Fukushima-is-still-news

- vol. 10 –

Health Effects Of Radiation and Collateral Effects



Odile Girard



Référence bibliographique

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INTRODUCTION

J'ai « découvert » l'écologie au début des années 70, croisant dans le même temps la pollution, les luttes paysannes et la malbouffe, la médecine qui avait (déjà) perdu son âme, les mouvements sociaux et bien sûr le nucléaire qui a occupé une grande partie de ma vie.

Après la catastrophe de mars 2011 au Japon, j'ai suivi chaque jour une partie des grands journaux japonais anglophones pour essayer de sauvegarder un maximum d'articles ayant trait à Fukushima. L'idée était de conserver une sorte d'archive accessible à tous, qu'ils soient écrivains, journalistes ou tout simplement intéressés.

Le blog « <u>Fukushima-is-still-news</u> » a été poursuivi jusqu'en 2019. Ci-dessous, la conclusion parue le jour où j'ai décidé d'arrêter mon blog.

End of March 2019: Time to stop this blog

29 Mars 2019 Rédigé par fukushima-is-still-news et publié depuis Overblog

I have been collecting and spreading information on the Fukushima disaster for more than 8 years. More than ever I am convinced that the name of my blog « Fukushima-is-still-news » was aptly chosen. Or perhaps i should have called it « Fukushima should still be news ». What i'm getting at is that i know the disaster is going on and we cannot simply forget Fukushima and turn the page. But the mode of action I chose 8 years ago has its limits and it is time for me to stop this blog.

I don't want the contents to be lost, so I will try and publish the lot with the Éditions de Fukushima so that the information remains available online.

Good bye for now. I am not doing a disappearing act. I'm still there tracking what's going on in the world of nukes.

C'est maintenant chose faite. Le blog *fukushima-is-still-news* est désormais disponible aux Éditions de Fukushima. Une fois de plus merci à mon ami Pierre, qui m'a convaincue à l'époque de tenir ce blog et m'a aidée à le lancer.

Odile Girard

Avertissement

La mise en page de dizaines de milliers de pages étant trop fastidieuse, nous avons préféré dans un premier temps éditer les volumes 7 à 16 sans mise en page particulière plutôt que de risquer de ne jamais les éditer. Chacun de ces livres est donc, dans la version présente, constitué des articles du blog copiés de manière brute. Les articles sont disposés a priori chronologiquement. Nous nous excusons donc pour l'absence de table des matières. La recherche peut toutefois facilement être effectuée par mot clé avec la fonction CRTL + F

Le présent volume est le dixième d'une collection de 16 ouvrages qui sont édités petit à petit.

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Health Effects Of Radiation

Health and radiation update Feb 11, 2012

February 11, 2012

Atomic energy commission to recommend background checks for nuclear workers

http://mdn.mainichi.jp/mdnnews/news/20120211p2a00m0na002000c.html

The Japan Atomic Energy Commission (JAEC) on Feb. 10 put together a draft report recommending energy companies be made to do background checks on employees working at important nuclear facilities or with nuclear materials.

Specifics are expected to be ironed out by a new government atomic energy regulatory organ to be established in April.

In January of last year, the International Atomic Energy Agency (IAEA) released a recommendation that the trustworthiness of nuclear employees be checked, and according to the JAEC, background checks on nuclear employees are already performed in most major countries. Such checks were considered in Japan in 2004 by the Ministry of Economy, Trade and Industry, but were not implemented over privacy concerns.

After the meltdowns at the Fukushima No. 1 nuclear plant, the JAEC recommended checks because "implementing counterterrorism measures for nuclear facilities, which can cause serious damage to society, is an urgent matter."

One obstacle to the checks is that it is difficult for power companies to check on workers' criminal records or debts, so police and other authorities would have to help. Furthermore, Tokyo Electric Power Co. could not confirm the identities of some of the workers who had been sent to the Fukushima No. 1 plant in recent background checks, and the JAEC has admitted it would be difficult to put the checks into practice. Click here for the original Japanese story

February 10, 2012

Approval near for Oi reactors / Agency says stress test evaluations at N-plant were adequate

http://www.yomiuri.co.jp/dy/national/T120209006930.htm

A government nuclear safety agency has submitted a final draft of an evaluation report that approves the stress test results of the Nos. 3 and 4 reactors at the Oi nuclear power plant in Oi, Fukui Prefecture, to a meeting attended by experts.

The Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency has virtually completed its evaluation of the assessment of the reactors run by Kansai Electric Power Co. The agency's approval of the evaluation is one of the preconditions for the government's goal of resuming operations at the reactors.

The reactors have remained out of service after being taken off-line for regular safety checkups.

KEPCO had reported to NISA their stress test results show safety levels at the reactors are appropriate. At the meeting, NISA officials heard a range of opinions from nuclear experts on the final draft.

NISA will soon compile a final evaluation report and will submit it to the Cabinet Office's Nuclear Safety Commission, which will examine the adequacy of the evaluation.

Prime Minister Yoshihiko Noda and three Cabinet members will decide whether to allow the reactors to resume their operations based on the results of the commission's examination of NISA's report and the opinions of local governments in Fukui Prefecture.

Fukui Gov. Issei Nishikawa requested the government to make the safety criteria based on the knowledge and lessons learned from the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant in the wake of the Great East Japan Earthquake last year.

The government will hold explanation sessions with local governments and residents to improve their understanding about the reactors' possible resumption of operations.

When NISA submitted its final draft to the meeting, some experts required that it be modified.

But NISA plans to continue with plans to complete its final evaluation report because "The report's main objective--deciding that the Oi reactors' safety assessment results are appropriate--will not change," a senior NISA official said.

NISA's final draft says an accident with a severity similar to the problems experienced at the Fukushima No. 1 nuclear plant will not occur at the Oi plant.

The draft also incorporates recommendations made by a delegation from the International Atomic Energy Agency that recently visited Japan.

KEPCO is now researching active faults around the Oi nuclear power plant and past large-scale tsunamis that have been recorded in historical documents.

The final draft also touches on the possibility that the stress test results will change depending on KEPCO's research.

February 08, 2012

N-safety unit to be housed with METI

http://www.yomiuri.co.jp/dy/national/T120207005565.htm

The Environment Ministry is likely to start operations of a new external nuclear regulatory agency to be launched in April at an annex of the Economy, Trade and Industry Ministry that oversees the current nuclear safety body, sources said.

The government wants to establish the new watchdog at a new location to rule out any conflict of interest that the body might have by being associated with METI, a promoter of nuclear power.

But because of difficulties in finding a home for the agency, the government will for the time being likely house the new watchdog at the current Nuclear and Industrial Safety Agency (NISA) premises.

The government has already been criticized because NISA, a nuclear regulator, works under the auspices of METI, and this proximity is seen as having contributed to the crisis at the Fukushima No. 1 nuclear power plant.

Most of NISA's functions will be absorbed by the new agency, which will be staffed by about 500 people. According to the sources, the new agency will probably be relocated as early as this summer.

Premises housing the new watchdog need sufficient earthquake resistance, must be situated on a lower floor and located near the Prime Minister's Office. Because there are also plans for a new nuclear safety investigation committee to be set up with the agency, at least 6,000 square meters of space is required, the sources said.

The sources said the Environment Ministry found a suitable private building in Tokyo's Shiodome area, but was unable to coordinate the move.

One reason for the ministry's struggle to find suitable premises is that bills to enable the creation of the new nuclear agency and the committee have yet to be passed in the Diet.

"If we decide on the location before Diet deliberations [on the bills], opposition parties would criticize us, saying we're disrespecting the Diet," a senior ministry official said.

Air radiation drops after snowfall / But decontamination necessary, levels will rise once snow melts, experts say

http://www.yomiuri.co.jp/dy/national/T120207005622.htm

The Fukushima prefectural government has received many inquiries because air radiation levels across the prefecture following the crisis at the Fukushima No. 1 nuclear power plant declined considerably late January and have since remained constant, perhaps due to fallen snow blocking radiation above the ground.

According to monitoring by the Education, Culture, Sports, Science and Technology Ministry and others, the rate of decline was particularly large in the Akougi district in Namie and the Nagadoro district in Iitate, located in the expanded evacuation zone around the nuclear plant.

Radiation measuring found that the Akougi district had a reading of 19.7 microsieverts per hour in the morning of Jan. 25, down from 30 microsieverts per hour recorded in the morning of Jan. 18. Air radiation levels also decreased to 5.9 microsieverts per hour from 10 microsieverts per hour over the same period in the Nagadoro district.

It is believed there were no major changes in air radiation levels before Jan. 18 and after Jan. 25. According to the ministry's Nuclear Emergency Response Headquarters, the decline can be attributed only to snowfall since decontamination operations were not conducted in the areas at the time.

The Fukushima Meteorological Observatory said snow accumulation is not monitored in Namie and Iitate, but temperatures and other factors suggest the town and the village had snow from Jan. 20 to 22.

The prefectural emergency response headquarters said radiation levels also declined in the city of Fukushima. While such levels measured 0.84 microsievert per hour at 6 p.m. on Jan. 21 when snow began to fall, at 9 p.m. on Jan. 22, after snowfall, radiation levels in the air measured 0.62 microsievert per hour. Farmer Masuo Kaneko, 63, who evacuated to the city from Nagadoro district, said after reading the newspapers he thought the radiation levels were dropping rapidly. But he was disappointed to hear the decline was due to snowfall.

"I expected radiation levels to halve in about two years time," he said.

Tokyo Institute of Technology Associate Professor Keiji Saneyoshi said air radiation levels may halve if about 20 centimeters of snow falls in certain areas. "Yet decontamination work needs to continue since the levels will rise again once the snow melts," Saneyoshi said.

Cesium detected in worms near Fukushima plant

http://www3.nhk.or.jp/daily/english/20120208_04.html

Researchers say high levels of radioactive cesium have been detected in earthworms caught in areas around the damaged Fukushima Daiichi plant.

The researchers from the Forestry and Forest Products Research Institute checked cesium levels in earthworm samples they collected at 3 locations.

The institute says about 19,000 becquerels of cesium per kilogram of worms were detected in Kawauchi Village 30 kilometers from the plant, about 1,000 becquerels in Otama Village, 70 kilometers from the plant, and 290 in Tadami Town, 130 kilometers away.

The institute says the cesium levels rise in proportion to the radioactive levels of top soil containing decomposed leaves, the worms' feed.

The reading in Kawauchi was higher than the 146,000 becquerels per kilogram detected in a wild boar in Fukushima Prefecture. The radioactive level in the animal is 30 times the official limit.

The chief researcher at the institute, Motohiro Hasegawa, says boars, birds and other forest animals feed on earthworms. He says the radioactive impact on these creatures will need to be constantly monitored to prevent contamination through the food chain. February 07, 2012

Gov't to set up radiation yardstick for shipping Fukushima stones

http://mdn.mainichi.jp/mdnnews/news/20120207p2g00m0dm102000c.html

TOKYO (Kyodo) -- The Japanese government plans to set up a radiation yardstick for shipping stones given the detection of a relatively high level of radiation in gravel, used as building materials, from near the crippled Fukushima Daiichi nuclear power plant, industry minister Yukio Edano said Tuesday. The government will set up a panel to create such a standard by the end of next month. The yardstick is expected to apply mainly to quarries in Fukushima Prefecture, but details will be discussed at the panel's meetings. The government has been checking distribution routes of crushed stones from quarries in Fukushima since the detection of the building materials suspected to have been radioactively contaminated.

The gravel used was shipped from a quarry within the evacuation zone near the stricken plant sometime between the beginning of the nuclear crisis and the government's designation of the evacuation zone on April 22.

The crisis was triggered by the earthquake and tsunami on March 11.

So far, a relatively high level of radiation has been detected at 22 locations in Fukushima Prefecture, mostly resident houses, according to government checkups, jointly conducted by local municipalities. **Crushed stones suspected to have been radioactively contaminated may have been used at more than 1,000 construction sites**, and so far the measurement of radiation levels has been conducted at **only 10 percent of them.**

The government will speed up its radiation check process to complete it by the end of March, Edano said. February 06, 2012

High radioactive cesium levels detected in worms 20 km from nuke plant

http://mdn.mainichi.jp/mdnnews/news/20120206p2a00m0na008000c.html

Radioactive cesium registering some 20,000 becquerels per kilogram has been found in worms 20 kilometers from the damaged Fukushima No. 1 nuclear plant.

The cesium was detected by a team including Motohiro Hasegawa, chief researcher in soil zoology at Japan's Forestry and Forest Products Research Institute. Worms are a source of food for many wild animals, and it is feared that radiation could gradually accumulate in the bodies of animals throughout the food chain.

The research team's findings will be announced at a meeting of the Ecological Society of Japan, to commence in the Shiga Prefecture city of Otsu on March 17.

Researchers dug up between 40 and 100 worms in national forests in the Fukushima Prefecture village of Kawauchi, which lies partly in the exclusion zone around the nuclear plant; the village of Otama, located 60 kilometers from the plant; and the town of Tadami, about 150 kilometers from the plant, between late August and late September last year.

The worms in Kawauchi registered 20,000 becquerels per kilogram of radiation. In Otama the level was around 1,000 becquerels per kilogram, while in Tadami 290 becquerels per kilogram was recorded. The airborne radiation dose in Kawauchi at the time of the investigation was 3.11 microsieverts per hour, while in Otama, it was 0.33 microsieverts per hour, and in Tadami it was 0.12 microsieverts per hour. The figures show radioactive cesium concentration was greatest in the areas where airborne radiation dosage was highest.

In surveys conducted by the Forestry Agency between August and September last year, radioactivity of 1.38 million becquerels per square meter of soil was measured in Kawauchi, compared with between about 80,000 and 120,000 becquerels in Otama, and 20,000 becquerels in Tadami.

Much of the radioactive substances released from the plant in the nuclear disaster remains on **fallen leaves**. It is thought that worms have ingested the organic matter formed from the breakdown of these leaves.

Click here for the original Japanese story

Govt to measure radiation levels in no-fly zone

http://www3.nhk.or.jp/daily/english/20120206_08.html

Japan's government will measure radiation levels around the troubled Fukushima Daiichi nuclear plant as a step toward revising the no-fly zone over the site.

No aircraft has been allowed to fly within a 20-kilometer radius of the plant since the nuclear accident.

The government says it will revise the no-fly zone as it confirmed in December that the nuclear reactors have now reached a state of cold shutdown.

Starting Monday and continuing for several days, helicopters flying at an altitude of about 300 meters will collect air samples around the plant to measure radiation levels.

There are no specific standards on radiation levels for the designation of no-fly zones. The government plans to revise its earlier decision based on data collected during the flights.

February 04, 2012

Plowing technique to fight spread of radiation demonstrated

http://mdn.mainichi.jp/mdnnews/news/20120204p2a00m0na010000c.htm

IWAKI, Fukushima -- A plowing technique being considered to fight the spread of radiation was demonstrated here on Feb. 2, though some farmers on hand were disappointed. In the demonstration, four large machines dug up earth from around 30 centimeters deep to replace potentially contaminated topsoil and reduce the amount of radiation crops absorb from it. According to a prefectural official, radiation readings in the field were 0.3 to 0.42 microsieverts on Feb. 1, and 0.23 to 0.3 microsieverts after the plowing. "There was an effect," the official said. Around 150 people including local farmers gathered to watch the demonstration. Some farmers complained, however, that "expensive machines are necessary" for the plowing technique, and that an overall decontamination plan for the city's fields has still not been decided on. Click here for the original Japanese story

US univ. to monitor wildlife in Fukushima

http://www3.nhk.or.jp/daily/english/20120204_05.html A US research team will conduct a long-term study on the impact of radiation exposure on wild animals and plants around the Fukushima Daiichi nuclear power plant.

The team from University of South Carolina, led by Professor Timothy Mousseau, will begin the study in Fukushima Prefecture and other areas of Japan in May.

The team has been studying the impact of radioactive fallout from the Chernobyl nuclear accident on wildlife around the plant for more than 13 years.

Its study shows a decrease in the number of birds and insects, as well as abnormalities in animals even in areas with low radiation levels of one to 3 microsieverts per hour.

The team says long-term research is likely to shed light on the impact of low-level radiation from the Fukushima accident on wildlife and that it hopes to cooperate with Japanese researchers.

Professor Mousseau will visit Fukushima later this month in preparation for the study. He says generational change of animals, such as birds, is quicker than that of humans and will provide clues to the impact of radiation on human genes.

January 31, 2012

Japan's nuclear stress tests deemed consistent with IAEA standards

http://mdn.mainichi.jp/mdnnews/news/20120131p2g00m0dm081000c.html TOKYO (Kyodo) -- An International Atomic Energy Agency fact-finding team said Tuesday that Japan's nuclear stress tests, a key step for restarting reactors following the Fukushima nuclear crisis, are "generally consistent" with IAEA safety standards.

On the last day of its nine-day mission to Japan to review the tests at nuclear power plants, the IAEA delegation conveyed its findings to the government's Nuclear and Industrial Safety Agency, while also making some recommendations to improve the tests's effectiveness.

"The conclusion of the team is that NISA's instructions and review process for the comprehensive safety assessments are generally consistent with IAEA safety standards," the delegation said in its preliminary report.

Tokyo introduced the stress tests after the meltdown at Tokyo Electric Power Co.'s Fukushima Daiichi power plant in the wake of the March quake-tsunami disaster, to check how much leeway the nation's nuclear power plants have to withstand earthquakes, tsunami and the loss of power.

To confirm if the test method is consistent with global safety standards, the government asked the Vienna-based body to verify them.

But there remains criticism among some local governments hosting nuclear power plants and experts that the stress tests need to reflect the findings that the government's accident investigation team has yet to compile on the Fukushima nuclear crisis.

NISA earlier compiled a draft report endorsing results of first-round stress tests that Kansai Electric Power Co. submitted with regard to the No. 3 and 4 reactors at its Oi power plant in Fukui Prefecture. The two reactors are currently idled for scheduled checkups.

The government's nuclear safety agency is set to finalize the report after studying the IAEA's findings, and will have it checked by the Nuclear Safety Commission of Japan.

James Lyons, nuclear installation safety director of the IAEA's Nuclear Safety and Security Department who heads the delegation, said at a press conference that deciding whether to restart the reactors is up to the Japanese government.

Currently, only three of Japan's 54 commercial reactors are operating. Japanese reactors must shut down for maintenance every 13 months, and so far no idled reactor has passed the stress tests, a prerequisite for resuming operations.

If no idled reactors get approval to restart, Japan will be without any operating reactors by the end of April.

Radiation update feb 13, 2012

February 13, 2012

Radiation concerns keep municipalities from helping with disaster-area debris

http://mdn.mainichi.jp/mdnnews/news/20120213p2a00m0na017000c.html

Concerns about radiation are preventing the massive amount of debris left in areas hit by the March 2011 tsunami from being sent to other areas for processing.

Keisuke Hiwatashi, mayor of Takeo, Saga Prefecture, visited the disaster areas over 10 times for volunteer and other work. He felt that they needed immediate help processing debris, and on Nov. 28 he announced that Takeo would accept debris for processing. According to the city government, however, over 1,000 phone calls and e-mails came in over the next two days, with many of them critical of the decision. This included one that could be considered a threat. It is believed that Hiwatashi withdrew his decision because of these complaints, though there were additional reasons.

To use the prefecture's waste processing facilities, permission is needed from an association made up of local municipalities, but Genichi Tanaka, mayor of Kohoku, voiced hesitance, stating, "Many opinions should be sought." His comment hinted that municipalities were not informed of the decision in advance. Residents, particularly those near the facility that would process the debris, are also concerned. One 60-year-old farmer commented, "We can't ignore the possibility of harmful rumors" about radiation contamination if the city takes on debris.

Hiwatashi is considering holding a referendum on the issue.

According to the Ministry of the Environment, 22.52 metric tons of debris remained in the three prefectures of Iwate, Miyagi and Fukushima as of Jan. 31. The national government hopes to have debris from Iwate and Miyagi processed in other municipalities, as the amount is 11 to 19 times the regular amount of waste generated in each of the prefectures in one year.

In July last year, Yamagata Prefecture began taking on debris, and in November Tokyo followed suit. Kanagawa Prefecture, Chiba Prefecture and the Shizuoka Prefecture city of Shimada announced they would accept debris as well. However, in Kanagawa Prefecture, most residents at meetings were opposed to the idea, so no time frame for receiving debris has been set. In Niigata Prefecture, although cities have expressed willingness to consider taking on debris, the prefectural governor is reluctant to do so. According to a November survey by the Ministry of the Environment, 54 municipalities and special district authorities across 11 prefectures had either received debris or were considering doing so. This was a large drop from April last year, when a survey found 572 municipalities and special public associations across 42 prefectures were considering accepting debris. The problem of radioactive ash remaining after burning the debris caused many municipalities to back off.

Furthermore, radiation standards for using ash in landfills differ from one municipality to another. The upper limit for radioactive cesium in ash used in landfills is 8,000 becquerels per kilogram under national standards, but Yamagata Prefecture has chosen a stricter standard. Tokyo is using the national standard, but is requiring test incineration at the time of shipping.

Hiwatashi has indicated he wants to use the maximum limit of naturally occurring radiation as a standard, but Hiroki Nonaka, a representative of a citizen's group on nuclear power, opposes bringing in debris.

"We should not spread contamination. We can help in other ways, like receiving evacuees or sending safe crops," he said.

Koichi Toyoshima, professor of physics at Saga University, commented, "Radiation levels differ across the different parts of debris. The plan to use the maximum limit of naturally occurring radiation would be hard, as the volume (of debris to measure) is large." Click here for the original Japanese story

New mini-dosimeters

February 14, 2012

Institute develops memory card-sized ultra small dosimeters http://mdn.mainichi.jp/mdnnews/news/20120214p2a00m0na015000c.html

Three kinds of ultra-small radiation integrative dosimeters developed by AIST are pictured together with an adapter, front, and a 500-yen coin, left, that illustrates their small size, in this recent photograph. (Mainichi)

TSUKUBA, Ibaraki -- A research institute based here has announced its success in developing an ultrasmall integrative and high-quality radiation dosimeter that is no bigger than the size of a memory card, it has been learned.

The National Institute of Advanced Industrial Science and Technology (AIST) in the Ibaraki Prefecture city of Tsukuba has developed three versions of ultra-small dosimeters that are capable of measuring emission doses while at the same time recording past data.

The smallest among the three, which at a glance looks no different from an SD memory card, weighs only 10 grams and is 35 millimeters long, 25 millimeters wide, and 12 millimeters thick.

According to officials at the institute, this is the world's smallest integrative dosimeter capable of storing past data.

The newly-developed devices are made of solid silicon and can be used for a total of six consecutive months on regular watch batteries, institute officials say.

When connected to a computer via a specialized adapter, users can check previously taken data by the exact day and time it was recorded.

The devices also notify users of high radiation doses through a buzzer and a light signal.

The institute is currently looking for a manufacturer to develop the devices into a marketing product that will be targeted at individual consumers and the dosimeter and the adapter will be priced at or under 5,000 yen each, officials say.

Click here for the original Japanese story

Poor standards

February 15, 2012

N-safety panel apologizes for defective standards

http://www3.nhk.or.jp/daily/english/20120215_30.html

The head of the government's nuclear safety commission says government guidelines for nuclear safety need to be reviewed.

Haruki Madarame made the remark on Wednesday in response to questions at the Independent Investigation Commission of the Fukushima Nuclear Accident, a panel established in the Diet.

Madarame said he has to admit that the government guidelines for nuclear safety are defective in many ways.

He apologized for insufficient wording in the guidelines for taking measures against the danger of a tsunami and for inappropriate wording stipulating that it is not necessary to prepare for long-time power loss.

Madarame also spoke about the handling of data from a system to predict the spread of radioactive substances. He said it is a misunderstanding to argue that more swift evacuation would have been possible if the data had been made public more quickly. But he said the data should have been disclosed at an earlier stage of the accident.

The Industrial Safety Agency's former chairman Nobuaki Terasaka was also present at the meeting to answer questions.

Terasaka said he feels sorry that the government task force on the nuclear disaster did not make minutes of its meetings. Terasaka was the secretary general of the task force in the wake of the nuclear disaster.

He added that work is underway to reproduce records of the meetings based on summaries of memorandums that are available.

Flaws in the safety regulations

February 17, 2012

NSC head says system flawed / Nuclear risks ignored, govt regulations lax, Diet inquiry told

http://www.yomiuri.co.jp/dy/national/T120216005656.htm

The chief of the Cabinet Office's Nuclear Safety Commission has apologized for flaws in the government's nuclear safety regulations, including nuclear power plants' countermeasures against tsunami, at a Diet-sponsored inquiry investigating the Fukushima nuclear crisis.

NSC chairman Haruki Madarame was called as a panel witness Wednesday to address the Fukushima Nuclear Accident Independent Investigation Commission, which was jointly set up by the House of Representatives and the House of Councillors. It is chaired by Kiyoshi Kurokawa, former president of the Science Council of Japan.

Regarding the government's safety regulations on nuclear power plant countermeasures against tsunami and power outages, Madarame said, "I can't help admitting there are flaws. I'd like to apologize for that." He also said, "It was a mistake that tsunami risks weren't addressed in detail, and that the regulations stipulated, 'There is no need to consider the serious impact of prolonged power loss [at nuclear power plants].'"

The NSC chief said a fundamental review of the government's nuclear safety standards was needed and that the problems were deep-seated.

"While other countries considered [stricter nuclear safety standards], Japan made excuses to avoid them. A system was created in which decision-making was difficult and change was avoided," he said.

"I think this attitude is at the root of various problems," Madarame added.

Wednesday's meet was the first full-scale hearing conducted by the Diet investigation panel. Nobuaki Terasaka, former director general at the Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency, was also called as a witness to address the panel.

Terasaka admitted safety measures taken by the agency were insufficient. "This accident occurred at a time when there wasn't enough preparation [to cope with possible nuclear accidents]. The agency had problems acting as the [nuclear industry's] regulation body."

The commission's hearings are basically obliged to be open and differ from separate hearings held by a government investigation panel, which are basically closed to the public.

Wednesday's hearing was broadcast on the Internet.

What conditions for nuclear workers compensation?

February 18, 2012

Former nuclear worker, heart attack victim sues gov't over workers comp claim http://mdn.mainichi.jp/mdnnews/news/20120218p2a00m0na006000c.html

FUKUOKA -- A former nuclear plant worker who suffered a heart attack decades after being exposed to radiation has filed suit against the government, demanding it recognize his claim for workers compensation.

Ryusuke Umeda, 76, a resident of Fukuoka, filed the suit with the Fukuoka District Court on Feb. 17. There is no precedent for nuclear plant workers in Japan being recognized as suffering from non-cancer diseases attributable to radiation exposure. However, similar cases may emerge on the heels of the Fukushima nuclear disaster, in which many workers have been exposed to radiation.

"We want to clarify the actual conditions of nuclear plant workers and maintain that the current criteria for recognizing workers compensation claims are wrong," said attorneys for the plaintiff.

According to the complaint and other sources, Umeda did plumbing and other work at Japan Atomic Power Co.'s Tsuruga Power Station in Tsuruga, Fukui Prefecture, and at Chugoku Electric Power Co.'s Shimane Nuclear Power Plant in Matsue, Shimane Prefecture, in 1979. At the time, however, he was not given sufficient instruction on radiation protocols, and to boost efficiency he worked without a mask or sound-making dosimeter. Before long, he began suffering from nose bleeds and fatigue. He had a heart attack in 2000.

In 2008, he filed a workers compensation claim with a labor standards inspection office in Matsue, along with a statement from a doctor at Nagasaki University Hospital who examined him saying, "The possibility that his disease was partly triggered by radiation cannot be ruled out."

However, the labor standards inspection office dismissed his claim, citing an advisory by the International Commission on Radiological Protection (ICRP) that non-cancer diseases are not included in the effects of radiation exposure if the dose was less than 100 millisieverts. Umeda's external radiation exposure reading was 8.6 millisieverts.

Umeda argued that the reading did not reflect actual conditions because he had taken off his dosimeter while working at the nuclear complexes. He also claimed that the causal relationship between radiation exposure and his condition should be recognized, citing a government guideline for recognizing sufferers of atomic bomb-related diseases that lists heart attacks as one of the health problems caused by radiation exposure.

The government declined to comment on the case, saying, "We haven't received the complaint yet." Click here for the original Japanese story

New norms on cesium

February 18, 2012

New radiation limits confuse farmers

http://www.yomiuri.co.jp/dy/national/T120217006258.htm

Farmers in Fukushima Prefecture have had differing reactions to the new limits introduced by the health ministry on radioactive cesium in food.

"I wonder whether the radioactive cesium level will be lower than the new limits even if I grow rice after decontamination," Takayoshi Sakurai said with a sigh. "I feel the government has introduced the new limits to keep Fukushima from distributing food."

Sakurai, 65, has five hectares of paddy fields in Minami-Soma, which has been forced to give up rice planting this year.

He said he would rather abandon farming if he has to grow rice without a guarantee that it will be sold. On the other hand, Zenichiro Endo, 65, a dairy farmer with 43 milk cows in Koriyama, was more positive. "Tighter restrictions are good because children drink a lot of milk," he said. "Consumers won't drink milk if it's not safe and tasty. It is important to address their concerns [about radioactive cesium] first." The Radiation Council said opinions from people other than consumers should be taken into consideration.

It called on the Health, Labor and Welfare Ministry to listen to what farmers and other food producers have to say about suspensions of food shipments to avoid being swayed by damaging comments from other sources.

The health ministry holds frequent talks with the Agriculture, Forestry and Fisheries Ministry before it revises radiation limits.

As a result, the new limits were adopted for food items that are eaten after being soaked in water, such as dried shiitake mushrooms. The new limits for rice and beef will be delayed.

Ministry sets stricter cesium limits for food

http://www.yomiuri.co.jp/dy/national/T120217006336.htm

Tsuyoshi Nakamura and Eiji Noyori / Yomiuri Shimbun Staff Writers

New govt limits on cesium levels in food

(unit: becquerels per kilogram)

	Provisional limits	New limits		
() Vegetables	500	100		
Grains	500	(General food products, including dairy)		
Meat, eggs, fish	500			
Drinking water	200	10		
Milk, dairy products	200	50 (Milk only)		
Baby food items	No category	50		

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Imeline	on rea	ulations	tor ra	adioact	ive	substance	s in	tood

2011			
From mid-March	Radioactive substances detected in agricultural products in many loca- tions following the outbreak of the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant.		
March 17	The Health, Labor and Welfare Ministry sets provisional regulatory limits.		
March 29	The Food Safety Commission under the Cabinet Office approves the provisional limits.		
July 26	The Food Safety Commission submits a proposal to the government saying a cumulative radiation dose of under 100 millisieverts over a lifetime poses no health risks.		
Oct. 31	The health ministry's advisory council begins reviewing provisional limits.		
Dec. 22	The health ministry announces a new limit of 100 becquerels per kilo- gram for general food products.		
2012			
Feb. 2	The Radiation Council under the Education, Culture, Sports, Science and Technology Ministry presents a draft proposal on new limits.		
Feb. 16	The Radiation Council approves the health ministry's new limits.		

The Health, Labor and Welfare Ministry held firm to its original proposal for new, tougher limits on radioactive cesium in food. However, the science ministry's Radiation Council has said the new regulatory limits for milk and baby food items are too strict.

Despite the criticism, the council approved new limits that are far tougher than the current provisional limits. The health ministry plans to apply the new limits in accordance with its original proposal for food, drinking water, milk, and baby foods starting in April, but some observers voiced concerns they could cause trouble for food producers and inspection arrangements.

According to the health ministry's proposal approved Thursday by the Radiation Council of the Education, Culture, Sports, Science and Technology Ministry, the new limits are set at 100 becquerels per kilogram for regular food items, 50 becquerels for milk and baby food items, and 10 becquerels for drinking water. The council is an advisory panel of the science ministry.

"We didn't mean to drag out the talks to annoy [the health ministry], but we just wanted [the ministry] to think deeply about why we took such a long period of time," said Otsura Niwa, chairman of the Radiation Council and professor emeritus of Kyoto University.

During a council meeting held Thursday morning at the science ministry building, Niwa requested the health ministry give thoughtful consideration to the application of the new limits.

The new limits are extremely strict and are set between one-twentieth and a quarter of the present provisional limits.

In six council meetings held since December, many council members stated the health ministry's proposed limits were too strict.

"Children's safety can be secured even if the limits are set at 100 becquerels, which is the same level for general food items. It's not necessary to set stricter limits for only baby food items and milk at half of this figure," a council member said during one of the meetings. Another member said, "The basic premises for calculating the limits are too strict."

Another issue council members found problematic during their discussions with the health ministry was that they believed calculation methods were not realistic.

According to the health ministry's original proposal, the limits were calculated based on an assumption that 50 percent of distributed food items are contaminated. However, council members have said this assumption is too extreme.

As the ministry assessed the ratio of contaminated food with radiation doses 1.5 times to five times higher than ratios found in Europe or the United States, the new cesium limits for general food have become far stricter.

"I wonder [the limits were calculated] based on a fictitious scenario," a council member said. ===

Ministry's strong intent

A senior health ministry official said, "We aimed to set standards that protect a large majority of people, even in a case when multiple worst case [scenarios] are combined."

Behind the ministry's decision is the strong will of health minister Yoko Komiyama, who has enthusiastically tackled child-rearing issues since before the Democratic Party of Japan became the ruling party.

Komiyama backed the ministry's bureaucrats from the beginning, saying, "In order to feel safer, we'd like to set stricter limits for baby food items."

Consequently, the category for baby foods was newly established as there was no such category when the government initially determined the provisional limits.

However, Radiation Council experts, who seriously regard scientific grounds and impact on society, thought that establishing the new category was an unnecessary effort.

One opinion expressed during the council meetings stated that since the limit for general food items was sufficient, the safety standards for baby food items should not be a separate category.

However, the health ministry did not yield, and an agreement between the ministry officials and council members seemed a distant possibility.

"How food is eaten varies greatly among individuals, and it's impossible to measure and look after the actual exposure of each person. So, we think we must protect the public's health by setting a rational standard under the strictest assumptions. We have a different view from the report presented by the Radiation Council," a senior health ministry official said.

Radiation doses

Survey reveals radiation doses / 58% of Fukushima residents likely exposed to less than 1 millisievert

http://www.yomiuri.co.jp/dy/national/T120220004953.htm

FUKUSHIMA--About 58 percent of Fukushima Prefecture residents were likely externally exposed to radiation measuring less than 1 millisievert during the first four months of the Fukushima nuclear crisis, according to a survey released Monday by the prefectural government.

The prefectural government released its estimate of the external radiation doses of 10,468 people. The prefecture has a population of about 2 million people.

Of 9,747 people, excluding workers at the crippled Fukushima No. 1 nuclear power plant, 57.8 percent were estimated to have been exposed to levels less than 1 millisievert--which is considered the annual limit of radiation exposure under normal circumstances--during the first four months, according to the survey.

The survey found 94.6 percent of residents were considered to have been exposed to less than 5 millisieverts of radiation.

Only two women were estimated to have been exposed to radiation levels exceeding 20 millisieverts. The main reason behind the two women's high exposure level is that the two stayed in the expanded evacuation zone--the area spanning five municipalities beyond a 20-kilometer radius around the power plant--for more than three months.

One of the women is thought to have been exposed to 23 millisieverts of radiation, the highest among people who did not work at the nuclear plant.

Among 1,693 people under 20 years old who were surveyed, one male was estimated to have been exposed to 18.1 millisieverts, but all others were exposed to less than 10 millisieverts.

Among workers at the nuclear plant, the highest level was 47.2 millisieverts.

"In past epidemiological examinations, obvious health effects have not been observed with cumulative doses of 100 millisieverts or less. The results of the survey show the level of radiation exposure will not likely impact residents' health," an official of the prefecture said.

A total of 431,720 people, or 21 percent of Fukushima residents, responded to the questionnaire by the end of January.

The released results are from 10,468 out of 29,103 residents in litate, Namie and the Yamakiya district of Kawamata, which are designated as expanded evacuation zones, and the no-entry zone within 20 kilometers of the nuclear plant.

Residents in these areas were surveyed before residents in other areas.

Based on the survey results, the estimated external exposure levels were calculated according to timeseries data on air radiation levels at various locations.

Residents were asked to recall where they stayed and what they did for the first four months of the nuclear crisis that began soon after the March 11 earthquake and tsunami.

The data was calculated using the Education, Culture, Sports, Science and Technology Ministry's monitoring survey results and the System for Prediction of Environmental Emergency Dose Information (SPEEDI), the government's computer system that simulates the dispersal of radioactive substances. (Feb. 21, 2012)

40% of residents' exposure tops annual limit

http://www3.nhk.or.jp/daily/english/20120220_26.html

More than 40 percent of the people surveyed in 3 municipalities near the Fukushima Daiichi nuclear plant were exposed to radioactivity levels above the annual safety limit in the 4 months after the disaster.

Fukushima Prefecture released on Monday the results of its survey of external radioactive exposure among some 9,750 residents of 2 towns and a village after the accident last March. This number excluded people working in places with high radioactivity, such as a nuclear plant.

Participants were asked about their behavior over a 4-month period immediately following the nuclear accident in order to estimate their external exposure.

Forty-two percent of the respondents are estimated to have received more than one millisievert --- the annual limit for the general public --- in the 4 months following the disaster.

Estimated exposure exceeded 10 millisieverts for 71 people. The highest dose was 23 millisieverts for an adult woman.

Among young people under the age of 20 at the time of the accident, the highest exposure was 18.1 millisieverts over 4 months.

The prefecture is conducting the survey on all its 2 million residents.

Fukushima residents exposed to up to 23 millisieverts of radiation http://mdn.mainichi.jp/mdnnews/news/20120220p2g00m0dm146000c.html



The government's new radiation contamination map site is seen in this screen capture taken on Oct. 18. (Mainichi)

FUKUSHIMA (Kyodo) -- The Fukushima Prefecture government said Monday residents of three municipalities near the crippled Fukushima Daiichi nuclear power plant are estimated to have been exposed to up to 23 millisieverts of radiation in the four months after the accident caused by the March 11 earthquake and tsunami.

"As annual radiation exposure of up to 100 millisieverts poses no specific cancer risks, the estimated radiation is unlikely to cause any adverse health effect," Fukushima Medical University Vice President Shunichi Yamashita told a press conference. "It is important to reduce future radiation exposure as much as possible."

While **the allowable radiation exposure limit is set ordinarily at 1 millisievert per year,** the International Commission on Radiological Protection has recommended an **emergency limit of 20 to 100 millisieverts.**

Of 9,474 residents, excluding nuclear plant workers, in Namie, Kawamata and Iitate, 5,636 persons, or 57.8 percent, were exposed to radiation of less than 1 millisieverts during the four months, the local government said.

Those exposed to radiation of 1 to less than 10 millisieverts totaled 4,040 persons, or 41.4 percent.

Some 71 people were exposure to 10 millisieverts or more, including two people exposed to more than 20 millisieverts. The maximum exposure was 23 millisieverts.

Radiation of 20 millisieverts was adopted as the standard for designating the planned evacuation zone -- outside the 20-kilometer emergency evacuation zone around the Fukushima Daiichi plant.

Including nuclear plant workers, the number of residents of the three municipalities exposed to 10 millisieverts or more of radiation totaled 95 people. The maximum exposure among that larger group was estimated at 47.2 millisieverts.

The prefectural government is now conducting a health survey of all its approximately 2 million residents. They were sent questionnaires, asking where they were after the nuclear crisis began and how they acted since then.

However, only 52.1 percent of the questionnaires sent to the residents of the three municipalities, and 21 percent of all the questionnaires sent throughout the prefecture, had been collected as of the end of January, according to the local government.

Can history teach us lessons?

February 20, 2012

'Bikini incident' survivor's story relevant today as Fukushima crisis continues http://mdn.mainichi.jp/mdnnews/news/20120220p2a00m0na009000c.html

Eleven months since the outbreak of the nuclear disaster at the Fukushima No. 1 Nuclear Power Plant run by Tokyo Electric Power Company (TEPCO), with people still living in fear of radiation exposure, I went to hear what a man who was exposed to radiation 58 years ago, had to say.

Matashichi Oishi, 78, was a crew member of the fishing boat Daigo Fukuryu Maru, or "Lucky Dragon 5," which one day in 1954 found itself covered in the "ashes of death" from a nuclear experiment being conducted in the Pacific by the U.S., off the Bikini Atoll.

"Many people were exposed to blasting winds and extreme heat by the atomic bombs that were dropped on Hiroshima and Nagasaki," Oishi said. "As for us, we were covered in radioactive white powder that rained down from the sky, and suffered internal radiation exposure."

It was Feb. 11, and Oishi was speaking to an audience of about 60 people attending a study session cohosted by a civic group and the Nishitokyo Municipal Government. He'd shut down the dry cleaning business that he'd run for years in Tokyo at the end of 2010.

"I'd always been trying to share my experiences through spoken and written words, but no one would listen to a mere former fisherman-turned-launderer. But ever since the disaster in Fukushima broke out, what I have to say is no longer 'someone else's pitiful story,'" he said.

That Oishi characterized his ordeal -- an incident which sparked Japan's anti-nuclear activist movement -- as having been viewed as "someone else's pitiful story" is testament to the turbulent road he'd been forced to take.

Oishi was the eldest son in a family of six children in the Shizuoka Prefecture town of Yoshida, located next to the city of Yaizu, where Daigo Fukuryu Maru's home port was located. He was 14 years old when he joined the crew of a bonito fishing boat. In January 1954, right after Oishi turned 20, he left port on the

Daigo Fukuryu Maru, a tuna fishing boat. In the predawn hours of March 1, Oishi and his colleagues were in the Pacific near the Marshall Islands, when a nuclear bomb device detonated some 160 kilometers away.

In his book, "The Day the Sun Rose in the West," Oishi describes what happened in the immediate aftermath: "Two hours passed ... I noticed that the rain contained white particles ... I took a lick; it was gritty but had no taste."

Only later did it emerge that the white powder had been coral reef that had been incinerated by the hydrogen explosion, and scattered through the sky.

"There was enough of it accumulating on the deck of our boat that we would leave footprints. But it wasn't hot to the touch, and it didn't give off an odor, so we weren't fearful of it," Oishi explained. The hydrogen bomb, given the code name "Castle Bravo," is said to have released 1,000 times the power of the bomb dropped on Hiroshima.

In the two weeks between the explosion and the boat's return to port, the crew members continued to be exposed internally to radiation through the food they ate and the air they breathed, though the exact degree of their exposure is unknown. According to the public-interest corporation that runs the Tokyo Metropolitan Daigo Fukuryu Maru Exhibition Hall, it is estimated from crew members' white blood cell counts and other symptoms that they were exposed to an estimated 2,000 to 3,000 millisieverts of radiation. Exposure to 4,000 millisieverts of radiation at once is said to result in death for 50 percent of people.

The oldest of the Daigo Fukuryu Maru's 23 crew members, then 40-year-old Aikichi Kuboyama, died half a year later from acute radiation syndrome. Oishi, meanwhile, lost his hair and saw his white blood cell count drop, but was able to go home after being hospitalized for 14 months.

In 1955, the Japanese and U.S. governments reached an agreement in which the U.S. government would pay the Japanese government 720 million yen in "sympathy money," without having to take any legal responsibility. Politically, the Bikini Incident had been settled. But what awaited Oishi in his hometown were others' prejudiced and discriminatory attitudes toward him as a victim of radiation exposure, and jealousy over the 1.9 million yen he'd received. People even asked him to shoulder loans that they had no prospects of paying back.

The white powder at the bottom of this bottle is a sample of the "ashes of death" brought back by the crew of the Daigo Fukuryu Maru. No radioactivity can be detected from it today. (Mainichi) Unable to withstand the treatment, Oishi relocated to Tokyo and began working at a dry cleaner's. "I wanted to live unnoticed among the crowd in a place where no one knew about my past radiation exposure," Oishi said.

He eventually married, but the couple's first child was stillborn. Fearing that the discrimination that plagued him would burden his wife and two children who survived, Oishi kept mum on his experience. And still, he could not keep the prejudice from seizing his loved ones.

"Two of my daughter's engagements were broken off," Oishi recalled. "Just because one was exposed to radiation or is related to someone who did, people saw us as somehow deviating from 'the human realm.'" Through all this, his fellow crew members continued to die from cancer and other health problems. Oishi asked himself if it was acceptable to stay quiet about what he and his fellow shipmates had experienced. In 1983, 29 years after the incident took place, Oishi spoke to a group of junior high school students about the Bikini Incident. This experience led to his decision to continue sharing his story far and wide.

"It's frustrating, isn't it? I've suffered so much from discrimination and prejudice, while many of my fellow fishermen died from illness in their 40s and 50s. Meanwhile, their surviving families continued to suffer. If I do not speak out about it, as someone who was actually there, the incident will be forgotten. I have no choice but to speak out. That's what I thought."

Since then, Oishi has traveled across the country giving talks about the dangers of radiation and internal exposure. It was one day in the recent past that "someone else's pitiful story" turned into "my grave story" for all those affected by the crisis at the Fukushima nuclear plant.

"The Bikini Incident and the recent nuclear plant disaster are essentially of the same nature in that they have both caused internal exposure to radiation. However, I inhaled and was covered (in radioactive materials) for two weeks, while the people of Fukushima are living in it. It's outrageous. (Radiation) isn't visible, and no one wants to leave their hometowns. But radiation detection devices register certain radiation levels. ... The people must be at their wits' end.

"What are we going to do about radiation, and about nuclear power? We can't leave it up to the leaders who don't want to lose in international competition, because they will resist seeing the health effects of radiation exposure as significant. The public must think this through with raised awareness, or this problem will remain unresolved forever."

At his home in Tokyo, Oishi showed me a bag full of his medications, including ones to improve the symptoms of angina and myocardial infarction, others to prevent asthma attacks, as well as those for the treatment of infections. He takes approximately 30 kinds of drugs per day.

"To be honest, the reason I'm able to hold out is because of the medication," Oishi said. "If it weren't for the medication, I wouldn't be here."

In 1992, Oishi was diagnosed with liver cancer and received surgery for it. He now has a tumor in his lung, and his asthma-like coughing fits can't be kept under control without his meds. He also has arrhythmias and cataracts. It's not clear if there's a causal relationship between his encounter on a shipping boat years ago and his ailments today, but Oishi says in his aforementioned book that none of the conditions existed before he encountered the U.S. nuclear experiment.

Concerned with the possible aftereffects of his exposure to radiation, Oishi continued to undergo physical exams once a year at the National Institute of Radiological Sciences, which was founded in 1957 as a direct result of the Bikini Incident. He stopped going, however, after his checkup in 1992, because the institute would not give him detailed data even though he requested it.

"My liver cancer was detected at a different hospital, too," Oishi said. "I began to feel that for the National Institute of Radiological Sciences, we were merely research subjects. Based on what I've seen and heard about the slow response of the national government to the plight of people in Fukushima, I get the impression that things haven't changed. Unless we try to learn from the lessons of past radiation victims, I'm afraid that our painful experiences will be repeated."

Of the 23 crew members who were on the Daigo Fukuryu Maru the day of the 1954 explosion, 14 have already died. With the exception of Kuboyama, the national government has not recognized any causeand-effect relationships between the exposure of crew members to radiation and the illnesses they eventually developed. As Oishi has not been issued an atomic bomb survivor's health handbook -- official certification from the government that would make him eligible for special health benefits -- he continues to receive medical treatment under the standard health insurance program. (By Mamoru Shishido, Evening Edition Department)

Click here for the original Japanese story

Plant factories for safety

February 22, 2012

Safety certification system for plant factories to be launched with view to disaster areas

http://mdn.mainichi.jp/mdnnews/news/20120222p2a00m0na021000c.html

A private-sector safety certification system for plant factories that can produce high-quality vegetables all year round through artificially controlled cultivation environments is set to be launched next month in what could be a fresh move to help ensure the safety of groceries produced in northeastern Japan, which was heavily damaged by seawater and radiation in the March 11 triple disasters.

Consumers across Japan have been paying close attention to the safety and stable supply of food products as farmlands in northeastern Japan -- a major food supply region -- were badly damaged either by seawater brought by tsunami or radiation from the crippled Fukushima No. 1 Nuclear Power Plant. The safety certification system could play a catalyst role in promoting the benefits of plant factories, which some disaster areas are trying to use as part of their reconstruction efforts.

"We want to produce and offer safe crops in line with the demands of consumers," said Kenichi Ikari, an official of the municipal government in Kawauchi, Fukushima Prefecture.

Following the outbreak of the crisis at the Fukushima No. 1 nuclear power station, part of Kawauchi village was designated as an evacuation zone and the rest as an emergency evacuation preparation zone. The designation of the emergency evacuation preparation zone was lifted in late September, and the local government declared in late January that it would reopen its office functions and schools in April, setting the stage for villagers to return home. Although decontamination work has been underway, it is not easy to put farmlands back on track. Moreover, even if cultivation were resumed on the farmlands, it would not be clear whether vegetables raised there could be sold.

Under these circumstances, plant factories, which entail the cultivation of vegetables in a closed environment without using soil, grabbed the spotlight. As these facilities allow growers to minimize the effects of radiation, the safety of vegetables grown in such conditions can be made into a major selling point. The local government in Kawauchi plans to start operating a plant factory in April 2013 and hire about 30 farmers who have lost their jobs. The municipal government of the neighboring city of Minamisoma has also started a feasibility study on a similar facility.

Because of a lack of public recognition and high costs, many companies have fallen into a cycle of starting and withdrawing from plant factory businesses in the past. Osaka Prefectural University professor Haruhiko Murase, a prominent researcher on plant factories, believes such facilities will take root in disaster areas. "Plant factories can produce safe food anywhere and help create jobs. They meet the needs of the disaster areas," he said.

After receiving advice from Murase, Osaka-based non-profit organization E-Being, which conducts soil assessments on former factory sites and other such land, is to start preparations to launch the safety certification system. The certification system applies to factories that do not use any sunlight. It is designed to check the amounts of such things as coli bacteria, heavy metals and radioactive substances contained in liquid solutions used to cultivate crops. It will also analyze sugar and vitamins contained in vegetables while examining whether the quality of products is being steadily maintained.

Whether or not to certify a plant factory will be decided by a committee of experts. Consumers will be able to get information on inspections through QR-codes, or quick response codes, attached to product

packaging. ESPEC MIC Corp. in Oguchi, Aichi Prefecture, which has been operating plant factories since the late 1980s, is willing to receive safety certificates, saying, "Certification will be effective if vegetables grown (in certified factories) can be differentiated from ordinary vegetables."

Nevertheless, a single public health scare originating in one plant factory could trigger panic over plant factories across the country. Murase wants the entire food industry to accept the safety certification system, and therefore has called on about 120 companies that are involved in research with Osaka Prefectural University to try to receive safety certificates.

Click here for the original Japanese story

Importance of external radiation exposure for individuals

Fe

Children's radiation doses to guide decontamination in Fukushima Pref. city http://mdn.mainichi.jp/mdnnews/news/20120223p2a00m0na009000c.html

SOMA, Fukushima -- City authorities here will prioritize decontamination of areas where children's external radiation exposure is estimated to be 2 millisieverts or more per year, it has been learned. The Soma Municipal Government made the decision on Feb. 22. The city will also offer medical consultations to local residents.

"It's important to detect how much radiation children were exposed to and respond appropriately," said Soma Mayor Hidekiyo Tachiya. "Based on the measured values, we will set priorities in carrying out effective decontamination work."

It is extremely rare for a city to decontaminate areas based on the levels of external radiation exposure among individual residents.

Soma lies on a stretch of Pacific coast between 30 and 50 kilometers from the crippled Fukushima No. 1 nuclear plant, and in the aftermath of the meltdowns there the city conducted an external radiation exposure survey on a total of 4,010 children -- from babies to junior high school students -- and pregnant women. The subjects were asked to carry gamma ray detectors for three months starting in October last year, and the results collected formed the basis for the annual exposure calculations.

In the survey, one resident was found to have been exposed to an annual dose of 4.3 millisieverts -- more than four times the government-set maximum of 1 millisievert. Furthermore, a total of 522 residents -- or 13 percent of subjects -- were found to have been exposed to doses exceeding the government limit, of which 33 residents (0.8 percent) were exposed to 2 millisieverts or more.

At schools in mountainous areas where the airborne radiation doses stood at 1 microsievert per hour, some 50 percent of elementary school children and approximately 70 percent of junior high school students registered 2 millisieverts or more. Even at schools in the plains, where the airborne radiation doses were relatively low at 0.2 to 0.4 microsieverts per hour, several children were found to have been exposed to 2 millisieverts or more of radiation. The results indicate that the exposure levels vary depending on areas as well as individuals.

Based on the survey results, the city decided to prioritize decontamination of environments where children were exposed to 2 millisieverts or more of radiation per year total -- a figure set in reference to a

Ministry of Education, Culture, Sports, Science and Technology guideline that children should not be exposed to more than 1 millisievert of radiation a year at schools.

University of Tokyo's Institute of Medical Science doctor Masaharu Tsubokura, who cooperated with the city's survey, said, "It is important to assess the data on individual citizens' radiation exposure rather than the airborne radiation levels in each area. It is also necessary to conduct follow-up surveys to confirm whether decontamination work has steadily lessened radiation doses." Click here for the original Japanese story

bruary 23, 2012

Food : new radiation standards

February 24, 2012

Stricter limits on radiation in food to start April 1 in Japan

http://mdn.mainichi.jp/mdnnews/news/20120224p2g00m0dm084000c.html

TOKYO (Kyodo) -- Japan will enforce stricter limits on radioactive cesium found in food, which come between one-20th and a quarter of the current provisional limits depending on food categories, from April 1 when the new fiscal year begins, the health ministry formally decided on Friday.

The new ceilings, which will come more than a year after the Fukushima Daiichi nuclear plant crippled last March began leaking radiation, are set at 100 becquerels per kilogram of cesium for regular food items such as meat, vegetables and fish, 50 becquerels for milk and infant food, and 10 becquerels for drinking water.

The Health, Labor and Welfare Ministry held firm to its original proposal for the new limits, despite some criticisms that they are too harsh and could hurt food producers. Meanwhile, citizen's groups have called for even tighter regulations.

The new figures compare with the present ceilings of 500 becquerels per kg for a broad category of regular food items and 200 becquerels for milk, dairy products and water. Japan currently does not have a specific category for infant food.

Grace periods will be given to certain food items to avoid confusion and chaos among consumers. For example, application of the new limits on rice and beef will be postponed until Oct. 1, considering their production and distribution cycles.

New radiation safety standards for food endorsed http://www3.nhk.or.jp/daily/english/20120224_21.html The Japanese government will apply stricter standards for permissible levels of radioactive cesium in food products starting in April.

The new standards were officially endorsed by a health ministry advisory council on Friday.

Under the new standards, food products will be allowed to contain up to 100 becquerels of cesium per kilogram. That's 80 percent less than the current permissible level.

Baby food and milk will be permitted to contain 50 becquerels and drinking water, 10 becquerels.

An education ministry panel on radiation endorsed the new standards last week, but suggested that the permissible standards for general food products will ensure the safety of babies without setting specific limits for baby food and milk.

At Friday's meeting, members of the health ministry panel said stricter standards for baby food will help to ease consumers' concerns. Some members also called for all local governments to carry out thorough checks under the new standards.

The standards will take effect in April, but transitional measures will be applied for rice, beef and soy beans.

Death at work - Compensation agreed

Death at Fukushima plant ruled from overwork

http://www3.nhk.or.jp/daily/english/20120224_39.html

Japanese labor authorities have ruled that a man's death at the crippled Fukushima Daiichi nuclear plant was due to his having to carry out demanding work while wearing stress-creating protective gear.

It is the first time the labor ministry has recognized such a case connected to cleanup work at the plant.

The authorities have granted compensation to the family of 60-year-old plumber Nobukatsu Oosumi from Shizuoka Prefecture.

His lawyer says Oosumi worked for a construction company subcontracted to Toshiba. He was sent to the Fukushima plant in May to do piping work in a nuclear waste processing facility.

He died a day after he began work, saying he felt ill.

Oosumi's family applied for compensation, saying his death was caused by physical and mental stress from the workload.

The labor authorities told the family's lawyer that Oosumi died because he had to work through the night

under uncomfortable conditions while wearing a protective suit and mask.

Oosumi's widow says her husband must be looking down from above and feeling relief.

Toshiba has declined to comment on the case.

High radiation near Fukushima

February 26, 2012

Govt releases new radiation readings

http://www.yomiuri.co.jp/dy/national/T120225003396.htm

The Yomiuri Shimbun

The government has announced the latest radiation readings from areas in the no-entry zone and the expanded evacuation zone around the crippled Fukushima No. 1 nuclear power plant.

Based on this rough data, the government is scheduled to reorganize the 20-kilometer no-entry zone around the nuclear plant and the expanded evacuation zone into three zones.

One of the three zones to be set up is a zone where residency is prohibited for an extended period. This zone has estimated annual radiation exposure levels of more than 50 millisieverts--or more than 9.5 microsieverts per hour--and stretches mainly northwest from the plant in Fukushima Prefecture, according to the latest data.

The information was released Friday by the Education, Culture, Sports, Science and Technology Ministry, the Cabinet Office's nuclear accident evacuees life support team and the Land, Infrastructure, Transport and Tourism Ministry. The readings were measured during flights over the area.

February 25, 2012

High radiation level logged in town near Fukushima plant

http://mdn.mainichi.jp/mdnnews/news/20120225p2g00m0dm015000c.html

TOKYO (Kyodo) -- High levels of radiation have been detected in municipalities in evacuation zones around the crippled Fukushima Daiichi nuclear power plant, with the highest reading of 470 millisieverts per year recorded in one town, a midterm report on an Environment Ministry survey showed Friday. A survey conducted between Nov. 7 and Jan. 16 showed that the annual readings topped 50 millisieverts a level deemed uninhabitable under a proposed new classification -- in many spots north-northwest of the plant that was crippled by the March 2011 earthquake and tsunami.

The highest level of 470 millisieverts was logged at a spot in Futaba, northwest of the plant, while the lowest level of 5.8 millisieverts was detected in another part of the same town, the survey said.

The results were similar to those in an earlier survey by the ministry of science using airplanes.

The Environment Ministry plans to compile a final report on the survey by the end of March **so the government can use the data to reclassify a no-go zone and evacuation zone near the plant into three categories in April.**

The three categories are an uninhabitable area with annual radiation levels of 50 millisieverts or more, an area with levels between 20 and 50 millisieverts where residents would be restricted, and another area with levels below 20 millisieverts where residents would be allowed to return in stages.

The transport ministry has decided to reduce the no-fly zone over Fukushima Prefecture from a 20kilometer radius of the Fukushima plant to 3-km radius based on the survey conducted by the science ministry earlier in February, effective from midnight Friday.

The highest radiation level was 12 microsieverts per hour at an altitude of 150 meters. The transport ministry determined that the smaller no-fly zone will not undermine safety as estimated radiation exposure at that altitude during 1,000 hours of flying per year would be less than 20 millisieverts, the level set by the government for designating an evacuation zone, it said.

Meanwhile, the Environment Ministry also said that high levels of radioactive cesium have been detected in ash and firewood in eight prefectures in the Tohoku and Kanto regions, with the highest reading of 240,000 becquerels per kilogram measured in ash from a household in Minamisoma, Fukushima Prefecture.

In a survey conducted on ash and firewood from 65 households, 163,000 becquerels of cesium was also detected in ash from a household in Kawamata in Fukushima. At two households in the prefecture, firewood from around the houses had been collected and used for boiling bathwater.

Waste with radiation levels exceeding 100,000 becquerels needs to be kept in a disposal site with its walls and base sealed with reinforced concrete to keep out rainwater, and only waste with radiation levels of 8,000 becquerels or below can be disposed of like normal waste.

More than 8,000 becquerels of cesium was detected in ash from 13 households -- three in Iwate, one in Miyagi, eight in Fukushima and one in Ibaraki prefectures -- while up to 1,460 becquerels was detected in firewood, the ministry said.

No-fly zone over Fukushima reduced to 3 km

No-fly zone over Fukushima plant scaled back

http://www3.nhk.or.jp/daily/english/20120225_12.html

Japan's transport ministry has scaled back the no-fly zone over the troubled Fukushima Daiichi nuclear plant as radioactivity over the site has dropped to a safe level.

Aircraft are barred from flying within a 3-kilometer radius of the plant from midnight on Friday. The prior restricted zone had a radius of 20 kilometers.

Earlier this month, the transport and science ministries jointly surveyed radiation levels within the 20kilometer no-fly zone.

The survey found that the levels had dropped to 12 microsieverts per hour or below, at the minimum safe flight altitude of 150 meters.

The transport ministry concluded that radioactivity at that level could pose no risks to passengers and flight crew.

No regular routes of passenger aircraft cross over the Fukushima plant.

The ministry had banned aircraft from flying within a 30-kilometer radius of the Fukushima plant following the nuclear accident last March. The zone was reduced to areas within a 20-kilometer radius in May of last year.

Can this help?

February 27, 2012

Fertilizer mixed with potassium helps cut down amount of cesium in brown rice http://mdn.mainichi.jp/mdnnews/news/20120227p2a00m0na002000c.html

TSUKUBA, Ibaraki -- Fertilizer mixed with potassium can greatly reduce the amount of radioactive cesium absorbed by brown rice from contaminated rice paddies, researchers at the National Agricultural Research Center have found.

Officials at the research center based in Tsukuba, Ibaraki Prefecture, said they succeeded in cutting down the amount of cesium absorbed by brown rice by up to 50 percent after they used potassium-laced fertilizer in contaminated paddies in four prefectures, though the results differed depending on soil characteristics. Potassium is known to be easily absorbed by plants.

The experiment covered a total of five paddies in Fukushima, Ibaraki, Tochigi and Gunma prefectures, which were contaminated with radioactive materials emitted from the disaster-crippled Fukushima No. 1 Nuclear Power Plant. Researchers used fertilizer under different conditions to study cesium absorption by brown rice.

As a result, the levels of cesium absorbed by brown rice were reduced by 6 to 46 percent in rice fields where potassium compounds three times the normal amount were applied. Researchers presume that the similarity in chemical characteristics between cesium and potassium helped brown rice to absorb more potassium.

Researchers have also found that the optimal amount of potassium compounds is 25 milligrams per 100 grams of soil and that any amount beyond that would bring about no remarkable results. Currently, the target amount of potassium compounds in rice paddies is set at 15 to 30 milligrams per 100 grams of soil.

"I hope the results will be reflected in this year's rice planting," said Naoto Kato, a senior scientist at the center.

Click here for the original Japanese stor

Milk safe, really ?

February 29, 2012 **Cesium in milk found under limit** http://www3.nhk.or.jp/daily/english/20120229_26.html

Major Japanese milk producers say their products have passed the government's safety standards for radioactive cesium.

The government decided to strengthen milk safety standards from April amid consumer concerns about the nuclear accident at the Fukushima power plant.

Under the new standards, milk will be allowed to contain only 50 becquerels of cesium per kilogram, or one quarter the current permissible level.

The Japan Dairy Industry Association on Wednesday announced the results of radiation screening tests held at 124 factories, mainly in eastern Japan.

The association said the amount of radioactive cesium in milk before shipping was below the lowest detectable amount -- 10 becquerels per kilogram -- at all of the factories.

The association says the tests confirmed that the milk is safe, and that it hopes children drink it without fear of radioactive contamination.

What's the point of having standards?

March 1, 2012

Ministry OK's rice planting in areas over cesium limit

http://www.yomiuri.co.jp/dy/national/T120229006153.htm

The Yomiuri Shimbun

The agriculture ministry has announced it will conditionally permit rice planting this year in municipalities where radioactive cesium contained in last year's harvests was found to be from 100 becquerels to 500 becquerels per kilogram.

According to the Agriculture, Forestry and Fisheries Ministry's announcement on Tuesday, all packages of rice from these areas will be required to undergo tests.

At the end of last year, the ministry decided to ban rice planting in areas where rice crops were found to contain radioactive cesium levels beyond the government's interim limit of 500 becquerels.

But it continued to consider what to do for areas where rice harvests were found to contain radioactive cesium levels above 100 becquerels, a new stricter limit to be enforced from April.

After examining rice contamination levels and hearing from local governments concerned, the ministry decided to restrict planting rice in these municipalities in principle.

However, as exceptions, the ministry will permit rice planting in these areas if respective local governments oversee rice paddies and all packages of rice are inspected before distribution.

The ministry said it would be possible to prevent the distribution of rice containing radioactive cesium exceeding 100 becquerels in the market by restricting rice shipments until all tests have been completed. The measure will be applied to 12 municipalities in Fukushima Prefecture, including the city of Fukushima, and part of Shiroishi, Miyagi Prefecture.

In 2011, about 31,000 tons of rice was produced in the 12 municipalities in Fukushima Prefecture, accounting for about 10 percent of the total rice production in the prefecture.

The ministry will ask the municipalities concerned about their intentions. It remains unknown how many of them want to plant rice this year, according to the ministry's Agricultural Production Bureau.

Agriculture minister Michihiko Kano explained Tuesday that the decision was made out of consideration for the great enthusiasm the municipalities have for growing rice.

However, the ministry has left the final decision to each municipality involved.

As some problems remain unresolved, such as how to test all packages of rice, the ministry may face criticism by municipalities and other parties concerned.

Fukushima sleeps badly

March 5, 2012

Fukushima city sees more patients with insomnia, high blood pressure: survey

FUKUSHIMA -- The rate of insomnia and high blood pressure among people in this city had grown significantly in the first six months since the outbreak of the nuclear disaster in comparison to data from the previous year, a recently revealed survey shows.

The poll, conducted by a medical care cooperative, which operates several clinics in the capital city of Fukushima, shows that between March 11 and Aug. 31, 2011, patients in the city who were diagnosed with insomnia stood at 27 percent more than the same period in the preceding year, while those suffering from high blood pressure had correspondingly increased by 13 percent.

The cooperative obtained the results by analyzing data from a total of 4,551 patients who visited one of the institution's clinics in the city of Fukushima between March 11 and Aug. 31 last year, and compared it with those of the 4,434 patients who visited the clinic in the same period in 2010.

According to the findings, patients suffering from an inability to sleep had increased from a total of 292 in 2010 to 370 in 2011, while those diagnosed with high blood pressure had increased from 493 to 557 in the surveyed period. Furthermore, patients diagnosed with herpes zoster -- a type of skin rash, often associated with a weakened immune system, among other causes -- had increased by more than two times, from 19 to 50.

People diagnosed with hyperlipidemia -- excessive fat in the blood, which often occurs due to a lack of physical exercise -- had also increased by 7 percent, from 418 to 449.

According to officials from the cooperative, it is likely that fear of radiation and stress following the outbreak of the crisis at the Fukushima No. 1 Nuclear Power Plant, have worsened health conditions among many residents.
Fukushima, a city located relatively far from the nuclear plant, was not among the areas that were most severely affected in the triple disasters. There were almost no damaged buildings in the city caused by the Great East Japan Earthquake and tsunami, and most of the city's residents were neither evacuated nor had to live in temporary housing units following the meltdowns at the nuclear power plant. However, accumulated airborne radiation doses measured in the city's central Sugitsuma district after the outbreak of the nuclear disaster have stood at approximately 4 millisieverts since March 2011, a comparatively high level, putting the lives of residents at constant risk of insecurity and anxiety. "In terms of herpes zoster anomalies, it is not clear whether the cause is related to the nuclear crisis or not. However, there is a possibility that the main cause behind the increase in such cases is the building up of anxieties among many people," an official with the cooperative said.

Click here for the original Japanese story

Does this count as a collateral effect of the disaster ?

Medical personnel quitting Fukushima due to lingering fears of radiation exposure

http://mdn.mainichi.jp/mdnnews/news/20120305p2a00m0na012000c.html

FUKUSHIMA -- Fears of radiation exposure continue to haunt people in Fukushima Prefecture, nearly one year after the March 11 megaquake and tsunami triggered the crisis at the Fukushima No. 1 Nuclear Power Plant.

Some residents are falling ill after being deprived of an ordinary life at home and in the office. Meanwhile, 62,674 residents, or roughly 3 percent of the prefecture's pre-disaster population, have evacuated outside the prefecture as of Feb. 23.

Even worse, harmful rumors still abound and are affecting local agriculture and tourism.

Just before 6 a.m. on a regular working day, a radiological technologist in his 30s removes snow from the roof of his car at his home in Yonezawa, Yamagata Prefecture, before heading for a hospital in the city of Fukushima. He normally returns home after midnight.

Heavy snow this winter is a big challenge for him and other drivers as they travel the Kuriko mountain pass linking Yonezawa and Fukushima. A roundtrip takes five hours. Sometimes his car gets stuck in the snow, and he has to shovel snow, wondering, "What am I doing here?"

But come April, he will work at another hospital in northeastern Japan. "It will be much easier. But I feel sorry for my colleagues," he says dejectedly.

A native of Fukushima City, he studied at a medical vocational school in Tokyo for three years and has worked at the current hospital for eight years. He lives with his wife, a 4-year-old daughter and 1-year-old son.

After the outbreak of the nuclear crisis, he emphasized to his wife that there was no need to worry about possible effects from the disaster. The maximum permissible level of radiation exposure for a radiological technologist who performs X-rays and computed tomography (CT) every day is 50 millisieverts per year

and a total of 100 millisieverts over five years. Schools in Tokyo claim that nuclear radiation levels in the city of Fukushima do not pose a danger to human health.

His wife seemed to have understood his explanation initially but her attitude began to change gradually. She stayed indoors with her children all day long and scolded them bitterly over petty issues. "Isn't it dangerous after all?" she asks.

Conflicting opinions on the effects of radiation exposure are flooding the Internet and false rumors abound. Her friends evacuated outside the prefecture with their children.

During weekends, he took his family to Tochigi and Yamagata prefectures to let his children play freely at parks there and returned home with a heavy load of vegetables. Fatigue took a toll on his body and domestic quarrels became frequent.

"If a radiological technologist flees, the effects around him will be enormous," he warns. His wife retorts, "Can't a radiological technologist's family escape?"

There is no proof that a small amount of radiation exposure causes cancer, but then there is no proof that it does not cause cancer. The couple spent countless hours talking about what to do, but he failed to convince his wife.

He and his family moved to Yonezawa in August last year. His wife looked happy again.

An exodus of medical personnel from Fukushima Prefecture is unstoppable. According to medical people familiar with the issue, 152 doctors in the prefecture quit between March 1 and Dec. 1 last year, while 81 doctors entered the prefecture, resulting in a drop of 71 doctors.

Kazuhira Maehara, head of the prefecture's hospital association, says, "There are many cases in which medical personnel are moving out of the prefecture even if they want to stay because of their family members' desire to leave."

The radiological technologist in his 30s says he had a hard time telling the Fukushima hospital that he would leave. He was fearful that nurses and other medical staff may leave one after another. He says he just wanted to leave as quietly as possible.

Shortly after the nuclear crisis began, doctors and nurses departed from the Fukushima hospital. He is the 15th medical personnel to quit the institution.

Click here for the original Japanese story

No radiation level is safe

March 6, 2012 Health effects of radiation doses under 100 millisieverts still unknown http://mdn.mainichi.jp/mdnnews/news/20120306p2a00m0na007000c.html

As radioactive material from the Fukushima No. 1 nuclear plant continues to contaminate wide swathes of Japan, the health effects of radiation -- including from relatively low doses -- are a matter of concern for many, and unknowns remain.

All matter is made of atoms, and the majority of it is stable. Some unstable matter, however, releases energy, or radiation, as its atoms change into other types of atoms. There are different types of radiation, like alpha rays, beta rays, gamma rays and x-rays, and they have the ability to pass through matter. The degree to which they can do this varies: alpha rays can be blocked with a single sheet of paper, while x-

rays can pass through the human body. Even in the course of our daily lives, humans are naturally exposed to radiation. Japanese are exposed to an average of 1.5 millisieverts of radiation per year. Radiation harms the body because it damages the DNA in its cells. DNA is an important substance that holds genetic information. If it is broken by the impact of radioactive rays or particles, mistakes can occur when it is repaired or the cell divides, leading to cell death or mutations and chromosomal abnormalities. Radiation exposure includes external exposure from outside of the body, and internal exposure from taking in radioactive materials through food or water. Such materials that are ingested are expelled from the body through the metabolic process. In the case of cesium, this takes around 100 days. Experts are divided over the difference in health effects of external and internal radiation exposure, but the International Commission on Radiological Protection (ICRP), which advises governments around the

world, holds that both types of exposure are equal. Long-term studies on around 93,000 people exposed to the Hiroshima and Nagasaki atomic bombings have shown that cancer rates rise proportionally with doses of 100 millisieverts or more. According to the National Institute of Radiological Sciences, exposure to 100 millisieverts of radiation leads to a 0.5 percent

increase in the chances of dying of cancer.

Regarding the Fukushima nuclear disaster, many worry about "low radiation doses" of under 100 millisieverts, but science has not yet shown what the health effects of these dosages may be. However, Yasuhito Sasaki, director at the Japan Radioisotope Association and former member of the ICRP, says, "There is no safe amount of radiation exposure. The less radiation one is exposed to, the better." Click here for the original Japanese story

The "invisible enemy"

March 8, 2012

Health uncertainties torment Japanese in nuke zone

http://mdn.mainichi.jp/mdnnews/news/20120308p2g00m0fe132000c.html

FUKUSHIMA, Japan (AP) -- Yoshiko Ota keeps her windows shut. She never hangs her laundry outdoors. Fearful of birth defects, she warns her daughters: Never have children.

This is life with radiation, nearly one year after a tsunami--hit nuclear power plant began spewing it into Ota's neighborhood, 40 miles (60 kilometers) away. She's so worried that she has broken out in hives.

"The government spokesman keeps saying there are no IMMEDIATE health effects," the 48--year--old nursery school worker says. "He's not talking about 10 years or 20 years later. He must think the people of Fukushima are fools.

"It's not really OK to live here," she says. "But we live here."

Ota takes metabolism--enhancing pills in hopes of flushing radiation out of her body. To limit her exposure, she goes out of her way to buy vegetables that are not grown locally. She spends 10,000 yen (\$125) a month on bottled water to avoid the tap water. She even mail--ordered a special machine to dehusk her family's rice.

Not everyone resorts to such measures, but a sense of unease pervades the residents of Fukushima. Some have moved away. Everyone else knows **they are living with an invisible enemy.**

Radiation is still leaking from the now--closed Fukushima Dai--ichi nuclear plant, though at a slower pace than it did in the weeks after the March 11 earthquake and tsunami. It's not immediately fatal but could show up as cancer or other illnesses years later.

The uncertainty breeds fear. Some experts say the risks are quite low outside the 20--kilometer (12-mile) no--go zone, and people can take steps to protect themselves, such as limiting intake of locally grown food, not lingering in radiation "hot spots" such as around gutters and foliage, and periodically living outside the area. But risks are much higher for children, and no one can say for sure what level of exposure is safe.

What's clear is Fukushima will be a test case that the world is watching for long--term exposure to low--dose radiation.

More than 280,000 people live in Fukushima city alone, though some have left, and many more live in surrounding towns, including many of the 100,000 who have been evacuated from the no--go zone.

"People are scared to death," says Wolfgang Weiss, chairman of the U.N. Scientific Committee on the Effects of Atomic Radiation, which is studying Fukushima. "They are thinking, 'Tell me. Is it good or bad?' We can't tell them. ... Life is risky."

It hasn't helped that the government has given only the most optimistic scenarios of the risks to avoid mass panic.

Public skepticism of government assurances grew when the man appointed as health adviser for Fukushima prefecture, Shunichi Yamashita, repeatedly said exposure to 100 millisieverts of radiation a year was safe.

Studies have found that cancer risks rise at an annual exposure of 100 millsieverts or above but aren't statistically detectable at lower levels. Below 100, experts can't say for sure whether it's safe, just that a link to cancer can't be proven.

In Fukushima and nearby areas, outside the 20--kilometer evacuation zone, the annual exposure is 20 millisieverts in some places and as high as 50 in others. Before the disaster, people in Japan were exposed to about 1 millisievert of natural background radiation a year; in the United States the average is about 3 millisieverts.

The controversy earned Yamashita a nickname: "Mr. 100 Millisieverts." Toshiso Kosako, a professor at the University of Tokyo's graduate school, stepped down as government adviser last year in a tearful protest of Yamashita's views.

Kouta Miyazaki is among those who have lost confidence in the government.

"Government officials should all come live in Fukushima for several years and bring their families. They're all staying in places where it's safe," Miyazaki says. "We're being told to get radiated and drop dead."

Miyazaki, 40, closed his online business selling Fukushima peaches; he doubts anyone would buy them now. He plans to move away with his 15--year--old son, although that would mean living separately for a while from his wife, who works as a counselor in Fukushima.

The nature of the threat has changed over time. Initially, it was exposure to the large releases of radiation from explosions at the plant. The risk from leaks remains but at a much reduced level.

These days, the main danger is less obvious but just as real: consuming contaminated food and water and ingesting radioactive particles. Radioactive material has accumulated in gutters where rainwater collects and shrubs with leaves that suck in radiation.

The risk is cumulative. The radioactivity in one's body builds up through various activities, including eating contaminated food every day or staying in a hot spot for an extended period.

Schools are restricting outdoor activities, and radiation meters dot the streets. Some people are using their own devices to measure radioactivity.

At area hospitals, thousands of people are on waiting lists to get their radiation levels measured with whole--body counters. One child at Minami Soma Hospital, southeast of Fukushima, was found with 2,653 becquerels of radioactive cesium.

It's a big number, but is it dangerous? Jacques Lochard, an International Commission on Radiological Protection official advising Fukushima prefecture, says the child's exposure could amount to as little as 0.3 millisieverts a year, or as much as 8 millisieverts, depending on how the child was exposed to the radiation.

All most residents know is that their bodies are contaminated. What the numbers mean is unanswered. **Kunihiko Takeda**, a nuclear and ecology expert who has been more outspoken about the dangers than many others, says people become less afraid after he explains the risks.

"They are freed from the state of not knowing," says Takeda, who has a blog with instructions on how parents can protect their children from radiation. "They now know what to do and can make decisions on their own."

Lochard says he was sad to hear about a Fukushima woman whose children were too afraid to bring her grandchildren from Tokyo for visits. All the parents need to do, he said, is bring food from home and keep the children indoors.

Still, Lochard says, "There is no safe level. It is a small risk but not zero."

After the 1986 Chernobyl accident, more than 6,000 thyroid cancers clearly linked to radioactive iodine were found in children and adolescents. A study by Weiss' U.N. committee found exposure to iodine was lower in Fukushima than at Chernobyl. Still, parents are worried because the Chernobyl cancers didn't emerge until a couple of years later.

"Nobody can say this is over. I'd be the last to say that," Weiss says.

Mayor Shouji Nishida of Date, a city of 66,000 people in Fukushima prefecture, says his community is preparing for the future by relying less on the central government, and by adjusting expectations. He believes 5 millisieverts of radiation a year -- five times the typical amount of background radiation in Japan -- is a realistic goal.

"We are defining policies to live and coexist with radiation," he says.

Online:

Kunihiko Takeda's blog (in Japanese): http://takedanet.com/

Thyroid problems

March 9, 2012

Thyroid screenings detect relatively high exposure

http://www3.nhk.or.jp/daily/english/20120309_18.html

Experts have detected radioactive iodine in the thyroid glands of 80 percent of the people who used to live near the Fukushima nuclear plant. Five of them had dosages of more than 50 millisieverts.

The scientists at Hirosaki University in Aomori Prefecture conducted checkups last April of 65 people

who were living near the Fukushima plant at the time of the nuclear accident. They found radioactive iodine in the thyroid glands of 50 of them.

The team calculated the amount of radioactive iodine exposure for each resident. The calculations assumed that the residents had inhaled radioactive iodine on March 12th, just one day after the accident.

Most of the residents had an estimated dosage of 10 millisieverts or less, but 5 had dosages of more than 50 millisieverts. The International Atomic Energy Agency recommends taking iodine tablets for this level of exposure.

The person with the highest dosage of 87 millisieverts stayed within 30 kilometers of the Fukushima power plant for more than 2 weeks after the accident.

The team leader, Hirosaki University Professor Shinji Tokonami, says the levels of radioactive iodine were relatively low compared to the scale of the accident.

But he says some residents face potential health risks from the exposure, and they should have continue to have regular health checkups by professional researchers.

But can people be expected not to worry?

Over half of Fukushima residents 'greatly worried' about health after nuclear crisis

http://mdn.mainichi.jp/mdnnews/news/20120309p2a00m0na014000c.html

Over half of Fukushima Prefecture's residents worry greatly about their health due to the ongoing nuclear crisis at the crippled Fukushima No. 1 Nuclear Power Plant, a Mainichi Shimbun poll has indicated.

The survey, conducted on March 3 and 4, covered all prefectures across Japan including Iwate, Miyagi and Fukushima prefectures, which suffered the most damage in the Great East Japan Earthquake and tsunami on March 11 last year. It found that 54 percent of residents in Fukushima Prefecture were "greatly worried" about the potential health effects of radioactive materials from the nuclear plant -- twice the national average of 27 percent.

In Miyagi Prefecture, 35 percent of residents were "greatly worried," compared with 31 percent in Iwate Prefecture.

Combining the percentages of those who were either "greatly worried" or "somewhat worried" about their health, the figure for Fukushima Prefecture reached 83 percent -- 10 points above the national average of 73 percent. The corresponding figure for Iwate Prefecture stood at 74 percent, followed by Miyagi Prefecture at 71 percent. Many residents in the disaster-stricken regions were apparently anxious due to a lack of information from the government.

The ratio of residents with such fears stood at 65 percent in Hokkaido and 63 percent in the Kinki region in western Japan.

By gender, 68 percent of men and 76 percent of women in the survey were concerned about their health due to the nuclear crisis, while 70 percent of men and 81 percent of women in Fukushima, Miyagi and Iwate prefectures harbored such fears.

By age, those in their 20s were the least concerned about their health both in terms of the national average and in the three disaster-stricken prefectures.

Responding to a question on whether they think the central government has been sufficiently disclosing information on the nuclear disaster, an average of 70 percent of respondents in the three disaster-hit prefectures said they believed the government was "hiding" information -- roughly on par with the national average of 71 percent. By prefecture, 75 percent of residents in Fukushima Prefecture expressed similar distrust in the government, followed by Miyagi Prefecture at 70 percent and Iwate Prefecture at 60 percent.

Even among those who are in favor of restarting nuclear plants under suspension for regular inspections, an average of 6 percent of all respondents said they believed the government has been disclosing sufficient information on the nuclear disaster, compared with 7 percent in the three disaster-stricken prefectures. Among proponents of nuclear plant reactivation, an average of 66 percent (62 percent in the three disaster-affected prefectures) said they believed the government is "hiding" information on the nuclear crisis.

Among those in the three affected prefectures who were "greatly concerned" with their health, 86 percent of respondents said they think the government is concealing information on the nuclear disaster. Nationally, an average of 85 percent of those who are "greatly concerned" with their health said the government is keeping information on the disaster secret from the public.

Is this a surprise?

March 10, 2012

High radioiodine levels found in thyroids of Fukushima residents post-meltdown http://mdn.mainichi.jp/mdnnews/news/20120310p2a00m0na005000c.html

HIROSAKI, Aomori -- Radioactive iodine levels exceeding international limits were detected in the thyroid glands of five people who lived near the Fukushima No. 1 nuclear plant during the meltdowns there, researchers here have revealed.

Findings by the research team, led by professor Shinji Tokonami from Hirosaki University, showed that 50 of 65 people checked from April 11 to 17 last year had radioactive iodine-131 in their thyroids, with 26 absorbing radiation doses over 10 millisieverts, and five with doses over 50 millisieverts -- the upper limit set by the International Atomic Energy Agency (IAEA).

"After detecting high levels of radiation exposure in people who stayed in Namie, we were able to grasp part of the reality of the disaster," says Tokonami.

All five people with doses exceeding 50 millisieverts -- the point at which the IAEA recommends taking iodine pills to prevent thyroid cancer -- were from Namie, Fukushima Prefecture -- three who were still living in the town's Tsushima district at the time, and two who had moved to the prefectural capital about two weeks after the outbreak of the nuclear crisis. Most of Namie lies within the 20-kilometer radius no-go zone around the Fukushima plant.

The survey covered 12 other people from Namie's Tsushima district, and 48 people from other municipalities along the prefecture's coast who had evacuated to the city of Fukushima shortly after the March 11 disasters. The team made their dosage calculations based on the assumption that the residents, who varied from infants to people in their 80s, had inhaled radioactive iodine -- which has a short half-life -- immediately after the outbreak of the disaster.

The highest exposure from radioiodine overall was 87 millisieverts, while the highest among children under 15 was 47 millisieverts.

The researchers' findings exceed data collected by the government in a similar survey in March 2011. Among the total of 1,080 children the government surveyed in Iwaki and other Fukushima Prefecture municipalities at the time, the highest estimated doses stood at around 30 millisieverts.

"The central and prefectural governments should conduct follow-up surveys and take other measures to deal with potential health issues," Tokonami stated.

The Hirosaki University team will submit its findings to the Ministry of Internal Affairs and Communications, and brief the residents. Click here for the original Japanese story

New disaster prevention guidelines

Panel: Expand priority protection zones

The Yomiuri Shimbun

http://www.yomiuri.co.jp/dy/national/T120317003469.htm

xxxxxx



A Nuclear Safety Commission panel has decided on a draft to revise nuclear disaster management guidelines that would greatly expand the area in which priority protection measures would be take in the event of a severe accident.

The special committee on nuclear disasters endorsed the draft Friday, which would expand the priority protection zone to a radius of 30 kilometers for nuclear power plants, instead of the current eight to 10.

Based on the decision, the nuclear regulatory agency to be established in April or later will finalize the legal grounds for the guidelines and the criteria for evacuation under the revised guidelines, the officials said.

The new guidelines will be reflected in disaster management plans of the central and local governments, but many issues remain to be solved.

It is, therefore, uncertain whether such disaster management plans can be compiled in concrete and practical forms, along with moves to restart idle nuclear reactors.

The guideline revision was sought because the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant revealed many flaws in the current guidelines.

The special panel took into account, for the first time, the leakage of large quantities of radioactive material.

Some key points of the revised guidelines are as follows:

-- Areas within a 30-kilometer radius of nuclear plants will be designated as urgent protective action planning zones (UPZ), where disaster management measures such as evacuation plans are intensively undertaken as priorities.

-- Areas within a five-kilometer radius of plants will be designated as precautionary action zones (PAZ), where residents will be asked to immediately evacuate if a severe accident, such as a meltdown, occurs.

-- The establishment of plume protection planning areas (PPA), where prior distribution of iodine pills--to prevent damage to the thyroid gland--will be considered, in principle, within a 50-kilometer radius of plants.

-- The functions of accident response bases are to be separated into a command center--outside a 30-kilometer radius--and a "front-line control station."

To date, the guidelines have been in the government's Basic Disaster Management Plan only as items to be "respected sufficiently."

However, the government plans to clarify the legal weight of the guidelines under the Law on Special Measures Concerning Nuclear Emergency Preparedness.

In coordination with the new nuclear regulatory agency, local governments hosting nuclear power plants and surrounding municipalities will compile detailed evacuation plans and evacuation criteria.

Such evacuation standards should be decided based on actual accidents and measurements of radiation levels without relying on data from the System for Prediction of Environmental Emergency Dose Information (SPEEDI) of the science ministry, the officials explained.

The new guidelines will likely be reflected in local disaster management plans in steps, starting in late September. It will take a year or more to complete the revisions, the officials predicted.

However, it is quite difficult to compile concrete evacuation plans, and may be delayed if the launch of the new nuclear regulatory agency is postponed.

The guideline revisions will cover only nuclear power plants.

Is this so surprising?

Over 40% of Fukushima children do not understand much about radiation: poll March 19, 2012

http://mdn.mainichi.jp/mdnnews/news/20120319p2g00m0dm007000c.html

FUKUSHIMA (Kyodo) -- A total of 95 out of 225 children, or 42 percent of respondents to a Kyodo News poll, who evacuated from areas near the Fukushima Daiichi nuclear power plant but still reside in Fukushima Prefecture, said they do not understand much about radiation, according to the result of the survey released Sunday.

When asked about radiation, a total of 103 children, or 46 percent, said they are afraid of it in response to a multiple-choice question, but among them, 84 children said they became aware of the risks of radiation for the first time after the disaster at the crippled complex.

Only 17 said they knew of the risk before the disaster, according to the poll taken on fifth-grade elementary school and second-year middle school students.

A total of 75, or 33 percent, said they have been mindful about radiation or have become mindful for the first time after the accident in a question where they were asked to select one of four options.

A total of 138, or 62 percent, said they are not paying attention to radiation even after the disaster.

Of those who are mindful of radiation, 44 percent said they are concerned about dosages near their homes and neighborhoods, 33 percent worry about food and 25 percent said they did not know what they should be concerned about also in a multiple-choice question.

The survey was conducted in February and March in cooperation with eight out of the 11 Fukushima municipalities whose areas encompass evacuation zones.

At least 4,000 of some 16,000 elementary and junior high school children in the 11 municipalities have evacuated outside Fukushima.

Of the respondents to the Kyodo survey, only 3 percent said they want to take refuge outside Fukushima Prefecture, while 14 percent said they did not want to.

The respondents were also asked questions related to Fukushima Prefecture's demand for decommissioning all of the 10 nuclear reactors located in it.

A total of 46 percent said nuclear energy is necessary for society, while 10 percent said it was not necessary in Fukushima but necessary outside Fukushima.

The high percentage of children who learned about the risk of radiation only after the nuclear disaster suggests they felt real fear only after the experience of their evacuation, said Mitsuo Yamakawa, professor at Fukushima University.

"Still, there are many children who think nuclear energy is necessary but that's probably because their parents or relatives have had nuclear-related jobs," he said.

Asked to write in a free description section what Fukushima will be like in 30 years, the children's reactions were mixed.

A second-year middle-school girl wrote, "It will be safe just like the days before the nuclear accident," while a second-year middle-school boy said Fukushima will be powered mainly by renewable energy.

Those who aired pessimistic views said Fukushima would remain deserted or that radiation fears will persist.

New cesium standards in food

March 28, 2012

Stricter food cesium limits set to kick in

http://www.yomiuri.co.jp/dy/national/T120327005279.htm

The Yomiuri Shimbun

As stricter limits on radioactive cesium in food will go into effect Sunday, authorities and institutions affected by the new limits are making final preparations.

The Chiba prefectural government has introduced the new limits ahead of schedule, and makers of instruments for measuring cesium are receiving last-minute inquiries from customers concerned about the new limits, which are stricter than global standards.

Consumers continue to eye food warily after the outbreak of the crisis at the Fukushima No. 1 nuclear power plant that has shaken public trust in food safety. "To restore people'zs trust in food, we must conduct inspections thoroughly," an official in charge of enforcing new limits said.

In the morning of March 21, officials of the Chiba prefectural government and the Asahi municipal government collected cauliflower and cabbage for inspection before shipment from a farm in Asahi, which was hit by the March 11, 2011, tsunami, resulting in the death or disappearance of 15 people. The officials sealed the vegetables carefully in plastic bags to prevent anything from tainting the samples.

The farmer who provided the vegetables looked serious while watching the officials. "I'm confident nothing will be detected on my vegetables. However, I want people to eat my vegetables without worrying," he said.

The samples were sent to an inspection facility in Tokyo the same day.

Based on the Food Sanitation Law, the new limits were mandated by the Health, Labor and Welfare Ministry to minimize people's food radiation exposure.

The limits require that cesium not exceed 100 becquerels per kilogram for regular food items such as meat and vegetables. Considering the effect of radiation on children, the limits on milk and baby food are set at 50 becquerels per kilogram. For drinking water, the limit is set at 10 becquerels per kilogram.

With some exceptions food shipped after Sunday must meet the new criteria. The Chiba prefectural government calculated that it would take about 10 days for newly harvested vegetables to be put on sale to apply the new limits. Municipalities in the prefecture were instructed to apply the new limits from inspections conducted on March 21.

Chiba is one of the nation's largest agricultural producers, shipping a variety of vegetables to Tokyo and surrounding prefectures.

The prefecture was included in areas subject to the stricter inspections under the health ministry's guidelines on inspections, which were made in accordance with the new cesium limits. The prefecture is required to conduct inspections more frequently than prefectures such as neighboring Saitama.

A Chiba prefectural government official in charge of enforcing the new limits said, "I believe none of our food will exceed the limits, but to relieve consumer anxiety, we must conduct strict inspections regularly."

The new cesium limits on drinking water will be 20 times stricter than the current limits. To inspect drinking water accurately, measuring instruments--such as germanium semiconductor detectors--need to accurately measure cesium at the level of about one-tenth the limit for drinking water.

The Kanagawa Water Supply Authority, which provides water to Yokohama, Kawasaki and other cities, received a germanium semiconductor detector on March 19 after ordering it in autumn. "It took about six months to receive the detector due to short supplies, but I'm relieved it arrived just in time," an authority official said.

In some areas, it takes two days to deliver water to households. Observing extra caution, the organization began testing water to an accuracy of 1 becquerel on Monday.

Some inspection instruments owned by local governments will be unable to handle the new cesium limits without updates as the new limits require more accurate instruments. Inspection accuracy can be improved if more time is spent on inspections, but that decreases the amount of food that can be inspected daily.

Hitachi Aloka Medical, Ltd., a measuring instrument maker based in Mitaka, Tokyo, has received about a dozen inquiries every day recently from local governments and companies asking how to comply with the new limits without increasing inspection time.

The company said it had advised callers to update their instruments' software or use more efficient containers for testing.

Cesium in school lunches

March 29, 2012

44 Japanese municipalities test school lunches for cesium http://mdn.mainichi.jp/mdnnews/news/20120329p2g00m0dm006000c.html

TOKYO (Kyodo) -- A recent Kyodo News survey has found that 44 of 74 major Japanese municipalities are testing school lunches or their contents for radioactive cesium amid fears of radioactive contamination following the March 2011 Fukushima Daiichi nuclear plant accident.

In 17 eastern Japan prefectures, including Fukushima, where the central government requires food products to be tested before shipment, 34 of 42 municipalities covered by the survey are conducting such tests. In the other prefectures, similar tests are undertaken in 10 out of 32 cities.

The survey conducted between March 16 and 22 covered school boards of the 74 major municipalities including the country's prefectural capitals and Tokyo's 23 wards. Municipal governments are left free to decide whether to test school lunches.

Forty-four of the 74 survey targets test school lunches or their materials in various ways. Of the remaining 30 survey targets, six including Morioka and Akita in northeastern Japan plan to start such tests in the future. Among the 24 that do not test school lunches, some cited confirmed safety of food products in the market through pre-shipment and other tests as a reason.

Of the 74 municipalities, seven have adopted stricter allowable cesium density levels for food products than the central government standard, taking effect Sunday, of 100 becquerels per kilogram.

The stricter levels include 4 becquerels per kg for Sapporo, 10 becquerels for Yamagata, 40 becquerels for Fukui and Tokyo's Adachi and Sumida wards, 50 becquerels for Kyoto and the absence of cesium detection for Tottori.

Fukushima, Matsuyama and Tokyo's Bunkyo Ward are considering setting stricter levels than the central government standard.

But what will gov't do with all that contaminated rice?

March 30, 2012

Gov't to buy up, discard rice from Fukushima areas exceeding new radiation standard

http://mdn.mainichi.jp/mdnnews/news/20120330p2a00m0na009000c.html

All rice from areas of Fukushima whose radiation levels exceed a new government standard of 100 becquerels per kilogram will be purchased by the government this year and discarded, it has been learned.

The new standard of 100 becquerels per kilogram comes into effect in April, and will apply to rice harvested from around October this year. The Ministry of Agriculture, Forestry and Fisheries decided to go ahead with the move to alleviate consumers' concerns while supporting farmers.

Up to 37,000 metric tons of rice is expected to be covered by the measure, with the purchase cost reaching 9 billion yen.

In the wake of the disaster at the Fukushima No. 1 Nuclear Power Plant, the interim limit for radioactive cesium in rice was 500 becquerels per kilogram. Last year the ministry ordered municipalities to halt shipments of rice from areas in which the rice radiation level was found to exceed this limit, and it bought up rice from all of the areas.

The ministry will purchase the rice through a corporation and it will bill Tokyo Electric Power Co., the operator of the stricken nuclear plant, for the amount spent.

The ministry's Policy Planning Division says that about 70 regions in 12 municipalities including the cities of Fukushima, Nihonmatsu and Date will be covered by the measures.

Click here for the original Japanese story

Kawauchi, Tamura

April 2, 2012

April 2, 2012

No-entry restriction lifted for Kawauchi, Tamura

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120401002736.htm

In line with a review of evacuation zoning that has been in place since the outbreak of the crisis at the Fukushima No. 1 nuclear power plant, the no-entry restriction was lifted on Sunday for Kawauchi and Tamura, both in Fukushima Prefecture, kicking off a project to allow residents to return home.

Transfers and the establishment of checkpoints were completed on Saturday.

The public administrative functions of Kawauchi village, which were temporarily shifted to Koriyama in the prefecture, had already returned to the town. School will also resume this month.

With the lifting of the restrictions for no-entry zones (within a 20-kilometer radius of the crippled plant), Kawauchi will be made up of zones being prepared for residents' return (annual radiation exposure of 20 millisieverts or lower) and those with restricted residency (above 20 millisieverts to 50 millisieverts).

Before now, residents wishing to visit their homes had to get a permit to show at checkpoints set up at the entrance to the no-entry zone. Each permit specified the date when entry was allowed.

Although residents still cannot stay overnight in the village, they are free to return home briefly or to enter temporarily for public works.

Meanwhile, the neighboring towns of Tomioka, Naraha and Okuma remain off-limits.

On Saturday, barricades weighing about 600 kilograms each and measuring about five meters wide and 80 centimeters high were placed by the government's Nuclear Emergency Response Headquarters at six locations on the roads that link Kawauchi with the three neighboring towns. A checkpoint was also shifted five kilometers to the east to the border between Kawauchi and Tomioka at midnight.

"Residents can return home freely while we start improving infrastructure, marking a step forward in our post-disaster reconstruction," said Juichi Ide, an official of the Kawauchi village office who witnessed the establishment of a barricade.

"We can now return home without an entry permit," said Katsutoshi Kusano, a 67-year-old Kawauchi resident. Neighboring areas around Kusano's house have become a zone being prepared for residents' return. He said he would return home temporarily on Sunday.

New evacuation zones

April 1, 2012

New evacuation zones set for 3 municipalities

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120331003158.htm

New evacuation zones



The government has announced that parts of three municipalities near the crippled Fukushima No. 1 nuclear power plant will be reclassified according to three new categories based on annual radiation doses.

The no-entry and expanded evacuation zones, which were established last year for 11 municipalities after the outbreak of the nuclear crisis, will be reclassified. The three new categories will be applied first to the cities of Minami-Soma and Tamura as well as the village of Kawauchi, government officials said Friday.

The no-entry and expanded evacuation zones will be reclassified by annual radiation doses as follows:

-- Areas where the accumulated radiation dose is 20 millisieverts or less per year will be designated as "zones being prepared for residents' return," for which authorities will relax conditions for residents to briefly visit their houses and permit entry for public purposes.

-- Areas with annual doses above 20 and up to 50 millisieverts per year will be designated as "zones with restricted residency," where residents can make brief visits to their houses although they are urged to remain evacuated.

-- Areas where the radiation dose exceeds 50 millisieverts per year will be designated as "zones where residency is prohibited for an extended period." Entries to these zones will be blocked with barricades.

For the first two categories, residents will not be allowed to stay overnight when visiting their houses, the officials said.

The government initially planned to apply the new evacuation zone categories to all the 11 affected municipalities at once. However, its discussions with the local governments over how their administrative areas would be reclassified did not progress as expected, because annual radiation doses can differ even within the same area, according to the officials.

Minami-Soma, Tamura and Kawauchi were the first among the 11 municipalities to reach agreements with the government over the reclassification. The new categories will be implemented in Tamura and Kawauchi on Sunday and take effect in Minami-Soma on April 16, the officials said.

The government will continue discussions on the reclassification with the remaining eight municipalities, they added. (Apr. 1, 2012)

Off-limits order lifted for parts of 2 Fukushima municipalities

http://mdn.mainichi.jp/mdnnews/news/20120401p2g00m0dm023000c.html

TAMURA/KAWAUCHI, Japan (Kyodo) -- The government lifted its off-limits order Sunday for parts of Tamura city and Kawauchi village in Fukushima Prefecture, located near the crippled Fukushima Daiichi nuclear power plant.

Residents from these areas, where radiation levels are relatively low, will now be allowed to freely enter the areas without taking protective measures against radiation exposure although they cannot stay overnight.

It was the first revision of the government's designation of evacuation zones in the current no-go zone within a 20-kilometer radius from the plant since the nuclear accident, which was triggered by the earthquake and tsunami disaster on March 11 last year.

Eimasa Tsuboi, 72, from Tamura said he wants to rebuild his family's collapsed ancestral grave first. "I have to fix the grave," he said. "And today, I will open the door of my home and let the wind in."

In Kawauchi, Katsutoshi Kusano, 67, and his wife Shigeko, 66, visited their homes. "We hope we can clean our garden," they said.

Under the government's reclassification, in zones where radiation levels exceed 50 millisieverts per year and are expected to remain at or above 20 millisieverts over the next five years, the return of evacuees will be designated as difficult. The government's current yardstick for evacuation is 20 millisieverts a year.

In zones with radiation levels of between 20 and 50 millisieverts, there will only be a limited return of residents. In those with radiation levels of 20 millisieverts or less, preparations will be made for lifting evacuation orders.

In these latter zones, the order will be lifted as soon as infrastructure is restored and enough progress is made in decontaminating schools and other public facilities.

Soon after the March 11 nuclear plant disaster, the government issued an evacuation directive for residents within a 20-kilometer radius from the plant. Later, however, it designated areas with high radiation levels outside the no-go zone as emergency evacuation preparation areas where residents were required to evacuate within one month.

Cesium & food

April 1, 2012 **Govt. tightens control over cesium in food**

http://www3.nhk.or.jp/daily/english/20120401_12.html

The Japanese government is setting stricter standards for permissible levels of radioactive cesium in food products.

Local governments will begin applying the new inspection rules on Monday.

After the accident at the Fukushima Daiichi nuclear power plant in March of last year, the health ministry set the temporary permissible level of radioactive cesium in vegetables and meat at 500 becquerels per kilogram.

But the amount of cesium in food products has since decreased.

Under the new standards, common food products will be allowed to contain up to 100 becquerels of cesium per kilogram, 80 percent less than the current level.

Baby food and milk will be permitted to contain 50 becquerels, and drinking water 10 becquerels.

The health ministry says that, between January and March, a total of 600 cases were reported in 9 prefectures, including Fukushima, Ibaraki, and Tochigi, in which food products contained more than 100 becquerels of cesium.

The reported food products include landlocked salmon, flounder and raw shiitake mushrooms.

Local governments and the central government will stop distributing foods exceeding the new standards.

Foods with excessive radiation under new rule found in 8 prefectures

http://mdn.mainichi.jp/mdnnews/news/20120401p2g00m0dm012000c.html

TOKYO (Kyodo) -- Food items containing levels of radioactive cesium exceeding a new limit, to be enforced from Sunday, have been found in 421 instances in eight prefectures since January this year, a survey by the health ministry showed Saturday.

The food items with levels exceeding 100 becquerels per kilogram of cesium were found in Fukushima, Iwate, Miyagi, Yamagata, Ibaraki, Tochigi, Gunma and Chiba prefectures in the survey conducted through March 21, according to the Ministry of Health, Labor and Welfare.

Of the 421 cases, about 80 percent involved seafood and river fishes, and the remainder involved shiitake mushrooms and the meat of wild animals such as boars and birds.

Almost all cases involving vegetables related to shiitake mushrooms.

The government will enforce new ceilings on Sunday, setting a limit of 100 becquerels per kg of cesium for regular food items such as meat, vegetables and fish, 50 becquerels for milk and infant food, and 10 becquerels for drinking water.

The figures compare with the present ceilings of 500 becquerels per kg for a broad category of regular food items and 200 becquerels for milk, dairy products and water.

In Fukushima, there were 285 instances of excessive radiation in food items, followed by Ibaraki with 36 cases and Tochigi with 29.

Tighter cesium standards in practice

April 2, 2012

Prefectures preparing for tighter cesium standards

http://www3.nhk.or.jp/daily/english/20120402_26.html

An NHK survey shows that around half of Japan's prefectures are strengthening measures to inspect food to meet the nation's tighter standards for radioactive cesium in food products.

NHK conducted the survey on 47 prefectures ahead of Sunday's introduction of the new guidelines.

33 prefectures said they will conduct regular inspections. 21 of them said they had installed more devices or established new sections in charge of radiation checks.

Concerns are rising that local authorities may not be able to screen a large enough selection of food samples due to limited resources. Detecting lower doses of radiation takes time. But all the prefectures said they are ready to cope with the new standards.

The government requires 17 prefectures in northeastern Japan to check radiation levels in their farm produce.

11 of the prefectures said their inspections will also cover food products that are not designated by the government.

Tochigi Prefecture said municipalities will conduct additional pre-shipment checks for farm produce in which no radioactive materials have been detected.

Some respondents called for the government to check rice and wheat for radiation, because a large volume of the grains are shipped at one time.

Following the nuclear accident in Fukushima, the government set a temporary permissible level of cesium in vegetables and meat of 500 becquerels per kilogram.

The new limit for general foodstuffs is 100 becquerels per kilogram. Tighter limits are set for baby food and milk, as well as drinking water.

Stricter food safety standards introduced

http://www3.nhk.or.jp/daily/english/20120402_31.html

Local governments across Japan have begun applying the stricter standards for permissible levels of radioactive cesium in food products that came into effect on April 1st.

Under the new rules, common food products, such as vegetables and rice, may contain at maximum 100 becquerels of cesium per kilogram.

The limit for baby food, including formula and milk, is 50 becquerels, while that for drinking water is 10 becquerels.

The new levels are from one-fifth to one-20th of the old amounts deemed safe.

The health ministry has specifically called on 17 prefectures, including Fukushima, Ibaraki and Tokyo, to carry out periodic checks for radiation. Other local governments are initiating safety inspections on their own.

The ministry says that as of 5 p.m. on Monday, 4 prefectures that submitted their inspection results on drinking water and fish found no products that exceeded the new limits.

Monday's inspections have centered on products that have been found to contain cesium of over 100 becquerels in the past. Municipalities are required to check more than 3 samples of any food products found to contain over 50 becquerels of cesium.

Distribution of foods exceeding permissible levels will be stopped by local and central governments.

Returning to Kawauchi or Tamura

April 2, 2012 No-entry restriction lifted for Kawauchi, Tamura

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120401002736.htm

In line with a review of evacuation zoning that has been in place since the outbreak of the crisis at the Fukushima No. 1 nuclear power plant, the no-entry restriction was lifted on Sunday for Kawauchi and Tamura, both in Fukushima Prefecture, kicking off a project to allow residents to return home.

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High cesium concentration in plankton, a long way from Fukushima

April 3, 2012

Cesium up to 100 times levels before disaster found in plankton far off nuke plant http://mdn.mainichi.jp/mdnnews/news/20120403p2a00m0na009000c.html

Radioactive cesium up to 100 times pre-nuclear disaster levels has been detected in plankton inhabiting the sea far from the crippled nuclear plant following the March 2011 disaster, according to a survey conducted by Japanese and U.S. researchers.

The high concentration of cesium, which is believed to derive from the Fukushima No. 1 Nuclear Power Plant, suggests that radioactive substances that have leaked from the complex are spreading extensively in the sea.

Jun Nishikawa, research associate with the University of Tokyo's Atmosphere and Ocean Research Institute, underscored the need for a long-term survey on the contamination of marine creatures with radioactive substances.

"Even though radiation levels detected from the plankton samples were still low, there is a possibility that large amounts of cesium will accumulate in fish through the food chain in a phenomenon called biological concentration. We need to continue our survey," he said. "Each species of marine creatures that feed on animal plankton need to be monitored over the long term."

The results of the survey were published in the Proceedings of the National Academy of Sciences of the United States on April 3.

In the survey, Nishikawa and other researchers including those with U.S. Woods Hole Oceanographic Institution collected samples of sea water and animal plankton at about 60 locations in the sea some 30 to 600 kilometers off the crippled plant in June last year, and measured the levels of radioactive cesium in them.

Radioactive cesium was detected in at least one sample taken at each of the locations.

The largest amount of radioactive cesium in animal plankton was found in a sample collected at a location 300 kilometers from the power plant -- at 102 becquerels of cesium-134 and cesium-137 per kilogram in dry weight. This compares with the average amount before the accident, which stood at 0.1 to 1 becquerel of only cesium-137.

The small amount of cesium in plankton -- 0.3 becquerels per kilogram -- was found in a sample taken at a location 600 kilometers off the plant.

The largest volume of cesium in sea water was found in a sample collected 100 kilometers from the plant, at 7,733 becquerels per cubic meter.

In the survey, radioactive cesium was hardly found in samples south of the black current, which flows south of Fukushima and meanders eastward off the Boso Peninsula, leading researchers to believe that the current blocked the spread of radioactive substances south. Click here for the original Japanese story

A buffer zone "for a long time"

April 5, 2012

Hirano eyes Fukushima 'buffer zone'

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120404005215.htm

Tatsuo Hirano, state minister for reconstruction from the Great East Japan Earthquake, has suggested an uninhabited buffer zone under state control be created around the crippled Fukushima No. 1 nuclear power plant, government sources said.

Hirano made the proposal--which he stressed was only his private idea and did not represent government policy--when he met with Fukushima Gov. Yuhei Sato on Tuesday at the Reconstruction Agency in Tokyo. Sato seems to have declined to respond, according to the sources.

The meeting was also attended by mayors from eight municipalities around the nuclear plant in Futaba County in Fukushima Prefecture.

The sources quoted Hirano as saying, "I suggested at a meeting of the government's Nuclear Emergency Response Headquarters [on Saturday] to set up a buffer zone around the Fukushima No. 1 nuclear power plant." Hirano did not elaborate on which areas might be included in the buffer zone.

Hirano's proposal apparently reflects his judgment that **safety concerns will remain in some areas around the nuclear plant even after decontamination work is carried out because water highly contaminated with radioactive substances and other radioactive waste will have to be stored on the nuclear plant's premises for a long time.**

The life of emergency workers is not worth much

April 5, 2012

Gov't agency sought to raise Fukushima radiation exposure limit to 350 millisieverts

"(mainichi Japan) April 05, 2012" http://mainichi.jp/english/english/newsselect/news/20120405p2a00m0na019000c.html

The government's Nuclear and Industrial Safety Agency (NISA) demanded the health ministry raise the allowable radiation exposure limit to 350 millisieverts effectively for emergency workers trying to bring the crippled Fukushima nuclear power station under control shortly after the ministry lifted the legal exposure limit to 250 millisieverts from 100 millisieverts on March 14, 2011, it has been learned.

NISA demanded the change to the radiation exposure limit after receiving a request from Tokyo Electric Power Co. (TEPCO), the operator of the troubled Fukushima No. 1 Nuclear Power Plant, according to NISA's internal documents disclosed after an organization specializing in issues of radiation exposure requested the materials through information disclosure laws. The internal documents disclosed are NISA's internal memos and solicitation documents TEPCO, Toshiba Corp. and Hitachi-GE Nuclear Energy, Ltd. sent to NISA.

It was already known that then Prime Minister Naoto Kan talked about the possibility of raising the exposure limit to 500 millisieverts at the Prime Minister's Office three days after it was raised to 250 millisieverts. But it is the first time that specific exchanges between the government ministries and agencies concerned have been revealed through internal documents.

Regulations enforced under the Industrial Safety and Health Act set the radiation exposure limit at 50 millisieverts per year for workers under "usual" conditions and at 100 millisieverts for five years, while the rules set the limit at 100 millisieverts for people working under an emergency situation. To cope with

the worsening nuclear crisis at the Fukushima nuclear power complex, the Health, Labor and Welfare Ministry raised the emergency exposure limit to 250 millisieverts for workers at the Fukushima nuclear power plant three days after the outbreak of the disaster.

Meanwhile, the health ministry had planned to maintain the "usual" limit and combine it with the emergency limit to set the overall upper threshold. Under the scheme, a worker who is exposed to more than 50 millisieverts of radiation in Fukushima will not be allowed to work at other nuclear power plants for one year. Likewise, the worker who is exposed to more than 100 millisieverts of radiation in Fukushima will not be allowed to work at other nuclear power plants for five years.

Seeing that the scheme was unfavorable for workers, TEPCO and nuclear plant makers, therefore, demanded the health ministry set a separate exposure limit, rather than combine the "usual" limit with the emergency limit. If a separate limit was set, the worker would be allowed to be exposed to the "usual" level of radiation exposure at other nuclear facilities even if he was exposed to 250 millisieverts of radiation in Fukushima. On March 22, 2011, Hitachi Ltd., the parent company of Hitachi-GE Nuclear Energy which dispatched emergency workers to the Fukushima plant, asked then health minister Ritsuo Hosokawa to set a separate exposure limit.

NISA was later told by TEPCO and Toshiba Corp that it would be difficult to secure enough workers at other nuclear power plants. NISA then prepared a written document on March 25, 2011, saying, "Unless a separate limit is set it will create grave problems in preventing the nuclear disaster from worsening." With that document, NISA urged the health ministry to review the exposure limit.

After repeatedly exchanging opinions, the health ministry decided to maintain its original plan to combine the "usual" limit with the emergency exposure limit and conveyed its decision to NISA. But the health ministry decided to take out the stipulation of "50 millisieverts per year." Under the revised scheme, a worker who was exposed to radiation between 50 and 100 millisieverts in Fukushima would be allowed to work at other nuclear plants later for five years within the limit of 100 millisieverts. NISA, TEPCO and others continued to have complaints thereafter. But work to bring the troubled nuclear power plant under control passed the critical stage and the emergency exposure limit was lowered back to 100 millisieverts at the end of last year.

No-return zone again

April 6, 2012

No-return zone around Fukushima plant proposed

http://www3.nhk.or.jp/daily/english/20120406_20.html

Japan's reconstruction minister has proposed designating an indefinite off-limits zone around the Fukushima Daiichi nuclear plant.

Tatsuo Hirano told reporters on Friday that the zone would be within the context of local reconstruction plans for the next 10 or 20 years.

Hirano said the zone would probably include the parts of the towns of Futaba and Okuma, which host the plant. He added that the towns' mayors are responding positively to the proposal.

He said the government will consult the towns and other municipalities in deciding the size of the zone.

He said new guidelines to compensate affected residents would be needed.

Such a zone is to be designated for safety reasons, regardless of radiation levels.

Hirano had suggested that some areas near the plant remain unsafe because a large amount of radioactive water is stored there.

The government is also rezoning Fukushima's existing evacuation areas according to 3 new categories based on radiation levels, so that residents can return home in stages.

Futaba Town Mayor Katsutaka Idogawa told reporters that he agrees with Hirano's plan to create an offlimits zone to better ensure safety.

But Idogawa said a line should be drawn according to radiation levels, instead of automatically restricting entry within a certain radius around the nuclear plant.

A 63-year-old man from Futaba Town said he has never felt at peace over the past year as an evacuee. The man lived about 4 kilometers from the crippled plant.

He said that if his neighborhood is to be declared off-limits, he wants a temporary town to be created elsewhere so that residents can settle there.

More details about the potential "buffer zone"

April 7, 2012

Hirano airs 'buffer zone' proposal

The Yomiuri Shimbun

http://www.yomiuri.co.jp/dy/national/T120406004917.htm

Tatsuo Hirano, state minister in charge of reconstruction from the Great East Japan Earthquake, publicly stated Friday his idea to create a circular "buffer zone," or permanently uninhabited area, around the Fukushima No. 1 nuclear power plant.

In a press conference following a Cabinet meeting Friday morning, Hirano said the envisioned uninhabited zone "will probably be set at a certain distance from the nuclear facility as one of the yardsticks [for its designation]."

"Discussions must be held in the government about whether 500 meters or 1,000 meters [from the nuclear plant], for instance, would be an appropriate distance [for the uninhabited zone]," he said.

"A decision on the matter must be finalized after hearing the opinions of the concerned local municipalities," Hirano added.

The minister's remarks were interpreted as an indication that the government considers it adequate to demarcate the uninhabited zone within a certain radius from the towns of Futaba and Okuma, with the crisis-struck plant as its center. Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant straddles the Pacific coast border of the two towns.

"It is advisable for the government to have talks on the matter with the local municipalities concerned, especially the towns of Futaba and Okuma," he said.

Regarding compensation for former residents of the uninhabited zone, Hirano said the calculation of damages "will be different from the formula currently employed" by the Education, Culture, Sports, Science and Technology Ministry's nuclear accident compensation dispute screening panel.

The minister's statement suggested that the government determine compensation criteria to be specifically applied to the uninhabited zone, separate from the new classification of three nuclear crisis-affected areas, including the zones where residency is prohibited for an extended period.

Check your mushrooms

April 10, 2012

High levels of radioactive cesium detected in shiitake mushrooms grown in Chiba

http://mainichi.jp/english/english/newsselect/news/20120410p2a00m0na007000c.html

CHIBA -- Levels of radioactive cesium exceeding the government's new safety standards have been detected in shiitake mushrooms grown by a farmer here, prompting prefectural authorities to call for a suspension of shipments.

The Chiba Prefectural Government announced on April 9 that 740 becquerels per kilogram of cesium was detected in shiitake mushrooms grown outdoors by a farmer in Shiroi, Chiba Prefecture -- levels in excess of the government's new limit of 100 becquerels per kilogram, which took effect on April 1. The prefectural government has consequently requested the Shiroi Municipal Government to have farmers refrain from shipments.

According to prefectural officials, the farmer sold a total of some 4 kilograms of shiitake mushrooms at an unmanned farm stand between March 20 and 25. Later feeling anxious, the farmer asked the city to measure radiation levels in the mushrooms on March 30, leading to the detection of the high levels of radiation.

City officials further found that another farmer in the city had also likely sold some 5 kilograms of shiitake mushrooms, whose radiation levels may have surpassed the new safety standard. The city had not been aware that the two farmers were growing shiitake mushrooms.

In a similar revelation, the Tochigi Prefectural Government announced on April 9 that levels of cesium topping the central government's new safety limit were detected in shiitake mushrooms grown outdoors in seven municipalities in Tochigi Prefecture, including Utsunomiya and Shioya. The mushrooms grown in Shioya were found to have contained 950 becquerels of cesium -- the largest amount among the seven municipalities.

The Tochigi Prefectural Government requested the towns of Haga and Nasu to refrain from shiitake shipments, on top of five other municipalities that the prefecture has already called on to suspend shipments.

Repeating History

April 15, 2012

Namie to seek medical fee exemption for all residents

http://mainichi.jp/english/english/newsselect/news/20120415p2g00m0dm005000c.html

FUKUSHIMA (Kyodo) -- The municipal government of Namie, Fukushima Prefecture, located near the crippled Fukushima No. 1 Nuclear Power Plant, will request the state exempt its residents from paying medical fees, senior municipal officials said.

It will be the first move by local governments affected by the nuclear disaster to seek legal measures for residents' healthcare, according to the officials.

"We will stress the importance of health supervision for our residents," they said.

The Namie government will ask seven neighboring municipalities to join the request, and the town of Futaba is already prepared to join, according to the officials.

Namie will soon distribute health handbooks to all residents so they can continuously record the results of health checks, including thyroid exams, **for long-term healthcare**.

The handbooks were apparently compiled based on those distributed to the survivors of the 1945 U.S. atomic bombings of Hiroshima and Nagasaki. The holders of the A-bomb health handbook are exempt from medical fees in principle, and Namie will seek to introduce a similar medical fee exemption for those who have its health handbooks.

"Our residents will be plagued by worries about their health in the wake of radiation exposure. It is necessary to provide them with permanent medical treatment," a municipal official said.

Brief visit to Minami-Soma

April 17, 2012

Minami-Soma evacuees visit homes briefly

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120416004901.htm

MINAMI-SOMA, Fukushima--Evacuees from areas in Minami-Soma affected by the crisis at the Fukushima No. 1 nuclear power plant made temporary visits to their homes Monday as the no-entry and expanded evacuation zones were lifted in the city at midnight Sunday.

From early Monday morning, residents were seen returning to homes left abandoned since the March 11 quake and tsunami. They immediately started cleaning out debris and mud to prepare for a return to their old lives.

Debris was found scattered in such places as the coastal Odaka district, and many houses were abandoned as they had collapsed or been buried in mud.

The no-entry and expanded evacuation zones, which were established last year, have been reclassified into three new categories according to annual radiation doses.

These are "zones being prepared for residents' return" and "zones with restricted residency," where residents can freely return briefly to their homes, and "zones where residency is prohibited for an extended period," where residents can only make brief visits with permission from authorities.

There are about 3,900 households in these zones. Since the areas become deserted after dark, anticrime measures are necessary.

Immediately before the lifting of the previous zoning requirements, a patrol party formed by about 80 prefectural police officers and residents held a departure ceremony and patrolled the areas.

Since water supply and sewage systems still need to be restored and decontamination work is required in the areas, it is likely to take a while before residents can return to their homes for good.

Homecoming for Minami-Soma residents

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120416004737.htm

MINAMI-SOMA, Fukushima--As the no-entry restriction was lifted on midnight Sunday, allowing people to return temporarily to their hometown of Minami-Soma on Monday morning, some residents were disappointed to see their wrecked houses, while some others had their hopes of reconstructing the area renewed.

Last year's crisis at the Fukushima No. 1 nuclear power plant resulted in part of the city being designated as a no-entry zone. This zone has now been reorganized into new areas as part of the government's review on evacuation zones.

At about 10 a.m., Asako Yamaguchi, 59, returned to her coastal home in the city's Haramachi district with her husband, Koki, 63, and second son, Kiyoshi, 30.

"I know I can no longer live here. But it's only natural for all of us to want to come back to our own house," Asako said.

Her two-story wooden home was hit by the March 11 tsunami, and all that remains of the first floor is the frame of the house.

The house was built 17 years ago by Asako's 63-year-old brother, carpenter Mitsuo Uemura, who was killed by the tsunami.

After the disaster, Asako felt a strong desire to keep the house that was built by her brother. But it was in the no-entry zone and exposed to the elements without repair for more than a year. The wrecked building somehow still stands, despite it resting on only one pillar.

Asako has almost given up on resuming her old life at the house because of fears about another tsunami hitting the area and radiation concerns.

The no-entry zone has been reorganized so that Asako and her neighbors can freely visit the part of the district that holds their homes. But the state of her house made Asako cry.

On the same day, Seizo Hasegawa, 69, who once ran a poultry farm, entered his Odaka district house after 10 a.m. with his wife. While the district has been rezoned, his home remains in an area where residency is restricted.

The dosimeter in his hand sounded an alarm and detected 3.54 microsieverts of radiation per hour.

Tiles had fallen from the house's roof, part of a storage wall had crumbled and cow manure was lying around the home.

Before the quake, Hasegawa owned about 50,000 broiler chickens and processed the meat with his 30 employees.

His new factory was built just two years ago. But most of his clients, such as a wedding hall and a bento shop, were on the prefecture's coast. As these businesses were badly affected by the disaster, Hasegawa was left with no option but to cull the chickens.

Furthermore, radiation fears stemming from the crisis at the crippled nuclear power plant may damage his ability to sell chicken. Hasegawa therefore believes that it is too difficult to resume his business for the time being.

The Odaka district, which was designated as a no-entry zone following the disaster, has been left almost untouched.

"Although we were told we can now return to our homes, it's hard to do so without infrastructure, such as schools and hospitals. I guess no one will return," Hasegawa said with a sigh.

Also in the Odaka district, at about 8 a.m., employees of building contractor Nakazato Komuten returned to its headquarters for the first time in about 13 months.

The company continued to operate after the tsunami by moving its headquarters to various locations in and outside of the city.

"The reconstruction of the Odaka district has just begun. Let's do our best together," the firm's administration manager, Hiroshi Kayama, 58, said in front of about 30 employees.

After confirming the building's safety by using a dosimeter to check radiation levels, employees cleaned the office's muddy rooms.

Don't overdo it

April 21, 2012

Farm ministry asks food industries to abide by gov't-imposed allowable radiation limits

http://mainichi.jp/english/english/newsselect/news/20120421p2a00m0na012000c.html

The Ministry of Agriculture, Forestry and Fisheries has sent a notification to 270 organizations related to the supermarket, restaurant and other food-related industries, calling for them to abide by government-imposed allowable limits for radiation in their products.

There are cases of food-related and other industries setting their own standards that are even tougher than the government-imposed limits, and therefore the agriculture ministry said, "The national standards fully ensure safety. Different standards create confusion."

With respect to radioactive cesium in food items, the government set new allowable limits in April at 100 becquerels per kilogram of regular food and 50 becquerels per kilogram of milk and baby food. Suggesting that the government-imposed limits are strict by international standards, the agriculture ministry called for food-related industries to apply the government-imposed standards even to voluntary checks on their food products for radiation in a bid to avoid confusion that could be caused by excessive restrictions.

Stressing the need for scientifically reliable analysis even for voluntary inspections, the agriculture ministry has been advising food-related companies to use organizations that are registered with the ministry to conduct independent inspections of their food products.

The agriculture ministry has come under criticism and complaints from food-related industries for sending the notification. The Seikatsu Club Consumers' Co-operative Union, which sells and delivers food products to its members across the country, has been inspecting almost all products it handles for radiation, and it set its own standards that are stricter than the national standards on April 1. Hiroshi Tsuchida, in charge of product quality control at the co-operative union, said, "It is the consumers' right to select safer food, and the notification is too demanding. The national standards are not considered reassuring in the first place, and therefore if they are forced upon us, the government will lose all the more confidence."

Yukiguni Maitake Co., a major manufacturer and seller of mushrooms in Niigata Prefecture, set its own allowable radiation limit at 40 becquerels per kilogram of mushrooms in November last year and lowered it to 20 becquerels this March. The company said it has not confirmed the receipt of the notification from the agriculture ministry. But it said it would continue to use its own standard.

"We understand the importance of protecting producers, but our company has received requests from consumers to lower our standard. We have a responsibility to meet the needs of consumers," an official with the company said.

Promise of protection for recovery workers

April 23, 2012
Recovery workers to get radiation limits

Jiji Press http://www.yomiuri.co.jp/dy/national/T120422002572.htm

The health ministry will introduce radiation exposure control standards for reconstruction workers in areas damaged by last year's earthquake and tsunami, officials said.

The ministry found it necessary to implement the new standards, as reconstruction work is beginning in earnest in Fukushima Prefecture, home to a nuclear power station crippled by the disasters.

Currently, there are radiation exposure control standards for workers at the Fukushima No. 1 nuclear plant and those engaged in decontamination around the plant **but not for construction and other workers.**

In areas where annual radiation exposure is estimated at greater than 5 millisieverts, employers will be obliged to have each worker carry a dosimeter and receive health checks at least once a year, officials said Friday. In other areas, such individual radiation exposure control will not be required.

All the way to 2032

April 23, 2012

April 23, 2012

Edano: some can't return even after 10 years http://www3.nhk.or.jp/daily/english/20120423_04.html

Japan's Industry Minister Yukio Edano says there will be some areas near the damaged Fukushima Daiichi nuclear power plant that will have radiation levels too high for residents to return, even 10 years from now.

In a meeting with local officials in towns near the nuclear plant on Sunday, the minister showed an estimation based on government monitoring carried out by aircraft in November.

It forecasts the level of atmospheric radiation in five to 10 years, but the effects of decontamination is not taken into account. The estimate predicts that in March 2017 there will be areas in the towns of Futaba and Okuma where radiation exposure will exceed 100-millisieverts per year.

In some areas in these two towns, as well as in Namie Town, radiation exposure will exceed 50-millisieverts.

By March 2022, some areas in these three towns and in Tomioka, radiation will remain higher than 20millisieverts.

After the meeting, Nuclear Crisis Minister Goshi Hosono told reporters the government should be prepared to talk to the residents about making a decision to give up returning home.

But at the same time, Hosono said the government will consult local administrations about decontamination plans because some residents are insisting on returning.

Projections released for radiation hot spots in Fukushima through 2032

http://mainichi.jp/english/english/newsselect/news/20120423p2a00m0na010000c.html

FUKUSHIMA -- The government on April 22 released six hot spot charts to show projected annual dose rates of radioactive materials spewing from the crippled Fukushima No. 1 Nuclear Power Plant from the end of March this year through 2032.

The charts, based on airborne monitoring of radioactive contamination in November last year, compare annual dose rates in March this year with projections for 2013, 2014, 2017, 2022 and 2032.

Tatsuo Hirano, state minister in charge of post-March 11 reconstruction and disaster prevention, says, "They are prognostic charts based on theoretical values but decontamination factors were not taken into account." It is the first time that the government has made public such forecasts.

The government produced the charts which focus on areas with high levels of radiation contamination extending in the northwestern direction in Fukushima Prefecture. Government officials say the charts will help local governments affected by the nuclear disaster to draw up a plan to assist evacuees in returning home.

The projections reveal that borders along the towns of Okuma and Futaba, where the Fukushima plant is located, will remain as zones with an annual radiation dose of more than 50 millisieverts, **which are basically difficult for residents to return to live even after 20 years.** The town of Namie and the village of Katsurao will continue to have restricted districts due to annual radiation doses of over 20 millisieverts and below 50 millisieverts.

The central government presented the charts during a meeting in Fukushima with leaders of the prefecture's eight towns and villages around the nuclear plant.

Please hide it

April 23, 2012

on Fukushima-diary:

Yamashita banned recording findings suggestive of thyroid tuber Posted by Mochizuki on April 23rd, 2012 · No Comments

Following up this article..7290 Bq/Kg from carnation in Fukushima

In the symposium, a pulmonologist, Dr. Okayama gave a comment about the current situation of Japanese medical industry.

He is from Sendai Miyagi. He attended the symposium about radiation therapy held on 4/21/2012, where the chairman was Yamashita Shunichi.

When he sees carotid by ultrasonic echo for the treatment of arterial sclerosis on this ordinary work, he can see thyroid as well.

He often finds thyroid tuber.

Ultrasonic echo can be used by a doctor and engineer, but both of them are supposed to record findings suggestive of thyroid tuber or cyst even if it was originally to see carotid.

However, Yamashita Shunichi requested doctors in the symposium not to record the findings because it causes unnecessary concern of patients.

All very confusing

April 26, 2012

Confusion reigns over beef limits / Agriculture ministry issues conflicting instructions on cesium standards

http://www.yomiuri.co.jp/dy/national/T120425006185.htm

The Yomiuri Shimbun

The agriculture ministry has caused confusion in the cattle industry by issuing conflicting instructions on the allowable limits of radioactive cesium in beef.

In December, the government announced that the maximum level of radioactive cesium in meat, fish and other food would be reduced from the provisional standards of 500 becquerels per kilogram to 100 becquerels per kilogram, saying some food may be exempted for a certain period of time.

The Agriculture, Forestry and Fisheries Ministry successfully sought a moratorium on imposing the new standards on beef until the end of September "in consideration of cattle producers," saying the limit is stricter than those in other countries.

The new standards came into force this month.

On March 9, the ministry instructed local governments to ask that the revised criteria be applied to beef before the end of the transitional period.

Local governments have been instructed to ask producers and others in the cattle industry to dispose of beef found to contain more than 100 becquerels per kilogram.

An official in the ministry's Meat and Egg Division said the instruction was issued due to consumer concerns.

"Beef is usually frozen for an extended period of time," the official said. "[The instruction] is meant to reduce the amount of beef that is processed and frozen before stricter standards are applied in autumn."

But the ministry's actions have confused cattle farmers. Farmers have asked local governments whether beef that fails to meet the revised criteria, but passes the provisional standards that are still in effect as part of the moratorium, can be sold.

Responding to the ministry's instruction, the Gunma prefectural government on April 5 asked a local farmer who had beef containing more than 100 becquerels per kilogram to voluntarily dispose of the meat instead of selling it.

Further complicating this matter, the ministry's Food Retail and Service Division on April 20 instructed distributors and retailers to refrain from imposing stricter standards than the government's revised criteria for food items.

An official at the division said he "was not aware" that a different office in the same ministry had issued an instruction for beef producers to follow the new criteria before the moratorium's end.

"The issuing of different instructions by the ministry is not a problem because our instruction is meant for consumers and retailers [instead of farmers]," the official added.

But three days later, Agriculture, Forestry and Fisheries Minister Michihiko Kano rejected the instruction and said, "The [April 20] instruction was not meant to oppose various efforts" to ensure food safety, such as the creation of stricter standards among retailers.

Hideaki Karaki, president of Kurashiki University of Science and the Arts, criticized the ministry's handling of the revised criteria.

"If the government changes rules soon after they are established, it will lose the trust of the public," the food expert said. "The ministry has been misled by a tendency to demand zero risk in food."

More problems with fish

April 26, 2012 **Cesium contaminated fish found in Tone river**

http://www3.nhk.or.jp/daily/english/20120426_08.html

Radioactive cesium exceeding the new legal limit has been found in fish in the Tone River, which passes north of Tokyo. Authorities have taken measures to stop the shipment of fish caught in the river.

Chiba prefectural officials say a silver crucian carp caught in the river contained 110 becquerels of radioactive cesium per kilogram. The new limit is 100 becquerels per kilogram.

The Tone River is the river with the largest drainage area in Japan. The town where the contaminated fish was caught is located about 180 kilometers from the disabled Fukushima Daiichi nuclear plant.

The prefecture has asked 10 municipalities along the river and 6 fishery cooperatives not to ship fish from the river to market.

Last month, fish and shellfish pulled from a pond near the river were removed from circulation because of radiation levels above the legal limit.

Prefectural officials say they will check other types of freshwater fish for radioactivity.

Namie to provide own radiation test

Thursday, April 26, 2012

Evacuated Fukushima town sets up whole-body dosimeter at temporary housing complex



A man undergoes an internal radiation measurement check-up using the newly installed whole-body dosimeter at a temporary housing complex in Nihonmatsu, Fukushima Prefecture, on April 26. (Mainichi)

http://www.mainichi.jp/english/english/newsselect/news/20120426p2a00m0na011000c.html

NIHONMATSU, Fukushima -- The municipal government of Namie, a town which was evacuated due to the nuclear disaster at the Fukushima No. 1 Nuclear Power Plant, has set up a whole-body dosimeter at a temporary housing complex here in a bid to promote its own efforts to monitor residents' health.

Namie, which falls within the no-go and planned evacuation zones around the damaged nuclear power plant, is the first among all totally evacuated municipalities following the nuclear disaster to push forward such a move and install a radiation counter at a temporary housing complex.

The whole-body dosimeter, which was installed at a Namie clinic currently located on the premises of a temporary housing complex in Nihonmatsu, Fukushima Prefecture, will be used to check levels of internal radiation exposure in approximately 50 people a day. Screenings will take no more than two minutes per person, and results will be announced on the spot.

The Namie Municipal Government hopes to complete initial screenings of all town residents by the end of fiscal 2012.

While some 17 percent of Namie residents, mostly those under the age of 40, have already undergone some internal radiation measuring tests, including such launched by the prefectural government, the Namie Municipal Government took the initiative in order to provide long-term health monitoring for town residents, officials say.

The move was also pushed forward partially as a result of the fact that town officials were not notified about estimated radiation diffusion locations immediately after the disaster at the power plant in March last year, which led to an evacuation of residents and the town hall to sites where it was later discovered to have been highly radioactive at the time.

Based on this experience, **town official judged that it is necessary to provide their own radiation tests to protect residents' health**, a decision which eventually led to the installment of the dosimeter.

Thyroid cancer?

April 27, 2012

News Navigator: What is thyroid gland cancer and its relation to radiation?

http://mainichi.jp/english/english/perspectives/news/20120427p2a00m0na014000c.html

There are concerns that radiation from the Fukushima No. 1 Nuclear Power Plant may cause thyroid gland cancer. The Mainichi answers common questions readers may have about this cancer.

Question: Why is there concern about thyroid gland cancer?

Answer: After the 1986 Chernobyl nuclear disaster, thyroid gland cancer increased among children who ate foods contaminated with radioactive iodine. The surge in thyroid gland cancer started four years after the disaster, and the progress of the cancer is slow, so in the case of the Fukushima disaster, an increase in thyroid gland cancer would not be seen yet.

At Chernobyl, thyroid gland cancer increased after radiation exposure equivalent to around 10 sieverts across one's lifetime. In the case of Fukushima, regulations on radioactive food were soon put in place, so the amount of radioactive exposure is much less, and medical professionals have projected that thyroid gland cancer cases will not increase.

Q: How have thyroid gland ultrasound tests for children under 18 in Fukushima Prefecture gone?

A: Results as of November last year, released by the Fukushima Prefectural Government, were that among 3,765 people tested, around 30 percent had tumors of two centimeters or smaller found, but no children had malignant tumors. If a tumor is nonmalignant then treatment is not necessary. It is also said that nonmalignant tumors hardly ever change into malignant tumors.

Q: What does the thyroid gland do?

A: The thyroid gland, an organ around five centimeters tall and three centimeters wide located beneath the Adam's apple, makes growth and digestion hormones using iodine as a base material. These hormones are essential to growth, and children have a high absorption rate for iodine.

Q: Can thyroid gland cancer be cured?

A: Both adults and children can be treated if thyroid gland cancer is detected. Over 90 percent is a type called papillary, and if surgery is done the rate of survival for the next five years is 92 percent. According to hospital head and thyroid gland specialist Koichi Ito, the younger the patient the better the chance of recovery.

Q: How many people get thyroid gland cancer?

A: According to research by Doctor Shinichi Suzuki of Fukushima Medical University, it is very rare among children, with patients 14 or under accounting for only 0.3 percent of cases. According to the National Cancer Center, as of 2006 the thyroid gland cancer rate was 6.2 people per 100,000. As of 2010, the death rate from it was 0.6 people per 100,000. Compared to other cancers affecting Japanese people, the death rate was low. It is said that because the progress of the cancer is slow, many people die of other ailments before noticing they have it. (Answers by Hanayo Kuno, Science & Environment News Department)

"Vital" workers condemned to stay

April 28, 2012-

Workers with high radiation levels to stay at N-plant

Jiji Press http://www.yomiuri.co.jp/dy/national/T120427006236.htm

Tokyo Electric Power Co. said Thursday that a total of 16 employees whose cumulative radiation doses have exceeded 100 millisieverts, a government-set limit, will continue to work at the crippled Fukushima No. 1 nuclear power plant.

According to TEPCO, the 16 are engaged in equipment operation and radiation control and have advanced expertise and extensive experience at the nuclear plant crippled by the March 11 earthquake and tsunami last year.

Following the accident at the plant, the health ministry raised the cumulative dose limit to 250 millisieverts for workers there. But this measure will expire at the end of April. The cumulative limits revert back to 50 millisieverts per year and 100 millisieverts over a five-year period.

As the 16 people are vital for containing the plant's nuclear crisis, the company will keep them at workand take steps to reduce radiation levels at the quake-proof building used for its disaster response team, it said.

With TEPCO taking such measures as covering some ceilings and floors with lead in the quake-resistant building, radiation levels there have fallen to 0.7 microsievert per hour from 1.6 microsieverts, according to the utility.

Cesium in Iwate residents

http://fukushima-diary.com/2012/04/119-of-132-people-positive-from-sampling-survey-of-radioactive-substances-in-urine-in-iwate/#.T52swZsZvYg.facebook

119 of 132 people positive from sampling survey of radioactive substances in urine in Iwate

Posted by **Mochizuki** on April 29th, 2012 ·

Iwate prefecture conducted sampling survey of radioactive substances in urine in Ichinoseki city and Oshu city.

The result published on 3/2/2012 shows **cesium was measured from 119 of 132 people (90.1%).** The highest reading was 6 Bq/L.

On 4/16/2012, the chairman of Iwate association of obstetricians and gynecologists, Kobayashi sent public questions to Tasso, Iwate governor.

1. 尿検査結果の評価について

1. About the assessment of the urine survey results.

1.評価した委員会の会議録は公開されているのか伺います。また、公開していないとすればその理由を伺います。

1. Is the meeting minutes of the assessing committee disclosed ? If not, we demand to know the reason.

2.評価した委員は、放射性物質の內部被ばくに関する専門家なのか、どこでどのようにして選ばれたのか、また、市民の代表を加えることはできなかったのか伺います。

2. Are the committee members the experts of internal exposure ? Where and how were they selected and why citizen's representatives were not added to the members ?

2. 尿検査結果を受けての今後の取り組みについて

2. About treatments to follow up the result.

1. 放射性セシウムが検出された子どもたち個々の食生活など原因を調べる、また症状などの聞き取り 調査が必要と思われますが、その予定はないか伺います。また、予定がない場合はその理由もお示し 下さい。

1. Is there any schedule to conduct research about the diet of the children who they measured cesium from the urine of and about their symptoms ? If not, we demand to know the reason.

2. 子どもたちの健康を守るため、今後も継続して尿検査と健康検査を行なっていくべきだと思いますが、ご見解を伺います。

2. We think we shall continue to conduct children's urine test and health inspection from now on. What is the view of Iwate prefecture ?

3. 本県においても甲状腺に放射性ヨウ素を取り込んだ可能性がある子どもたちがいるはずです。このことについて測定と評価を行い、対策を講じて不安を解消させるべきではないかと思いますが見解 をお示しください。

3. Some of the children must have taken radioactive iodine to thyroid in Iwate as well. We think we shall conduct research and assess the result to deal with the concerns of citizens. What is the view of Iwate? 3. 今回の尿検査に関する専門的な質問

3. Professional questions about this urine test

1. 今回の尿サンプリング調査の評価過程において、セシウムの体内半減期をどのように試算していま すか。年齢によって半減期が異なる場合は、例を挙げてお示しください。

1. How did you estimate the biological half-life of cesium ? if it differs from age, please show us examples. 2. 今回の尿サンプリング調査の評価過程において、体内のセシウム総量(単位ベクレル)を試算・算 出していますか。算出しているなら、なぜ公表しないのか伺います。

2. Did you estimate the entire amount of cesium contained in body from this result? If yes, please give us the reason why it is not published.

3.「体重40キロの子ども・慢性摂取・事故から365日後の検査・日尿量1リットル」という仮定で 、尿1リットルから何ベクレル検出されるとこの子どもが、「年間1ミリシーベルト」または「生 涯100ミリシーベルト」に相当する被ばくを受けたことになるのかお示しください。 3. Please tell us how much of cesium per L in urine corresponds to "1 mSv/h" or 100 mSv/Life on the assumption that a 40kg of a child continuously takes cesium for 365 days after Fukushima accident / urine = 1L/d.

4.同じく、上記の仮定の子ども1リットル当たり6ベクレル検出された場合(365日後)の預託実効線量と、この子どもが事故から730日後の検査で6ベクレル検出された場合の預託実効線量をそれぞれ算出するとどのような数値となるか伺います。

4. Please give us the depository and effective dose on the same assumption as above (365 days later and 730 days later.)

以上の点について5月16日までに、文書で回答していただくようお願いします。なお、回答いただ いた内容はマスコミに提供いたしますのでご承知おきください。

Please give us documented answers for those questions above by 5/16/2012. We will disclose the content of the answer to media.

Tables available on Fukushima-diary (link above)

Sayama tea: not to worry

May 1st, 2012

Sayama Tea festivals held on '88th day of spring' to highlight safety after nuke crisis

http://mainichi.jp/english/english/newsselect/news/20120501p2a00m0na 008000c.html



Five promotion women, wearing casual kimono with splashed patterns and a rosy sash, pick up fresh tea leaves of the prefecture's special variety of green tea "Sayama Kaori (Sayama Flavor)" at a tea plantation next to the Iruma city government office in Iruma, Saitama Prefecture, on May 1. (Mainichi) 拡大写真

IRUMA, Saitama -- "New Sayama Tea" festivals were held across the green tea producing region in southwestern Saitama Prefecture on May 1, the 88th day of spring, with five promotion women, wearing casual kimono with splashed patterns and a rosy sash, picking up fresh tea leaves of the prefecture's special variety "Sayama Kaori (Sayama Flavor)" at a tea plantation next to the Iruma city government office.

Tea producers in this region were forced to suspend shipments of their tea products last year due mainly to contamination from radioactive substances from the crippled Fukushima No. 1 Nuclear Power Plant. This year, the tea growers highlight the safety of their products to consumers by checking their products in three stages -- when they are raw, after they are dried and after they are processed into final products to be put on the market.

Sadao Okauchi, chairman of the Iruma Tea Industry Society, said, "We will definitely ship only safe products. I want everyone to enjoy the flavor of our tea without anxiety."

Sayama Tea is widely regarded as one of the top-three Japanese tea brands. It is said that "Sayama provides the best taste of green tea while Uji provides the best flavor and Shizuoka the best color."

Too much cesium in food

May 3, 2012

Cesium exceeding new limit detected in 51 food items in 9 prefectures

http://mainichi.jp/english/english/newsselect/news/20120502p2g00m0dm016000c.html

TOKYO (Kyodo) -- Radioactive cesium was detected in 51 food products from nine prefectures in excess of a new government-set limit in the first month since it was introduced on April 1, according to data released by the health ministry on Tuesday.

The limit was exceeded in 337 cases, or 2.4 percent of 13,867 food samples examined by the Health, Labor and Welfare Ministry.

Cesium exceeding the previous allowable limit of 500 becquerels per kilogram was detected in 55 cases, while the new limit of 100 becquerels was exceeded in 282 cases.

By prefecture, there were 142 cases in Fukushima, 69 in Tochigi, 41 in Ibaraki, 35 in Iwate, 32 in Miyagi, 13 in Chiba, two each in Yamagata and Gunma, and one in Kanagawa.

Mushrooms and other agricultural products containing cesium in excess of the tougher limit were involved in 178 cases, while 156 cases pertained to fishery products such as flat fish and bass. In addition, two cases involved black bear meat and one case fried stone moroko.

Better keep off wild plants

May 5, 2012

Cesium pushing wild plants off menu

http://www.yomiuri.co.jp/dy/national/T120504004389.htm

The Yomiuri Shimbun

Many local governments are calling on producers and harvesters of edible wild plants to refrain from shipping their products after a number of them were found to contain levels of radioactive cesium that exceed state limits.

Some of these plants are now at the height of their picking season, but citizens are also being urged not to gather the plants in certain areas affected by cesium discharged into the environment by the accident at the Fukushima No. 1 nuclear power plant in March 2011.

In Fukushima Prefecture, some local governments have been told by the central government to refrain from shipping five types of edible wild plants whose radiation readings exceeded the state's safety limit of 100 becquerels per kilogram.

The five include royal fern (zenmai in Japanese), ostrich fern (kusasotetsu), Angelica tree sprouts (taranome), butterbur sprouts (fukinoto), and young fronds of koshiabura, a deciduous tree belonging to

the ginseng family. Young shoots and immature fronds of these plants are cooked as vegetables and considered a delicacy.

The prefectural government also told the city of Date to refrain from shipping bracken (warabi in Japanese), as the plants harvested there were found to contain 110 becquerels of radioactive cesium per kilogram.

According to the prefectural government, many similar edible wild plants with radioactive cesium content in excess of the new safety limits adopted April 1 have been found, prompting producers and harvesters to suspend their shipments.

Most of these plants were shipped through the end of March, as their radioactive cesium content was less than the previous provisional safety limits of 500 becquerels per kilogram.

In the town of Iino in Fukushima city, where wildly grown taranome shipments have been suspended, local direct sales depots are refraining from selling most edible wild plants for the time being.

In a typical year, local farmers bring edible wild plants to these local stores, the sale of which accounts for nearly half the stores' sales during the Golden Week holiday season.

As few customers are in the market for edible wild plants this year, these stores' sales have fallen 75 to 80 percent compared to levels seen before the accident at the Fukushima nuclear plant.

"Farmers know they won't sell, so they don't bring them [edible wild plants] in. I wonder if our customers will ever come back...There is no prospect for returning to normal now," lamented Toshihiro Ito, 61, manager of the direct sales shop in Iino.

Edible wild plants gathered for private use are not subject to the government's restriction.

The months of May and June are considered high season for gathering these young fronds and shoots.

Although an increasing number of people are expected to go up into the mountains in search of the wild plants, officials of the Fukushima prefectural government said they want people to refrain from doing so.

Wild taranome from Ichikai in southeast Tochigi Prefecture was found to contain 110 becquerels of radioactive cesium, prompting the prefecture to request the town to refrain from shipping the produce.

Elsewhere, in the town of Kami in Miyagi Prefecture, ostrich fern gathered locally was found to contain 310 becquerels of radioactive cesium. In Ibaraki Prefecture, young koshiabura fronds gathered in Hitachi and those from Hitachi-Omiya were found to contain 1,300 and 140 becquerels of radioactive cesium, respectively, prompting the prefectural government to ask the local municipalities to refrain from shipping them.

Koriyama - Hot spots in schools

May 7, 2012

'Hot spots' detected at more than 20 schools in Koriyama

http://mainichi.jp/english/english/newsselect/news/20120507p2g00m0dm041000c.html

FUKUSHIMA, Japan (Kyodo) -- More than 20 schools in Koriyama city in Fukushima Prefecture, home to the crippled Fukushima Daiichi nuclear plant, have "hot spots" with high radiation levels on their premises, a civil group said Sunday.

The finding was based on municipal education board documents it obtained through an information disclosure request, it said.

The education board instructed elementary and junior high schools as well as nursery schools in January to check air radiation levels in side ditches, hedges and drains on their premises. Schoolyards and classrooms were excluded as the levels there have been regularly examined.

Reports submitted by each school in April showed at least 14 elementary and seven junior high as well as five nursery schools have hot spots where the cumulative annual radiation dose could reach 20 millisieverts, or more than 3.8 microsieverts per hour.

At the start of the new academic year in April, the education board lifted a restriction that had limited students to playing in schoolyards for less than three hours per day in the wake of the nuclear disaster last year.

Tokiko Noguchi, head of the civil group, told a press conference Sunday, "There are many spots in schools where radiation levels still remain high," calling on the education board to restore the restriction.

Evacuation zone deserted

May 12, 2012 Population nearly halved in ex-evacuation zone

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120511004810.htm

Populations of municipalities in former emergency evacuation preparation zone



89

The population of municipalities in the former emergency evacuation preparation zone in Fukushima Prefecture has nearly halved since the outbreak of the crisis at the Fukushima No. 1 nuclear power plant, according to a Yomiuri Shimbun survey.

In light of the situation, municipal governments in these areas are concerned their communities will collapse unless measures to stop population outflow are taken.

Designated by the central government at the start of the crisis, the former emergency evacuation preparation zone either partially or entirely encompasses areas in Minami-Soma, Tamura, Kawauchi, Naraha and Hirono. The five municipalities are within a 20- to 30-kilometer radius of the nuclear plant.

According to the survey, 59,000 people lived in the five municipalities before the earthquake, but about 30,000 have since evacuated the area. In Hirono, Naraha and Kawauchi, where municipal governments asked residents to evacuate based on their own judgment, the population dramatically declined.

While municipal governments in Minami-Soma and Tamura did not take such measures, families with children and others have evacuated the area in rapid succession. The central government lifted the emergency evacuation preparation zone designation on Sept. 30, allowing residents to return home without any restrictions.

Although seven months have passed since then, only about 2,200 residents in total have returned home. As a result, the total population in these municipalities has **decreased to 54 percent of what it was before the earthquake.**

There are various reasons why evacuees have not returned home. Beside concerns about high radiation levels, some said their places of work had been closed, while others said their children had settled in at new schools in the cities they had evacuated to.

Meanwhile, the central government has been urgently working to reclassify parts of municipalities within a 20-kilometer radius of the crippled plant in the no-entry zone, as well as areas in the expanded evacuation zones where accumulated radiation doses may exceed 20 millisieverts per year.

However, the central government faces difficulties doing so because municipal governments are opposed to reclassification, as many residents do not want their homes to be divided, among other reasons. While such zones encompass areas in 11 municipalities, the new categories have only been applied to Minami-Soma, Tamura and Kawauchi.

Is it safe now?

May 14, 2012 Trial rice planting begins 20 kms from Fukushima nuke plant

http://mainichi.jp/graph/2012/05/14/20120514p2a00m0na004000c/001.html



KAWAUCHI, Fukushima -- Trial planting of rice has begun in this village some 20 kilometers away from the crippled Fukushima No. 1 Nuclear Power Plant, with the aim of examining whether rice produced in this area would contain radioactive cesium.

Some 50 people, including volunteers from the Tokyo metropolitan area, participated in the traditionalstyle rice planting in the village of Kawauchi on May 13, a move initiated by the village's commerce and industry association and other entities.

While the village's entire area was subject to the central government's rice planting restrictions last year on the heels of the nuclear disaster at the Fukushima No. 1 nuclear plant, the Kawauchi Municipal Government has decided to voluntarily refrain from planting rice in the village this year as well.

Based on the results of the test growing, the village seeks to resume full-scale rice planting next year and beyond. A total of 30 rice paddies will each have a 1,000-square-meter experimental patch, on which rice is test-planted at different depths with different volumes of minerals sprayed to absorb radioactive substances.

Once harvested, the experimental rice will not be distributed but will be tested for any radioactive cesium.

Fukushima "best prefecture for giving birth to babies and to raising children"

Children under 18 to receive free medical care in Fukushima

http://mainichi.jp/english/english/newsselect/news/20120514p2a00m0na007000c.html

FUKUSHIMA -- Medical care costs for children under 18 will be free in this prefecture, which is still reeling from the nuclear disaster, with the aim of stemming the ongoing population drain.

The Fukushima Prefectural Government formally decided on May 14 that all medical costs for prefectural residents aged 18 or younger will be free of charge starting in October -- marking the nation's first move of its kind.

The decision came after the prefecture's plea to the central government to foot those medical bills fell on deaf ears and the prefecture started considering covering the costs on its own. Related budget bills will be submitted to the Fukushima Prefectural Assembly in June for a planned implementation in October.

While the prefecture's cities, towns and villages have already made medical costs for children in the thirdgrade or younger free, the latest initiative will add a new system under which the medical costs for children between the fourth-grade and 18 years old will also be entirely subsidized.

The new program will cost 4.7 billion yen annually, which will be covered by part of a fund created for monitoring prefectural residents' health.

"The future of Fukushima Prefecture rests on the shoulders of the children here. **This initiative will be a symbol for making Fukushima the nation's best prefecture for giving birth to babies and raising children**," said Fukushima Gov. Yuhei Sato.

Rats and radiation

May 14, 2012

High cesium levels detected in rats near Fukushima

http://www3.nhk.or.jp/daily/english/20120514_16.html

High levels of radioactive cesium have been detected in rats caught in forests near the damaged Fukushima Daiichi nuclear plant.

Researchers from the Forestry and Forest Products Research Institute analyzed the rat samples collected from remote areas of Fukushima and Ibaraki prefectures in October and December last year.

The institute says about 3,100 becquerels of cesium per kilogram was detected in rats captured near Kawauchi village, which is 30 kilometers from the plant. About 790 becquerels per kilo was found in rats from around Kita-Ibaraki city, 70 kilometers away.

Aerial radiation levels were 3.11 microsieverts per hour in Kawauchi and 0.2 microsieverts in Kita-Ibaraki.

The institute says the cesium levels in rats apparently rise in proportion to the concentration of atmospheric radiation where they live.

A senior researcher at the National Institute of Radiological Sciences, Yoshihisa Kubota, says rats are as sensitive to radiation as humans.

Kubota stressed the importance of maintaining ongoing studies into the effects of radioactive substances on wild organisms.

Fukushima - How many victims?

Study: Fukushima killed at least 14,000 people in the US, mostly babies, in weeks following disaster

Learn more: http://www.naturalnews.com/034586_Fukushima_USA_fatalities.html#ixzz1uvOfNsoJ

For the very first time, a scientific study published in a peer-reviewed journal has come up with a solid estimate of the total number of US deaths caused by the Fukushima nuclear disaster in the weeks following it. Epidemiologist Joseph Mangano, MPH, MBA, and his colleagues say that, based on compiled data, at least 14,000 people in the US were killed during the 14 weeks following the Fukushima catastrophe -- and the majority of these deaths were in children under age one.

Published in the *International Journal of Health Services*, Mangano's study looked at both infant and adult death rates during the time when Fukushima occurred, as well as in previous months and years. During the 14 weeks prior to Fukushima, for instance, infant deaths had been declining by 8.37 percent, while in the weeks following the disaster they increased by 1.8 percent. Among adults, a 4.46 percent death rate was observed in the weeks after Fukushima, compared to 2.34 percent, which is about half that rate, a year prior.

"This study of Fukushima health hazards is the first to be published in a scientific journal," said Mangano. "It raises concerns, and strongly suggests that health studies continue, to understand the true impact of Fukushima in Japan and around the world. Findings are important to the current debate of whether to build new reactors, and how long to keep aging ones in operation."

During the first few months when the Fukushima disaster was unfolding, *NaturalNews* reported on radiation spikes in milk (http://www.naturalnews.com/032048_radiation_milk.html), rainwater (http://www.naturalnews.com/031871_radiation_rainwater.html), and the general food supply, both in the US and abroad. Though tangible harm in humans was not necessarily evident at that time, it now appears that this systemic poisoning translated into thousands of known deaths, and likely tens of thousands more cases of cancer and other illnesses.

"Based on our continuing research, the actual death count here may be as high as 18,000, with influenza and pneumonia, which were up five-fold in the period in question as a cause of death," added Mangano. "Deaths are seen across all ages, but we continue to find that infants are hardest hit because their tissues are rapidly multiplying, they have undeveloped immune systems, and the doses of radioisotopes are proportionally greater than for adults."

Sources for this article include:

http://www.marketwatch.com/story/medical-journal-article-14000-us-deaths-tied-to-fukushima-reactor-disaster-fallout-2011-12-19

Learn more: http://www.naturalnews.com/034586_Fukushima_USA_fatalities.html#ixzz1uvOuY3RZ

Just as long as there is no additional exposure...

May 16, 2012

Fukushima hospital finds 99 percent of young children below minimum cesium level

http://mainichi.jp/english/english/newsselect/news/20120516p2a00m0na006000c.html

Tests in Minamisoma, Fukushima Prefecture, have shown that 99.2 percent of tested children junior-high school age or younger and 90.1 percent of tested people high school age or older were below the minimum level for radioactive cesium.

The results were for the half-year until the end of March and compiled on May 15 by Minamisoma City General Hospital. In October of last year, the percentages were 67.7 and 31.1, respectively.

Doctor Masaharu Tsubokura, who was part of the project, says, "Cesium taken into the body has been steadily expelled, and long-lasting radioactive exposure during regular life is being kept to a fairly low level."

There were 1,688 children and 7,814 adults tested, for a total of 9,502 people. For a 60 kilogram person, the minimum level for "detection" was four becquerels per kilogram. Of the children, 1,439 were at or below the level, and the highest value for children for the January to March period was 13.2 becquerels per kilogram. Of the adults, 5,229 people were at or below the level, and the highest value for adults for the January to March period was 25.3 becquerels per kilogram.

Sixty-seven children and 114 adults who showed relatively high values were tested again three months later, and in the retesting all of those children and 112 of the adults showed lowered values. However, two men at 60 or over showed slight increases.

As long as there is not additional outside exposure, radioactive cesium in the body is estimated to halve in adults over a period of around three to four months. In retesting, however, around 10 percent of the adults did not show halving of their cesium amounts over that period. Regarding those people, a hospital spokesperson said, "We cannot say anything for certain, but it is highly likely they ate products such as vegetables from home gardens that had not been checked for radiation."

TEPCO's radiation figures higher than official estimates

Note from this blog's editor : the articles don't seem to give the same figures. I'm not sure what to make of it

TEPCO: 900,000 TBq emitted from Fukushima plant

http://www3.nhk.or.jp/daily/english/20120524_10.html

The operator of the Fukushima Daiichi nuclear plant estimates that 900,000 terabecquerels of radioactive material have been emitted from the facility.

Officials of Tokyo Electric Power Company, or TEPCO, say fuel rods inside the plant's No.1 to No.3 reactors melted down shortly after the earthquake and tsunami on March 11th last year.

The utility analyzed the damaged reactors, radiation levels around the plant, and radioactive material in soil samples.

It estimates that 900,000 terabecquerels of iodine-131 and cesium-137 were released from the plant since the accident.

The figure is 50 percent to 80 percent higher than those released separately by the Nuclear Safety Commission and the Nuclear and Industrial Safety Agency, but less than 20 percent of the amount emitted after the Chernobyl accident.

TEPCO will officially release the estimates on Thursday.

TEPCO estimate sees more radiation than NISA's

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120523005514.htm

Tokyo Electric Power Co. has estimated the total amount of radioactive substances discharged from its Fukushima No. 1 nuclear power plant measured 760,000 terabecquerels, 1.6 times the estimate released by the Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency in February.

One terabecquerel is equal to 1 trillion becquerels.

TEPCO will include the estimate in a final report to be compiled by an in-house accident investigation committee in June. The firm has also begun explaining how it arrived at the figure to local governments in Fukushima Prefecture.

There are two ways to estimate the amount of discharged radioactive substances. One way is to base calculations on the degree of damage to the reactor core. The other is to reverse calculate based on the density of radioactive substances found in the atmosphere and seawater. As a result, there will be differences in estimates depending on how the figures were obtained.

NISA released an estimate of 770,000 terabecquerels in June last year, and another estimate of 480,000 terabecquerels in February. The Cabinet Office's Nuclear Safety Commission released an estimate of 570,000 terabecquerels in August last year.

TEPCO combined the two methods and repeated its calculations under different conditions. It reached a final estimate of 400,000 terabecquerels of iodine-131 and 360,000 terabecquerels of cesium-137.

The amount of radioactive substances discharged in the Chernobyl accident in 1986 was 5.2 million terabecquerels.

"As there wasn't enough available data immediately after the disaster, estimates can differ substantially if conditions change, even just a little," said Prof. Hideo Yamazaki at Kinki University, an expert in environmental analysis. "The discharged amount of radioactive substances increased, but the figure is within the assumed margin of error. There will be no problems in continuing decontamination work and other measures."

WHO's estimates

May 23, 2012-05-24

WHO estimates Fukushima people's exposure levels

http://www3.nhk.or.jp/daily/english/20120524_07.html

The World Health Organization says some Japanese citizens were exposed to up to 50 millisieverts of radiation during last year's nuclear crisis, but that this is not enough to cause cancer.

The WHO released a preliminary report on estimated radiation exposure over the 4 months after the accident at the Fukushima Daiichi power plant in March 2011.

The estimation is based on the results of a Japanese government survey of soil and food products. The results were released to the public in September last year.

The report estimates that Namie town and Iitate Village in Fukushima Prefecture, close to the plant, were exposed to the highest levels of 10 to 50 millisieverts.

It says other parts of the prefecture received between one and 10 millisieverts, while areas outside the immediate impact of the disaster got 0.1 to one millisievert.

No area of the country saw exposures exceeding the cancer-risk level of 100 millisieverts.

The WHO says the estimates may be too high because it assumed that people remained in their communities near the plant for 4 months after the accident -- in fact, most quickly evacuated.

The organization says it also excluded from its calculations the sales ban on food products contaminated with higher radiation levels than the government limit.

The WHO says it will release a final report in July, which will include a comprehensive assessment of the accident's impact on people's health.

About Fukushima workers

May 24, 2012 UN: Fukushima workers did not die from radiation http://www3.nhk.or.jp/daily/english/20120525_01.html

A UN agency says the deaths of 6 workers who were involved in operations at the crippled Fukushima Daiichi nuclear plant were not linked to radiation.

The UN Scientific Committee on the Effects of Atomic Radiation, or UNSCEAR, released a preliminary report at a news conference at its headquarters in Vienna on Thursday.

UNSCEAR has been conducting scientific studies since May of last year. They were based on data provided by the Japanese government and focused on the effects of radiation on Fukushima plant workers.

UNSCEAR Chair Wolfgang Weiss said the committee confirmed that 8 of the roughly 20,000 workers who had been involved in operations at the plant until late January, were exposed to more than 100 millisieverts of radiation.

Anyone with that dose is said to have an increased risk of cancer.

Weiss added that the committee will continue to examine the effects of radiation on human bodies using figures presented by Japan.

UNSCEAR plans to compile a final report and submit it to the UN by the end of next year.

WHO estimates radiation impact on Japanese people

May 24, 2015

Namie, litate exposed to radiation doses within 10 to 50 millisieverts

http://mainichi.jp/english/english/newsselect/news/20120524p2g00m0dm033000c.html

TOKYO (Kyodo) -- Radiation doses to individuals from the Fukushima Daiichi nuclear crisis were the largest within a dose band of 10 to 50 millisieverts in the town of Namie and the village of litate in Fukushima Prefecture, the World Health Organization said Wednesday in a preliminary estimate.

"In these most affected locations, external exposure is the major contributor to the effective dose," the WHO said.

Doses were estimated to be within a band of 1 to 10 millisieverts in the rest of the prefecture and 0.1 to 10 millisieverts in most of Japan, the WHO said.

All doses are below 0.01 millisieverts outside Japan.

The WHO made the estimates by considering major routes of exposure -- external exposure and internal exposure from ingestion of foodstuffs and inhalation, based on data made available by the Japanese government through mid-September in 2011.

Given limited information available, the assessment contained **a number of assumptions,** such as radioactive cloud composition and dispersion, time spent indoors and outdoors, and that people in the most affected areas outside the 20-kilomter radius from the Fukushima plant continued to live there for

four months after the accident caused by the March 11, 2011, earthquake and tsunami disaster, the WHO said.

"All efforts were made to avoid any underestimation of doses," it said.

shocking

Radiation survey halted at request of Fukushima gov't: researchers http://english.kyodonews.jp/news/2012/06/163866.html

AOMORI, Japan, June 14, Kyodo

A survey on local residents' exposure to radioactive iodine was abruptly halted at the request of the Fukushima prefectural government just weeks after the nuclear crisis was triggered by the March 2011 earthquake-tsunami disaster, a team of researchers said Thursday.

The team led by Shinji Tokonami, a professor at Hirosaki University's Institute of Radiation Emergency Medicine, began the survey in April last year but ended it after the prefectural government told the researchers that such studies might fuel concern among residents.

Tokonami said the request came after his team surveyed 62 people instead of its initial plan to conduct checks on more than 100.

First test fishing since the disaster

June 23, 2012

Fukushima sea food "safe" for eating

http://www3.nhk.or.jp/daily/english/20120623_27.html

No radioactive substances have been detected in marine products caught off Fukushima Prefecture in the first test fishing following the 2011 nuclear accident.

The prefectural federation of fisheries co-operative associations announced on Saturday that three kinds of test samples it chose showed radiation levels lower than detectable by radioscope.

Two kinds of octopus and one type of shellfish were tested for radioactivity on Friday and Saturday at a facility at the port of Matsukawaura in Soma City.

This is the first test of any sea food samples from the area since the accident at the Fukushima Daiichi nuclear power plant in March of last year.

The octopus and shellfish will be boiled and processed before being sold at supermarkets in the city next week.

The fishery federation plans to conduct another round of fishing before the end of the month to sell catches in Tokyo and other major markets, if possible

Cesium in childrens' bodies

July 1, 2012

Small amount of cesium detected in Fukushima children's urine

http://mainichi.jp/english/english/newsselect/news/20120701p2g00m0dm013000c.html

TOKYO (Kyodo) -- A small amount of radioactive cesium was found in the urine samples from 141 infants and young children living in Fukushima Prefecture, where the crippled nuclear power plant is located, among 2,022 of those surveyed, a Japanese research group said Saturday.

Three urine samples contained more than 10 becquerels of cesium per kilogram, including a case with 17.5 becquerels. Ten becquerels or less of cesium was found in the samples of the other 138, the Yokohama-based Isotope Research Institute said.

The urine samples also contained about an average 64 becquerels of radioactive potassium.

"The level of cesium is lower than that of potassium, and it definitely has no effect on the human body," said Hideaki Karaki, honorary professor of food safety at the University of Tokyo. "But we still need to know how cesium was taken into those infants' bodies."

The research institute said those children with over 10 becquerels of cesium were eating home-grown vegetables.

The survey, conducted from last November to January, covered infants and children up to age 7.

According to Fukushima Prefecture, the cesium testing covered the largest number of citizens since the Fukushima Daiichi nuclear plant was hit by a massive earthquake and tsunami in March 2011.

Too much cesium in fish

July 3, 2012

High level of radioactive cesium detected in Fukushima freshwater fish

http://mainichi.jp/english/english/newsselect/news/20120703p2g00m0dm035000c.html

TOKYO (Kyodo) -- The Environment Ministry said Monday it detected 61 to 2,600 becquerels per kilogram of radioactive cesium in 23 varieties of freshwater fish sampled at five rivers and lakes in Fukushima Prefecture between December and February.

After the Fukushima Daiichi nuclear plant crisis, the government reduced the level of radioactive cesium deemed safe for consumption to a maximum of 100 Bq/kg for fish, meat and other food items.

A kind of goby taken from the Mano River in Minamisoma, located north of the crippled nuclear plant, showed 2,600 Bq/kg, according to the ministry.

Marine fish, in contrast, logged lower levels, apparently due to the different way in which the radioactive substance builds up in their systems, the ministry said.

In 31 marine fish samples taken at three locations off Fukushima and Miyagi prefectures, cesium levels ranged from 2.15 to 260 Bq/kg.

High cesium levels in Fukushima freshwater fish

http://www3.nhk.or.jp/daily/english/20120703_04.html

Japan's Environment Ministry says it detected higher levels of radioactive cesium in freshwater fish than marine fish in disaster-hit Fukushima Prefecture.

The ministry on Monday released the results of its study conducted from December last year to February this year. It took freshwater samples in rivers and lakes, as well as at 8 locations in the open sea.

The highest amount of cesium, 2,600 Becquerels per kilogram, was found in a goby freshwater fish taken from a river that flows from litate Village to Minamisoma City, north of the crippled plant.

Some water bugs, which freshwater fish eat, also showed high levels of 330 to 670 Becquerels per kilogram.

A type of flounder and bass caught off Iwaki City, south of the plant, registered 260 Becquerels per kilogram-- the highest level for marine fish.

A ministry official spoke about the differences in cesium levels in freshwater and marine fish. The official said marine fish are likely to get rid of cesium from their bodies more quickly as they have the ability to excrete salt.

The ministry will closely monitor freshwater fish as radioactive cesium may remain in their bodies for a longer period.

Breast milk tests

July 10, 2012

No cesium detected from Fukushima mothers' breast milk

Jiji, Kyodo http://www.japantimes.co.jp/text/nn20120710a4.html#.T_w5vZFIwpU

FUKUSHIMA — No radioactive cesium has been detected in tests on the breast milk of mothers in Fukushima Prefecture, the prefectural government said Monday.

The Fukushima government released the results of radiation checks on the breast milk of 26 mothers with babies that were conducted during June to ascertain the impact of the triple-meltdown crisis that began in March 2011 at Tokyo Electric Power Co.'s Fukushima No. 1 power plant.

The prefecture opened a special counseling call center to receive applications for breast milk tests on June 1.

The center provided counseling to 308 callers, of whom 261 applied for radiation checks on their breast milk, including mothers who had evacuated from Fukushima to other prefectures, Miyagi, Yamagata and Niigata among them.

The tests on breast milk are being performed on a first-come first-served basis and free of charge.

Shuntaro Hida on "Bura Bura" disease

July 12, 2012

A-bomb doctor warns of further Fukushima woes

By MEGUMI IIZUKA Kyodo http://www.japantimes.co.jp/text/nn20120712f3.html#.T_6v8pFIwpU

A 95-year-old retired doctor is continuing to warn of possible health dangers to residents near the Fukushima No. 1 nuclear plant after some of them developed symptoms similar to those afflicting atomicbomb survivors he treated for decades.

Spreading the word: Shuntaro Hida, who treated hibakusha for decades, is interviewed last month at his home in Saitama Prefecture. KYODO



More than a year after the nuclear crisis erupted, Shuntaro Hida is busy giving lectures and interviews to make people aware of the danger of inhaling, drinking or eating radioactive substances.

Hida says he has received calls from residents around the Fukushima plant complaining of unexplained fatigue and diarrhea as well as hair loss, symptoms he suspects were caused by internal exposure to radiation.

It remains unknown if the health problems are linked to the release of massive amounts of radioactive materials from Tepco's damaged plant. But Hida is concerned.

"I am worried because I received such calls much earlier than I expected," he says.

The amount of research into and public knowledge about internal exposure to radiation is still limited because the United States "concealed" information about the problem for a long time after it dropped the atomic bombs on Hiroshima and Nagasaki in 1945, Hida says.

A native of Hiroshima, he was serving as an army doctor there when he was exposed to radiation from the atomic bomb. He has since treated more than 6,000 survivors and worked as a director of the counseling center at the Japan Confederation of A- and H-Bomb Sufferers Organizations.

Once radiation gets into the human body, it leads to long-term exposure to low-dose radiation, he says. That could pose a greater risk to human health, such as developing cancer and damaging the immune system, than short-term exposure to a higher level of radiation.

Hida says that through his endeavors to share his experiences with younger generations, he has come to feel that many people in Japan now see rejecting not only nuclear weapons but also nuclear power as "the only way" to avoid the threat of radiation.

"It is crucial to involve people who are still indifferent as well as those who have not taken any action in the movement to end nuclear power generation," says Hida, who retired in 2009 and now lives in Saitama.

He has spent much of his life researching the unexplained fatigue called Bura Bura disease he believes is caused by radiation exposure. Hida says some people could begin showing symptoms "in one to three years" after the Fukushima meltdowns.

The illness haunted thousands of atomic-bomb survivors, including those who escaped the direct blast but inhaled, drank or ate radioactive substances, he says.

Those who exhibited the symptoms felt too tired to work or even stand up, but doctors could not clearly establish they were ill. The patients lost trust in society as they were regarded by some as pretending to be sick or were just being lazy.

"Many of them committed suicide," Hida says. He is worried that something similar might be repeated in Fukushima because current medicine still can't establish a link between fatigue and radiation exposure.

"It is a fight to change the mindset of each and every person," Hida says, recalling his decades-long struggles to make people aware of the danger of internal exposure to radiation amid a lack of scientific data.

Under the Occupation until the early 1950s, people were forbidden from "speaking, recording or doing research into symptoms of atomic-bomb survivors," he says. "I was stalked by the military police when I was talking about what I witnessed in Hiroshima," and arrested several times by the Occupation forces for "not abiding by their Occupation policy."

Hida, as a representative of a group of medical professionals called the Japan Federation of Democratic Medical Institutions, urged U.N. Secretary General U Thant in 1975 to hold an international conference on the effects of radiation on hibakusha, which was realized two years later.

"It's anger that has kept me speaking to this day. How could I remain silent even 67 years after the bombings?" Hida says.

Bring exposure to international levels

July 13, 2012

Goal set to reduce Fukushima radiation in long term

http://www.japantimes.co.jp/text/nn20120713x3.html#.UAASYJFIwpU

Kyodo, Jiji

The government approved a long-term goal Friday for reducing exposure to radiation in Fukushima Prefecture to levels in line with international standards as part of the policy for reconstruction and recovery from the nuclear crisis.

The Cabinet approved the goal of cutting the annual radiation dose to 1 millisievert or less, excluding exposure to natural radioactivity, in the prefecture hosting the crippled Fukushima No. 1 plant, but it failed to meet a call to boost subsidies to firms starting firms or expanding operations.

The current evacuation order around the plant is designed to prevent exposure of more than 20 millisieverts of radiation a year, based on information from the International Commission on Radiological Protection.

Under the Fukushima reconstruction and recovery policy, the government is also pledging to financially support a health management fund that the prefecture has established to provide free medical services for residents under 19. For returning evacuees, the government will bear the costs for building infrastructure.

Respecting the prefecture's concept of seeking "a society not dependent on nuclear power," the government also will help create businesses involved in renewable energy sources.

Other measures include continued decontamination work, an increase in the number of temporary storage sites for tsunami debris.

New radiation tests show "acceptable" results

July 13, 2012

Radiation exposure in Fukushima restudied

http://www3.nhk.or.jp/daily/english/20120713_34.html Japanese researchers say the maximum radiation exposure of adult residents in Fukushima after the

Japanese researchers say the maximum radiation exposure of adult residents in Fukushima after the nuclear plant accident there was below the international safety standard.

The researchers at Hirosaki University in northern Japan examined the thyroid glands of 62 Fukushima residents in April last year, soon after the accident. In their initial report released in March, they said the maximum exposure level was 87 millisieverts.

The team reexamined the exposure levels by using detailed data, including that on the spread of nuclear substances called radioactive plumes after the accident.

In their latest report, the researchers said the maximum exposure was 33 millisieverts for adults and 23 millisieverts for those under the age of 20.

The levels were less than half of previously released figures, and lower than an internationally accepted limit of 50 millisieverts.

One of the researchers, Professor Shinji Tokonami, says the latest results are highly reliable because they were based on more accurate data than before.

Tokonami adds that the health conditions of children should be continuously monitored as they are at higher risk of thyroid radiation exposure.

Trivialisation of the effects of radiation

interesting analysis by Majia of the recent study of Fukushima children's exposure to radiation:

http://majiasblog.blogspot.fr/2012/07/new-study-on-childrens-exposure-to.html

Sunday, July 15, 2012

New Study on Children's Exposure to Fukushima Radiation Raises More Questions Than It Answers

One of the most distressing aspects of the Fukushima crisis from my perspective is the effort to trivialize the significance of the event by scientists and regulators. [......]

The most recent effort to trivialize the effect of radiation from Fukushima can be found here:
Thyroid doses for evacuees from the Fukushima nuclear accident. Nature. http://www.nature.com/srep/2012/120712/srep00507/full/srep00507.ht ml

A primary health concern among residents and evacuees in affected areas immediately after a nuclear accident is the internal exposure of the thyroid to radioiodine, particularly I-131, and subsequent thyroid cancer risk. In Japan, the natural disasters of the earthquake and tsunami in March 2011 destroyed an important function of the Fukushima Daiichi Nuclear Power Plant (F1-NPP) and a large amount of radioactive material was released to the environment. Here we report for the first time extensive measurements of the exposure to I-131 revealing I-131 activity in the thyroid of 46 out of the 62 residents and evacuees measured. The median thyroid equivalent dose was estimated to be 4.2 mSv and 3.5 mSv for children and adults, respectively, much smaller than the mean thyroid dose in the Chernobyl accident (490 mSv in evacuees). Maximum thyroid doses for children and adults were 23 mSv and 33 mSv, respectively.

MAJIA HERE: First, it is noteworthy how small the sample size is in this study: "In total, 62 people aged from 0 to 83 years old (of which accurate information on age was unavailable for eight people) underwent the measurement with informed consent."

MAJIA HERE: Second, the following passage is odd. It acknowledges that some children were in extensively contaminated areas but the study extrapolated their exposure from adults, and fails to tell us whether or not those adults were from the extensively contaminated areas:

"Some children were known to have stayed in heavily contaminated areas from March 11th to 18th. As the most conservative scenario, we estimated the thyroid dose to children, using the atmospheric I-131 concentration assessed from the thyroid measurements of adults."

Majia here: notice all the estimations in the article about how calculations for kids were extrapolated. Notice also that exposure is limited to March 15 in this passage: [Excerpted] "As mentioned earlier, we considered that the rainfall on March 15th resulted in deposition of ambient radioactive materials on the ground and subsequent less possibilities to inhale them. The maximum I-131 activity detected in the thyroid of an adult was 1.5 kBq. Assuming the inhalation exposure took place for 4 hours on the afternoon of March 15th (see above), we estimated that this person could inhale as much as 85 kBq of I-131. Using the thyroid activity and breathing rate16, the maximum atmospheric I-131 concentration was estimated to be 23 kBq m⁻³. In our data analysis, we did not consider I-132 exposure due to lack of information. "

Majia here: It is interesting that even with this set of limitations the article here finds that the children might have been subject to doses on excess of 50 millisieverts:

[Excerpted] "Using the maximum atmospheric concentration, the thyroid dose for different age groups from inhalation of I-131 was calculated for children as shown in Table 2. In this estimation the dose for 1-, 5- and 10year-old children could exceed 50 mSv. If children in this age range remained in Tsushima District after the radioactive plume arrived in the afternoon of March 15th, they might have experienced further exposure to I-131 Majia here: Yet, the study results indicate an exposure of only 4 millisieverts for kids? How is that? Well, look at this passage from the methodology section. The study is using a lot of estimations in its calculations and one of those estimations is based on the premise that iodine-131 was inhaled only on March 15th

[Excerpted] "Where $D_{T,0}$ is the thyroid equivalent dose (mSv) assuming that they inhaled I-131 on March 15th, *t* is the elapsed time between March 15th and the measured date, T_{eff} is the effective half-life of I-13117, *f* is the equivalent thyroid dose coefficient16[,] 17, and *i* is the thyroid uptake factor equal to 0.3. The effective half-lives of 3 months (from 0 to 1 year of age), 5 years (more than 2 to 7 years of age), 15 years (more than 12 to 17 years of age), and adult (more than 17 years of age) were calculated using each biological half-life given by ICRP Publication 6717, and they were estimated to be 4.67, 5.94, 7.15, and 7.27 days, respectively." MAJIA HERE: This research study's conclusions based on 61 subjects, using a methodology that entailed a scintillation spectrometer held to the neck during the period of April 12 to 16th 2011 presuming .3 uptake RAISES MORE QUESTIONS THAN IT ANSWERS.

[Excerpted] We measured activity in the thyroid during the period from April 12th to 16th, 2011, using a 3-inch × 3-inch NaI(Tl) scintillation

spectrometer (JSM-112, Hitachi Aloka Medical, Ltd., Tokyo). We wrapped the detection head with plastic foil and cleaned the neck with alcohol wipes so as to avoid radioactive contamination. We then placed the detection head on the cleaned part of the neck and started the measurement.

MAJIA HERE: I cannot comment on whether a scintillation spectrometer held to the neck is a reliable indicator of iodine-131 uptake.

But I can suggest that the sample size was not adequate and the assumptions about the time and amount of uptake raise many more questions than they answer.

Here are some other data points that contribute to concerns about the conclusions drawn from this study about children in Fukushima's exposure to Iodine 131:

Just 0.8% of children in 2001 Japanese control group had thyroid cysts or nodules — 36% in Fukushima study

http://enenews.com/now-35-8-of-fukushima-children-have-thyroid-cystsor-nodules Taken from thyroid examination section of the sixth report of Fukushima Prefecture Health Management Survey(Section 7 here) translated by Fukushima Voice:

http://www.pref.fukushima.jp/imu/kenkoukanri/240426shiryou.pdf Majia Here: I am not saying that this data set is the truth as contrasted with the comparatively low level of exposure extrapolated from the study published at Nature.

What I am saying is that there were quite a few accounts published in the Japanese news media that children in Fukushima have thyroid nodules and this development is very worrying.

Given efforts to trivialize the disaster, I hope to raise questions about the adequacy of the Nature study in predicting Fukushima children's exposure to iodine-131.

The release of iodine 131 was not restricted to March 15 2011.

Iodine 131 has been detected many times in radioactive sewage sludge in many areas in Japan

http://optimalprediction.com/wp/iodine-131-on-the-increase/#comment-5 http://fukushima-diary.com/2011/12/constant-leakage-of-iodine131/

Furthermore, evidence exists that efforts have been made to censor data on children's thyroid exposure. Please see the following narrative and citations:

On July 6 2011 the Japanese press Kyodo reported that in a March survey of 1,080 children aged 0 to 15 in Iwaki, Kawamata, and Iitate, 45% of kids in Fukushima survey had thyroid exposure to radiation[i] In August, NHK reported that Japan's nuclear commission had erased children's exposure data derived from a test of 1,000 children aged 15 or younger who had been screened for radiation affecting their thyroid.[ii]The report stated that one four year old child had a thyroid exposure of 35 millisieverts, but that the amount was "not considered a health threat." This exposure level accounts only for Iodine-131 and does not incorporate the child's total exposure to other radionuclides. In April 2012, the Peace Philosophy Centre posted the results of the Fukushima government's March 2012 survey of 38,001 children under 18 located in thirteen Fukushima prefecture cities. Thyroid nodules (5.0mm) or cyst (20.0mm) were detected in 13,460 individuals, or 35.3% of the sample. These results were an increase of 5.6% from a January pre-test.[iii]

Internet research project abandoned because of Fukuhima Prefecture

July 20, 2012

Radiation dosage website abandoned due to opposition from Fukushima Pref.

http://mainichi.jp/english/english/newsselect/news/20120720p2a00m0na016000c.html

The National Institute of Radiological Sciences (NIRS) developed a radiation dosage website for Fukushima Prefecture residents following the March 2011 nuclear accident but was forced to drop it due to opposition from the prefectural government, which warned the website would stir up fears, the Mainichi Shimbun has learned.

Experts have expressed concern about the prefecture's reaction, saying failure to conduct effective research into Fukushima residents' radiation exposure would only lead to public frustration and mistrust.

A proposal to develop a system to estimate radiation dosage through the Internet came up during a closed-door preliminary meeting of the prefecture's study committee on health management for all Fukushima residents at Fukushima Medical University in Fukushima on May 13 last year.

According to the minutes of the meeting and other information which the Mainichi obtained through a freedom of information request, the NIRS studied a method in April last year to gauge external exposure to radiation for residents and others around the crippled Fukushima No. 1 Nuclear Power Plant, under instruction from the Education, Culture, Sports, Science and Technology Ministry.

The NIRS aimed to cover more than 100,000 residents and felt it necessary to use the Internet to effectively get a good grasp of their activities after the nuclear disaster while their memories were fresh. The institute, headquartered in Chiba, set up a website to assess radiation doses and developed a system to estimate exposure when residents entered their post-disaster activities into the system.

About 10 million yen for the project's development was financed by the science ministry's disasterrelated subsidies and the system was near completion in May 2011.

Separately, Fukushima Prefecture launched a study on health monitoring in April last year and held a preliminary meeting with experts from the NIRS, Fukushima Medical University, Hiroshima University, Nagasaki University and other institutions, with officials from the central and Fukushima prefectural governments also in attendance.

During the meeting, a professor from Fukushima Medical University proposed having residents record their activities in writing to check their radiation doses. A senior NIRS official requested research via the

Internet along with written statements and revealed a plan to hold a briefing on the dosage estimate scheme in the town of Tamura on May 22, 2011.

However, a high-ranking member of the medical association in the prefecture balked, asking, "Why are you going to do that at this time?" and telling the official to be "careful." A senior official of the prefectural government's health and welfare department was also critical of the NIRS initiative, saying, "We don't want you to hold a briefing that may fuel residents' anxiety."

When the preparatory meeting was held May 13 last year, the NIRS website mentioned a plan to unveil the Internet research system but posted a postponement notice one week later.

Research into radiation doses was eventually limited to residents' answers in writing and interview sheets that were distributed from the end of June last year. But the collection rate at the end of May this year stood at only 22.6 percent.

The NIRS told the Mainichi that it was **forced to abandon the Internet research project due to the wishes of the prefecture.**

The high-ranking member of the medical association said that the Internet research may have raised the response rate. The member said the debate on how to utilize the botched Internet research was insufficient.

A senior official of the prefectural government's health and welfare department said he spoke against the briefing in Tamura but did not make remarks opposing the system itself. He did not remember exactly what he said.

The rules of worker exposure

July 21, 2012 **How worker exposure is controlled** http://www3.nhk.or.jp/daily/english/20120721_26.html

Japanese health authorities set the permissible cumulative level for radiation exposure for workers at nuclear power plants at 50 millisieverts per year to protect their safety.

If their exposure exceeds the limit, they are not allowed to work inside radiation control areas.

Employers violating the rule can be punished with prison terms of up to 6 months or fines of up to 500,000 yen or about 6,370 dollars.

Worker exposure is measured by dosimeters they wear while at work, and their employer is responsible for managing them.

At the Fukushima plant, workers receive dosimeters before starting work and return them after work.

The plant's operator, Tokyo Electric Power Company, and one of its contractors, Tokyo Energy & Systems, monitored the exposure of workers from Buildup, a subcontractor with an executive suspected of ordering adjustment of dose records. Workers were informed of their doses every day, and cumulative figures were reported to Buildup once a month.

Such data is also reported to the Radiation Effects Association on a regular basis to keep track of workers' cumulative doses even if their employers change.

Buildup's workers were carrying a dosimeter called "Glass Badge" in addition to the digital one they were told to cover with lead.

The health ministry plans to compare the data on both dosimeters for any significant differences, and also compare data records of people working at the same site.

Build-up President Takashi Wada says he's aware of the gravity of the issue.

The president of another subcontractor told NHK that work in a highly radioactive environment is lucrative.

But he said it's out of the question to falsify exposure data. He said he fears the revelation could undermine confidence in nuclear subcontractors.

A man who had worked at the Fukushima plant just after last year's accident says the official dose limit is 50 millisieverts per year but in reality contractors avoid sending workers to the site if the reading goes beyond 20 millisieverts.

He says he himself can no longer work at nuclear power plants as his cumulative dose probably exceeds about 30 millisieverts.

The man says subcontractors cannot send workers to the plant when their doses rise. So, he says, subcontractors want to limit exposure on a daily basis.

The man adds that many veteran employees are now unable to do such work because of their high cumulative doses. He says he wants people to understand the current situation involving a less-experienced workforce.

Meltdowns pushed strontium 90 levels up in Kanto and Tohoku

July 25, 2012

Strontium 90 levels in Kanto, Tohoku rise after Fukushima meltdowns

http://mainichi.jp/english/english/newsselect/news/20120725p2a00m0na004000c.html

Strontium 90 released in the Fukushima nuclear disaster has pushed levels of the radioactive element in the Kanto and Tohoku regions higher than any recorded since between the year 2000 and the meltdowns last year, a government study released July 24 has revealed.

The nationwide airborne survey conducted by the Ministry of Education, Culture, Sports, Science and Technology found the higher levels in 10 Kanto- and Tohoku-area prefectures (excluding Miyagi and Fukushima, where strontium 90 was detected in soil samples). The study results did not confirm whether other regions had been affected by the release of the element in the nuclear disaster.

If taken internally, strontium 90 tends to collect in the bones, though the science ministry has emphasized that the amounts detected are extremely small and present no risk to human health.

The highest strontium 90 level ever detected in the regions was 358 becquerels per square meter in Miyagi Prefecture in 1963, when both the United States and the former Soviet Union conducted regular nuclear weapons tests. The highest level found from 2000 to before the Fukushima nuclear disaster was 0.3 becquerels per square meter in Hokkaido in 2006. The highest level in the recent survey was 6 becquerels in Ibaraki Prefecture, while elevated strontium 90 amounts were also found in Gunma, Yamagata, Saitama, Iwate, Kanagawa, Chiba and Akita prefectures, as well as Tokyo.

Surprised?

July 27, 2012

No. 1 workers' radiation doses soared 16-fold

Kyodo http://www.japantimes.co.jp/text/nn20120727a4.html

The cumulative annual radiation doses of workers at the Fukushima No. 1 plant rose more than 16-fold from the year before during the first year of the nuclear crisis, Tokyo Electric Power Co. data show.

Over a roughly one-year period from the March 2011 meltdowns and the end of February, cumulative radiation doses came to 244.6 man-sieverts per worker — a more than 16-fold surge compared with the 14.9 man-sieverts measured in the previous year, the data showed.

March 2011 alone accounted for around half of the figure, some 120.2 man-sieverts, while the highest exposure recorded for an individual worker stood at 678.8 millisieverts.

Excluding the No. 1 and nearby Fukushima No. 2 plants, workers' cumulative exposure at the country's 15 nuclear plants stood at 61.1 man-sieverts in the year through March 2011.

The data noted about 20,000 workers at the No. 1 plant were exposed to roughly 12 millisieverts on average in the reporting period.

Don't worry, it's only strontium

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201207250060 Radioactive strontium from Fukushima disaster found in 10 prefectures

- Previous ArticleSome Fukushima workers may have been illegally recruited
- Next ArticleOECD report: Nuclear expansion on track despite Fukushima

July 25, 2012 THE ASAHI SHIMBUN

Radioactive strontium-90 from the crippled Fukushima No. 1 nuclear power plant has been detected for the first time in 10 prefectures outside Miyagi and Fukushima, the science ministry said July 24.

The highest reading was in Ibaraki Prefecture and nearly matched the maximum level of strontium-90 recorded in Japan following the Chernobyl nuclear disaster. The nine other prefectures are Iwate, Akita, Yamagata, Tochigi, Gunma, Saitama, Chiba, Tokyo and Kanagawa.

But experts say the current levels of strontium-90 will have little impact on health.

"The health impact of the strontium will be much smaller than that of cesium," said Takumaro Momose, deputy head of the Radiation Protection Department at the Japan Atomic Energy Agency. "There is no need to worry as long as we keep track of radiation doses derived from cesium. There is no problem about food, either, as long as the cesium content remains within the safety standard."

The latest measurements were part of the science ministry's release of data on the concentrations of strontium-90 in monthly dust deposits collected in outdoor receptacles at measurement stations in all 47 prefectures between April 2010 and December 2011.

Data was unavailable for Miyagi Prefecture because the tsunami that triggered the nuclear accident on March 11 last year also destroyed the measurement station. In Fukushima Prefecture, the ministry's analysis was obstructed because the measurement station is located within the no-entry zone around the Fukushima No. 1 nuclear plant.

The science ministry said soil samples taken in June last year already detected strontium attributable to the Fukushima nuclear disaster in the two prefectures.

The ministry said the strontium found in the 10 other prefectures came from the Fukushima plant because the measurements exceeded the pre-disaster maximum of 0.30 becquerel per square meter and rose in March or April last year following the onset of the accident.

According to the ministry's measurements, a maximum concentration of 6.0 becquerels of strontium-90 per square meter was recorded in Hitachinaka, Ibaraki Prefecture, in March 2011. That is 20 times the 0.30 becquerel per square meter observed in Hokkaido in February 2006, the highest measurement taken in Japan between April 2000 and February 2011.

Strontium-90 has a long half-life of about 50 years and tends to accumulate in human bones. It can easily be absorbed by food items, readily dissolves in water and can reach depths of 50-60 centimeters in the soil.

Strontium-90 readings in Japan peaked in the 1960s, a time when many nuclear tests were taking place around the world and releasing radioactive substances into the atmosphere. A record high 358 becquerels per square meter was recorded in Sendai in 1963.

The strontium levels later dropped as the number of nuclear tests declined, but they rose temporarily to 6.1 becquerels per square meter in Akita Prefecture following the Chernobyl disaster in 1986.

The latest strontium-90 fallout was only one-625th of the combined fallout of cesium-137 and cesium-134 in Akita Prefecture, where the strontium-to-cesium ratio was the largest. That ratio was less than one-10,000th in Chiba, Tokyo and Kanagawa prefectures, the science ministry said.

Thousands of becquerels of strontium-90 per square meter were deposited across Japan during the atmospheric nuclear tests of the 1950s and 1960s, according to Shunichi Hisamatsu, director of the Department of Radioecology at the Institute for Environmental Sciences.

"Adding 6 becquerels of strontium a month on top of that is not likely to have a major impact," Hisamatsu said. (This article was compiled from reports by Hiroshi Ishizuka, Yuri Oiwa and Akiko Okazaki.) THE ASAHI SHIMBUN

Nothing to do with radiation, says TEPCO

July 31, 2012

Ex-Fukushima plant chief Yoshida suffered bleeding to brain: TEPCO

http://mainichi.jp/english/english/newsselect/news/20120731p2g00m0dm056000c.html

TOKYO (Kyodo) -- Tokyo Electric Power Co. said Monday that former Fukushima Daiichi nuclear power plant chief Masao Yoshida, who is recuperating from esophageal cancer, suffered bleeding to the brain and underwent emergency surgery last week.

"His condition is serious, but there's no threat to his life and he's conscious," Executive Vice President Zengo Aizawa said at a press conference, while refraining from commenting further on Yoshida, who played a key role in handling the nuclear crisis at the plant last year.

Yoshida felt ill last Thursday and was taken to a hospital where he was found to be suffering bleeding to the brain, according to Aizawa. Yoshida had left the position of plant chief in December after being diagnosed with esophageal cancer.

Citing comments by doctors, another TEPCO official said it was unlikely that the bleeding was directly connected to Yoshida's esophageal cancer or radiation exposure.

During the press conference, TEPCO unveiled its updated work schedule for scrapping the crippled Nos. 1 to 4 reactors at the Fukushima plant, reflecting the ongoing preparations to remove nuclear fuel from the No. 4 unit's spent fuel pool and plans to maintain the stability of the plant.

It also maintained the timeline for completing the decommissioning process within 30 to 40 years as stated in the initially announced medium- to long-term work schedule in December.

TEPCO also said the same day that a survey of the plant's subcontractor workers showed that many were not satisfied with their working conditions in general.

A total of 62 percent of the respondents said the environment of the work site was "not good," with some expressing concern about whether their masks were safe enough from radiation exposure. A total of 69 percent, meanwhile, were unhappy about the meals.

The questionnaires were answered by 1,913 workers between May 17 and May 31, the utility said. "On the whole, there were many 'not good' assessments and there is a need for further improvement," TEPCO said in a document on the outcome of the survey.

Fukushima parents worried about their children's health

August 2, 2012

Kids' safety key worry in Fukushima

Attendees of latest public hearing on energy fear low-level radiation

By NATSUKO FUKUE Staff writer http://www.japantimes.co.jp/text/nn20120802x2.html

FUKUSHIMA — A year and half after the start of the nuclear crisis, many who attended the government's latest public hearing on energy policy in Fukushima on Wednesday still expressed concern about the impact of radiation on their children.

"I'm really terrified," said a city resident who gave only her last name, Hanazawa. "I have two daughters. I wonder if it's a good idea to let them lead a life, give birth and stay here."

According to the International Commission on Radiological Protection, 100 millisieverts of radiation exposure over a lifetime increases the chances of death by cancer by 0.5 percent.

Based on the ICRP's standard, which sets an annual limit of 20 to 100 millisieverts of radiation exposure in emergencies, the government ordered the evacuation of residents in areas where annual radiation exposure reaches 20 millisieverts a year.

But what concerns many parents in Fukushima is their children's exposure to low levels of radiation, and the lack of consensus among scientists on its effects.

A 50-year-old woman living in Koriyama, Fukushima Prefecture, told The Japan Times after the public hearing that she fears young people will be harmed by the radiation, and that discrimination against Fukushima residents will continue.

"I've tried to prepare myself mentally for the discrimination my son may face when he looks for a job or when he gets married, just because he was in Fukushima last March," said the woman, who withheld her name.

Her son left the prefecture to enter a university in Niigata Prefecture in April 2011, a month after the crisis started, but that hasn't eased her worries. "I just hope my son will stay healthy," she said in tears.

A father of two university students in the city of Fukushima and one of the 30 speakers at the hearing also expressed misgivings.

"I'm deeply concerned about whether it is OK for my children to marry and raise their kids in Fukushima," the man, who only gave his surname, Nogi, said. "Young people (in Fukushima) have to feel anxious and fearful at such joyful moments in life. Can we accept society and politics that are causing this situation? It's time for us to think seriously about this."

He urged the government to abandon nuclear energy as soon as possible so the people who live near reactors won't be put at risk.

Many Fukushima residents remain evacuees from the radiation. According to the Reconstruction Agency, as of last month there were still 100,096 evacuees inside the prefecture, while 61,548 lived elsewhere.

Residents of areas covered by the disaster relief law are eligible for free public housing for up to three years if they evacuate outside Fukushima Prefecture.

Pregnant women and children under 18 years old from 23 cities and towns designated for evacuation can receive ¥600,000. Others get ¥80,000. Meanwhile, Tokyo Electric Power Co. will pay up to ¥120,000 a month to those from an evacuation zone whose radius extends to 30 km.

But many struggle with the decision to live apart from their families due to the costs, despite the compensation.

The woman from Koriyama said she decided to stay put.

"It's not that I don't care about radiation, but we have a mortgage and send money to our son. So (my husband and I) thought it's better to save while our son is in university." It would have been different if she had a small child, she said.

Meanwhile, she said she is upset with how the government is handling the situation in Fukushima, and she continues to participate in antinuclear events.

She even went to Tokyo to join a rally in Yoyogi Park last month.

"I wanted to show that Fukushima people are angry, too, not just Tokyo residents," she said. "I felt participating in a rally is different from just typing the sentence 'I'm antinuke' on the Internet."

She said she never imagined she would participate in such demonstrations because of their past leftwing trappings. "But look at me now. I never thought I would join a rally at the age of 50."

She said her dream is that Japan will someday shift to green energy and serve as a model for other countries.

"All Fukushima people can agree right now that we don't need nuclear energy," she said.

Namie resigned to reclassification

August 3, 2012

Fukushima town set to accept reclassified evacuation zone plan

http://mainichi.jp/english/english/newsselect/news/20120803p2a00m0na006000c.html

NAMIE, Fukushima -- Namie Mayor Tamotsu Baba says his town will accept a central government plan to reclassify evacuation zones established in the aftermath of the disaster at the Fukushima No. 1 Nuclear Power Plant.

All Namie residents have evacuated from the town, which has been divided into no-go and planned evacuation zones. On Aug. 2 Baba told the Mainichi Shimbun that his town would accept the central government's plan to reclassify evacuation zones in Namie, one of 11 municipalities under evacuation orders.

Of the 11 cities, towns and villages, five including the town of Naraha, which will formally implement the reclassification plan on Aug. 10, will go along with the central government's plan. Namie's decision to agree to the reclassification may accelerate negotiations between the central government and the remaining Fukushima Prefecture municipalities.

Mayor Baba had refused to enter into negotiations with the state, saying the government of Prime Minister Yoshihiko Noda had failed to fully explain a revival plan for the 11 nuclear crisis-hit municipalities with designated evacuation zones. But the Ministry of Economy, Trade and Industry (METI) in July announced standards for claiming damages relating to real estate and other properties in accordance with the wishes of the affected municipalities. Mayor Baba welcomed the METI announcement, saying certain amounts of compensation have been disclosed. He plans to take steps to win consent for the reclassification plan from the town assembly and hold briefings for town residents.

Under the new reclassification plan, the town will be classified into three zones based on the amount of annual radiation exposure -- a hard-to-return zone, a zone with residential restrictions and a zone being prepared for the lifting of evacuation orders. The central government will formally decide on the newly redrawn zones in October.

The new standards for damage claims stipulate that claims for real estate damage in the three zones will be fully compensated if the evacuation orders last more than six years after the nuclear disaster. Town residents will be able to return home after March 2017 when the amount of damages will become equal for all residents of the town.

Children in Fukushima

August 8, 2012

http://www.beyondnuclear.org/children-health/2012/8/8/proof-enough-thyroid-abnormalities-in-children-after-fukushi.html

Proof enough: Thyroid abnormalities in children after Fukushima

Following the recent discovery that 36% of nearly 40,000 Fukushima children examined have abnormal thyroid growths, the inevitable industry apologistshave surfaced, questioning any connection between the radioactive iodine spewed out when three cores at Fukushima began melting in March 2011. But the burden of proving safety should be on those whose profit results in poisoning, not on those who are poisoned. So says the precautionary principle, which does not require *certainty* of harm to halt radiation exposure.



What is known about thyroid disease, radioactive iodine exposure and children?

Certainly radioactive iodine is a cause of thyroid irregularities, often cancer, as industry proponents admitand studies at Chernobyl illustrate. Radioactive iodine can be inhaled or ingested.

Dr. Yamashita, known as "Mr. 100 mSv" in Japan and a proponent of a 20 mSv limit for children (the same as the German nuclear worker exposure limit), conducted a study of Nagasaki, Japan children in 2001. In

this study 0-0.8 percent of children had nodules—much lower than the Fukushima children -- a population that could be similar and therefore act as a control group.

In general, children are more susceptible to radiation exposure.

Studies show that thyroid abnormalities have not appeared this quickly in past radioactive iodine exposures, but that does not mean it can't happen.

What are the difficulties in assessing exposure to radioactive iodine?

The Tokonami study recently estimated doses from Fukushima radioactive iodine in part by using measured levels of radioactivity in the thyroid of 62 people. Tokonami claims that the median estimated dose is 4.2 millisieverts and futher, claims that most of the dose came from inhalation, not ingestion. However, this study also claims that the doses from Chernobyl were much higher. The results of this study are incomplete for several reasons and should not be used to inform the data on thyroid abnormalities in children.

Although it is tempting to compare iodine exposures from one circumstance to another, exposure scenarios can be very different. Health effects should be examined on their own merit, beginning with the diagnosis of an abnormality, since variations in exposure and individual susceptibilities can make reliance on previous exposure scenarios misleading.

Starting a health study like Tokonami with an assumed dose (which is an estimation), instead of an examination of health impacts (which are real), is unwarranted because of the uncertainty in dose estimation. The 36% of thyroid abnormalities in children do exist and had to come from somewhere (quickly). Even if dose estimates are thought too low to cause them, there still has to be an explanation. At Fukushima the official position was that milk consumption was restricted in the days following the accident but not after Chernobyl -- this means that people in Japan got less iodine dose. But it is less clear that those in the Fukushima area did not eat iodine rich foods like seaweed and shellfish that could result in greater exposures.

At Chernobyl, many kinds of radioactive iodine were examined whereas at Fukushima, doses from iodine 131 are the main focus so far since assessing dose for other iodines would be time-consuming. Since there is a good chance that the population was exposed to other radioactive iodines, exposure levels could be higher than measured or estimated.

The population of Japan has a diet high in iodine while that of former Soviet states exposed to Chernobyl radiation is iodine deficient. This was thought to have conferred a protective effect on Japan's population, but the Fukushima children data casts doubt on this.

In general, studies from Chernobyl seem to account for all damage from iodine 131 (including the beta radiation, not just gamma) while it is unclear that the Fukushima assessment has accounted for beta damage. Since most of the dose to the thyroid from internal iodine contamination comes from beta, leaving it out would underestimate doses to Japanese children.

Clarifying methodologies and making them public is one way to address the public concern over exposure to radioactivity. Determining exposure is a complex process based a great deal on assumptions and estimates. Current lack of clarity, on beta dose from iodine, on assumptions made, methodologies used and the reasons why, only adds to the confusion and mistrust. To state that the radioactive iodine doses at Fukushima were many times lower than those at Chernobyl is completely unwarranted at this point given the uncertainties outlined above. The study would have been more valid if this comparison had been left out.

The Take-Away Points

It is reasonable to conclude, in the face of the evidence and even considering all of the uncertainties, that children could have an increase in thyroid abnormalities like cysts and nodules, due to radioactive iodine exposure from Fukushima.

While radiation is not known for certain to be the cause in all cases, according to the precautionary approach this link doesn't have to be absolutely proven for reasonable people to act to stop exposure or to blame radiation.

And, if the thyroid abnormalities were NOT caused by radioactive iodine, then WHAT was the cause of the abnormalities? Radiation cannot be absolved without a viable alternative cause presented. Again, The 36% of thyroid abnormalities in children do exist and had to come from somewhere.

Radiation effects for second generation hibakusha

Hereditary effects of radiation to be studied

http://www3.nhk.or.jp/daily/english/20120808_23.html

Children born to South Korean survivors of the 1945 atomic bombings of Hiroshima and Nagasaki will take part in a new study. It will investigate whether their illnesses are linked to their parents' exposure to radiation.

The research will involve analysis of blood samples from atomic bomb survivors, or hibakusha, and their children to determine whether the effects of exposure are passed between generations.

There are more than 2,600 atomic bombing survivors and about 10,000 second-generation hibakusha in South Korea. About 2,300 second-generation hibakusha suffer from diseases such as leukemia and

arthritis. Many of them believe their diseases were triggered by their parents' exposure to radiation.

A group of second-generation hibakusha patients will organize the study with the cooperation of a team led by Taisei Nomura, Professor Emeritus of radiology at Osaka University.

The group's leader Han Jong-sun says he hopes the study will help make him and other secondgeneration hibakusha eligible for support from the South Korean government as soon as possible.

The offspring of atomic bomb survivors in Japan receive health checkups on a regular basis, but those in South Korea are not subject to the same benefits from their federal government. In December, the province of South Gyeongsang became the first local government in South Korea to pass an ordinance providing support for second- and third-generation descendants.

Professor Emeritus Nomura says the hereditary effects of radiation exposure have already been proven in animal experiments. He says he will work with South Korea to lead to more understanding.

Experts at the Japan-US organization Radiation Effects Research Foundation in Hiroshima say the genetic impact of the 1945 atomic bombings has not yet been determined.

Butterflies damages by radiation from Fukushima

August 12, 2012

Radioactive fallout from Fukushima nuclear meltdowns caused abnormalities in Japan's butterflies

Jiji http://www.japantimes.co.jp/text/nn20120812a2.html

Radioactive fallout from the nuclear disaster in Fukushima Prefecture created abnormalities among the nation's butterflies, according to a team of researchers.

"We conclude that artificial radionuclides from the Fukushima (No. 1) nuclear power plant caused physiological and genetic damage" to pale grass blue butterflies, a common species in Japan, a recent article in Scientific Reports, one of on-line journals of the Nature Publishing Group, said.

Radiation exposure harmed butterflies' genes, and the damage could well be passed on to future generations, the article stated.

"Sensitivity (to irradiation) varies between species, so research should be conducted on other animals," said Joji Otaki, a team member and associate professor at the University of the Ryukyus in Okinawa.

"Humans are totally different from butterflies and they should be far more resistant" to the health effects of radiation, Otaki noted.

The researchers collected 121 adult pale grass blue butterflies in and outside Fukushima Prefecture in May 2011, two months after the nuclear crisis started.

Abnormalities such as unusually small wings were found in 12 percent of the total. But the rate rose to 18 percent in a second generation produced through mating among the butterflies collected and some even died before reaching adulthood.

When second generation butterflies with abnormal traits mated with healthy ones, the rate of abnormalities rose to 34 percent in the third generation, according to the article.

The team collected another 238 butterflies last September and determined that the abnormality rate stood at 28 percent. However, it nearly doubled to 52 percent among a second generation born to the original butterflies caught.

The researchers said the butterflies collected in May were heavily exposed to radiation as larvae. The impact was apparently more severe on the second generation, as well as on the butterflies collected in September, because they suffered heavy exposure at a far earlier stage while they were still fertilized eggs or just reproduction cells, according to the team.

The impact of artificial radiation exposure on the species was also investigated using larvae collected in Okinawa, one of the prefectures least affected by fallout from the nuclear disaster.

After the larvae were exposed to radiation and fed with leaves contaminated with radioactive materials, similar rates of abnormalities and premature deaths were observed, the article said.

Blame the workers

August 14, 2012

TEPCO to take steps to prevent Fukushima plant workers from falsifying radiation readings

http://mainichi.jp/english/english/newsselect/news/20120814p2a00m0na004000c.html

Tokyo Electric Power Co. (TEPCO) submitted to the government's Nuclear and Industrial Safety Agency (NISA) a set of measures on Aug. 13 to prevent workers at the crippled Fukushima No. 1 Nuclear Power Plant from playing foul and falsifying radiation readings.

The utility had been ordered by NISA to come up with preventative measures following shocking revelations that several workers had placed lead covers over their alarm pocket dosimeters (APDs) to mask radiation exposure levels while engaging in restoration work at the Fukushima nuclear power station. Under the measures, the utility will conduct surprise inspections to see whether workers are wearing dosimeters the way they are supposed to. TEPCO, meanwhile, produced lead covers experimentally -- similar to the ones several workers had used to try to hide radiation exposure at the nuclear power plant -- and estimated that they were effective in masking radiation readings by about 30 percent.

Under the preventative measures, in October TEPCO will replace its protective gear for nuclear plant workers with new ones that are see-through around the chest area, where dosimeters are worn. Employees of TEPCO and its principal contractors will also conduct surprise inspections to see whether workers are actually wearing dosimeters.

Furthermore, with respect to those workers who are exposed to 5 millisieverts or more of radiation per month, TEPCO will conduct separate inspections if the levels of their monthly radiation exposure measured by the alarm pocket dosimeter are 20 percent lower than the levels measured by a different type of personal dosimeter used simultaneously, or the levels are less than half the average levels for a group of workers engaged in the same tasks.

Fukushima monkeys come in useful

August 16, 2012

Wild monkeys to be used for measuring forest radiation levels

http://mainichi.jp/english/english/newsselect/news/20120816p2a00m0na011000c.html

A professor is planning to attach radiation measuring devices to wild monkeys to create radiation maps of forests contaminated by the Fukushima No. 1 Nuclear Power Plant disaster.

"Investigating the contamination of forests is difficult ... For the sake of a detailed investigation, we'll have wild monkeys help us out," said Fukushima University professor Takayuki Takahashi, who is planning the project. The radioactive contamination levels of the forests that cover around 70 percent of Fukushima Prefecture are still not clear.

The investigation will be carried out together with a wildlife protection center. Wild monkeys in highly contaminated areas like litate or Namie will be captured, have devices to measure radiation with GPS functionality attached to their necks, and then be released back into the wild. After about a month of recording air radiation levels, the devices will be remotely detached and their data collected.

According to Takahashi, wild monkeys move in groups and live in territories covering around four hectares. Starting with one monkey, Takahashi hopes to then expand to use more of the animals and increase the size of the area covered.

In October last year, a test was done using a measuring device on a wild monkey in the city of Fukushima, but after the apparatus was recovered a problem with it prevented data from being accessed. Currently, Takahashi is working on improving the measuring devices with an aim to resuming tests in the fall.

"The Ministry of Education, Culture, Sports, Science and Technology is conducting radiation monitoring with aircraft, but it is not getting detailed radiation amounts, so an early investigation is necessary. If all goes well with the monkeys, I would also like to use wild boars or dogs," said Takahashi.

All's well in Fukushima...

August 16, 2012

Cesium in those near No. 1 rated low, now

http://www.japantimes.co.jp/text/nn20120816a6.html

The Washington Post

WASHINGTON — Researchers have found very low amounts of radioactivity in the bodies of about 10,000 people who were living near the Fukushima No. 1 power plant when three of its reactors melted down.

The first published study that measured the radiation within a large number of residents reassured health experts because the numbers reported imply only negligible health risks. The threat appeared to be considerably lower than in the aftermath of the Chernobyl disaster, the experts agreed.

"Exposure levels were much lower than those reported in studies even several years after the Chernobyl incident," said Masaharu Tsubokura of the University of Toyko, lead author of a short paper published in the Thursday issue of the Journal of the American Medical Association.

The study measured radiation in 8,066 adults and 1,432 children in Minamisoma, about 20 km north of the nuclear plant. Researchers found an average radiation dose of well less than 1 millisievert, which is considered a safe amount.

The residents stood in a full-body radiation counter for two minutes, which allowed the scientists to measure the presence of radioactive cesium isotopes. Those isotopes, which can be taken in from the air or through eating contaminated food, are generally considered to be among the ones posing the greatest health risk from the crisis. The measurements were taken between last September and March.

Roy Shore, chief of research at the Radiation Effects Research Foundation in Hiroshima, said in an interview that the measured doses constitute a very low health risk.

"Out of 10,000 people with a dose of 1 millisievert, the radiation would cause two to get cancer during their lifetimes, but about 3,500 would get cancer also without any radiation," he said. "The jury is still out, but I expect the public health impact from radiation to turn out to be considerably lower than that of Chernobyl."

But he said radiation is not the only health risk after the accident. "The psychological impact has been very great and has caused a lot of anxiety," he said.

Although the study results appear to be reassuring, they are considered preliminary and come with a number of caveats.

The measurements of radiation were not initiated as a scientific study, for instance, but rather meant as health checkups for volunteers from the local population. Therefore, there may be a selection bias in the results, although it is not known whether it would lead to an overestimation or underestimation of the measured doses.

"We would expect that people most concerned and therefore with a higher chance of exposure would seek out the screening, yet we cannot know for sure," said Stuart Gilmour, coauthor of the study at the University of Tokyo.

Kiyohiko Mabuchi, head of the Chernobyl Research Unit at the U.S. National Cancer Institute, said that only internal radiation from one source — cesium — was measured. Therefore, the study does not address external radiation from contaminated areas, which can be harmful, too.

"External exposure could be as much as or more than our measured internal exposure," Gilmour said, "but it is difficult to quantify because it can greatly vary even in small areas."

Radioactive iodine, which was not measured by the new study, has been identified as the likely cause of some of the most serious health effects of the 1986 Chernobyl accident by causing thyroid cancer. Radioactive iodine was taken up primarily by children who drank contaminated milk.

Although cesium isotopes have half-lives of years, radioactive iodine isotopes can be measured for only a short time. As a result, the threat from iodine may not be known for years.

David Weinstock of Harvard University, while aware of the shortcomings of the report, agrees with the authors' conclusions. He calls the measured doses an "approximately zero risk." He attributes the results to the public health response in Japan.

"In Chernobyl, there was no response in the beginning and people were left to consume contaminated food, while in Fukushima the response has been to evacuate and to stop food consumption from contaminated areas, and it seems to have been validated," he said

Dangerous vegetables

August 22, 2012

2 Fukushima men suffer internal radiation exposure from homegrown vegetables http://mainichi.jp/english/english/newsselect/news/20120822p2a00m0na008000c.html Two Fukushima Prefecture men in their 70s suffered a relatively high level of internal radiation exposure by consuming homegrown vegetables contaminated with radioactive cesium, a survey by the University of Tokyo's Institute of Medical Science has found.

The level of radioactivity in one of the men was close to 20,000 becquerels. Researchers said this would result in an annual radiation dose of about 0.85 millisieverts -- under the government's yearly limit for radiation exposure from food of 1 millisievert per year.

Doctor Masaharu Tsubokura, who tested the men, commented, "This is not a level that would affect their health, but when people consume homegrown vegetables and other such products we would like them to undergo tests.

The men live in the town of Kawamata and the city of Nihonmatsu, respectively. Whole body counters were used to measure their internal exposure to cesium 134 and cesium 137 between July and August. The man from Kawamata had a level of radioactivity of 19,507 becquerels, while his wife had a reading of 7,724 becquerels. The man from Nihonmatsu, meanwhile, registered radioactivity of 11,191 becquerels and his wife had a level of 6,771 becquerels of radioactivity. Both couples were believed to have been exposed to radioactive cesium released during the disaster at the Fukushima No. 1 Nuclear Power Plant.

Every day, the couple in Kawamata had eaten homegrown shiitake mushrooms grown on wood from the Fukushima Prefecture town of Namie, as well as bamboo shoots from near their homes, and dried persimmon. Radioactivity of over 140,000 becquerels was found in the mushrooms. The couple from Nihonmatsu reportedly consumed vegetables given to them by the other couple.

But it was not radiation

August 23, 2012

Worker dies after collapsing at Fukushima nuke plant

http://mainichi.jp/english/english/newsselect/news/20120823p2a00m0na007000c.html

A 57-year-old worker died after collapsing at the disaster-crippled Fukushima No. 1 Nuclear Power Plant on Aug. 22, police have announced.

The incident marks the latest in a series of deaths of workers trying to bring the plant under control following the outbreak of the nuclear disaster in March 2011. Plant operator Tokyo Electric Power Co. (TEPCO) says it is aware of four such workers having died in the past.

According to TEPCO, the man was found collapsed at the plant at around 10:35 a.m. on Aug. 22 and was rushed to a hospital in the Fukushima Prefecture city of Iwaki after suffering cardio-respiratory arrest. The man died that afternoon, Fukushima Prefectural Police said.

"It is not known why he collapsed, but it was not because of the effects of radiation, judging from his exposure dosage," TEPCO said.

The man was engaged in work to build additional storage tanks to hold water contaminated with radiation along with five other workers at the plant from shortly past 9 a.m. on Aug. 22. He was wearing a full-face mask and protective gear, according to TEPCO.

At around 9:50 a.m., he was taking a break in a room as part of measures to prevent heatstroke, but he complained of feeling ill shortly afterwards. At around 10:35 a.m., a fellow worker found him unconscious.

The deceased worker had worked at the Fukushima No. 1 nuclear plant since August last year. He had taken a week-long holiday before returning to work on Aug. 22, the day he collapsed and died. His radiation exposure readings that day were 0.03 millisieverts, while his accumulated exposure dosage was 25.24 millisieverts.

Lost dosimeters

August 25, 2012

Lax use of dosimeters

http://www.japantimes.co.jp/text/nn20120825a7.html

[second part of the Japan Times article]

Jiji

Tokyo Electric Power Co. says workers at the Fukushima No. 1 nuclear plant have lost 20 dosimeters since June 2011, while eight others were found not to be attached to work suits.

Workers at the plant, crippled by the natural disasters in March 2011, must carry dosimeters attached to their work clothes under rules set by the health ministry.

"At the time, we thought there was no problem, but clearly there was insufficient supervision," Tepco said Thursday after it learned of the misplaced dosimeters.

According to the company, the workers who lost dosimeters were hired by contractors and subcontractors. Only three of the devices have been recovered.

Little guinea-pigs

August 28, 2012 Non-Fukushima children to be checked for thyroid abnormalities http://www.japantimes.co.jp/text/nn20120828a5.html

Kyodo

The government will check the thyroid glands of 4,500 children in three distant places in Japan to determine whether the 36 percent of Fukushima children so far found to have thyroid growths are victims of the nuclear disaster, officials said Monday.

The ultrasonic thyroid exams will be conducted on people 18 or younger who live outside Fukushima Prefecture through next March, they said.

"It is not unusual for benign thyroid lumps to be found in healthy people, but Japan lacks epidemiological data on this," a member of the Cabinet Office's medical support team for nuclear victims said. "The exams will be conducted as far away from the Fukushima No. 1 nuclear plant as possible, where the radiation has no influence."

Given that thyroid cancer in children surged several years after the 1986 Chernobyl nuclear disaster, about 360,000 children in Fukushima Prefecture are now subject to the medical exams.

Of the 38,114 children who had been examined as of March this year, 13,646 — or about 36 percent — were found to have lumps or other thyroid irregularities, the prefectural government said.

IPPNW urges Gov't to take action on radiation

August 31,2012

Doctor group urges radiation action

Kyodo http://www.japantimes.co.jp/text/nn20120831a6.html

A globally renowned antinuclear group has implored the government to take urgent and comprehensive steps to limit annual radiation exposure from the Fukushima nuclear crisis to less than 1 millisievert.

The International Physicians for the Prevention of Nuclear War, which won the Nobel Peace Prize in 1985, will officially submit a set of recommendations to the government in the near future.

The IPPNW's proposals will state that residents in areas contaminated with fallout from the crippled Fukushima No. 1 plant should be allowed full access to data about radiation levels, and that a system be set up to register all those who may have been exposed to annual radiation of 1 millisievert or more.

Victims of the nuclear disaster also should receive greater assistance to minimize their radiation exposure, and the government should provide them with health, housing, employment and educational assistance — as well as compensation — in a fair and consistent manner if they choose to relocate from irradiated areas, the IPPNW will stress.

Also, given the susceptibility of children to longterm radiation, "It's certainly appropriate that priority be given to them and also to pregnant women," Tilman Ruff, a representative for the group, told a news conference in Tokyo.

Ruff also accused government agencies and senior officials alike of propagating information amid the crisis that did not reflect international opinions, as well as the notion that annual exposure below 100 millisieverts poses no immediate health threat.

The proposals also express fears about the workers engaged in cleanup efforts at the Fukushima No. 1 nuclear plant and those who will participate in decommissioning its reactors — a process expected to take decades.

Effects of radiation on genes of Fukushima people

August 31,2012

Government to study genetic effects of radiation

http://www3.nhk.or.jp/daily/english/20120831_14.html

The Japanese government plans to study the possible effects of radiation on genes of people affected by the Fukushima nuclear accident. It will begin the tests in the next fiscal year.

Environment minister Goshi Hosono revealed the plan at a meeting in Fukushima City on Thursday.

Fukushima residents have been voicing concerns over possible genetic effects of radioactive substances emitted in the nuclear accident at the Fukushima Daiichi nuclear power plant in March last year.

The ministry plans to conduct blood and other tests. The ministry says it will work with the Fukushima Medical University and research institutions. The first priority will be testing children.

Hosono said after the meeting that the health of Fukushima residents needs to be monitored for more than 50 years. He said understanding radiation influences on the genetic level could help these people in the future.

The ministry plans to request funding to carry out the study in its budget for the next fiscal year.

Study of genetic damage not so obvious

September 1, 2012

Environment ministry to check Fukushima residents' DNA for radiation damage

http://mainichi.jp/english/english/newsselect/news/20120901p2a00m0na013000c.html

The Ministry of the Environment has revealed a plan to examine the genomes of volunteers in Fukushima Prefecture next fiscal year to look for radiation damage stemming from the ongoing nuclear crisis there.

According to the environment ministry, it will work with Fukushima Medical University to collect DNA samples from volunteers and hunt for abnormalities in their genes. The cost is expected to be in the hundreds of millions of yen.

Radiation damages genes and can bring about cancer and other ailments. The ministry says that there were repeated requests to do a gene study from pregnant mothers and others participating in a national long-term study on the effects of chemical substances and radiation on children's health.

However, professor Yusuke Nakamura of the University of Chicago, a leader in the field of genomic studies, calls the plan "baseless," saying that because people's gene sequences slightly differ anyway and errors in the testing equipment could occur, even if abnormalities in DNA sequences were found they might not be related to ailments or caused by radiation.

Satoru Miyano of the University of Tokyo, who specializes in genetic analysis, warned, "Analysis results that might not in fact have any connection to radiation could be associated with the Fukushima nuclear disaster, hurting the people of Fukushima Prefecture and leading to discrimination and prejudice."

The ministry has said that it plans to sound out experts when it starts setting up the plan's specifics.

Shocking facts about dosimeters again

40% of workers had no dosimeter at nuke plant soon after disaster

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201209040060

September 04, 2012

THE ASAHI SHIMBUN

A construction company employee in Fukushima Prefecture found that his white blood cell count had spiked a year after he worked at the Fukushima No. 1 nuclear power plant without a dosimeter, following the disaster that crippled the plant.

The man, in his 30s, is concerned whether his exposure to radiation on the day he worked will be recognized as the cause if he develops cancer. Dose records are necessary for applying for workers' compensation benefits, and he believes the reading he was told to record was lower than the actual level.

His exposure occurred on March 16, 2011, less than a week after Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant was devastated by the Great East Japan Earthquake and tsunami.

TEPCO records show 7,766 people worked at the Fukushima No. 1 plant between March 15 and March 31, 2011, and 3,077, or about 40 percent, did not have a dosimeter.

The actual number of workers is estimated to be in the hundreds because the same individuals were counted more than once if they worked on different occasions.

During the 17-day period, only the representative of a working group wore a dosimeter, and all members of the working group entered the reading of the representative's dosimeter into their records as their own.

It was an emergency measure because most of the 5,000 dosimeters at the plant were washed away by the tsunami.

Some workers told The Asahi Shimbun that their representatives stayed at least 10 meters from their nearest approach.

In the case of the man with the elevated white blood cell count, he and two other workers carried diesel oil and filled power generators beside a reactor building. They were all from subcontractors, and none had a dosimeter.

Their supervisor from TEPCO's primary contractor, who was wearing a dosimeter, stayed inside a vehicle during what appeared to be a 10-minute assignment.

Back in a building, the supervisor said, "The dose was 1 millisievert per 30 minutes. It was the same for all four of us."

The man, although uncertain of the exact dosage he was exposed to, entered "2 millisieverts per hour" into his record. He thought he would lose his job if he protested to someone from the primary contractor.

DIFFICULTY IN GETTING WORKERS' COMP

Two weeks later, TEPCO had all workers wear a dosimeter from April 1, 2011, at the direction of the health ministry. Workers receive dosimeters, called an APD, at the beginning of the day and return them at the conclusion of the day's work.

Workers at nuclear power plants enter daily radiation exposure data into dose record books, which are critical evidence when they apply for workers' compensation or file lawsuits seeking damages.

Without the correct dosage data, workers may not be able to receive sufficient compensation or relief measures.

Dose record books were issued to 430,000 workers by the end of March 2011. Radiation exposure data for all workers is kept at the central registration center of the Radiation Effects Association.

According to health ministry standards, people who developed leukemia are eligible for workers' compensation if they worked at a nuclear power plant for more than a year and their annual radiation exposure was 5 millisieverts or more.

The ministry plans to establish guidelines for colon, stomach and esophagus cancer.

Eligible patients can receive free medical treatment and get compensation for absences from work.

In lawsuits, plaintiffs have to present records of their radiation exposure data at a nuclear power plant.

A health ministry official said dosage data will be "appropriately estimated" based on records for nearby workers and air dose readings if people who worked at the Fukushima No. 1 plant during the 17-day period apply for workers' compensation.

Still, accurate estimates will become harder to come by, with the passing years.

TEPCO informed the health ministry of the emergency measure to deal with a shortage of dosimeters on March 31, 2011. The health ministry called for immediate improvements, fearing individual workers' dose data may not be correctly recorded.

Electric utilities and subcontractors are required to monitor workers' dose data to keep it under legal limits of 50 millisieverts per year and 100 millisieverts for five years.

TEPCO justified the emergency response.

"We were able to fully monitor workers' radiation exposure from the representatives' dosimeters," an official said.

TEPCO also said the practice does not violate the Industrial Safety and Health Law. **Under rules based on** the law, the official said, it is allowed to "calculate" dose data when monitoring with a measuring instrument is extremely difficult.

But the health ministry disagreed and recommended corrective action be taken on May 30, 2011. **It said TEPCO could have had all workers wear dosimeters much earlier.**

By the end of July, 23,000 people had worked at the Fukushima No. 1 nuclear plant since the Great East Japan Earthquake.

In one instance, a director of a TEPCO subcontractor ordered workers to shield their dosimeters with lead plates to keep dose readings low. In another troubling revelation, some workers left their dosimeters in vehicles.

The latest case could further erode the reliability of dosage data recorded for nuclear plant workers.

(This article was compiled from reports by Miki Aoki and Jun Sato.)

THE ASAHI SHIMBUN

See previous story :

8 workers wore no dosimeter at Fukushima nuke plant

http://ajw.asahi.com/article/0311disaster/life_and_death/AJ201208240051

August 24, 2012 THE ASAHI SHIMBUN

Eight employees at the stricken Fukushima No. 1 nuclear power plant have worked without wearing personal dosimeters since June 2011, while 20 have lost their dose measurement devices, Tokyo Electric Power Co. said Aug. 23.

TEPCO apologized for the sloppy enforcement of radiation control and its failure to take appropriate measures to prevent a recurrence of such incidents. The plant operator also acknowledged its "slow response" in reporting the oversights to authorities.

The Asahi Shimbun revealed in July that some subcontractor workers were ordered to cover their dosimeters with lead plates at the Fukushima plant in December to keep radiation dose readings low. Those findings were followed by revelations that three employees worked without dosimeters and one dosimeter was lost at the Fukushima No. 1 nuclear plant.

Those developments prompted TEPCO to review dosimeter lending records as far back as June last year.

Two of the eight workers who wore no dosimeters on the ground were TEPCO employees and six were subcontractor employees. TEPCO said six of them forgot to borrow a dosimeter, one of them decided on his own that he didn't need to wear one, and the remaining worker could not get a dosimeter due to mismanagement in the lending process.

All 20 dosimeter losses were by subcontractor employees. Many of the losses occurred during work or while the workers were changing their clothes, TEPCO said.

Three of the lost dosimeters were later recovered, but the rest are still missing, and some details of the incidents remain unclear.

Losing a dosimeter or working without one means correct dose records are unavailable, presenting a serious problem in terms of safety control.

Officials on the grounds of the Fukushima plant were aware of the problems as soon as they arose, but TEPCO's head office in Tokyo failed to notify the Ministry of Health, Labor and Welfare and the Nuclear and Industrial Safety Agency accordingly.

Junichi Matsumoto, acting general director of TEPCO's Nuclear Power and Plant Siting Division, said the utility notified the government authorities of all those cases only on Aug. 23.

"We have taken it seriously that personal doses were not measured properly," Matsumoto told a news conference on Aug. 23. "In retrospect, we were slow to respond."

The health and labor ministry plans to take a tough stance in investigating the matter.

"These are cases where we should have been notified immediately," one ministry official said. "And the cases are so numerous. TEPCO's delayed response is problematic."

"We were notified only today," a NISA official said. "We will review TEPCO's response."

THE ASAHI SHIMBUN

No dosimeters for 3,000

http://www.japantimes.co.jp/text/nn20120904x2.html

Tuesday, Sep. 4, 2012

No dosimeters for 3,000 JIJI

More than 3,000 people may have worked at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant without carrying dosimeters in the early days of the crisis, a health ministry source said Tuesday.

For 17 days starting March 15, 2011, after the crisis started four days earlier, there is no record of dosimeters having been given to 3,077 workers at the plant, out of the 7,766 who worked there during that period, the source said.

As an emergency step, only leaders of work teams carried dosimeters on their clothes, the source said.

"The health ministry issued an order on March 31, 2011, to correct the situation," health minister Yoko Komiyama said.

"We have confirmed that all workers have been carrying dosimeters (since then)," she said, adding that her ministry is taking measures that included checking on the workers' internal radiation exposure and providing them with consultations.

If workers apply in the future for government recognition of health problems attributable to their work at the plant, the ministry will make a "proper judgment" by considering their engagement in the crisis-response work without dosimeters, Komiyama said.

Too early for cancer

September 12, 2012

1 case of thyroid cancer found following Fukushima nuclear crisis

http://mainichi.jp/english/english/newsselect/news/20120912p2g00m0dm025000c.html

FUKUSHIMA, Japan (Kyodo) -- A Fukushima prefectural government panel on the health impact from last year's nuclear crisis at the Fukushima Daiichi power plant said Tuesday that one young person has been found to be suffering from thyroid cancer.

The finding was reported at a meeting of the eight-member panel that organized thyroid gland screening for 360,000 residents aged 18 years or younger as of March 11, 2011, when the earthquake and tsunami crippled the power plant.

Of the total, the results of medical checks on 80,000 have been made available.

Shinichi Suzuki, professor at Fukushima Medical University and an observer on the panel, said at the meeting that there was no confirmed link between the case and radiation released during the nuclear crisis.

"Even in the case of Chernobyl, it took at least four years" before residents developed thyroid cancer symptoms, Suzuki said.

"In the Fukushima disaster, neither external exposure to radiation similar to that in Hiroshima and Nagasaki nor internal radiation exposure similar to that in the Chernobyl disaster occurred," he said.
Radioactive iodine released in nuclear accidents can accumulate in thyroid glands as a result of breathing or ingestion.

In the 1986 Chernobyl nuclear disaster, a dramatic increase in thyroid cancer was detected among children in the affected area.

New standards for radiation-linked cancer

September 29, 2012

More standards for recognizing nuke workers' cancers released

http://mainichi.jp/english/english/newsselect/news/20120929p2a00m0na012000c.html

The Ministry of Health, Labor and Welfare (MHLW) on Sept. 28 released standards on compensation for nuclear workers afflicted with stomach, esophagus, and colon cancer caused by radiation exposure.

To qualify, **workers must have been exposed to at least 100 millisieverts of radiation in total, with five years having passed since they began engaging in nuclear work -**- conditions that would indicate a strong relationship between nuclear work and the three types of cancer. Different standards exist for other cancers such as leukemia.

According to Tokyo Electric Power Co., as of the end of August, 167 workers involved with recovery work at the Fukushima No. 1 Nuclear Power Plant had been exposed to over 100 millisieverts of radiation.

In December 2009 and February 2011, before the Fukushima disaster, there were two applications from nuclear plant workers seeking recognition of stomach, esophagus, and colon cancer as work-related illnesses. Based on past records, a MHLW panel investigated the issue and put together a report stating that recognition of raised risk for these three types of cancer started within the range of 100 and 200 millisieverts, with the minimum latent period of related cancers ranging between roughly five and 10 years. The newly announced standards are based on this report.

The MHLW has not disclosed whether it approved the two compensation applications.

Since 1976, 11 nuclear plant workers have been recognized as being victims of work-related radiation illnesses. Six had leukemia, two had multiple myeloma, and three had malignant lymphomas -- illnesses with separate recognition standards. For leukemia workers must have been exposed to at least 5

millisieverts for radiation for a year. The corresponding levels for multiple myeloma and malignant lymphomas are 50 millisieverts and 25 millisieverts, respectively.

Based on observational studies of survivors of the Hiroshima and Nagasaki bomb blasts, the International Commission on Radiological Protection (ICRP) says that the risk of developing cancers, excluding blood cancers like leukemia, increases linearly upward from a combined dosage of 100 millisieverts. They say the risk of dying from cancer at 100 millisieverts is 0.5 percent higher than normal. The effects of less than 100 millisieverts are unknown, but the ICRP recommends keeping radiation exposure as low as possible.

Furthermore, heavy radiation exposure over a short time leads to symptoms like losing hair and bleeding, and can cause death as well. Two plant workers died after being exposed to 6 to 20 sieverts at the nuclear accident in Tokai, Ibaraki Prefecture in 1999.

All necessay health measures should be taken in Fukushima, says UN

November 3, 2012

U.N. urges health measures amid N-crisis

http://www.yomiuri.co.jp/dy/national/T121103002031.htm

GENEVA (Jiji Press)--In its recommendations compiled Friday, a working group of the U.N. Human Rights Council urged Japan to take protective measures against possible negative health effects of radiation from Japan's worst-ever nuclear crisis.

It was the first such call made in the recommendations of member states regarding the nation's human rights policy.

Regarding the March 2011 crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, Austria said Japan should "take all necessary measures to protect the right to health and life of residents living in the area of Fukushima from radioactive hazards."

Fukushima screens its children

November 5, 2012

Briefing on Fukushima children's thyroid screening exposes residents' dissatisfaction

http://mainichi.jp/english/english/newsselect/news/20121105p2a00m0na017000c.html

KORIYAMA, Fukushima -- A briefing session on thyroid tests conducted on children in the prefecture 18 years and younger following the outbreak of the nuclear disaster at the Fukushima No. 1 Nuclear Power Plant was held for prefectural residents on Nov. 4.

The screenings began in October 2011, and the first round for 115,000 children -- or about one-third of the total -- has thus far been completed. Residents, however, had criticized the process as lacking in sufficient explanation.

At the briefing, participants voiced dissatisfaction over having to put in requests for thyroid images to receive them. In response, Fukushima Medical University professor Shinichi Suzuki, who leads the thyroid screenings, said, "We will consider releasing the images (without requiring requests)."

Around 70 Fukushima residents attended the session, during which Suzuki emphasized that it was highly unlikely that thyroid cancer rates would rise at this point, and that the results for children in Fukushima Prefecture were not out of the ordinary. He also sought understanding from residents, saying that epidemiological studies on thyroid tumors in children had never before been conducted in Japan.

Some participants expressed concern that the next round of tests for children who were given a grade of A2 (having cysts 20 millimeters or smaller), comprising the second largest group of children at around 35 percent after the 65 percent who were graded A1 (having no cysts), would not be for another two years.

The briefing session ran one hour over its planned two-hour limit. Similar sessions will take place in the prefectural capital of Fukushima on Nov. 10, and Minamisoma on Nov. 18, as well as other cities around the prefecture.

What standards for iodine tablets?

November 7, 2012

Expert panel to discuss iodine tablet criteria

http://www.yomiuri.co.jp/dy/national/T121106003395.htm

The Yomiuri Shimbun

The Nuclear Regulation Authority plans to soon establish an expert panel to discuss the criteria for taking iodine tablets to prevent internal radiation exposure in the event of a nuclear accident, The Yomiuri Shimbun has learned.

Kayoko Nakamura, 62, an NRA commissioner in charge of disaster management measures, revealed the plan to The Yomiuri Shimbun on Monday. Nakamura also said she would like to establish domestic criteria on what level of radiation would necessitate resident evacuations.

The NRA decided on new nuclear disaster management guidelines on Oct. 31. Under the guidelines, key areas for disaster-preparedness measures were designated as those within a 30-kilometer radius of a nuclear power plant. The guidelines also stipulated that stable iodine tablets should be properly administered in the zone when an order to evacuate or remain indoors is issued.

Although it was determined that the NRA would decide when the tablets should be administered, the details of when people should be told to take the pills and by whom have yet to be resolved.

As a result, local municipalities near nuclear power plants are complaining that they are having difficulties drawing up their own regional disaster prevention plans--which the agency has requested they complete by March 2013--without knowing the standards for administering the tablets.

Members of the panel will be chosen from experts from the private sector who are knowledgeable about the effects of stable iodine tablets, such as radiologists. Because the pill is designated as a powerful medicine, issues such as how to manage it and accountability for **side effects** need to be addressed.

"If we deliberate on the details of administering [the pills] without an airtight plan, it could cause a panic like the one that occurred in Fukushima Prefecture. We will work out specifics, including which people will be asked to take the pills," Nakamura said.

Impact of low-level radiation "not negligible"

November 9, 2012

Exposure to low-level radiation can cause leukemia, U.S.-Ukraine study of Chernobyl cleanup workers finds

http://www.japantimes.co.jp/text/nn20121109a5.html

Kyodo

WASHINGTON — Protracted exposure to low-level radiation is associated with a significant increase in the risk of leukemia, according to a long-term study published Thursday in a U.S. research journal.

The study released in the monthly Environmental Health Perspectives was based on a 20-year survey of around 110,000 workers who engaged in cleanup work related to the Chernobyl nuclear plant disaster in 1986.

Scientists from the University of California, San Francisco, the U.S. National Cancer Institute and the National Research Center for Radiation Medicine in Ukraine were among those who participated in the research.

The scientists conducted a followup health survey covering 110,645 cleanup workers through 2006. Of the workers, 137 contracted leukemia, including 79 chronic cases.

Of those surveyed, 87 percent had been exposed to cumulative radiation doses of below 200 millisieverts and 78 percent to below 100 millisieverts, indicating the impact on health of low-level exposure is not negligible.

After statistically excluding genetic and other factors that could cause leukemia, the study estimated that approximately 16 percent of all the leukemia cases confirmed during the 20-year followup study were attributable to radiation exposure from the Chernobyl disaster.

The finding was statistically consistent with estimates for Japanese atomic bomb survivors, the research team said.

The team said its finding is also useful in assessing the effects of exposure to radiation from medical equipment.

In the triple-meltdown disaster that started last year at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear complex, the maximum radiation exposure dose for workers was temporarily raised to 250 millisieverts a year from 100 millisieverts.

Keigo Endo, a radiologist and president of Kyoto College of Medical Science, pointed to previous data showing an increased risk of leukemia with cumulative radiation exposure of as low as 120 millisieverts.

"The latest finding underlines the importance of long-term followup surveys. Further details of the survey should be examined to confirm specific dose levels that could cause leukemia," Endo said.

Kids, stay away from puddles and don't forget to gargle!

November 11, 2012

Cute fallout reminder: Kids play with the Kibitan bird mascot Oct. 14 in Fukushima. AFP-JIJI



Mascot bird warns kids of radiation

http://www.japantimes.co.jp/text/nn20121111b3.html

AFP-Jiji

A grinning cartoon mascot modelled after a bird has been enlisted to teach children in Fukushima Prefecture how to remain safe from radioactive fallout spewed during the nuclear disaster.

Kibitan — a plump, yellow cartoon character with stubby wings and boots — is warning youngsters to stay away from puddles and ditches, where large quantities of radioactive materials tend to accumulate.

In a leaflet issued by Fukushima's nuclear crisis task force, Kibitan, inspired by the narcissus flycatcher, asks children to promise to wash their hands and gargle with water as soon as they return home. The smiling Kibitan also explains what radiation is and cautions that it can make children sick if it gets inside their body.

The character was designed in 1995 to mark an athletics meet in the prefecture and has served as a local mascot ever since.

Tens of thousands of people were evacuated from their homes around the Fukushima No. 1 plant in the weeks after it suffered three core meltdowns following last year's monster earthquake and tsunami.

But antinuclear energy campaigners say the government has done little to protect those living only a little farther afield. Last month, environmental group Greenpeace charged that radiation levels up to 13 times the legal limit had been detected in heavily populated areas just a few dozen kilometers from the plant.

"It is especially disturbing to see that there are many hot spots around playground equipment, exposing children, who are most vulnerable to radiation risks," a Greenpeace scientist said in October.

On Thursday, the government admitted that some of its radiation measurements were inaccurate, saying devices at 675 locations in and around Fukushima were underreporting radioactivity levels by around 10 percent.

The nuclear catastrophe discharged radioactive materials into the environment over a wide area and rendered swaths of agricultural land unusable.

Though the twin natural disasters killed more than 19,000 people in March last year, no one has been officially recorded as having died as a direct result of the Fukushima meltdowns. But experts caution that decommissioning the No. 1 plant and making areas around it habitable again will still take decades.

UN Committee worried about radiation in Fukushima

November 14, 2012

UN OKs continued analysis of Fukushima radiation

http://www3.nhk.or.jp/daily/english/20121114_26.html

The UN General Assembly has endorsed continued research into the effects of radiation exposure from the 2011 Fukushima nuclear crisis.

An assembly panel unanimously adopted a resolution endorsing the research by a UN scientific committee on Tuesday.

The resolution expressed concern over potential harmful effects of radiation and called for a report on the findings by next fall.

The resolution came after the panel, meeting in New York, heard a report by the chairman of the Scientific Committee on the Effects of Atomic Radiation, Wolfgang Weiss. He was speaking via video link from Vienna.

Weiss said preliminary analysis has found no health effects among some 20,000 people studied, including workers at the Fukushima Daiichi plant.

But Weiss said continued research is needed because 170 people have received radiation doses above 100 millisieverts, the threshold for increased risks of cancer.

Representatives of the European Union and other members told the meeting they want to show solidarity with those affected by the crisis in Japan.

The UN set up the scientific committee in the 1950s to study radiation exposure from fallout of nuclear tests.

Since May last year, the committee has analyzed data provided by the Japanese government on plant workers and others who were exposed to radiation.

Protect Fukushima cleanup workers

November 14, 2012 Chernobyl study shows need for caution in Fukushima http://www.japantimes.co.jp/text/nn20121114f2.html

Kyodo

A study released Thursday by a U.S. research team links protracted exposure to low-level radiation to a higher risk of leukemia among workers engaged in the cleanup of the 1986 Chernobyl nuclear disaster, and points to the need to protect those involved in dealing with the Fukushima crisis.

In the U.S. study, scientists did a followup health survey covering 110,645 cleanup workers through 2006 and found 137 developed leukemia.

After excluding genetic and other factors, it estimated that around 16 percent of the leukemia cases confirmed during the 20-year followup period were attributable to radiation exposure from the disaster.

Most of the victims were involved in efforts to contain the Chernobyl disaster until 1990. Their cumulative exposure was less than 200 millisieverts.

According to Tokyo Electric Power Co., around 6,000 workers are currently involved in efforts to decommission the four crippled reactors at the Fukushima No. 1 power plant.

After the March 2011 meltdowns and hydrogen explosions, the Health, Labor and Welfare Ministry raised the allowable cumulative radiation exposure threshold to 250 millisieverts for workers so Tepco wouldn't run out of workers too quickly because of overexposure.

After the government declared the completion of "Phase 2" of the road map for containing the disaster, the limit was lowered last December to 50 millisieverts per year and 100 millisieverts per five years, the same level as before the crisis.

But six workers were exposed to more than 250 millisieverts.

"All of the six have already left the work site," Tepco said. "At this moment, there has been no observable impact on their health."

By the end of September this year, 167 workers registered more than 100 millisieverts. Workers exposed to 50 to 100 millisieverts numbered 941.

High radiation zones, including the structures housing the reactors, remain off-limits. As work progresses, concern will likely increase about what to do to reduce the health risk of workers.

Tepco meanwhile apparently lacks adequate procedures and discipline to minimize the radiation exposure.

Reports show workers have either misplaced dosimeters for measuring their radiation exposure or have worked without them. There was also an ethically questionable case in which dosimeters were covered by a lead sheet to suppress exposure readings, so workers could undertake operations beyond the exposure limit.

"In Japan, nobody exactly knows workers' conditions at nuclear facilities," said Masako Sawai of Citizens' Nuclear Information Center. "Even after the Fukushima crisis started, there have been moves to conceal exposure. In that sense, the latest U.S. data are very instructive and show the need for Japan to grasp what is going on."

Earlier this month, a 46-year-old man from Iwaki, Fukushima Prefecture, pleaded for better conditions at Fukushima No. 1. He said he was told to ignore dosimeter alerts and continue working in a high-radiation environment.

He told reporters Nov. 1 at the health ministry, "Rank-and-file people cannot raise their voices even when there is a problem." He filed a complaint with a Fukushima labor office against Tepco and Kandenko Co., the Tepco subcontractor that oversaw the man's work.

Lowest levels of radiation harmful to life

November 19, 2012

Source: Science Daily http://www.sciencedaily.com/releases/2012/11/121113134224.htm

Even Low-Level Radioactivity Is Damaging, Scientists Conclude

ScienceDaily (Nov. 13, 2012) — Even the very lowest levels of radiation are harmful to life, scientists have concluded in the Cambridge Philosophical Society's journal *Biological Reviews*. Reporting the results of a wide-ranging analysis of **46 peer-reviewed studies published over the past 40 years**, researchers from the University of South Carolina and the University of Paris-Sud found that variation in low-level, natural background radiation was found to have small, but highly statistically significant, negative effects on DNA as well as several measures of health.

The review is a meta-analysis of studies of locations around the globe that have very high natural background radiation as a result of the minerals in the ground there, including Ramsar, Iran, Mombasa,

Kenya, **Lodeve, France**, and Yangjiang, China. These, and a few other geographic locations with natural background radiation that greatly exceeds normal amounts, have long drawn scientists intent on understanding the effects of radiation on life. Individual studies by themselves, however, have often only shown small effects on small populations from which conclusive statistical conclusions were difficult to draw.

"When you're looking at such small effect sizes, the size of the population you need to study is huge," said co-author Timothy Mousseau, a biologist in the College of Arts and Sciences at the University of South Carolina. "Pooling across multiple studies, in multiple areas, and in a rigorous statistical manner provides a tool to really get at these questions about low-level radiation."

Mousseau and co-author Anders Møller of the University of Paris-Sud combed the scientific literature, examining more than 5,000 papers involving natural background radiation that were narrowed to 46 for quantitative comparison. The selected studies all examined both a control group and a more highly irradiated population and quantified the size of the radiation levels for each. Each paper also reported test statistics that allowed direct comparison between the studies.

The organisms studied included plants and animals, but had a large preponderance of human subjects. Each study examined one or more possible effects of radiation, such as DNA damage measured in the lab, prevalence of a disease such as Down's Syndrome, or the sex ratio produced in offspring. For each effect, a statistical algorithm was used to generate a single value, the effect size, which could be compared across all the studies.

The scientists reported significant negative effects in a range of categories, including immunology, physiology, mutation and disease occurrence. The frequency of negative effects was beyond that of random chance.

"There's been a sentiment in the community that because we don't see obvious effects in some of these places, or that what we see tends to be small and localized, that maybe there aren't any negative effects from low levels of radiation," said Mousseau. "But when you do the meta-analysis, you do see significant negative effects."

"It also provides evidence that there is no threshold below which there are no effects of radiation," he added. "A theory that has been batted around a lot over the last couple of decades is the idea that is there a threshold of exposure below which there are no negative consequences. These data provide fairly strong evidence that there is no threshold -- radiation effects are measurable as far down as you can go, given the statistical power you have at hand."

Mousseau hopes their results, which are consistent with the "linear-no-threshold" model for radiation effects, will better inform the debate about exposure risks. "With the levels of contamination that we have seen as a result of nuclear power plants, especially in the past, and even as a result of Chernobyl and Fukushima and related accidents, there's an attempt in the industry to downplay the doses that the populations are getting, because maybe it's only one or two times beyond what is thought to be the natural background level," he said. "But they're assuming the natural background levels are fine."

"And the truth is, if we see effects at these low levels, then we have to be thinking differently about how we develop regulations for exposures, and especially intentional exposures to populations, like the emissions from nuclear power plants, medical procedures, and even some x-ray machines at airports."

Fukushima Radioactive Contamination Symptoms Research (FRCSR)

Fukushima Radioactive Contamination Symptoms Research (FRCSR) has been authorized to officially represent Dr. Helen Caldicott in Japan.

Please contact Dr. Yuri Hiranuma, FRCSR Medical Information Director, at frcsrus@gmail.com for any media or infrormation requests related to Japan.

http://www.frcsrus.org/

FRCSR originated with an establishment of "Minna no Karte" or "Everyone's Medical Chart," a website which collects, through the Internet, subjective symptoms including general malaise and other worrisome symptoms that may be the result of radiation contamination.

The purpose of FRCSR is to collect voices of people who felt "something was obviously wrong" after the Fukushima Dai-ichi nuclear accident, to allow for an understanding of multiple and simultaneous derivations of characteristic symptoms after a certain time point, and to provide a public place for common understanding of unfalsified database of symptoms in order to grasp their relationship to the whole aspect. This activity, originally started by one individual and subsequently supported by many, is now beginning to build an international network, while distributing collected data, people's voices, and current situations in Japan, to many medical care providers, researchers and journalists who recognize and understand radiation exposure.

Objectives of FRCSR include issues which are problems not necessarily limited to Japan. These include the following: encouraging any medical institution or medical care provider, not limited to medical institutions in prefectures around the Fukushima nuclear power plant, to recognize the necessity for understanding of symptoms of radiation contamination; and having those in any medical field to incorporate a new point of view, such as radiation contamination, into medical care. We believe that these

issues constitute part of essential global awareness of all major nuclear incidents impacting health to include: Three Mile Island, Chernobyl, and now, Fukushima.

Our hope is to keep moving forward, even if it might be a single step at a time, not only for many people who have understood activities of FRCSR and reported their symptoms, but also those suffering from radiation exposure all over the world.

Shino Yasutomo Executive Director FRCSR

http://frcsrnewsletter.blogspot.fr/

FRCSR (2)

November 25, 2012

http://frcsrnewsletter.blogspot.fr/

The last report of symptoms from this research group dates August 30, 2012

On the same page also, a link toward a terrifying photodatabase (in Japanese).

This is a report regarding symptoms at the seventeenth month since the Fukushima nuclear accident.

The number of symptoms per person increased from 4.9 in January to 5.6. (Refer to the FRCSR Original Database)https://docs.google.com/spreadsheet/ccc?key=0Aq8f83tqq7QudDNMTWdaS0c3Qkd5QnBWO HZwSXJLOEE#gid=0)

Each category showed an average rate of increase of 1.1 to 1.2 times since the previous survey result. Categories whose rates of increase exceeded the average rate of increase are: upper gastrointestinal system including vomiting and nausea at 1.3 times; tumors including pituitary adenoma and cystic tumor at 1.4 times, and endocrine system mainly related to thyroid gland at 1.6 times.

Reports of tumors have begun to come in. There has been a rapid increase of endocrine symptoms, which might be a preliminary stage before tumors appear. In addition, there have been **multiple reports of pediatric thyroid cancer from the Kanto region and the Metropolitan area**, 250 km away from the Fukushima Dai-ichi nuclear power station. In other words, even before a diagnosis of thyroid cancer is established by physicians, it seems that cancer was germinating and growing within one year of the

Fukushima nuclear accident. In Chernobyl, pediatric cancer developed over a period of 5 to 10 years after the accident; but in the case of Fukushima, canceration took only one-third of the time. The effects of the Fukushima Dai-ichi nuclear accident on human body revealed an onset of cancer within one year to one and a half year; the speed of symptom progression is three to five times that of Chernobyl.

In the thyroid examination conducted on 38,114 Fukushima children, 13,460 which represented 35.8% of the total examined had thyroid nodules and/or cysts. In Chernobyl, 5% of the population had some physical findings/symptoms one year after the accident: In Fukushima the occurrence was seven times as many as Chernobyl in one year. Consequently, in comparison with Chernobyl, it is estimated that the speed of onset of symptoms would be 3 to 5 times faster and the number of cases would be more than 7 times as many.

From the beginning of the survey up to this month, symptoms constantly increasing include fatigue, sleepiness, headaches, dizziness, eczema, urticaria, pruritis, epistaxis, canker sores, sore throat, chest pain, cough, sputum, and diarrhea. In menstruating women, almost 100% have reported symptoms such as irregular menstrual periods, hypomenorrhea, and amenorrhea.

In addition, from winter to spring, there were unusual increases in all types of infectious diseases, such as an explosive spread of influenza, food poisoning such as E. Coli O-157 in rainy season, rubella, mycoplasma pneumonia, chlamydial pneumonia. (Refer to the Infectious Disease Surveillance Center at the National Institute of Infectious Diseases. http://www.nih.go.jp/niid/en/) It is possible to attribute an increase in infectious diseases to depressed resistance, but on the other hand, these symptoms could be attributable as early symptoms of leukemia. It is a pathophysiological fact that Merkmal of leukemia includes fatigue, cold-like symptoms, and bleeding tendency such as easy bruisability and epistaxis. If the recurrent cold-like symptoms since last year are due to changes in white blood cells, the number of future leukemia cases might be beyond our imagination. Already there are many reports of abnormalities in white blood cell count and neutrophils.

Part of hematology-related reports (all reports are from a 250-km radius area).

*A relative has chronic myelomonocytic leukemia with a prevalence of 1 in 100,000.

*A fifty-year-old man from Higashimurayama had abnormal blood test at a health check-up in March, 2012, and was eventually was diagnosed with leukemia.

*Seven-year-old boy: WBC over 10,000 with 43% neutrophils in January 2012, but WBC was 6,300 with 25% neutrophils in June 2012. Three-year-old boy: WBC over 10,000 with 28% neutrophils in October 2010 and WBC 7,300 with 28% neutrophils in June 2012.

*A six-year-old daughter with a slight decrease in WBC in blood test from last June. She has not gained weight.

*A sixteen-year-old girl and her mother both had decreased WBC. The daughter lost weight. Blood test from November 2011 showed decreased WBC, platelets and RBC. CK, GPT, ALP and lymphocytes were slightly high.

At a hospital in west Tokyo, there have been more patients with multiple myeloma. The hospital pharmacist reports an increased demand for Velcade (Bortezomib), a multiple myeloma medication, and the doctors cannot figure out why there are so many cases of esophageal cancer or findings of abnormalities in upper GI endoscopy. Moreover, in terms of cancers, there have been reports of breast

cancer and colon cancer.

Also, there have especially been more cases of a diagnosis of "Kawasaki Disease" in hospitals within a 300km radius range. Kawasaki Disease was discovered in 1961 by a Japan Red Cross Hospital pediatrician, Dr. Tomisaku Kawasaki. The disease was named after him in 1967. (Refer to a Wikipedia entry of Kawasaki Disease and Japan Kawasaki Disease Association case images.) Main symptoms include ocular conjunctival injection, enlarged cervical lymph nodes, rash and erythema. The cause is supposedly unknown, but these symptoms are extremely similar to radiation exposure symptoms.

Regarding childbirth, a birth weight of less than 1,500 grams is defined as a very low birth weight baby. There have been several reports of abortions for fetal weight never exceeding 1,000 grams. Also there has been a baby born with a birth weight of 1,000 grams with a hole in the heart. And there are other reports of premature births and miscarriages. It seems that the number of abortions is increasing. On August 29, 2012, it was announced that the National Center for Child Health and Development (Tokyo) and Showa University (Tokyo) decided a policy to begin testing blood of pregnant women for presence of Downs Syndrome with 99% accuracy. Other medical institutions are also in consideration of introducing the same test. Reports of an introduction of such tests, in anticipation of increased needs, and a new development of medical technology seem to be more common and even seem intentional in timing.

Within a 300-km radius, there are marked occurrences of dizziness and hearing loss. Several days after the accident, there were reports of severe dizziness in a 20-km zone from ground zero. These symptoms are spreading to people living in a 250-km radius area after one year since the accident. In connection with this expansion of affected areas, effects on the central nervous system are also serious.

The central nervous system effects include such symptoms as lassitude with fatigue, memory decline/loss, forgetfulness, agraphia, loss of mental calculation, motor dysfunction such as falls, but it is difficult to collect data because they may not be aware of changes in their own characteristics other than what they can perceive themselves for self-reporting. However, this issue is actually more serious than specific physical symptoms. It is speculated the number of these cases might be as many as or even more than the cases with physical symptoms. This constitute an extremely large social issue as Japan continues a process of restoration from now on.

Mental symptoms, just like physical symptoms, get worse in those who already had chronic conditions. For instance, if someone already had depression, there will be worsening of depression. In addition, there is an accentuation of basic personality or characteristics. Someone who was already nervous will become even more nervous as if driven into a corner. On the other hand, someone can gain overly positive attitudes, ignoring many symptoms including a chest pain. These changes in personality and characteristics may be subtle at this point of time, but they will worsen with time.

In particular, those living in contaminated areas who have subjective symptoms such as lassitude with fatigue need to evacuate at an early stage. Symptom progression is fast, and they won't be able to make appropriate decisions. In other words, they might lose a will to evacuate or become unable to act on it.

The person himself/herself is not aware of these extremely slow yet certain changes. The entire society as

a whole will slowly change. For instance, Japan is known as a country that takes a long time to make a decision due to its vertically-structured society with an emphasis on relationship of "master and servant." On the other hand, Japan was strict with time and has maintained the world's highest quality in the manufacturing industry. There are already many occurrences of human errors at a work place and the error is unnoticed even after the product is eventually finished.

The second-generation and the third-generation descendants of Hiroshima/Nagasaki atomic bomb victims report miscarriages, stillbirths, pneumonia, cancer, thyroid diseases, epistaxis, Kawasaki Disease, joint pain, cystitis and hematuria. It is speculated that sensitivity to radiation might be high when ancestors have been exposed to radiation. It is truly unforgivable that these people are exposed to radiation again.

Shino Yasutomo Executive Director FRCSR

Translation by Dr. Yuri Hiranuma Medical Information Director FRCSR

WHO always the optimist

November 26, 2012

WHO report sees low risk of cancer rise for Fukushima residents

http://mainichi.jp/english/english/newsselect/news/20121126p2g00m0dm003000c.html

TOKYO (Kyodo) -- There is a low risk of a rise in cancer rates for residents near the Fukushima Daiichi power plant following a nuclear crisis last year, a preliminary report of the World Health Organization showed Sunday.

According to the report, the possibility that cancer risks will significantly increase among adults and children, excluding newborns, is low based on the statistics of actual cancer incidence.

However, there are also data showing newborns in the town of Namie and the village of litate in Fukushima Prefecture could suffer from cancer, leukemia or other illnesses in the future.

The preliminary report is based on the assumption that the residents lived in the affected areas for four months after the nuclear accident and continued to eat local products.

In reality, most of the residents were evacuated after the nuclear crisis.

A final report will be released in December at the earliest.

"I think we should not get used to it"

September 26, 2012

Fukushima teachers' union member advocates lessons about radiation, human rights

http://mainichi.jp/english/english/newsselect/news/20121126p2a00m0na015000c.html

FUKUSHIMA -- "Talking about the dangers of radiation is like rubbing salt into the wounds of us Fukusghima residents who are getting used to radiation," says Toshiki Kokubun, deputy secretary of the Fukushima teachers' union.

Twenty months after the March 11, 2011 Great East Japan Earthquake and tsunami triggered the crisis at the Fukushima No. 1 Nuclear Power Plant, decontamination work is under way at schools outside the nogo zones, while outdoor activities and athletic meets are being held like pre-disaster days.

But Kokubun, 50, has agonized over the nuclear disaster and published union news bulletins that deal with measures to respond to nuclear radiation. Such news stories are intended for teachers who are placed in a dilemma between local governments and parents, and many point to the danger from the Fukushima nuclear accident.

Kokubun is now concerned about how students are being educated about radiation. Radiation instruction has begun at schools in the prefectural capital of Fukushima ahead of other schools in the region. It is important to learn about nuclear radiation, he says, adding that he fears that being worried about radiation is being problematized more than the radiation itself.

"For cesium 137 alone, areas with a surface contamination concentration of more than 40,000 becquerels per square meter make up half of Fukushima Prefecture's eastern region. The figure is equal to that in controlled areas. Isn't it strange to question the failure to acclimate to such an environment more than the abnormality of living in such places?" he says.

Kokubun says the union has done its best to examine school lunch ingredients for radioactivity. Children have 180 school lunches a year but are not at decontaminated schools 24 hours a day, he says, wondering if anyone can say with confidence that their health is not jeopardized by nuclear radiation.

He was in the union office in Fukushima when the March 11, 2011 twin natural disasters hit. He managed to return to his house in Koriyama the following day. When he learned the news about hydrogen explosions at the Fukushima nuclear power plant, he prepared himself for death. Kokubun's mental condition soon began to deteriorate. When he saw Mt. Adatara in the morning, he couldn't stop crying. Tears welled up in his eyes as he saw rivers and mountains on his way to work.

The Abukuma River was particularly dear to Kokubun because that's where he caught crabs when he was young. After he became a teacher, he rode his bicycle along the bank's roads. He met his future wife in Shirakawa, a city on the upper reaches of the river.

Radioactive materials have spread along the waterway. "It has become a canal of radioactivity," he says dejectedly.

After the hydrogen explosions rocked the nuclear plant, Kokubun sent his son, a freshman at a university, and his daughter, a third-year student at a junior high school, to his sister's house in Kumamoto Prefecture. He and his family considered relocating to Okinawa Prefecture, but along with his teacher wife, they decided to stay.

After the Golden Week holiday period, his children returned to Fukushima to meet their friends but his sadness deepened. He cried loudly before going to work but his condition did not improve. In June, he was diagnosed as suffering from post-traumatic stress disorder. He still visits his doctor.

This past summer, Kokubun and a civic group jointly published a book about the dangers of radiation and human rights to protect the lives of children. In the book, he called for education to reduce radiation exposure, restore human rights and fight against discrimination.

There have been fewer reports of late and the Fukushima accident appears to be fading from people's consciousness. Kokubun says he himself is getting accustomed to it. "But the danger remains. I think we should not get used to it," he says quietly.

Take iodine 12 hours before fallout

December 1, 2012

Taking iodine before fallout hits is key: NRA

Kyodo http://www.japantimes.co.jp/text/nn20121201a2.html

The Nuclear Regulation Authority released Friday the results of a computer simulation on how the use of iodine tablets by people around nuclear plants can protect their thyroids from excessive exposure to radiation in the event of a severe catastrophe.

The NRA's estimate, compiled by the government-affiliated Japan Atomic Energy Agency, shows that taking iodine before large fallout is released would have a positive effect, particularly for people within 30 km of a crippled plant.

The Japan Atomic Energy Agency also recommended that people within 5 km of a plant evacuate immediately in the event of a disaster and not wait until radioactive materials actually start to escape.

The agency reported its assessment to a panel set up under the NRA in hopes it will help local governments craft effective disaster mitigation plans based on guidelines compiled since the Fukushima crisis started.

The guidelines feature special disaster preparations for people living within 30 km of a nuclear facility. The analysis is based on the assumption that a 1.1 million kw reactor releases radioactive substances at around the same level as those seen in the Fukushima meltdowns.

In its model, a massive radiation leak starts 27 hours after an emergency occurs at a plant and lasts for seven hours.

The amount of radiation affecting people 5 to 30 km radius from the plant could exceed International Atomic Energy Agency criteria for taking thyroid protection — 50 millisieverts in the first seven days — even if they stay indoors for two days before evacuating beyond the 30-km line. But when taking iodine pills 12 hours before the release of radioactive substances, their exposure is expected to drop below the benchmark line.

November 30, 2012

Taking iodine before release of radioactivity helps reduce exposure

http://mainichi.jp/english/english/newsselect/news/20121130p2g00m0dm077000c.html

TOKYO (Kyodo) -- A Japanese government affiliate said Friday that taking iodine tablets before large amounts of radioactive substances are released in the event of a nuclear plant disaster would help people living within 30 kilometers of the plant to protect their thyroids from excessive exposure.

The analysis by the Japan Atomic Energy Agency also recommended that people within a 5 km-radius of the plant evacuate before the release of radioactive materials begins in such severe cases as that at the Fukushima Daiichi complex.

The agency reported its assessment at a panel set up under the Nuclear Regulation Authority, the country's nuclear regulatory body, hoping it will help local governments craft their own nuclear disaster mitigation plans based on guidelines compiled in the wake of the nuclear crisis.

The guidelines feature special preparations for nuclear disasters for people living within a 30-km radius of nuclear plants.

The analysis is based on the assumption that a 1.1 million kilowatt reactor releases radioactive substances at around the same level as those seen in the Fukushima disaster.

The release of such massive amounts of radiation is presumed to start 27 hours after an emergency occurs at the plant and last for seven hours.

According to the JAEA, the amount of radiation affecting people living within a 5-30 km radius may exceed International Atomic Energy Agency criteria for taking thyroid protection -- 50 millisieverts in the first seven days -- even if they stay indoors for two days before evacuating to outside the 30-km circle.

But when taking iodine pills 12 hours before the release of radioactive substances, their exposure is expected to drop below the benchmark line.

The analysis also said that evacuation before such massive releases of radioactive substances would be effective for people living within the 5-km zone in order to keep the exposure to their whole body below 100 millisieverts, an IAEA-set limit where evacuation is recommended.

But those within a 5-30 km zone do not necessarily have to do likewise, the analysis said.

The benchmark was not exceeded when people within a 5-10 km zone stayed inside concrete facilities for two days and then moved outside the 30-km circle, nor for people within a 10-30 km zone who remained indoors for two days.

Potentially cancerous doses of radiation for (at least) 178 Fukushima workers

December 1, 2012

High thyroid radiation doses in 178 Fukushima workers

http://ajw.asahi.com/article/0311disaster/life_and_death/AJ201212010050

December 01, 2012 By YURI OIWA/ Staff Writer

Dozens of workers received potentially cancerous doses of radiation to their thyroid glands during recovery work at the Fukushima No. 1 nuclear power plant, according to data submitted to the World Health Organization.

Tests on workers suspected of having high whole-body internal doses found 178 individuals whose thyroid glands displayed doses greater than 100 millisieverts, the generally accepted threshold for a raised risk of thyroid cancer.

The highest recorded dose was 11,800 millisieverts, a level that would give a correspondingly high probability of thyroid cancer.

Plant operator Tokyo Electric Power Co. submitted the data on thyroid tests for 522 workers—both its own staff and contractors—to the WHO upon request. The released data excluded personal details, such as the age of the individuals involved.

A forthcoming WHO report, which cites the data, says two workers had an exposure of more than 10,000 millisieverts, a level widely considered to be a lethal dose when received as full-body exposure. However, a dose of this level received in the thyroid gland alone can have an impact limited to that organ and may not cause acute symptoms.

TEPCO identified the individual whose thyroid gland received 11,800 millisieverts as being between 30 and 39 years old. It said the worker had developed no ill-health effects and remains employed, albeit in a non-nuclear job.

The individual's whole-body external and internal radiation dose was 678.8 millisieverts, the highest of all workers tested.

The WHO assessed the probability of these people developing thyroid cancer by reviewing medical records from the Hiroshima and Nagasaki atomic blasts. It calculated the risk for people in three separate age categories—aged 20, 40 or 60 at the time of exposure.

It said a 20-year-old who receives a dose of 11,800 millisieverts will be 34 times more likely to develop thyroid cancer within 15 years. The average incidence for a 20-year-old is 0.02 percent, which in this case is raised to 0.67 percent. Over the individual's entire lifetime, the rate rises from 0.21 percent to 3.8 percent.

A 40-year-old who receives such a dose will have a seven times greater risk of developing thyroid cancer within 15 years, rising from 0.05 percent to 0.36 percent. A 40-year-old's lifetime risk rises from 0.19 percent to 1.1 percent.

Twenty-year-olds who receive a smaller thyroid dose of 200 millisieverts have a 55 percent higher chance of developing cancer within 15 years, an incidence of 0.03 percent; and the individual's lifetime risk rises by almost one-third to 0.27 percent.

The data showed that of the workers tested, 163 had thyroid doses greater than 200 millisieverts. [out of 522?]

TEPCO has not published its thyroid test results directly. The company justifies this by noting that it publishes other test results instead.

"We are monitoring (workers') health through whole-body radiation doses," a TEPCO official said. "We have not published thyroid gland data because there are no dose limit standards, unlike whole-body data."

The company is not required to provide such data to the government. But it has also not released individual thyroid results to many of the workers employed as contractors at the disaster site.

One medical expert has argued for TEPCO to release results to all workers who took tests.

"Some epidemiological studies suggest that radiation exposure can increase the risk of thyroid cancer for people aged 40 or older, too," said Yoshio Hosoi, a professor at Hiroshima University's Research Institute for Radiation Biology and Medicine. "In addition to children, adults need to receive continued tests if their thyroid gland radiation doses are 100 millisieverts or higher."

TEPCO said it plans to offer workers thyroid gland ultrasound examinations free of charge if their wholebody radiation doses are 50 millisieverts or higher.

However, at least one expert said that may not include all people at risk.

"There is a possibility that the thyroid gland radiation dose is 100 millisieverts even if the wholebody dose is only 5 millisieverts," said Saburo Murata, deputy director of Hannan Chuo Hospital.

Murata called on TEPCO to release all past test results—and those of tests in the future.

By YURI OIWA/ Staff Writer

Questionable labour practices at Fukushima Daiichi

December 5, 2012

Crisis workers note shady practices

http://www.japantimes.co.jp/text/nn20121205a7.html

Kyodo, Jiji

A recent survey of workers at the disaster-hit Fukushima No. 1 nuclear plant indicated questionable hiring practices, with nearly half saying they received assignments from companies other than those paying their wages, some being told to falsely identify their employers and others unaware of how much radiation they have been exposed to.

Masayuki Ono, an official at Tokyo Electric Power Co., which operates the plant where three reactor meltdowns occurred last year and many areas are too dangerous to get near, said the utility "will take the results seriously" and "will take measures such as overseeing contractors."

The survey in September and October indicated that 47.9 percent of 2,423 workers hired by subcontract companies received payment from firms different to those instructing them at the workplace, while 125 said they were asked to misidentify their employers. And about 36 percent of such workers had not been given written or verbal explanations about their employment terms.

On radiation exposure, 15.1 percent of all 3,186 respondents, including bosses, said they did not know their exposure levels.

Radiation data for Fukushima Daiichi workers

Radiation data shows elevated cancer risk for dozens of Fukushima workers

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212070067

December 07, 2012 THE ASAHI SHIMBUN

Radiation doses that raise the risk of cancer have been recorded in dozens of workers--or about 1 percent of the work force--at the Fukushima No. 1 nuclear plant.

Plant operator Tokyo Electric Power Co. on Dec. 6 released data for radiation doses recorded between March 11, 2011, when the disaster started, and Jan. 31, 2012.

The figures show 165 workers, or about 1 percent of those monitored, received doses of at least 100 millisieverts, a level widely believed to raise the risk of cancer over a person's lifetime.

TEPCO released the data after submitting it in March, upon request, to the World Health Organization. It was the company's first direct release of such data, although it has shared other data with the WHO, which the agency plans to release shortly.

The data contained no personal details, nor did it identify the duties of the workers concerned. It presented figures grouped according to age category.

Twenty-five individuals in their 20s received more than 100 millisieverts, or 1.2 percent of the 2,057 workers in that category; so too did 40 of 4,179 individuals aged 30-39. The threshold was reached in 49 workers of 5,893 in their 40s; by 46 individuals in their 50s, out of 5,409; and five aged 60-69, of whom there were 1,858 workers.

None of the 64 teenage workers employed at the plant, and none of the 26 in their 70s and 80s, were exposed to more than 100 millisieverts of radiation.

But the data shows that three workers in their 20s received an elevated dose of more than 250 millisieverts, together with one person each in their 30s, 40s and 50s.

Younger adults are more susceptible to injurious effects of radiation. A forthcoming WHO report says the risk of developing radiation-induced cancer over a person's lifetime is 1.5 times greater for a 20-year-old than a 40-year-old. It is three times greater than for a 60-year-old. Furthermore, a 20-year-old's risk of thyroid cancer is four times that of a 40-year-old's.

TEPCO releases radiation exposure by age groups

http://www3.nhk.or.jp/daily/english/20121207_12.html

Tokyo Electric Power Company says a teenage worker at the Fukushima Daiichi nuclear plant was exposed to radiation levels at least 50 times higher than Japan's maximum permissible dose for the general public.

The annual maximum radiation exposure limit for the public is set at one millisievert.

The utility company disclosed data on Thursday that it submitted to the World Health Organization in March. The data includes details of the radiation doses that workers were exposed to at the plant.

A total of 20,103 workers took part in post-disaster operations between March 2011 and the end of January this year.

The youngest was aged 18 while the oldest was 84. Those in their teens numbered 64. One of them was

exposed to a cumulative radiation dose of 56.89 millisieverts, the highest for his age group.

A TEPCO employee in his 30s received 678.8 millisieverts, the highest dose among all the workers.

Those in their 20s were exposed to an average dose of 15.86 millisieverts, the highest among all the age groups.

Workers in their 40s were the largest group at 5,893. They had an average exposure of 11.64 millisieverts.

The annual maximum permitted level for plant workers is set at 50 millisieverts. This makes it difficult to retain experienced workers for long periods. The ongoing decommission work is expected to take several decades.

Deformed cicadas

December 10, 2012

[Mutation] Cicada with a leg on the head, white external tumor on abdomen, deformed wings

http://fukushima-diary.com/

Posted by Mochizuki on December 9th, 2012 · 4 Comments

Share on facebookShare on printShare on emailShare on twitterMore Sharing Services In 300km area from Fukushima plant, variety of mutated cicadas were observed. It's also reported that the hatching time was from late July to the end of August, which is longer than usual to end by mid August. Also, female rate was unusually high, which was 60~70%.

 \downarrow Leg from the head





 \downarrow Tumors on abdomen



 \downarrow Deformed wings



A normal incidence in 10 year-olds?

Dec 3, 2012

http://fukushimavoice-eng.blogspot.fr/2012/12/are-36-thyroid-cysts-in-tokyo-children.html Are 36% Thyroid Cysts in Tokyo Children a Good Comparison to Fukushima Thyroid Findings? On December 1, 2012, the following article was published in Asahi Shimbun. (Complete translation to follow after this article).

The headline states that 36% of children in Tokyo was found to have thyroid cysts. Data mentioned is from 2,753 children who had thyroid ultrasound examinations done at a Tokyo thyroid clinic, Ito Hospital, from 2003 to August 2012. The article concludes that this data, inclusive of data prior to the Fukushima nuclear accident, must mean thyroid ultrasound abnormalities in Fukushima children represent a normal incidence of such abnormalities.

However, it is not clear how many of the 2,753 children were actually tested in the eight-year period from 2003 up to March 11, 2011, as opposed to the seventeen-month period from the accident up to August 2012. As thyroid ultrasound examinations are rarely conducted in children under normal, non-radioactive circumstances, due to the rarity of thyroid disease in children, it is difficult to think the 2,753 can be evenly distributed from year to year as in 300 per year. According to this article, Ito Hospital did not seem to specifically provide pre-accident findings. Moreover, Ito Hospital is a facility authorized by the Japan Thyroid Association whose president, the infamous Shunichi Yamashita of Fukushima Medical University, sent the following letter to its members in January 2012.

http://fukushimavoice-eng.blogspot.com/2012/05/fukushima-childrens-thyroid-examination.html Due to the lack of more detailed information such as the number of children examined in each year showing the change from year to year as well as the number of children actually examined up to March 2011, we can only speculate what the 36% might entail.

The newspaper article mentions that 189 children had multiple ultrasound examinations. It seems likely that these 189 might belong to the pre-accident group, as anecdotal stories tell us most who got the ultrasound examination after the accident were told to follow up in one year.

It is beyond our comprehension why this hospital would not provide more accurate data for comparison. If they did provide it, why wouldn't the newspaper cover it more accurately? Does the data provide conclusive evidence of the impact of radiation from the Fukushima nuclear accident?

* * *

Complete translation of the newspaper article:

In relation to the many findings of cysts (fluid-filled sac) in thyroid examination of children in Fukushima

Prefecture, a similar ratio of about 3,000 children was found to have cysts at a Tokyo hospital. Dr. Kenji Iwaku at Ito Hospital in Tokyo reported it at the Japan Thyroid Association meeting on November 30.

Specialists say that "This data includes pre-accident data for comparison. It is not likely that cysts found in Fukushima children are due to radiation exposure."

According to the report, the data was the compilation of thyroid ultrasound results in 2,753 children under age 15 conducted at Ito Hospital from 2003 up to August 2012. The result showed that 36% of the children had thyroid cysts.

189 children had multiple ultrasound examinations: 42% saw an improvement with cysts getting smaller or resolving; 14% had cysts that became larger; and the remaining 44% saw no changes. No children developed malignant disease such as cancer during the follow-up.

Because there was an increase in pediatric thyroid cancer after the Chernobyl nuclear accident in former USSR, Fukushima Prefecture has been conducting thyroid ultrasound examination in children under age 18. Cysts were found in 35% of children tested last fiscal year and 42% this fiscal year so far.

The lack of comparative data in children in other areas has raised the voice that the cysts might be due to the effect of Fukushima Dai-ichi nuclear accident.

Shigenobu Nagataki, Nagasaki University emeritus professor in thyroid disease, said, "The data reported is from the study conducted using similar ultrasound equipments to what was used in Fukushima Prefecture. It also includes data from pre-accident years. Cysts in Fukushima children cannot be due to radiation."

As the comparison to the Fukushima examination, the government plans on conducting thyroid ultrasound examinations outside Fukushima Prefecture, such as in Nagasaki Prefecture, for about 4,500 children.



Systematic distribution of iodine tablets within 5-km radius of nuke plants?

December 26, 2012

NRA panel looks to distribute iodine tablets to households near Japan's nuclear plants

Kyodo

http://www.japantimes.co.jp/text/nn20121226a4.html

A panel under the Nuclear Regulation Authority agreed in principle Tuesday to distribute iodine tablets to households living close to nuclear power plants.

The medical-related panel, which is studying ways to mitigate radiation exposure in the event of a disaster, is considering providing households within a 5-km radius of any nuclear power plant with iodine pills to help lessen the chances of developing thyroid cancer due to fallout. It also plans to consider whether to extend the radius to people living within 30 km from an atomic plant.

The panel plans to reach a final decision by March for inclusion into the country's nuclear disaster response guidelines that were compiled in light of the triple-meltdown calamity that started last year at the Fukushima No. 1 nuclear plant.

NRA Commissioner Kayoko Nakamura, who is also on the panel, said it is necessary to ensure recipients of the iodine tablets are aware that they do not need to take them unless they are instructed to do so in the event of a nuclear emergency.

Details need to be further worked out, including the timing of the distribution and whether to provide iodine in syrup form for babies. The NRA may make the final decisions, or local-level authorities more versed on their situations may be the ultimate authority, the NRA's secretariat said during a meeting of the panel.

In the Fukushima crisis, residents living within a 20-km radius of the plant and even in areas beyond had to flee from their homes.

The evacuation process caused significant confusion and the central government's instructions regarding the use of iodine pills were delayed, and there were shortcomings reported regarding the distribution of the drug.

Fukushima workers only partly checked for radiation

January 4, 2013

Fukushima nuke plant workers not checked for radiation doses to arms, legs

http://mainichi.jp/english/english/newsselect/news/20130104p2a00m0na015000c.html

Fukushima No. 1 nuclear plant workers who struggled to bring the nuclear crisis under control in its first few months were **only checked for radiation exposure to the torso despite the presence of highly radioactive rubble,** according to former employees of plant operator Tokyo Electric Power Co. (TEPCO) and other sources.

If nuclear plant radiation doses to the arms, legs and head are higher than to the torso, the law requires plant operators to instruct workers to wear dosimeters on these parts of their bodies in addition to their chests.
TEPCO maintains that it initially measured radiation doses for workers through chest scans. But experts question TEPCO's argument, saying the giant utility should quickly produce estimates of radiation doses to the affected workers' arms and legs.

One TEPCO employee who was in charge of monitoring radiation at the time of the nuclear accident stepped in puddles near the nuclear plant's No. 1 reactor building several times while working to restore electricity to the disaster-stricken station. His shoes and socks were soaked.

Radiation dosages around the area were 10 to 20 millisieverts per hour, but radiation dosages from some rubble under his feet topped 100 millisieverts. Several hundred people were working around the building at the time, the onetime TEPCO employee says.

Workers normally wear ring badge dosimeters on the arms and legs when radiation dosages at hand and under foot are high. But the former employee says he only wore an APD dosimeter in his chest pockets.

"I had numbness in my toes for several months but I did not go to hospital because I thought it was due to the unsanitary environment," he recalls.

Another radiation monitoring official says TEPCO did not measure radiation doses to fingertips and the lenses of the eye even when workers disposed of highly radioactive rubble. There are manyfold differences in radiation dosages even between hands and chest. He also says there are cases in which a chest APD for gamma rays cannot properly measure radiation dosages from other forms of radioactive materials that emit a massive amount of dangerous, cell-destroying beta rays.

Ring badge dosimeters were distributed to workers two or three months after the onset of the nuclear crisis, and one of the former TEPCO employees says he and his colleagues were concerned about how much radiation they had in fact been exposed to in the course of their jobs.

A TEPCO spokesman says the Fukushima nuclear plant operator properly monitored radiation dosages with chest APDs because gamma ray levels were initially higher than beta ray levels. As gamma ray levels stabilized due to the introduction of equipment to treat contaminated water, beta ray levels became more apparent, prompting TEPCO to order its employees to wear ring badge dosimeters, he says. Employees had their entire bodies examined for radiation exposure after work and this procedure led to the discovery of three workers who were irradiated with highly contaminated water in March 2011, the spokesman says, adding TEPCO does not see any need for an additional investigation.

But Ikuro Anzai, a professor emeritus of radiation protection at Ritsumeikan University, says workers at the stricken Fukushima plant must have been exposed to fairly heavy beta ray doses from the start of the nuclear disaster. Radiation monitoring can measure contaminants on the body's surface but cannot **track radiation dosages to the extremities and head**. He says the central government and TEPCO should immediately survey the workers' duties and where they did their jobs to help catch any cancers they may develop early, potentially saving their lives.

A nuke research hub in Fukushima

January 10, 20123

Gov't to fork out 80 billion yen for radiation research hub in Fukushima

http://mainichi.jp/english/english/newsselect/news/20130110p2a00m0na007000c.html

The Japanese government has decided to set up a laboratory in Fukushima Prefecture for research and analysis of radioactive materials and the development of disaster robots, with the aim of making it an international hub of radiation studies in the future.

Once completed, the research facility is also expected to create hundreds of employment opportunities in the prefecture, assisting the area's recovery from the Great East Japan Earthquake and the Fukushima No. 1 nuclear power plant disaster.

On Jan. 9, the government decided to allocate some 80 billion yen in the fiscal 2012 supplementary budget bill for the designing and construction of the laboratory. The government is also mulling collaboration between the facility and the International Atomic Energy Agency (IAEA), ultimately eyeing the establishment of an international hub for radiation research and development with hundreds of researchers from around the world.

In an emergency economic stimulus package to be approved by the Cabinet on Jan. 11, the government designates "recovery from the nuclear disaster" and "support for research and development in the private sector" as top priority issues, indicating that the establishment of the radiation laboratory in Fukushima will become the focal point of the package.

Specifically, the government will fund the Japan Atomic Energy Agency (JAEA) -- an independent administrative agency -- by setting aside some 80 billion yen in the fiscal 2012 supplementary budget bill. Under the plan, the JAEA will construct a facility to analyze radioactive materials emitted from the Fukushima No. 1 nuclear plant, as well as a center for research and development of remote-controlled robots for use at disaster sites and in space.

At the laboratory, researchers will analyze radioactive waste and study methods for the processing and storing of such waste, using the Fukushima nuclear disaster as a lesson, according to the government's plan. As Tokyo Electric Power Co., the operator of the stricken Fukushima No. 1 nuclear plant, has decided to decommission the No. 1 through No. 4 reactors at the plant, research for safe decommissioning of

reactors will also be conducted at the facility. Furthermore, methods for effectively collecting rare metals from radioactive materials will also be studied.

Meanwhile, the robot laboratory will conduct research and development of unmanned robots that can be remotely controlled under such severe circumstances as a nuclear crisis and other disasters, as well as in space where radiation levels are high.

At the end of last year, the government and the IAEA agreed to establish an IAEA center for training emergency response capabilities in Fukushima Prefecture. A plan is also being considered for an international research hub for reactor decommissioning and inviting hundreds of researchers from universities and the IAEA.

Not worried any more or feeling like guinea-pigs?

January 10, 2013

Body scan: A staff member of the National Institute of Radiological Sciences demonstrates how a person is examined by a whole-body counter used to check the internal radiation exposure level of Fukushima Prefecture residents in June 2011. KYODO

As radiation fears dwindle, so do checkups

Doctor wants more residents to get followup full-body scans

By MIZUHO AOKI Staff writer

When Dr. Masaharu Tsubokura began checking the internal radiation exposure levels of Minamisoma residents four months after the Fukushima No. 1 nuclear power plant experienced three reactor core meltdowns, many were living in fear, not knowing what kind of dangers they were being exposed to by living in Fukushima Prefecture.

All available dates for checking internal exposure levels at Minamisoma Municipal General Hospital had been quickly booked for the next eight months. Due to those fears and a mounting distrust of the authorities, some residents were visibly angry at Tsubokura upon hearing their checkup results, which they had difficulty interpreting. It was chaotic, he said. But things have changed since.

As residents have come to understand more about radiation and that their internal exposure levels are low, an air of calm has been noticeable. At the same time, residents' interest in knowing their exposure levels has waned.

"I'm surprised to see such a dramatic loss of interest in just about a year and a half," said Tsubokura, 30, who works several days a week at Minamisoma hospital and the rest of the week at the University of Tokyo. "The biggest issue we have now is finding ways to secure continuous checkups for internal radiation exposure."

The city of Minamisoma covers the cost for two checkups. The hospital there began conducting the second round of internal exposure examinations in August, but less than 3 percent of residents tested in the first round turned up that month, Tsubokura said.

"To be honest, local people have almost no worries (about radiation exposure because of eating contaminated food) these days.... They are satisfied with their results from last year (where many were below detectable levels)," Tsubokura said.

"Also, there are many people who feel they were being used as human guinea pigs" in the first round and don't want to take part in the followup tests, he added.

Tsubokura, who specializes in hematology at the University of Tokyo, went to Minamisoma for the first time in early April 2011 to support hospitals suffering from a shortage of doctors following the March 2011 disasters.

About two-thirds of the city is located within a 30-km radius of the wrecked Fukushima No. 1 plant, but Tsubokura said he had no fear of going there.

"I looked up radiation levels there and thought the figures wouldn't cause raised health risks by staying there for a week," he said.

After a week of helping, Tsubokura came back to Tokyo, and has been shuttling back and forth between Tokyo and Fukushima since then.

From May 2011, Tsubokura began diagnosing outpatients at the Minamisoma hospital and when the hospital received a whole body counter to measure internal radiation exposure levels in July, Tsubokura was put in charge of operating and maintaining the machine.

According to the more than 20,000 results the hospital has received so far, the internal radiation exposure levels of Minamisoma residents are low and have declined since last year, he said.

Levels were especially low in children because of the differences in their metabolism, and probably due to mothers extra care in selecting their food, he said. But there have been a few seniors who had relatively high levels, due to eating highly contaminated foods like wild game and mushrooms they had gathered.

According to the hospital's test results, no radioactive cesium was detected from 99.9 percent of 1,679 children examined between last April 1 and Sept. 30. The highest amount detected was 25.6 becquerels per kilogram, which can be translated into far less than 1 millisievert per year, he said.

The International Commission on Radiological Protection (ICRP) set a radiation exposure limit under normal situations of 1 millisievert per year and says cumulative exposure of 100 millisieverts would increase the chance of death by cancer by 0.5 percent.

As for adults, 92 percent of 6,977 examinees had radiation exposure below detectable levels in the same period, compared with about 67 percent of examinees between September 2011 and last March, the data showed. The highest figure was 141 becquerels per kilogram, which can also be translated to below 1 millisievert, he said.

Measurable levels of radioactive cesium with the whole-body counter the hospital uses is 4 becquerels per kilogram for a person weighing about 60 kg.

All the three people with over 50 becquerels per kilogram of radioactive cesium had been continuously eating mushrooms from areas where their distribution is banned, the data showed.

But because **only about 50 percent of Minamisoma residents have been tested in the first round,** there may be people with higher internal radiation exposure levels, he said.

Tsubokura has been calling for residents to get checked, holding over 100 briefings and passing notices to neighborhood associations. However, it has been difficult to get the attention of the remaining half of the residents, he said.

"I am concerned about the current situation.... I have been involved in a movement to incorporate internal radiation exposure checkups into regular medical examinations at schools," Tsubokura said.

As for the most worrisome internal radiation exposure levels in the early days of the nuclear disaster, radioactive materials consumed have already been discharged from bodies and the amount can no longer be estimated, he said.

"The weakest point of these checkups is that we are not estimating the internal exposure amount of residents immediately after (the meltdowns). And we haven't been able to measure exposure to radioactive iodine-131" that has a half-life of just eight days, Tsubokura said. "Those are lost forever. The only way (to guess) is to use SPEEDI (a government-operated computer simulation system used to determine or predict dispersions of radioactive substances) data to calculate using some kind of estimate equation."

Damage from 3/11 to the sea

January 13, 2013 Survey checks radioactive contamination in the Pacific

http://ajw.asahi.com/article/globe/feature/tsunami/AJ201301130030

YU MIYAJI and MIZUHO KAJIWARA/ The Asahi Shimbun GLOBE

TOKYO--The Great East Japan Earthquake and ensuing tsunami reminded us of the terrible damage the sea is capable of inflicting. But what about the damage caused to the sea by the accident at the Fukushima No. 1 nuclear power plant?

A team of researchers from the United States, Japan and elsewhere has been studying this very question to see how the Pacific Ocean's waters and marine life have been affected by what has been dubbed "the worst accidental release of radiation to the ocean in history."

In mid-November last year, the U.S. Woods Hole Oceanographic Institution (WHOI) and the University of Tokyo's Atmosphere and Ocean Research Institute held a symposium in Tokyo titled "Fukushima and the Ocean." Over two days, around 90 marine researchers from the United States, Japan and so on gathered to discuss the extent of marine radioactive contamination and how this information should be communicated to the general populace. On the final day, the debate was opened to the public and close to 200 people attended; proof, if any were needed, that these issues are not merely the concern of a few specialist researchers.

The symposium's roots can be traced back to less than a week after the accident occurred, when Ken Buesseler, senior scientist at WHOI, called on researchers from all over the world to help ascertain radiation levels off the coast of Fukushima and the accident's impact on marine life. At the beginning of June 2011, a team of around 20 scientists from the United States, Japan and Spain set sail on a two-week field study aboard a ship provided by the University of Hawaii.

The team surveyed an area 30 to 600 kilometers offshore from the nuclear plant. They took samples of seawater from more than 30 locations, from the ocean surface right down to depths of 2,000 meters. The samples were then analyzed by 16 laboratories in seven countries, including Monaco and Slovakia. The Tokyo symposium was held in the wake of this research.

According to Buesseler, when radioactive debris is released into the sea, it usually gets dispersed far and wide by ocean currents before eventually finding its way to the seabed. This survey showed radiation levels spiking in areas where eddies commonly form due to the complicated interplay of the Kuroshio and Oyashio currents.

One of the participants, Jun Nishikawa, assistant professor of the University of Tokyo's Atmosphere and Ocean Research Institute, says the highest detected cesium-134 and cesium-137 activity was around 3,900 becquerels per cubic meter (bq/m3). This reading was made not in the seas close to the nuclear plant, but in an area of near-shore eddies to the southeast. The research also revealed that concentrations of radioactive cesium isotopes in the surveyed area were 10 to 1,000 times higher than before the accident occurred.

"We still don't know enough about how cesium isotopes accumulate in the bodies of fish, so further observations will be needed from hereon," says Buesseler.

Professor Jota Kanda from the Tokyo University of Marine Science and Technology adds that "fish species absorb cesium in different ways. Even in areas with low concentrations of radioactive material, we are still finding some fish types that manifest higher-than-normal concentrations."

Kanda, who compiled the results of the two-day symposium, says that when flatfish were exposed to cesium-134 during an experiment, "young fish absorbed high levels quickly, whereas mature fish absorbed it more slowly."

"The Fukushima accident demanded research above and beyond what any one single nation could undertake," says Buesseler. "Our survey involves research institutions from several countries and is independent from the Japanese government, so I think it will live up to the expectations of the Japanese people too."

ICRP: LENDING AN EAR TO THOSE AFFLICTED BY DISASTERS

DATE, Fukushima Prefecture--The International Commission on Radiological Protection (ICRP) wields tremendous influence as the body responsible for setting international standards for radiation protection. The French economist Jacques Lochard, 62, and several other key ICRP figures have been participating in a series of public dialogues in Date, Fukushima Prefecture. At the fourth such meeting in November, held to discuss the impact of the nuclear accident on schooling in the region, Lochard exchanged views with local teachers and offered advice on how to treat radiation damage.

The ICRP was invited to attend by the local community, but Lochard says Date's residents were a little standoffish in their first meeting with the foreign visitors. By the second meeting, though, they had become more relaxed and a fully fledged discussion ensued.

There have been several such dialogues since then.

"Fukushima's experiences have been shared throughout the world, but when you speak to the locals, they have a strong sense of being treated unfairly. It was quite an eye-opener," says Lochard. He believes his role is to answer the questions of the local residents while communicating their problems and opinions to the outside world.

Lochard also visited areas afflicted by the Chernobyl nuclear accident in 1986. His aim was to listen to the demands of the local community and ascertain what they needed to return to a normal life. There are many differences between Chernobyl and Fukushima, though.

"In Chernobyl, people were kept totally in the dark about what was going on, whereas there is too much information in the case of Fukushima, so local residents don't know what to believe," he explains.

At the same time, Lochard feels there are many similarities too. In both cases, for example, the afflicted communities began to feel a strong sense of abandonment as time passed.

Locals often quiz Lochard about whether they should return to decontaminated homes or move somewhere new instead.

"I can't really tell them what the best course of action would be," he says. "What I can do, though, is listen to their worries and continue to engage them in dialogue."

The ICRP is a network of around international 250 experts involved in research and other work related to radiation. The body is essentially a loose group of scientists without any centralized organization, yet it nonetheless has an important influence on the Japanese government's radiation policies.

TRAINEES FROM QUAKE-PRONE COUNTRIES FLOCK TO JAPAN FOR DISASTER TIPS

At the end of October, Japan was visited by 11 administrative officers and scientists from Chile, Peru, the Philippines, Turkey, China and Bangladesh, six diverse countries that all share one thing in common with Japan: the omnipresent threat of a mega-earthquake. The trip was part of a training course organized by the Japan International Cooperation Agency (JICA). The trainees visited areas impacted by last year's disaster, such as Ofunato and Miyako in Iwate Prefecture or Kesennuma in Miyagi Prefecture.

The tour took in embankments breached by the tsunami, for example, and areas designated evacuation spots. The participants listened to the experiences of people who had been swept up in the tsunami or doctors who had helped out with rescue operations. They also visited the Kansai region, scene of the Great Hanshin Earthquake in 1995. All in all, the team spent around two months talking directly to people affected by the disasters or to experts in disaster prevention. Topics on the agenda included how local governments responded directly after the earthquake and how medical treatment was dispensed in the absence of many essential utilities.

"Istanbul lives under the constant threat of a major earthquake striking. We need to think about how to protect the city's 2.5 million schoolchildren," said one participant, Istanbul Deputy Governor Harun Kaya, 46. During the trip, he heard how evacuation drills are conducted at Japanese schools. "I want to use such drills as a springboard to spread awareness about disaster prevention among Turkish families."

Boris Saez, 39, is the man in charge of disaster prevention planning in the central Chilean municipality of Talcahuano. He recalls a conversation with someone who hadn't fled the tsunami because of a naïve faith in the strength of the levees.

"The message really hit home that even the best anti-disaster facilities can't keep us safe just by themselves," he says. When he returns to Chile, Saez says he will push for the continuation of regular disaster drilling.

In 2012 alone, more than 500 people from all over the world have visited disaster-hit areas in Japan as part of JICA's training programs. Travel and accommodation expenses are covered by JICA out of the Japanese government's Overseas Development Assistance (ODA) budget. In return, the participants are expected to propose concrete targets for improving anti-disaster planning after they return to their own countries.

"I hope the trainees can learn firsthand about Japan's disaster prevention technologies and experiences, and then incorporate this knowledge into anti-disaster planning in their own countries," says a JICA spokesperson.

People suspicious : Is radiation understated?

January 17, 2012

Farmers still suffering from radiation fears

Sales of Tohoku produce remain far below pre-March 2011 levels http://www.japantimes.co.jp/text/nn20130117f1.html

By PATRICE NOVOTNY AFP-Jiji

Mayumi Kurasawa's seaweed company saw seven of its factories swept away by the 2011 tsunami. Nearly two years later, sales continue to be eroded by consumer fears over nuclear contamination from the Fukushima No. 1 power plant.

Removing the risk: An employee for the Becquerel Center, a firm that rents machines that check for radiation levels, demonstrates how to use a scintillator to measure radiation levels in a sample of mashed persimmon at its shop in Kashiwa, Chiba Prefecture, on Oct. 21, 2011. AFP-JIJI



"Our seaweed is checked every day, and I guarantee you that it's safe," she said during a recent visit to Tokyo to promote the company she works for, Kawashu. "But we are selling two-thirds less than before Fukushima."

Like many farmers in the Tohoku region, Kurasawa is struggling to sell her produce to a wary population that remains unconvinced by reassurances of food safety.

Even though the Kawashu company's production sites are in Iwate Prefecture, 300 km from the nuclear plant, it is struggling to sell its "wakame" seaweed.

"Many clients prefer produce from South Korea or from China over us. They think it's safer," Kurasawa said.

Previously lauded for their quality, Tohoku products from wasabi, mushrooms, fruit and grains to salmon and sake are now regarded with suspicion by a large number of Japanese customers.

The problems started, of course, when the Fukushima No. 1 plant was swamped by the March 11, 2011, tsunami and three of its reactors went into meltdown after their cooling systems were knocked out.

A photo from April 1, 2011, shows a frozen food factory surrounded by tsunami debris in the town of Ishinomaki, Miyagi Prefecture. AFP-JIJI



The reactors spewed radioactive contamination into the atmosphere, forcing the evacuation of tens of thousands of people.

Sales for Tohoku products have dropped 60 to 70 percent on average against what they were before the crisis.

After the disaster started to abate, the legal limit for radioactive cesium in food was raised in line with international emergency procedures before returning to normal in April last year.

This return to "normal" should have reassured consumers, but the stigma has lingered from temporary bans imposed on beef, milk, mushrooms, vegetables and rice from Fukushima Prefecture after they were found to contain levels of radioactive cesium above government safety limits.

Public faith that certain foods were safe has also been hit by instances of fraud, in which wholesalers have attempted to sell Fukushima produce under the labels of other regions.

The products in question were found not to be dangerous, but the deception, along with doubts over government food screening measures cobbled together after the crisis started, has made life even harder for farmers.

Consumers and experts have also voiced suspicions that officials are understating potential health risks due to worries about the possible economic fallout and the complications should compensation come into play.

Grocery stores, skeptical about the government's legal limit of 100 becquerels of radioactive cesium per kilogram for food, have begun their own testing regimens.

The country's largest supermarket chain, Aeon, has been enforcing a zero-risk policy.

"If we detect radioactive cesium in a product over measurable limits, we stop procuring it from the area it is produced in," Aeon spokesman Norihito Ikkai said. "As a result, it enables customers to buy our products free from anxiety."

In the area around the power station, the majority of produce is now well below the legal limit for radiation, and most produce, plants and animals raised in other prefectures in Tohoku pass inspections.

"All products sold here are checked and healthy," said Katsuyasu Ito, the chef at the L'aureole French restaurant in Oshu, Iwate Prefecture. "But anxieties remain among consumers when it comes to Tohoku products."

Exports have also been hit, falling 8.3 percent from 2010 to ¥451.1 billion in 2011, according to statistics from the Agriculture, Forestry and Fisheries Ministry.

"A total of 45 countries and areas restricted food imports from Japan following the nuclear plant accident, resulting in declines in shipments," a ministry official said. "Generally, they are easing the curbs, except for South Korea."

In the Fukushima town of Soma, 40 km from the stricken power plant, locally grown rice has been passing the radiation tests, but only locals want to buy it.

Masahiro Saito, a chicken farmer who has seen a 20 percent loss in his turnover, feels less unlucky than his grain- and vegetable-growing neighbors, some of whom have had to pack up for good.

"At the peak of the radiation in March 2011, I recorded 5 becquerels of radioactive cesium per kilogram on my chickens," well below the government limit, Saito said.

Like most of his counterparts, he has raised his animals on American corn, which explains why he and other farmers have suffered less than others in the region.

But the consequences of the nuclear catastrophe are still being felt two years later on the overall economy, not just agriculture, and on the daily lives of hundreds of thousands of people in the region. The cleanup around Fukushima is expected to take decades and experts warn that some communities may have to be abandoned.

Anecdotally, the pressures are mounting and stories of people whose livelihoods have dried up abound in the media.

The Cabinet Office says up until last November, 76 people in the region took their own lives in connection with the disaster.

Of the deaths, 21 were linked to financial and livelihood issues and nine to employment issues, the government said.

Radioactive fish (confirmation)

January 20, 2013

Record-high cesium in fish near N-plant

http://www.yomiuri.co.jp/dy/national/T130119002888.htm

Jiji Press

About 254,000 becquerels per kilogram of radioactive cesium was measured in a spotbelly rockfish caught in the port of Tokyo Electric Power Co.'s crippled Fukushima No. 1 nuclear power station late last month, TEPCO has said. **The cesium level is 2,540 times higher than the government-set limit for food and the highest found in fish since the March 2011 accident** at the plant, according to TEPCO.

Are such estimates the only way to define exposure?

January 27, 2013 **Fukushima thyroid exposure at "safe levels"**

http://www3.nhk.or.jp/daily/english/20130127_25.html

Japanese researchers say residents of Fukushima Prefecture were not exposed to levels of radiation that would damage their thyroid glands.

The researchers at the National Institute of Radiological Sciences explained the results of their study at a symposium in Tokyo on Sunday.

The impact of radioactive iodine on the thyroid gland is difficult to detect as the substance dissipates quickly.

The internationally permissible level is 50 millisieverts.

The researchers used tests conducted soon after the accident at the nuclear plant and data on radioactive cesium to estimate the amount of radioactive iodine absorbed by residents in 12 municipalities.

They also calculated the amount taken in by those in other places with a simulation that shows radioactive iodine spreading from the plant.

They say residents of Iwaki City, Futaba Town and Iitate Village were exposed to the highest levels. They estimate that one-year-old children received exposure of up to 30 millisieverts.

The institute says no one in the Fukushima accident 2 years ago is likely to have been exposed to more than the internationally permissible level of 50 millisieverts.

Makoto Akashi of the institute says the estimate can be made more precise with data on the individuals' movements at the time of the accident.

Study of cattle after Fukushima disaster

Distribution of Artificial Radionuclides in Abandoned Cattle in the Evacuation Zone of the Fukushima Daiichi Nu

http://www.plosone.org/article/info:doi/10.1371/journal.pone.0054312

Abstract

The Fukushima Daiichi Nuclear Power Plant (FNPP) accident released large amounts of radioactive substances into the environment. In order to provide basic information for biokinetics of radionuclides and for dose assessment of internal exposure brought by the FNPP accident, we determined the activity concentration of radionuclides in the organs of 79 cattle within a 20-km radius around the FNPP. In all the

specimens examined, deposition of Cesium-134 (¹³⁴Cs, half-life: 2.065 y) and ¹³⁷Cs (30.07 y) was observed. Furthermore, organ-specific deposition of radionuclides with relatively short half-lives was detected, such as silver-110m (^{110m}Ag, 249.8 d) in the liver and tellurium-129m (^{129m}Te, 33.6 d) in the kidney. Regression analysis showed a linear correlation between the radiocesium activity concentration in whole peripheral blood (PB) and that in each organ. The resulting slopes were organ dependent with the maximum value of 21.3 being obtained for skeletal muscles (R² = 0.83, standard error (SE) = 0.76). Thus, the activity concentration of ¹³⁴ Cs and ¹³⁷Cs in an organ can be estimated from that in PB. The level of radioactive cesium in the organs of fetus and infants were 1.19-fold (R² = 0.62, SE = 0.12), and 1.51-fold (R² = 0.70, SE = 0.09) higher than that of the corresponding maternal organ, respectively. Furthermore, radiocesium activity concentration in organs was found to be dependent on the feeding conditions and the geographic location of the cattle. This study is the first to reveal the detailed systemic distribution of radionuclides in cattle attributed to the FNPP accident.

Citation: Fukuda T, Kino Y, Abe Y, Yamashiro H, Kuwahara Y, et al. (2013) Distribution of Artificial Radionuclides in Abandoned Cattle in the Evacuation Zone of the Fukushima Daiichi Nuclear Power Plant. PLoS ONE 8(1): e54312. doi:10.1371/journal.pone.0054312

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Introduction

The accident at the Fukushima Daiichi Nuclear Power Plant (FNPP) discharged volatile artificial radionuclides such as ^{129m}Te, ¹³²Te, ¹³¹I, ¹³²I, ¹³³Xe, ¹³⁴Cs, ¹³⁶Cs and ¹³⁷Cs into the environment [1]–[5]. The details of the timing and causes of the radioactive releases have been monitored by Tokyo Electric Power Company (TEPCO) (http://www.tepco.co.jp/nu/fukushima-np/f1/index-e.html). The Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan, and the U.S. Department of Energy (U.S. DOE) examined the airborne dose rate 1 m above the ground surface within 80 km from the FNPP (http://radioactivity.mext.go.jp/en/). In order to assess biological effects of radiation exposure, evaluations of both external and internal exposure are important. While a variety of data pertaining to external exposure are available, only limited data of the internal distribution of radionuclides and their activity are available. Deposits and internal exposure of radionuclides are dependent on the metabolism and biokinetics of radionuclides, which are not fully understood in animals. As of April 22, 2011, the evacuation zone was set to within a 20-km radius surrounding the FNPP, and approximately 3,400 cows, 31,500 pigs, and 630,000 chickens were left behind in this area. On May 12, 2011, the Japanese government ordered Fukushima Prefecture to euthanize the cattle in the evacuation zone. Recently,

Calabrese indicated the importance of risk assessment for chronic radiocesium exposure based on the situation at Fukushima in Japan and emphasized the limitation for the assessment of risk from radiocesium intake due to the absence of animal model chronic bioassays [6]. Almost all of the cattle abandoned in the evacuation zone can be recognized individually by their ear-tag and their individual histories are easily obtainable. We therefore thought that those would be ideal as an animal model for assessing chronic exposure to radionuclides after the FNPP accident. In order to provide basic information for biokinetics of radionuclides and for dose assessment of internal exposure, we evaluated gamma-ray emitting artificial radionuclides in multiple organs of the cattle and analyzed their organ specificity and metabolism.

Results and Discussion

Between August 29 and November 15, 2011, we collected 79 cattle in total, 27 of which were from Minami-soma city located north and 52 from Kawauchi village located southwest of the FNPP. Both places are within the evacuation zone between 10- and 20-km radius of the FNPP. The cattle included 63 adult females (3 of which were pregnant), 10 male calves, and 3 female calves. The age of the cattle without the ear-tag was estimated by its height and body size. We classified the cattle as infant if it was younger than 6 months old.

Typical gamma-ray spectra obtained from muscle, liver, and kidney are shown in Figure S1. In these spectra, either of photopeaks from ¹³⁴Cs, ¹³⁷Cs, ^{110m}Ag, and ^{129m}Te was observed. In the control animals, which were housed in Hokkaido Prefecture (northern edge of Japan, 630 km from FNPP), we could not detect any photopeaks of ¹³⁴Cs, ¹³⁷Cs, ^{110m}Ag, and ^{129m}Te (data not shown). We also determined the limit of detection based on the background measurement (see "Materials and Methods"). From these data, we concluded that the detected radionuclides, such as ¹³⁴Cs, ¹³⁷Cs, ^{110m}Ag, and ^{129m}Te, in the abandoned cattle were attributable to environmental contamination by the nuclear fallout from the FNPP accident. Based on the count rate from each cattle organ, we calculated the concentration of these radionuclides, as listed in Table 1. All the measurements were decay-corrected to the day of major release, March 15, 2011 (see the section on decay correction in Materials and Methods). All specimens including peripheral blood (PB) obtained from abandoned cattle showed deposition of two radionuclides, ¹³⁴Cs and ¹³⁷Cs. The measured radioactivity of ¹³⁴Cs was similar to that of ¹³⁷Cs after decay correction in all samples examined. Therefore, both isotopes of radiocesium are hereafter represented by ¹³⁷Cs. Muscle tissues showed the highest deposition of ¹³⁷Cs and no statistical difference of ¹³⁷Cs activity concentration was observed among three representative positions of the cattle muscle (Longissimus, Biceps femoris, and Masseter muscle). We thus classified these three muscles into one category, "skeletal muscle," in the subsequent regression analysis between PB and organs.

	Cr-134 (Big/kg)*			Cr-13P (Big/kg)*			Ag-110m (Bg/kg/*			Te-12hm (Bolkg)*		
	-	a 50 ⁴	August 1	2744A	: 50 ⁴	sun?	m485	: 50 ⁴	num"	mean 2	50 ⁴	aya"
Longitalmus muscle	582	1.398	48	411	0406	48		NO ⁴			ND	
liceps femoris muscle	637	8-4285	38	663	240	38		ND			ND	
Masseter muscle	579	+ 359	19	606	±323	19		NO			ND	
Neck muscle	549	1,300		568	:327	6		NO			ND	
Diaphragm.	272	1:206	12	200	+203	10		NO			NO	
longue	584	±390	17	679	±304	12		NO			ND	
Heart.	304	± 176	30	363	± 147	30		NO			ND	
Uniter	198	±145	-02	207	#154	-02	137	::176	42/42*		ND	
Gelwy	344	1.349	39	361	::164	29		NO:		7,000	24,000	10/25
ung .	272	a 186	35	195	= 143	56		NO			ND	
Spieren	182	2.98	30	190	2106	20		190			ND	
hyroid-gland	200	0.201		192	1.207			NO			ND	
Submandibular gland	162	0.101	11	128	0114	11		NO			ND	
Nammary gland	- 54	1960	3	54	8.55	3		ND			ND	
Utervs	128	0.114	6	143	±125	-6		NO			ND	
Hinary bladder	186	8.40	1	200	1.94	5		ND			ND	
Irain	119	+ 36	3	123	+34			NO-			ND	
be.	100	1155	11	110	242	11		NO			ND	
fiood	24	+ 20	33	25	210	51	5.2	+3.7	5/31*		ND	

'Decay correction was made to the day major release of radionuclides, March 15, 2011.

SD: the standard deviation, 'num: the number of the samples positive for the deposition of radionucleides.

ND not detectable.

"The Number of positive samples/the number of tested samples. All the samples were positive for ""Cs and ""Cs.

doi.10.1071/journal.gone.0054013.8001

Table 1. Activity concentration of ¹³⁴Cs, ¹³⁷Cs, ^{110m}Ag and ^{129m}Te in cattle organs and peripheral blood.

doi:10.1371/journal.pone.0054312.t001

In the liver (100%: 47/47 animals) and PB (9.8%: 5/51 animals), ^{110m}Ag (half-life: 249.8 d) was detected (Table 1). Furthermore, kidney (62%: 18/29 animals) showed the deposition of ^{129m}Te, despite its short half-life (33.6 d), whereas other specimens including PB did not.

Regression analysis revealed linear correlations of ¹³⁷Cs activity concentration between PB and organs. The slope was dependent on each organ examined (Figure 1), indicating that radiocesium activity concentrations in the organs can be estimated from the blood levels. The activity concentration level of ¹³⁷Cs in the skeletal muscle was the highest among all of the organs examined and was 21.3-fold greater (standard error (SE) = 0.76) than that of PB. The difference of the regression slopes between the skeletal muscle and other organs was significant (t-test, Table S1). Interestingly, ¹³⁷Cs activity concentration in the heart was significantly lower than that in skeletal muscles despite the fact that the heart is composed of striated muscle cells.

Figure 1. Correlation of ¹³⁷Cs activity concentration between peripheral blood (PB) and organs.

Cattle were captured in Plots 1(circle), 2 (triangle), and 3 (square). Cattle from the same plot were enclosed by black marking. Inset: Cattle whose ¹³⁷Cs radiation concentration in PB was lower than 20 Bq/kg. All those from Plot 1 and part of Plot 2 were included.

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Cattle were divided into 3 groups in accordance with the plot in which they were caught. Plots 1 and 3 were in Minami-soma city located to the north and plot 2 in Kawauchi village located to the southwest of the FNPP, respectively. Cattle in Plot 1 were kept in a stall barn after the FNPP accident, and they were fed with radionuclide-free pasture grass and supplied with radiation contaminated rainwater until sacrifice.

Cattle in Plots 2 and 3 were unleashed and were freely allowed to graze on contaminated grass after the accident. The profile of rdiocesium activity concentration could be divided into 3 groups in accordance with the Plot where the cattle were caught (Figure 1 and Table S2). Although Plots 1 and 3 were the same city, the feeding conditions were different. The level of ¹³⁷Cs activity concentration in soil samples between Plot 2 and Plot 3 was not so different (Table S3) and was also reportedly quite similar [7]. However, ¹³⁷Cs activity concentration in PB of cattle in Plot 3 was the highest and that in Plot 1 was the lowest in this study (comparison of each group, p<0.01, t-test). These indicate that the activity concentration of internally deposited radionuclides is largely influenced by feeding conditions as well as geographic conditions of the cattle farm.

The transfer of radionuclides from mother to fetus is one of the major concerns of exposure to internal radiation. As mentioned above, we had collected 3 pregnant cows. The comparison between radiocesium activity concentration in the fetus and the mother is shown in Figure 2A. Most symbols lay on the upper part of the dashed equality line (fetus side). The regression analysis of all tested organs showed that the activity concentration of cesium was 1.19 times higher (R² = 0.62, SE = 0.12) in fetal organs than in the corresponding maternal organs. Cesium is considered to transfer freely between mother and fetus and is assumed to be uniformly distributed throughout all the tissues of the fetus [8]. These observations indicate that radiocesium is more concentrated in the fetus than in the mother. Although Silver and Tellurium are transplacental [9]–[11], neither ^{110m}Ag nor ^{129m}Te was detectable in the fetal organs examined, indicating that these radionuclides were efficiently captured by the mother's organs and were not delivered to the fetus. In order to understand fetal biokinetics of each radionuclide we tried to collect PB from the fetus. However, we could not obtain sufficient quantities to enable the measurement of radioactivity.



Figure 2. Comparison of ¹³⁷Cs activity concentration between mother and offspring.

A. Organ ¹³⁷Cs activity concentration between 3 pairs of mother and her fetus. **B.** Organ ¹³⁷Cs activity concentration between 3 pairs of mother and her child. The dashed line indicates the slope at which ¹³⁷Cs activity concentration in organs is equal between mothers and their corresponding offsprings. Points

above this line indicate that offspring ¹³⁷Cs activity concentration in an organ was higher than that of the mother. The bold line is the regression line obtained from all organs.

doi:10.1371/journal.pone.0054312.g002

Before the cattle were euthanized, we noticed 3 mother and infant pairs in Plot 2. We confirmed that these infants were born after the FNPP accident and that they were being weaned at the time. As shown in Figure 2B, most of the points lie on the upper side of the dashed equality line (infant side). The regression analysis showed that radiocesium activity concentration was 1.51 times higher in the infant organs than in the corresponding maternal organs ($R^2 = 0.70$, SE = 0.09). Therefore, we concluded that the deposition of ¹³⁷Cs in infant organs is correlated with that in the corresponding maternal organs but is higher than that in maternal ones. Shorter half-lives of retention are adopted for infants and children than for adults [12]. Inaba *et al.* mentioned that water and electrolyte metabolism should differ considerably between newborn and adult, and that potassium contents of the feeding might affect the radiocesium activity concentration [13]. We do not have any data regarding the proportion attributed to milk and grass which the infants were taking at the time of the sacrifice.

In our data, the thyroid showed lower ¹³⁷Cs deposition compared with other visceral organs (Figures 1 and 2B). Bandazhevsky previously reported that the highest accumulation of radiocesium was found in the endocrine glands, in particular, the thyroid, in humans [14]. Although we need to consider the species difference between humans and cattle, radiocesium is suggested to have little impact on thyroid carcinogenesis.

Chronic inflammation and the development of proliferative atypical cells of the bladder uroepithelium in people living in ¹³⁷Cs-contaminated areas in Ukraine have previously been reported [15]. The urinary bladder showed relatively high ¹³⁷Cs accumulation in this study (Figure 1). In our observation, so far, we could not find any abnormalities at the gloss appearance level in the bladder.

Radioactive ^{110m}Ag is not a fission product but is formed by the neutron capture of stable ¹⁰⁹Ag. We detected ^{110m}Ag in the liver of all of the cattle except for fetuses examined (Table 1 and Figure 3A). The ratio of deposited radioactivity concentration of ^{110m}Ag to ¹³⁷Cs in the soil of Plot 2 and Plot 3 was lower than 0.5% and that in the grass of Plot 3 was lower than 5% (Table S3). The value in the soil was consistent with the distribution map of radiation doses by MEXT

(http://radioactivity.mext.go.jp/old/en/1750/2011/10/1750_1031e_2.pdf) (MEXT Dose Map) as of June 14, 2011. In the current study, ^{110m}Ag activity concentration in the liver did not show Plot dependent difference or association with ¹³⁷Cs activity concentration (Figure 3A). Both the human evidence and the animal studies indicate substantial deposition of silver in the liver but the retention rate is influenced by the route of intake [12]. It is reported that the liver deposition of ^{110m}Ag in sheep and its transfer coefficient to the liver was higher than that of ¹³⁷Cs in the Chernobyl nuclear accident [16]. These data indicate that the transfer coefficient of ^{110m}Ag to the liver is higher than that of ¹³⁷Cs. Furthermore, postmortem data on the distribution of ^{110m}Ag in a patient 195 days after injection showed the highest uptake in the liver (40%) among all organs [17]. There was no relationship between the activity concentration of ^{110m}Ag in PB and in the liver (Figure 3B). Danscher *et al.* reported that silver predominantly accumulates in lysosome-associated tissues, such as lymph nodes, liver, kidneys and the central nervous system after silver administration in rats and mice. Furthermore, they showed the intense accumulation of silver in Kupper cells of the liver [18]. From these cumulative data and this study, we concluded that the liver is the primary target organ for ^{110m}Ag deposition.



Figure 3. Activity concentration of ^{110m}Ag and ^{129m}Te.

doi:10.1371/journal.pone.0054312.g003

We clearly detected the radioactivity of ^{129m}Te in the cattle kidney (Table 1), although the measurement was performed 7 months after the FNPP accident. We concluded that the kidney is the target organ of ^{129m}Te deposition, based on its relatively short half-life (^{129m}Te, 33.6 d). The activity concentration of ^{129m}Te was mainly classified into two groups: Plots 2 and 3 (Figure 3C). The ratio of ^{129m}Te/¹³⁷Cs activity concentration in the kidney of some cattle from Plot 2 was higher than that from Plot 3. As of March 15, the ratio of soil activity concentration of ^{129m}Te to ¹³⁷Cs was 0.34 in Plot 2 and 1.41 in Plot 3, respectively [7]. This contradiction needs further investigation.

After the FNPP accident, a large amount of ¹³²Te was released into the environment. At first a higher activity concentration of ¹³²Te than ^{129m}Te was detected in the soil of the evacuation zone [7]. The deposition of ^{129m}Te in the kidney suggests that radioactive ¹³²Te also accumulated in the kidney shortly after the FNPP accident. The half-life of ¹³²Te is 3.2 days and its decay product is radioactive ¹³²I, which is thyroid tropic. A previous study reported that radioactive tellurium that is orally administered to cows concentrates in the thyroid more than in most other tissues [19]. These results suggest that we need to pay more attention to ¹³²Te as well as ¹³¹I in assessing health risk to the thyroid.

Currently, we are further collecting tissues from animals, including cattle, in the evacuation zone in order to construct a tissue bank which represents a variety of species. As the first stage, we are going to make dose assessments of deposited radionuclides in animals. Microscopic examinations of necropsied animals are also underway to find lesions that could be directly attributed to the effect of ionizing radiation. Our study is the first report on organ-specific deposits of various gamma-ray emitting radionuclides in cattle after the FNPP accident, and should contribute to improvement in public health and radiation safety. [...]

Namie Town first to check on its children's exposure

January 29, 2013

Fukushima town estimates children's exposure doses

http://www3.nhk.or.jp/daily/english/20130129_32.html

A town near the Fukushima Daiichi nuclear plant has started examinations to estimate the radiation exposure of young residents during the initial phase of the nuclear accident at the plant in March 2011.

Namie Town is between 5 and 30 kilometers from the crippled plant. Many of its residents evacuated to northwestern areas of the town just after the accident without knowing that radiation levels were high there.

In response to residents' health concerns, the town on Tuesday began checkups for residents who were 18 or younger at the time of the accident.

On the first day, about 30 children were examined at a medical station at a temporary housing complex in neighboring Nihonmatsu City.

A medical research team of Hirosaki University explained the purpose and method of the checks.

The impact of radioactive iodine is difficult to detect long after exposure, as the substance dissipates quickly. So researchers will collect blood from examinees to look for changes in shapes of chromosomes in lymphocytes.

Namie is the first municipality in Fukushima Prefecture to carry out such tests. About 850 children, or 23 percent of those eligible, say they want to be checked.

Analysis is likely to take several months. But Hirosaki University Professor Mitsuaki Yoshida says his team will do its best to notify the examinees of the results as soon as possible to relieve people's concerns.

1954 - The whole of Japan affected by radiation

February 4, 2013

Fukushima disaster renews interest in documentary on 1954 incident



A poster for the documentary film titled "Hoshasen o abita X nengo" (X years after exposure to radiation).

http://mainichi.jp/english/english/newsselect/news/20130204p2a00m0na014000c.html

The ill-fated Daigo Fukuryu Maru was not the only Japanese fishing boat to be exposed to nuclear fallout from U.S. hydrogen bomb testing on Bikini Atoll in 1954, says a Japanese television program that was recently converted into a documentary film.

A television program by a Japanese broadcasting network in 2004, which has now resurfaced as a documentary film titled "Hoshasen o abita X nengo" (X years after exposure to radiation), says that some 1,000 Japanese fishing vessels were in surrounding waters at the time. One-third of these belonged to fisheries cooperatives in Kochi Prefecture.

A total of six H-bomb tests were conducted by the United States on Bikini Atoll between March and May of 1954. The well-known Shizuoka Prefecture-based tuna fishing boat Daigo Fukuryu Maru was some 160 kilometers east of the site of a blast that took place on March 1. The death of the ship's chief radioman, Aikichi Kuboyama, several months later due to acute radiation syndrome sparked a worldwide movement against A- and H-bombs.

Released in September last year, "Hoshasen" is an 83-minute documentary film that tracks down former tuna fishermen from Kochi. In one scene, a widower of a former deckhand who died in 1999 at the age of 74 looks back on the cremation of her husband, saying, "Only the bones of my husband were in bits." One-third of the 241 seamen who were identified had died before reaching their 50s or 60s, and those still living suffered from illness. Many had cancer, and more than a few showed symptoms believed to be caused by radiation.

The Japanese government, however, settled the issue with the U.S. government in January 1955 with the receipt of 2 million dollars in compensation, without having investigated the health problems experienced by seamen who had been on ships other than the Daigo Fukuryu Maru. **U.S. government records show that the whole of Japan was covered in radioactive materials that year, levels of which the U.S. had measured.** The film succeeds in revealing numerous such facts in a controlled tone.

The television documentary series on which "Hoshasen" was based was produced by Hideaki Ito, a director at Nankai Broadcasting Co. in Ehime Prefecture who learned about the activities of former high school teacher Masatoshi Yamashita through the Internet.

In 1985, Yamashita began to research fishing ships that had been exposed to radiation with local high school students in a seminar he held on local history. As former seamen who had been reluctant to speak about their experiences opened up to the students, the truth gradually came out.

Shocked with the information Yamashita had gathered, Ito produced the program "Washi mo shi no umi ni otta" (I, too, was in the sea of death). In 2004, it was aired nationwide on Nippon Television Network Corp.'s documentary program, NNN Document, and won the grand prize at the Age of Regionalism Video Festival. Though sequels were aired locally, there was little response from viewers. It was just when Ito was considering aborting the project that the disaster at the Fukushima No. 1 Nuclear Power Plant broke out. The program was rebroadcast on NNN Document in January 2012, and became widely discussed on the Internet.

Reaffirming his commitment to the project, Ito successfully appealed to his superiors at Nankai Broadcasting and his contacts at Nippon Television for support in making the program into a film.

"I believe that shedding light on what happened half a century ago will help minimize the harm done to the people of Fukushima," Ito says.

The film's distributor, Ukky Productions, says independent and cinema screenings at some 30 locations are planned through this summer, and that they are looking for more parties to host screenings. Ukky Productions can be contacted by phone on: 03-5213-4933 (Japanese language only)

Children's thyroids - Suzuki strikes again

Fukushima gov't postponed thyroid examinations for children who fled from prefecture

http://mainichi.jp/english/english/newsselect/news/20130209p2a00m0na011000c.html

The Fukushima Prefectural Government's resident health survey committee postponed thyroid gland examinations for children who fled the region after the crisis at the Fukushima No. 1 Nuclear Power Plant following secret meetings.

The matter was revealed in the minutes of the secret meetings that were released by the prefectural government after a request by the Mainichi Shimbun under the freedom-of-information act. While the reason to have postponed the examinations is unclear, an expert warns that "Actions such as this could only increase residents' distrust of the prefectural government."

The prefectural government had been conducting thyroid gland examinations as part of its health surveys following the outbreak of the Fukushima No. 1 Nuclear Power Plant disaster in 2011. It assigned the Fukushima Medical University to conduct the examinations. The initial tests for children who remained in the prefecture were carried out at the university's affiliated hospital located in the city of Fukushima in October 2011 and at local halls and elsewhere the following month.

According to the minutes, the preparation of thyroid gland screenings at hospitals outside of Fukushima Prefecture was the topic of the fourth secret meeting on Oct. 17, 2011. Shinichi Suzuki, professor at Fukushima Medical University who was in charge of the examinations, pointed out, "There aren't many doctors who specialize in thyroid gland issues. We need to postpone authorizing hospitals outside of the prefecture to conduct the tests and prioritize arrangements within the prefecture."

However, Suzuki stated in the fourth exploratory panel meeting that was held on the same day as the secret meeting, "We are set to prepare thyroid gland examinations for those who have fled from the prefecture."

Moreover, Shunichi Yamashita, vice president of Fukushima Medical University who chairs the exploratory panel, made a comment at the secret meeting on Jan. 25, 2012, saying, "It is important to send out a message that says we have

prepared for examinations outside the prefecture." Accordingly, in the panel meeting on the same day, Suzuki said, "We have listed 113 (medical institutions outside the prefecture) for the thyroid gland examinations. We plan to make informal agreements with them around January and the examinations will be conducted sometime after April." Keiichi Sasa, head of the health management research office at the prefectural government, explained at the prefectural assembly's ad hoc committee meeting on March 13, 2012, that, "We are in the final stage of preparing for the thyroid gland examinations outside of the prefecture so that they can start to be carried out in May." Suzuki also said at a press conference after the panel meeting on April 26 that year, "We hope to announce the medical institutions that will carry out thyroid examinations outside the prefecture in May after the Golden Week holiday period."

However, several medical institutions outside the prefecture told the Mainichi Shimbun that they received the documents from Fukushima Medical University requesting support for thyroid gland examinations between late March and early June in 2012, and that the written agreements for the examinations were received in late August.

The prefectural government finally announced on Sept. 5, 2012, the 71 medical institutions outside the prefecture that would carry out the thyroid gland examinations. The tests in other prefectures started in November the same year, about a year after the initial examinations that were carried out for children who remained in Fukushima.

The prefectural government's health management research office responded that although it had originally planned to prepare for the examinations outside of the prefecture in early fiscal 2012, it took time to prepare details that ultimately delayed the announcement to early September. Suzuki hasn't responded to an interview request by the Mainichi.

The exploratory panel has been criticized for its misconduct such as releasing the minutes of the meetings after deleting any references to internal radiation exposure from the documents.

Thyroid cancer in young Fukushima people

February 13, 2013

2 more thyroid cancer cases identified in Fukushima

http://mainichi.jp/english/english/newsselect/news/20130213p2g00m0dm091000c.html

FUKUSHIMA, Japan (Kyodo) -- A Fukushima prefectural government panel said Wednesday two young people, who were 18 or younger when the nuclear crisis at the Fukushima Daiichi complex erupted in March 2011, have been diagnosed with thyroid cancer, bringing the total number of such cases to three.

Reporting the finding at a meeting of the panel on the health impact from the disaster, Shinichi Suzuki, professor at Fukushima Medical University, said it is too early to link the cases to the nuclear accident as the 1986 Chernobyl disaster demonstrates that it takes at least four to five years before thyroid cancer is detected.

The three people have been doing well since undergoing surgery, according to Suzuki.

Radioactive iodine released in nuclear accidents tends to accumulate in thyroid glands, particularly in young people. In the Chernobyl disaster, a noticeable increase in thyroid cancer cases was detected among children in the affected area.

Local authorities in Fukushima Prefecture, home of the crippled nuclear plant, are examining the thyroid glands of those who were under 18 at the time of the nuclear crisis to check if they have been affected by the radiation.

Among the 360,000 people, around 38,000 were checked in fiscal 2011, of whom 10, including the three thyroid cancer cases, are suspected of suffering from some form of cancer. The average age of the 10 people is around 15 and seven of them are women.

The remaining seven are undergoing medical examinations at the university.

Not so scientific

February 14, 2013

Questions raised over testing methods for thyroid gland doses in Fukushima http://ajw.asahi.com/article/0311disaster/fukushima/AJ201302140072

By YURI OIWA/ Staff Writer

Researchers have announced safe radiation doses in thyroid glands for the vast majority of residents living around the stricken Fukushima nuclear plant. But their studies are based on estimates, assumptions and a calculation method that many experts have called into question.

A mountain of challenges must be overcome before the doses can be evaluated more accurately. Some obstacles could be removed simply through improved coordination in sharing information.

One of the biggest problems is the scarce availability of data for radioactive iodine, which has a short halflife of eight days, in the period immediately following the nuclear disaster that began on March 11, 2011. The researchers were forced to depend on other data resources just to estimate the iodine doses in

thyroid glands. The Environment Ministry commissioned the task to the National Institute of Radiological Sciences (NIRS), which has relied on two methods to assess the doses.

One method estimates iodine doses on the basis of abundantly available data on the internal doses of radioactive cesium, which has a much longer half-life. The other method relies on simulations of the spread of iodine from the disaster at the nuclear plant.

Presenters at a symposium in late January focused largely on the method that uses the cesium doses. The symposium was held to show the results of the central government's thyroid gland study in Fukushima Prefecture that started last year.

They said the thyroid gland doses were 30 millisieverts or less in 90 percent of 1-year-olds in the village of litate, the group with the highest doses. The corresponding figures for other communities were between 27 millisieverts and 2 millisieverts or less.

All those figures fell short of the 50-millisievert international standard for taking iodine tablets to prevent thyroid gland irradiation.

Their estimates were based largely on their perceived iodine-to-cesium ratio in human bodies. Ideally, the team of researchers would have used data on subjects who were tested for both radioactive substances. But such information was scarce.

Instead, the team relied on thyroid gland iodine tests conducted by the central government in late March 2011 on 1,080 children in Iitate, Kawamata and other communities, and whole-body cesium dose data for about 300 adults from Iitate and Kawamata who were tested by the Japan Atomic Energy Agency.

On the basis of that data, the researchers assumed the iodine-to-cesium ratio was 3:1 in human bodies. The estimate was used to evaluate thyroid gland doses for residents who were living in other communities where cesium tests were conducted.

Many pointed out during the symposium that the ratio should be studied further.

The Nuclear Regulation Authority and other sources have said the iodine-to-cesium ratio was 10:1 in airborne materials spewed out by the Fukushima reactors. The corresponding ratios in soil are believed to have been 10:1 northwest of the nuclear plant and 50:1 south of the plant.

However, the iodine-to-cesium ratios were between 1:1 and 50:1 in the internal radiation doses of about 50 researchers who measured radiation levels around the Fukushima No. 1 plant immediately after the nuclear disaster started. The median value was 11:1.

Furthermore, the iodine-to-cesium ratios were less than one in five residents from the town of Namie who were tested in April 2011 by a group led by Shinji Tokonami, a radiology professor at Hirosaki University.

"We have to attune the iodine-to-cesium ratios after studying why they are not the same in human bodies and in the environment, including in soil, and why they differ among individuals," said Osamu Kurihara, head of the NIRS Internal Dosimetry Section and leader of the research team. Tokonami questioned the wisdom of using one ratio for all residents to determine the thyroid gland doses.

"The ratios in the bodies of subjects do vary, depending on when they inhaled iodine contained in a radioactive plume and which direction the plume was flowing," Tokonami said. "The ratio estimates should at least be different between the areas northwest of the nuclear plant and the areas south of it."

Sharing existing data poses another challenge. The central government holds all the thyroid gland iodine dose data on the 1,080 children. Separately, the Fukushima prefectural government is in possession of all the whole-body cesium dose data.

It is unknown if any of the 1,080 children were also tested for cesium doses. Such double-tested subjects could be sources of information that would certainly enhance the accuracy of the ratio estimates.

"The dose estimates should be based on more studies on the iodine-to-cesium ratios and should take the subjects' whereabouts (in the immediate aftermath of the nuclear disaster) into consideration," said Toshimitsu Homma, head of the JAEA Nuclear Safety Research Center.

The governments of Russia and the United States tested their citizens in Japan for thyroid gland doses shortly after the Fukushima disaster.

Russian researchers said a team of experts visited Japan in April 2011 at Moscow's behest to test staff of the Russian Embassy in Tokyo, their family members and other Russian citizens. Iodine was detected in three of the 268 subjects tested.

The thyroid gland dose was estimated at 2 millisieverts for an adult and 4 millisieverts for a 1-year-old, the Russian scientists said.

About 7,000 people were tested for thyroid gland doses at U.S. military bases across Japan. Measurements on U.S. airmen at Yokota Air Base in Tokyo led to the estimation that a subject who spent 24 hours outdoors was exposed to an average thyroid gland dose of 5.3 millisieverts, sources said.

Over 44 % of Fukushima kids surveyed have thyroïd abnormalities

February 18, 2013

Fukushima kids have skyrocketing number of thyroid abnormalities - report

http://rt.com/news/fukushima-children-thyroids-abnormalities-cancer-444

Published: 18 February, 2013, 07:54

Officials in protective gear check for signs of radiation on children who are from the evacuation area near the Fukushima Daini nuclear plant in Koriyama, March 13, 2011.(Reuters / Kim Kyung-Hoon) A recent report into the Fukushima Nuclear disaster of 2011 has shown that more than forty percent of children have thyroid abnormalities.

-The Tenth Report of the Fukushima Prefecture Health Management Survey, released earlier this week, with data up to January 21, 2013, revealed that 44.2 percent of 94,975 children sampled had thyroid ultrasound abnormalities. The number of abnormalities has also been increasing over time as well as the

proportion of children with nodules equal to and larger than 5.1 mm and any size cysts have increased. The report has also revealed that 10 of 186 eligible are suspected of having thyroid cancer as a result of the exposed radiation.

On Wednesday, the Fukushima Prefectural Government announced that two people who were teenagers at the time of the Fukushima No. 1 meltdown have been diagnosed with thyroid cancer, bringing the total number of cases officially confirmed by authorities to three. All have undergone surgery and are now recovering.

Around 360,000 youths at the time of the disaster have to be repeatedly checked to see if they have been affected by the radiation.

In the meantime on Friday, a government-backed researcher claimed that no health effects have been detected in people living in the contaminated area because the radiation level is not high enough.

"Since the accident in Fukushima, no health effects from radiation have been observed, although we have heard reports some people fell ill due to stress from living as evacuees and due to worries and fears about radiation," Kazuo Sakai of Japan's National Institute of Radiological Sciences has said.

He went on to argue that people in the area had a radiation exposure of 20 millisieverts or less, while "we know from epidemiological surveys among atomic-bomb victims in Hiroshima and Nagasaki that if exposure to radiation surpasses 100 millisieverts, the risk of cancer will gradually rise."

Sakai says that it will take years to establish a clear link between the nuclear catastrophe and health risks *"as empirical knowledge says it takes several years before thyroid cancer is detected after exposure to radiation."*

Scientists and activists across the globe are still arguing about the possible long-term effects of the nuclear catastrophe while activists accuse the government of concealing the crucial data from people ever since the disaster.

Global environmental watchdog, Greenpeace, has criticized Tokyo of undermining the severity of public health risk.

Kazue Suzuki, nuclear campaigner at Greenpeace, who is not a scientist, said Japan should not try to play down the potential dangers.

"Japan should pour more energy into prevention of diseases including thyroid cancer than talking down the risk of low-level radiation," Kazue Suzuki from Greenpeace has said, warning "if there is no comparative epidemiological data, the government should err on the side of caution and carry out more frequent health checks among residents not only in Fukushima but in other prefectures," she said.

An earthquake in the ocean in March 2011 sent a devastating tsunami to Japan's northeast coast killing around twenty thousand people and sending nuclear reactors on the coast into meltdown.

See also in French : http://fukushima.over-blog.fr/article-fukushima-les-cancers-arrivent-115459886.html

UN numbers much lower than WHO's May 2012 estimates

February 28, 2013

U.N. panel: Thyroid radiation doses in Fukushima infants within safe limits

February 27, 2013 http://ajw.asahi.com/article/0311disaster/fukushima/AJ201302270037

By YURI OIWA/ Staff Writer

FUKUSHIMA--Thyroid gland doses of internal radiation in year-old infants living within 30 kilometers of the Fukushima No. 1 nuclear power plant are well within safety limits, according to a United Nations committee.

At a Feb. 26 international conference in Fukushima, a representative of the U.N. Scientific Committee on the Effects of Atomic Radiation said the infants averaged less than 50 millisieverts, about half the estimate presented by the World Health Organization in May.

International Atomic Energy Agency guidelines recommend the ingestion of iodine tablets to block thyroid irradiation for people with a dose of 50 millisieverts. It is believed the risk of cancer increases in levels that exceed 100 millisieverts.

The U.N. estimate used data that was not compiled in time for the WHO evaluations, and also considered typical evacuation behaviors on an area-by-area basis.

During the conference, several Japanese researchers said the U.N. evaluations were more realistic than the WHO estimates.

The WHO estimated that thyroid gland doses were between 100 and 200 millisieverts for 1-year-olds in the town of Namie, and 10 to 100 millisieverts for 1-year-olds in the rest of Fukushima Prefecture.

The WHO assumed that residents in the 20- to 30-km zone surrounding the nuclear plant evacuated their homes around four months after the crisis began to unfurl on March 11, 2011, and considered both the inhalation of airborne radioactivity and the ingestion of contaminated foodstuffs and water.

The U.N. estimate, by contrast, only considered harmful effects through inhalation.

The U.N. committee also evaluated whole-body doses of adults within a 30-km radius of the nuclear plant. Such doses were estimated at less than 5 millisieverts on average for those who evacuated on March 12, 2011, and at less than 10 millisieverts on average for those who evacuated later.

The WHO's Zhanat Carr, who attended the Feb. 26 session, said it was common for the WHO, whose mission is to protect people's health, to present cautious estimates so as not to underestimate doses. The U.N. committee will present a report, being drawn up by about 80 experts from countries, including Japan, to a session of the U.N. General Assembly in September.

Increased risk of cancer hardly detectable, says WHO

March 2, 2013

WHO: Slight cancer risk after Japan nuke accident

http://mainichi.jp/english/english/newsselect/news/20130228p2g00m0d m094000c.html

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LONDON (AP) -- Two years after Japan's nuclear plant disaster, an international team of experts said Thursday that residents of areas hit by the highest doses of radiation face an increased cancer risk so small it probably won't be detectable.

In fact, experts calculated that increase at about 1 extra percentage point added to a Japanese infant's lifetime cancer risk.

"The additional risk is quite small and will probably be hidden by the noise of other (cancer) risks like people's lifestyle choices and statistical fluctuations," said Richard Wakeford of the University of Manchester, one of the authors of the report. "It's more important not to start smoking than having been in Fukushima."

The report was issued by the World Health Organization, which asked scientists to study the health effects of the disaster in Fukushima, a rural farming region.

On March 11, 2011, an earthquake and tsunami knocked out the Fukushima plant's power and cooling systems, causing meltdowns in three reactors and spewing radiation into the surrounding air, soil and water. The most exposed populations were directly under the plumes of radiation in the most affected communities in Fukushima, which is about 150 miles (240 kilometers) north of Tokyo.

In the report, the highest increases in risk are for people exposed as babies to radiation in the most heavily affected areas. Normally in Japan, the lifetime risk of developing cancer of an organ is about 41 percent for men and 29 percent for women. The new report said that for infants in the most heavily exposed areas, the radiation from Fukushima would add about 1 percentage point to those numbers.

Experts had been particularly worried about a spike in thyroid cancer, since radioactive iodine released in nuclear accidents is absorbed by the thyroid, especially in children. After the Chernobyl disaster, about 6,000 children exposed to radiation later developed thyroid cancer because many drank contaminated milk after the accident.

In Japan, dairy radiation levels were closely monitored, but children are not big milk drinkers there. The WHO report estimated that women exposed as infants to the most radiation after the Fukushima accident would have a 70 percent higher chance of getting thyroid cancer in their lifetimes. But thyroid cancer is extremely rare and one of the most treatable cancers when caught early. A woman's normal lifetime risk of developing it is about 0.75 percent. That number would rise by 0.5 under the calculated increase for women who got the highest radiation doses as infants.

Wakeford said the increase may be so small it will probably not be observable.

For people beyond the most directly affected areas of Fukushima, Wakeford said the projected cancer risk from the radiation dropped dramatically. "The risks to everyone else were just infinitesimal." David Brenner of Columbia University in New York, an expert on radiation-induced cancers, said that

although the risk to individuals is tiny outside the most contaminated areas, some cancers might still result, at least in theory. But they'd be too rare to be detectable in overall cancer rates, he said. Brenner said the numerical risk estimates in the WHO report were not surprising. He also said they should be considered imprecise because of the difficulty in determining risk from low doses of radiation. He was not connected with the WHO report.

Some experts said it was surprising that any increase in cancer was even predicted.

"On the basis of the radiation doses people have received, there is no reason to think there would be an increase in cancer in the next 50 years," said Wade Allison, an emeritus professor of physics at Oxford University, who also had no role in developing the new report. "The very small increase in cancers means that it's even less than the risk of crossing the road," he said.

WHO acknowledged in its report that it relied on some assumptions that may have resulted in an overestimate of the radiation dose in the general population.

Gerry Thomas, a professor of molecular pathology at Imperial College London, accused the United Nations health agency of hyping the cancer risk.

"It's understandable that WHO wants to err on the side of caution, but telling the Japanese about a barely significant personal risk may not be helpful," she said.

Thomas said the WHO report used inflated estimates of radiation doses and didn't properly take into account Japan's quick evacuation of people from Fukushima.

"This will fuel fears in Japan that could be more dangerous than the physical effects of radiation," she said, noting that people living under stress have higher rates of heart problems, suicide and mental illness. In Japan, Norio Kanno, the chief of litate village, in one of the regions hardest hit by the disaster, harshly criticized the WHO report on Japanese public television channel NHK, describing it as "totally hypothetical."

Many people who remain in Fukushima still fear long-term health risks from the radiation, and some refuse to let their children play outside or eat locally grown food.

Some restrictions have been lifted on a 12-mile (20-kilometer) zone around the nuclear plant. But large sections of land in the area remain off-limits. Many residents aren't expected to be able to return to their homes for years.

Kanno accused the report's authors of exaggerating the cancer risk and stoking fear among residents. "I'm enraged," he said.

WHO says only slightly higher cancer risk for Fukushima residents

http://www.japantimes.co.jp/news/2013/03/02/national/who-says-only-slightly-higher-cancer-risk-for-fukushima-residents/#.UTDnkTf1tEs

LONDON – Two years after the Fukushima nuclear disaster, an international team of experts said Thursday that residents of areas hit by the highest doses of radiation face an increased cancer risk so small it probably won't be detectable.

In fact, experts calculated the increase at about 1 extra percentage point added to a Japanese infant's lifetime cancer risk.

"The additional risk is quite small and will probably be hidden by the noise of other (cancer) risks like people's lifestyle choices and statistical fluctuations," said Richard Wakeford of the University of Manchester, one of the authors of the report. "It's more important not to start smoking than having been in Fukushima." The report was issued by the World Health Organization, which asked scientists to study the health effects of the disaster in Fukushima Prefecture.

The most exposed populations were directly under the plumes of radiation after three reactors at the Fukushima No. 1 power plant suffered meltdown and spewed radiation into the surrounding air, soil and water.

In the report, the highest increases in risk are for people exposed as babies to radiation in the most heavily affected areas. Normally in Japan, the lifetime risk of developing cancer of an organ is about 41 percent for men and 29 percent for women.

The new report says that for infants in the most heavily exposed areas, the radiation from the nuclear plant would add about 1 percentage point to those numbers.

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After Fukushima, dairy radiation levels were closely monitored, but children in Japan generally are not big milk drinkers.

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The Environment Ministry on Thursday also questioned the report.

"This report is not a chart predicting the future," an official said. "It is wrong to think what are presented as risks will materialize as shown."

Among the problems with the report, the ministry cited the assumption that low-dose radiation of 100 millisieverts or lower has a specific impact on health, when no impact has been confirmed in epidemiological studies.

"At this moment, there is no need to change policy on health management," the official said, noting the ministry's estimate for radiation doses is lower than that of the WHO.

Regarding health risks for nuclear power plant workers, the ministry said it would like to continue monitoring their well-being.

Information from Kyodo added

Greenpeace disagrees with WHO's estimations

Source : Greenpeace

World Health Organisation downplays health impacts of Fukushima nuclear disaster

Amsterdam, February 28, 2013 – Greenpeace today criticised the World Health Organisation for releasing a flawed new report that hides crucial information on the health impacts of the Fukushima nuclear disaster.

"The WHO report shamelessly downplays the impact of early radioactive releases from the Fukushima disaster on people inside the 20 km evacuation zone who were not able to leave the area quickly," said Dr. Rianne Teule, Greenpeace International nuclear radiation expert.

"The WHO should have estimated the radiation exposure of these people to give a more accurate picture of the potential long-term impacts of Fukushima. The WHO report is clearly a political statement to protect the nuclear industry and not a scientific one with people's health in mind."

The people inside the 20 km zone have possibly been exposed to significant radiation doses of hundreds of mSv, according to the work of German nuclear expert Oda Becker. She used modelling based on the data from Fukushima plant operator TEPCO on radioactive releases to calculate potential doses for people 10, 15, 20 and 40 km from the reactors.

The WHO report and its PR spin shockingly downplay the likelihood that thousands of people are at risk of cancer from the Fukushima disaster. They hide the cancer impacts by emphasising small percentage increases in cancers. Those small percentages actually translate into thousands of people being at risk.

"The WHO's flawed report leaves its job half done," said Teule. "The WHO and other organisations must stop downplaying and hiding the impact of the Fukushima disaster and call for more emphasis on protecting the millions of people still living in contaminated areas."
The WHO only releases reports on the impact of radiation releases on a population with the approval of the International Atomic Energy Agency.

Greenpeace is an independent global campaigning organisation that acts to change attitudes and behaviour, to protect and conserve the environment, and to promote peace.

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Notes:

Link to Oda Becker document: http://www.greenpeace.org/international/Global/international/briefings/nuclear/2013/2012_OdaBeck er.pdf

Greenpeace's "Lessons from Fukushima" report can be viewed at: http://bit.ly/Ax62jy

Radiation levels around Fukushima fell by 40%

March 2, 2013

Declining radiation measured near Fukushima plant, some blown elsewhere



http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303020041

By HIROSHI ISHIZUKA/ Staff Writer

Government figures show airborne radiation levels in the vicinity of the Fukushima No. 1 nuclear plant fell by about 40 percent over the course of a year, reflecting natural decay and dispersal by wind and rain.

On March 1, the science ministry released data recorded last autumn by survey helicopters within an 80kilometer radius of the crippled plant and presented it in the form of maps. Among the observations was a pronounced fall in levels in a hot zone northwest of the plant.

Ministry officials attributed the decline in roughly equal measure to decay, and to wind blowing radioactive material elsewhere and rain sluicing it out to sea.

"Typhoons hit in June and later," a ministry official said. "They may have helped spread the radioactive substances."

The latest measurements, conducted between Oct. 31 and Nov. 16, 2012, represented the sixth such round of sampling. High-sensitivity sensors fitted to helicopters were used to calculate radiation levels at a height of 1 meter above the ground at about 140,000 locations.

The results were compared against data collected during the fourth round, in October and November 2011.

During that one-year period, radiation levels fell by 40 percent on average across the zone. The decrease was particularly conspicuous in a belt of high radiation that extends across forests, farmland and towns northwest of the nuclear plant.

Officials said of the 40 percent decline, 21 percent was due to decaying radioactive cesium. Cesium-134 has a half-life of 2 years, the period of time after which only half the amount of isotope remains. But the plant spewed other radioactive isotopes as well, including cesium-137, which has a half-life of 30 years, and which will be declining comparatively more slowly.

The officials said the remaining 19 percent decline was likely due to environmental factors.

Comparison against measurements taken in June 2012, the fifth round of surveys, showed a decrease of 21 percent over five months. That time, dispersal likely accounted for 13 percent and decay for 8 percent.

The first three surveys were conducted with different analysis methods, so it remains difficult to compare readings across the entire period since the March 11, 2011 disaster, the ministry officials said.

See also : Radiation fell 40% near Fukushima plant last yr http://www.yomiuri.co.jp/dy/national/T130302003564.htm

Jiji Press

Radiation levels in areas within 80 kilometers of the crippled Fukushima No. 1 nuclear power plant fell about 40 percent last year, according to aircraft monitoring data released by the science ministry.

The decrease was much sharper than the expected annual fall of about 21 percent from natural radioactive decay of cesium-134 and cesium-137, due possibly to the effects of rain and other factors, the Education, Culture, Sports, Science and Technology Ministry said Friday.ministry.

Radiation levels in 80-km zone around Fukushima plant down 40 percent: gov't

http://mainichi.jp/english/english/newsselect/news/20130302p2a00m0na008000c.html

Radiation levels in an 80-kilometer radius around the disaster-stricken Fukushima No. 1 Nuclear Power Plant are down 40 percent, possibly due to the effects of rainfall and decontamination work, according to a government ministry.

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) on March 1 released a radiation map taken of the area showing airborne radiation one meter from ground level, measured from a helicopter on Nov. 16 last year. Compared to measurements taken around a year earlier on Nov. 5, 2011, the measurements were on average around 40 percent down.

During the time between the measurements, radioactive cesium would have naturally lessened by around 21 percent. It was the sixth radiation measurement of the area from a helicopter since the nuclear disaster. Measurements were also taken from air for areas in eight prefectures outside the 80-kilometer zone, where earlier surveys found higher radiation levels, on Dec. 28. Most of those measurements were below one microsievert per hour.

The radiation map can be seen on MEXT's homepage.

Differences of more than 100 times the level of radiation

March 4, 2013

1.



Study: Higher radiation risk found at one evacuation route used after nuclear disaster

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303040085

By YURI OIWA/ Staff Writer

Of the many routes taken by evacuees in the aftermath of the 2011 nuclear disaster one stands out as having posed a greater health risk to those fleeing.

The Environment Ministry asked researchers at the National Institute of Radiological Sciences and the Japan Atomic Energy Agency to estimate radiation doses that may have accumulated in the thyroid glands of people who took the 18 most common evacuation routes.

Researchers made their calculations on the premise that evacuees had spent 24 hours outdoors. Depending on the period and route taken in evacuating, there were **differences of more than 100 times in the radiation dose** of individuals fleeing from an area within a 20-kilometer radius of the stricken Fukushima No. 1 nuclear power plant. The highest estimated thyroid radiation dose was found for the evacuation route taken by residents who remained at the Tsushima activation center in Namie until the morning of March 23 and then evacuated to the Adachi gymnasium in Nihonmatsu, some 60 kilometers from the nuclear plant where reactor meltdowns had occurred.

The estimated doses were **104 millisieverts for a 1-year-old child, 89 millisieverts for a 10-year-old child and 53 millisieverts for an adult**.

The accepted scientific wisdom is that the risk of thyroid cancer increases when individuals are exposed to more than 100 millisieverts of radiation.

All other routes had estimates under 100 millisieverts.

The estimates are meant to serve as reference points for evacuees who can calculate the health risks they were exposed to by using the figures for the evacuation route they took.

In the event an individual is diagnosed with cancer, it should be possible to estimate the causal effect of the nuclear disaster through exposure to radiation depending on the evacuation route taken.

However, there are almost no actual measurements of radiation doses because the radioactive iodine that accumulates in the thyroid has a short half-life.

Based on data about the estimated volume of radioactive materials emitted from the Fukushima plant and wind direction, estimates were made of the changes in the concentration of iodine in the atmosphere for areas of 3 kilometers square for the period between March 12 and April 30 of 2011.

Those concentrations were used to estimate thyroid radiation doses for children aged 1 and 10 years old as well as adults along 18 representative evacuation routes taken by residents in the 12 municipalities in the vicinity of the crippled nuclear plant.

The evacuees were presumed to have inhaled the iodine in the atmosphere.

The lowest estimated dose was for the evacuation route from Katsurao to the Azuma gymnasium in Fukushima city taken on March 14. The estimates were less than 1 millisievert for both a 1-year-old child and an adult.

Because the estimates were based on the presumption that evacuees were outdoors for 24 hours, the actual radiation doses were likely much lower because very few people likely stayed outdoors for that long.

TEPCO's figures on workers exposure - Can they be trusted?

March 3, 2013

Collective exposure dose still remains high at Fukushima Daiichi

http://www.japantimes.co.jp/news/2013/03/03/national/collective-exposure-dose-still-remains-high-at-fukushima-daiichi/#.UTMMRjf1tEs

Kyodo

The annualized radiation exposure of workers at the Fukushima No. 1 nuclear complex since last March was four times higher than before the triple meltdowns occurred, figures provided by Tokyo Electric Power Co. showed Saturday.

The second such calculation since the power station experienced three catastrophic core meltdowns in March 2011 underscored the difficulties in pursuing long-term decommissioning work and lowering the irradiation of workers at a time when levels of radiation remain sky-high at the crippled facility.

Tepco's report estimated the total dose workers received from March 2012 to January in "man-sievert" units.

The collective exposure came to 60.1 man-sieverts, or an annualized 65.6 man-sieverts — around 4.4 times higher than the 14.9 man-sieverts recorded at the Fukushima No. 1 power station in fiscal 2009, according to the utility's calculations.

Compared with the 246.9 man-sieverts logged during the first year of the nuclear crisis from March 2011, the latest figure fell to around a quarter. However, it remained high compared with the average 46.3 mansieverts logged in fiscal 2011 at other atomic power plants operated by Tepco.

In the period between April 2012 and January, meanwhile, the average exposure of approximately 12,100 workers surveyed at the Fukushima No. 1 plant stood at 4.6 millisieverts, with the highest dose reaching 46.59 millisieverts.

The maximum radiation dose for nuclear workers is set at 50 millisieverts per year, and 100 millisieverts over five years. The government raised the annual limit to 250 millisieverts after the Fukushima No. 1 meltdowns, but lowered it to 50 millisieverts that December.

Official radiation figures raise doubts

Source : Deutsche Welle

http://www.dw.de/rising-doubts-about-japans-official-radiation-figures/a-16631709

Rising doubts about Japan's official radiation figures

As the two-year anniversary of the world's second-worst nuclear accident nears, citizen groups are questioning the accuracy of the government's contamination data for the area around the Fukushima Daiichi nuclear plant. As the two-year anniversary of the world's second-worst nuclear accident nears, citizen groups are questioning the accuracy of the government's contamination data for the area around the Fukushima Daiichi nuclear plant.

As she watched footage of the first nuclear reactor located in Fukushima Prefecture exploding in the aftermath of the devastating earthquake on March 11, 2012, Yuko Hirono said it felt as if she were watching a movie.

"It was unreal - it was hard to believe, but I had to try to make myself believe it and think realistically what I should do to protect myself and my family," she told DW. "It would have been much easier to react to the situation optimistically, but I tried to be a realist."

'Not under control'

Hirono has since moved to Glasgow with her Scottish husband and their daughter because she believes the situation at that plant is "not under control." She also has little faith in the accuracy of information provided by the authorities.

Today, most people outside the northeastern areas of Japan directly affected by the nuclear fallout are going about their lives as if the crisis were over. Yet some volunteer groups are conducting out their own monitoring efforts and sharing the data on websites.

"We believe it is dangerous for people still living in highly contaminated areas," said Hajime Matsukubo, a spokesman for the Tokyo-based Citizens' Nuclear Information Center (CNIC). He points to independent studies indicating that people in Fukushima and Koriyama – cities well beyond the exclusion zone imposed by the government – are still exposed to high levels of radioactivity.

"The level of a 1 millisievert dose per year, which has been set by the International Commission on Radiological Protection, is the result of a lot of research," Matsukubo said. "And even if the risk is not so high, people from the Fukushima Prefecture should not have to accept that."

People are worried about exposure, he adds, even though scientists, doctors and the government tell them it's safe to live in these areas.

The government provides information from remote monitors in and around the exclusion zone, but CNIC questions the accuracy of the data.

Easily understandable data

"There is a possibility that areas around the monitoring posts have already been decontaminated," Matsukubo said. "We are deeply worried that these numbers are being accepted as official air radiation levels and used to estimate exposure."

CNIC is calling on authorities to gather air radiation data from all sources and make it available - and easily understandable - on one website to determine the degree of contamination of agricultural land. Experts warn, however, that assessments made today may be of limited later as it takes about five years for radiation to sink to a depth in the ground at which point it can affect potatoes and other root crops.

"After several blunders during the first year, the food monitoring program now seems to be preventing most food above contamination limits from reaching supermarkets, so even people living their lives as

usual should be protected from most of the avoidable internal exposure," said Antonio Portela with the Tokyo Radiation Levels, a group that provides daily radiation data via Facebook.

There is particular concern over wild mushrooms and berries, wild game meat and citrus fruits as well as fresh-water fish and demersal fish caught off the northeast coast.

"I think that it's possible to have a reasonably accurate idea of the extent of the contamination and how it has affected the food chain, for example, by using exclusively official data," Portela said. "But the way in which the information is available makes this operation very time-consuming."

What's needed, Portela argues, is a clear warning that some food items from the Kanto region in eastern Japan and some prefectures in the northeastern part of the country are showing elevated contamination levels. People need to know, he said, that this "situation is not going to change during the coming years or decades."

Several Japanese state and local authorities have Internet links to radiation monitoring information, including Japan's Nuclear Regulation Authority (NRA), the Ministry of Education, Culture, Sports, Science and Technology, the Tokyo Metropolitan Institute of Public Health and the National Institute for Radiological Sciences.

'Putting people's health first'

Yoshiko Aoyama, deputy director of the NRA policy review and public affairs division, said she believed information provided to the public "has been helpful."

She cited a speech by NRA Chairman Shunichi Tanaka to the Fukushima ministerial conference on nuclear safety in December. In that speech, Tanaka said the authorities aim to "put people's health first" and to establish "an objective and rigorous regulatory system based on hard science rather than political or economic considerations."

But a vast amount of work remains to be done, and some citizen groups have raised questions about the efforts made to date.

"I've seen guys with wet rags wiping off windows and hosing down driveways of mud collected in vacant towns over the last two years," said Joe Moross, an engineer and volunteer with Safecast Japan. "It might look a bit better, but it's doing very little to get rid of the cesium contamination. You can't get rid of something like that with a broom."

Overcoming fears

Removing cesium, he noted, would require carving off the top layer of affected surfaces, a process that has been done on some of the main roads.

Experts admit that before people will return to their homes in the evacuated areas, they'll need to overcome their fears of something they can't see, hear, taste or smell.

"People just don't know whether or not it's safe and if they don't feel safe, they won't return," said Moross. "Many also worry that the government may be more interested in economics and business than in people and health."

Not enough done about Fukushima residents' health

March 8, 2013

Editorial: Gov't needs to do more in managing Fukushima residents' health

http://mainichi.jp/english/english/perspectives/news/20130308p2a00m0na004000c.html

The World Health Organization (WHO) recently compiled estimates on residents' risk of cancer from the Fukushima nuclear disaster triggered by the March 2011 Great East Japan Earthquake and tsunami. In its health risk assessment report, the WHO said it was unlikely that cancer would increase among the general population in Fukushima Prefecture. It was predicted that in some areas, infants would face an increased risk of developing cancer, but the absolute increase in risk was thought to be small. The report offers some reassurance for Fukushima Prefecture residents, but that doesn't mean they can now go away happy.

Since the outbreak of the ongoing nuclear disaster, residents and their families have worried about how much radiation they have been exposed to, whether it has affected their health, and whether they face a continued risk living in the prefecture. Besides responding to these concerns, there are other risks to consider in the protection of people's health. But nearly two years after the outbreak of the nuclear disaster the efforts of the central government and prefectural governments remain insufficient. Japan's Nuclear Regulation Authority (NRA) has provided suggestions pertaining to a health monitoring survey that the Fukushima Prefectural Government is conducting on its residents. It states that the central government needs to take responsibility and offer continued support, but there is a need to go further than this.

The deputy chair of the Fukushima Medical Association, who was part of the team reviewing the health checks, suggested that checks be carried out under the direct control of the central government, and that a central government base be set up in Fukushima Prefecture to support the health of prefectural residents and people working there. We would like to see officials probe the feasibility of these suggestions. The NRA also suggested that surveys on people's activities after the outbreak of the nuclear disaster be enhanced to gain a more accurate picture of how much radiation each resident was exposed to. But this is probably impossible.

To determine each person's radiation exposure, officials have asked residents to remember in detail their activities over the four months following the onset of the Fukushima disaster, and write down those activities on forms. However, this is a task that officials should have been pouring effort into immediately after the outbreak of the disaster. It is difficult, now, for people to accurately recall what happened after such a long time. Not surprisingly, less than 30 percent of residents have responded to the request.

Ryugo Hayano, a professor at the University of Tokyo, has advanced a project to estimate people's internal exposure to radioactive iodine during the early stages of the nuclear disaster using global positioning system data from their mobile phones to track down where they were at the time. More efforts like this are necessary.

It is problematic that local measurements of people's internal radiation exposure and measurements of their external radiation exposure from dosimeters are not managed centrally. A system needs to be set up

to gather and uniformly manage the data, and give residents a comprehensive overview of radiation exposure.

To determine and estimate people's radiation exposure and manage people's health, the central government and local bodies need to eliminate the system of vertically layered administrative functions and join hands in a combined effort.

It remains unclear whom the NRA's suggestions are directed at, or how effective they are, but this is not the time for officials to be shifting responsibility. We call on the Ministry of the Environment and other related organizations to decide on the organization that will play a central role, and quickly prepare a system to handle the situation.

Safecast network keeps on checking and sharing the data

March 8, 2013

TWO YEARS ON: NPO continues volunteer activities to provide radiation data in Fukushima http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303080071

By KAZUHIRO TAIRA/ AJW Staff Writer

As the crisis started to unfold at the Fukushima No. 1 nuclear plant, tech-savvy individuals on both sides of the Pacific banded together to help fill the void of information that residents so desperately needed. For Pieter Franken, his role in the venture was more personal. His Japanese wife had relatives in a city devastated by the tsunami that led to the nuclear accident on March 11, 2011. He also feared for the future of his daughter in Japan.

Safecast, a cross-border nonprofit organization, was set up through online communications one week after the Great East Japan Earthquake struck. Since then, volunteers have been exchanging technologies and expertise to help measure radiation levels in the disaster areas and making the information freely available on the Internet.

"Sharing the data not only gives people a sense of assurance, but doing so also helps us know what we should be doing next," said Franken, 45, the director for Safecast operations in Japan. "We have so far made a total of 7 million measurements."

Most of the data has been obtained from portable radiation detectors, called "bGeigies" by Safecast staff. They currently have about 80 bGeigies.

The letter "b" stands for "bento" (lunchbox). The devices are contained in waterproof plastic cases the size of a bento and are designed to be mounted on the side windows of cars and elsewhere. They are configured to measure radiation levels at five-second intervals while in motion.

The readings are recorded automatically, along with the time and location provided by the Global Positioning System.

A bGeigie in a car traveling 60 kph, for example, will take radiation measurements every 80 meters, allowing Safecast to obtain crucial raw data in areas that residents frequent, including residential streets, school commuting routes and school neighborhoods.

They have also installed 300 fixed sensors.

"Radiation levels can vary considerably during the course of short walks," Franken said. "It's nonsense that a single measurement by government authorities is used to represent readings over a broad area."

About 50 core activists and 100 volunteer radiation monitors, including many local residents, currently work for Safecast.

The NPO has also helped measure radiation levels at the request of local governments.

The readings are offered for public view on the Safecast website (http://safecast.org) in simple visualizations. The original, unprocessed data is also available for anybody to download and use. Franken, a native of the Netherlands, has worked in Japan as an information technology expert since arriving in 1987 as a university student. He is currently a senior executive director and the chief technology officer at Monex Inc., a securities house.

After the magnitude-9.0 quake and tsunami hit northeastern Japan, Franken was unable to enter the affected areas, including hard-hit Ishinomaki, Miyagi Prefecture, where his wife's relatives were living. They survived.

He said he had an overwhelming desire to do anything to help, not the least for the future of his then 8year-old daughter. Specifically, he wanted to use his expertise and skills in information technology. Around that time, Franken was contacted by Joichi Ito, an information technology entrepreneur who is now director of the Massachusetts Institute of Technology Media Lab.

Ito was contacting people online to arrange measures to help victims of the disaster.

The ensuing discussions pinpointed the need for more radiation data.

Volunteers in the U.S. state of Oregon set up a website to help display maps of radiation levels provided by the Japanese and U.S. governments and other sources. But that effort underscored the shortage of such data.

An online network of people helped assemble the necessary resources--human, cash and material. The "human resources" included Jun Murai, a computer communications professor at Keio University who is known as the "father of the Internet in Japan," and Ray Ozzie, a former chief software architect with Microsoft Corp.

By way of "cash," an online public subscription fund collected \$37,000 (3.5 million yen) from about 600 donors.

In "material" terms, a California-based manufacturer International Medcom Inc. provided two portable radiation detectors, a vital piece of equipment that had been extremely difficult to procure.

Members of the network, some of them based overseas, gathered in Japan to exchange ideas. They visited the disaster areas and further honed their plans.

Franken first set foot in a disaster area in late April 2011, more than a month after the multiple disasters. In Koriyama, Fukushima Prefecture, about 60 kilometers from the stricken nuclear plant, Franken saw a local volunteer fret over the unavailability of radiation levels in places he frequented.

When Franken handed him a portable detector, the volunteer even used the device to test the soles of his shoes.

"The man was very angry," Franken said. "He said the actual readings were far higher than the radiation levels released to the public."

Franken has now visited disaster areas nearly 50 times. He said Safecast's readings show that radiation levels have fallen 30 to 50 percent in most areas, and up to 70 percent in some locations, over the past two years.

The science ministry said March 1 that surveys conducted by helicopter in October and November showed that radiation levels within an 80-km radius of the Fukushima plant decreased by an average 40 percent year on year.

Ministry officials added that a difference in the measurement methods made it impossible to provide comparisons with radiation levels during the early phase of the disaster.

Attitudes in the disaster areas have changed in a variety of ways over the past two years. While some residents are willing to work as volunteer radiation monitors, others have said they don't want to see any more data on radiation levels, according to Franken.

He added that people overseas continue to ask him if it is safe to be in Japan.

People unfamiliar with nuclear terminology would be at a loss if they were told that the radiation level is 0.1 microsievert per hour in Iwaki, about 40 km from the Fukushima plant.

"But people do understand when I tell them that the level in Iwaki is about the same as in New York or Los Angeles or can be lower in some localities," Franken said.

International Medcom this month plans to begin selling to the public assembly kits for Safecast's "bGeigie Nano," which weighs 400 grams and costs \$450, less than half the weight and price of the bGeigie. Franken developed the assembly kits.

"We want to continue measuring radiation levels over the coming decade," Franken said.

"What was not possible when Chernobyl occurred has become possible by using the combined power of ordinary citizens."

Situation not abnormal for children - One way of looking at things

March 9, 2013

Ministry: Rate of Fukushima thyroid abnormalities roughly normal

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303090076

By YURI OIWA/ Staff Writer

More than 40 percent of children from Fukushima Prefecture tested for thyroid abnormalities, such as small cysts or lumps, but that rate is not troubling because it roughly matches data elsewhere in Japan, the Environment Ministry said March 8.

"The results in Fukushima Prefecture were approximately the same as in the other prefectures," said Yasuo Kiryu, a senior ministry official in charge of radiological health control.

The government of Fukushima Prefecture has been conducting ultrasound thyroid gland tests on about 360,000 children and young adults who were aged 18 or under when the disaster at the Fukushima No. 1 nuclear plant began to unfurl in March 2011. Babies born after the accident were not included.

By January, tests were complete on about 133,000 individuals, and 41.2 percent of them were diagnosed with cysts of up to 2 centimeters in size and lumps measuring up to 5 millimeters on their thyroid glands. Experts believe cysts and lumps of that size pose no particular concern.

But there was no telling if that incidence rate was particularly high or reflected contamination from radioactive iodine released from the nuclear plant because it was the first time high-performance ultrasound devices had been used to test children's thyroid glands in such a comprehensive study.

To obtain control data for comparison, the Environment Ministry tested 4,365 children aged between 3 and 18 in three other cities far from Fukushima, using ultrasound devices of the same performance and diagnostic standards.

The samples were taken in Nagasaki, the capital of Nagasaki Prefecture, Kofu, the capital of Yamanashi Prefecture, and Hirosaki, Aomori Prefecture.

The surveys found cysts measuring up to 2 cm and lumps measuring up to 5 mm in 56.6 percent of the children tested. Larger cysts and lumps were found in 1.0 percent of them, compared with 0.6 percent in the Fukushima children.

"The survey found that the situation in Fukushima is not abnormal," said Shigenobu Nagataki, a professor emeritus of radiology at Nagasaki University.

But he added: "Tests in Fukushima should continue over the subjects' lifetimes. And to account for regional differences, it is necessary to compare the test results against those on children born after the nuclear disaster in Fukushima Prefecture."

The prefectural government has said it plans to continue conducting tests on the children involved throughout their lifetimes.

More reassuring data on radiation exposure

March 9, 2013

Radiation levels from internal exposure dropping in Fukushima

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303090044

The Asahi Shimbun

By FUMIKAZU ASAI/ Senior Staff Writer

Radiation testing shows a sharp decline in internal exposure levels among Fukushima Prefecture residents, two years after the Fukushima No. 1 nuclear power plant accident.

Of the 106,000 people the prefecture tested using whole body counter (WBC) devices, which can measure the presence of radioactive materials, by the end of December, 99.98 percent measured less than 1 millisievert.

Of about 34,000 people who were tested at Hirata Chuo Hospital in Hirata village from Oct. 17, 2011, to the end of 2012, most showed levels of radioactive cesium-137 below the detectable limit.

Less than 1 percent of people who were tested in May 2012 or later showed signs of radiation exposure. Minami-Soma municipal general hospital has been testing residents' internal exposure using two WBCs. The results of testing between April and September last year already showed a monthly decline in the ratio of residents in whom cesium levels were detectable.

"As a whole, levels of internal exposure are low," said Masaharu Tsubokura, a physician who has been working on the testing program at the Minami-Soma municipal hospital. "The situation now is not one that consuming food from Fukushima Prefecture can raise one's internal radiation level. Still, I hope (people from the Fukushima plant affected area) will continue to be tested."

WBCs have also been independently installed in Fukushima city, Date, Soma and Namie.

Asked about eating habits, some with relatively high levels of internal radiation exposure said they had consumed homegrown "shiitake" mushrooms grown on wood chips. When tested, some shiitake mushrooms showed high levels of more than 10,000 becquerels per kilogram.

Doctors advised the people eating contaminated mushrooms to switch to commercially distributed food, such as foodstuffs sold in supermarkets. Their radiation levels dropped when the second and third tests were conducted within three months.

Inhaling radioactive particles released into the air immediately after the nuclear plant accident and their accumulation in the food chain contribute to increased internal exposure radiation levels.

In checkups conducted in 2011, many of those tested showed higher levels of exposure due to inhaling radioactive particles, but cesium levels dropped because the substances were excreted through urine.

Video on Fukushima (NHK)

http://www3.nhk.or.jp/nhkworld/english/movie/feature201303111607.html

On air : Health checks go on

A whole month in no-go zone without gear

March 13, 2013

3 men searched for people in no-go zone without protective gear for 1 month



A police officer in protective gear is seen in the exclusion zone around the Fukushima No. 1 nuclear plant on March 11, 2013. The search for people still missing two years after the March 2011 disasters continues. (Mainichi)

http://mainichi.jp/english/english/newsselect/news/20130313p2a00m0na009000c.html

Three officials of the Futaba Municipal Government near the crippled Fukushima No. 1 Nuclear Power Plant, wearing no radiation protective gear and carrying no dosimeters, were engaged in work in no-go zones to search for people who went missing from the tsunami for nearly a month shortly after the outbreak of the crisis on March 11, 2011, it has been learned.

Yet, nothing has been done so far to assess the estimated cumulative exposure to radiation for the three men. An expert said, "It was a well-known fact at that time that levels of radiation were high in evacuation zones. The government's responsibility is great for having failed to give proper instructions. Follow-up investigations (into their radiation exposure) must be done."

At that time, the government's Nuclear Emergency Response Headquarters established standards for entering evacuation zones based on relevant laws, requiring people concerned to wear protective gear and carry dosimeters. But the latest finding clearly discloses how much the central and local governments were confused even one to two months after the outbreak of the nuclear disaster.

According to officials of the Futaba Municipal Government, the three men in their 30s to 50s at the time took turns to observe search activities conducted by police and firefighters in Futaba's Nakano district and other areas along the coast in the evacuation zone from April 22 to May 19, 2011. Their role was to determine where bodies were found -- either Futaba or its neighboring town -- in situations where bodies were found near the border between the two towns. They were also engaged in work to carry mortuary tablets, photo albums and other things found in the search areas to a storage facility at their local government office.

When they were ordered to carry out the mission to observe search activities, they were not instructed or briefed by the local government to wear dosimeters and protective gear nor to evaluate and keep records of their radiation exposure. At that time, the official functions of the Futaba Municipal Government had already been transferred to Kazo in Saitama Prefecture. But before the local government was evacuated, there were dosimeters kept in reserve at the local government office in Futaba, but all of them are said to have been damaged by the earthquake.

Fukushima Prefectural Police required people engaged in search activities to be fully equipped with such things as protective gear, and each group of searchers to carry at least two dosimeters and report their external radiation exposure to its disaster security headquarters. Furthermore, before and during search activities, safety management support teams were measuring levels of atmospheric radiation over the search areas.

According to Fukushima Prefectural Police, a total of about 25,700 people were engaged in search activities in evacuation zones and other areas that fall within the jurisdiction of Futaba Police Station and Minamisoma Police Station from March to May 2011, and their cumulative external radiation exposure

was each below 5 millisieverts (ordinarily, a person is exposed to radiation of up to 1 millisievert per year).

Muneshige Osumi, public relations chief at the Futaba Municipal Government, told the Mainichi Shimbun, "We want to set the record straight." Muneyuki Shindo, professor emeritus at Chiba University, stressed the need to make the government's responsibility clear and conduct follow-up investigations. "Manuals for crisis management measures against this type of accident need to be prepared on the assumption that nuclear accidents could occur in other municipalities hosting nuclear power stations."

557,000 hibakusha

No. of Hiroshima A-bomb victims stands at around 557,000

http://mainichi.jp/english/english/newsselect/news/20130324p2g00m0dm004000c.html

HIROSHIMA (Kyodo) -- The number of atomic-bombing victims, or "hibakusha," in Hiroshima totaled 557,478, research by the municipal government showed Saturday.

The latest figure rose by around 15,000 from the previous tally 14 years ago as the local government made a fresh review of 120,000 documents by using computers for the first time.

Of the 557,478, 384,743 were confirmed to have been in the city or nearby towns and villages when the A-bomb was dropped, up around 12,000 from the previous survey. The remainder includes people who later entered areas near the center of the explosion and those without sufficient information about their situations.

The death toll from the 1945 A-bombing was lowered to 277,996, from the previously reported 280,959, as duplications were found.

A city official suggested the latest study will be the last one as 68 years have passed since the bombing and it is unlikely new documents will be discovered.

Keiko Otani, an assistant professor at Hiroshima University's Research Institute for Radiation Biology and Medicine who took part in the study, said the latest research now encompasses almost all those who died in the bombing or afterwards from its effects, or developed health problems.

"From now on, we will study how radiation affected people in the early days (after the blast) by examining the circumstances of A-bomb survivors and when they died," she said.

Effect of radiation?

March 30, 2013

Thyroid survey shows no major gap between Fukushima, other areas

http://mainichi.jp/english/english/newsselect/news/20130330p2g00m0dm005000c.html

TOKYO (Kyodo) -- Thyroid conditions among juvenile population in three prefectures across Japan --Aomori, Yamanashi and Nagasaki -- are not much different from those of their counterparts in Fukushima Prefecture hit by the March 2011 nuclear crisis, a recent survey by the Environment Ministry showed Friday.

The ministry conducted the study from last November to March this year on a total of 4,365 people aged 3 to 18 in the cities of Hirosaki in Aomori, Kofu in Yamanashi and Nagasaki, and concluded that the percentages of detecting small lumps and other anomalies in the surveyed population were "almost equal to or slightly lower in Fukushima."

The percentage of lumps measuring less than 5 millimeters or cysts smaller than 20 millimeters came to 57.6 percent in Hirosaki, 69.4 percent in Kofu, and 42.5 percent in Nagasaki, it said. After the 2011 accident, Fukushima Prefecture conducted thyroid tests on about 360,000 people under 18 and found lumps and other issues in 41.2 percent, stirring anxiety.

Shunichi Yamashita, vice president of Fukushima Medical University, said the latest survey underscored the fact that "small cysts and lumps naturally exist in children when they are examined with the same precision level as in Fukushima."

But on the same subject see also:

http://fukushima-diary.com/2013/03/56-of-the-evacuees-in-naha-have-thyroid-abnormality/

56% of the evacuees in Naha have thyroid abnormality

and

http://fukushima-diary.com/2013/03/thyroid-abnormality-rate-is-13-3-in-miyagi-too-good-compared-to-the-57-of-other-3-prefectures/

Thyroid abnormality rate is 13.3% in Miyagi, "Too good" compared to the 57% of other 3 prefectures

According to Marumori town in Miyagi prefecture, they detected nodules or cysts of thyroid from **13.3** % of children from their thyroid test.

The test was conducted from 3. 2012 to 1. 2013, testees were under 18 years old when 311 took place.

Among 1,982 testees, they detected cysts from 259 but these are not supposed to require a follow-up test. They detected nodules from 5, which require a follow-up test.

However, in Nagasaki, Aomori and Yamanashi prefecture, they detected nodules and cysts from **57%** of the children by the same thyroid test. (cf, Thyroid nodule and cyst found from 57% of children outside of Fukushima, MOE "Higher than Fukushima" [URL])

It is hard to explain where this huge gap (13.3% vs 57%) of the thyroid test result is from unless the test was implemented unfairly.

区分	内容	説明	該当者数	割合
異常なし	①所見なし	「のう胞」又は「結節(しこ り)」が認められなかった者	1,718人	86.7%
	②経過観察	「のう胞」が認められたもの の、再検査や治療の必要がな い者	259人	13.1%
		81	1,977人	99.8%
異常あり	③要精密検査	「結節(しこり)」が認めら れ、継続した検査を勧める者	5人	0.2%

New Yorl Symposium on the medical and ecological consequences of 3/11

Helen Caldicott Foundation and PSR's Fukushima anniversary symposium a big success!

http://www.beyondnuclear.org/nuclear-power/2013/3/15/helen-caldicott-foundation-and-psrs-fukushima-anniversary-sy.html

Beyond Nuclear's Cindy Folkers and Kevin Kamps were honored to be invited to present at the Helen Caldicott Foundation's symposium at the New York Academy of Medicine on the medical and ecological consequences of the Fukushima nuclear catastrophe, marking the two year anniversary of its beginning. The event was co-sponsored by Physicians for Social Responsibility (PSR). Cindy presented on "Post-Fukushima Food Monitoring in the U.S.," and Kevin presented on "70 Years of Radioactive Risks in Japan and America."

Other presenters included: a videotaped message by former Japanese Prime Minister Naoto Kan, who served during the first several months of the Fukushima nuclear catastrophe, and has since called for a complete nuclear power phaseout in Japan; Akio Matsumura, who has brought the dire risks of a highlevel radioactive waste storage pool fire at Fukushima Daiichi Unit 4 to the attention of millions worldwide; Hisako Sakiyama, a member of the Japanese Parliament's Fukushima Nuclear Accident Independent Investigation Commission; biologist Timothy Mousseau, on the biological implications of "Chernobyl, Fukushima, and other Hot Places"; pediatrician Wladimir Wertelecki, on "Congenital Malformations in Rivne, Polossia (Ukraine) associated with the Chernobyl accident"; and many others.

The Helen Caldicott Foundation's executive director, Mali Lightfoot, has reported that in addition to the hundreds who attended the symposium in person, more than 4,300 people in 650 cities worldwide watched the event online via livestream.

Video of all presentations and the question and answer sessions are now available for viewing.

Hiroshima peace medias

April 6, 2013

Hiroshima daily posts radiation tales

Kyodo

http://www.japantimes.co.jp/news/2013/04/06/national/hiroshima-daily-posts-radiation-tales/#.UV7-4jdsFEs

HIROSHIMA – A website operated by a Hiroshima newspaper has posted a series of stories in English and Japanese about radiation victims across the globe, hoping to spread awareness about all such victims, not just those of the atomic bombing of Hiroshima and Nagasaki.

The website of the Chugoku Shimbun's Hiroshima Peace Media Center posted the stories at the end of March under the title "EXPOSURE — Victims of Radiation Speak Out."

The Japanese title is "Sekai no Hibakusha," or "Hibakusha Around the World."

The original work won a Japan Newspaper Publishers and Editors Association award for fiscal 1990 and was published in book form in 1991 in Japanese and in 1992 in English.

The series, which started on May 21, 1989, and continued through to May 29, 1990, consisted of 134 articles and eight features.

To write the articles about radiation victims around the world, a team of reporters from the Chugoku Shimbun went to 15 countries, including the Soviet Union, Brazil, the United States, India, Malaysia and South Korea.

According to Akira Tashiro, executive director of the center, even though radioactive contamination has occurred in various parts of the world, little was known and reported when they started gathering information more than 20 years ago.

The series introduced damage from radioactive contamination, including the effects of nuclear weapons testing in Semipalatinsk, Kazakhstan, a former Soviet republic, the leak of a radioactive substance used at

a hospital in Brazil, contamination from a nuclear power plant in India and thorium contamination from a Japanese refinery in Malaysia.

"I have been planning to post the stories after the Fukushima No. 1 nuclear accident happened in 2011," said Tashiro, a veteran journalist specializing in nuclear issues. "What we did over 20 years ago was pioneering work. I am sure the content is relevant even now and worth reading for everybody around the world."

The stories can be found at www.hiroshimapeacemedia.jp/mediacenter/index.php?topic=Exposure_en

New York Symposium on medical and ecological effects of 3/11

Dossier 3

April 9, 2013

Rosy Fukushima health report faulted by experts

http://www.japantimes.co.jp/community/2013/04/09/voices/rosy-fukushima-health-report-faulted-by-experts/#.UWOqOEpsFEs

Dear Prime Minister Shinzo Abe,

The February 2013 report by the World Health Organization on the predicted radiation effects of the Fukushima No. 1 nuclear disaster provided some welcome news indeed.

For example, Richard Wakeford of the University of Manchester wrote: "The additional risk is quite small and will probably be hidden by the noise of other (cancer) risks like people's lifestyle choices and statistical fluctuations."

If true, the Japanese government can, for example, now confidently inform mothers living in the irradiated areas of Fukushima Prefecture and beyond that there is no need to worry about their children's health or futures.

Unfortunately, many international experts take strong exception to these optimistic findings. This disagreement was starkly revealed at a recent symposium held in New York on March 11-12 titled "The Medical and Ecological Consequences of the Fukushima Nuclear Accident."

Addressing the symposium, Alexey Yablokov of the Russian Academy of Sciences said: "Using criteria demanded by the International Atomic Energy Agency (IAEA), the World Health Organization (WHO) and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) resulted in marked

underestimates of the number of fatalities and the extent and degree of sickness among those exposed to radioactive fallout from Chernobyl."

Yablokov continued: "The Chernobyl catastrophe has already killed several hundred thousand human beings in a population of several hundred million that was unfortunate enough to live in territories affected by the fallout. The number of Chernobyl victims will continue to grow over many future generations."

Prime Minister, I know many of your advisors claim that the amount of radiation released at Fukushima No. 1 was far less than at Chernobyl. However, a report released by the U.K.-based nonprofit Institute of Science in Society in November 2012 said: "Analysis based on the most inclusive data sets available reveals that radioactive fallout from the Fukushima meltdown is at least as big as Chernobyl and more global in reach." That conclusion was reached based on work with state-of-the-art atmospheric dispersion models by an international team led by Andreas Stohl at the Norwegian Institute for Air Research.

Further, nuclear researcher Hiroaki Koide of Kyoto University told the conference: "The cesium-137 that was released into the atmosphere by Units 1 through 3 was 168 times that of the Hiroshima bomb, according to the Japanese government report to the IAEA, an international organization which promotes nuclear power.

"However, I myself believe this is probably an underestimate, and two or three times that amount, that is, 400 to 500 times the amount of cesium-137 of the Hiroshima atomic bomb, has already been dispersed into the atmosphere. I believe almost the same amount of radioactive material released into the air has probably flowed into the ocean."

Steven Starr of the University of Missouri pointed out **that the WHO is not a reliable source of objective information since it is required to base its research on data submitted to it by member governments. Further, beginning in 1959, all WHO reports on nuclear contamination must first be approved by the IAEA, whose charter requires it to do its utmost to promote the use of nuclear power.**

One point made over and over again at the symposium is that long-term epidemiological studies have shown **there is no such thing as a "safe dose" of radiation**. In 2006 the U.S. National Academy of Science noted: "There is a linear dose-response relationship between exposure to ionizing radiation and the development of solid cancers in humans. It is unlikely that there is a threshold below which cancers are not induced."

Thus, as little as a single becquerel of radiation has the potential to initiate cell damage ultimately leading to cancer and assorted illnesses. Further, as Mary Olson of Nuclear Information and Resource Services said, research has demonstrated that women are significantly more susceptible to radiation-induced

illness than men, and children, especially little girls, even more so. The most endangered of all is the fetus, which, through the placenta, can have radiation introduced into its rapidly developing body through its mother.

Radiation contamination is cumulative, with the greatest danger resulting from internal exposure through inhaling contaminated air, eating contaminated foods and drinking contaminated water. Thus, the longer one remains in a contaminated environment, the more likely one is to become sick.

These findings are highly significant in light of Koide's conclusion: "The contamination areas were as large as 20,000 sq. km, which meant a vast zone in the Tohoku and Kanto regions would have to be evacuated. Faced with such a reality, the Japanese government decided it would never be able to help the people in these contaminated areas, and that the people would be abandoned and left there. As of today, about 10 million people have been left in areas that should have been designated radiation-controlled areas, and they are exposed to continual radiation every day."

As to what this means in concrete terms, one conference presenter, nuclear expert Arnie Gundersen, estimates that the disaster would lead to 1 million extra deaths from cancer. While Gundersen puts the release of cesium at about half that of Chernobyl, he noted that little attention has been paid to radioactive gases xenon and krypton, which poured out of the No. 1 plant in quantities "two to three times" greater than the 1986 Ukrainian meltdown. Gundersen's assessment on the health effects of Fukushima is based on the damage done to area residents from the 1979 partial meltdown at the Three Mile Island nuclear plant in Pennsylvania, where he served as an expert witness.

Prime Minister, you have called for a "beautiful Japan," a Japan its citizens can be proud of. Can there truly be a beautiful Japan when large numbers of its citizens are left to face the possibility of slow, painful deaths resulting from radiation-induced cancers and other illnesses? Can the Japanese people be proud of a country that would allow this to happen to its own citizens?

It is still not too late to act, Prime Minister. For example, will your government provide financial support for residents in contaminated areas who wish to move to safe areas, most especially women of childbearing age and those with children?

BRIAN A. VICTORIA

Yellow Springs, Ohio

Presentations made at the conference in New York on March 11-12 can be viewed at www.totalwebcasting.com/view/?id=hcf# . Send comments on this issue and Hotline to Nagata-cho submissions of 500-700 words to community@japantimes.co.jp .

University of Tokio survey very reassuring

April 11, 2013

Radioactive cesium not detectable in 99% of Fukushima residents: study

http://www.japantimes.co.jp/news/2013/04/11/national/radioactive-cesium-not-detectable-in-99-of-fukushima-residents-study/#.UWagt0psFEs

Radioactive cesium was too low to detect in 99 percent of 22,000 residents examined in Fukushima Prefecture and neighboring Ibaraki, according to a University of Tokyo survey.

The team, which included professor Ryugo Hayano, examined internal radiation exposure levels in the two prefectures between March and November 2012. Their findings were unveiled Wednesday in the Transactions of the Japan Academy.

The survey found that the rate of internal exposure in the residents surveyed stood at about onehundredth of the level detected in people living in the area around the Chernobyl plant at the time of the 1986 disaster.

Levels of cesium-137 were shown to be below the detectable threshold of 300 becquerels per kilogram of body weight for 99 percent of the residents, according to the team.

For the remaining 1 percent, or 212 people, 10 becquerels were detected. Still, their annual internal exposure would total only 0.04 millisievert, far below the government-set limit of 1 millisievert per year, the team said.

Meanwhile, cesium levels equivalent to 1 millisievert of internal exposure at an annualized rate were found in four elderly people who routinely ate wild mushrooms and boars. The team confirmed that the figures dropped after these four changed their eating habits.

Just as with the Chernobyl crisis, soil, particularly around Fukushima, was heavily contaminated with radioactive substances following the March 2011 nuclear meltdowns at the Fukushima No. 1 power plant.

The low cesium readings were attributed to the quality of the soil in the areas surveyed, which prevented food crops from absorbing radioactive materials, the conduction of radiation checks for food and the attention local residents are paying to the produce they consume, according to Hayano.

But the team, which used a whole body counter to examine the residents, concluded that checks on internal exposure and food inspections need to be continued. The study was conducted jointly with a hospital in Fukushima Prefecture.

Fukushima schoolchildren clear of cesium

http://www3.nhk.or.jp/nhkworld/english/news/20130411_19.html

Schoolchildren living near the Fukushima Daiichi nuclear plant have come up clear of radioactive cesium in internal-exposure screenings.

Researchers led by the University of Tokyo examined roughly 1,400 elementary and junior high school children in Miharumachi, 50 kilometers from the crippled plant.

They carried out the tests from September to November last year.

Researchers said levels of cesium 137 in all tested children were below the detectable amount of 300 becquerels.

The same researchers implemented similar tests between November 2011 and February 2012. They found then up to 1,300 becquerels of cesium 137 in 54 children.

Researchers say the new results show that checks on food products have generally prevented children from ingesting radioactive material.

University of Tokyo professor and team member Ryugo Hayano said the researchers will continue to gather data so Fukushima residents can feel safe.

Researchers this time were able to test all schoolchildren in Miharumachi. Subjects of previous screenings took part on a voluntary basis, leading to doubts over the relevance of results.

April 9, 2013

No radioactive cesium found in any of 10,000 children examined

http://mainichi.jp/english/english/newsselect/news/20130411p2g00m0dm030000c.html

TOKYO (Kyodo) -- A research team of University of Tokyo and other experts said Wednesday its survey of people who used to live near the crippled Fukushima Daiichi nuclear power plant found no radioactive cesium in any of the 10,000 children 15 years or younger examined after May 2012.

"This shows that chronic internal exposure in Fukushima is very low compared with the case of the Chernobyl nuclear accident in 1986," said Ryugo Hayano, a member of the research team and University of Tokyo professor.

"Food inspections at markets appear to be working well," he added.

The research team checked 32,811 people -- residents of Fukushima and neighboring Ibaraki Prefecture and those who evacuated to other prefectures -- for the internal presence of radioactive substances. The team used whole body counters at a hospital in the village of Hirata, Fukushima Prefecture, from October 2011 to November 2012.

Radioactive cesium was found in about 1 percent of the people surveyed after March 2012, compared with 15 percent in November 2011.

Radioactive materials taken in shortly after the Fukushima Daiichi plant disaster in March 2011 are believed to have already left the body in many cases, while improvements in food inspection methods are also considered to have been effective in eliminating contaminated food.

The survey found no specific relationship between the degree of exposure and land contamination.

The minimum detection level for the whole body counters is 300 becquerels.

Whether lessons have been learned seems questionable

April 12, 2013

Editorial: Radiation monitoring system must protect residents near nuke plants

http://mainichi.jp/english/english/perspectives/news/20130411p2a00m0na019000c.html

The Nuclear Regulation Authority (NRA) has drawn up a plan to once again revise the guidelines for countermeasures against nuclear disasters, which calls for a radiation monitoring system in case of an emergency. Under the draft, the monitoring system would be beefed up, but some parts of it are short on specifics. Moreover, the NRA has postponed debate on some important matters. As such, serious questions remain as to whether the new guidelines would be effective enough to protect residents from accidents at atomic power stations.

Priority zones for nuclear disaster prevention measures would be expanded from 8-10 kilometers from nuclear plants to 30 kilometers and the areas where radiation monitoring posts are supposed to be established would also be enlarged under a review of the guidelines in the wake of the Fukushima nuclear disaster. Prefectural governments that host nuclear plants are supposed to use national government grants to set up monitoring posts in each 10-kilometer-square area in 16 directions from nuclear plants within the priority zones.

In case of an emergency, experts say it is desirable to use portable radiation counters in addition to monitoring posts to gauge radiation levels at about two-kilometer intervals. A study team of the NRA considered requiring local bodies to be prepared for such a monitoring system, but stopped short of incorporating such a stepped up system in the plan to revise the guidelines.

Concern remains about measures to protect monitoring posts from multiple disasters. Following the outbreak of the Fukushima nuclear disaster, 23 of 24 monitoring posts that the Fukushima Prefectural Government installed in areas around the Fukushima No. 1 Nuclear Power Plant were unable to send data because their devices were swept away by tsunami and communication lines were cut off because of the earthquake. To prevent such trouble, it is necessary to lay backup communication lines and beef up emergency power sources. However, **the standards for monitoring posts do not require such measures**. Instead, the specifications of radiation monitoring posts are left up to each local government.

Furthermore, plumes of radioactive substances can be brought by winds to areas far from nuclear plants, as was the case with the Fukushima Prefecture village of Iitate. However, the NRA did not incorporate countermeasures against such plumes and instead postponed debate on the matter.

Some local bodies hosting atomic power stations are reportedly late in installing radiation monitoring posts because of a budget shortfall. Under such circumstances, **one cannot help but wonder whether the national and local governments have sufficiently learned lessons from the nuclear accident and utilized them for their nuclear disaster** countermeasures. The NRA is asking local governments hosting atomic power plants about whether they have installed monitoring posts. The authorities should instruct local bodies to improve any flaws in their monitoring posts, including their specifications.

Under the latest plan to revise the guidelines, the national government would set up a monitoring center if a nuclear accident were to occur, and gather, analyze and announce relevant data in an integrated fashion. The plan should be appreciated in that it would clarify the division of roles between the national governments, local bodies and nuclear plant operators and their responsibility. However, such a **division of roles** would be meaningless if radiation monitoring posts were not functioning properly.

Local bodies would distribute iodine tablets to residents of areas within five kilometers from atomic power plants to prevent thyroid glands from being exposed to radiation in case of nuclear accidents after holding briefing sessions on how to take such drugs as well as their side-effects. Such briefing sessions are necessary to relieve local residents' concerns. The NRA should also continue to consider distributing iodine tablets to those living outside the five-kilometer zones.

The NRA simultaneously released the draft of new standards for regulating nuclear plants that will come into force in July this year. However, **no discussions should be held on reactivation of idled nuclear reactors unless effective nuclear disaster prevention measures are devised.**

Isn't it up to adults to protect children?

April 14, 2013

Lawsuit seeks evacuation of Fukushima children

http://mainichi.jp/english/english/newsselect/news/20130414p2g00m0d m016000c.html



In this Tuesday, April 2, 2013 photo, Toshio Yanagihara, one of the lawyers representing 14 children from Fukushima who started a legal battle for the right to live free of radiation, holds a leaflet urging quick action be taken to protect children from radiation during a press conference in Tokyo. Yanagihara criticized the government as appearing more worried about a population exodus than in saving the children. (AP Photo/Yuri Kageyama)

TOKYO (AP) -- Their demand: **The right to live free of radiation**. The plaintiffs who started the legal battle: 14 children.

A Japanese appeals court is expected to rule soon on this unusual lawsuit, filed on behalf of the children by their parents and anti-nuclear activists in June 2011 in a district court in Fukushima city, about 60 kilometers (40 miles) west of the crippled nuclear plant that spewed radiation when a massive earthquake and tsunami hit it more than two years ago.

The lawsuit argues that Koriyama, a city of 330,000, should evacuate its children to an area where radiation levels are no higher than natural background levels in the rest of Japan, or about 1 millisievert annual exposure.

In a culture that frowns upon challenging the authorities, the lawsuit highlights the rift in public opinion created by the baffling range in experts' views on the health impact of low dose radiation. Although some experts say there is no need for children to be evacuated, parents are worried about the long-term impact on their children, who are more vulnerable to radiation than adults. Consuming contaminated food and water are additional risks.

After the Fukushima accident, the world's worst since Chernobyl, Japan set an annual exposure limit of 20 millisieverts for determining whether people can live in an area or not. The average radiation for Koriyama is far below this cutoff point, but some "hot spots" around the city are above that level.

"This is the level at which there are no major effects on health and people can live there," said Keita Kawamori, an official with the Japanese Cabinet Office. "Academic experts decided this was the safe level."

A prominent medical doctor in charge of health safety in Fukushima has repeatedly urged calm, noting damage is measurable only at annual exposure of 100 millisieverts, or 100 times the normal level, and higher.

A lower court rejected the lawsuit's demands in a December 2011 decision, saying radiation had not reached the 100-millisievert cutoff. The International Commission on Radiological Protection, the academic organization on health and radiation, says risks decline with a drop exposure, but does not believe there is a cutoff below which there is no risk.

An appeal filed is still before Sendai High Court in nearby Miyagi Prefecture more than a year later. After the 1986 Chernobyl disaster, which emitted more radiation than the Fukushima Dai-ichi plant, the Soviet government made it a priority to evacuate women and children from within a 30-kilometer (20mile) radius of the plant, bigger than the 20-kilometer (12-mile) no-go zone around the Fukushima Daiichi plant.

The number of children behind the original lawsuit dwindled to 10 for the appeal, and is now down to one as families left the prefecture voluntarily or the children grew older. Legally in Japan, a city has responsibility for children only through junior high, since high school is not compulsory.

But the case serves as a precedent for other Fukushima children.

Toshio Yanagihara, one of the lawyers, criticized the government as appearing more worried about a population exodus than in saving the children.

"I don't understand why an economic power like Japan won't evacuate the children -- something even the fascist government did during World War II," he said, referring to the mass evacuation of children during the 1940s to avoid air bombings. "This is child abuse."

After Chernobyl, thousands of children got thyroid cancer. Some medical experts say leukemia, heart failure and other diseases that followed may be linked to radiation.

In Fukushima, at least three cases of thyroid cancer have been diagnosed among children, although there's no evidence of a link with the nuclear disaster. There are no comparative figures on thyroid cancer in other areas of Japan.

The children in the lawsuit and their families are all anonymous, and details about them are not disclosed, to protect them from possible backlash of ostracism and bullying.

"Why is Japan, our Fukushima, about to repeat the mistakes of Chernobyl?" wrote a mother of one of the children in a statement submitted to the court. "Isn't it up to us adults to protect our children?"

The trial has attracted scant attention in the mainstream Japanese media but it has drawn support from anti-nuclear protesters, who have periodically held massive rallies.

Among the high-profile supporters are musician Ryuichi Sakamoto, manga artist Tetsuya Chiba and American linguist and political activist Noam Chomsky.

"There is no better measure of the moral health of a society than how it treats the most vulnerable people within it, and none or more vulnerable, or more precious, than children who are the victims of unconscionable actions," Chomsky wrote in a message.

A 12-year-old, among those who filed the lawsuit but have since left the area, said she was worried. "Even if I am careful, I may get cancer, and the baby I have may be hurt," she said in a hand-written statement.

Radiation in Japan does not all come from Fukushima

April 24, 2013

First radiation detected in Japan from N. Korea February nuke test

AFP-JIJI

http://www.japantimes.co.jp/news/2013/04/24/world/first-radiation-detected-in-japan-from-n-korea-february-nuke-test/#at_pco=cfd-1.0

VIENNA – Possible radioactive traces from a North Korean nuclear test in February have been detected for the first time, although it remains unclear what fissile material Pyongyang used, a monitoring organization said Tuesday.

"The ratio of the detected xenon isotopes (xenon-131m and xenon-133) is consistent with a nuclear fission event occurring more than 50 days before the detection," the Comprehensive Test Ban Treaty Organization (CTBTO) said. "This coincides very well" with the North Korea's announced nuclear test on Feb. 12.

The detection at a monitoring station in Japan came 55 days after the explosion.

The group said, however, that the discovery couldn't help it answer the key question of whether Pyongyang used plutonium or uranium in the blast.

North Korea used plutonium in its 2006 and 2009 tests and any discovery that it used highly enriched uranium for its third test would mark a significant technological step for the impoverished and unpredictable regime.

It would also raise international concerns that North Korea might pass on weapons-grade uranium, or the necessary technology and knowhow to make it, to rogue states or terrorists seeking to make crude nuclear explosive devices.

It is also possible that the so-called radionuclides were from a nuclear reactor or other atomic activity, and the CTBTO said it is currently examining the traces to see whether this is the case.

It ruled out however that the source was the crippled Fukushima No.1 nuclear plant.

The detection was made in Takasaki, Gunma Prefecture, 1,000 km from the North Korean test site. Lower levels were also picked up at Ussuriysk, Russia, one of several hundred sites worldwide reporting to the CTBTO.

Regular release of information crucial

April 22, 2013

Fukushima gov't forced to reveal children's thyroid gland tests

http://mainichi.jp/english/english/newsselect/news/20130422p2a00m0na016000c.html

FUKUSHIMA -- The Fukushima Prefectural Government has been forced to reveal children's thyroid gland tests to an NPO after earlier refusing to release the results carried out following the Fukushima nuclear disaster, it has been learned.

The prefectural government had previously insisted that making the results public would be an invasion of privacy. However, under a prefectural ordinance on the release of information to the public, the data did not qualify to be withheld, forcing the prefectural government to release it.

The data covers ultrasound tests for lumps and other abnormalities, with four levels of diagnoses. The results are listed by municipality for 38,114 children tested in the 2011 fiscal year. The data was put together in April last year by Fukushima Medical University, which is charged with conducting the tests. Yukiko Miki, president of the NPO Access-Info Clearinghouse Japan, demanded the release of the results in December last year, and they were given to the NPO in late January.

Some differences are seen in the results across municipalities. The ratio of children who were diagnosed "B," which meant they had lumps of more than five millimeters and would be subjected to further tests, ranged from 0 to 1.7 percent. The ratio for "A2," which meant they had lumps of under five millimeters, ranged from 25.2 to 41.6 percent.

Professor Toshihide Tsuda of Okayama University, an expert on pollution investigations, says, "Although we cannot say anything for certain based on numbers from a single round of tests, this is important information for looking into the causal relationships between the spread of radioactive material (iodine-131) and the incidence of thyroid gland cancer. **The regular release of information is necessary for keeping tabs on health changes.**"

Regarding the release of the data, a representative for the regional government's department for management of prefectural citizens' health said, "We made our decision based on ordinance rules." The prefectural ordinance on information disclosure says that government documents that could cause misunderstanding or confusion among prefectural residents should not be released, but the thyroid gland test results were judged to fall outside that criteria.

Despite the fact the data was already released to the NPO, at a press conference on Feb. 13, Fukushima Medical University's professor Shinichi Suzuki, who holds responsibility for the tests, refused to reveal the test results, saying "individual areas would be identified (as having higher incidence of lump detection), causing problems for those who were tested."

Fukushima health management insufficient, says UN

May 24, 2013

U.N. urges Japan to boost checks for internal radiation exposure from Fukushima disaster

http://mainichi.jp/english/english/newsselect/news/20130524p2a00m0na017000c.html

Anand Grover, the U.N. special rapporteur on the right to health, is calling on Japan to expand examinations of internal radiation exposure of people in the aftermath of the 2011 Fukushima nuclear disaster, saying a health management survey by Fukushima Prefecture is insufficient.

Grover made the call in a report after conducting research on the radiation exposure issue as a representative of a U.N. team on behalf of the U.N. Human Rights Council.

Specifically, the report urges the Japanese government to conduct health checkups on people in areas with exposure doses of over 1 millisievert annually, within or outside Fukushima Prefecture. The report will be submitted to the council in the near future.

In the report, Grover takes issue with Fukushima Prefecture's action to limit examinations of internal radiation exposure of children to thyroid glands and asking the prefectural government to carry out urine and blood tests to deal with the possibility of developing leukemia and other diseases. He also advises the prefectural government to correct the current procedures, in which image data and reports on thyroid gland tests are not delivered to parents. Instead they are asked to go through cumbersome procedures to request disclosure of information.

In addition, the report urges the central government to limit radiation doses to ordinary people to an annual limit of 1 millisievert and conduct health checks for residents in areas with the potential to top the limit. The report points out that **the Japanese government's evacuation standard of 20 millisieverts a year should be cut to 1 millisievert or less from the standpoint of human rights.**

In addition, the report also expresses concern about details of support and the coverage area despite the enactment of a measure in June last year to support children's health and life after their evacuations from radiation-affected zones. The report urges the central government to offer evacuees from zones with radiation doses of more than 1 millisievert with housing, educational and medical assistance.

What about ongoing radiation exposure?

To be taken with a pinch of (iodine) salt...

May 27, 2013

U.N.: Post-Fukushima collective thyroid dose about 3.3% the dose from Chernobyl

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201305270089

The Asahi Shimbun

By YURI OIWA/ Staff Writer

The health effects from the Fukushima nuclear accident are substantially smaller than those from the Chernobyl disaster, and the increase in cancer incidence in Japan will be negligible, according to a U.N. panel's estimates.

The collective thyroid dose of Japanese people from radioactive materials released from the Fukushima No. 1 nuclear plant will be about one-30th of that of the exposed populations from the 1986 Chernobyl accident, according to a draft report by the U.N. Scientific Committee on the Effects of Atomic Radiation obtained by The Asahi Shimbun.

The draft also said the cancer incidence in Japan will rise only marginally and will be difficult to detect.
However, the report cautioned that data on released radioactive materials or actual measurements of radioactive iodine are insufficient, and that many uncertain factors remain about dose statistics.

It also pointed out that health effects of low-dose exposures have not been fully learned.

The draft report was compiled by 85 experts in and outside the U.N. panel over the past two years. Its contents will be discussed at a committee session that opens in Vienna on May 27 and submitted to a U.N. General Assembly session in September.

The report is expected to be reviewed several years later based on the latest data.

The draft report said the accident at the Fukushima No. 1 nuclear plant on March 11, 2011, was much more serious than the Three Mile Island accident in 1979, but the volume of radioactive materials released into the air was far less than in the Chernobyl accident.

The amounts of radioactive iodine-131 and cesium-137 from the Fukushima plant were less than onethird and one-fourth, respectively, of those from Chernobyl, while those of strontium and plutonium were extremely small.

The experts calculated the collective dose of the Japanese population of 130 million, multiplying the estimated dose in each region by the number of people affected.

The total thyroid dose over 10 years from the Fukushima accident is estimated at 99,000 person-sieverts, about one-30th of that of the 600 million people in the former Soviet Union and surrounding countries affected by Chernobyl.

The total whole-body dose is estimated at 32,000 person-sieverts in Japan, about one-10th of that from Chernobyl.

In addition to the limited volume of radioactive materials, the draft report said Japanese authorities evacuated residents and regulated food consumption relatively swiftly. [????????]

The experts also said the thyroid dose among Fukushima Prefecture residents outside a 30-kilometer radius of the nuclear plant was below 100 millisieverts over one year from the accident, a figure considered the threshold for increased cancer risk.

According to the estimates, the thyroid dose was 33-66 millisieverts for 1-year-olds and 8-24 millisieverts for adults. For 1-year-olds inside the zone, the thyroid dose was 20-82 millisieverts.

In the Chernobyl accident, about 6,000 people developed thyroid cancer, the only cancer whose link to a nuclear accident has been scientifically established, and more than 10 of them died.

Average thyroid dose after the Chernobyl disaster was 500 millisieverts for evacuees and 100 millisieverts for residents in the contaminated area. Figures for young children are estimated to be two to four times higher.

The experts working for the U.N. panel estimated the increase in thyroid cancer incidence over a lifetime if children in Fukushima Prefecture are exposed to 50 millisieverts, which is considered the average for 1-year-olds outside the 30-km radius.

According to the estimates, 0.8 in 100 girls and 0.2 in 100 boys naturally develop thyroid cancer. That rate will increase by 0.2 person for girls and by 0.05 person for boys due to the Fukushima accident.

The experts also estimated the whole-body dose of Fukushima Prefecture residents over one year.

The figures for adults and 1-year-olds outside the 30-km radius were less than 4 millisieverts and less than 7.5 millisieverts, respectively. Those for adults and 1-year-olds inside the zone were less than 10 millisieverts and less than 20 millisieverts.

What is the value of statistics?

May 28, 2013

UN: Manifest health effects unlikely in Fukushima

http://www3.nhk.or.jp/nhkworld/english/news/20130528_33.html

A draft report by a UN panel says it does not expect it will be possible to attribute any manifest health effect in residents around the Fukushima Daiichi power plant for radiation exposure from the 2011

nuclear accident. It says their doses were much lower than those for the Chernobyl accident.

The UN Scientific Committee on the Effects of Atomic Radiation drafted the report. The amounts of radiation exposure for residents around the Fukushima plant were estimated by using various data. The committee is made up of radiologists and other experts from around the world.

The draft report estimates the levels of radiation exposure for the thyroid gland -- the part of the body which is most affected by radioactive iodine.

It says the thyroid doses of iodine were up to 82 millisieverts for one-year-old children within 30 kilometers of the plant at the time of the accident and evacuated later. For one-year-olds outside this zone, the report estimates doses of up to 66 millisieverts.

The amounts are less than one 60th of those for the Chernobyl accident in 1986.

These figures are also lower than an international threshold for higher thyroid cancer risk, which is said to be 100 millisieverts. Another international guideline warns of health considerations if doses exceed 50 millisieverts.

The panel says the estimated doses for Fukushima residents were lower, as the estimated amount of radioactive iodine released from the plant was less than one third of the figure for Chernobyl.

It says evacuation and food safety regulations that began immediately after the accident also helped.

The panel says that even with overall body exposure, it does not expect that it will be possible to attribute any manifest health effect in residents near the Fukushima plant to radiation exposure received as a result of the nuclear accident.

The committee plans to discuss the contents of the draft, and submit it to the UN General Assembly in September.

see also :

May 27, 2013

U.N.: Post-Fukushima collective thyroid dose about 3.3% the dose from Chernobyl

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201305270089

Ibaraki accident - How dangerous?

May 30, 2013

Officials say no environmental risk from radioactive leak at Tokai lab

THE ASAHI SHIMBUN

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201305300064

TOKAI, Ibaraki Prefecture--The leak of radioactive materials at the Hadron Experimental Facility on May 23 does not pose any environmental health risks, according to its operators.

The High Energy Accelerator Research Organization and the Japan Atomic Energy Agency, which run the Japan Proton Accelerator Research Complex (J-PARC) in Tokai, Ibaraki Prefecture, where the facility is located, announced the results of their estimate of the accident's environmental effects on May 29.

They calculated that the radioactive substances have spread to the west of the facility, at a maximum radiation dose of 0.29 microsievert at its boundary.

That figure is below the annual radiation dose limit of 1 millisievert, and officials of the joint operators said even a prolonged stay in the area will not affect a person's health.

On the same date, they also announced that one more person had been subjected to radiation exposure, in addition to the 33 people reported by May 27. A male employee working for a private company who was in the facility was exposed to a radiation dose of 0.1 millisievert, they said, bringing the number of exposed to 34 people out of 100. Other than those people, two who have not yet been tested are now out of the country, and measurement tests will be conducted in their home countries.

Radioactive particles from J-PARC accident spread 1 km westward

http://mainichi.jp/english/english/newsselect/news/20130530p2a00m0na013000c.html

Radioactive materials from last week's failed experiment at the Japan Proton Accelerator Research Complex (J-PARC) in Ibaraki Prefecture reached one kilometer to the west of the facility, according to preliminary figures released on May 29 by administrative bodies including the Japan Atomic Energy Agency (JAEA). The JAEA also confirmed on the same day that a 57-year-old male employee had been exposed to 0.1 millisieverts of radiation, bringing the total number of affected persons to 34.

Radioactive substances from the facility were dispersed on May 23 by the building's ventilator at around 3:15 p.m., and then again at around 5:30 p.m. The spread of the radiation was calculated using factors such as existing weather conditions at the time.

The contaminated region could possibly include residential areas, as a housing district is located some 600 to 700 meters westward of the facility. However, officials said that the levels of radiation were low and would not result in adverse health effects.

The highest radiation dose was said to be found at the boundary of the premises, located approximately 90 meters from the building where the botched procedure occurred. Exposure for one hour in that area would have resulted in a radiation level totaling 0.29 microsieverts (with one micron equaling one-thousandth of a millimeter).

J-PARC Director Yujiro Ikeda apologized for the incident, and noted that the center plans to hold briefing sessions with local residents."We will do everything in our power to rebuild trust (in our facility)," he commented.

At first, the JAEA said that the number of persons exposed to radiation was 33 among the total of 55 individuals who were on the premises at the time. It was later discovered, however, that the additional male employee had come to the facility for a total of one hour in order to help with research. May 30, 2013(Mainichi Japan)

UNSCEAR strikes again - All is well...

June 1, 2013

U.N. experts: No rise in cancer seen from Japan's nuclear disaster

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201306010022

REUTERS

VIENNA--The evacuation of tens of thousands of people helped prevent rising cancer rates and other health problems after Japan's Fukushima nuclear disaster, the world's worst in 25 years, U.N. scientists said on May 31.

Radiation exposure following the reactor meltdowns more than two years ago did not cause any immediate health effects, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) said after its annual meeting.

That would be in contrast to Chernobyl, the 1986 Soviet reactor explosion which sent radioactive dust across much of Europe and is believed to have caused thyroid cancer in some children.

A magnitude 9 earthquake and tsunami on March 11, 2011, killed nearly 19,000 people and devastated the Fukushima No. 1 nuclear plant, spewing radiation and forcing about 160,000 people to flee their homes.

Actions to protect inhabitants in the area, including evacuation and sheltering, significantly reduced the exposure to radioactive substances, the scientific body said after the session to prepare a report for the U.N. General Assembly.

"These measures reduced the potential exposure by up to a factor of 10," said senior UNSCEAR member Wolfgang Weiss.

"If that had not been the case, we might have seen the cancer rates rising and other health problems emerging over the next several decades," he said in a statement.

Weiss, who chairs work on UNSCEAR's Fukushima report, told reporters that dose levels were "so low that we don't expect to see any increase in cancer in the future in the population."

UNSCEAR's findings appeared to differ somewhat from a World Health Organization (WHO) report published in February which said people in the area worst affected have a slightly higher risk of developing certain cancers.

NO RADIATION-RELATED DEATHS

Weiss suggested the UNSCEAR study, carried out by 80 experts and with the involvement of five international organizations including the United Nations health agency, was based on information covering a longer period after the accident.

UNSCEAR's 27 member states scrutinized the draft during this week's session in Vienna, it said, adding it would be the most comprehensive scientific analysis of the issue so far.

While a few received very high doses, no radiation-related deaths or acute effects were observed among nearly 25,000 workers--including employees of the operator Tokyo Electric Power Co.--involved at the accident site, it said.

Highlighting the differences between Chernobyl and Fukushima, Weiss said people close to the then Soviet plant were exposed to radioactive iodine that contaminated milk.

The thyroid--a gland in the neck that produces hormones that regulate vital body functions--is the most exposed organ as radioactive iodine concentrates there. Children are deemed especially vulnerable.

"In Chernobyl, many children used milk which had high iodine concentrations, resulting in high thyroid doses, resulting in an increase of thyroid cancer," Weiss said, adding that the doses in Japan were "much, much lower."

In Belarus, Russia and Ukraine, the countries most affected by Chernobyl, more than 6,000 cases of thyroid cancer had been reported by 2005 in children and adolescents who were exposed at the time of the accident, UNSCEAR says on its web site.

"Many of those cancers were most likely caused by radiation exposures shortly after the accident," it adds.

U.N. experts see no increased cancer risk among Fukushima residents

http://mainichi.jp/english/english/newsselect/news/20130601p2g00m0dm002000c.html

VIENNA (Kyodo) -- U.N. scientists assessing the health impact of the disaster-crippled Fukushima Daiichi Nuclear Power Station said Friday their estimates based on data obtained so far show the radiation dose on residents in the region is so low they do not expect to see any increase in cancer in the future but urged that follow-up studies be conducted on residents' health.

The U.N. Scientific Committee on the Effects of Atomic Radiation also noted that the prompt evacuation of many residents from areas around Tokyo Electric Power Co.'s plant resulted in a reduction of dose they would have received from radioactive substances released after the 2011 accident.

The panel said its dose estimate of radioactive iodine, which is associated with the thyroid cancer, in most cases was below the critical 50 millisieverts, a threshold above which preventive "iodine tablets" are given to young children, but also mentioned single cases of children with a dose level up to 66 millisieverts.

The doses of cesium 134 and 137 on adults for the whole body are estimated up to 15 millisieverts, much lower than 100 millisieverts of dose considered to increase risks for solid cancers.

In the 1986 nuclear accident in Chernobyl, many children consumed milk with a high iodine concentration, leading to high thyroid doses and an increase in thyroid cancer.

The panel said the quick evacuation of the local population after the accident has reduced the radiation doses for the people by a factor of 10.

Radiation doses were also reduced because taking in food contaminated with radioactive substances was prevented.

The results presented in the report differ from those in a previous report published by the World Health Organization in February, which warned of higher cancer risks for residents and nuclear power plant workers around Fukushima than the average for the country's entire population.

On this, UNSCEAR said the WHO only had access to data from the first three months after the accident and then calculated the estimates by using models and plausible parameters, while UNSCEAR made use of precise dose distributions from an additional year of time, which helped present updated results. About the workers at the Fukushima plant, the panel confirmed that two workers received thyroid doses up to 12 millisieverts as a result of inhalation of iodine at the beginning of the accident. They are under medical surveillance and nothing extraordinary has been observed so far, according to the panel. The panel said it has only limited information on the impact of animals, plants and other non-human spheres, adding follow-up research, particularly in the ocean, is needed.

UNSCEAR held a meeting from Monday through Friday in Vienna to discuss the impact of the Fukushima accident on residents and others. A report is expected to be presented to the U.N. General Assembly session this fall.

Weren't we supposed to trust the UN figures?

June 5, 2013

Fukushima survey lists 12 confirmed, 15 suspected thyroid cancer cases Kyodo

http://www.japantimes.co.jp/news/2013/06/05/national/fukushima-survey-lists-12-confirmed-15-suspected-thyroid-cancer-cases/#.Ua8HPNhBpg4

FUKUSHIMA – An ongoing study on the impact of radiation on Fukushima residents from the crippled atomic power plant has found 12 minors with confirmed thyroid cancer diagnoses, up from three in a report in February, with 15 others suspected cases, up from seven, researchers announced Wednesday. The figures were taken from about 174,000 people aged 18 or younger whose initial thyroid screening results have been confirmed.

Researchers at Fukushima Medical University, which has been taking the leading role in the study, have said they do not believe the most recent cases are related to the nuclear crisis.

They point out that thyroid cancer cases were not found among children hit by the 1986 Chernobyl nuclear accident until four to five years later.

The prefecture's thyroid screenings target 360,000 people who were aged 18 or younger when the March 2011 meltdown crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant was triggered by a major quake and tsunami.

The initial-phase checks the size of lumps and other possible thyroid cancer symptoms and categorize possible cases into four groups depending on the degree of seriousness. Those in the two most serious groups are picked for secondary exams.

In fiscal 2011, after confirming test results from about 40,000 minors, the prefecture sent 205 for secondary testing. Of the 205, seven were diagnosed with thyroid cancer, four came out with suspected cases, and another had surgery but the tumor was found to be benign.

In fiscal 2012, of about 134,000 minors with confirmed initial screening results, the prefecture sent 935 to secondary testing. Among them, five were confirmed with thyroid cancer, while there were 11 suspected cases.

In the Chernobyl catastrophe, thyroid cancer was reported in more than 6,000 children. The U.N. Scientific Committee attributed many of the cases to consumption of milk contaminated with radioactive iodine immediately after the crisis started.

Last month, U.N. scientists assessing the health impact of the Fukushima nuclear crisis said the radiation dose for residents in the region was much lower than Chernobyl and that they do not expect to see any increase in cancer in the future.

Among those aged 10 to 14 in Japan, thyroid cancer strikes about 1 to 2 in a million.

"Fukushima's survey examines people who have no symptoms across the board and it is hard to evaluate it because there are no comparable data," a health department official at the Environment Ministry said. "We need to take a careful look at it."

The official downplayed the possible effects of the nuclear crisis, saying it is likely that Fukushima authorities were able to detect cancer cases early.

Papillary thyroid cancer in Fukushima children

June 5, 2013

12 children already had surgery in Fukushima, all were Papillary thyroid cancer

http://fukushima-diary.com/2013/06/12-children-already-had-surgery-in-fukushima-all-were-papillary-thyroid-cancer/

Following up this article..12 Fukushima children diagnosed to have thyroid cancer, 15 more suspected to have cancer, "300% up since February" [URL]

According to Fukushima prefectural government, **12 children have already had surgery** by 5/27/2013.

Among 12 cases (malignant or possibly malignant) found in 2011, 8 children already had surgery. One of them turned out to be benign nodule. 7 of them turned out to be papillary thyroid cancer.

Among 16 cases (malignant or possibly malignant) found in 2012, 5 children already had surgery. All of them turned out to be papillary thyroid cancer.

The youngest child among those 16 cases was 9 years old when 311 took place. (Female)

http://www.pref.fukushima.jp/imu/kenkoukanri/250605siryou2.pdf

Related article..[New Normal] NHK "Thyroid problem is a people's disease in Japan. Papillary thyroid cancer is a gentle cancer" [URL]

Nothing to do with radiation?

June 6, 2013

Experts: More data needed to assess radiation's role in cancer among Fukushima kids

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201306060092

THE ASAHI SHIMBUN

Health experts are at odds on whether radiation from the Fukushima nuclear accident led to an unexpectedly high occurrence rate of thyroid gland cancer among children in Fukushima Prefecture.

The prefectural government has been conducting thyroid gland tests on all children in the prefecture who were 18 or younger when the nuclear crisis began to unfold in March 2011.

Twelve of the 174,000 children who have undergone the comprehensive checkups have been found with thyroid gland cancer, with an additional 16 suspected of having the disease.

A majority of radiologists, as well as the prefectural government, have dismissed speculation that radiation from the Fukushima No. 1 nuclear power plant had any role in the numbers. But others said it is premature to make any assessment based on the currently available data.

The figures mean about one in every 15,000 children in Fukushima Prefecture has thyroid gland cancer. The rate soars to one in every 6,000 if the suspected cases are included.

Those figures are higher than the thyroid gland cancer occurrence rate of 1.7 in every 100,000 individuals between the ages 15 and 19 in Miyagi and three other prefectures in 2007.

The Fukushima prefectural government has attributed the higher rate to the fact that a large number of children have been subjected to exhaustive, high-precision tests, which are able to detect cancer more accurately than conventional tests.

Shinichi Suzuki, a Fukushima Medical University professor involved in the tests, denies that radiation has had any impact on the occurrence rate.

He said thyroid gland cancer only began to emerge four or five years after the Chernobyl nuclear accident of 1986, and most of the patients were infants when they were exposed to radiation. By contrast, only two years have passed since the Fukushima nuclear disaster, and thyroid gland cancer has been found in children 9 years old or older, Suzuki said.

Kazuo Shimizu, a Nippon Medical School professor who was recently appointed to a prefectural government panel to discuss the test results, takes a more cautious stance.

"With the data we currently have, there is no way of telling if radiation has had any impact," Shimizu said. "A large-scale study is necessary to test the thyroid glands of children in similar age brackets who were never exposed to radiation."

Shimizu said the different scales of the Chernobyl and Fukushima disasters and the different situations of food-derived iodine intake preclude a simple comparison between the two cases.

Many experts have pointed out that an assessment remains difficult as long as little data is available on radiation doses in thyroid glands.

"Comparison with doses is essential, so there should be more research emphasis on that front," said Fumiko Kasuga, another member of the prefectural government panel, who is also a vice president of the Science Council of Japan.

(This article was written by Yuri Oiwa and Teruhiko Nose.)

Beyond Nuclear reacts to UNSCEAR press release

June 6, 2013

http://www.beyondnuclear.org/radiation-health-whats-new/2013/6/6/un-radiation-panel-children-more-vulnerable-to-radiation-eve.html

UN radiation panel: children more vulnerable to radiation, even so, no detectable health effects from Fukushima



"Long-term monitoring, proper medical treatment, key to Fukushima citizens' health outcomes. Children at increased risk". This *should* have been the title of the most recent press release from the United Nations

Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). However, UNSCEAR continues to downplay health effects from the ongoing Fukushima nuclear catastrophe.

The UNSCEAR press release presages their release of two reports expected in October 2013. It is hard to evaluate the scientific basis for many UNSCEAR claims without access to the full reports, but UNSCEAR's collective thought process is quite clear, both in the press release and the accompanying video of a May 31 press conference that followed a meeting of the committee. Beyond Nuclear contends the following issues are still outstanding and must be independently addressed to protect public and particularly child, health. UNSCEAR should no longer be allowed to downplay radiation impacts.

1. Fear of radiation is justified based on radiation dangers and past official actions to hide this danger

UNSCEAR needs to recognize that fear of radiation exposure is justifiable because exposure to radiation posses a true (not exaggerated), unseen danger, that is often downplayed or ignored by officials. This official unwillingness to face these dangers often leaves people with no control over their own health outcomes. The UN Human Rights report (advanced unedited version): Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Anand Grover, Mission to Japan (15 - 26 November 2012), recognizes that this fear of radiation has merit and should be addressed on this merit: "The Special Rapporteur personally observed the anxiety and stress among evacuees, residents and their families, which were related to *the effect of radiation leakage on health, especially of children*, cost of evacuation, loss of livelihoods as well as uncertain future and delays in receiving compensation that hindered rebuilding of their lives."

While uprooting communities and livelihoods is certainly devastating, the reason the people can't return to their former lives two years after the Fukushima catastrophe isn't because of the earthquake and tsunami devastation, it is because no dose of radiation is safe and radiation exposure has increased due to the catastrophe in the areas where these people used to live and work.

2. Radiation is the real danger, not evacuation and relocation

The solution to the mental anguish caused by a nuclear accident isn't moving people back into contaminated areas, or keeping them from leaving in the first place -- something that UNSCEAR hints at when they say doses at Fukushima were reduced by a factor of 10 because of either evacuating or sheltering in place. However, the not-so subtle implication is that, of these two options, evacuation and more importantly, permanent relocation, can be the real damage, not radiation: "The experience from the 1986 Chernobyl accident has shown us that apart from any direct impact on physical health, the social and societal effects, and their associated health consequences in the affected population will need special attention in the coming years," said Carl-Magnus Larsson, Chair, UNSCEAR. "Families are suffering, and people have been uprooted and are concerned about their livelihoods and futures, the health of their children...it is these issues that will be the long-lasting fallout of the accident." UNSCEAR, intentionally or not, is setting up a scenario where, at the very least, permanent relocation and maybe even evacuation, will not be recommended in future nuclear catastrophes. People who become victims of nuclear energy will not be able to relocate.

3. Scientific bodies like UNSCEAR should know better than to attempt to "predict away" health effects of radiation exposure



UNSCEAR continues to predict that any health effects that occur will be difficult to attribute to radiation exposure: "Radiation exposure following the nuclear accident at Fukushima-Daiichi did not cause any immediate health effects. It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workers..." Note they don't say there will not be any health effects, just that we won't be able to detect them. So while they say long term monitoring is key, what would they expect to find if they have already assumed they won't see anything? Why bother to look? The UN Human Rights report warns that we don't yet know the impact of low-dose radiation from Fukushima. (see quote in paragraph below)

Should we observe increases in disease in Japan, UNSCEAR most likely will refuse to acknowledge that these disease increases are attributable to radiation not because of science, but because their prognostications told them it wasn't possible. In essence, what happened to cover up Chernobyl health impacts is occurring right now in Japan.

4. People want proper medical treatment, not data-mining

UNSCEAR has not accounted for those in Japan who avoid official databases and therefore may not be in the official "count". These people don't want to become a statistic without also receiving proper medical care, something they believe they won't get from government. The UNSCEAR statement hints at medical follow-up, but doesn't really define what that means: "At the same time, it is important to maintain a long-term medical follow-up for the exposed population, and in relation to certain diseases to provide a clear

picture of their health status development." But people in Japan have a right to be skeptical regarding proper medical follow-up since their historical experience after the atomic bombings proved to them their only worth to researchers was as a radiation experiment. The UN report on Human Rights post Fukushima makes a stronger statement regarding access to medical care and the impacts of low-dose radiation: "As the exact health effects of long-term exposure to low-dose ionizing radiation cannot be accurately predicted, the implementing measures should also expressly provide free, life-long health screening and medical treatment relating to radiation exposure for all affected persons. The 20-year time limit contained in the Civil Code should not apply to financial assistance for medical care related to the nuclear accident."

5. Studies of past radiation exposures are not always applicable to Fukushima exposures

UNSCEAR refuses to recognize the differences in exposure between the populations exposed from Fukushima and those exposed to medical exams and treatments, and atomic bomb fall-out. They still claim that for children: "More research is needed to fully understand the risks and effects following childhood exposure to radiation. This is necessary (and possible) because there are many individuals who were exposed as children (such as the survivors of the atomic bombings) who are still alive. Their experiences must not be lost," said Fred Mettler, Chair, UNSCEAR Report on Effects of Radiation Exposure on Children." This bomb exposure is not comparable to either the exposures at Chernobyl or Fukushima, which in turn, may not be wholly applicable to each other. The UN Human Rights report recognizes this (paragraph 9), as do a number of researchers.

6. Children falling victim to radiation AND predictions of no noticeable health impacts

UNSCEAR recognizes that children are often more vulnerable to damage from radiation in any exposure scenario. In the case of Fukushima, UNSCEAR has recognized that long-term monitoring is key. Publishing a report enumerating the vulnerabilities of children is very important and the report by UNSCEAR will be the first attempt to collect this information in one place. But the report's release will be marred by UNSCEAR's presupposed conclusion that " It is unlikely to be able to attribute any health effects in the future among the general public...", and their historic unwillingness to stray from this belief despite observations to the contrary. As the health outcomes of children in Japan are followed, it will be interesting to see how nuclear proponents attempt to downplay any increases in childhood diseases linked to radiation exposure.

7. Radiation exposure assumptions are based on flawed and incomplete data

Natural Radiation Levels Depending Upon Location

How much radiation we receive depends upon where we are. For example, in Japan, the amount of radiation in the Kansai area is generally higher than in the Kanto area. This is due to differences in the earth's composition. If a person were to move from Tokyo to Osaka, that person would come to receive 0.17mSv more radiation per year, however this would have absolutely no ' ill effects. Nuclear power plants have established a goal of releasing no more than 0.05 mSv per year; this is lower than what would be obtained by moving from Tokyo to Osaka.



elevation. For example, if a person were to stand on the peak of Mt. Fuji, that person would receive five times more radiation than when standing at ground level

thanks to simply info.org for mapUNSCEAR is not accounting for the spread of radioactive contamination through burning of rubble OR other ill-fated attempts at "cleanup". Rubble which could be radioactive, has been transported across Japan and is being burned, spreading radioactive exposure. Attempts to clean the contaminated areas has lead to contamination of different areas and keeping track has been difficult.

UNSCEAR appears to be averaging the doses from Fukushima across the entire population of Japan, even though not everyone in Japan will be getting the same amount of exposure. "The additional exposures received by most Japanese people in the first year and subsequent years due to the radioactive releases from the accident are less than the doses received from natural background radiation (which is about 2.1 mSv per year). This is particularly the case for Japanese people living away from Fukushima, where

annual doses of around 0.2 mSv from the accident are estimated, arising primarily through ingestion of radionuclides in food."

However, before Fukushima, the background radiation in Japan was much lower than 2.1 mSv per year for most areas (see map, thanks to simplyinfo.org) This means that the 1mSv per year allowed through ingestion alone, by the Japan government, and which UNSCEAR supports, will add significantly to any natural radiation dose. In fact, the UN Human Rights report recommends that Japan should "Formulate a national plan on evacuation zones and dose limits of radiation by using current scientific evidence, based on human rights rather than on a risk-benefit analysis..."

Perhaps the most maddening circumstance is that UNSCEAR makes recommendations, but takes absolutely no responsibility for how these recommendations are used. This lack of accountability necessitates public vigilance and interaction with any recommendations they make. Beyond Nuclear will review the final reports when they are released in October. Stay tuned.

Checking Fukushima kids

June 9, 2013

Fukushima kids' thyroids screened

Aid group provides parents with first real feedback, documents

by Tomohiro Osaki Staff Writer http://www.japantimes.co.jp/news/2013/06/09/national/fukushima-kids-thyroidsscreened/#.UbQsGdhBpg4

Forty-four children living in areas of Fukushima Prefecture subject to high levels of radiation were screened for thyroid cancer Saturday in Tokyo, highlighting widespread health fears following the 2011 nuclear meltdowns crisis.

Saturday's checkup in Shinjuku Ward was organized by a fund-raising group established by well-known journalist **Ryuichi Hirokawa** that supports young victims in the areas worst affected by the disaster at the Fukushima No. 1 plant.

Hirokawa, editor-in-chief of monthly magazine Days Japan, which is known for its in-depth photojournalism, said he immediately realized the risk of children in Fukushima developing thyroid cancer through covering the aftermath of the 1986 Chernobyl catastrophe for more than two decades. He also expressed grave skepticism over the effectiveness of Fukushima's local government-led screening programs for thyroid cancer, criticizing their infrequency and inadequate feedback.

"These kinds of tests should be organized by the state or local municipalities, who should not only provide worried parents with detailed feedback but also do as much as possible to alleviate the financial burden on them," Hirokawa said.

Saturday's examination in Tokyo, on the other hand, provided each participant with sonograms of their thyroid, a step he called essential so that parents can have documentation for future reference, in addition to making available consultations with doctors.

A mother of two daughters who took part in the checkups said that after the triple meltdowns in 2011 she immediately fled from Koriyama, Fukushima Prefecture, to Saitama Prefecture to ensure her family's safety. After the screening, the woman, who asked not to be named for privacy reasons, said a small pustule had been detected in the thyroid of her oldest daughter, 5.

"The doctor assured me there is no immediate health risk, but still it's very worrying," the woman told The Japan Times in an interview. "But the good news is that we've now got such detailed documentation. My husband and I are planning to discuss what to do with it in the future."

Another woman from Chiba Prefecture said with relief that both of her daughters, 6 and 2, had tested negative.

"I was worried sick about the results, but it seems my kids are healthy," said the woman, also speaking on condition of anonymity. "I might have brought the results to another doctor for a second opinion if any abnormality had been detected. But for now, I think I will just keep them for future reference, just in case." Eighty-six more children will be similarly tested Sunday.

Fukushima Prefecture initiated a raft of medical examinations for local residents in October 2011, including thyroid checks for those aged under 18 at the time of the March 2011 nuclear disaster. Of the roughly 360,000 children among them, 175,499 so far have undergone health checkups for possible thyroid cancer. Twelve were confirmed to have tested positive, in addition to 15 deemed at high risk of developing the disease, according to the latest report by Fukushima Medical University.

1 millisievert dose limit "too low" for relief workers?

June 13, 2013

Red Cross radiation limit for relief workers too low, say critics

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201306130065

By YURI OIWA/ Staff Writer

The Japanese Red Cross Society has established a guideline for medical workers that sets an accumulated radiation dose limit of 1 millisievert for relief activities, although experts have said the ceiling is too low to allow workers to provide ample assistance to disaster victims.

"Radiation doses above 1 millisievert have no health effects," said Yasushi Asari, a professor of emergency medical care at Hirosaki University. "There is no need for medical workers to use that threshold."

Masahito Yamazawa, director-general of the Red Cross nuclear disaster preparedness task force, said during in-house discussions there were arguments for and against the 1-millisievert threshold. But the Red Cross determined that a 1-millisievert limit would still allow its workers to engage in relief activities in zones with high radiation levels because each relief mission usually lasts only up to a week, Yamazawa said.

One millisievert is the legal annual dose limit for members of the public during normal times.

Yamazawa added that allowances were also made for the fact that its medical relief squads include clerical workers.

"We have created the guideline out of a positive desire to help victims during a nuclear disaster," Yamazawa said. "We will use it as a platform for further improvements if the need arises."

Providing relief to disaster victims is one of the legally defined duties of the Japanese Red Cross Society. It has organized more than 500 relief squads across Japan, each squad comprising one medical practitioner, three nurses, one driver and one clerical worker.

Japanese Red Cross relief units fulfilled a total of 900 missions in communities ravaged by the 2011 Great East Japan Earthquake. However, initially they were unprepared for a nuclear disaster, and that created a vacuum of relief squads in Fukushima Prefecture during the early stages of the crisis at the Fukushima No. 1 nuclear power plant.

Red Cross officials said they learned from that experience and decided to create the new guideline for nuclear disaster relief activities.

The guideline says relief squad members should carry dosimeters and iodine tablets at all times, and retreat to safety whenever they are in danger of being exposed to more than 1 millisievert in accumulated radiation. It also says relief workers should keep clear of zones that are off-limits to residents.

Shigenobu Nagataki, professor emeritus of radiology at Nagasaki University, said the new Red Cross' ceiling is too low and could compromise relief activities.

"It is the mission of medical workers to help those who are injured or ill. They should not be allowed to leave assistance for patients in no-entry zones to the Self-Defense Forces, police and firefighters alone," said Nagataki, who serves on an expert panel that advises the prime minister's office on nuclear disasters. "The 1-millisievert annual dose limit for members of the public at normal times is too low to be used in disaster relief activities."

Nagataki and other radiation experts are concerned that the Red Cross guideline could set an example for Japan's 1,150 health ministry-certified disaster medical assistance teams and other similar squads.

"If everyone follows the Red Cross standard, that could create confusion in evacuation processes for patients and elderly citizens in off-limit zones," Nagataki said. "That could cause a repeat of what happened in Fukushima."

Wrong dates. Sorry.

June 26, 2013

Radiation exposure data inaccurate for 16,000 Fukushima residents

Kyodo

http://www.japantimes.co.jp/news/2013/06/26/national/radiation-exposure-data-inaccurate-for-16000-fukushima-residents/#.UcqM_thSb9k

FUKUSHIMA – Fukushima Prefecture and the National Institute of Radiological Sciences said Tuesday they erroneously estimated the radiation exposure of 16,118 people in a survey covering the first four months after the outbreak of the March 2011 disaster at the Fukushima No. 1 nuclear plant.

Among the roughly 420,000 people authorities have so far finished compiling data on, recalculations show 12,469 received higher doses and 3,649 lower doses than previously estimated.

The margins for revisions range from plus 0.4 millisievert to minus 0.2 millisievert. As a result of the revisions, it was learned that **some people were exposed to more than 1 millisievert — the annual limit set by the government for ordinary citizens**.

"We apologize to the people of Fukushima," institute board member Makoto Akashi said. People will be notified of their revised figures by the end of July, Akashi said. That data is expected to be further scrutinized to obtain an even more accurate picture of the number of people whose exposure was wrongly estimated.

The institute has been commissioned by Fukushima Medical University to conduct a survey targeting all 2.05 million residents of the prefecture.

It had calculated exposure using a computer program containing mismatched dates resulting in dose miscalculations, the institute said. The mistakes were detected when researchers updated the system.

Fukushima: wrong radiation exposures given

http://www3.nhk.or.jp/nhkworld/english/news/20130626_10.html

Fukushima Prefecture says more than 16,000 residents were given wrong estimates of their external radiation exposure in a survey following the disaster at the Fukushima Daiichi nuclear power plant in 2011.

The figures were calculated by the National Institute of Radiological Sciences near Tokyo for all of Fukushima Prefecture's 2 million residents. The figures were calculated using a computer program, based on factors including the residents' activities in the 4 months after the accident.

Of the 2 million residents, calculations using the program have been completed for 420,000 people.

Prefectural officials say more than 12,000 people were given figures up to 0.4 millisieverts lower than the correct estimates because the calculations were based on wrong dates in the computer program.

The prefecture says even with the correct figures, it is unlikely that the estimated dosage would pose health problems. The annual limit for exposure for the general public is one millisievert.

The prefecture has apologized for the mistake and says the computer program will be modified, and the right figures sent to residents.

Jun. 26, 2013 - Updated 00:59 UTC

Revised internal exposure for Fukushima workers

June 6, 2013

Records underestimate radiation exposure in Fukushima workers

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201307060066

By TOSHIO TADA/ Staff Writer

The test records of 479 workers at the crippled Fukushima No. 1 nuclear power plant contained false documentation on the amount of internal radiation they were exposed to, the Ministry of Health, Labor and Welfare said July 5.

The records of 452 of them have since been revised upward by a maximum of 48.9 millisieverts, according to health officials. The records of the rest were revised downward.

The ministry said Tokyo Electric Power Co., the plant operator, failed to follow government instruction to make sure that its employees and contractors followed proper calculation protocol and that inadequate methods were employed to estimate the amount of internal exposure.

In March, records of external exposure were found to be in error by up to several millisieverts in 63 individuals.

The revised internal exposure calculations recorded 50 millisieverts in 24 people by the end of March 2013. Six people topped 100 millisieverts.

The maximum dose limit for nuclear plant workers by law is set at 100 millisieverts over a five-year period. At least two individuals continued to work after reaching that limit.

The latest findings increase concerns over the health effects from radiation following the revelations that workers received much greater exposure than originally reported.

About **20,000** individuals had worked at the stricken nuclear plant by the end of 2011, nine months after the reactor meltdowns.

Protocol calls for individuals to be tested at the first sign of internal exposure. But radiation levels were not taken for several months after initial exposure due to a shortage of measuring devices, though in principle, the workers should have been tested immediately. According to the findings by the health ministry, the erroneous documentation partially assumed that radioactive substances entered the body at midpoint during the work period. But according to accepted protocol for nuclear emergencies, when the exact date of the first exposure is not available, the calculations should assume that the intake took place at the beginning of the work period.

Input errors were also found in other cases.

The now-defunct Nuclear and Industrial Safety Agency instructed TEPCO in July 2011 to set official calculation rules, which the utility failed to carry out scrupulously. Academics and others pointed out the possibility of inaccurate exposure calculations, which TEPCO never seriously investigated.

There was similar inaction on the part of the government. It began delving into the matter only this year after the United Nations organization tasked with studying the effects of radiation raised questions about the records.

Neither TEPCO nor the health ministry has come forward to take responsibility for the discrepancies.

"We have notified our employees and contractors of the rules, and we believed they were observing them," a TEPCO official said. "We have done all in our power we can do."

Health ministry officials say they believed that TEPCO was making sure the rules were observed.

Iodine tablets don't equate safety

July 13, 2013

Iodine tablets no prevention

http://www.japantimes.co.jp/opinion/2013/07/13/editorials/iodine-tablets-no-prevention/#.UeJcKaxSb9k

As the power industry attempts to restart the country's nuclear reactors, the Nuclear Regulation Authority's new proposal to require local governments to stock enough iodine tablets and make them available to people of all ages is potentially misleading. The NRA suggested that having enough of the iodine, technically, potassium iodide (KI), pills on hand would be an important measure should another nuclear disaster occur.

The NRA's suggestion makes it appear that having iodine tablets on hand will somehow constitute thorough disaster preparation. Unfortunately, potassium iodide is not an "anti-radiation" pill, as people might hope. Instead, **taking the KI pills is only a supplementary measure.**

Evacuation is the primary protective measure that people should take in case of another nuclear disaster. Local governments within a 30-km radius of nuclear power plants should stock iodine tablets, but also let people know what the tablets can and cannot do.

The tablets block uptake of radioactive iodine into the thyroid glands, but only if taken before or within a few hours after exposure to radioactive iodine. The pills do not prevent radioactive iodine from entering the body, nor do they protect other parts of the body.

The NRA's recommendation may lead some people to believe that they are safe from radiation if they just pop a little pill. That is far from the case, and the government should make sure that citizens understand this.

The iodine is helpful for infants and children, who are at greatest risk from exposure, and people of all ages derive some benefit. However, the pills cannot protect the body from other radioactive elements and do nothing if radioactive iodine is not present. The pill's effectiveness, like all preventive measures, depends on many factors: exposure time, absorption rates, a person's general health and the total amount of radioactive iodine present.

Providing the pills is not a bad thing; however, the NRA's directive to local governments to stock the pills may appear to be a more thorough protective measure than it really is. To use them effectively requires specific guidelines for different age groups and under different conditions.

Knowing that the pills are on hand will be little comfort for people living near the nuclear plants that are restarted. The NRA's recommendation may make people feel safe when they are not. Having enough iodine pills on hand is not genuine safety. The pills are only one temporary measure to lessen the effects of radiation should another accident occur.

More realistic and more thorough preventative measures should be demanded of the NRA. If another meltdown occurs, there will be no magic pill.

28 months for TEPCO to announce workers excessive exposure

July 19, 2013

TEPCO now says 2,000 Fukushima workers exposed to high radiation doses http://ajw.asahi.com/article/0311disaster/fukushima/AJ201307190080

THE ASAHI SHIMBUN

Estimated radiation doses in thyroid glands exceeded safe levels in nearly 2,000 people who worked at the stricken Fukushima nuclear plant, more than 10 times the number previously announced, The Asahi Shimbun has learned.

The larger figure was deduced after doubts were raised both at home and abroad over the results of Tokyo Electric Power Co.'s belated first study on the workers' health.

TEPCO, the nuclear plant's operator, said in December that radiation doses topped 100 millisieverts--the widely accepted threshold for an increase in the risk of cancer--in 178 people, with a maximum reading of 11,800 millisieverts.

But that figure covered only a fraction of those who have braved the high radiation levels to try to bring the nuclear crisis under control.

The workers themselves say TEPCO has provided little or no information about radiation doses in their thyroid glands. Some have stopped working at the crippled Fukushima No. 1 plant.

The new figure is based on a review of an expanded number of study subjects.

TEPCO and its partner companies not only re-evaluated the readings from thyroid gland dose tests, but they also estimated doses when the amount of radioactive iodine that entered the body was unavailable. These estimates were based on cesium intake amounts, the airborne iodine-to-cesium ratio on the days they worked, and other data.

The latest study showed that doses topped the 100-millisievert mark in 1,973 workers. In one worker, the estimated thyroid gland dose increased by more than 1,000 millisieverts during the review.

A thyroid gland dose reflects the amount of internal exposure to radioactive iodine that has entered the body through inhalation and other processes. The thyroid gland doses received during the early stages of the nuclear disaster, which started in March 2011, account for most of the potential internal damage to the Fukushima plant workers.

Early on in the crisis, health experts warned about the risks of high radiation doses received by the workers. But TEPCO was late in opening a full-scale investigation into the thyroid gland doses.

The utility submitted data about the doses to the World Health Organization. However, TEPCO only released available data for some of the workers in December after it learned that the WHO was planning to disclose the information.

The data concerned 522 workers for whom thyroid gland dose test results were available.

It took TEPCO 28 months since the earthquake and tsunami on March 11, 2011, caused the nuclear disaster to learn that so many workers have been exposed to cancer-inducing levels of radiation doses in their thyroid glands.

Its re-evaluation also came after the U.N. Scientific Committee on the Effects of Atomic Radiation, which received data from TEPCO, questioned the reliability of the company's thyroid gland dose readings. Japan's health ministry also ordered TEPCO and its partner companies to review the internal dose readings for the workers.

"We will provide and pay for annual, ultrasound thyroid gland tests to all workers with thyroid gland doses in excess of 100 millisieverts over their lifetimes," a TEPCO public relations official said. "We have already notified those who are eligible for the checkups."

But TEPCO said it does not know how many of those eligible workers have actually taken the tests. Sources said only about half of them have received the thyroid gland checkups.

In addition, the utility has not announced a schedule for the thyroid gland checkups for the workers and has yet to explain what it will do when it spots abnormalities during the tests.

Most of the study subjects with thyroid gland doses exceeding 100 millisieverts entered the Fukushima plant site early in the disaster and inhaled radioactive substances. TEPCO employees account for 976 of them, with the remainder employed by the utility's main contractors and their subcontractors.

Several workers told The Asahi Shimbun that TEPCO has never provided a careful explanation about the risks of radiation exposure in thyroid glands. Some subcontractor workers have already quit their jobs, complaining that they were never told about the radiation doses or received any notification of thyroid gland tests.

The delay in the testing can be partly blamed on a health ministry policy, which says health control for nuclear plant workers should be based solely on whole-body doses.

The ministry has never taken the initiative to investigate thyroid gland doses in the Fukushima workers. It has left the task to TEPCO on a "voluntary" basis.

Some experts have emphasized that enhanced thyroid gland doses do raise the risk of cancer even if the whole-body doses remain modest. But the health ministry has maintained that whole-body dose control is sufficient.

The international consensus for the 100-millisievert threshold for an increased risk of cancer is based partly on studies following the 1986 Chernobyl nuclear disaster.

The international standard for taking iodine tablets to block radiation exposure in thyroid glands, however, is 50 millisieverts.

Some health experts have said the cancer rate began increasing at the 50-millisievert level after the Chernobyl disaster.

Children are believed to be the highest at risk to thyroid gland doses. But a recent study showed the risk of cancer from thyroid gland doses rises even in people over 40, countering the previous belief that older people were far less susceptible to the cancer-inducing effects of radiation.

(This article was compiled from reports by Yuri Oiwa and Toshio Tada.)

Tepco admits exposure topped 100 millisieverts

Nearly 2,000 at Fukushima No. 1 face higher thyroid cancer risk

Kyodo

http://www.japantimes.co.jp/news/2013/07/19/national/1973-fukushima-plant-workers-show-higher-risk-for-thyroid-cancer/#.UemUXKxSb9k

Tokyo Electric Power Co. said Friday that 1,973 workers at the Fukushima No. 1 nuclear plant have estimated thyroid radiation doses exceeding 100 millisieverts and are therefore at higher risk of getting thyroid cancer.

The workers will be allowed to undergo annual ultrasonic thyroid examinations free of charge, the utility said.

Tepco has given health checks to 19,592 workers — 3,290 Tepco employees and 16,302 employees of its partner firms.

However, only 522 workers had their radiation doses checked and reported to the World Health Organization. Last February, the WHO said thyroid radiation doses in 178 of them surpassed the threshold of 100 millisieverts.

For the remainder of the workers, Tepco estimated their radioactive iodine doses based on their radioactive cesium intake.

Tepco also said Friday that no steam was seen in the reactor 3 building.

Employees saw vapor through a monitoring camera Thursday. It was rising from near the central area of the top floor of the reactor building, which was severely damaged by a hydrogen explosion early in the crisis.

As of Thursday evening, the temperature readings on reactor 3 pretty much stayed the same as before the steam was found, as have radiation figures around it.

But when Tepco checked the same area at 7:55 a.m. Friday, it did not find any steam, according to the utility.

Workers can't access the floor because the radiation level is too high and work to remove the rubble is done by remote control. Operations were suspended when the steam was observed.

Tepco suspects that rain Wednesday and Thursday may have found its way to the lid of the reactor's primary containment vessel and evaporated due to the warmth of the container.

The Nuclear Regulation Authority said in a press release Friday that it has not detected any significant changes in either the temperature of the primary containment vessel or in radiation levels at the plant. The NRA also said it has ordered Tepco to thoroughly investigate the incident, noting the utility's explanation is insufficient.

"We don't believe this could lead to a serious situation, but any abnormalities should be quickly reported to us," said NRA senior official Hideka Morimoto.

1,973 Fukushima plant workers have higher risk of thyroid cancer

http://mainichi.jp/english/english/newsselect/news/20130719p2g00m0dm068000c.html

TOKYO (Kyodo) -- Tokyo Electric Power Co. said Friday 1,973 workers at its disaster-crippled Fukushima Daiichi nuclear plant have estimated thyroid radiation doses exceeding 100 millisieverts and are therefore at higher risk of suffering from thyroid cancer.

The workers will be allowed to undergo annual ultrasonic thyroid examinations free of charge, the utility said.

TEPCO gave health checks to 19,592 workers -- 3,290 TEPCO employees and 16,302 employees of its partner firms -- in connection with the plant's nuclear fuel meltdown triggered by the March 2011 earthquake and tsunami.

However, just 522 workers actually had their radiation doses checked and reported to the World Health Organization. Last February, the WHO said thyroid radiation doses in 178 of them surpassed the threshold of 100 millisieverts.

For the remainder of the workers, TEPCO estimated their radioactive iodine doses based on their radioactive cesium intake.

Iodine tablets extended to all

July 20, 2013

Recommendation for iodine tablets in case of nuclear disaster expanded to

all ages

http://mainichi.jp/english/english/newsselect/news/20130720p2a00m0na007000c.html

The Nuclear Regulation Authority (NRA) secretariat updated its guidelines on July 19 to recommend that distribution and ingestion of stabilized iodine tablets in case of nuclear disaster be extended to individuals of all ages, it has been learned.

The tablets are used to prevent the onset of thyroid gland cancer. Previously, the guidelines only recommended the tablets for people under 40 years of age. By removing the age limit, iodine tablets will now be needed for around 4.8 million people living within 30 kilometers of nuclear plants. Local governments will hold explanatory briefings for residents, and begin distribution of the tablets shortly.

Only one pharmaceutical company in Japan is capable of supplying the tablets, however, which could limit the distribution speed of the iodine.

The guidelines are based on the national government's nuclear disaster response policy, and are being released in two versions: one for local government officials and one for those in the medical fields.

The previous guidelines for individuals under 40 were designed in 2002 by the NRA's predecessor, the Nuclear Safety Commission, based on studies of atomic bomb victims in Hiroshima and Nagasaki. Such research indicated that people over age 40 at the time of exposure to the bombs' radiation did not have increased incidence of thyroid gland cancer.

However, the NRA's secretariat says that the latest research shows that while the risk of thyroid gland cancer drops with age, it still exists -- even in the elderly. The NRA also warns that iodine tablet users should be prepared for side effects, including reduced thyroid gland function.

See this recent contradictory article :

http://fukushima-is-still-news.over-blog.com/article-iodine-tablets-don-t-equate-safety-119061314.html

How generous!

July 19, 2013

TEPCO to give Fukushima workers health check ups

http://www3.nhk.or.jp/nhkworld/english/news/20130719_40.html

Tokyo Electric Power Company says it will give free lifelong health check-ups to people who were exposed to high levels of radiation while dealing with the Fukushima nuclear accident and its aftermath.

TEPCO decided to take the step after it found that nearly 2,000 people had higher doses of radioactive cesium in their thyroid glands than the international threshold of 100 millisieverts.

They account for 10 percent of the people who worked at the plant between March 2011 and December 2012.

The utility reviewed the results of the thyroid gland tests on the workers after the government revised its evaluation method for internal radiation exposure.

In March last year TEPCO told the World Health Organization that only 178 people had received radiation doses higher than the threshold.

Officials of the utility say the nearly 2,000 people are eligible to receive ultrasound tests on their thyroid glands once a year for the rest of their lives.

The officials also say they have informed almost all the eligible people but only 37 percent have taken the tests.

Hiroshima University Professor Kenji Kamiya says the plant operator must make every effort to provide heath care for the workers because it remains unclear how the large doses of radioactive cesium will affect their health.

Re-examination of children with thyroid lumps

July 24, 2013

Fukushima steps up children's thyroid recheck

http://www3.nhk.or.jp/nhkworld/english/news/20130724_28.html

Fukushima Prefecture has taken steps to facilitate the re-examination of children found with lumps in their thyroid glands following the 2011 nuclear crisis.

Only one hospital had been conducting the re-examination in the prefecture in northeastern Japan.

The prefectural government has added 2 more hospitals to carry out the examinations. One started work on Wednesday and examined 5 children. The other is to follow on Friday.

Prefectural officials took the step because only one-third of the children requiring re-examination have been able to undergo the procedure.

Fukushima is conducting regular checks of the thyroid glands of 360,000 people who were 18 or younger when the nuclear crisis began.

That's out of concern that radioactive materials emitted by the damaged reactors could accumulate in children's thyroids, possibly causing cancer.

Children found with a lump 5.1 millimeters or larger are supposed to undergo a thorough recheck. That includes an ultrasound examination and blood and urine tests.

The re-examination is taking time. As of the end of March, only one-third of about 1,100 children had been re-examined.

A doctor involved in the examinations expressed hope that the expanded program will help residents feel more at ease over their health.

Fukushima 4-year olds now to be checked for radiation

August 1, 2013

Fukushima begins radiation level checks on children

http://www3.nhk.or.jp/nhkworld/english/news/20130801_29.html

The Fukushima prefectural government has started internal radiation level checks on children under 4 years old who were previously too small to undergo the checks with a standard whole body counter.

The equipment for measuring internal radiation levels is designed for people with the height of adults. Fukushima officials have now fitted the equipment with a 90-centimeter high chair to allow smaller children to be tested.

The checks, which started on Thursday, cover children who lived in 5 municipalities designated as evacuation zones following the Fukushima Daiichi nuclear power plant accident in March 2011.

A father who brought in his 3-year-old son said it is good that the checks have now become available for smaller children but **they should have started much earlier**.

A Fukushima official, Keiichi Sasa, said parents have been anxious and frustrated by their inability to

check the internal radiation levels of their small children.

He said the prefecture plans to make the checks available for more children in Fukushima.

Fukushima plant workers & radiation

August 5, 2013

9,640 Fukushima plant workers reach radiation level for leukemia compensation

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201308050104

By MIKI AOKI/ Staff Writer

Nearly 10,000 people who worked at the stricken Fukushima No. 1 nuclear plant are eligible for workers' compensation if they develop leukemia, but few are aware of this and other cancer redress programs. According to figures compiled by plant operator Tokyo Electric Power Co. in July, 9,640 people who worked at the plant between March 11, 2011, when the nuclear accident started, and Dec. 31 that year were exposed to 5 millisieverts or more of radiation.

Workers can receive compensation if they are exposed to 5 millisieverts or more per year and develop leukemia one year after they began working at the plant.

TEPCO figures showed that 19,592 people worked at the Fukushima No. 1 plant during the nine-month period and were exposed to 12.18 millisieverts on average.

The government has set standards for workers' compensation for other cancers, such as malignant lymphoma, multiple myeloma, stomach cancer, esophagus cancer and colon cancer. Some were established after the Fukushima nuclear disaster.

Only four people who worked at the stricken Fukushima No. 1 plant have applied for compensation for cancer. Their requests are currently under review.

"The government does not appear to be serious about protecting workers," said Saburo Murata, deputy director of Hannan Chuo Hospital, who is well-versed in radiation dose management. "It should provide medical checkups on its own responsibility as a way to steadily carry out decommissioning."

The health ministry acknowledged it has no system to inform all workers of the standards for workers' compensation. It said it is considering distributing leaflets.

By the end of June this year, 13,667 workers had been exposed to 5 millisieverts or more on an accumulated basis, according to TEPCO figures.

The number of workers reaching the 5-millisievert threshold for possible leukemia compensation is expected to further increase because TEPCO is planning measures that could expose them to high radiation levels. One immediate project at the Fukushima plant is dealing with the radioactive water accumulating at the site that is leaking into the ocean.

Under safety regulations, workers cannot work at nuclear plants if they have been exposed to more than 50 millisieverts per year or more than 100 millisieverts over five years.

Free cancer screenings offered by the ministry and TEPCO are limited to those who were exposed to more than 50 millisieverts per year and do not cover 90 percent of those who were exposed to 5 millisieverts or more per year.

Lost medical records of A-bomb victims recovered

August 4, 2013

Medical records of world's first radiation victim from A-bomb recovered

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201308040020

By YURI OIWA/ Staff Writer

Long-lost medical records detailing the sharply deteriorating health of the world's first recognized radiation sickness patient have been recovered 68 years after the victim died within weeks of being exposed to the atomic bomb in Hiroshima.

The patient, Midori Naka, a stage actress, died 18 days after she was injured in the nuclear blast on Aug. 6, 1945. She was staying in Hiroshima as part of a traveling theater troupe.

After returning to Tokyo a few days later, Naka died while undergoing treatment, which included blood transfusions, at the University of Tokyo Hospital. She was 36.

The discovery came after decades of efforts by researchers to locate her missing records. The hospital kept updates of her condition leading up to her death and the results of her autopsy.

But other vital records have been missing until their recent recovery.

Kazuhiko Maekawa, professor emeritus with the University of Tokyo who is expert in treating patients suffering from radiation exposure, hailed the discovery of Naka's medical records.

"She apparently died of sepsis in the end after the infectious disease spread all over her body," he said. "The records are invaluable as those reporting in detail on changes in her health condition after she was exposed to a fatal level of radiation."

One of the researchers searching for Naka's records was Shiro Shirato, a medical student at the University of Tokyo in August 1945, who helped conduct a blood test on Naka. He also took part in her autopsy. Shirato died three years ago at age 87.

His widow, Keiko Shirato, 83, who resides in Ayase, Kanagawa Prefecture, said she was relieved to learn of the recovery of Naka's medical records.

"If my husband were still alive, he would have been rejoicing over the news," she said.

Naka was about 750 meters from ground zero at a Hiroshima lodging facility where her traveling troupe was staying. After she was severely injured in the blast, she managed to return to Tokyo, where she was born and raised.

The recovered records showed the results of her blood tests, a chart of her body temperatures and the treatment she underwent until her death, along with diagnoses of her illness as radiation disease. Family members of those who were involved in her treatment, who have passed away, discovered the documents. The Asahi Shimbun interviewed university officials who authenticated the medical records as Naka's.

Symptoms that Naka developed and the results of her autopsy were described in reports compiled by the Science Council of Japan. They were also quoted in reports on the impact of the atomic bombing that were taken to the United States after the U.S. military translated the original Japanese documents into English. But most of the original records had been missing until the recent discovery. Some researchers speculated that the U.S. occupying forces took them to the United States.

Others believed that Japanese officials hid them out of fear of U.S. forces seizing the data. The recent find ruled out U.S. involvement behind the loss of the records.

According to the newly discovered documents, Naka was in the kitchen of the lodging around 8 a.m. on Aug. 6, some 15 minutes before the detonation of the atomic bomb. She told doctors that she saw a flash of yellow light two meters square shortly after and heard a noise akin to the bursting of a hot water boiler. When she was pulled from the wreckage, she found herself in only her underwear and with injuries all over her body.

Feeling strong nausea, Naka vomited. After she entered a river to flee from a raging fire in the neighborhood, she was rescued and taken to a camp for survivors. Five of the nine members of her troupe, which she had joined in January 1945 to give performances for workers at munitions factories, were later found to have been killed instantly.

With no medical treatment provided at the camp, Naka, wrapping herself in a sheet of straw mat, managed to board the first train bound for Tokyo after the blast. She arrived in the capital in the early hours of Aug. 10. She was admitted to the University of Tokyo Hospital on Aug. 16.

The records showed that her white blood cell counts were down to 400 per cubic millimeter of blood, less than 10 percent of their normal level.

Naka began losing clumps of hair the following day. Her injuries on her back sharply worsened. On Aug. 21, her body temperature rose to nearly 40 degrees. She received blood transfusions. Her white blood cell counts dropped further to 300 per cubic mm on Aug. 22. Infectious ulcers formed around her injuries. She underwent more blood transfusions.

On Aug. 23, she developed infectious ulcers around the spot where she had a shot and hemorrhagic macules--the size of rice grains--all over her body. Additional blood transfusions followed.

Her body temperature rose to 40.4 degrees on Aug. 24. She died at 12:30 p.m. that day.

In 1945, little was known about the health hazards of exposure to massive levels of radiation.

Masao Tsuzuki, professor of surgery at the university who treated her, was one of only a handful of Japanese doctors familiar with radiology. He diagnosed her illness as radiation disease.

"Before, the consequences of an atomic bomb were believed to be the destruction by a blast and burns left by the ray of heat," he said in an Asahi Shimbun article dated Aug. 29, 1945. "It was proved, however, in addition to those, an atomic bomb causes harm as a result of 'radioactive substances.' "

Kenji Kamiya, professor of radiology at the Research Institute for Radiation Biology and Medicine with Hiroshima University, estimated that Naka had been exposed to a radiation dose of more than 8,000 millisieverts, given her symptoms and her proximity to the hypocenter of the explosion.

That level of exposure is fatal to humans, according to experts.

Shiro Shirato began his search for Naka's missing records more than 30 years after her death, after reading a letter in the Letters to the Editor section of The Asahi Shimbun's Feb. 26, 1978, edition.

In the letter, Hagie Ezu, a younger colleague of Naka, asked for readers' cooperation in gathering details of Naka's condition while she was in the Tokyo hospital. Ezu was 67 when she wrote the letter.

After corresponding with Ezu many times, Shirato made arrangements for her to view part of Naka's medical records remaining at the university to help her effort.

Shirato also went to the United States to look for Naka's other medical records at the National Archives and Records Administration in Washington, but to no avail.

Ezu wrote the letter to the editor after she took part in a memorial service marking the 33rd anniversary of the death of the members of the Sakuratai (Cherry unit) troupe in 1977.

With few accounts left about Naka, she decided to launch her own research to publish in 1980 a book on the tragedy of the troupe, with Naka at the center of the story.

The book, titled "Sakuratai Zenmetsu" (The annihilation of the cherry unit), was later adapted into the 1988 movie "Sakuratai Chiru" (The annihilation of the cherry unit), by director Kaneto Shindo, who has shot a number of anti-war films.

Ezu's son, Heita, a 74-year-old resident of Kamakura, Kanagawa Prefecture, said his mother embarked on her book project to keep Naka's memory alive.

"She believed that somebody should pass the memory of Naka's life to succeeding generations to keep it from being buried in history," he said.

Ten Fukushima workers exposed to radiation

August 12, 2013

10 exposed to radiation at Japanese nuke plant

AP

http://www.japantimes.co.jp/news/2013/08/12/national/10-exposed-to-radiation-at-japanese-nuke-plant/#.UglNgW15ivM

IWAKI, FUKUSHIMA PREF. – Ten workers at the Fukushima No. 1 nuclear plant were exposed Monday to small amounts of radiation while conducting cleanup activities, Tepco said.

Tokyo Electric Power Co. said it is still investigating how the workers were contaminated, but that it may have been from radioactive dust.

It said small amounts of radiation were found on the workers' faces and hair.

Workers at Fukushima plant suffer radiation

http://www3.nhk.or.jp/nhkworld/english/news/20130812_30.html

Ten workers at the damaged Fukushima nuclear power plant have been found exposed to radiation above the safe limit. The cause is believed to be a machine spraying cool mist in the plant compound.

The employees of Tokyo Electric Power Company were checked before leaving the plant compound after noon on Monday. They were found to have been exposed to radiation mainly on their heads and faces.

TEPCO officials say the workers were exposed to radiation at a level of 19 becquerels per square centimeter. That's 5 times the limit set by the utility.

The officials say the workers are showing no unusual symptoms. The utility officials say the workers may have been exposed while waiting for a bus in front of the plant headquarters.

They say a cool mist machine was operating in the area to help prevent heatstroke among the workers. They say radiation detectors were sounding in the area.

The officials say the mister was spraying water from a dam about 10 kilometers away from the plant. The same water was being used for toilets and other facilities.

Contaminated mister

August 13, 2013

Workers likely sprayed with radioactive mist at Fukushima nuclear plant

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201308130049

By RYUTA KOIKE/ Staff Writer

A mist-generating machine designed to prevent heatstroke apparently sprayed radioactive substances onto the heads and faces of 10 workers at the stricken Fukushima No. 1 nuclear plant, the plant's operator said.

Tokyo Electric Power Co. said Aug. 12 that unusually high radioactivity levels--up to five times the company's self-imposed safety standard--were detected on the 10 employees, but they showed no immediate signs of illness.
The 10 male employees, in their 20s to 50s, were working in a quake-proof building at the site and were likely exposed to the radioactive substances from the mist generator installed in front of the building, according to TEPCO.

TEPCO checked the purifying facility that supplies water for the mist generator, but no radioactive contamination was found. The company said the water might have become contaminated when it ran through the pipes.

All workers who enter and leave the plant's premises are checked for radiation exposure at a building on the site. Radioactivity levels of up to 19 becquerels per square centimeter were detected among the 10 employees when they were tested at 12:40 p.m. on Aug. 12.

Internal exposure was not found when the workers were later checked by a whole body counter, according to TEPCO.

TEPCO plans to conduct a more detailed investigation into the cause of the workers' high radioactivity levels.

By RYUTA KOIKE/ Staff Writer

18 Fukushima children detected with cancer

August 21, 2013

Thyroid cancer found in 18 Fukushima children

http://www3.nhk.or.jp/nhkworld/english/news/20130821_06.html

Medical examinations in Fukushima Prefecture following the nuclear crisis of 2011 have detected 18 children with thyroid cancer.

The finding was reported on Tuesday by a prefectural panel examining the impact of radiation on the health of local residents.

The prefecture is giving medical checkups to all 360,000 children aged 18 or younger at the time of the accident at the Fukushima Daiichi plant in March 2011.

That's because radioactive substances released in the accident can accumulate in children's thyroid glands, possibly increasing their risk of developing cancer.

Some 210,000 children had been tested by the end of July. Besides the 18 minors diagnosed with cancer, 25 others are suspected to have the illness.

The incidence rate of thyroid cancer in children is said to be one in hundreds of thousands. In Japan, 46 people under 20 were diagnosed with thyroid cancer in 2006.

The panel says it cannot determine if the accident has affected the incidence of cancer among children in Fukushima. But it has decided to set up an expert team to look into the situation.

Panel chief Hokuto Hoshi says they will carefully examine the accumulated data and individual cases so they can give explanations to residents in a responsible manner.

Even after 55 years, 2.5 times more likely to get leukemia

August 23, 2013

55 years after atomic bombings, survivors 2.5 times more likely to develop leukemia

http://mainichi.jp/english/english/newsselect/news/20130823p2a00m0na012000c.html

More than half a century after the U.S. atomic bombings of Hiroshima and Nagasaki, survivors are 2.5 times more likely than others in Japan to develop leukemia, a survey by the Radiation Effects Research Foundation (RERF) has shown.

According to an analysis of health surveys that the RERF conducted on some 113,000 A-bomb survivors between 1950 and 2001, the incidence of leukemia among hibakusha -- or survivors of the 1945 atomic bombings of Hiroshima and Nagasaki -- is about 2.5 times higher than others 55 years following the bombings.

The analysis found 312 cases of leukemia among those surveyed, of which 94 were believed to have been related to radiation exposure due to the atomic blasts. Although the risk of developing leukemia tended to decline as time passed, the study has found that those who were 10 years old at the time of the bombings - and were exposed to 1 sievert (1,000 millisieverts) of radiation -- were 51.3 times more likely than others to develop leukemia five years after the bombings. The figure declined to 3.5 times after 40 years -- and to 2.5 times after 55 years -- following the atomic attacks.

The study also found that those who were 30 years of age at the time of the bombings were 21 times more likely to develop leukemia than others five years after the atomic blasts, which declined to 2.7 times 40 years after the bombings.

In 1994, the RERF conducted a risk survey based on data collected between 1950 and 1987, which found that the younger one was at the time of the bombings -- and the less time that had passed -- the higher was the risk of developing leukemia.

Thyroid cancer cases

August 21, 2013

6 who were minors at time of nuclear disaster newly found to have thyroid cancer

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201308210049

THE ASAHI SHIMBUN

Six young people in Fukushima Prefecture, who were aged 18 or under when the nuclear crisis began to unfold there in March 2011, have been diagnosed with thyroid cancer since June, prefectural authorities said Aug. 20.

In addition, 10 children are believed to have developed the same form of cancer.

The prefectural government said it was unlikely there was any link to the reactor meltdowns at the Fukushima No. 1 nuclear power plant triggered by the earthquake and tsunami disaster. Officials explained that thyroid cancer typically develops several years after exposure to radiation.

The prefectural government has so far released thyroid testing results for 193,000 children. The number of children who have been diagnosed as or suspected of having thyroid cancer totaled 44, up from 28 as of June.

Eighteen of them have been diagnosed with thyroid cancer and 25 are showing symptoms of the disease. The remaining child was suspected of having the cancer but was later diagnosed with a benign tumor. The 44 children and young people who have received definitive or suspected diagnoses of thyroid cancer were aged between 6 and 18 as of March 2011. Their tumors were diagnosed as slow-growing types, ranging in diameter from 5.2 millimeters to 34.1 millimeters.

About 40 percent of them have participated in a survey to determine the level of their whole-body external radiation exposure during the first four months after the nuclear crisis started. Their radiation doses were less than two millisieverts.

A Fukushima prefectural government official said, "It is likely (the 44 children) developed tumors or lumps before the nuclear accident."

The young people have undergone thyroid testing several times since the disaster, but the sizes of their tumors or lumps have remained roughly the same, according to the prefectural government.

In the case of the Chernobyl disaster in 1986, thyroid cancer cases started to soar four to five years later.

A number of residents have expressed strong dissatisfaction with the Fukushima prefectural government over its interpretation of the effects of radiation exposure, the accuracy of its thyroid testing and the way it discloses information.

The prefectural government said it plans to create a panel of specialists who were not involved in the testing to reassess the results of the thyroid checks. The panel will also re-evaluate the treatment provided to those diagnosed with thyroid cancer, as well as the effects of radiation exposure caused by the nuclear accident.

The prefectural government is in the process of conducting thyroid tests on about 360,000 individuals who were 18 years old or younger and living in Fukushima Prefecture at the time of the disaster. The check-ups will continue throughout their lives. The government also plans to take a new look at the way the tests are conducted to see if there are any problems.

(This article was written by Yuri Oiwa and Teruhiko Nose.)

Fukushima gov "revised" the past thyroid report as publishing the latest report

http://fukushima-diary.com/2013/08/fukushima-gov-revised-the-past-thyroid-report-as-publishing-the-latest-report/

On 8/20/2013, Fukushima prefectural government "revised" the past thyroid report as they publish the latest report.

The revision was announced but the reason is not mentioned.

The "revised" report mentioned the thyroid cancer of 12 Fukushima children. In the latest report that was published on the same day as the "revision", it was increased to be 18 children.

The "revised" contents are the age and sex distribution of the 28 malignant / potentially malignant cases found by 5/27/2013.

The biggest change was in the 18 years old group. It consisted of 2 male but it was changed to consist of 3 female.

 \downarrow Revised contents are in the colored boxes. The left is before the revision.

 \downarrow The announcement of the revision.

http://www.pref.fukushima.jp/imu/kenkoukanri/250605siryou2.pdf http://www.pref.fukushima.jp/imu/kenkoukanri/250625siryouikkatu.pdf

http://wwwcms.pref.fukushima.jp/pcp_portal/PortalServlet?DISPLAY_ID=DIRECT&NEXT_DISPLAY_ID=U 000004&CONTENTS_ID=24809

Radiation protection manual for returnees

August 28, 2013

Radiation safety advice for returnees to be mulled http://www3.nhk.or.jp/nhkworld/english/news/20130828_37.html

Japan's nuclear regulatory body has decided to compile radiation safety guidelines for evacuees who hope to return to their homes near the Fukushima Daiichi nuclear plant.

The government has designated less-contaminated areas near the plant as zones for preparing for early returns. It plans to allow evacuees from the areas to return home after decontamination work to lower radiation levels and recovery of basic social facilities there.

But evacuees have expressed many concerns about the safety of their hometowns since radiation there will still be higher than in other parts of the country.

To ease such concerns, the Nuclear Regulation Authority decided on Wednesday to set up a team to compile this year guidelines on how returnees can protect themselves from radiation exposure.

The guidelines are to be based on individual exposure and surrounding radiation levels, and to refer to existing standards on food and radiation safety.

The authority's chairman Shunichi Tanaka stressed the importance of proposing ways for evacuees to avoid the effects of radiation exposure and minimizing health concerns.

The government's taskforce on the nuclear disaster had instructed the authority in March to scientifically study how evacuees could return home without worries.

Check Tokyo website on radiation...in English

September 4, 2013

Online effort to combat impact of Fukushima fiasco

Tokyo sets up English website on radiation

by Mizuho Aoki Staff Writer

http://www.japantimes.co.jp/news/2013/09/04/national/tokyo-sets-up-english-website-on-radiation/#at_pco=tcb-1.0&at_ab=-&at_pco=3&at_tot=8

With the announcement Saturday in Buenos Aires of the winning bid for the 2020 Olympics, the Tokyo Metropolitan Government is running an English website dedicated to radiation-related information — a last-ditch effort to brush off the negative impact from the contaminated water problems plaguing the crippled Fukushima No. 1 nuclear plant.

The website — monitoring.tokyo-eiken.go.jp/en/index.html — provides hourly radiation levels monitored at eight locations in Tokyo, including Shinjuku, Ota and Adachi wards, as well as the results of

fallout, tap water and food sampling tests conducted by the metro government. The website also provides all of the past radiation readings Tokyo has monitored since 2011.

Visitors to the site, which was launched Friday afternoon, had topped 4,660 as of noon Wednesday, a metro official said. The figure is more than double the number an English website providing hourly radiation levels in Shinjuku received in a single month.

The metro government updates monitored outdoor radiation levels every hour, daily for tap water and fallout, and about once a week for food. The site was launched at the instruction of Gov. Naoki Inose, who left for Buenos Aires on Saturday, the official said.

At a Friday news conference, Inose said radiation levels in Tokyo are no different from those in New York, London or Paris, stressing the importance of convincing foreigners of Tokyo's safety.

Radiation levels in Tokyo spiked in March 2011, hitting a record 0.8 microsieverts per hour that March 15. The levels quickly fell to normal levels after about one month and have since remained at around 0.05 microsieverts per hour.

Hourly radiation levels in London and Paris were 0.088 and 0.057 microsieverts, respectively, in August, according to the metro government.

Food safety 'guaranteed' Bloomberg

The safety of Japan's food is "guaranteed" by the world's strictest tests introduced after the Fukushima nuclear disaster started, the government said in a statement following recent revelations of radioactive water leaking and tainted groundwater flowing into the sea.

In the 17 months of tests through August, less than 0.7 percent of domestically produced food was found to have an excessive level of radionuclides, the Foreign Ministry said in an emailed statement.

"Even in Fukushima Prefecture, where the accident occurred, annual radiation exposure from food and water is lower than one hundredth of 1 millisievert," the food safety limit set by the U.N., the ministry said.

Bad communication, Fukushima people don't really have health problems

blog editor's note: amazing

September 7, 2013

Fukushima: health disaster or PR fail?

by Rowan Hooper

http://www.japantimes.co.jp/news/2013/09/07/national/fukushima-health-disaster-or-pr-fail/#.UiyhoX9Sb9k

One thing about having a nuclear accident in a rich country is that at least there is going to be good medical care and long-term monitoring. The repair and clean-up operation is another matter, of course — which is why Japan is currently under pressure to accept help from abroad in fixing the appalling mess caused by the three reactor meltdowns at the Fukushima No. 1 nuclear power plant.

But having great monitoring, assessment and medical treatment of citizens is one thing. It is quite another making sure information is communicated to the public clearly and openly. That is something at which neither the plant's operator, Tokyo Electric Power Co. (Tepco), nor the Japanese government have succeeded at all well. And without good communication, fear and misinformation about radiation can understandably grow.

I was talking about this last week with Gerry Thomas, who runs the Chernobyl Tissue Bank (CTB) at Imperial College London. The CTB collects and analyzes samples of tissue from people exposed to radiation after the Chernobyl nuclear disaster in the USSR (present-day Ukraine) in 1986, and monitors the occurrence of thyroid cancer in contaminated areas.

About Fukushima, she is dismissive of the health risks. That might seem cavalier to people in the Tohoku region of northeastern Honshu who are worried about radiation contamination, but Prof. Thomas has seen what happened in Chernobyl — which released far more radiation than Fukushima has to date. "Fukushima is nothing compared to Chernobyl," she told me. "It really is nothing, it's a tenth of the dose of cesium." (For the World Nuclear Association report on this, see bit.ly/17urZKd)

The problem in Japan, she says, is more one of communication than public health.

"They've got a huge problem out there — largely a PR problem; it's not a health problem because none of this is going to do anything health-wise," the professor said.

Our conversation came about because I'd seen a news clip on NHK reporting 18 cases of thyroid cancer in a monitored population around Fukushima.

Fukushima Medical School monitors some 360,000 people who were aged 18 or younger at the time of the March 11, 2011, Great East Japan Earthquake and tsunami. What you might conclude from the report — but you'd be mistaken — is that there is a direct link between the cases of cancer and the release of radioactive material following the meltdown. I asked for Thomas' opinion.

What we don't know, she told me, is whether these thyroid cancers are to do with the environment in Fukushima — or whether there is something about the genetics of the people monitored.

We also don't know, she pointed out, whether the frequency is similar to that seen in other areas of Japan. In Chernobyl (where children were exposed to more than 100 times the maximum dose of radioactive

iodine seen after Fukushima), thyroid cancers did not present themselves until four or five years after the disaster.

"Given what we know about radiation dose and time elapsed since the accident," says Thomas, "I personally cannot see how this finding can be related to the radiation — the doses were too low and the time too short, based on what we know from Chernobyl."

She directed me to a recent scientific paper reporting the results of radiation monitoring of adults and children around Fukushima. The paper, published in Proceedings of the Japanese Academy, Series B (which you can see for yourself; DOI reference: 10.2183/pjab.89.157), reports on the whole-body radiation screening of nearly 33,000 people.

"Internal exposure levels of residents are much lower than estimated," write Ryugo Hayano and colleagues of the University of Tokyo.

In the town of Miharu, about 50 km from the stricken power plant, Hayano's team monitored 95 percent of schoolchildren (aged 6-15). The radioactive cesium in the bodies of all the children was below the detection limit. In other words, they are emphatically*not* eating food contaminated with radiation.

This sort of nonsensational, reassuring result isn't something that will generally get reported by NHK or other media outlets.

We are all exposed to radiation, all the time (this fantastic dose chart makes it clear: xkcd.com/radiation) There is, however, a special fear of radiation that is introduced to the environment by human activities. But that fear can get out of hand. Far more radiation was released in the Chernobyl disaster than has been so far from the Fukushima plant, but even the Chernobyl disaster — the world's worst — can be put into context.

"If you compare Chernobyl with what we allowed to escape into the atmosphere as a result of the nuclear tests in the Nevada desert, that was far, far more than Chernobyl," Thomas says. "We've got a short-term memory about things like this. Instead of looking back and saying, 'What do we know from exposures in the past?' we just panic about the next one."

Her advice: Talk to people.

The Japanese authorities — whether officials from Tepco, the government or monitoring agencies, or academics — ought to be open and learn to communicate better.

As Thomas puts it: "They have got to talk to the local population, they have got to talk to the fishermen, and **they've got to make people understand that low levels of radiation don't matter because we're all exposed to it all the time.**"

Rowan Hooper (@rowhoop on Twitter) is the News Editor of New Scientist magazine. The second volume of Natural Selections columns translated into Japanese is published by Shinchosha at ¥1,500. The title is "Hito wa Ima mo Shinka Shiteru (The Evolving Human)."

NRA launches seafloor contamination study

September 19, 2013

NRA launches cesium contamination study of seafloor

Kyodo

http://www.japantimes.co.jp/news/2013/09/19/national/nra-launches-cesium-contamination-study-of-seafloor/#.Ujs60lNSb9k

The Nuclear Regulation Authority has launched an investigation of the seafloor off the coast of Fukushima Prefecture to check current contamination levels from the Fukushima No. 1 nuclear power plant meltdowns.

A Geiger counter will be trailed from a ship over about 1,000 sq. km. of the seafloor to help determine the density of radioactive cesium there.

While past studies have focused on certain points in the Pacific around the radiation-leaking Fukushima plant, the NRA's investigation aims to analyze more broadly how the contamination has spread on the seabed.

The results will be compiled by March and the data could be used to confirm the safety of marine products, although it is not clear whether the investigation will take up the effects that radioactive water leaks have on the plankton flowing through the area.

The NRA outsourced the project, which began Wednesday, to a team involving the University of Tokyo and the National Maritime Research Institute.

The team started with a sonic survey and other activities to check the geological formation of the seafloor. It will start measuring the cesium density between November and February, covering an area 20 km of the coast, 50 km north and 50 km south of the Fukushima No. 1 plant.

An official of the NRA secretariat said the study must continue for at least three years to properly gauge the changes in contamination.

The amount of highly radioactive water is increasing by the day at the plant because of the emergency cooling operations for the three crippled reactors. The water used is being stored in more than 1,000 huge tanks set up at the site, posing a risk of leaks.

Recently, 300 tons of contaminated water leaked from one of the tanks, some of which could have reached the ocean through drainage channels. In addition, an estimated 300 tons of tainted groundwater is thought to be entering the sea each day.

All trial fisheries operations off Fukushima were suspended in September.

Nuclear regulator launches study of sea contamination off Fukushima

http://mainichi.jp/english/english/newsselect/news/20130919p2g00m0dm041000c.html

TOKYO (Kyodo) -- Japan's Nuclear Regulation Authority on Wednesday started an investigation of the contamination of the seafloor off the coast of Fukushima Prefecture to check the impact of the 2011 Fukushima Daiichi nuclear power plant disaster.

The study of the density of radioactive cesium is being conducted with the aid of a ship that trails a radiation counter along the seafloor and will cover an area of about 1,000 square kilometers.

Studies in the past have focused on certain points in the Pacific Ocean around the radiation-leaking Fukushima plant, while the NRA's investigation aims to analyze the spread of contamination through a broader investigation.

The results will be compiled by March next year and the data could be used to confirm the safety of marine products.

The NRA has outsourced the project to a team involving the University of Tokyo and the National Maritime Research Institute.

The team from early Wednesday started a sonic survey and other activities to check the geological formation of the seafloor. It will start measuring the density of cesium between November and February. The survey will cover an area within 20 kilometers off the coast and 50 km north and south of the Fukushima Daiichi plant.

An official of the NRA secretariat said that such an investigation needs to continue for at least three years in order for the changes in the spread of contamination to be properly recorded.

Highly radioactive water is increasing daily at the plant as a result of water continually being pumped into the three crippled reactors. The liquid is kept at hundreds of huge tanks set up at the site, posing a risk of leaks.

Most recently, 300 tons of contaminated water was found to have escaped from one of the tanks, part of which could have flowed into the ocean through drainage channels.

All fisheries operations off the coast of Fukushima have been suspended from September amid signs of further contamination stemming from the nuclear complex.

But on Wednesday, a local fisheries cooperative covering the southern part of the prefecture decided to start what it terms a trial operation from Sept. 26. The operation limits the type of marine products to be fished and only allows those confirmed to be safe to be shipped.

The decision came after the cooperative postponed its plan to start from Sept. 5 its first trial operation after the Fukushima nuclear accident.

Another fisheries cooperative covering the northern part of the prefecture is also seeking to resume its trial operation from Sept. 26.

Quicker method for analysing strontium-90

September 19, 2013

New method reduces analysis time of radioactive strontium

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201309190058

By YUKIKO SEINO/ Staff Writer

FUKUSHIMA--A joint team of Japanese researchers has developed a way of analyzing radioactive strontium-90within minutes rather than weeks, potentially enabling emergency workers to promptly check areas for contamination.

Strontium-90 readily dissolves in water and tends to accumulate in human bones when absorbed. It can cause bone cancer and leukemia.

Since the nuclear disaster in Fukushima Prefecture in 2011, high levels of strontium have leaked into the surrounding environment.

Although the conventional technique has superior analytical sensitivity, with only a minimal amount of components needed to be reliably detected in sample, the process took from two to four weeks.

In addition, it required several stages of pretreatment to extract strontium alone.

However, the joint team led by Yoshitaka Takagai, an associate professor of studies in analytical chemistry at Fukushima University's Faculty of Symbiotic Systems Science, succeeded in reducing the analysis time to 20 minutes.

The team includes a researcher from the Japan Atomic Energy Agency, the operator of the Monju prototype fast-breeder reactor in Tsuruga, Fukui Prefecture.

Takagai and other members started the study soon after the 2011 Great East Japan Earthquake and tsunami that devastated northeastern Japan and triggered the disaster at the Fukushima No. 1 nuclear power plant.

The team realized a short-time analysis of strontium-90 by adding a new device, which can extract strontium-90 only, to the existing commercial analytical equipment.

The new method involves absorbing strontium into a resin and then bringing about a chemical reaction of other materials with oxygen.

Moreover, almost entirely automated functions of the new method will reduce the radiation exposure of operators working on the analysis, the team said.

In addition, as it requires no solution containing radioactive substances for the analysis, researchers can work outside radiation controlled areas.

In this method, the lower detection limit is about 5 becquerels per kilogram of soil and about 3 becquerels per liter of solution.

It is expected to be used as a screening method in emergencies.

"It is possible to choose the new or conventional method depending on the intended use," Takagai said. "I hope our new method will be used widely."

The team's research paper is to be published in an online journal of the Royal Society of Chemistry.

Urgent need to study impact of radiation on Fukushima workers

September 20, 2013

More Fukushima plant workers show health problems

http://www3.nhk.or.jp/nhkworld/english/news/20130920_36.html

The health ministry says the percentage of workers who have health issues in their physical exams has increased at the crippled Fukushima Daiichi nuclear plant and nearby locations.

The ministry for the first time analyzed the results of physicals reported to a labor standards inspection office which has jurisdiction over 2 nuclear plants in Fukushima.

Some 6,700 people engaged in radiation-related work for 545 work units in the region took special physicals last year. Most of them are believed to be plant workers.

The health ministry officials say that 284 of them, or 4.21% of the employees in the area, showed

unhealthy medical readings, such as higher white blood cell counts.

They were required to take more detailed tests or undergo treatment.

The proportion of people with health issues was up 3.23 percentage points from the figure reported in 2010, before the nuclear crisis.

The ministry says it's not easy to simply compare the results since the work units have seen 70% of their employees replaced over the past 3 years.

But, it says it plans to conduct an epidemiological survey to learn more about the impact of the radiation.

Yes, what about strontium?

September 25, 2013

Radioactive cesium levels drop in Fukushima fish, but strontium remains a mystery

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201309250072

THE ASAHI SHIMBUN

Radioactive cesium levels have steadily declined in fish off Fukushima Prefecture, but samples taken closer to the wrecked nuclear power plant were still showing high readings, according to studies

And the government, which plans to take charge of the persistent problem of radioactive water leaks at the plant, **can only guess at the extent of strontium contamination among marine life in northeastern Japan.**

According to the Fisheries Agency, only three, or 0.6 percent, of 472 marine samples tested between Sept. 1 and 19 in Fukushima Prefecture showed radioactive cesium levels exceeding the government safety standard for food of 100 becquerels per kilogram. That compares with 2.7 percent of the samples tested in July and August, and 53 percent during the early stages of the nuclear crisis in the March-June period of 2011.

Of the latest samples, 13.3 percent had levels between 10 and 100 becquerels per kilogram, while 86 percent had concentrations of 10 becquerels or less per kilogram or were undetectable, according to the agency.

In other prefectures, the ratio of samples breaching the safety threshold of 100 becquerels dropped from 6.5 percent in March-June 2011 to 0.4 percent in July-August 2013.

In the September tests, none of the 407 samples outside Fukushima Prefecture contained radioactive cesium exceeding 50 becquerels per kilogram.

In fact, 94.3 percent of the samples fell to 10 becquerels or less or the contamination was undetectable, the agency said.

The targets of the tests were mainly major fish species and those that had previously shown more than 50 becquerels of radioactive cesium per kilogram.

The decreases were particularly sharp among white bait and Japanese sand lance, which showed high concentrations of cesium shortly after the meltdowns at the Fukushima No. 1 nuclear power plant in March 2011.

None of the 215 samples of these species showed a level of even 1 becquerel of cesium in tests across the country since April this year.

In addition, the radioactivity levels in long-distance travelers, such as skipjack tuna, Pacific saury and chum salmon, were all below 5 becquerels in the latest cesium tests, the agency said.

However, Takami Morita, a senior research coordinator at the Fisheries Agency, said some fish living in shallow waters were still showing relatively high levels of cesium.

The highest reading in the September tests was 130 becquerels in rockfish.

"Radioactivity levels have not fallen substantially in fish species in waters along the coast of Fukushima Prefecture as well as those inhabiting the shallow seabed or rocky stretches," Morita said. He said these fish are likely ingesting cesium by eating organic matter in the mud.

These species include marbled flounder, stone flounder, olive flounder, sea bass, Japanese rockfish and Japanese black porgy, all living in depths under 100 meters. Cesium levels exceeding 100 becquerels per kilogram have been found in some samples since April.

Although contaminated water continues to leak at the Fukushima nuclear plant, radioactivity levels of seawater outside the harbor of the plant were considered undetectable, according to government studies.

"Despite the fact that contaminated water has been leaking since 2011, not just this summer, the cesium concentration of fisheries products has receded," Morita said. "The main cause of ongoing radioactive contamination of fisheries products can be said to be the large volumes of radioactive materials that scattered immediately after the accident."

However, the government's standard for food is based only on measurements of radioactive cesium.

And the tests are not designed to read levels of other radioactive materials, including strontium, which is believed to accumulate in bones and can cause cancer and leukemia.

Strontium is difficult to detect, and an accurate analysis can take about a week.

The Fisheries Research Agency, commissioned by the Fisheries Agency, has conducted **only 40 tests for strontium in marine product samples.**

The Ministry of Health, Labor and Welfare said it estimates levels of strontium at about 12 percent of radioactive cesium levels.

"We have to keep carefully studying the situation," said Jota Kanda, a professor at the Tokyo University of Marine Science and Technology. "We have to increase the number of inspections for strontium levels."

Eighteen prefectural governments and industry associations in eastern Japan have been testing for radioactive cesium in marine products around once a week since the nuclear crisis started.

In Fukushima Prefecture, 14,070 samples were tested between March 2011 and late August this year, while 23,400 samples were studied in other prefectures over the same period.

The nuclear accident has halted coastal and trawl fishing in Fukushima Prefecture, with the exception of trial fishing operations involving limited species.

Some fishermen in the prefecture resumed trial operations on Sept. 25. But Tokyo Electric Power Co., operator of the stricken plant, belatedly acknowledged that radioactive water at the plant site was spilling into the Pacific Ocean.

Leaks from tanks storing highly radioactive water on the site have also been reported.

The Fukushima fishermen fear that constant problems at the nuclear plant and TEPCO's struggles to deal with the water crisis will further erode confidence that their catches are safe. South Korea earlier this month banned imports of Japanese marine products from eight prefectures after the leaks at the Fukushima plant were reported.

Shipment restrictions for certain fish have been imposed in other prefectures: sea bass and two other species caught off Miyagi Prefecture; seven species, including rockfish, off Ibaraki Prefecture; and sea bass and Japanese black porgy caught south of Iwate Prefecture's border with Miyagi Prefecture.

Ibaraki Prefecture has restricted shipments of 13 fish species, including fat greenling, caught in the northern part of the prefecture. The restrictions are based on the results of the ongoing tests for radioactive cesium.

Fukushima workers: radiation dose underestimated and insufficient health records

October 12, 2013

U.N. panel doubts radiation dose estimates among Fukushima workers http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310120042

THE ASAHI SHIMBUN

The Japanese government may have underestimated by 20 percent the internal radiation doses in workers during the initial phases of the Fukushima No. 1 nuclear power plant disaster, a U.N. panel said.

The U.N. Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) raised doubts about the dose estimates of the Japanese government and Tokyo Electric Power Co., the plant operator, in a summary of a report submitted to the Fourth Committee of the U.N. General Assembly on Oct. 12.

UNSCEAR used data provided by the Japanese government, TEPCO and other entities to assess the amount of radioactive substances discharged during the nuclear crisis that began in March 2011. It also analyzed radiation doses in the 25,000 or so individuals who worked at the plant no later than October 2012.

The U.N. committee noted that workers were tested for thyroid gland doses from radioactive iodine only after a significant delay. It also said the dose assessment procedures totally ignored iodine-132 and iodine-133, which have short half-lives of 2 hours and 20 hours, respectively.

After assessing discharge volumes and their contribution to doses for each class of radioactive substance, UNSCEAR concluded that worker doses during the early stages of the nuclear crisis may have been underestimated by about 20 percent.

The government and TEPCO are providing free health checkups to Fukushima plant workers whose doses have reached certain levels.

Currently, about 1,100 individuals who received 50 millisieverts or more in whole-body doses can receive free tests for cancer of the thyroid gland, lungs, stomach and colon. About 2,000 people with whole-body doses below 50 millisieverts but thyroid gland doses of 100 millisieverts or more are qualified to be tested for thyroid gland cancer.

If UNSCEAR's assessment is accurate, more workers should be eligible for the health checkups. The panel plans to finish and release the report by year-end at the earliest.

INSUFFICIENT HEALTH RECORDS

But the possible underestimates are just one problem in a system that has proved inefficient in protecting workers' health.

Long-term observations are needed to fully understand the risk from radiation exposure among workers at the plant. But many companies involved have failed to conduct medical examinations or file reports to the government--even though they are required to do so under law.

A government database on workers' health conditions is still not running, making it impossible to check whether workers have suffered health problems.

The health ministry has required companies to submit medical examination results for 20,000 people who worked at the Fukushima No. 1 plant before December 2011, depending on the level of their radiation doses.

The ministry wanted to use the results to create a database and set up a framework to check whether workers have developed cancer, cataracts and other diseases.

However, by August, companies had failed to submit basic examination data on 4,297 workers, more than one-third of all the people who should be covered.

The health ministry ordered TEPCO and 81 primary contractors to submit the data. It is still waiting for that information.

Some companies are believed to have not even conducted the health examinations.

A more serious problem is that experts cannot check all thyroid examination results.

The database covers whole-body dose data and examination results of lung, colon and other cancers, among other items. But it does not cover thyroid dose data, and only part of the thyroid examination results is included.

An expert criticized incomplete results, saying radiation exposure in the Fukushima nuclear disaster came in large part from radioactive iodine, which tends to accumulate in the thyroid gland. (This article was compiled from reports by Yuri Oiwa and Toshio Tada.)

Fukushima bulls all right

October 9, 2013

Radiation exposure study finds no abnormality in Fukushima bull testis**

http://mainichi.jp/english/english/newsselect/news/20131009p2g00m0dm033000c.html

SENDAI (Kyodo) -- Researchers have found no effect of radioactive cesium on the testes -- considered sensitive to radiation -- and sperm count of bulls that had been left behind in the evacuation zone around the crippled Fukushima Daiichi nuclear power plant, according to a study made public Tuesday.

"In the future, we want to examine (radiation's) genetic impact by transplanting fertilized eggs to cows or conducting artificial insemination," said Manabu Fukumoto, a Tohoku University professor of pathology who was involved in the research published online by Britain's Scientific Reports.

The group analyzed three bulls -- two found in the village of Kawauchi in September 2011 and one in the town of Naraha in January 2012, which were left behind within the 20-kilometer radius from the plant that experienced multiple meltdowns after the March 2011 quake and tsunami.

Microscopic observations found no abnormality in their testes' internal shape or their ability to produce sperm. The cell division process leading to sperm formation was also comparable to specimens that had not been exposed to radiation, according to the study.

Fukushima workers & radiation (2)

October 13, 2013

Radiation estimates for Fukushima workers may be too low: U.N. report

http://mainichi.jp/english/english/newsselect/news/20131013p2g00m0dm037000c.html

NEW YORK (Kyodo) -- Japanese authorities may have underestimated by 20 percent the radiation doses workers received in the initial phase of the Fukushima nuclear power plant disaster, according to a recently released report by a U.N. panel.

The U.N. Scientific Committee on the Effects of Atomic Radiation said in a summary report released on its website that the Japanese government and Tokyo Electric Power Co., known as TEPCO, may have underestimated radiation doses of the workers as tests used failed to take into account some types of radiation.

The report said the committee analyzed the radiation doses of some 25,000 people who worked at the Fukushima Daiichi plant on or before October 2012, using data provided by the government, the plant operator TEPCO and others to assess the amount of radioactive substances discharged during the nuclear crisis triggered by the March 2011 earthquake and tsunami.

The committee noted that workers were tested for thyroid gland doses for radioactive iodine after a significant delay, with no account taken of "the potential contribution from intakes of shorter-lived isotopes of iodine, in particular iodine 133," which have a short half-life of 20 hours.

The committee said in the report that "as a result, the assessed doses from internal exposure could have been underestimated by about 20 percent."

Increased exposure to radioactive iodine has been said to increase the risk of cancer and thyroid disorders.

If the estimates of the U.N. committee's assessments were accurate, more Fukushima plant workers would be eligible for free health checks provided by the government and TEPCO.

TEPCO said about 2,000 workers with thyroid gland doses of 100 millisieverts or more are qualified for cervical ultrasound inspection.

The committee also said for the 12 workers who were estimated to have received absorbed doses to the thyroid from iodine-131 intake alone in the range of 2 to 12 gray, "an increased risk of developing thyroid cancer and other thyroid disorders can be inferred."

An increased risk of cancer is expected for more than 160 additional workers who received doses over 100 millisieverts from external exposures, but the incidence is expected to be "indiscernible," it said.

The committee said that although the doses of local residence near the plant are low, continued research is needed to identify the full scope and expression of the differences in effects, mechanisms and risk from exposure to ionizing radiation for children and for adults.

UN panel: radiation dose may be underestimated

http://www3.nhk.or.jp/nhkworld/english/news/20131013_06.html

A UN panel says Japanese authorities may have underestimated radiation doses workers received in the initial phase of the Fukushima nuclear crisis in 2011.

Investigators from the UN Scientific Committee of Atomic Radiation recently filed their report.

They raised doubts about estimates by the Japanese government and plant operator Tokyo Electric Power Company.

Panel members analyzed records of 25,000 workers who worked at the plant until last October, paying special attention to 12 workers with higher doses.

The UN committee found the Japanese government and TEPCO ignored the effects of radioactive iodine.

Some kinds of iodine have much shorter half-lives than other radioactive substances. Analysts would have had to test workers immediately to discover the true dose.

But the investigators pointed to a substantial delay in measuring procedures. They concluded that current estimates may be 20 percent lower than they should be.

The committee urged the government and TEPCO to observe workers' conditions over the long term.

New exposure limit for bus drivers

October 21, 2013

Govt. sets exposure limit for bus drivers

http://www3.nhk.or.jp/nhkworld/english/news/20131021_05.html

The Japanese government has set the cumulative radiation exposure limit for bus drivers who will carry local residents in the event of nuclear accidents. It says drivers will have the same limit as the general public.

The government decided how to help municipalities within 30 kilometers of a nuclear power plant draw up their evacuation plans. It sets the yearly exposure limit for drivers at one millisievert.

The government also says the transport ministry will demand transport companies secure ways to safely evacuate people.

In addition, it says Japan's Self-Defense Forces will also discuss with municipal governments ways to transport people.

The central government will also train municipal workers in how to take iodine tablets. The tablets are distributed to households within 5 kilometers of a nuclear power plant in advance of a possible accident.

It says iodine helps prevent the thyroid gland from absorbing radioactive substances.

Home offered to Fukushima children in Matsumoto

October 22, 2013

Mayor offers Fukushima kids home in his town

http://ajw.asahi.com/article/0311disaster/recovery/AJ201310220094

THE ASSOCIATED PRESS

MATSUMOTO, Nagano Prefecture--A generation ago, Dr. Akira Sugenoya performed lifesaving cancer surgery on more than 100 children after the 1986 Chernobyl catastrophe. Today, as mayor of a central Japanese city, he's trying to avoid a repeat of his own history.

Beginning in April, parents living in the shadow of the Fukushima nuclear disaster will be able to send their children about 300 kilometers away to his city, Matsumoto, to go to school. The city will pay 14

million yen (\$140,000) a year for a six-bedroom house and caretakers; parents won't pay tuition but will cover expenses such as utilities and meals.

"If my fears turn out to be unfounded, nothing would be better news," Sugenoya said in a recent interview with The Associated Press at Matsumoto city hall. "But if they become reality, then there is little time before it's too late."

Sugenoya has been critical of the government's response to the three meltdowns at the Fukushima No. 1 nuclear power plant, which exploded after the March 2011 tsunami and is still releasing radiation into the air and sea. Decommissioning will take decades, and experts disagree over how much the disaster will affect the health of area residents.

The single sickness confirmed by the International Atomic Energy Agency to have been caused by lowdose radiation from Chernobyl is thyroid cancer, which if properly treated with surgery is rarely fatal. Sugenoya, a thyroid specialist, volunteered to work in Belarus, close to the Ukraine power plant, in 1991 after hearing about thousands of cases of thyroid cancer there.

Five years later, he quit his job at a prestigious Japanese hospital and returned for another five and a half years. He has set up a donation fund for Chernobyl victims and regularly brings doctors from Belarus into Japan for training.

It's unclear how the radiation leaks near Fukushima No. 1 compare with those from Chernobyl. Measuring exposure at the individual level involves complex calculations to account for the daily intake of food and water, and can vary greatly.

The Japanese government has detected 44 confirmed and suspected cases of thyroid cancer among 217,000 youngsters, 18 and under, checked in Fukushima Prefecture. Thyroid cancer among children is generally rare, estimated at only one in a million. The link to radiation is still inconclusive, and extensive testing of Fukushima children could account for the higher numbers.

Children are far more sensitive to radiation-caused diseases than adults because their bodies are developing, but their bodies can bounce back and heal from the damage of radiation. Sugenoya said that in areas of Belarus that are close to Chernobyl, children are periodically sent away from radiated areas. Matsumoto, in Nagano prefecture, has about 240,000 people, and has room in its schools because of the declining population common in rural areas. Sugenoya's plan, called the Matsumoto Project, will be open to Fukushima students from third grade to junior high school.

Matsumoto officials have conducted meetings in Fukushima to explain the plan, and some parents have expressed interest, but it is unclear how many of them will send their children away to study.

Fukushima residents most worried about radiation are already gone. Some 150,000 people have left areas in Fukushima most ravaged by the tsunami, a third of them to other prefectures.

About 200 of them are in Matsumoto, including Hiroshi Ueki, his wife and their children, 6 and 4. "They ask me, 'Can I now touch the flowers?" Ueki said of his children. "In Fukushima, they had to wear masks, and they became afraid. They were getting scolded a lot. 'Don't touch any dirt.' 'Don't touch this.' 'Don't touch that.'"

Some who remain in areas surrounding the wrecked nuclear plant are torn over whether to stay. Yuri Hasegawa, a 45-year-old Fukushima mother, is so worried she has bought a Geiger counter and has a stockpile of masks. She cooks with only food that has been tested for radiation.

She has been sending her two children, 9 and 13, to summer and winter camps in the northernmost island of Hokkaido, the southernmost island of Okinawa, and the southwestern city of Hiroshima. She is thinking about taking part in the Matsumoto Project. She said she faces opposition from her husband and other relatives, who scoff at her concerns as extreme.

In her backyard and other areas, "The Geiger counter starts going beep, beep, beep, beep," she said. "The beeps are coming so fast. You know radiation is going through our bodies. It's because it's invisible. **If we could see it, we wouldn't be living here**."

The Japanese government says it is safe to live in areas that have not been forced to evacuate, but it also has admitted errors in responding to the radiation danger.

Shortly after the tsunami, the government could have doled out potassium iodide pills to block children's thyroids from accumulating radioactive iodine. It had the pills, but failed to deliver them in time to be effective, and it has acknowledged that it was not properly prepared.

The government also has acknowledged that it failed to effectively use data that accurately forecast where radioactive plumes were headed. While a zone around the nuclear plant was cleared, residents beyond the zone who were in the predicted paths of the plumes were not warned.

Sugenoya, a slightly built man with a gentle smile, said his offer is intended to help concerned families play it safe.

"Radiation doesn't hurt. It doesn't even itch," he said. "A terrible thing has happened, but people don't realize it at all."

October 23, 2013

Japanese mayor offers Fukushima kids a home in his town AP

http://www.japantimes.co.jp/news/2013/10/23/national/japanese-mayor-offers-fukushima-kids-a-home-in-his-town/#.UmeFaVM0_9k

MATSUMOTO, NAGANO PREF. – A generation ago, Dr. Akira Sugenoya performed lifesaving cancer surgery on more than 100 children after the 1986 Chernobyl nuclear catastrophe. Today, as mayor of Matsumoto, he is trying to avoid a repeat of his own history.[...]

Help wanted in Fukushima

October 25, 2013

Help wanted in Fukushima but low pay, high risks and gangsters

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310250089

REUTERS

IWAKI, Fukushima Prefecture--Tetsuya Hayashi went to Fukushima to take a job at ground zero of the worst nuclear disaster since Chernobyl. He lasted less than two weeks.

Hayashi, 41, says he was recruited for a job monitoring the radiation exposure of workers leaving the plant in the summer of 2012. Instead, when he turned up for work, he was handed off through a web of contractors and assigned, to his surprise, to one of Fukushima's hottest radiation zones.

He was told he would have to wear an oxygen tank and a double-layer protective suit. Even then, his handlers told him, the radiation would be so high it could burn through his annual exposure limit in just under an hour.

"I felt cheated and entrapped," Hayashi said. "I had not agreed to any of this."

When Hayashi took his grievances to a firm on the next rung up the ladder of Fukushima contractors, he says he was fired. He filed a complaint but has not received any response from labor regulators for more than a year. All the eight companies involved, including embattled plant operator Tokyo Electric Power Co., widely known as TEPCO, declined to comment or could not be reached for comment on his case.

Out of work, Hayashi found a second job at Fukushima, this time building a concrete base for tanks to hold spent fuel rods. His new employer skimmed almost a third of his wages--about \$1,500 a month--and paid him the rest in cash in brown paper envelopes, he says. Reuters reviewed documents related to Hayashi's complaint, including pay envelopes and bank statements.

Hayashi's hard times are not unusual in the estimated \$150-billion effort to dismantle the Fukushima reactors and clean up the neighboring areas, a Reuters examination found.

In reviewing Fukushima working conditions, Reuters interviewed more than 80 workers, employers and officials involved in the unprecedented nuclear clean-up. A common complaint: the project's dependence on a sprawling and little scrutinized network of subcontractors--many of them inexperienced with nuclear work and some of them, police say, have ties to organized crime.

TEPCO sits atop a pyramid of subcontractors that can run to seven or more layers and includes construction giants such as Kajima Corp. and Obayashi Corp. in the first tier. The embattled utility remains in charge of the work to dismantle the damaged Fukushima reactors, a government-subsidized job expected to take 30 years or more.

Outside the plant, Japan's "Big Four" construction companies--Kajima, Obayashi, Shimizu Corp. and Taisei Corp.--oversee hundreds of small firms working on government-funded contracts to remove radioactive dirt and debris from nearby villages and farms so evacuees can return home.

TEPCO says it has been unable to monitor subcontractors fully but has taken steps to limit worker abuses and curb the involvement of organized crime.

"We sign contracts with companies based on the cost needed to carry out a task," Masayuki Ono, a general manager for nuclear power at TEPCO, told Reuters. "The companies then hire their own employees taking into account our contract. It's very difficult for us to go in and check their contracts."

The unprecedented Fukushima nuclear clean-up both inside and outside the plant faces a deepening shortage of workers. There are about 25 percent more openings than applicants for jobs in Fukushima prefecture, according to government data.

Raising wages could draw more workers but that has not happened, the data shows. TEPCO is under pressure to post a profit in the year to March 2014 under a turnaround plan Japan's top banks recently financed with \$5.9 billion in new loans and refinancing. In 2011, in the wake of the disaster, TEPCO cut pay for its own workers by 20 percent.

With wages flat and workers scarce, labor brokers have stepped into the gap, recruiting people whose lives have reached a dead end or who have trouble finding a job outside the disaster zone.

The result has been a proliferation of small firms--many unregistered. Some 800 companies are active inside the Fukushima plant and hundreds more are working in the decontamination effort outside its gates, according to TEPCO and documents reviewed by Reuters.

TEPCO, Asia's largest listed power utility, had long enjoyed close ties to regulators and lax government oversight. That came under harsh scrutiny after a 9.0 magnitude earthquake and a massive tsunami hit the plant on March 11, 2011. The disaster triggered three reactor meltdowns, a series of explosions and a radiation leak that forced 150,000 people to flee nearby villages.

TEPCO's hapless efforts since to stabilize the situation have been like someone playing "whack-a-mole," Minister of Economy, Trade and Industry Toshimitsu Motegi has said.

"Nuclear disaster hub hospitals"

November 5, 2013

Government to improve medical care response to nuclear accidents http://ajw.asahi.com/article/0311disaster/fukushima/AJ201311050045

By YURI OIWA/ Staff Writer

The government is planning to enhance medical preparedness for nuclear accidents by designating "nuclear disaster hub hospitals" capable of treating patients with low-dose radiation exposure.

The Nuclear Regulation Authority's secretariat will set up a team to discuss revisions to the current system based on lessons learned from the disaster at the Fukushima No. 1 nuclear power plant, sources said.

The government plans to include the new system, including special assistance teams, in its basic disaster management plan by next summer following NRA approval, according to the sources.

The core hospitals will be selected from among those offering emergency care on a daily basis within a 30-kilometer radius of a nuclear power plant and adjacent areas.

Tentatively called nuclear disaster hub hospitals, they will be designated by local governments based on national standards set by the NRA secretariat.

The hospitals will receive practical training on a regular basis so that residents in wide areas can be decontaminated and treated when they suffer from low-dose radiation exposure.

Under the current system, there are no uniform standards for appointing hospitals responsible for decontamination and medical treatments.

Local governments have traditionally selected them based on the distance from a nuclear plant and other factors, not on emergency care capabilities.

A separate group of hospitals will be designated in each region to offer specialized decontamination and medical services to patients with more severe symptoms. Candidate institutions include Fukushima Medical University, Nagasaki University, the University of Fukui, Osaka University and Hirosaki University in Aomori Prefecture.

Previously, only Hiroshima University and the National Institute of Radiological Sciences in Chiba Prefecture were expected to fulfill such functions.

The government also plans to reinforce the support system by setting up more than 100 groups of doctors and nurses to provide medical services for patients affected by radiation.

The members will be drawn from the 1,150 disaster medical assistance teams, which are organized for natural disasters, and trained for new missions in the event of a nuclear accident.

No one was killed by direct radiation exposure in the Fukushima nuclear disaster caused by the March 2011 Great East Japan Earthquake and tsunami. But the medical system was thrown into chaos, and dozens of people died, including bedridden patients who were forced to flee from areas under evacuation orders.

The current system was introduced after two workers at a nuclear fuel processing plant died due to heavy radiation exposure in 1999. It was based on the assumption that only a limited number of residents would suffer radiation exposure.

But hospitals responsible for decontamination and medical treatments failed to adequately respond to the Fukushima disaster, which affected residents across wide areas.

Of six hospitals tasked with those missions in Fukushima Prefecture, four were in areas close to the nuclear plant where residents were ordered to evacuate or to stay indoors.

Only two were experienced in emergency care, with one equipped with a dedicated center for such operations.

The current system was inefficient partly because the science ministry is in charge of medical services for people affected by radiation, and the health ministry is responsible for emergency care in natural disasters.

The NRA secretariat, which was established after the Fukushima nuclear disaster, will oversee the new system with the goal of ensuring an effective response to nuclear accidents.

Under the NRA secretariat, the National Disaster Medical Center, affiliated with the health ministry, is expected to serve as the executive office for the new system. The center already works as the secretariat for disaster medical assistance teams.

Check it yourself (2)

November 11, 2013 **Experts call for change in radiation measuring** http://www3.nhk.or.jp/nhkworld/english/news/20131111_41.html

A panel of experts is urging the Japanese government to change the way it measures radiation exposure for evacuees from the Fukushima nuclear accident when they return home.

The panel at the Nuclear Regulation Authority on Monday endorsed draft proposals covering state support for people who want to return to their homes near the Fukushima Daiichi nuclear plant.

The proposals call on authorities to allow evacuees to return only after yearly radiation levels in their communities have fallen to below 20 millisieverts.

The proposals also say it should be a long-term aim to bring annual exposure levels for people to one millisievert or less.

To date, officials have estimated exposure based on radiation levels in the environment. But the panel says they should measure exposure by equipping individuals with radiation monitors called dosimeters.

Radiation measurements made by dosimeters tend to be one-third to one-seventh of readings estimated through environmental monitoring.

The draft proposals include making maps that show areas with high radiation levels and using dosimeter measurements to enable more effective decontamination work.

The panel also calls for assigning local government officials and health nurses as advisors in each community.

The Nuclear Regulation Authority will officially compile the proposals and submit them to the government.

Check it yourself (3)

November 12, 2013

Plan to lower radiation readings OK'd

JIJI http://www.japantimes.co.jp/news/2013/11/12/national/plan-to-lower-radiation-readingsokd/#.UoMlTyewT9k

To facilitate the return of evacuees, the Nuclear Regulation Authority has approved a change in the way radiation doses are monitored around the crippled Fukushima No. 1 nuclear power station that will effectively result in lower readings, but observers warn this could raise public mistrust.

The change calls for basing monitoring on data from dosimeters held by individual residents.

It was proposed by the regulatory commission's secretariat at its meeting Monday and gained broadbased consensus.

Dosimeter readings tend to be less than half of those using the existing method based on air dose rates, which assume that residents stay outdoors for a total of eight hours a day, according to the NRA Secretariat.

The proposal comes as the government is aiming to lift the evacuation advisory for areas where annual radiation doses are estimated at 20 millisieverts or lower.

The new method is expected to help promote the return of evacuees as well as reduce costs for decontaminating areas tainted by radioactive fallout from the Tokyo Electric Power Co. plant.

But a change in the monitoring method could heighten local residents' mistrust of the government, observers said.

The NRA Secretariat's proposal said that a key condition for allowing evacuees to return home is that annual radiation doses estimated from air dose readings not exceed 20 millisieverts.

The government will manage the doses of residents who return home by using dosimeters distributed to them. Over the long term, the goal will be to limit residents' annual extra radiation exposure stemming from the disaster at the plant to 1 millisievert, the proposal said.

The government will also deploy counseling staff, including municipal officials, doctors and other medical experts, for returnees who are uneasy about radiation, according to the proposal.

Decontamination costs are estimated at ¥2.53 trillion to ¥5.13 trillion in Fukushima Prefecture, excluding radioactive waste disposal

In the city of Fukushima, Ichiro Kowata, 77, an evacuee from litate, called for the government to more fully explain the proposed method change. "Younger people say they can't trust statements that suddenly declare areas to be safe when they have been called dangerous until now," he said.

Young people & thyroid cancer

November 13, 2013

More suspected and confirmed cases of thyroid cancer diagnosed in Fukushima children

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201311130066

THE ASAHI SHIMBUN

Fifteen more young people in Fukushima Prefecture have received definitive or suspected diagnoses of thyroid cancer, which is often associated with radiation exposure, prefectural officials said Nov. 12.

That raises to 59 the total number of young people who have been diagnosed with or are suspected of having thyroid cancer.

All were aged 18 or under in March 2011 when the Great East Japan Earthquake and tsunami triggered reactor meltdowns at the Fukushima No. 1 nuclear plant.

The latest figures show 12 people per 100,000 who were aged 18 or younger at the time of the accident developing thyroid cancer.

That compares with an average of 1.7 people per 100,000 in the general population between the ages of 15 and 19 who contracted the cancer in 2007, according to statistics taken in four prefectures, including nearby Miyagi.

The current results are based on the latest round of testing, which covered an additional 33,000 young people in Fukushima Prefecture. To date, the prefectural government has released test results for about 226,000 people.

It is difficult to make a simple comparison, however. Thyroid cancer usually goes undetected in children unless they develop pronounced symptoms. The thyroid testing now being done in Fukushima Prefecture covers all healthy children and is designed for early detection of minor symptoms associated with the cancer.

Prefectural officials said it is unlikely there is a link between the young people's exposure to radiation and the increased number of suspected and confirmed cancer cases to date.

Still, the prefectural government will try to ease concerns about the effects of radiation exposure on the health of children by starting new thyroid testing in the spring that will cover 25,000 children who were fetuses at the time of the nuclear disaster.

Prefectural officials maintain the age distribution of the young people who have been diagnosed with or suspected of having the cancer, unlike in the aftermath of the Chernobyl disaster in 1986, is similar to that of children with thyroid cancer elsewhere in the general population.

In the case of Chernobyl, thyroid cancer cases only began soaring four to five years after the accident. Some experts said it is unlikely that the cancer develops within three years after exposure to radiation.

Of the 15 young people and children, only eight were definitively diagnosed as having thyroid cancer. The other seven are suspected cases. Of the total number of children diagnosed as or suspected of having developed thyroid cancer, those numbers are 26 and 33, respectively. Except for one of those who was diagnosed with a benign tumor, all were aged between six and 18 as of March 2011. Their average age was 16.8.

(This article was written by Teruhiko Nose and Yuri Oiwa.)

Thyroid cancers in Fukushima

November 13, 2013

Experts say link to disaster not yet established

Thyroid cancers up in Fukushima

by Mizuho Aoki Staff Writer http://www.japantimes.co.jp/news/2013/11/13/national/thyroid-cancers-up-infukushima/?utm_source=rss&utm_medium=rss&utm_campaign=thyroid-cancers-up-infukushima#.UoPmCSewT9k

Screening of Fukushima residents who were 18 or younger at the time of the 2011 nuclear disaster had found 26 confirmed and 32 suspected cases of thyroid cancer as of Sept. 30, according to the Fukushima Prefectural Government.

The number of confirmed cases was up by eight from August, while the suspected cases rose by seven, the prefecture-led study found.

About 226,000 people have undergone the screening program since it kicked off in October 2011.

The 26 confirmed cases underwent surgery and are doing well, according to the prefecture.

A panel of experts at the prefecture concluded Tuesday that it is too early to link the cases to the nuclear disaster, given that papillary thyroid cancer — the type found in the 26 people — develops at a very slow pace, according to prefectural officials. Following the 1986 Chernobyl catastrophe, it took about four to five years for thyroid cancers in significant number to be detected.

Thyroid cancer is considered a major health concern for children because radioactive iodine spewed by the crippled nuclear plant tends to accumulate in thyroid glands, especially among young children. Following the Chernobyl disaster, more than 6,000 children were diagnosed with thyroid cancer, according to the U.N. Scientific Committee, which attributed many of the cases to consumption of contaminated milk.

According to media reports, thyroid cancer normally strikes about 1 to 2 people aged 10 to 14 per million in Japan, far less than about 115 in 1 million cases in Fukushima. However, the figure cannot be simply compared, because the screening in Fukushima targets all children under 18, most of whom are without any symptoms, and no such screening is being done elsewhere in Japan.

To address mounting worries among local residents with children, the prefecture will expand the screening tests next April to include people born after the disaster started.

Managing radiation on individual basis

November 20, 2013

Regulators call for radiation dose management on individual basis

http://www.japantimes.co.jp/news/2013/11/20/national/regulators-call-for-radiation-dose-management-on-individual-basis/#.UozfHCewT9k

Kyodo

The Nuclear Regulation Authority said Wednesday it will propose to a government task force that management of radiation doses on an individual basis will be vital to working out steps to protect people seeking to return to their homes near the stricken Fukushima No. 1 nuclear plant.

The proposal is expected to bring about a change in the government's policy of using "estimated" personal doses, calculated from air dose levels measured by radiation monitoring posts and other sources, when setting evacuation zones and other protective steps.

But as radiation exposure measured by individual dosimeters tends to be lower than estimated doses, the latest move could effectively mean a relaxation of the rules, making it easier for the government to achieve its long-term goal of reducing exposure doses to 1 millisievert per year in contaminated areas.

Estimated doses are calculated on the assumption that an individual remains eight hours outdoors and 16 hours indoors.

NRA Chairman Shunichi Tanaka said at a meeting of NRA commissioners that grasping individual doses is "essential" when evacuees return homes, because each person's lifestyle is different.

"Individual doses differ, and that could affect health," he said.

The proposal also called on the government to present a road map showing the timeline for measures it will implement to help people decide whether to return to their homes as well as to support those who decide to do so.

The measures include creating a team of counselors for each community that will help residents take radiation protection measures based on their dosimeter readings and respond to their concerns.

More than two years have passed since the Fukushima crisis was triggered by a huge earthquake and tsunami, but around 150,000 residents of the prefecture still live as evacuees.

In August, the government finished reclassifying areas where evacuation orders are in place to three categories based on radiation levels — a zone where evacuation orders are ready to be lifted, a zone where habitation is restricted and a zone where residents will have difficulties in returning for a long time.

Decontamination efforts are being made but there has not been a case in which an evacuation order has been lifted.

Personal dosimeters: Easier said than done?

November 21, 2013

NRA plan to implement use of personal dosimeters no easy task

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201311210067



A dosimeter lent to Fukushima Prefecture residents during a temporary visit to an evacuation zone (Asahi Shimbun file photo)

By YURI OIWA/ Staff Writer

Japan's nuclear watchdog has recommended that people who evacuated after the Fukushima nuclear disaster in 2011 wear personal dosimeters once they return to their communities.

But that might be easier said than done.

The Nuclear Regulation Authority explained Nov. 20 that its proposal would lead to new safety measures based on readings from personal dosimeters.

A number of obstacles stand in the way, however, such as how to measure personal doses and how to use that data to design ways to safeguard against radiation.

The NRA also called for the appointment of "facilitators," or advisers to evacuees who have returned home.

So far, the government has designed its post-disaster response--such as decontamination work and the lifting of evacuation orders--on the basis of estimates of airborne radiation levels.

If residents wear personal dosimeters, they will be able to quickly ascertain what actions bring about high radiation readings by recalling what they were doing at the time.

That would show residents what they need to do to avoid being in areas where radiation levels are high and which places should be decontaminated.

"It is essential for residents who return home to know about their own doses, understand how their whereabouts are correlated to the doses they receive, and take dose reduction, health management and other measures on the basis of their dose readings," part of the NRA recommendation said.

But many of the dosimeters that have been distributed to residents can only measure doses accumulated over several months. They do not enable users to figure out how their whereabouts are correlated to the doses they receive.

According to Cabinet Office officials in charge of assisting nuclear disaster victims, the government is contemplating the distribution of a new type of personal dosimeter that is adapted to measure hourly doses. The new dosimeters are compact, have long battery lives and can also provide weekly and daily average dose rates.

Some of the new dosimeters have already been distributed, on a voluntary and trial basis, to evacuees from the Miyakoji district of Tamura, Fukushima Prefecture, which is designated as a "zone being prepared for the lifting of the evacuation order," and other areas.

Makoto Miyazaki, a research associate of radiation health management with Fukushima Medical University, carries one. He said the new dosimeter enables him to tell time variations in his doses, which tend to be lower during the day when he is at work, than at night when he is at home.

Dose readings need to be rendered graphically on a chart by using computer applications to be easily understood.

"To use the readings as an aid for designing safety measures, there should be people who can communicate the results in an understandable way," Miyazaki said.
The Environment Ministry has requested 670 million yen (\$6.7 million) in budget allocations for the next fiscal year for a program to distribute dosimeters to 4,200 residents from areas designated as "zones being prepared for the lifting of the evacuation order."

The appointment of facilitators, included in the NRA recommendation, would not be easy. It remains unclear from where the advisers will be recruited, and how many people will be trained and eventually appointed.

"Government assistance to the facilitators will be indispensable," said Shunichi Tanaka, NRA chairman, at a Nov. 20 news conference. "Trial and error is our only option."

See also :

November 20, 2013

Regulators call for radiation dose management on individual basis

http://www.japantimes.co.jp/news/2013/11/20/national/regulators-call-for-radiation-dose-management-on-individual-basis/#.UozfHCewT9k

"More about radiation"

November 22, 2013

Editorial: Gov't should explain more about radiation to Fukushima residents

http://mainichi.jp/english/english/perspectives/news/20131122p2a00m0na018000c.html

The Nuclear Regulation Authority (NRA) has released a report recommending specific measures to allow evacuees from areas hit by the Fukushima nuclear crisis to return home. In particular, a plan to evaluate and reduce evacuees' exposure to radiation after returning home based on the amounts of radiation measured by dosimeters they carry is noteworthy as one of the pillars of the recommendations.

The government has so far issued evacuation orders and decontaminated areas affected by the nuclear disaster based on air doses of radiation measured from aircraft. The NRA's report should be highly appreciated, considering that levels of radiation measured by dosimeters individuals carry indicate their actual exposure to radiation more accurately than figures estimated based on air dosages.

However, only delivering dosimeters to residents of affected areas will not ensure safety or reassure them. It is important for the government to explain the results of measurements of radiation exposure on dosimeters to residents in detail and in a comprehensible way.

If residents use dosimeters capable of measuring hourly radiation levels, they will be able to check the levels of their radiation exposure at their homes, workplaces and schools and during commuting to and from their offices or schools. Using such data, residents will be able to reduce their exposure to radiation on their own. To that end, however, they need those with expertise who can provide consultations to them.

The report points to the need for such counselors. The concerned ministries and agencies as well as local governments must consider specific measures to achieve this, such as human resource development and deployment of experts to affected areas.

The government should provide a more detailed explanation of differences between air doses of radiation and individuals' exposure to it. The NRA's recommendations clearly state that actual levels of individuals' exposure to radiation tend to be lower than those estimated on the basis of air doses. However, they have failed to sufficiently explain the reason for such a tendency. As such, some critics say the NRA's recommendations that radiation levels measured by dosimeters residents carry be used to evaluate and reduce their radiation exposure constitute a de facto relaxation of the standards. Unless the government tries to make residents understand such complicated matters, it would cause confusion to them and damage the public's trust in the government.

The report should be appreciated also in that the need to respect each individual's choice, regardless of whether evacuees will return home or not, has been incorporated in the recommendations. The authorities should implement measures to extend assistance that residents really need, including those outside evacuation zones and those who have voluntarily evacuated from their neighborhoods.

The report states that cumulative radiation doses, estimated based on air doses, must decline to 20 millisieverts per year or lower as a precondition for allowing residents taking shelter elsewhere to return home. At the same time, however, the report underscores the need to implement measures to cut down an individual's annual exposure to radiation, excluding that existing in nature, to 1 millisievert in the long

term. Some experts argue that annual exposure to 20 millisieverts is too high. It is worth considering to authorize local governments affected by the nuclear disaster to set conditions for allowing residents to return home at their own discretion depending on each area's situation.

Residents are concerned about not only radiation but also employment, education and medical care. It is important for local bodies to set up offices that can provide consultations on all these issues.

The NRA has interviewed officials of affected local governments and private organizations before working out the recommendations, but its efforts to listen to opinions from communities in areas hit by the nuclear crisis are still insufficient. The authorities should continue to interview residents of affected areas, and reflect their various opinions in its response to the disaster.

Thyroid checks

November 27, 2013

Fukushima verifying thyroid check results

http://www3.nhk.or.jp/nhkworld/english/news/20131127_40.html

Fukushima Prefecture has held the first meeting of an expert panel to examine ongoing medical checks of local young people for thyroid cancer.

The prefecture is checking the thyroid glands of 360,000 people who were 18 or younger at the time of the March 2011 nuclear accident at the Fukushima Daiichi plant. 26 of the subjects have been diagnosed with thyroid cancer.

Radioactive substances emitted from the plant can accumulate in the gland and cause cancer.

At the meeting on Wednesday, experts stressed the importance of establishing a system for more checks. They said the prefecture should ask more local hospitals to do them.

Others called for similar large-scale checks outside the prefecture, and inviting opinions from thyroid experts to verify the relation between radiation exposure and the cancer.

The prefecture is expected to finish the current round of checks by the end of March.

The panel plans to continue verifying the method and results of the tests.

Californian babies & radiation from Fukushima

November 28, 2013

Fukushima nuclear disaster causes cancer and birth defects in US newborns – epidemiologist

http://www.panorama.am/en/society/2013/11/28/fukushima-child-diseases/

After the disaster at the Fukushima nuclear plant in Japan, little attention was paid to how the radiation leaks can affect the health of children who live in the US. **Joseph Mangano, epidemiologist and Executive Director of the Radiation and Public Health Project research group,** speaks with the Voice of Russia about the study that showed that kids born after 2010 have some 26% percent higher risks to have cancer and birth defects. But the US keep silent on the problem.

After the study by the Radiation and Public Health Project research was made public there was little response or reaction in the US. Although, Joseph Mangano expects to hear from people more as there are great concerns about the safety of food in water, even in the US from Fukushima.

"We just published a study in the Open Journal of Pediatrics. We looked at official two types of data: one was the EPA statistics on how much radiation was in the air in the weeks and months after Fukushima (it was much higher in the West Coast than in the rest of the country) and number two – we looked at the state California's official statistics on newborns who are born with a condition called hypothyroidism which is where the thyroid is underactive. It is something that is known to be affected by exposure to radioactive Iodine which is only created in atomic bombs which haven't been exploded for years and nuclear reactor emissions," explains Joseph Mangano.

The Fukushima nuclear disaster is quite harmful for human health, although it happened in Japan, all the way across the ocean, the contaminated waters and polluted air can easily reach the continent on the other side of the Pacific Ocean.

"Studies almost three years ago found that the plume of radiation that escaped from Fukushima arrived on the West Coast of the US just five days after the initial meltdown. It doesn't take long: once these radioactive particles in gases get in the air, it moves along with prevailing winds and keeps travelling until it returns to the environment through rain and snow," says epidemiologist Joseph Mangano in an interview with the Voice of Russia.

"It circled the entire Northern hemisphere but it got to the West Coast within five days and came into the environment in greater amounts on West Coast and elsewhere in the country," Mangano continues. The aim of the study is to find the correlation between the increased cases of hypothyroidism disease in children and the consequences of the Fukushima catastrophe.

"We are just now starting to get our hands on recent data from 2011. It means that we start by looking at the fetus and the newborn because they are the most susceptible to radiation. And we are going to be looking at not just hypothyroidism but at further birth effects: infant deaths, babies were born underweight; babies were born prematurely- things of that nature to see before and after Fukushima if there was a difference. It's gonna take decades to know what the full casualty list of Fukushima is because sometimes it takes decades, for example, for a cancer to show itself, to manifest itself after the exposure," Joseph Mangano explains to the Voice of Russia's host Jay Johnson, who conducted the interview.

In the future more children would be born with diseases or other health problems caused by Fukushima disaster. According to Mangano, more people would be born not just with birth defects, but with diseases affected by the radiation, such as cancer.

Recently, Japan has surveyed 200,000 children near the Fukushima plant in 2012 and has found out that 56% of the children under 18 have a precancerous lesions which is absolutely off the charts, as it should be almost none, says Mangano.

"It's an ongoing study by Fukushima Medical University. They also found as many as 59 kids had thyroid cancer and that's a condition that's very rare in kids. We would expect in three years maybe one or two. They confirmed 26 and they suspect another 33. So, this is just the beginning. As a research community we really need to look at this terrible meltdown seriously and do all the studies on the continuing basis," Joseph Mangano said.

Fukushima fallout damaged thyroid glands of California babies

http://www.theecologist.org/News/news_analysis/2164974/fukushima_fallout_damaged_thyroid_glands _of_california_babies.html

Chris Busby 19th November 2013

A new study finds that radioactive Iodine from Fukushima has caused a significant increase in hypothyroidism among babies in California, 5,000 miles across the Pacific Ocean.

The Fukushima catastrophe has been dismissed as a potential cause of health effects even in Japan, let alone as far away as California.

A new study of the effects of tiny quantities of radioactive fallout from Fukushima on the health of babies born in California shows a significant excess of hypothyroidism caused by the radioactive contamination travelling 5,000 miles across the Pacific. The article will be published next week in the peer-reviewed journal *Open Journal of Pediatrics*.

Congenital hypothyroidism is a rare but serious condition normally affecting about one child in 2,000, and one that demands clinical intervention - the growth of children suffering from the condition is affected if they are left untreated. All babies born in California are monitored at birth for Thyroid Stimulating Hormone (TSH) levels in blood, since high levels indicate hypothyroidism.

Joe Mangano and Janette Sherman of the Radiation and Public Health Project in New York, and Christopher Busby, guest researcher at Jacobs University, Bremen, examined congenital hypothyroidism (CH) rates in newborns using data obtained from the State of California over the period of the Fukushima explosions.

Their results are published in their paper *Changes in confirmed plus borderline cases of congenital hypothyroidism in California as a function of environmental fallout from the Fukushima nuclear meltdown.* The researchers compared data for babies exposed to radioactive Iodine-131 and born between March

17th and Dec 31st 2011 with unexposed babies born in 2011 before the exposures plus those born in 2012.

Confirmed cases of hypothyroidism, defined as those with TSH level greater than 29 units increased by 21% in the group of babies that were exposed to excess radioactive Iodine in the womb [*]. The same group of children had a 27% increase in 'borderline cases' [**].

Contrary to many reports, the explosion of the reactors and spent fuel pools at Fukushima produced levels of radioactive contamination which were comparable with the Chernobyl releases in 1986. Using estimates made by the Norwegian Air Laboratory it is possible to estimate that more than 250PBq (200 x 10¹⁵) Bq of Iodine-131 (half life 8 days) were released at Fukushima.

This is also predicted by comparing the Caesium-137 estimates with I-131 releases from Chernobyl, quantities which caused the thyroid cancer epidemic in Byelarus, the Ukraine and parts of the Russian Republic.

More on this later. At Fukushima, the winds generally blew the radioactive iodine and other volatile radionuclides out to sea, to the Pacific Ocean. The journey 5,000 miles to the West Coast of the USA leaves a lot of time for dispersal and dilution. Nevertheless, small amounts of I-131 were measured in milk causing widespread concern.

The authorities downplayed any risk on the basis that the "doses" were very low; far lower than the natural background radiation. The University of Berkeley measured I-131 in rainwater from 18th to 28th March 2011 after which levels fell. If we assume that mothers drank 1 litre of rainwater a day for this period (of course they didn't) the current radiation risk model of the International Commission on Radiological Protection (ICRP) calculates an absorbed dose to the adult thyroid of 23 microSieverts, less than 1/100th the annual background "dose". The foetus is more sensitive (by a factor of about 10 according to ICRP) but is exposed to less as it is perhaps 100 times smaller.

So this finding is one more instance of the fact that the current radiation risk model, employed by the governments of every nation, is massively insecure for predicting harm from internal radionuclide exposures or explaining the clear observations.

The Fukushima catastrophe has been dismissed as a potential cause of health effects even in Japan, let alone as far away as California. And on what basis? Because the "dose" is too low.

This is the mantra chanted by the International Atomic Energy Agency (IAEA), the World Health Organization (WHO, largely the same outfit), and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). And let's not forget all the nuclear scientists who swooped down on Fukushima with their International Conferences and placatory soothing presentations.

This chant was heard after Chernobyl, after the nuclear site child leukemias; in the nuclear atmospheric test veterans cases; and in all the other clear situations which in any unbiased scientific arena would long ago have blown away the belief that low level internal exposures are safe.

But this one-size-fits-all concept of "dose" is the nuclear industry's sinking ship. It provides essential cover for the use of uranium weapons, whether fission bombs or depleted uranium munitions; for the development of nuclear power stations like Hinkley Point; the burying of radioactive waste in landfills in middle England; releases of plutonium to the Irish Sea from Sellafield (where it drifts ashore and causes increases in cancer on the coasts of Wales and Ireland); and most recently, for the British Governments denial of excess cancers among nuclear test veterans.

This new study is not the first to draw attention to the sensitivity of the unborn baby to internal fission products. In 2009 I used data supplied to me when I was a member of the UK government Committee Examining Radiation Risks from Internal Emitters (CERRIE) to carry out a meta-analysis of infant leukemia rates in five countries in Europe: England and Wales, Germany, Greece, and Byelarus.

There had been an unexpected and statistically significant increase in infant leukemia (age 0-1) in those children who were in the womb during the (whole body monitored) increased levels of Caesium-137 from Chernobyl. The beauty of this study (like the TSH study) is that, unlike the Sellafield child leukemias, there is really no possible alternative explanation.

It was the low "dose" of Caesium-137 that caused the leukemias. And the dose response trend was not a straight line: The effect at the very low "dose" was greater than at the very high "dose". Presumably because at the high doses the babies perished in the womb and could not, therefore, develop leukemia. I published the results and drew attention to the failure of the ICRP model in the *International Journal of Environment and Public Health* in 2009.

I had published a paper on this infant leukemia proof of the failure of the risk model in *Energy and Environment* in 2000, and also presented it in the same year at the World Health Organisation conference in Kiev. It was there that I first really came up against the inversion of science deployed by the chiefs of the IAEA and UNSCEAR. The conference was videofilmed by Wladimir Tchertkoff and you can see his excellent documentary, which made it to Swiss TV, *Atomic Lies*, re-released in 2004 as Nuclear Controversies (link to youtube, 51 minutes).

For what is done by these people is to dismiss any evidence of increased rates of cancer or any other disease by shouting at it: "the doses were too low". In this way, reality is airbrushed away. What is this quantity "dose"? It is a simple physics-based quantity which represents the absorption of energy from radiation. One Sievert of gamma radiation is one Joule per kilogram of living tissue.

This might work for external radiation. But it doesn't work for internal exposures to radioactive elements which can produce huge effects on cellular DNA at low average "doses". It is like comparing warming yourself in front of the fire with eating a hot coal. Or comparing a punch to stabbing. Same dose, same energy. Very different effects.

This "dose" scam has been used to dismiss real effects since it was invented in 1952 to deal with the exposures from nuclear weapons development and testing. For those who want to dig deeper into the science there is a recent book chapter I wrote in the book New Research Directions in DNS Repair.

The most scary instances of the sensitivity of the foetus to radiation are the sex ratio studies of Hagen Scherb, a German biostatician and member of the European Committee on Radiation Risk (ECRR). With his colleague Christina Voigt he has published a series of papers showing a sudden change in the sex ratio of newborns after various radiation exposure incidents.

Sex ratio, the number of boys born to 1,000 girls is a well accepted indicator of genetic damage and perturbations in the normal ratio of 1,050 (boys to 100 girls) are due to the deaths before birth of radiation damaged individuals of one sex or the other depending on whether the father (sperm) or mother (egg) was most exposed.

We found such an effect (more girls) in our study of Fallujah, Iraq, where there was exposure to Uranium weapons. But Scherb and Voigt have looked at the major catastrophes, Chernobyl, the weapons tests fallout, near nuclear sites in data from many countries of the world. Huge datasets.

They estimate that millions have babies have been killed by these subtle internal radiation exposures. The nuclear military project is responsible for an awful lot of deaths. In years to come I believe this will eventually be seen as the greatest public health scandal in human history.

Of course, the exposure to radio-Iodine is associated with thyroid cancer in children. There was a big rise of thyroid cancer in Byelarus, the Ukraine and the Russian Republic after Chernobyl. The situation at Fukushima seems set to echo this, despite the reassurances from the authorities that there will be no effects.

Our paper reports 44 confirmed thyroid cancer cases in 0-18 year olds in Fukushima prefecture in the last six months (a figure that has since risen to 53). In the hypothyroidism paper we discuss the 44 cases relative to the population and calculate that this represents an 80-fold excess based on national data prior to the Fukushima Iodine releases.

This presents a severe challenge to Dr Wolfgang Weiss of the UN and WHO, who stated last year that no thyroid cancers could result from the Fukushima disaster as the "doses were too low". How does he explain the 80-fold increase in this normally rare condition?

Or rather, when will he admit that the entire scientific model that underpins his views is fraudulent? And that nuclear radiation is - roughly speaking - 1,000 times more dangerous to human health than he is letting on?

Chris Busby is the Scientific Secretary of the European Committee on Radiation Risk. *For details and current CV see* www.chrisbusbyexposed.org. *For accounts of his work see* www.greeenaudit.org, www.llrc.org and www.nuclearjustice.org

For statisticians:

* RR 1.21, 95% CI 1.04-1.42; p = .013

** RR 1.27, 95% CI 1.2-1.35; p = .00000001.

Thyroid cancer in Fukushima children

December 22, 2013

Experts differ over nuclear accident's effect on cancer rate in children

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201312220021

THE ASAHI SHIMBUN

Experts were divided over whether radiation from the Fukushima nuclear accident affected the thyroid cancer rate among children in Fukushima Prefecture, in which 59 young people have been diagnosed with or suspected of contracting the disease.

Most of the experts dismissed the possibility that effects from radiation from the accident at the Fukushima No. 1 nuclear power plant could appear so soon in children.

"The rate at which children in Fukushima Prefecture have developed thyroid cancer can be called frequent because it is several times to several tens of times higher," said Toshihide Tsuda, a professor of epidemiology at Okayama University, at the meeting on Dec. 21 conducted by the Environment Ministry and Fukushima prefectural government at which experts offered their opinions.

Tsuda used the results of cancer registration statistics kept in Japan to support his theory. Those statistics showed that between 1975 and 2008, an estimated annual average of between five to 11 people in their late teens to early 20s developed thyroid cancer for every 1 million people.

"Because there is the possibility that the number of cases could increase in the future, there is a need to implement measures now," he said.

However, Tetsuya Ohira, a professor of epidemiology at Fukushima Medical University, criticized Tsuda's conclusion saying it was not appropriate in scientific terms to compare the results of the testing in Fukushima with cancer registry statistics.

Fukushima prefectural government officials plan to look further into the relationship between radiation exposure and thyroid cancer after analyzing future test results.

Thyroid cancer screening is being conducted on young people in Fukushima Prefecture who were 18 or younger at the time of the nuclear accident, which was triggered by the March 11, 2011, Great East Japan Earthquake and tsunami.

As of Sept. 30, 2013, 59 out of about 239,000 tested had been diagnosed with or are suspected of having thyroid cancer. One was diagnosed with a benign tumor.

Shinichi Suzuki, a Fukushima Medical University professor involved in the tests, said there was no link between the effects of radiation exposure and the cases of diagnosed or suspected thyroid cancer.

(This article was written by Teruhiko Nose and Yuri Oiwa.)

Half of the sailors have some form of cancer

Source : EcoWatch http://ecowatch.com/2013/12/27/ronald-reagan-cancer-sue-tepco-fukushima-radiation/

70+ USS Ronald Reagan Crew Members, Half Suffering From Cancer, to Sue TEPCO For Fukushima Radiation Poisoning

Brandon Baker | December 27, 2013 2:28 pm | Comments

After U.S. Navy sailors on the USS Ronald Reagan responded to the 2011 Fukushima disaster in Japan for four days, many returned to the U.S. with thyroid cancer, Leukemia, brain tumors and more.

At least 71 sailors—many in their 20s—reported radiation sickness and will file a lawsuit against Tokyo Electric Power Co. (TEPCO), which operates the Fukushima Daiichi energy plant.

The men and women accuse TEPCO of downplaying the danger of nuclear radiation on the site. The water contaminated the ship's supply, which led to crew members drinking, washing their bodies and brushing their teeth with contaminated water. Paul Garner, an attorney representing 51 sailors, saidat least half of the 70-plus sailors have some form of cancer.

"We're seeing leukemia, testicular cancer and unremitting gynecological bleeding requiring transfusions and other intervention," Garner told New York Post.

Senior Chief Michael Sebourn, a radiation-decontamination officer assigned to test the aircraft carrier, said that radiation levels measured 300 times higher than what was considered safe at one point. Meanwhile sailors like Lindsay Cooper have contrasted their initial and subsequent feelings upon seeing and tasting metallic "radioactive snow" caused by freezing Pacific air that mixed with radioactive debris.

"We joked about it: 'Hey, it's radioactive snow!" Cooper said. "My thyroid is so out of whack that I can lose 60 to 70 pounds in one month and then gain it back the next. My menstrual cycle lasts for six months at a time, and I cannot get pregnant.

"It's ruined me."

Cooper said the Reagan has a multimillion-dollar radiation-detection system, but the crew couldn't get it activated quickly enough.

"And then we couldn't go anywhere," she said. "Japan didn't want us in port, Korea didn't want us, Guam turned us away. We floated in the water for two and a half months."

San Diego Judge Janis L. Sammartino dismissed the initial suit in late November, but Garner and a group of attorneys plan to refile on Jan. 6, according to Fox 5 San Diego.

Though publications like The Washington Times have wondered if the Navy and/or National Security Agency might have known about the conditions the sailors were heading into two years ago, Garner and the attorneys say the lawsuit is solely directed at TEPCO.

"We're suing this foreign corporation because they are doing business in America," co-counsel Charles Bonner. "Their second largest office outside of Tokyo is in Washington, D.C.

"This foreign corporation caused harm to American rescuers, and they did it in ways that give rise to jurisdiction here in this country."

US sailors lawsuit (Global Research)

U.S. Navy Sailors Sue TEPCO over Cluster-Fukushima Snafu

http://www.globalresearch.ca/u-s-navy-sailors-sue-tepco-over-cluster-fukushima-snafu/5362417

By William Boardman Global Research, December 22, 2013

"Why has this not made national headlines??? The Aircraft Carrier Ronald Reagan is nuclear powered. Radiation detection equipment did not pick up on this?? Why have these sailors and marines medical records been removed from permanent tracking. Criminal implications galore. This should be all over mainstream media. Someone please forward all these ene reports to the media.... Tepco is the lowest of snakes. Hari Kari for the lot of em!!"

Fukushima lawsuit of 2012 comes as news to too much of the public

The story referred to in the enenews.comcomment above has had some coverage by Energy News, Tuner Radio Network, Stars and Stripes and a few others, but coverage, if any, by mainstream media is scant to none. All the same, it's a real story, with real villains (TEPCO, Japanese government, U.S. Navy for starters), and real victims (a growing number of American service personnel put in harm's way and abandoned by their government when things got tough).

The core of this story is the lawsuit filed December 21, 2012, by attorney Paul C, Garner of Brooks & Associates of Encinatas, California, on behalf of nine plaintiffs (including a one-year-old), all of whom "were among the members of the U.S. Navy crew and attached to the U.S.S. Ronald Reagan (CVN-76), whose home port was San Diego, California, when they were exposed to radiation off the coast at Fukushima prefecture, Japan, whereat the Fukushima Nuclear Power Plant is located, on and after March 11, 2011, during the mission known as 'Operation Tomodachi.'"

The plaintiffs are seeking \$40 million each in damages as well as a fund of more than a billion dollars to be used for their future medical expenses, and requested a jury trial. On November 26, federal judge Janis Sammartino dismissed the complaint on narrow jurisdictional grounds and plaintiffs plan to re-file in January within the judge's stated parameters.

The U.S.S. Reagan is a nuclear-powered aircraft carrier with a crew of about 5,000 that arrived off the coast of Fukushima the day after the tsunami with other ships as part of Operation Tomodachi, or "friend" in Japanese.

On March 11, 2011, an earthquake near Fukushima caused a tsunami that killed an estimated 19,000 people and swamped the Fukushima nuclear power plant. In the aftermath of the tsunami, three of the six reactors at Fukushima melted down, releasing radiation into the air, ground, and water. The precise sequence of events remains unclear, but the Japanese government and TEPCO (the Tokyo Electric Power Company, a wholly owned public benefit subsidiary of the government of Japan) were not being fully forthcoming about the danger as the disaster developed.

Japanese officials apparently lied to everyone about the damage

Although the potential seriousness of the Fukushima accident was widely apparent, Japanese officials publicly and privately minimized the danger for as long as they could, lying to their own people and rescue personnel from other countries alike. At the time, the first meltdown was thought to have

happened on March 12. But on December 12, 2013, Naoto Kan, the former prime minister who was in office at the time, told a meeting of the Japan Press Club that his government had known that "the first meltdown occurred five hours after the earthquake" which hit at 14:46 on March 11.

The U.S.S. Reagan and accompanying ships were coming into an environment where radiation levels in the air and water were far higher than the Navy was being told officially. That lying is at the heart of the lawsuit against TEPCO, which was exposing its own workers to even greater risks than U.S. Sailors. The lawsuit argues that TEPCO's lies led the U.S. Navy to sail unknowingly into intensely and dangerously radioactive waters.

True as that may be, it fails to explain why the Navy would be so trusting and negligent in the first place. The Reagan is a nuclear-powered aircraft carrier. Its officers and crew are or should be more sensitive than most to radioactive risk under all conditions, but especially when approaching a damaged nuclear power plant, and operating downwind of Fukushima.

For days (it's not clear how many), U.S. sailors were going into the radioactive ocean to save people swept out to sea by the tsunami. Sailors were drinking and bathing in desalinated ocean water until someone figured out it was radioactive. Sailors washed planes and surfaces of the ship that were radioactive. How do the people in charge of the Reagan not know they're in a radioactive environment without being negligent?

U.S. Seventh Fleet Public Affairs issues incredible press release

On March 14, 2011, without explaining what woke them up to the danger, which they minimized anyway, Navy officials issued a press release that began:

"The U.S. 7th Fleet has temporarily repositioned its ships and aircraft away from the Fukushima Dai-Ichi Nuclear Power Plant after detecting low level contamination in the air and on its aircraft operating in the area. The source of this airborne radioactivity is a radioactive plume released from the Fukushima Dai-Ichi Nuclear Power Plant.

"For perspective, the maximum potential radiation dose received by any ship's force personnel aboard the ship when it passed through the area was less than the radiation exposure received from about one month of exposure to natural background radiation from sources such as rocks, soil, and the sun."

Why would anyone believe that, having failed to detect (they say) the radioactive plume, the Navy has any credible way of knowing what exposure any sailor may have received? The Navy also claimed the Reagan was 100 miles away from Fukushima "at the time," not specified. The Navy further claimed that only 17 crew members in three helicopter crews were exposed, that the "low level radioactivity was easily removed... by washing with soap and water," and "no further contamination was detected." This impossible-to-believe narrative was then effectively contradicted by the next paragraph of the press release:

"As a precautionary measure, USS Ronald Reagan and other U.S. 7th Fleet ships conducting disaster response operations in the area have moved out of the downwind direction from the site to assess the situation and determine what appropriate mitigating actions are necessary."

If no further contamination was detected, then it should be relatively easy to determine what appropriate mitigation actions were necessary.

Navy "supports the troops," at least until they really need it

According to individual reports, the Navy passed out iodine pills to officers and pilots, but not to most of the crew. The Navy also required crew members, before they could go on shore leave later in Thailand, to sign papers stating that they were healthy and couldn't sue the Navy. Clearly that would be mitigating for the Navy, even if it meant abandoning people whose potential radiation injuries wouldn't be showing up for months or years.

That's exactly what happened to Petty Officer 3rd Class Daniel Hair, as reported in Stars and Stripes in July 2013. Hair is part of the lawsuit against TEPCO and, like the other plaintiffs, has classic symptoms of low level radiation poisoning. The article also minimizes the possible exposure on the Reagan, quoting a Navy spokesman who uses the exact same language as the 2011 press release to minimize Fukushima radiation levels.

According to Stars and Stripes, Hair was told that the Reagan was just 5-10 miles off the coast of Fukushima. The paper also reported that:

"Sailors were drinking desalinated seawater and bathing in it until the ship's leadership came over the public address system and told them to stop because it was contaminated, Hair said. They were told the ventilation system was contaminated, and he claims he was pressured into signing a form that said he had been given an iodine pill even though none had been provided. As a low-ranking sailor, he believed he had no choice.

"The Navy has acknowledged that the Reagan passed through a plume of radiation but declined to comment on the details in Hair's story."

Most of the sick sailors are in their early twenties

There's no apparent reason to doubt that there are sick sailors, not all of them part of the lawsuit, but all of them with a common source of exposure from Fukushima. Two other plaintiffs, Maurice Enis and his girlfriend, Jaime Plym, held a press conference on March 11, 2013, that was part of a symposium at the New York Academy of Medicine dealing with the medical and ecological consequences of Fukushima. Enis and Plym both served on the Reagan, as the Huffington Post reported:

"The couple had been looking forward to leaving the military and starting a family. Now, Enis said, they don't know if children will be an option due to health problems they've both developed since signing away government liability. They've both been honorably discharged from the military and don't know how they will pay for medical treatment. Plym has a new diagnosis of asthma and her menstrual cycle is severely out of whack. Enis has lumps on his jaw, between his eyes and on his thigh. He's also developed stomach ulcers and lung problems, and is losing weight and hair."

In all, the Pentagon sent some 70,000 American military personnel to serve in or near Japan in response to Fukushima during the period from March 12 to May 11, 2011. And in 2011, the Dept. of Defense set out to do the right thing for these men and women who may have been exposed to harmful levels of radiation. The Defense Dept. announced plans to establish the Operation Tomodachi Registry to help these people track their health histories, an initiative pushed by Independent Senator Bernie Sanders of Vermont. According to the Pentagon:

"The DOD may establish an environmental health surveillance registry when: 1) occupational and environmental health exposures could cause illness, or 2) when the exposure is not expected to cause illness, but individuals need access to exposure data. In either case, these registries will contain the names of all the individuals who were known or believed to have been exposed along with estimates of their exposure."

No radiation level is "safe," and internal radiation is less safe

Since the Pentagon admitted it was unprepared to deal with radiation risk when the Fukushima crisis began, the creation of a registry was something of an after-the-fact means of making up for that initial unpreparedness. By the end of July 2011, the Pentagon reported that it had "already done 'internal monitoring' of radiation levels inside the bodies of 7,700 personnel who worked in parts of the disaster zone closest to the damaged power plant, including those who flew over the disaster zone...."

But the same report went on to minimize the impact without addressing the timeframe in which the radiation was received:

"The scans revealed that 98 percent of those personnel did not have elevated radiation inside their bodies.... among the 2 percent of service members (about 154 individuals) with elevated internal radiation levels the highest readings were about 25 millirems, equivalent to the dose that they would receive from 2 1/2 chest X-rays."

The lawsuit against TEPCO has 50-75 plaintiffs, as new people continue to join. If the 2 per cent with elevated exposure levels found by the Pentagon is relevant, then there would be something like 1,400 potential plaintiffs among the 70,000 service members who were part of Operation Tomodachi. The lawsuit was filed in December 2012, before the radiation exposure registry was completed. In September 2012, the Pentagon put out another press release touting the usefulness of the registry even though it asserted that "no Defense Department personnel or their families were exposed to radiation causing adverse health conditions following the nuclear accident in Japan last year."

The Defense Dept. promised the registry would be finished in 2012. The suffering veterans filed their lawsuit December 21. Within a month, the Pentagon decided to drop the whole registry thing after an almost two-year effort, saying that it had decided that there was no serious contamination in the first place.

This decision means, as Roger Witherspoon wrote on his blog at the time, "there will be no way to determine if patterns of health problems emerge among the members of the Marines, Army, Air Force, Corps of Engineers, and Navy stationed at 63 installations in Japan with their families. In addition, it leaves thousands of sailors and Marines in the USS Ronald Reagan Carrier Strike Group 7 on their own when it comes to determining if any of them are developing problems caused by radiation exposure."

So as far as the government is concerned, officially, it doesn't matter if Operation Tomodachi becomes, for some who served, a mission kamikaze.

Radioactive isotopes also in bananas...

An article from our friends at afaz in German :



ENJOY PACIFIC SEAFOOD

RADIOAKTIVE ISOTOPE SIND GUT FÜR DICH – SIND JA AUCH IN DER BANANE! ODER?

http://www.afaz.at/

Das macht Appetit? Na dann los, essen wir eine Banane mit Hilfe des Internets, lesen wir nach!

"Kalium ist ein für die Erhaltung des Lebens essenzieller Mineralstoff (Mengenelement). Als wichtigstes intrazelluläres (= innerhalb einer Zelle) Kation ist Kalium an den physiologischen Prozessen in jeder Zelle beteiligt." ¹)

"ich hab immer meinen shakerbecher auf der waage stehen, wenn ich anfange zu mixen, deswegen weiß ich auch, wieviel sie ohne schalen wiegen! eine "normale" wiegt ziemlich genau 100g, wobei so richtige monster schonmal 200g erreichen können!" ²)

Nehmen wir also einmal an, die geschälte Banane in unserer Hand ist eine kleine, also eine mit 100 Gramm. Aber wie viel Kalium enthält die eigentlich? Es sind pro 100 g (wie praktisch!): *420 mg* ³).

"Kalium besteht zu 0,012 % aus dem radioaktiven Isotop ⁴⁰Kalium und hat daher eine spezifische Aktivität von 31.200 Becquerel pro Kilogramm." ¹⁾

"Becquerel, abgekürzt Bq, ist die SI-Einheit der Aktivität eines radioaktiven Stoffes (Formelzeichen A). Die Aktivität gibt die mittlere Anzahl der Atomkerne an, die pro Sekunde radioaktiv zerfallen."⁴

Im Falle unserer 100 g Banane sind das dann **13,1 Bq** – oder noch einmal anders:

Ein Gramm Kalium hat eine Aktivität von 31 Bq

"Der Kaliumgehalt unseres Körpers wird durch verschiedene Regelmechanismen konstant gehalten. Die Niere kann in 24 Stunden etwa 1 mmol / kg Körpergewicht mit dem Harn ausscheiden."⁵⁾

Wir halten fest: man kann gar nicht zu viele Bananen essen und sich so mit Kalium vergiften. Der Körper scheidet überflüssiges Kalium einfach wieder aus. Der Körper kennt Kalium – es war schon immer Teil seiner Umwelt.

Wie verhält es sich nun mit Cäsium?

"Radioaktives Cäsium wird vom Körper mit Kalium verwechselt, das heißt, nach der Aufnahme wird es vom Magen-Darm-Trakt vollständig resorbiert, verdrängt dann das im Körper befindliche Kalium und wird stattdessen von den Körperzellen aufgenommen und wie Kalium eingebaut. Vor allem in Muskel-, Nieren-, Leber- und Knochenzellen, aber auch im Blut reichert sich das gefährliche Cäsium an." ⁶

Aha. ¹³⁷Cäsium wird vom Körper nicht als Gift erkannt – dieses Isotop gab es vor der Atomtechnik auf der Erde nicht. Trotz der Ähnlichkeit zu Kalium funktioniert daher der Regelkreis anders: es wird wesentlich schlechter ausgeschieden ⁷), **es reichert sich an**.

Na, was soll's. Wir haben ja gerade gehört, auch ⁴⁰Kalium strahlt, dann strahlt's halt ein bisschen mehr, worin besteht der Unterschied?

Darin: Ein Gramm ¹³⁷Cäsium hat eine Aktivität von 3,215 TBq (**Tera**becquerel).⁸) Der Vorsatz für Maßeinheiten für den Faktor eine Billion ist Tera mit dem Zeichen T. Der Zahlenname Billion steht im deutschen Sprachgebrauch für die Zahl 1.000 Milliarden oder 1.000.000.000 = 10¹². ⁹)

Ein Gramm ¹³⁷Cäsium hat eine Aktivität von 3.215.000.000.000 Bq

Wir dividieren: pro Gewichtseinheit strahlt das künstliche Isotop ¹³⁷Cäsium also unvorstellbare **103.044.871.794 Mal stärker**! Wer daher das natürliche Kalium mit dem künstlichen ¹³⁷Cäsium vergleicht, vergleicht nicht nur einen Apfel mit einer Birne: Er vergleicht einen Apfel mit 103 Milliarden Birnen!

Obwohl uns nun der Appetit vergangen ist, folgen wir den Tatsachen noch bis zum bitteren Ende. In der Natur ist 0,012% des vorhandenen Kaliums das radioaktive Isotop ⁴⁰Kalium. Wenn eine Bananenstaude aber auf verseuchter Erde steht, dann weiß natürlich kein Mensch, wieviel Kalium durch das hochgiftige Cäsium ersetzt wurde. Na, sagen wir einmal … ein Millionstel, es wurden lediglich 0,000.001% der Kaliumatome durch Cäsiumatome ersetzt. Nun, in diesem Falle würde die Banane mit 1,35 Millionen Becquerel strahlen, *das sind 17 mSv*¹⁰ – Atommüll.

Aber diese letzte Annahme ist freilich nur ein Rechenbeispiel, denn: Bei *so viel Strahlung (ein Millionstel der Kaliumatome ist durch Cäsium ersetzt)* würde der Bananenstrauch wahrscheinlich sofort eingehen.

Und vor allem: in Fukushima wachsen sowieso keine Bananen, oder?

[Hervorhebungen durch den Autor]

1)

http://de.wikipedia.org/wiki/Kalium 2)

http://www.muskelbody.info/forum/ernaehrung/4821-gewicht-banane.html 3)

http://www.jameda.de/naehrstoffe/kalium/ 4)

http://de.wikipedia.org/wiki/Becquerel_%28Einheit%29 5)

http://www.dr-gumpert.de/html/kalium.html 6)

http://www.n-tv.de/wissen/Wie-wirkt-radioaktives-Caesium-article2988881.html 7)

http://www.reisen-leben.com/lexikon/die-halbwertszeit-definitionen-fur-physikalische-biologische-und-effektive-halbwertszeit/ 8)

http://www.internetchemie.info/chemiewiki/index.php?title=Caesium-137 9)

http://de.wikipedia.org/wiki/Billion 10) http://de.wikipedia.org/wiki/Dosiskonversionsfaktor



11) http://afaz.at/downloads/symp/starr_caesium_folgen_japan.pdf

US Defense Department to checkon sailors' health

January 16, 2014

US to check sailors' radiation risk

http://www3.nhk.or.jp/nhkworld/english/news/20140116_13.html

The US Defense Department is to conduct a health survey of US sailors who took part in the relief efforts for the March 2011 quake and tsunami in Japan.

The House of Representatives passed a budget bill on Wednesday that would mandate a survey. The Senate is expected to pass the bill this week.

The bill calls for the Pentagon to report back to Congress by mid-April on the condition of the US naval servicemen who reported health problems after taking part in the relief operation. It also requests details of the measures taken by the US military to stave off radiation exposure.

Some US sailors have filed a lawsuit with a US court against the operator of the Fukushima Daiichi nuclear plant, Tokyo Electric Power Company.

The plaintiffs include crewmembers of the USS Ronald Reagan, a nuclear-powered aircraft carrier. They claim they were exposed to radiation from the meltdowns at the plant and have an increased risk of developing cancer. They blame Tokyo Electric for failing to provide accurate information about the nuclear accident.

Jan. 16, 2014 - Updated 03:04 UTC

Devastation from nuclear disaster truly "unknowable"

Source : SimplyInfo http://www.fukuleaks.org/web/?p=12245 Radiation Makes People Invisible – Full Article January 30th, 2014 **Radiation Makes People Invisible**

Robert Jacobs

Radiation makes people invisible. We know that exposure to radiation can be deleterious to one's health; can cause sickness or even death when received in high doses. But it does more. People who have been exposed to radiation, or even those who suspect that they have been exposed to radiation that never experience radiation related illnesses may find that their lives are forever changed – that they have assumed a kind of second class citizenship. They may find that their relationship to their families, to their communities, to their hometowns, to their traditional diets and even traditional knowledge systems have become broken. They usually spend the remainder of their lives wishing that they could go back, that things would become normal. They slowly realize that they have become expendable and that their government and even their society is no longer invested in their wellbeing.

As a historian of the social and cultural aspects of nuclear technologies I have spent years working in radiation-affected communities around the world. Many of these people have experienced exposure to radiation from nuclear weapon testing, from nuclear weapon production, from nuclear power plant accidents, from nuclear power production or storage, or, like the people in the community that I live, Hiroshima, from being subjected to direct nuclear attack. For the last five years I have been working with Dr. Mick Broderick of Murdoch University in Perth, Australia on the Global Hibakusha Project. We have been working in radiation-affected communities all around the world. In our research we have found a powerful continuity to the experience of radiation exposure across a broad range of cultures, geographies, and populations. About half way between beginning this study and this present moment the nuclear disaster at Fukushima Daiichi happened here in Japan. One of the most distressing things (among so many) since this crisis began is to hear so many people, often people in positions of political power and influence say that the future for those affected by the nuclear disaster is uncertain. I wish that it were so, but there is actually a deep historical precedence that suggests that the future for the people of Tohoku is predictable.

In this short article I will outline some continuities to the experiences of radiation-affected people. Most of the following is also true for people who merely suspect that they have been exposed to radiation, even if they never suffer any health affects. Many have already become a part of the experiences of those affected by the Fukushima disaster. There are, of course, many differences and specificities to each community, but there is also much continuity.

Sickness and mortality– Sickness and even death are the results of exposure to radiation that people expect. It is important to know that there are many different ways that people can become ill after exposure to radiation. When people are exposed to high levels of gamma radiation they can suffer from acute radiation sickness and death can come in a matter of days, weeks or months. Tens of thousands of people died of acute radiation sickness in Hiroshima and Nagasaki after they survived the nuclear attacks. A nuclear weapon gives off a very large burst of gamma radiation that only lasts a very short time, but if the whole body is exposed to high levels it can cause illness and death relatively quickly.

For those who were not close to the detonation of a nuclear weapon, or within a short distance of a disaster like the Chernobyl or Fukushima disasters, illness is often the result of internalized alpha emitting particles. With nuclear detonations this comes down as "fallout." In the case of Chernobyl and Fukushima these came down over large areas as the plumes of the explosions there settled back to Earth. Alpha emitting particles cannot penetrate the skin like gamma radiation can, but rather are internalized through inhalation or swallowing or through cuts in the skin.

These particles don't give off a large amount of radiation, but if they lodge in the body they continue to expose a small number of cells 24 hours a day often for the rest of a person's life. This can result in cancers and immune disorders that develop later in life, sometimes a few years, sometimes after one or several decades. Since the plumes of the three explosions at Fukushima deposited large amounts of alpha emitters across a large area, this is the primary danger to those living in the contaminated areas. It is disingenuous

when nuclear industry apologists say things like "no one died at Fukushima" since they are well aware that for most of the people who will eventually get sick this process will take time. We are currently in the latency period for these illnesses, a point not missed by nuclear industry PR people.

Losses of homes, community and identity– Areas that experience radioactive contamination often have to be abandoned by those who live there. The levels of radiation may be high enough that continued habitation can be dangerous to health. In these cases people loose their homes; often traditional homes that may have been the primary residences for a family for multiple generations. In these cases one's identity may be deeply connected to the home and the land around the home. For communities that have to be abandoned the bonds that have been built up and that sustain the wellbeing of the community are disintegrated. Friends are separated, extended families are often separated, and schools are closed. People who have lived in the same place all of their lives have to make a fresh start, sometimes in old age, sometimes as children, and loose the communal structures that have supported them: shopkeepers who know them, neighbors who can be relied on, the simple familiarity that we have by being known and knowing our way around.

What is lost when a person is no longer able to eat an apple from a tree planted by their parent or grandparent? With the loss of community many people loose their way of making a living. This is especially true in less industrialized places where many people have been farmers or fishers or herders for generations. When someone who has only known farming is taken from the land they have tended, when someone who is a fisher can no longer fish in areas where they understand the natural rhythms and habits of the fish, it can be impossible to start over. Often such people are forced to enter service positions or become dependent on state subsidies, which further erodes their sense of self and wellbeing. Usually, those removed from their land because of contamination are placed into temporary housing. In almost all cases this housing is not temporary, but becomes permanent. Since it is initially intended to be temporary housing it is often very shoddy and cramped.

It can become impossible for multigenerational families that have been living together for decades to remain together. This can remove care for the elderly, childcare for young families and further erodes to continuity of family identity, knowledge and support. Removal from land also is accompanied by the loss of a traditional diet. Those without access to the lands and seas that have provided food for their families for generations often begin a journey of ill health fostered by a new diet composed of processed foods. In some communities such as the small villages around the former Soviet nuclear test site in Kazakhstan the people simply continue to live in dangerously contaminated homes. The state responsible for their exposures no longer exists and no government feels the responsibility to evacuate them. They live very traditional lives and most of their food is from their own gardens and from livestock raised on their contaminated land. Many of the long-lived radionuclides simply cycle through this ecosystem and those living here can be contaminated and recontaminated over many generations.

Loss of traditional knowledge– In some remote places survival is dependent on centuries old understandings of the land. In Australia the areas where the British conducted nuclear testing in the

outback are very difficult places to live. Traditional communities in these areas often have songs that hold and transmit essential knowledge about how to survive in such a harsh environment, such as – where to find water, when to hunt specific animals, when to move to various areas.

When the British relocated them to live in areas hundreds of kilometers from their traditional homes this knowledge became broken. It became impossible for the refugee population to survive living a traditional life in areas where they had no knowledge of the rhythms of the land and animals. This removal from their traditional lands led quickly to dependence on governmental assistance and severed what had been millennium of self-reliance. This led to the further erosion of community, familial and personal wellbeing.

Discrimination– People who may have been exposed to radiation usually experience discrimination in their new homes and often become social pariahs. We first saw this dynamic with the hibakusha in Hiroshima and Nagasaki who found it very difficult to find marriage partners since prospective spouses feared they would have malformed children, found it difficult to find jobs since employers assumed that they would be sick more often, and often become the targets of bullying. It became very common to hide the fact that ones family had been among those exposed to radiation.

Many people are familiar with the story of Sadako Sasaki who died at the age of twelve after being exposed to radiation from the nuclear attack on Hiroshima ten years earlier. Sadako folded paper cranes in accordance with a Japanese tradition that someone who folds 1,000 paper cranes is granted a wish. Sadako's story has become well known and children around the world fold paper cranes when they learn her story, many of which are sent here to Hiroshima. While Sadako has become a symbol of the innocence of so many hibakusha who were victims of the nuclear attack, her father tried to hide this fact so that his family would not suffer discrimination and was upset that his daughterhad become so famously afflicted.

Children whose families evacuated from Fukushima prefecture after the triple meltdowns at Fukushima found themselves the victims of bullying at their new schools. Cars with Fukushima license plates were scratched when parked in other prefectures. Often this is the result of the natural fear of contamination that is associated with people exposed to a poison. In the Marshall Islands those who were evacuated from Rongelap and other atolls that became unlivable after being blanketed with radioactive fallout from the Bravo test in 1954 have had to live as refugees on other peoples atolls for several generations now. The Marshall Islands have a very small amount of livable land and so being moved to atolls that traditionally belonged to others left them with no access to good soil and good locations for fishing and storing boats. They have had to live by the good graces of their new hosts, and endure being seen as interlopers.

Becoming medical subjects– Many people who have been exposed to radiation then become the subjects of medical studies, often with no information about the medical tests to which they are subjected. Hibakusha of the nuclear attacks on Hiroshima and Nagasaki became medical subjects of the Atomic Bomb Casualty Commission during the American occupation of Japan after World War Two. This study has continued to this day under the, now jointly US-Japan operated Radiation Effects Research Foundation. In the early days of the study Japanese hibakusha had no choice about being subjected to the medical exams. An American military jeep would appear in front of their homes and they had to go in for an examination,

whether it was a good time or not. They were not given information about the results of their tests. This has happened in many radiation-affected communities.

In 1966 a US nuclear bomber blew up in midair and its debris fell on the small village of Palomares, Spain. Four H-bombs fell from the plane, one into the sea, and three onto the small village. None exploded but two broke open and contaminated part of the town with plutonium and other radionuclides. To this day some of the residents of Palomares are taken to Madrid each year for a medical examination as the effects of exposure on their health is tracked. They have never been given any of the results of the tests nor informed if any illnesses they develop were related to their exposures. They are subjects, not participants in the gathering and assessing of the effects of radiation on their bodies. There is no doubt that such studies contribute data to our understanding of the health consequences of radiation exposures (the data itself is contentious for reasons that I won't go into here), however for those from whom the information is gathered, being studied but not informed reduces ones sense of integrity and agency in your own health maintenance. Many Pacific islanders exposed to radiation by the nuclear tests of the US, the UK and France had such experiences where they were examined and then sent off with no access to the results. Many report feeling as if the data had been harvested from them.

Anxiety– Often the first thing that those exposed to radiation are told is that they have nothing to worry about. Their anxieties are belittled. Radiation is a very abstract and difficult thing to understand. It is imperceptible – tasteless, odorless, invisible – adding to uncertainty that people feel about whether they were exposed, how much they were exposed to, and whether they and their loved ones will suffer any health effects. The dismissal of their anxieties by medical and governmental authorities only compounds their anxiety. When other members of their community develop health problems, such as thyroid cancer and other illnesses years later it can cast a pall over their own sense of wellbeing for the rest of their lives. Every time that they run a fever, every time that they experience pain in their stomachs, nosebleeds, and other common ailments this anxiety rears up and they think – this is it, it's finally got me. These fears extend to their parents their children and other loved ones. Every fever that their child runs triggers horrible fears that their child will die. Sadako was healthy for nine years following her exposure to radiation when she was two years old in Hiroshima. Then suddenly her neck began to swell and she was soon diagnosed with leukemia. This is the nightmare world that the parents of children exposed to radiation experience on a daily basis. Every ailment can rip them apart.

Radiophobia and blaming the victim– Since it is often the case that who is and isn't exposed to radiation, especially to internalized alpha emitting particles, is unknown, large numbers of people near a nuclear detonation, a nuclear production plant, a nuclear power plant accident, a uranium mining location and countless other sources of exposure to radiation worry about their health and the health of their loved ones. Among this group, some have been exposed and some have not. The uncertainty is part of the trauma. Often, as is currently the case for the people of Northern Japan, all of these people are dismissed as having undue fear of radiation, and are often told that their health problems are the result of their own anxieties. In some cases that may well be true but it is beside the point.

For those who have experienced some radiological catastrophe, who may have been removed from their homes and communities and lost those bonds and support systems, who are uncertain as to whether each flu or stomach ache is the harbinger of the end, and who cannot be certain that contamination from hard to find alpha emitting particles is still possible when their children play in the park, anxiety is the natural response. Even if it does cause health problems, it is not their fault: forces outside of their control have upended their lives and they now must live a life of uncertainty and often experience discrimination. Of course they are going to suffer from the anxiety that this situation produces. To blame them for this is to blame the victims in the situation and is a further form of traumatization.

Conclusions– Radiation makes people invisible. It makes them second class citizens who no longer have the expectation of being treated with dignity by their government, by those overseeing nuclear facilities near to them, by the military and nuclear industry engaged in practices that expose people to radiation, and often by their new neighbors when they become refugees. People exposed to radiation often loose their homes, either through forced removal or through contamination that makes living in them dangerous. They loose their livelihoods, their diets, their communities, and their traditions. They can loose the knowledge base that connects them to their land and insures their wellbeing. Radiation can cause health problems and death, and even when it doesn't it can cause devastating anxiety and uncertainty that can become crippling. Often those exposed to radiation are blamed for all of the problems that follow their exposures. After a nuclear disaster we count the victims in terms of those who died but they are only a small fraction of the people who are truly victimized by the event. Countless more suffer the destruction of their communities, their families, and their wellbeing. The devastation that a nuclear disaster truly wreaks is unknowable.

The lives of those exposed to radiation, or those in areas affected by radiation but uncertain about their exposures, will never be the same. As Natalia Manzurova, one of the "liquidators" at Chernobyl said in an interview published two months after the Fukushima triple meltdowns:"Their lives will be divided into two parts: before and after Fukushima. They'll worry about their health and their children's health. The government will probably say there was not that much radiation and that it didn't harm them. And the government will probably not compensate them for all that they've lost. What they lost can't be calculated."

(This article is condensed from a chapter from a book manuscript in preparation on the work of the Global Hibakusha Project by Dr. Robert Jacobs and Dr. Mick Broderick) Robert Jacobs is an associate professor at the Hiroshima Peace Institute of Hiroshima City University in Japan.

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Eight more children diagnosed with thyroid cancer

February 7, 2014

Eight more Fukushima kids found with thyroid cancer; disaster link denied [I]]

http://www.japantimes.co.jp/news/2014/02/07/national/eight-more-fukushima-kids-found-with-thyroid-cancer-disaster-link-denied/#.UvUV9YXrV1s

FUKUSHIMA – Eight more Fukushima children have been confirmed as having thyroid gland cancer following the prefecture's checkups, a local panel of experts said Friday, ruling out any link to the Tepco triple-meltdown calamity.

The prefecture began the checkups in 2011 due to the nuclear disaster at Tokyo Electric Power Co.'s Fukushima No. 1 power station. Those subject to the measure were 18 or under at that time.

The panel, made up mainly of doctors and other medical experts, said it is unlikely the disease was caused by exposure to radiation from radioactive materials from the stricken power station.

The panel said 75 people were suspected of having thyroid gland cancer as of the end of last year, of whom 33 were confirmed as having the disease. Three months before, the number of confirmed patients stood at 25.

The total number of people eligible for the checkups is 375,000, of whom about 270,000 have been examined.

Thyroid cancer cases rise among young people

February 8, 2014

Thyroid cancer cases increase among young people in Fukushima

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201402080047

THE ASAHI SHIMBUN

The number of young people in Fukushima Prefecture who have been diagnosed with definitive or suspected thyroid gland cancer, which is often associated with radiation exposure, has risen to 75, prefectural officials said Feb. 7.

That is 16 more than in November, when figures were last released. The number of definitive cases rose by seven, from 26.

The 75 are among 254,000 individuals for whom results of thyroid gland tests have been made available to date.

Only residents of Fukushima Prefecture who were aged 18 or under at the time of the 2011 Fukushima nuclear disaster are eligible to receive the thyroid gland tests administered by the prefectural government.

The latest figures include the results from 28,000 more individuals compared to the numbers released in November.

Medical and government officials in Fukushima say they do not believe the cases of thyroid gland cancer diagnosed or suspected in the 75 young people in the prefecture are linked to the 2011 nuclear accident.

Hokuto Hoshi, who chairs a panel that discusses matters related to the prefectural survey on the health impact from radiation on Fukushima's residents, referred to the fact that cases of thyroid gland cancer in children who lived near Chernobyl only began to increase four to five years after the 1986 nuclear accident.

Doctors at Fukushima Medical University said they will start analyzing genes in cancerous thyroid glands surgically removed from children to try to ascertain if radiation played a role in the pathology of their cancer.

"We hope to look for unknown types of gene mutations, other than those known to be associated with the generation of thyroid gland cancer, to study if they could serve as markers for determining if the cancers were induced by radiation," said Shinichi Suzuki, a professor of thyroid gland surgery with the university.

Even if exposure to radiation does increase the occurrence of thyroid gland cancer, it will take years before such a relationship can be established, whereas no method is currently available to determine whether individual cases of thyroid gland cancer were induced by radiation, Suzuki added.

The 75 young individuals with confirmed or suspected thyroid gland cancer, including one who was later diagnosed with a benign tumor, averaged 14.7 years in age when the Great East Japan Earthquake and tsunami triggered the meltdowns at the Fukushima No. 1 nuclear power plant in March 2011.

(This article was written by Teruhiko Nose and Yuri Oiwa.)

Harvey Wasserman: 50 reasons...

Thank you to Pectine (http://pectineactualités.wordpress.com/) for sending me this article

50 Reasons We Should Fear the Worst from Fukushima

Harvey Wasserman | February 2, 2014 12:45 pm |

http://ecowatch.com/2014/02/02/50-reasons-fear-fukushima/

[This is the first in a two part series]

Fukushima's missing melted cores and radioactive gushers continue to fester in secret. Japan's harsh dictatorial censorship has been matched by a global corporate media blackout aimed successfully—at keeping Fukushima out of the public eye. But that doesn't keep the actual radiation out of our ecosystem, our markets ... or our bodies.



Speculation on the ultimate impact ranges from the utterly harmless to the intensely apocalyptic . But the basic reality is simple: for seven decades, government Bomb factories and privately-owned reactors have spewed massive quantities of unmonitored radiation into the biosphere.

The impacts of these emissions on human and ecological health are unknown primarily because the nuclear industry has resolutely refused to study them.

Indeed, the official presumption has always been that showing proof of damage from nuclear Bomb tests and commercial reactors falls to the victims, not the perpetrators.

And that in any case, the industry will be held virtually harmless.

This "see no evil, pay no damages" mindset dates from the Bombing of Hiroshima to Fukushima to the disaster coming next ... which could be happening as you read this.

Here are 50 preliminary reasons why this radioactive legacy demands we prepare for the worst for our oceans, our planet, our economy ... ourselves.

1. At Hiroshima and Nagasaki (1945), the U.S. military initially denied that there was any radioactive fallout, or that it could do any damage. Despite an absence of meaningful data, the victims (including a group of U.S. prisoners of war) and their supporters were officially "discredited" and scorned.

2. Likewise, when Nobel-winners Linus Pauling and Andre Sakharov correctly warned of a massive global death toll from atmospheric Bomb testing, they were dismissed with official contempt ... until they won in the court of public opinion.

3. During and after the Bomb Tests (1946-63), downwinders in the South Pacific and American west, along with thousands of U.S. "atomic vets," were told their radiation-induced health problems were imaginary ... until they proved utterly irrefutable.

4. When British Dr. Alice Stewart proved (1956) that even tiny x-ray doses to pregnant mothers could double childhood leukemia rates, she was assaulted with 30 years of heavily funded abuse from the nuclear and medical establishments.

5. But Stewart's findings proved tragically accurate, and helped set in stone the medical health physics consensus that there is no "safe dose" of radiation ... and that pregnant women should not be x-rayed, or exposed to equivalent radiation.

6. More than 400 commercial power reactors have been injected into our ecosphere with no meaningful data to measure their potential health and environmental impacts, and no systematic global data base has been established or maintained.

7. "Acceptable dose" standards for commercial reactors were conjured from faulty A-Bomb studies begun five years after Hiroshima, and at Fukushima and elsewhere have been continually made more lax to save the industry money.

8. Bomb/reactor fallout delivers alpha and beta particle emitters that enter the body and do long-term damage, but which industry backers often wrongly equate with less lethal external gamma/x-ray doses from flying in airplanes or living in Denver.

9. By refusing to compile long-term emission assessments, the industry systematically hides health impacts at Three Mile Island (TMI), Chernobyl, Fukushima, etc., forcing victims to rely on isolated independent studies which it automatically deems "discredited."

10. Human health damage has been amply suffered in radium watch dial painting, Bomb production, uranium mining/milling/enrichment, waste management and other radioactive work, despite decades of relentless industry denial.

11. When Dr. Ernest Sternglass, who had worked with Albert Einstein, warned that reactor emissions were harming people, thousands of copies of his *Low-Level Radiation* (1971) mysteriously disappeared from their primary warehouse.

12. When the Atomic Energy Commission's (AEC) Chief Medical Officer, Dr. John Gofman, urged that reactor dose levels be lowered by 90 percent, he was forced out of the AEC and publicly attacked, despite his status a founder of the industry.

13. A member of the Manhattan Project, and a medical doctor responsible for pioneer research into LDL cholesterol, Gofman later called the reactor industry an instrument of "premeditated mass murder."

14. Stack monitors and other monitoring devices failed at Three Mile Island (1979) making it impossible to know how much radiation escaped, where it went or who it impacted and how.

15. But some 2,400 TMI downwind victims and their families were denied a class action jury trial by a federal judge who said "not enough radiation" was released to harm them, though she could not say how much that was or where it went.

16. During TMI's meltdown, industry advertising equated the fallout with a single chest x-ray to everyone downwind, ignoring the fact that such doses could double leukemia rates among children born to involuntarily irradiated mothers.

17. Widespread death and damage downwind from TMI have been confirmed by Dr. Stephen Wing, Jane Lee and Mary Osbourne, Sister Rosalie Bertell, Dr. Sternglass, Jay Gould, Joe Mangano and others, along with hundreds of anecdotal reports.

18. Radioactive harm to farm and wild animals downwind from TMI has been confirmed by the Baltimore News-American and Pennsylvania Department of Agriculture.

19. TMI's owner quietly paid out at least \$15 million in damages in exchange for gag orders from the affected families, including at least one case involving a child born with Down's Syndrome.

20. Chernobyl's explosion became public knowledge only when massive emissions came down on a Swedish reactor hundreds of miles away, meaning that—as at TMI and Fukushima—no one knows precisely how much escaped or where it went.

21. Fukushima's on-going fallout is already far in excess of that from Chernobyl, which was far in excess of that from Three Mile Island.

22. Soon after Chernobyl blew up (1986), Dr. Gofman predicted its fallout would kill at least 400,000 people worldwide.

23. Three Russian scientists who compiled more than 5,000 studies concluded in 2005 that Chernobyl had already killed nearly a million people worldwide.

24. Children born in downwind Ukraine and Belarus still suffer a massive toll of mutation and illness, as confirmed by a wide range of governmental, scientific and humanitarian organizations.

25. Key low-ball Chernobyl death estimates come from the World Health Organization, whose numbers are overseen by International Atomic Energy Agency, a United Nations organization chartered to promote the nuclear industry.

26. After 28 years, the reactor industry has still not succeeded in installing a final sarcophagus over the exploded Chernobyl Unit 4, though billions of dollars have been invested.

27. When Fukushima Units 1-4 began to explode, President Obama assured us all the fallout would not come here, and would harm no one, despite having no evidence for either assertion.

28. Since President Obama did that, the U.S. has established no integrated system to monitor Fukushima's fallout, nor an epidemiological data base to track its health impacts ... but it did stop checking radiation levels in Pacific seafood.

29. Early reports of thyroid abnormalities among children downwind from Fukushima, and in North America are denied by industry backers who again say "not enough radiation" was emitted though they don't know how much that might be.

30. Devastating health impacts reported by sailors stationed aboard the USS Ronald Reagan near Fukushima are being denied by the industry and Navy, who say radiation doses were too small to do harm, but have no idea what they were.

31. While in a snowstorm offshore as Fukushima melted, sailors reported a warm cloud passing over the Reagan that brought a "metallic taste" like that described by TMI downwinders and the airmen who dropped the Bomb on Hiroshima.

32. Though it denies the sailors on the Reagan were exposed to enough Fukushima radiation to harm them, Japan (like South Korea and Guam) denied the ship port access because it was too radioactive (it's now docked in San Diego).

33. The Reagan sailors are barred from suing the Navy, but have filed a class action against Tokyo Electric Power (Tepco), which has joined the owners at TMI, the Bomb factories, uranium mines, etc., in denying all responsibility.

34. A U.S. military "lessons learned" report from Fukushima's Operation Tomodachi clean-up campaign notes that "decontamination of aircraft and personnel without alarming the general population created new challenges."

35. The report questioned the clean-up because "a true decontamination operations standard for 'clearance' was not set," thereby risking "the potential spread of radiological contamination to military personnel and the local populace."

36. Nonetheless, it reported that during the clean-up, "the use of duct tape and baby wipes was effective in the removal of radioactive particles."

37. In league with organized crime, Tepco is pursuing its own clean-up activities by recruiting impoverished homeless and elderly citizens for "hot" on-site labor, with the quality of their work and the nature of their exposures now a state secret.

38. At least 300 tons of radioactive water continue to pour into the ocean at Fukushima every day, according to official estimates made prior to such data having been made a state secret.

39. To the extent they can be known, the quantities and make-up of radiation pouring out of Fukushima are also now a state secret, with independent measurement or public speculation punishable by up to ten years in prison.

40. Likewise, "There is no systematic testing in the U.S. of air, food and water for radiation," according to University of California (Berkeley) nuclear engineering Professor Eric Norman.

41. Many radioactive isotopes tend to concentrate as they pour into the air and water, so deadly clumps of Fukushima's radiation may migrate throughout the oceans for centuries to come before diffusing, which even then may not render it harmless.

42. Radiation's real world impact becomes even harder to measure in an increasingly polluted biosphere, where interaction with existing toxins creates a synergy likely to exponentially accelerate the damage being done to all living things.

43. Reported devastation among starfish, sardines, salmon, sea lions, orcas and other ocean animals cannot be definitively denied without a credible data base of previous experimentation and monitoring, which does not exist and is not being established.

44. The fact that "tiny" doses of x-ray can harm human embryos portends that any unnatural introduction of lethal radioactive isotopes into the biosphere, however "diffuse," can affect our intertwined global ecology in ways we don't now understand.

45. The impact of allegedly "minuscule" doses spreading from Fukushima will, over time, affect the minuscule eggs of creatures ranging from sardines to starfish to sea lions, with their lethal impact enhanced by the other pollutants already in the sea.

46. Dose comparisons to bananas and other natural sources are absurd and misleading as the myriad isotopes from reactor fallout will impose very different biological impacts for centuries to come in a wide range of ecological settings.

47. No current dismissal of general human and ecological impacts—"apocalyptic" or otherwise—can account over time for the very long half-lives of radioactive isotopes Fukushima is now pouring into the biosphere.

48. As Fukushima's impacts spread through the centuries, the one certainty is that no matter what evidence materializes, the nuclear industry will never admit to doing any damage, and will never be forced to pay for it (see upcoming sequel).

49. Hyman Rickover, father of the nuclear navy, warned that it is a form of suicide to raise radiation levels within Earth's vital envelope, and that if he could, he would "sink" all the reactors he helped develop.

50. "Now when we go back to using nuclear power," he said in 1982, "I think the human race is going to wreck itself, and it is important that we get control of this horrible force and try to eliminate it."

As Fukushima deteriorates behind an iron curtain of secrecy and deceit, we desperately need to know what it's doing to us and our planet.

It's tempting to say the truth lies somewhere between the industry's lies and the rising fear of a tangible apocalypse.

In fact, the answers lie beyond.

Defined by seven decades of deceit, denial and a see-no-evil dearth of meaningful scientific study, the glib corporate assurances that this latest reactor disaster won't hurt us fade to absurdity.

Fukushima pours massive, unmeasured quantities of lethal radiation into our fragile ecosphere every day, and will do so for decades to come.

Five power reactors have now exploded on this planet and there are more than 400 others still operating.

What threatens us most is the inevitable next disaster ... along with the one after that ... and then the one after that ...

Pre-wrapped in denial, protected by corporate privilege, they are the ultimate engines of global terror.

Visit EcoWatch's FUKUSHIMA page for more related news on this topic.

Harvey Wasserman edits www.nukefree.org, where petitions calling for the repeal of Japan's State Secrets Act and a global takeover at Fukushima are linked. He is author of SOLARTOPIA! Our Green-Powered Earth.

New suit filed against TEPCO by US sailors

February 9, 2014

U.S. Sailors Sick From Fukushima Radiation File New Suit Against Tokyo Electric Power

Harvey Wasserman | February 9, 2014 1:23 pm | Comments http://ecowatch.com/2014/02/09/u-s-sailors-fukushima-radiation/

Citing a wide range of ailments from leukemia to blindness to birth defects, 79 American veterans of 2011's earthquake/tsunami relief Operation Tomadachi ("Friendship") have filed a new \$1 billion class action lawsuit against Tokyo Electric Power.

The suit includes an infant born with a genetic condition to a sailor who served on the USS Ronald Reagan as radiation poured over it during the Fukushima melt-downs, and an American teenager living near the

stricken site. It has also been left open for "up to 70,000 U.S. citizens [who were] potentially affected by the radiation and will be able to join the class action suit."

Now docked in San Diego, the USS Reagan's on-going safety has become a political hot potato. The \$4.3 billion carrier is at the core of the U.S. Naval presence in the Pacific. Critics say it's too radioactive to operate or to scrap, and that it should be sunk, as were a number of U.S. ships contaminated by atmospheric Bomb tests in the South Pacific.



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The re-filing comes as Tepco admits that it has underestimated certain radiation readings by a factor of five. And as eight more thyroid cancershave surfaced among children in the downwind region. Two new earthquakes have also struck near the Fukushima site.

The amended action was filed in federal court in San Diego on Feb. 6, which would have been Reagan's 103rd birthday. It says Tepco failed to disclose that the \$4.3 billion nuclear-powered aircraft carrier was being heavily dosed from three melt-downs and four explosions at the Fukushima site. The Reagan was as close as a mile offshore as the stricken reactors poured deadly clouds of radiation into the air and ocean beginning the day after the earthquake and tsunami. It also sailed through nuclear plumes for more than five hours while about 100 miles offshore. The USS Reagan (CVN-76) is 1,092 feet long and was

commissioned on July 12, 2003. The flight deck covers 4.5 acres, carries 5,500 sailors and more than 80 aircraft.

Reagan crew members reported that in the middle of a snowstorm, a cloud of warm air enveloped them with a "metallic taste." The reports parallel those from airmen who dropped the Bomb on Hiroshima, and from central Pennsylvanians downwind from Three Mile Island. Crew members drank and bathed in desalinated sea water that was heavily irradiated from Fukushima's fallout.

As a group, the sailors comprise an especially young, healthy cross-section of people. Some also served on the amphibious assault ship Essex, missile cruiser Cowpens and several others.

The plaintiffs' ailments parallel those of downwinders irradiated at Hiroshima/Nagasaki (1945), during atmospheric Bomb tests (1946-1963), and from the radiation releases at Three Mile Island (1979) and Chernobyl (1986). Among them are reproductive problems and "illnesses such as Leukemia, ulcers, gall bladder removals, brain cancer, testicular cancer, dysfunctional uterine bleeding, thyroid illnesses, stomach ailments and a host of other complaints unusual in such young adults."

One 22-year-old sailor declared to the court that "Upon my return from Operation Tomodachi, I began losing my eyesight. I lost all vision in my left eye and most vision in my right eye. I am unable to read street signs and am no longer able to drive. Prior to Operation Tomodachi, I had 2/20 eyesight, wore no glasses and had no corrective surgery." Additionally, he said, "I know of no family members who have had leukemia."

Plaintiff "Baby A.G." was born to a Reagan crew member on Oct. 15, 2011—seven months after the crew members exposure—with multiple birth defects.

The suit asks for at least \$1 billion to "advance and pay all costs and expenses for each of the Plaintiffs for medical examination, medical monitoring and treatment by physicians," as well as for more general damages.

Both Tepco and the Navy say not enough radiation was released from Fukushima to harm the sailors or their offspring. But neither can say exactly how much radiation that might have been or where it went. The Navy has discontinued a program that might have tracked the sailors' health in the wake of their irradiation.
After its four days offshore from Fukushima the governments of Japan, South Korea and Guam refused the Reagan port entry because of its high radiation levels. The Navy has since exposed numerous sailors in a major decontamination effort whose results are unclear.

Now docked in San Diego, the Reagan's on-going safety has become a political hot potato. The \$6 billion carrier is at the core of the U.S. Naval presence in the Pacific. Critics say it's too radioactive to operate or to scrap, and that it should be sunk, as were a number of U.S. ships contaminated by atmospheric Bomb tests in the South Pacific. There are also rumors the Navy is considering deploying the Reagan to a port in Japan, where protests would be almost certain.

Filed on Dec. 12, 2012, the initial suit involved just eight plaintiffs. It was amended to bring the total to 51.

That action was thrown out at the end of 2013 by federal Judge Janis S. Sammartino on jurisdictional grounds.

URL of the video: (17.15)

http://www.youtube.com/watch?feature=player_embedded&v=DSz1wGc1PcU

A January deadline for re-filing this second amended complaint was delayed as additional plaintiffs kept coming forward. Attorneys Paul Garner and Charles Bonner say still more are being processed.

The suit charges Tepco lied to the public—including Japan's then Prime Minister Naoto Kan—about the accident's radioactive impacts. Kan says Unit One melted within five hours of the earthquake, before U.S. fleet arrived. Such news is unwelcome to an industry with scores more reactors in earthquake zones worldwide.

The Plaintiffs say Tepco negligently leveled a natural seawall to cut water pumping expenses. The ensuing tsunami then poured over the site's unprotected power supply, forcing desperate workers to scavenge car batteries from a nearby parking lot to fire up critical gauges. Tepco belatedly dispatched 11 power supply trucks that were immediately stuck in traffic.

Similar reports of fatal cost-cutting, mismanagement and the use and abuse of untrained personnel run throughout the 65-page complaint.

Attorney Bonner will explain much of it on the Solartopia Radio show at 5 p.m. EST on Tuesday, Feb. 11. Some 4,000 supporters have signed petitions at nukefree.org, moveon.org, Avaaz and elsewhere.

Feb. 11—like the eleventh day of every month—will be a worldwide fast day for those supporting the victims of Fukushima's deepening disaster.

The future of the U.S. Seventh Fleet, the nuclear power industry and a growing group young sailors tragically afflicted by Fukushima's secret fallout will be hanging in the balance.

Visit EcoWatch's FUKUSHIMA page for more related news on this topic.

Harvey Wasserman *edits* www.nukefree.org, *where petitions calling for the repeal of Japan's State Secrets Act and a global takeover at Fukushima are linked. He is* author of SOLARTOPIA! *Our Green-Powered Earth.*

Five years to study radiation in baby teeth

February 14, 2014

Fukushima dental group to study baby teeth for radiation exposure

By YOSHITAKA ITO/ Staff Writer

FUKUSHIMA--The prefectural dental association has started a five-year study to measure radiation levels in baby teeth to better determine the health effects of the 2011 Fukushima nuclear accident.

Radiation tends to collect in baby teeth as they develop and does not metabolize, giving researchers the opportunity to take accurate measurements of radiation exposure when the child was younger.

Officials of the Fukushima Prefecture Dental Association said the project, supported by the Environment Ministry, will be the first in Japan to use teeth to analyze radiation exposure.

The dental association will ask parents to provide the baby teeth of their children who were living in Fukushima Prefecture when the meltdowns occurred at the Fukushima No. 1 nuclear plant in March 2011.

The association hopes to collect 4,000 teeth a year to measure concentrations of radioactive strontium and cesium.

Researchers at Tohoku University in Sendai, Miyagi Prefecture, and Ohu University in Koriyama, Fukushima Prefecture, will also take part in the project.

Depending on the condition of the teeth turned in, it may take researchers several years to measure radiation levels.

The results of the study will be announced at academic conferences, while people in Fukushima Prefecture who donate the teeth will be informed individually of the measurements.

Dentists who are members of the prefecture dental association will ask parents and guardians for their consent to collect the baby teeth of their children that have fallen out or have been pulled.

They will send the collected teeth to a research facility at the graduate school of Tohoku University.

The association will also conduct a comparative study of baby teeth from children who live outside of Fukushima Prefecture. Dental association officials said they will ask their counterparts in Kyushu and other regions for help in the project.

Hiroshima survivor & doctor: Nuclear plants are "terrible things"

February 20, 2014

Hibakusha: Doctor who examined A-bomb survivors for decades says nuclear plants must go



Shuntaro Hida (Mainichi) http://mainichi.jp/english/english/features/news/20140219p2a00m0na007000c.html

In mid-January, Shuntaro Hida, a 97-year-old former army doctor who has examined A-bomb survivors for over 60 years, gave his first lecture of the year. In a talk filled with gestures, Hida -- himself a survivor of the atomic bombing of Hiroshima -- spent about an hour and a half describing the horrific aftermath of the Aug. 6, 1945 bombing, while discussing the terrible nature of radiation damage.

"You can't see the radiation emitted from nuclear bombs or nuclear power plants. People are less sensitive to threats when they can't see them," he says. As a reporter who had heard Hida speak many times, I sensed impatience in his words.

In the wake of the disaster at the Fukushima No. 1 Nuclear Power Plant triggered by the March 2011 Great East Japan Earthquake and tsunami, Hida, who is knowledgeable about internal radiation exposure, received a stream of requests to give lectures. Mothers with young children, in particular, formed groups and invited Hida to study meetings. Hida says that after a high-profile incident 60 years ago in which the No. 5 Fukuryu Maru Japanese tuna fishing boat was exposed to radiation from U.S. nuclear testing on Bikini Atoll, a group of housewives in Tokyo's Suginami Ward kick-started a ban-the-bomb movement. At one point he felt that such sentiment nowadays was more widespread than back then. Among the patients Hida has examined was a former U.S. military firefighter who was exposed to radiation in nuclear testing on Bikini Atoll. The man was involved in a U.S. nuclear test in 1946, eight years before the Fukuryu Maru incident, and fell ill immediately afterward. He came down with a condition known as chronic lymphedema and his arteries started hardening. The man was sure his symptoms were caused by exposure to radiation from the nuclear testing, but the U.S. government denied any causal relationship of this kind. In 1982, the man, who was fighting his case in a lawsuit, came to Japan to be examined by Hida. Hida can still clearly remember him appearing in his wheelchair, both legs severed from the knees as a result of his illness.

"The U.S. tried to make out that there was never any damage from radiation exposure. He was discarded by his own country, and was a victim of this stance," Hida says. The following year, Hida says, the man died of cancer.

"Several hundred Japanese fishing vessels besides the Fukuryu Maru were exposed to radiation at Bikini Atoll, but the U.S. and Japan stated that damage was confined to the Fukuryu Maru. This was in spite of the fact that many young fishermen died of cancer and other such ailments," Hida said, visibly angered. "Even now in Fukushima, they say there's no damage from radiation because they're worried about the consequences of harmful rumors. I've heard that there are many people who can't speak out." The disaster at the Fukushima No. 1 Nuclear Power plant also angers Hida.

Some 50,000 Fukushima residents forced to evacuate are still living outside Fukushima Prefecture. Yet at the same time, the administration of Prime Minister Shinzo Abe appears keen to restart Japan's nuclear reactors.

"It was a mistake for this A-bombed country, which is also rife with earthquakes, to build 50-odd nuclear reactors," he says. "If there's another nuclear accident at some other location, Japan will be ruined. Hida has a sense of crisis somewhat resembling impatience.

"Both nuclear weapons and nuclear power plants are terrible things that cannot be controlled through human knowledge. We have to make an effort and continue action so that these things do not remain, for the benefit of our children and grandchildren," he says. (By Fusajiro Takada, photo by Kan Takeuchi) (This is Part 2 of an ongoing series.)

Cow DNA to study effects of radiation

February 20, 2014

Group to study DNA of cows near crippled Fukushima nuclear plant

http://www.japantimes.co.jp/news/2014/02/20/national/group-to-study-dna-of-cows-near-crippled-fukushima-nuclear-plant/#.UwcmOYXrV1s

Kyodo

SENDAI – A team of Japanese and U.S. scientists have launched a study to analyze the effects of radiation exposure on cows raised near the crippled Fukushima No.1 nuclear power plant.

Researchers from Kitasato University and the University of South Carolina have begun analyzing the DNA of 40 cows at three ranches within a 20-km radius of the nuclear power plant, which was crippled by the March 2011 earthquake and tsunami.

The group announced the launch of the project on Wednesday during a symposium in Tokyo. Researchers will measure the total radiation exposure of the 40 "black-haired" beef cattle and check for lymphocyte DNA damage.

The researchers will compare the results with cows in Aomori Prefecture that have not been exposed to fallout from the plant.

In May 2011, the Japanese government ordered local authorities to slaughter farm animals within the 20km radius of the plant, but some ranchers ignored the orders.

The government subsequently allowed farmers to continue raising animals on the condition that they are not shipped from the ranches.

"I don't think we will find any effects on the animals at these radiation levels," said Masahiro Natsuhori, a professor at Kitasato University's School of Veterinary Medicine.

"If that's the case, the research will be a step toward revitalizing areas that people can't currently enter," he added.

The project was launched after Timothy Mousseau, a biology professor at the University of South Carolina, asked Natsuhori to collaborate on the research.

Negligible risk?

February 25, 2014 **Study finds rise in lifetime cancer risk among Fukushima 1-year-old girls** http://www.japantimes.co.jp/news/2014/02/25/national/study-finds-rise-in-lifetime-cancer-riskamong-fukushima-1-year-old-girls/#.UwxbKYXrV1s

Kyodo

The lifetime risk of developing cancer has risen slightly among 1-year-old girls in an area affected by the nuclear crisis at the Fukushima No. 1 power plant, according to a study published online in a U.S. science journal Monday.

The assessment was based on a two-month study by Japanese researchers conducted about a year and a half after the March 2011 nuclear disaster. The study checked the radiation exposure of around 460 residents living near the crippled plant Fukushima Prefecture.

Health risk assessment indicates that post-2012 doses will increase the lifetime solid cancer incidence rate among 1-year-old girls by 1.06 percentage points in the Tamano area of Soma, Fukushima Prefecture, from the average rate of 31.76 percent, the study, published in the Proceedings of the National Academy of Sciences, said.

The study, conducted in August and September of 2012, covered both male and female residents aged 3 to 96 in the village of Kawauchi, the Haramachi district of Minamisoma and the Tamano area — all located 20 to 50 km from the crisis-hit plant in Fukushima Prefecture.

The Fukushima nuclear plant was crippled by a massive earthquake and the ensuing tsunami, spewing radioactive materials into the environment and provoking concern about local residents' health.

The study said that increases in the lifetime solid cancer incidence rate were relatively higher in the Tamano area than the other two areas among all age groups.

In Tamano, the rate was 0.82 point higher than average for 10-year-old girls, 0.71 point higher for 1-year-old boys and 0.59 point higher for 20-year-old women.

The team, which included researchers from Kyoto University and Fukushima University, said they measured radiation doses from both internal exposure, caused by factors such as food intake, as well as external exposure.

It is the first time projections have been made regarding the probability of cancer risk related to the nuclear disaster, according to the team.

Akio Koizumi, a team member and Kyoto University professor of environmental health, acknowledged that lifetime cancer incidence likely rose slightly due to radiation exposure but said he sees the impact of radiation exposure on health as "small."

Study of residents exposure

February 26, 2014

Radiation exposure near Fukushima evacuation zones up to twice national average

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201402260076

By NOBUTARO KAJI/ Staff Writer

A group of researchers estimates the average annual radiation exposure by residents in some areas adjoining the evacuation zones due to the Fukushima nuclear accident was on par with normal background levels.

The researchers, including Akio Koizumi, a professor of health and environmental sciences at Kyoto University's Graduate School of Medicine, examined 459 people who lived within 20 to 50 kilometers from the crippled nuclear plant for two months from August 2012, when some residents began to temporarily enter the areas.

They found returnees to the areas targeted in the study--Kawauchi village, the Tamano district of Soma city and the Haramachi district of Minami-Soma city--were exposed up to an annual average of 2.5 millisieverts of radiation, in addition to background radiation exposure. The Japanese annual average dose from background radiation is 2.1 millisieverts.

The finding was published Feb. 25 in the online edition of the Proceedings of the National Academy of Sciences of the United States of America.

The study found that the external radiation exposure accounted for 99.5 percent of the total dosage, while the internal exposure was less than 1 percent.

The external radiation exposure was measured using personal dosimeters, while the internal exposure was determined through examination of what the test subjects ate and the measurement of atmospheric dust.

The researchers found the annual average exposure, excluding average natural doses in Fukushima Prefecture before the March 2011 nuclear accident, was 2.51 millisieverts for Tamano district residents, 1.51 millisieverts for Haramachi district residents and 0.89 millisieverts for residents of Kawauchi village.

The study estimates that residents of the Tamano district, starting from the age of 1 in 2012, will be exposed to 42.8 millisieverts by the time they turn 89, the highest of the three areas.

The study said the radiation exposure in the Tamano district would raise the risk of cancer by 0.71 percentage points for men and 1.06 percentage points for women compared with normal levels.

About 44 percent of men and 32 percent of women develop tumors in their lifetime.

Words of warning from the past

Fishermen exposed to H-bomb test warn of dangers of radiation after Fukushima

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201402260053

February 26, 2014

THE ASAHI SHIMBUN

For decades, former crew members of a Japanese fishing boat exposed to a U.S. thermonuclear hydrogen bomb test kept quiet about their experiences, fearing discrimination from a public with little knowledge about the dangers of radiation.

But as the 60th anniversary nears of their exposure to the hydrogen bomb blast, surviving crew members, many now over 80 years old, have begun passing on their experiences in the waters near Bikini Atoll.

The Fukushima nuclear accident, triggered by the March 11, 2011, Great East Japan Earthquake and tsunami, thrust the dangers of radiation exposure back into the spotlight, just like 60 years ago.

At the time, during the Cold War, the United States and Soviet Union were engaged in a nuclear arms race. In the first test of the U.S. Castle Bravo project, the 15-megaton bomb detonated on March 1, 1954, was 1,000 times more powerful than the atomic bomb dropped on Hiroshima in August 1945.

The men aboard the Daigo Fukuryu Maru, a tuna fishing boat based in Yaizu, Shizuoka Prefecture, were exposed to the fallout from the blast. Of the 23 crew members, only seven are still alive.

Masaho Ikeda, 81, remembers an exchange among older crew members on deck at the moment the bomb was detonated at dawn on March 1.

"The sun has risen!" a crew member shouted.

"The sun never rises in the west," replied a perplexed shipmate.

Ikeda was a 21-year-old engineer who was checking machinery in the engine room when the blast occurred. He quickly started up the engine when someone yelled, "Let's get out of here."

Ikeda and the other crew members who were exposed to the fallout were hospitalized. He would later return to his home in Yaizu, only to face discrimination. People were afraid to approach him, concerned that radiation was contagious. Not wanting to trouble his family, he rarely spoke about his experiences to an audience.

However, in September 2013, he began speaking at schools and other locations in response to a request from a local citizens group.

"I may not have much longer to live," Ikeda says. "After seeing the Fukushima nuclear accident, I strongly felt I had to pass on my own experience of being exposed to radiation."

Although he eventually underwent surgery for stomach cancer, Ikeda worked as a truck driver until reaching retirement age. There is still a scar on the back of his left hand where fallout from the sky landed that March morning 60 years ago.

"I feel as though I have always been ill, but I want to continue talking as long as I am alive," Ikeda says.

Another former crew member who has begun talking about his experiences is Susumu Misaki. Last September, the 87-year-old invited about a dozen senior high school students to his home in Shimada, Shizuoka Prefecture, also in response to a request from the same citizens group.

He talked about what it was like when he first returned home to Yaizu from Bikini Atoll.

"Once, when I was taking a bath, I used a dosimeter to measure the bathwater and the needle went beyond its limit," Misaki says.

Misaki spent 14 months in the hospital. After being discharged, he opened a tofu shop. On more than one occasion, he heard insensitive people joke about "nuclear bomb tofu." He chose to ignore their comments, realizing it would be useless to get into arguments over it.

The tuna caught by the Daigo Fukuryu Maru on that fateful fishing expedition had to be destroyed. Yaizu also suffered for a long time from the negative publicity associated with the incident.

Misaki feels sorry for the fishing ports in Fukushima Prefecture that are now facing a similar fate because of the accident at the Fukushima No. 1 nuclear power plant.

"Radiation is dangerous," he says. "Fukushima is going through the same thing we faced."

One crew member who has been relating his experiences for many years is 80-year-old Matashichi Oishi.

In late January, Oishi spoke at a junior high school in Tokyo.

"I want to talk about what happened when the 'ash of death' was created," he tells the students. "Unlike Hiroshima, there was no black rain, but we were showered by white rain. It had no smell or taste."

The black rain that fell on Hiroshima and Nagasaki after the 1945 atomic bombings was fallout composed of dust, ash and debris.

The white rain that Oishi referred to was fallout made up of pulverized coral that was blown into the sky by the hydrogen bomb. The fallout caused dizziness and nausea among the exposed crew members. Blisters formed on their skin where the white ash landed. About 10 days later, the hair of many crew members began falling out.

A fisherman since he was 14 years old, Oishi was 20 when the hydrogen bomb was detonated. After facing discrimination and prejudice, Oishi also had to deal with jealousy among those who learned that he and other crew members received about 2 million yen (\$19,550) in compensation from the U.S. government.

He moved from Shizuoka to Tokyo and ran a laundry shop while keeping secret his experience on the Daigo Fukuryu Maru.

Oishi married, but their first child was stillborn. He also was diagnosed with liver cancer. Still, no additional support was provided because the compensation from the U.S. government was considered the final settlement. His former crewmates began dying when they were still in their 40s and 50s.

That led Oishi to begin speaking about his experiences when he was about 50.

"Politicians are hiding the dangers of radiation," he says.

While the United States and Soviet Union were building up their nuclear weapon stockpiles during the Cold War, Japan began constructing nuclear power plants in earnest.

"Even though we went through frustrating times, we were all but forgotten," Oishi says. "It was as if the term 'Bikini Atoll' itself no longer existed."

However, after the Fukushima nuclear accident, Oishi was flooded with lecture requests.

"What happened on Bikini Atoll 60 years ago is being quietly repeated in Fukushima," he says.

Oishi could not help but link the evacuees from Fukushima Prefecture with the residents of the Marshall Islands, many of whom could not return to their homes after they were exposed to radiation. The United States conducted 67 tests of nuclear weapons in the Marshall Islands, the site of the U.S. Pacific Proving Grounds, between 1946 and 1958.

Oishi temporarily suspended his speaking engagements after suffering a brain hemorrhage in 2012. He still finds it difficult to speak because of the aftereffects. He has resumed speaking, but now relies on the assistance of Mari Ichida, a curator at the Daigo Fukuryu Maru Exhibition Hall in Tokyo's Koto Ward, where the fishing boat is on display.

On Feb. 25, Oishi left for the Marshall Islands to attend a meeting to commemorate the 60th anniversary of the fishing boat's exposure to fallout that is planned for March 1.

It will be his first visit to the Marshall Islands in 10 years. Although he may not be in the best of health, Oishi said he wants to continue speaking out to remind people that mankind cannot exist alongside nuclear weapons and nuclear power plants.

(This article was compiled from reports by Sokichi Kuroda, Koichi Tokonami and Masato Tainaka.)

US sailors - new stunning documents

February 26, 2014 http://ecowatch.com/2014/02/26/navy-knew-fukushima-contaminated-uss-reagan/

Documents Say Navy Knew Fukushima Dangerously Contaminated the USS Reagan

Harvey Wasserman | February 26, 2014 12:05 am |

A stunning new report indicates the U.S. Navy knew that sailors from the nuclear-powered USS Ronald Reagan took major radiation hits from the Fukushima atomic power plant after its meltdowns and explosions nearly three years ago.

If true, the revelations cast new light on the \$1 billion lawsuit filed by the sailors against Tokyo Electric Power. Many of the sailors are already suffering devastating health impacts, but are being stonewalled by Tepco and the Navy.

The Reagan had joined several other U.S. ships in Operation Tomodachi ("Friendship") to aid victims of the March 11, 2011 quake and tsunami. Photographic evidence and first-person testimony confirms that

on March 12, 2011 the ship was within two miles of Fukushima Dai'ichi as the reactors there began to melt and explode.

In the midst of a snow storm, deck hands were enveloped in a warm cloud that came with a metallic taste. Sailors testify that the Reagan's 5,500-member crew was told over the ship's intercom to avoid drinking or bathing in desalinized water drawn from a radioactive sea. The huge carrier quickly ceased its humanitarian efforts and sailed 100 miles out to sea, where newly published internal Navy communications confirm it was still taking serious doses of radioactive fallout.

Scores of sailors from the Reagan and other ships stationed nearby now report a wide range of ailments reminiscent of those documented downwind from atomic bomb tests in the Pacific and Nevada, and at Three Mile Island and Chernobyl. A similar metallic taste was described by pilots who dropped the atomic bomb on Hiroshima, and by central Pennsylvanians downwind of Three Mile Island. Some parts of the atolls downwind from the South Pacific bomb tests remain uninhabitable six decades later.

Among the 81 plaintiffs in the federal class action are a sailor who was pregnant during the mission, and her "Baby A.G.," born that October with multiple genetic mutations.

Officially, Tepco and the Navy say the dose levels were safe.

But a stunning new report by an American scholar based in Tokyo confirms that Naval officers communicated about what they knew to be the serious irradiation of the Reagan. Written by Kyle Cunningham and published in Japan Focus, "Mobilizing Nuclear Bias" describes the interplay between the U.S. and Japanese governments as Fukushima devolved into disaster.

Cunningham writes that transcribed conversations obtained through the Freedom of Information Act feature naval officials who acknowledge that even while 100 miles away from Fukushima, the Reagan's readings "compared to just normal background [are] about 30 times what you would detect just on a normal air sample out to sea."

On the nuclear-powered carrier "all of our continuous monitors alarmed at the same level, at this value. And then we took portable air samples on the flight deck and got the same value," the transcript says. Serious fallout was also apparently found on helicopters coming back from relief missions. One unnamed U.S. government expert is quoted in the Japan Focus article as saying:

At 100 meters away it (the helicopter) was reading 4 sieverts per hour. That is an astronomical number and it told me, what that number means to me, a trained person, is there is no water on the reactor cores and they are just melting down, there is nothing containing the release of radioactivity. It is an unmitigated, unshielded number. (Confidential communication, Sept. 17, 2012).

The transcript then contains discussion of health impacts that could come within a matter of "10 hours. It's a thyroid issue."

Tepco and the Navy contend the Reagan did not receive a high enough dose to warrant serious concern. But Japan, South Korea and Guam deemed the carrier too radioactive to enter their ports. Stock photographs show sailors working en masse to scrub the ship down.



Sailors aboard the USS Ronald Reagan wash down the flight deck to remove potential radiation contamination while operating off the coast of Japan providing humanitarian assistance in support of Operation Tomodachi, March 22, 2011.

The \$4.3 billion boat is now docked in San Diego. Critics question whether it belongs there at all. Attempts to decontaminate U.S. ships irradiated during the Pacific nuclear bombs tests from 1946-1963 proved fruitless. Hundreds of sailors were exposed to heavy doses of radiation, but some ships had to be sunk anyway.

Leaks at the Fukushima site continue to worsen. Despite its denials, Tepco recently admitted it had underestimated certain radiation releases by a factor of 500 percent. A new report indicates that particles of radioactive Cesium 134 from Fukushima have been detected in the ocean off the west coast of North America.

Global concerns continue to rise about Fukushima's on-going crises with liquid leaks, the troubled removal of radioactive fuel rods, the search for three missing melted cores, organized crime influence at the site and much more. The flow of information has been seriously darkened by the pro-nuclear Abe Administration's State Secrets Act, which imposes major penalties on those who might report what happens at Fukushima.

But if this new evidence holds true, it means that the Navy knew the Ronald Reagan was being plastered with serious radioactive fallout and it casts the accident in a light even more sinister than previously believed.

The stricken sailors are barred from suing the Navy, and their case against Tepco will depend on a series of complex international challenges.

But one thing is certain: neither they nor the global community have been getting anything near the full truth about Fukushima.

Visit EcoWatch's NUCLEAR page for more related news on this topic.

Harvey Wasserman *edits* www.nukefree.org, *where petitions calling for the repeal of Japan's State Secrets Act and a global takeover at Fukushima are linked. He is author of* SOLARTOPIA! Our Green-Powered Earth.

Still unable to go home...after 60 years

February 27, 2014

60 years after nuclear tests, Marshall Islanders still waiting to return home

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201402270075



The 80-meter-deep Bravo Crater was created by a hydrogen bomb test on March 1, 1954. (Kenta Sujino)

By TARO NAKAZAKI/ Staff Writer

Banjo Joel fondly recalls his return home to Bikini Atoll after the U.S. government provided assurances that radiation from nuclear bomb testing no longer posed a threat to health.

He said the wind gently blew over the tranquil island surrounded by pristine beaches and azure water. But despite the government's safety declarations, the wind was carrying an invisible threat that later forced Joel and other islanders to flee once more in the 1970s.

Close to three years after the meltdowns at the Fukushima No. 1 nuclear power plant, thousands of evacuees are waiting for word on when they can safely return home.

For former residents of Bikini Atoll in the Marshall Islands, the wait has continued for decades.

Bikini Atoll, located about 4,000 kilometers southeast of Tokyo, consists of 23 coral islets arranged in the shape of a necklace. On the northwest corner of the atoll lies a huge depression commonly known as Bravo Crater.

The crater was created on March 1, 1954, when a 15-megaton bomb was detonated as part of the U.S. Castle Bravo project. The bomb was 1,000 times more powerful than the atomic bomb dropped on Hiroshima on Aug. 6, 1945, and it blasted a hole about 2 km in diameter and about 80 meters deep.

Before the hydrogen bomb test, all 167 residents of Bikini Atoll were forced to move to other parts of the Marshall Islands.

Since 1991, the U.S. government has worked with the Bikini local government on decontamination measures as part of a plan to have islanders return to their homes.

But with the 60th anniversary of the hydrogen bomb test just two days away, there is still no indication of when the former residents can return.

In 2010, UNESCO designated Bikini Atoll a world cultural heritage site. Although plans were drawn to use the designation to attract tourists, no specific progress has been made.

The Bikini local government is still using offices in Majuro, the capital of the Republic of the Marshall Islands.

Jason Aitab, 63, a Bikini council member, said the radiation on Bikini Atoll made it impossible to return.

He also expressed distrust of the United States and recalled escorting U.S. scientists to the atoll on a number of occasions. None of the scientists would touch the local food prepared at welcoming receptions.

The Bravo test spread radioactive materials over such a wide area that the fallout reached islands where residents had not been evacuated beforehand.

One such island is Rongelap Atoll, where decontamination work has started. Plans have been made for the former residents to return home, but not one has done so.

When islanders were moved from Bikini Atoll, they were told the hydrogen bomb test would be "for the good of mankind and to end all world wars."

Some Bikinians relocated to Ejit Island, about 600 kilometers to the southeast. Now, all 280 or so residents of Ejit are Bikinians or their family members.

The United States conducted 67 tests of nuclear weapons in the Marshall Islands, the site of the U.S. Pacific Proving Grounds, between 1946 and 1958. In 1968, U.S. President Lyndon Johnson declared Bikini Atoll safe and encouraged former islanders to return.

About 100 of them returned to Bikini, including Banjo Joel, now 63, who stayed there for five years from 1974.

In 1977, radioactive strontium-90 exceeding U.S. environmental standards was detected in well water. The following year, the U.S. Interior Department said cesium-137 levels on the atoll were so high that residents could not permanently live there. That forced the islanders to once again leave the atoll.

Joel, who lives on Ejit, said he wants to return again, but he does not believe it is safe.

His older brother, Korent, 65, lives on the outskirts of Majuro, the capital of the Marshall Islands. Korent still regrets that his family returned to Bikini. At that time, he was an itinerant worker in the Philippines.

After returning to Bikini, Korent worked as a captain of a ship that was on a secret mission to measure radiation levels in the Marshall Islands. Around Bikini, the levels went beyond the limit of the dosimeters.

Korent said he only realized how much radiation remained when he saw the measurements with his own eyes. Had he known about the radiation, he would never have allowed his family members to return.

He has nine children but he feels young people should not return to Bikini because no one knows if the radiation has disappeared even 60 years after the nuclear tests.

SLOW REPATRIATION PROCESS

About 180 km east of Bikini Atoll lies Rongelap, where plans are slowly moving forward to have residents return permanently.

Soil contaminated with radioactive materials 60 years ago was dug up and buried under the runway on Rongelap.

Newly paved roads wind through coconut palm forests before reaching what appears to be an exhibition ground for new homes. One neighborhood has about 40 white buildings with silver-colored tin roofs. The 50 or so people now living on Rongelap are in charge of maintaining and managing the social infrastructure needed for the return of residents.

To generate jobs, experimental hog and chicken farms have been set up on the island.

Decontamination work has continued since 1998. The United States contributed \$40 million (about 4 billion yen) toward a fund for the decontamination work. Coconut trees were cut down and topsoil removed using bulldozers. Still, only about 0.15 square kilometer of land has been decontaminated, or just 2 percent of the island's area.

Construction of housing was completed last year, but many still stand empty.

A total of 86 Rongelap islanders, including some in their mother's womb, were exposed to radiation from the Bravo test. The United States moved residents to other islands, but many returned home after Washington declared Rongelap safe in 1957.

However, those residents again left the island in 1985 after an increase in miscarriages, stillbirths and thyroid gland disorders.

Kenneth Kedi, 42, represents Rongelap in the Marshall Islands Senate. He said the history of spreading health damages by having residents return must not be forgotten.

A former senator, Abacca Maddison, 47, said the United States wanted to wash its hands of the issue by completing the permanent return of residents.

ISLAND WITH REPATRIATED RESIDENTS

Enewetak Atoll, one of the Marshall Islands that was also used as a nuclear testing ground, has seen a return of former residents.

Like Bikini and Rongelap, the United States set up a fund for decontamination work on Enewetak. Residents began moving back en masse in 1980.

The northern part of the atoll is still off-limits because of high radiation levels. There are also restrictions on consuming food taken from that area.

Neil Flores, 44, the city manager of the atoll, proudly states that about 800 people, including children, have returned to Enewetak. He said only a few of them are still worried about radiation.

Pointing to the fact that many people now live in Hiroshima and Nagasaki, Flores said it was pointless to be afraid of unseen dangers.

Enewetak is also home to an unusual site.

Visible from the sky are two adjacent circular shapes, one blue and the other gray. The shapes were originally craters with diameters of about 100 meters created by nuclear tests.

The crater that appears blue from the water has been left untouched.

But for the other crater, soil removed in the decontamination work was poured in and covered with concrete. The crater, which had a depth of about 9 meters, has turned into a gray dome about 7 meters in height.

In memoriam

February 28, 2014

Forgotten' victims of U.S. H-bomb testing dying in despair, hopelessness http://ajw.asahi.com/article/behind_news/social_affairs/AJ201402280079



Mitsuyoshi Taira, second from right, Toyofusa Nakajima, third from right, around 1954 aboard the Yahiko Maru (Provided by Kazue Oshima)

THE ASAHI SHIMBUN

While the world marks the 60th anniversary of the crew of the fishing boat Daigo Fukuryu Maru's deadly exposure to fallout from a U.S. hydrogen bomb test in the Pacific, hundreds of "forgotten" victims who were also exposed to the testing are reliving the painful memories.

"It is too late (to seek out the truth)," said a former crew member of the Yahiko Maru, a cargo ship sailing in waters near the Castle Bravo test on March 1, 1954, one of the most powerful U.S. thermonuclear blasts. The Daigo Fukuryu Maru, a Japanese tuna fishing boat based in Shizuoka Prefecture, is memorialized as a victim of the Castle Bravo test, one of a succession of U.S. nuclear tests carried out in the mid-Pacific 60 years ago, with all of its crew members being exposed to radiation.

When six nuclear tests were conducted between March and May 1954 on Bikini Atoll in the Marshall Islands, a total of 1,000 boats and ships are also estimated to have been sailing in nearby waters.

Because the Daigo Fukuryu Maru incident occurred when Japan was about to introduce nuclear power plants from the United States, both Tokyo and Washington hoped to settle the issue as quickly as possible.

They, therefore, limited acknowledging the consequences of radiation exposure from the hydrogen bomb testing to the Daigo Fukuryu Maru, and ignored the crews of other boats and vessels possibly exposed to fallout.

The Yahiko Maru, which set off from then Kuchinotsu town (present-day Minami-Shimabara city) in Nagasaki Prefecture in 1954, is one of the forgotten victims.

At the port town located at the southern tip of the Shimabara Peninsula, which was known as the "town of sailors," Mitsuyoshi Taira, Toshiyuki Miura and Toyofusa Nakajima boarded the 7,000-ton cargo ship.

Taira and Miura were 39 and 51 years old, respectively, when they climbed aboard the vessel, and worked as a steersman and the No. 1 oiler. Nakajima, then 50, was a cook.

From January through May 1954, the Yahiko Maru twice shuttled between Japan and Makatea Island in French Polynesia. On March 1, 1954, the day of the Castle Bravo test, the vessel was on its first voyage, which began on Jan. 13, and was sailing 500 kilometers northeast of Bikini Atoll.

After the journey, Taira, Miura and Nakajima were diagnosed with cancer and other afflictions, and died over the next 30 years.

Although the government has not acknowledged their deaths were due to radiation exposure, their bereaved families suspect the cause was connected to the Castle Bravo test.

"My father had contracted every disease (until his death)," said Taira's oldest daughter, Kyoko Nakagama, 68, who currently lives in Oita Prefecture.

According to Nakagama, her father collapsed from a bout of sudden dizziness and nausea around 10 days before the Yahiko Maru returned to Tokyo Port from its second trip to the South Pacific on May 30, 1954.

All 48 crew members underwent blood tests at medical centers in Tokyo or Tamano, Okayama Prefecture. Six of them, including Taira, were diagnosed as "having leukopenia caused possibly by exposure to radioactive substances," and hospitalized at Okayama University Hospital.

Taira was discharged from the health-care center 20 days later, but subsequently suffered from anemia, angina and other afflictions, and was repeatedly hospitalized.

In 1975, Taira submitted a shipping company-issued document that said "he was exposed to radiation on Bikini Atoll" as well as doctor's certification to apply for a "hibakusha" nuclear weapon survivor's certificate. But his application was refused because the certificate was intended only for victims of the 1945 U.S. atomic bombings of Hiroshima and Nagasaki.

The former steersman passed away because of decreased cardiac function in January 1986.

"I can't help but feel that the government had left the matter unresolved," said Nakagama.

The eldest daughter of Miura, who died of lymph node cancer in October 1967, one and a half months after being hospitalized, also said her father would have been able to live longer if the state had acknowledged the relationship between his condition and his exposure to radiation.

"If we had been able to prove he was exposed to radiation, my father could have been provided with better treatment," said Kuni Miyake, 80.

Nakajima passed away in May 1973 due to gastric cancer.

"If there are no records, one's cause of cancer is regarded as unexplained," said Kazue Oshima, 76, Nakajima's second daughter. "Unless continuous follow-up research is conducted, whatever happens in the future can be dismissed with the simple words, 'The cause cannot be identified.' " The Yahiko Maru's 48 crew members also included Kinya Yamamoto, the ship's doctor.

The 32-year-old physician, who learned of Washington's nuclear testing over the radio, instructed other crew members to stay out of the rain. Yamamoto died of myelodysplastic syndrome, a type of hematopoietic disorder, in 2008.

His oldest daughter, Yumiko Urayoshi, 55, said her father had repeatedly stressed that "my body is evidence" and continued taking detailed notes on changes in his condition until shortly before his death.

As former crew members of the Yahiko Maru become increasingly elderly, the number of those who possibly bear witness to the dangers of radiation exposure declines--only six members were confirmed still living via the latest Asahi Shimbun research.

The former Yahiko Maru sailor, who resides in Hiroshima Prefecture, said there is no choice for crew members but to accept the current situation.

"Japan at that time made few complaints to the United States," said the man, who was hospitalized for a month after returning from the second 1954 voyage. "I feel sorry for those who died previously, but I could not endure the situation unless I delude myself into believing their ages at death were their natural life spans given by heaven."

(This article was written by Hajimu Takeda and senior staff writer Yasuji Nagai.)

March1, 2014

Bikini Atoll hydrogen bomb test remembered

http://www3.nhk.or.jp/nhkworld/english/news/20140301_15.html

Saturday marks 60 years since a US hydrogen bomb test in Bikini Atoll in the Pacific Ocean exposed crewmembers of a Japanese fishing boat to radiation.

The United States conducted the test at the atoll in the Marshall Islands on March 1st, 1954. Twenty-three crewmembers of the No. 5 Fukuryu-maru from the central Japanese city of Yaizu were exposed to radiation.

Many people on nearby islands were also exposed to radiation. They are suffering from health problems, such as thyroid abnormalities, to this day.

Rongelap Atoll is about 200 kilometers from Bikini Atoll and its islands were also contaminated by radioactive material.

The islands have been decontaminated and reconstruction efforts are now underway.

But fear of radiation exposure has prevented former residents from returning to the islands.

The islanders will attend a ceremony in the Marshall Islands' capital, Majuro, on Saturday to call for the abolition of nuclear weapons.

An 80-year-old former crewmember of the No. 5 Fukuryu-maru, Matashichi Oishi, will take part in the event.

Mar. 1, 2014 - Updated 03:35 UTC

Commemoration

March 2, 2014

On eve of 3/11 anniversary, Japanese victims of Bikini Atoll commemorated

http://www.japantimes.co.jp/news/2014/03/02/national/on-eve-of-311-anniversary-japanese-victims-of-bikini-atoll-commemorated/#.UxIXGIXrV1s

AFP-JIJI

Around 1,800 people marched in Yaizu, Shizuoka Prefecture, on Saturday to mark the 60th anniversary of a U.S. hydrogen bomb test at Bikini Atoll, as Japan prepares to commemorate the Fukushima nuclear crisis three years ago.

The 1954 test exposed residents on the Marshall Islands to massive amounts of radiation. The fallout also contaminated the Japanese tuna fishing boat Daigo Fukuryu Maru (Lucky Dragon No. 5), which was near the atoll when the H-bomb detonated.

The ship's chief radioman, Aikichi Kuboyama, died of acute organ failure only seven months later at the age of 40, while 15 of the boat's 23 other crew members later died of cancer and other causes.

While the precise cause of Kuboyama's death has been disputed, the incident sparked an anti-nuclear movement in Japan nine years after Hiroshima and Nagasaki were leveled by atomic bombs in the closing days of World War II.

On Saturday, some 1,800 people marched to Kuboyama's grave in the port city of Yaizu. The city has held similar events to commemorate the incident for three decades, while the boat has been refitted and put on display at a memorial hall in Tokyo since 1976. It draws around 100,000 visitors every year.

"I want to see nuclear power abolished," Akira Ibi, a 70-year-old Yaizu citizen, said in an interview, adding he also wants to get rid of the nearby Hamaoka atomic plant on the Pacific coast.

Three years after the March 11, 2011, Great East Japan Earthquake and tsunami killed or left missing around 18,500 people in Tohoku and sent three reactors at the Fukushima No. 1 plant into core meltdowns, tens of thousands of people remain stuck in temporary housing after fleeing the region.

The nation's 50 nuclear reactors are all currently offline due to the crisis but Prime Minister Shinzo Abe is taking steps to restart some if they are deemed safe for operation.

"The government is trying to restart reactors by overlooking the danger of nuclear power," Kimiko Abe, 64, told the Mainichi Shimbun. "Nothing has changed after 60 years."

March 1, 2014 **Remembrance event held in Shizuoka Pref. for Bikini Atoll nuclear test victim** http://mainichi.jp/english/english/newsselect/news/20140301p2a00m0na016000c.html

YAIZU, Shizuoka -- A remembrance event was held here on March 1 for Aikichi Kuboyama, the chief radio operator on the Daigo Fukuryu Maru tuna fishing boat, who died around six months after the ship was hit by "death ash" from nuclear testing in Bikini Atoll, Marshall Islands, in 1954.

Organizers estimate that around 1,800 people attended the ceremony. They carried photographs of Kuboyama, who was 40 at the time of the incident, as well as banners and flags proclaiming messages such as "No to nuclear weapons!" and "Eliminate atomic bombs."

The group then set off from JR Yaizu Station on an about two-kilometer march to Kotokuin, a temple in the city where Kuboyama's grave is located, chanting for the abolition of nuclear weapons and an end to nuclear power. Many also held roses to commemorate Kuboyama's love of gardening.

According to Yaizu municipal officials, 16 of the Daigo Fukuryu Maru's 23 crew members have already passed away.

Kimiko Abe, 64, from Aomori, commented, "The government is closing its eyes to nuclear dangers as it aims to restart nuclear power plants. Even after 60 years, nothing has changed."

March 01, 2014 (Mainichi Japan)

Caught in radiactive ash

February 8, 2014 Blast from the past: Lucky Dragon 60 years on

http://www.japantimes.co.jp/opinion/2014/02/08/commentary/blast-from-the-past-lucky-dragon-60-years-on/#.UvfR4IXrV1s

BY JEFF KINGSTON

Sixty years ago, on March 1, 1954, a Japanese fishing boat named Lucky Dragon No. 5 was doused by radioactive fallout from a U.S. hydrogen-bomb test, codenamed Castle Bravo, on Bikini Atoll in the Marshall Islands. Although the bomb was over 1,000 times more powerful than the one dropped on Hiroshima in August 1945, Bravo was just one of 67 nuclear tests the U.S. conducted in that part of the North Pacific between 1946-58, rendering some atolls uninhabitable.

On the morning of the test, the wind blew radioactive fallout onto unlucky islanders, American servicemen and that Japanese boat fishing for tuna 160 km east of the blast site, some 32 km outside the exclusion zone. The crew reported that sandy ash fell onto the vessel for a few hours, and soon after they began to suffer nausea. By the time they returned to their home port of Yaizu in Shizuoka Prefecture on March 14, they had serious symptoms of radiation sickness and were hospitalized in Tokyo. The radio operator died six months later with American doctors insisting fallout was not the cause — a finding that Japanese doctors disputed.

The U.S. government's response was defensive, marked by a level of suspicion and prickliness that only the truly guilty can conjure up. The chairman of the U.S. Atomic Energy Commission apparently told President Dwight Eisenhower, based on no evidence, that the crew may have been Soviet spies trying to gather information. In the end, the U.S. provided trivial compensation to the men — but without any admission of legal responsibility.

And the contaminated tuna? It was sold in the Osaka central market and contaminated fish was consumed. Media reports stoked public anxieties and a fish-eating country stopped eating fish. Fish markets closed amid the hysteria and the government quickly set up radiation-inspection facilities in designated ports to try to reassure spooked consumers — but with little success.

Then, when a Japanese scientist trying to assess the public-health dangers asked an American media contact to request information from the U.S. Atomic Energy Commission, the American's bureau chief blocked transmission of the letter, assuming it was a publicity stunt designed to embarrass the United

States. U.S. doctors who examined the crewmen also seemed unsympathetic — declaring that they were in better condition than expected and would recover within a few weeks.

During the postwar Allied Occupation that ended in 1952, Japan's media had been forbidden from reporting on nuclear-bomb-related issues, so the Lucky Dragon incident was an opportunity to vent long-suppressed anguish and sparked intensive critical coverage.

The incident, and American efforts to downplay the consequences, infuriated many Japanese. This indignation kindled an anti-nuclear, anti-American movement that gathered steam, culminating in mass demonstrations against the U.S.-Japan Security Treaty in 1960.

Meanwhile, food-safety issues led housewives in Tokyo's Suginami Ward to establish what became a powerful consumers movement. More famously, the Lucky Dragon incident inspired the sci-fi film "Godzilla," whose eponymous monster awoken by the bomb tests first strode the nation's big screens later the same year.

In a recent email interview with Robert Jacobs, an American researcher affiliated with the Hiroshima Peace Institute at Hiroshima City University, he explained: "As I've written in my 2010 book 'The Dragon's Tail: Americans Face the Atomic Age,' the Bravo test was how the world really learned the true dangers of radioactive fallout from nuclear detonations. Until that time the U.S. had been able to keep this fairly secret. People knew that survivors in Hiroshima suffered from radiation sickness, but assumed that these were all people close enough to experience the other effects of the bomb (blast and heat).

"Even after the disaster of the Bravo test, the U.S. was able to keep a lid on things for a few weeks, carefully managing reports of contamination of the Rongelapese (people in the Marshall Islands), but when the Lucky Dragon pulled into port they were no longer able to contain the news.

"The main thing the Lucky Dragon told us about radiation was that you could be over 160 km away from the detonation of a nuclear weapon and it could still kill you. What had previously been abstract fears about the genocidal nature of nuclear weapons was suddenly made real, with real information, and with real victims.

"This led to the kind of research that showed that people all over the world were being affected by radiation from nuclear tests (Project Sunshine) and spurred the movement to ban nuclear-weapons testing in the atmosphere. Part of the rollout of the Atoms for Peace discourse the following year was to try to push back against the growing sense that nuclear weapons could actually kill all life on Earth. "It was this incident that led to the proliferation of radiation-mutated sci-fi monsters (such as Godzilla and the giant ants in "Them!"), all of which were given life and power by nuclear testing, not nuclear warfare."

Jacobs adds, "Had the Lucky Dragon not made it to port, and had it not done so in a place with a relatively free press, the nuclear powers may have been able to hide the toxic damage of their testing regimes for some more years."

Luckily it happened back then — because these days it would probably be designated a special secret and buried.

This shameful tale gets worse. The U.S. Congress investigated Marshall Islanders' compensation claims and made financial settlements. The redress money was then invested in an income-generating fund, but evaporated in one of those Wall Street moments, leaving most islanders high and dry, the majority receiving less than 15 percent of what they were promised.

As usual, too, zapped U.S. veterans were just screwed. Eisenhower never offered an apology to the Japanese victims, nor did he demonstrate contrition about the Lucky Dragon incident, while the testing continued for another four years.

It's time for Washington to live up to values it trumpets and take the measure of this disgraceful history.

I agreed with the Obama administration's criticism of Prime Minister Shinzo Abe's disastrous visit to Yasukuni Shrine at the end of last year, and was impressed by Ambassador Caroline Kennedy's frank criticism of the Taiji dolphin slaughter. That's what friends are for. But U.S. credibility in Japan would soar if Washington started taking responsibility and expressing contrition for its own past misdeeds. Kennedy could start by visiting the Lucky Dragon Museum in Tokyo, where the ship is on display, and offering an official government apology for what happened.

Isn't it time the U.S. started apologizing? Maybe it would find that people everywhere would be readier to hear its criticisms if it would also admit its mistakes.

Jeff Kingston is the director of Asian Studies, Temple University Japan.

February 18, 2014 Hibakusha: Former fisherman caught in 1954 nuke test tells his story

Matashichi Oishi is pictured in Ota Ward, Tokyo, on Jan. 28, 2014. (Mainichi) 拡大写真 http://mainichi.jp/english/english/features/news/20140218p2a00m0na013000c.html

This March 1 will mark 60 years since the fishing boat Daigo Fukuryu Maru was caught in radioactive ash from a U.S. nuclear test at the Bikini Atoll. Matashichi Oishi, 80, was a fisherman on that boat, and even while suffering from numerous ailments, he continues his quest to spread word of his story.

In late January, Oishi gave a speech at a Tokyo junior high school. Moving slowly with a cane, Oishi approached the stage, where he began to speak to the gathered junior high students in a slightly gravelly voice. "I'm old but I've got a lot I want to share," he said.

He wanted the students to know that the terror of nuclear weapons, their effects beyond the ability of humans to handle, continues today. "There is nothing more frightening than continuing to push forward when you know no way to deal with the potential problems," he said. There was a sense of urgency within his calm voice.

Oishi became a fisherman at age 14. He was 20 in January 1954 when he and the rest of those on the tuna fishing boat Daigo Fukuryu Maru set out from Yaizu Port in Shizuoka Prefecture. On March 1 that year, the boat was exposed to radioactive ash from the U.S. nuclear test at the Bikini Atoll of the Marshall Islands.

"There was no taste or smell. It was like it was snowing," says Oishi.

A few days later, Oishi began to have blisters on his skin, and his hair began to fall out. He and the others who had been on board went to the hospital. Half a year later, Oishi watched the radio operator dying from acute radiation poisoning right before his eyes. Amidst the wails of the family and fishermen, he felt anger brew up within him.

After he left the hospital, Oishi found that discrimination and prejudice awaited him, as did jealousy of the around 1.9 million yen in compensation he had received from the U.S. government. He decided to move to Tokyo where he could live in hiding amongst the crowds there. He opened a dry-cleaning shop in Ota Ward and put the past behind him.

However, 30 years ago he pulled the plug on his silence. What pushed him to do so was frustration with many things surrounding the Bikini Atoll incident -- the attempt by the U.S. and Japanese governments to use two million U.S.

dollars' worth of compensation payment to put an end to talk of the incident without clear assignment of responsibility, the death of other crewmembers who had left the hospital thinking they were all better, people forgetting the lessons taught by the incident, and the continuing development of nuclear weapons. He began telling his story, and has now held over 700 speeches.

In his speeches, Oishi has repeated a message. "The Bikini incident is relevant to today." He says, "Both as weapons and as power sources, nuclear technology has advanced. Radiation is invisible but will come back to affect our bodies. Everyone must know this." He feels that after the Fukushima nuclear disaster, people have finally started to understand what he has been saying.

In April 2012, Oishi collapsed from bleeding in the brain. After being hospitalized and going through rehabilitation he resumed his speeches, but he continues to be partially paralyzed.

"I've been able to live twice as long as my comrades. I won't stop my speeches, even if I have to drag my leg there," he says. He has also been afflicted with liver cancer, diabetes and irregular heartbeat, and always has his medicine and wheelchair nearby. He is now accompanied by his daughter and a grandchild when he goes to give his speeches.

A junior high student who listened to Oishi's speech asked him a question: What should we do to get rid of nuclear weapons? Oishi responded, "People are taken by and motivated by what's right in front of them, so I think that as long as people are around, nuclear weapons will be, too." Though he has long thought on the problem, he has not come up with a good solution for eliminating nuclear weapons. "I'd like all of you to think about what happiness is. If you keep thinking about that, maybe something will change," he said with a kind smile.

Oishi has decided to spend March 1 this year at the Marshall Islands. "The voice of a single old man, a former fisherman and launderer, is small," he says. He plans to join the islands' inhabitants, who were also exposed to radiation from the test, in making a case to the world. (This is Part 1 of an ongoing series)

February 18, 2014 (Mainichi Japan)

Bikini: A reminder of the irreparable

March 8, 2014

Sixty years since Bikini's sacrifice

http://www.japantimes.co.jp/opinion/2014/03/08/editorials/sixty-years-since-bikinis-sacrifice/#.UxxIioXrV1s

The Marshall Islands have marked the 60th anniversary of the U.S. hydrogen bomb test in the Bikini Atoll on March 1, 1954. That test bomb was 1,000 times more powerful than the atomic bomb dropped on Hiroshima in 1945. It completely destroyed one island and exposed thousands in the area, including Japanese workers on the fishing boat Fukuryu Maru No. 5, to deadly radiation. Hundreds of other fishing boats are believed to have been exposed to fallout from that bomb test.

The day deserves greater recognition as a day of nuclear disaster, as do many other days. Between 1946 and 1958, the United States conducted 67 nuclear tests at Bikini and in the Marshall Islands.

Those atmospheric tests, most of which were larger than the Hiroshima atomic bombing, produced mushroom clouds and huge amounts of nuclear fallout. The Marshall Islands were contaminated so badly that many areas became unlivable.

The tests destroyed the culture of the islands, irradiated thousands of people, ruined a large swath of the Pacific and accomplished very little other than add to the Cold War arms race between the Soviet Union and the United States.

In the years after the test, the U.S. told the evacuated inhabitants of nearby islands that it was safe to return. However, a high level of residual radiation exposed returning residents to contaminated water, air and locally grown food.

That type of false assurance from supposed authorities on safety might sound familiar to anyone living near nuclear power plants. Regardless of whether nuclear tests were used as a form of "atomic diplomacy" — as the Marshall Islands tests were — or to research efficient production of energy, the safety of nuclear tests and nuclear power plants has always been overstated.

The U.S. compensated the Marshall Islands monetarily, but that hardly restored the cultural heritage and the uprooted lives. The U.S. also paid for decontamination, but few islanders believe their islands to be truly safe.

Similarly, in Fukushima, Miyagi and Iwate prefectures, monetary compensation will hardly begin to rectify the damage caused by Tokyo Electric Power Co.'s mishandling of the March 2011 Fukushima No. 1 plant meltdown. As in the Marshall Islands, contamination of the area will take generations to mitigate.

Marshall islanders, like residents of Fukushima, continue to live in an extended exile, or "indefinite displacement," as a report to the United Nations Human Rights Council called it.

The Bikini Island testing disaster should stand as a stark reminder of the irreparable damage that the release of nuclear radiation — intentionally or mistakenly — can cause to people and the environment at any time.

US sailors & fallout

March 10, 2014

Stakes high as ailing U.S. Navy sailors take on Tepco over Fukushima fallout

http://www.japantimes.co.jp/community/2014/03/10/issues/stakes-high-as-ailing-u-s-navy-sailors-take-on-tepco-over-fukushima-fallout/#.Ux35t4Vrx_Q

by David Mcneill



Decontamination time: U.S. Navy crews mop up the flight deck to remove radioactive substances from USS Ronald Reagan on March 23, 2011, off the coast of Tohoku, after the aircraft carrier's forces spent 10 days helping with rescue and aid missions in the wake of the 3/11 earthquake and tsunami. | AP Issues|THE FOREIGN ELEMENT Stakes high as ailing U.S. Navy sailors take on Tepco over Fukushima fallout

byDavid Mcneill

Soon after the Fukushima nuclear crisis began, Mike Sebourn says he began noticing changes in his body. First came nosebleeds, headaches and nausea. In August 2011 the symptoms worsened. Previously fit and strong, he began to lose energy and experience excruciating pain.

Today, the former U.S. Navy officer says one side of his body has withered. "My right arm is about an inchand-a-half smaller than my left; my leg, too. Nobody can figure out what's wrong." After 17 years' service on American military bases in Japan, he has been forced to retire — aged 37.

Sebourn fears his condition was triggered by his job during Operation Tomodachi, the huge relief mission mounted by the U.S. military during the March 2011 disaster. After the Fukushima No. 1 nuclear plant went into meltdown on March 11, he was dispatched to Misawa Air Base in far-northern Aomori Prefecture to check helicopters for radiation.

The work put him in close contact with contaminated aircraft for weeks.

Radiation levels were high enough to require a mask and respirator, he says, but all he wore was gloves. "To be honest, I really hope what's wrong with me is not radiation-related. But I know radiation works in slow decay. So I'm worried about what will happen 10 or 15 years down the road." Sebourn is one of about 80 U.S. Navy personnel — most in their 20s and 30s — named in a new \$1 billion class-action lawsuit against Tokyo Electric Power Co. The suit claims Tepco was negligent about safety and lied to the sailors and the public about radiation levels at the No. 1 plant at the same time as Japan was asking for help for victims of the earthquake and tsunami.

Citing the 2012 Diet Commission report on the Fukushima disaster, lawyers Paul Garner and Charles Bonner say the utility knew the plaintiffs were going to be exposed to unsafe levels of radiation because it was aware that the plant had experienced a triple meltdown, but chose to keep it secret.

The plaintiffs are dealing with the consequences, say Garner and Bonner, "with illnesses such as leukemia, ulcers . . . brain cancer, brain tumors, testicular cancer, dysfunctional uterine bleeding . . . and a host of other complaints unusual in such young adults." The plaintiffs include a baby born with "multiple birth defects" to a servicewoman seven months after the meltdown.

"The injured servicemen and women will require treatment for their deteriorating health, medical monitoring, payment of their medical bills, appropriate health monitoring for their children and monitoring for possible radiation-induced genetic mutations," says the lawsuit, which was filed in San Diego on Feb. 6. "Some of the radiological particles inside of these service personnel have long half-lives, from six to 50 to 100 years."

Tepco and the U.S. Navy insist the amount of radiation released after the crisis was insufficient to have caused the range of medical problems cited by the plaintiffs. Neither would comment for this article about the lawsuit.

The stakes are high. If successful, the case opens up the possibility of claims from not just American military personnel and their dependents but potentially thousands of Japanese who experienced the fallout. Bonner says it has been filed on behalf of 70,000 U.S. citizens who were in Japan during the crisis, including 5,500 sailors on board the USS Ronald Reagan aircraft carrier during Operation Tomodachi. "We expect more to join."

Most of the plaintiffs were serving on the carrier, which arrived off the coast of Japan on a humanitarian mission on March 12. Garner says fuel melt in the No. 1 plant's reactor 1 began five hours after the March 11 quake, "giving Tepco ample time to warn them off. "These first responders were entitled to know before sacrificing their health and lives."

Lead plaintiff Lindsay Cooper spent much of her time on the flight deck of the Ronald Reagan during the crisis, about a mile offshore from the No. 1 plant. She recalls the constant taste of "aluminum foil" in the air

during the days after March 11. "We just weren't concerned about the radiation — our concern was getting food and humanitarian assistance to those that were in need on the coastline."

Crew members aboard the carrier used contaminated desalinated water to shower and brush their teeth. Cooper says the captain subsequently announced that all drinking water had been contaminated. Later, when they tried to sail away from the radiation, the carrier was blocked from entering ports in Japan, South Korea and Guam.

"No ports would let us in," she recalls.

Cooper says the radiation she ingested off Fukushima has knocked her thyroid "out of whack," leaving her with fluctuating weight problems and disrupted menstrual cycles. Hoping for a second child, Cooper says she can no longer get pregnant. She too retired from the service for health reasons in 2011. The lawsuit is likely to hinge on two key factors: how much radiation crew members were exposed to, and whether the bewilderingly wide range of symptoms — from inoperable brain cancer to chronic back pain — can be attributed to their exposure. Experts say demonstrating exposure is likely to be more straightforward than proving its impact.

"If the USS Reagan was offshore during March 11, 12 and 13, the sailors could have received whopping doses ... as they clearly exhibit deterministic effects," says Ian Fairlie, a respected independent consultant on radiation risks. He says the No. 1 disaster sent several big plumes out to sea on those dates. He calculates that most of the damage was done via inhalation and skin absorption, not water ingestion. Even with such expert testimony, however, the plaintiffs face an uphill battle determining the exact extent of their exposure. Speaking on condition of anonymity, one U.S.-based environmental expert said establishing causation in cases of exposure to environmental contaminants — radiation or otherwise — is a major legal challenge.

"Of course we know that they were exposed to some (likely very high) levels of radiation, and that some or many of these illnesses may have been caused by that exposure, [but] it's very difficult to prove it," the expert wrote in an email. "And because it's difficult to prove, it's even harder to argue in a court of law."

If the case goes to trial, scientists for Tepco and the navy are likely to argue that the symptoms do not match typical cases of radiation exposure, which normally trigger acute sickness in the immediate days and weeks after an accident. They will say that cancers would normally be expected to appear much later.

The first attempt to launch the suit was dismissed in December after a San Diego judge said she was unable to rule on a conspiracy charge against the Japanese government. Judge Janis L. Sammartino said

she did not have jurisdictional authority to determine whether the government — together with Tepco — had lied about the extent of the disaster to its U.S. counterpart.

Sammartino left the door open for a second attempt but signaled a potentially serious legal hurdle. She said the plaintiffs must show — at a minimum — that the navy would have behaved differently "but for Tepco's allegedly wrongful conduct." Courts are constrained, however, from probing the decision-making processes of the U.S. military.

Garner and Bonner say the revelation, from former Prime Minister Naoto Kan, that meltdown was underway before the Ronald Reagan sailed for the coast of Fukushima relieves judges of the need to second-guess what military commanders were doing.

"The soldiers didn't know that meltdown had happened," says Bonner. "They were helping tsunami victims, totally unaware that Tepco was dumping millions of tons of radioactive water into the Pacific." Many of the plaintiffs are reluctant to talk to the media. According to Stars and Stripes newspaper, some have been threatened and harassed and "accused of being fortune-seekers" by their peers. But Mike Sebourn denies money is the purpose of the suit.

"I don't want to get rich — I couldn't care less. I want some kind of medical fund that will take care of us down the road if we get really sick." Without a court ruling, Sebourn says, "There is not a single bit of evidence anywhere at all that says we were exposed to radiation."

Sebourn is also worried about his half-Japanese son, who remained at his home base, Naval Air Facility Atsugi, in Kanagawa Prefecture, while his father worked up north. Atsugi was a "dumping ground" for irradiated equipment, says Sebourn.

"My son missed a month of school because he would throw up uncontrollably for 50 times a day. If it's not radiation, I don't know what else it could be. I just want to know what happened to us."

Rise in radiation an hour before the explosion

March 11, 2014

Radiation surge detailed in 2011 accident
http://www3.nhk.or.jp/nhkworld/english/news/20140311_33.html

Data recorded by radiation monitoring posts near the Fukushima Daiichi nuclear power plant show the environmental radiation level rose sharply 1 hour before a hydrogen explosion took place at the plant.

14 monitoring posts around the plant recorded the radiation level every 20 seconds after the plant was damaged by the earthquake and tsunami on March 11th of 2011.

Data recorded by one of the monitoring posts, located 5.6 kilometers northwest of the plant, show that the radiation level began surging after 2:10 PM on March 12th.

At 2:40 and 40 seconds, the post measured 4.6 millisieverts per hour, the highest level of the day. That was about 1 hour before a hydrogen explosion occurred at the No.1 reactor of the plant.

The data suggest the accumulated doses of radiation would have reached 1 millisievert in about 20 minutes. 1 millisievert is the annual exposure limit for ordinary people.

Masamichi Chino, senior researcher at the Japan Atomic Energy Agency, says the rise in the environmental radiation level may have been caused by an emergency operation to protect the No.1 reactor by reducing pressure within the containment vessel. Tokyo Electric Power officials began the so-called vent work at around 2:00 PM.

The vented air was released after going through water to reduce the amount of radioactive cesium. The step is intended to reduce the substance to 1 thousandth of its original level. But the measure may not have been effective.

Chino says the data can help researchers investigate how radioactive substances were released into the atmosphere and study the effectiveness of the venting process. Mar. 11, 2014 - Updated 12:09 UTC

NHK video on (not official) mapping radiation

March 10, 2014 Mapping Radiation : "Empowering People"

http://www3.nhk.or.jp/nhkworld/newsline/201403100806.html

There is still strong concern about radiation especially around Fukushima A grassroot organization has launched online radiation map (do-it-yourself workshop in Tokyo to build their own measuring device). monitoring effort by more than 100 volunteers (mainly in Fukushima but also across Japan)

Popular workshops to make devices that allows people to measure radiation for themselves and make informed decisions.

Geiger counter coupled with GPS. It permits 1 measurement every 5 seconds (ie 1 measure every 5-10 meters for somebody walking). Visible to everybody on the public website.

Help form donors from the world and technical help from engineers from various countries Important to keep track of local variations (unlike government mapping which is not precise enough) Creating **transparency and openness** is the best way to take action.

see : www.safecast.org

Safecast is a global project working to empower people with data, primarily by mapping radiation levels and building a sensor network, enabling people to both contribute and freely use the data collected. After the 3/11 earthquake and resulting nuclear situation at Fukushima Diachi it became clear that people wanted more data than what was available. Through joint efforts with partners such as International Medcom, Keio University, The John S. and James L. Knight Foundation and GlobalGiving, Safecast has been building a radiation sensor network comprised of static and mobile sensors actively being deployed around Japan – both near the exclusion zone and elsewhere in the country.

Safecast supports the idea that more data – freely available data – is better. Our goal is not to single out any individual source of data as untrustworthy, but rather to contribute to the existing measurement data and make it more robust. Multiple sources of data are always better and more accurate when aggregated. While Japan and radiation is the primary focus of the moment, this work has made us aware of a need for more environmental data on a global level and the longterm work that Safecast engages in will address these needs. Safecast is based in the US but is currently focused on outreach efforts in Japan. Our team includes contributors from around the world.

http://blog.safecast.org/wp-content/uploads/2011/05/SAFECASTflyer.pdf

Comparisons

March 11, 2014

Tokyo radiation less than the level in Paris

http://www.japantimes.co.jp/news/2014/03/11/national/tokyo-radiation-less-than-the-level-in-paris/#.Ux9iFoXrV1s

by Jacob Adelman Bloomberg

Data from the Tokyo Metropolitan Institute of Public Health show atmospheric radiation levels in the capital are at the same level as before the Fukushima nuclear disaster started three years ago and are below those in Paris and London.

The average radiation level in central Tokyo was 0.0339 microsievert per hour in Shinjuku Ward on March 6, data showed. That's about the same as the day before the March 11, 2011, earthquake and tsunami caused three reactor core meltdowns at the Fukushima No. 1 plant, 220 km to the northeast.

That reading compares with 0.085 microsievert in London and 0.108 microsievert in Seoul on March 3, and 0.057 microsievert in Paris on Feb. 27, according to a compilation of world monitoring sites on the website of the Japan National Tourism Organization. Radiation levels in central Tokyo were as high as 0.809 microsieverts per hour on March 15, 2011, before declining to 0.0489 microsievert by the morning of March 18.

Radiation occurs naturally in the environment. While a careful search could still reveal trace levels of Fukushima-linked radioactivity in Tokyo, it now barely registers over readings from background sources, such as solar particles, rocks and soil, said Kathryn Higley, who heads the nuclear engineering and radiation health physics department at Oregon State University in Corvallis.

Radiation levels in central Tokyo on March 15, 2011, peaked at about 24 times the level of the day before the accident, prompting thousands of expatriates to flee the country over the following few months.

Last year's record number of foreign visitors and rising enrollment at international schools show how those concerns have abated, as Tokyo's radiation readings fall below those in other major cities.

New York recorded 0.094 microsievert an hour on May 31, 2011, according to the last available Geiger counter reading from Background Radiation Survey, a project where owners of the equipment feed their readings into a central database.

By comparison, a commercial flight exposes passengers to about 10 microsieverts per hour, according to the Health Physics Society's website.

Closer to the wrecked plant, levels remain high enough to prevent the return of many of the 160,000 residents evacuated after the disaster started.

In the town of Namie, about 10 km northwest of the plant, levels were as high as 17.59 microsieverts per hour at 8 a.m. on Friday, prefectural data show.

If sustained for a full year, that would be 154 times the maximum possible dose of 1 millisievert per year recommended for public exposure by the International Commission on Radiological Protection. The high radiation has made Namie part of an area of the northeast where it will be a "long time" before residents can return, accor

New device to quickly check radiation in cows

March 13, 2014 **New device allows quick radiation checks of cattle** http://www3.nhk.or.jp/nhkworld/english/news/20140313_24.html

Fukushima Prefecture has developed a device that can measure the radiation level of live cows in just one minute. Tests that use blood or urine samples normally take about a week to produce results.

The Fukushima Agricultural Technology Centre led the development of the equipment. It was demonstrated on Thursday at a cattle market in Motomiya City.

The device is applied to the cow's hind leg for one minute. The level of radioactive substances, mainly cesium, is shown on a display. Radioactive cesium is said to accumulate in the muscles.

The tests were carried out on 80 heads of cattle that were auctioned at the market later in the day. All the cows cleared the government's standards, and the results were explained to the cattle owners.

Fukushima Prefecture has been conducting radiation checks on all cattle before shipment since the nuclear accident at the Fukushima Daiichi plant. But the tests involve taking blood or urine samples and the results are available in about a week.

A cattle farmer who had a cow checked said the new device will help to confirm the safety of cattle from Fukushima more efficiently.

Shigeru Shiga from the technology center says beef cattle from Fukushima have been affected by consumer concerns over radiation contamination in the wake of the nuclear accident.

Shiga said he hopes the new device will help to guarantee the safety of cattle and reduce the burden on cattle farmers.

Mar. 13, 2014 - Updated 07:01 UTC

New radiation detectors

March 16, 2014

New and improved radiation detectors headed for Fukushima

http://www.japantimes.co.jp/news/2014/03/16/national/new-and-improved-radiation-detectors-headed-for-fukushima/#.UyW5YoXrV1s

Fukushima Minpo

Starting in April, Fukushima Prefecture will introduce easy to use radiation detectors for food produce at municipalities so that residents will no longer have to cut up items into small pi rrently, residents can test for cesium in home-grown vegetables and edible wild plants at community centers. But those detectors require cutting up 500 grams of food into small chunks, and it takes about 30 minutes to get the results.

With the new detectors, there is no need for slicing and dicing and residents can obtain the radiation readings quicker, according to prefectural officials.

The prefecture has already set aside a budget to provide at least one such detector for each municipality that requests it. The devices will be installed at community centers and other public facilities.

The lowest cesium level detectable with the new device is about 20 becquerels per kilogram, much lower than the 100 becquerels threshold set under the food safety law.

Since the March 11, 2011, meltdowns crisis at the Fukushima No.1 nuclear power station, several manufacturers have developed improved alternative testing devices. But as the accuracy of those selected by the prefecture will take some time to verify, their introduction may be pushed back to the latter half of fiscal 2014, officials said.

Easier to use testing devices are already used for certain food items, such as rice and "anpo kaki" (semidried persimmon). But they were developed specifically for each food type and are not suited for testing a range of other food items.

The city of Fukushima is the only municipality with devices of this kind that can be applied to a variety of foods.

According to the prefecture, there are about 530 conventional radiation detectors at 59 municipalities. In the 10 months through January, the devices were used to conduct a total of 126,626 food tests.

In the prefecture's survey of 836 users between October and December, 501 of the respondents said they wanted simpler to use radiation detectors. Those who hoped to reduce the number of food tests came to 377 and those who asked for shorter testing times stood at 127. Multiple responses were accepted.

"We will introduce the new detectors after verifying each product's accuracy," said an official at the prefecture's consumer affairs section. "We want to offer an easy to use testing environment and to reduce people's concerns."

UN Rapporteur calls for more testing

March 20, 2014

Bloomberg News

UN Investigator Calls for More Testing of Fukushima Heath Impact

http://www.businessweek.com/news/2014-03-20/un-investigator-calls-for-more-testing-of-fukushima-heath-impact

By Jacob Adelman March 20, 2014

Japan should expand its testing for cases of cancer from the Fukushima nuclear disaster beyond the thyroid screenings that have yielded 75 potential instances so far, a United Nations rights investigator said.

The thyroid cancer tests being conducted in Fukushima prefecture are based on a narrow understanding of the health effects of radiation, Anand Grover, a UN special rapporteur who surveyed the events surrounding the March 11, 2011 disaster, said today in Tokyo.

Data from victims of the bombing of Hiroshima in 1945 show broader cancer consequences than would be detected by the thyroid tests, said Grover, who didn't specify potential types of cancer.

The earthquake and tsunami in March 2011 caused the meltdown of three reactors at Tokyo Electric Power Co.â€^T\$ (9501) Fukushima Dai-Ichi atomic plant, the worst civilian atomic disaster since Chernobyl in 1986. About 160,000 people were forced to evacuate because of radiation fallout.

A report on the disaster by the World Health Organization in February last year estimated increased cancer risk for those in the most contaminated areas around the plant, but not elsewhere in Japan. The report also noted that better understanding of the effects of low-dose radiation may alter risk expectations from the Fukushima accident.

Expanded Testing

"Why don't we have a urine analysis, why don't we have a blood analysis?" said Grover, who also recommended that the tests be expanded to a broader geographical area. "Let's err on the side of caution."

Expanded testing would also bring emotional relief to parents worried that their children may have illnesses that are going undetected, said Grover, a New Delhi-based civil rights attorney.

Health officials in Fukushima prefecture have tested 254,000 residents aged 18 or under at the time of the disaster and have detected 75 with definitive or suspected thyroid cancer as of Feb. 7, the Asahi Shimbun reported.

Hokuto Hoshi, a doctor involved in the prefectural survey, said the cases aren't thought to be connected to the Fukushima meltdowns because not enough time has elapsed since the accident for the cancer to develop, according to the Asahi.

Grover also said that the Japanese government should bring radiation levels down to the 1 millisievert per year recommended for public exposure by the International Commission on Radiological Protection.

Increased Risk

Japan's government is preparing to lift evacuation orders in areas with radiation levels as high as 20 millisieverts per year, according to a Feb. 18 presentation by Masako Ogawa, an environment ministry director.

The 20 millisievert per year level is consistent with what is routinely permitted for occupational exposure outside the U.S. and under the 50 millisievert per year level allowed within the U.S., according to Kathryn

Higley, who heads the nuclear engineering and radiation health physics department at Oregon State University in Corvallis.

"We can't really measure radiation impacts (using epidemiological tools) at exposures less than about 100 millisieverts," Higley said in an e-mail. "That's what makes it such a difficult conversation to have. If it's unlikely that you'll never be able to detect an increased risk, why shouldn't you be allowed to go home?"

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NHK video on thyroid testing

March 28, 2014

Thyroid Concern in Fukushima Aired on Mar. 28

http://www3.nhk.or.jp/nhkworld/newsline/201403282314.html

People, many parents in particular, continue to worry about the health impact of radiation.

A private hospital in Hirata offers free check-ups to Fukushima children. The results of the first year show a 70 % rate of mild abnormalities in those children 18 or under.

Fukushima Prefecture also has a screening programme for children who were 18 or under at the time of the accident : 17, 000 children have been examined. The rate of mild abnormalities is 46 %.

One thing is certain, the children will have to be watched long term. It is better to detect health risks at an early stage.

UNSCEAR report "reassuring"

April 2, 2014

U.N. report finds no increase in Fukushima cancer rates http://ajw.asahi.com/article/0311disaster/fukushima/AJ201404020056

By YURI OIWA/ Staff Writer

A U.N. committee dismissed any recognizable rise in overall cancer rates among residents of Fukushima Prefecture caused by fallout from the disaster at the Fukushima No. 1 nuclear plant, sources said.

In a report expected to be published on April 2, the U.N. Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) said thyroid gland cancer cases could increase recognizably among infants who were 1 year old and stayed within 30 kilometers of the nuclear plant when the disaster started in March 2011. However, it added that the matter remains inconclusive because of insufficient data.

Tests have found a number of cancer cases and lumps in the thyroid glands of children in Fukushima Prefecture, but the report said most of those cases are unrelated to radiation exposure from the nuclear accident.

UNSCEAR reports are considered the most reliable among available international health studies on nuclear accidents.

The UNSCEAR used observation data provided by the Japanese government and articles published by world scientists to estimate the doses of both external and internal exposure to radiation following the triple meltdown at the plant.

Its health study of residents both in and outside Fukushima Prefecture was split into three categories: people who were 1 year old, 10 years old and adults when the disaster started.

The report estimated the whole-body doses accumulated over the first year following the disaster at 1-10 millisieverts on average in adults across all parts of Fukushima Prefecture, including areas around the crippled nuclear plant. The estimated dose was about double those figures for 1-year-olds, who are the most susceptible to radiation.

The dose estimates for 1-year-olds fell short of 100 millisieverts, the threshold at which it is believed the risk of cancer begins to clearly rise, the report said.

Priority is placed on safety for evaluations of the health impact of radiation. Such studies assume that even modest radiation doses could increase the risk of cancer.

The report noted that one in three Japanese develop cancer irrespective of their exposures to radiation.

Any increase in cancer rates corresponding to the average whole-body doses in Fukushima residents would be a tiny fraction of the average lifetime cancer risk of 35 percent among the Japanese population, and would be statistically negligible, the report said.

Cancer of the thyroid gland is the only cancer that has been scientifically proven to be related to radiation exposure since the 1986 Chernobyl nuclear disaster.

The risk of cancer is believed to start rising when the radiation dose in the thyroid gland, not the wholebody dose, has exceeded 100 millisieverts.

According to the report, thyroid gland doses accumulated over the first year after the Fukushima disaster were 47-83 millisieverts on average in 1-year-old infants who were staying between a 20-km radius and a 30-km radius of the Fukushima No. 1 nuclear plant.

For 1-year-olds staying within the 20-km radius, the doses in their thyroid glands were estimated at 15-82 millisieverts on average.

The report added that thyroid gland cancer rates could rise significantly if a large population of infants received doses close to 80 millisieverts. But it said no conclusion could be derived because of insufficient district-by-district data available on thyroid gland doses in children.

At any rate, any increase in thyroid gland cancer cases in Fukushima would still fall short of the 6,000 or so that followed the Chernobyl disaster, the report said. That is because thyroid gland doses among Chernobyl evacuees averaged about 500 millisieverts.

The report is expected to be reviewed several years from now on the basis of new information obtained.

UNSCEAR report (2)

April 3, 2014 U.N. panel sees no discernible increase in Fukushima cancer rates http://mainichi.jp/english/english/newsselect/news/20140403p2g00m0dm067000c.html

VIENNA (Kyodo) --- A U.N. scientific panel said in a final report Wednesday that no discernible increase is expected in future cancer rates due to radiation exposure in areas affected by the 2011 Fukushima nuclear plant accident.

"The doses to the general public, both those incurred during the first year and estimated for their lifetimes, are generally low or very low," the U.N. Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) said in its report on Fukushima.

For adults in Fukushima Prefecture, "While risk models by inference suggest increased cancer risk, cancers induced by radiation are indistinguishable at present from other cancers," the committee said. "Thus, a discernible increase in cancer 0incidence in this population that could be attributed to radiation exposure from the accident is not expected," it said.

The estimated dose for 1-year-old infants in the thyroid -- an organ particularly susceptible to radiation -- was estimated to be up to 80 millisieverts in the first year in the affected districts after the accident, it said. In contrast, for adults, the dose remained mostly below the critical threshold of 50 mSv.

The scientists noted that these dosage levels cannot be measured in general terms but considered only at an individual level as they are affected by various factors such as how long people stayed outside and what and how much contaminated food they ate.

Wolfgang Weiss, chairperson of the UNSCEAR Fukushima Assessment, said the risk of those infants developing thyroid cancer is low but they should consult a doctor who can help them through continuous diagnosis.

Thirteen workers were exposed to high doses estimated to be between 2 and 12 mSv as a result of their involvement in work in the first days after the accident at the plant but no immediate impact is said to have been observed on their health so far.

Compared with the 1986 Chernobyl incident, the prompt evacuation of people and other measures taken in Fukushima contributed to the effective reduction of radiation doses impacting people [????], the scientists said.

The results presented in the latest report differ from those in a report published by the World Health Organization in February 2013 that warned of higher cancer risks for residents around the nuclear power plant and plant workers.

On this, UNSCEAR said the WHO only had access to information available up to the first six months after the accident and calculated the estimates by using models and plausible parameters, while UNSCEAR made use of precise dose distributions from an additional year.

Weiss also cited the **importance of conducting the Fukushima health survey over the long term**. "This should continue to just see if something is showing up in the long term which we haven't seen. We can only judge what we have seen and assessed on the basis of what we know."

April 03, 2014 (Mainichi Japan)

UN: Cancer unlikely to increase in Fukushima

http://www3.nhk.or.jp/nhkworld/english/news/20140403_15.html

A report by a United Nations committee says the nuclear accident in Fukushima prefecture is unlikely to cause a significant rise in new cancer cases.

The UN Scientific Committee on the Effects of Atomic Radiation released the report on Wednesday. It includes analysis by over leading 80 global scientists on radiation and its effects following the Fukushima Daiichi nuclear power plant accident in 2011.

UN experts say they have received no reports on death or serious illness associated with radiation caused by the accident.

The report concludes that no significant changes in future cancer rates are expected due to radiation exposure.

The report covers children, who are deemed especially vulnerable. It says there is a theoretical increased risk of developing thyroid cancer among exposed children. It says the risk is low, but points to the need to continue monitoring health conditions.

The report says monitoring of radiation exposure to plant workers was greatly delayed after the accident,

leading to unclear exposure data in the early stages of the crisis. The report urges Japan to take appropriate measures in this regard. Apr. 3, 2014 - Updated 02:19 UTC

Passing on medical experience on radiation

April 7, 2014

Medic passing on nuclear lessons

http://www.japantimes.co.jp/news/2014/04/07/national/medic-passing-on-nuclear-lessons/#.U0LRfVfi91s

by Nozomi Iwakiri Kyodo

FUKUI – Physician Hironobu Tokunaga says it is his mission to pass on the lessons learned from his experience dealing with the Fukushima No. 1 reactor meltdowns to the younger generation.

Tokunaga, 42, was dispatched to Sendai by University of Fukui Hospital as a member of the disaster assistance team immediately after the magnitude-9.0 quake sent tsunami barreling into Tohoku's coastline on March 11, 2011. Two days later, he was assigned to the Fukushima Prefectural Government's disaster headquarters.

As a doctor from Fukui, which has more reactors than any other prefecture, Tokunaga was inundated with questions from hospitals about radioactive contamination, but "even doctors and nurses lacked sufficient knowledge about radioactive contamination and exposure," he said.

More than 100 medical teams were formed across the country to examine Fukushima residents' exposure to radiation after the triple meltdowns, but only around 20 of them actually went to the prefecture. Many turned down the assignment out of fear.

About a decade earlier, an emergency system for treating radiation-tainted people was set up following the fatal criticality accident in September 1999 at JCO Co., a nuclear fuel plant in the village of Tokai, Ibaraki Prefecture.

Under the system, governments with nuclear power plants within or near their jurisdictions hold periodic drills to practice medical treatment and other countermeasures related to nuclear accidents.

But "interest (in decontamination) among participants in the drills had been extremely low until the Fukushima disaster," said Hidekazu Terasawa, 62, a professor at the University of Fukui medical school who served as a lecturer under the system.

As nuclear plants are usually built in sparsely populated areas with an acute shortage of doctors, it was very difficult to make preparations in Fukushima for events resulting in radiation exposure, Terasawa said.

Terasawa, who is also an emergency room physician trained to handle any type of patient, was aware of the urgent need for such treatment because he was familiar with the fatal August 2004 accident at the Mihama power plant in Fukui run by Kansai Electric Power Co.

Five workers were killed and six others injured when scalding steam leaked from a broken pipe in reactor 3.

Terasawa and other doctors were unable to get any information on the workers' conditions, including indications of radiation exposure, in a timely manner.

"There is no absolute safety among things people produce and operate in the long run," Terasawa said.

Given the concentration of atomic power plants in Fukui, Terasawa is trying to create a system that would allow local doctors to study emergency treatments for radiation exposure at the University of Fukui and specialized institutions in the United States.

Tokunaga began studying under Terasawa 10 years ago. In the city of Tsuruga, which hosts a nuclear power plant, Tokunaga is passing on this knowledge to other doctors and nurses at Municipal Tsuruga Hospital.

He also gives lessons to firefighters, police officers and school teachers and workers. When requested, he works at the ER facility set up by the front gate of the Fukushima No. 1 plant.

The Fukushima crisis has raised widespread awareness about the dangers of radiation, but Tokunaga said that using radioactive materials is common in medicine, agriculture and other fields and industries.

"In modern society, people cannot live without radioactive substances and rays," he said.

Given this reality, Tokunaga said it is his mission to pass on what he has learned through his work since the Fukushima crisis began.

US sailors sue TEPCO again

April 8, 2014

U.S. sailors sue Tepco for \$1 billion over alleged radiation exposure

http://www.japantimes.co.jp/news/2014/04/08/national/u-s-sailors-sue-tepco-for-1-billion-over-alleged-radiation-exposure/#.U0OogVfi91t

SAN DIEGO – Nearly 80 U.S. sailors are seeking \$1 billion from Tokyo Electric Power Co., operator of the Fukushima No. 1 nuclear power plant, alleging the company lied about the high level of radiation in the area where they were carrying out a humanitarian mission following a tsunami that touched off a nuclear crisis three years ago.

A lawsuit filed in federal court in San Diego contends that Tepco repeatedly said there was no danger to the crew when they were actually being blanketed with radiation that has since led to dozens of cancer cases and a child being born with birth defects, the Orange County Register newspaper reported Monday.

The Japanese company says it's "wholly implausible" military commanders would rely on safety information from the utility.

This is the second time the sailors have targeted the utility, the newspaper reported.

Their 2012 suit was dismissed because it named the Japanese government, which owns the utility, and a judge said that put it beyond the reach of a U.S. court. An amended suit names only the utility, which runs the plant where three reactors went into meltdown and exploded in March 2011, sending radiation into the air.

The 79 sailors served on the San Diego-based aircraft carrier USS Ronald Reagan, which was ferrying food and water to the city of Sendai in the wake of a massive earthquake that triggered the tsunami.

In a motion to dismiss the new lawsuit, the Tokyo utility said that there was no way the commanders of the aircraft carrier would have relied on the utility to determine the safety of its sailors.

"It's wholly implausible," the company says in its response, "that military commanders in charge of thousands of personnel and armed with some of the world's most sophisticated equipment, relied instead only on the press releases and public statements of a foreign electric utility company."

Don't trivialise the effects of radiation on Fukushima people

April 14, 2014

Fukushima municipalities resist suspected bid to downplay radiation exposure http://mainichi.jp/english/english/newsselect/news/20140414p2a00m0na009000c.html

A Foreign Ministry email requesting municipalities affected by the Fukushima nuclear disaster to submit residents' internal radiation exposure data for use by the International Atomic Energy Agency (IAEA) has met a backlash, as the email suggested the data could be used to play down the radiation effects from the disaster, it has been learned.

The ministry sent out the email to 20 local governments in Fukushima Prefecture in mid-March, stating the data was necessary at the request of the IAEA for use in a report on the disaster. The email suggested that the IAEA report is expected to evaluate radiation exposure among residents at lower levels than reports by other international organizations.

About half of the municipalities that received the ministry's email have declined or are going to decline submission of the requested data to the ministry, on the grounds that "the effects of radiation exposure on residents' health could be trivialized" and that "it is senseless to request personal information via email."

The email, dated March 17, was dispatched by an official at the Foreign Ministry's International Nuclear Energy Cooperation Division to 18 municipalities in Fukushima Prefecture that have installed whole-body counters at hospitals and other facilities, as well as to the Fukushima Prefectural Government and the Namie Town Office. The email read, "The IAEA is making a report on the nuclear disaster," and demanded the municipalities submit residents' radiation exposure data measured by whole-body counters, individual dosimeters and other devices by March 24.

The Mainichi Shimbun interviewed the 20 local governments on April 8 and 9 and found that 10 of them had either refused or were going to refuse to submit the requested data. Asked why they decided to do so,

many of them said, "It lacks common sense to request radiation exposure data, which requires careful handling, via email alone," and "The request came in all too sudden and we don't have enough time to sort out the data."

Because the ministry's email stated that the IAEA "is trying to verify that the actual exposure doses are smaller than those in other reports," some municipalities suspected that the report could downplay radiation effects on residents' health. "If the data is used to their advantage, that could invite residents' mistrust," the municipalities told the Mainichi.

In the meantime, eight municipalities have submitted the requested data by deleting residents' names and other personal information or by limiting information to that which has already been publicly released. "We sensed the intention of trivializing radiation effects, but we wanted to see what kind of report they were going to make," one of the municipalities told the Mainichi.

So far, the World Health Organization (WHO) and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) have released their respective reports on the Fukushima No. 1 Nuclear Power Plant disaster, examining the effects of radiation exposure on residents' health.

WHO concluded in its report that residents in the most affected area were exposed to an estimated 12 to 25 millisieverts of radiation in the first year since the outbreak of the disaster and that even though the possibility of an increase in cancer incidence is small, cancer risks would partly increase.

The UNSCEAR report predicted that an adult resident in Fukushima Prefecture would be exposed to 10 millisieverts or less of radiation in their lifetime and that there will be no increase in cancer incidences or birth defects. However, UNSCEAR concluded that there is a possibility of an increase in childhood thyroid cancer risks.

Kenichi Bessho, head of the Foreign Ministry's International Nuclear Energy Cooperation Division, explained the ministry's email request, saying, "We asked municipalities to cooperate within their capacity."

"The IAEA asked us to submit actual measurement data, saying it wanted to produce an objective report. I'd like to refrain from elaborating more on our exchanges with the agency," he said. Bessho added that the ministry was in the course of scrutinizing the data it received from some of the municipalities and that it hasn't yet submitted the data to the IAEA.

The IAEA adopts the position that radiation exposure of 1-20 millisieverts per year is permissible.

The Japanese government has been promoting residents' return to areas affected by the nuclear catastrophe based on the IAEA position and other factors.

April 14, 2014 (Mainichi Japan)

Radiation survey published only after evacuation order was lifted

April 16, 2014

Estimated radiation doses of Fukushima returnees withheld for half a year http://ajw.asahi.com/article/behind_news/social_affairs/AJ201404160056

THE ASAHI SHIMBUN

The government withheld findings on estimated radiation exposure for Fukushima returnees for six months, even though levels exceeded the long-term target of 1 millisievert a year at more than half of surveyed locations.

Individual radiation doses were estimated to be beyond 1 millisievert per year, or 0.23 microsievert an hour, at 24 of all the 43 surveyed sites, including ones in the Miyakoji district in Tamura, Fukushima Prefecture, The Asahi Shimbun learned April 15.

The revelation comes just two weeks after the central government lifted the evacuation order for the district on April 1.

Last July, the Cabinet Office's working team in charge of assisting the lives of nuclear disaster victims asked the National Institute of Radiological Sciences and the Japan Atomic Energy Agency to measure air dose rates and estimate individual radiation doses at 43 locations.

The survey covered seven types of living spaces, including private residences, farmland and schools, in the prefecture's three municipalities of Tamura, Kawauchi and Iitate.

The government's decontamination work aims at bringing radiation levels in contaminated areas to within 20 millisieverts a year before it gives the go-ahead for residents to return.

It also intends to bring readings to 1 millisievert or less eventually. The International Commission on Radiological Protection says a reading of up to 20 millisieverts is acceptable in areas where cleanup is under way.

The central government has also proposed to distribute devices that measure individual radiation to returned evacuees, so residents can monitor their radiation doses on their own.

But some evacuees from areas affected by the Fukushima No. 1 plant nuclear accident, which was triggered by the 2011 earthquake and tsunami disaster, worry about the possibility they may be exposed to high radiation doses after returning to their homes.

For this reason, the government decided to study correlations between air dose rates and individual radiation doses around the crippled facility to prove that the amount of radiation to which residents will be exposed is sufficiently low, even when air dose rates are relatively high.

The National Institute of Radiological Sciences and the Japan Atomic Energy Agency last fall measured radiation levels at several dozens of spots at each of the 43 sites in the three municipalities. They found that individual radiation doses are typically 30 percent lower than air dose rates. The government-affiliated bodies also discovered that average air dose rates exceeded 0.23 microsievert per hour at 27 of the 43 sites, while they estimated individual radiation doses at over 0.23 microsievert an hour at 24 locations.

In mid-October, the two agencies compiled a midterm report and submitted it to the government. But the Cabinet Office's working team did not disclose the report until the evacuation order for the Miyakoji district was lifted. According to a member of the team, this was because the finding "has no direct relationship with lifting the evacuation orders."

Although the government held numerous meetings with Miyakoji residents to discuss lifting the evacuation order, it never presented the survey results, nor did it even refer to the existence of the data.

The government only presented an outline of the results to the three municipalities earlier in April. Asked to disclose the findings, the government released the survey results to The Asahi Shimbun and posted the midterm report on the website of the industry ministry. The working team said it planned to reveal the survey's findings and analysis of the data on April 18 after fine-tuning its final report. But the team changed its mind because The Asahi Shimbun's request to disclose the findings made it realize that public interest in the survey was greater than expected.

(This article was written by Shinichi Sekine and Miki Aoki.)

More about radiation levels around Fukushima

April 18, 2014

Report: Radiation levels around Fukushima drop significantly in some areas, still exceed target http://ajw.asahi.com/article/0311disaster/fukushima/AJ201404180053

THE ASAHI SHIMBUN

Radiation levels in some localities around the crippled Fukushima No. 1 nuclear power plant have dropped to well under the government standard of 20 millisieverts per year, according to the latest survey findings, which are consistent with the Abe administration's intention to lift evacuation orders at the earliest possible dates.

However, the final report on the government survey, released April 18, shows that Fukushima evacuees will be exposed to radiation levels exceeding the government's long-term target of 1 millisievert per year after they return to their homes.

In particular, individual radiation doses for returnees to Kawauchi, Fukushima Prefecture, where the evacuation order could be lifted as early as July, are estimated to be 3 millisieverts a year.

While an evacuation order for the Miyakoji district in the prefecture's Tamura city was lifted earlier this month, those working in the forest industry in the district are calculated to be exposed to 2.3 millisieverts of radiation per year, according to the survey results. The report also estimates that farmers and teachers in the district will annually receive radiation doses of 0.9 to 1.2 millisieverts and 0.7 millisievert, respectively.

The government's decontamination work is aimed at bringing radiation levels in contaminated areas to within 20 millisieverts a year before it gives the go-ahead for residents to return, and eventually to 1 millisievert or less.

Still, some Fukushima evacuees have called for readings to be brought down to 1 millisievert or less as early as possible, and fear exposure to annual radiation levels higher than 1 millisievert.

The Cabinet Office's working team in charge of assisting the lives of nuclear disaster victims asked the National Institute of Radiological Sciences and the Japan Atomic Energy Agency to measure air dose rates and estimate individual radiation doses in Fukushima Prefecture's three municipalities of Tamura, Kawauchi and Iitate.

The two agencies conducted a survey in the municipalities' farmland, mountains, forests, private residences and schools between August and September 2013, and calculated individual radiation exposure by occupation and other categories. The two government-affiliated bodies compiled a midterm report in October last year.

But the government had initially withheld the findings because the midterm report just contains "basic data obtained in the process of investigation," according to the Cabinet Office.

As The Asahi Shimbun and other parties made inquiries about the findings, the governmental working team released the midterm report on the website of the industry ministry earlier this month.

(This article was written by Asako Myoraku and Miki Aoki.)

Residents dissatisfied with exposure estimates

Residents respond to exposure estimates

http://www3.nhk.or.jp/nhkworld/english/news/20140418_42.html

Residents and evacuees of Tamura City's Miyakoji district are voicing dissatisfaction with the publication of radiation exposure estimates for the area.

Kazuo Yoshida lived in Miyakoji, but is now in temporary housing. He says the government should have released the data when discussions were underway on whether to lift the evacuation order for Miyakoji. He says he gave up farming and won't return unless authorities decontaminate mountains which are the source of the water he uses for drinking.

Yasushige Watanabe says radiation levels near his home and farming fields are higher than the estimates. He also says people won't return to the community until sufficient decontamination work is done. Watanabe says only 2 of the 36 households at his temporary housing unit have returned to Miyakoji. Tetsuzo Tsuboi is one of the residents who have returned home. He says he feels cheated by the government for withholding the estimates. He says he used to work in the forestry industry, but lost his job. He is calling on the government to put more effort into decontaminating mountain areas.

Hisao Tsuboi says the estimates are within his expectations. He resumed rice farming last year and has been using a dosimeter to keep track of radiation. He says levels may vary, so residents need to understand the specific exposure in their area.

Tsuboi also says many farmers are reluctant to start growing crops again because they fear they won't be able to sell them. He urges the government to do more to prevent rumors from damaging farmers. Apr. 18, 2014 - Updated 12:17 UTC

What maximum radiation is allowable?

April 18, 2014 Allowable radiation exposure levels http://www3.nhk.or.jp/nhkworld/english/news/20140418_46.html

The Japanese government has set the maximum annual allowable radiation exposure at 20 millisieverts to let evacuees return to the areas near the Fukushima Daiichi nuclear power plant.

The International Commission on Radiological Protection, or ICRP, says annual exposure levels that necessitate evacuation should be set between 20 and 100 millisieverts.

A lifetime exposure to 100 millisieverts of radiation is thought to increase the risk of death from cancer by 0.5 percent.

The government says it adopted the highest ICRP standard.

But the ICRP says that in the long term the levels should be set between 20 millisieverts and as low as one millisievert -- the allowable amount in one year for a person in ordinary circumstances.

The government says it wants to achieve the long-term goal of reducing exposure to less than one millisievert for people near Fukushima Daiichi by removing radioactive materials from the soil and taking other measures.

Apr. 18, 2014 - Updated 12:32 UTC

Safecast, network of cooperation

March 31, 2014

SAFECAST, Paving The Way For The Future Of Radiation Measurement http://kiyoshikurokawa.com/en/

kiyoshi kurokawa →Japanese

Ever since the Fukushima nuclear disaster, the official reports about radiation levels issued by the government as well as the radiation monitors on-site have been met with suspicion. Notwithstanding the fact that the disaster was caused by unprecedented natural causes, the way in which information was relayed to the public has been heavily criticized and doubted.

A week after the Fukushima Nuclear disaster, a decentralized model of documenting and sharing radiation readings that was dependent on the participation of the locals called 'Safecast' was set up. I have discussed this organization previously in my blog.

It all began with the assembling and usage of personal measuring instruments and sensors, checked to see if they provided accurate readings. The data collected through the use of these instruments was made available instantly on the sensor network. This was an elegant solution to the problem of the need for transparency and visibility, and the trust gained through the achievement of these two goals was backed up by the necessary technical expertise.

And as if to mirror global trends, the methods to build a sensor, the process by which to share the data online, and other required steps have all been simplified and put down in an easy-to-understand manual, allowing for anybody to participate and thus spreading this movement globally.

The accolades do not stop there. The IAEA recently recognized Safecast as one of the prime examples of contemporary information processing, and have rated it very highly. A quick look through the following two sites (1, 2) will help form a rough idea of what I am saying here.

An article by 'Atomic Reporter' sums it up, remarking that it is "no wonder Safecast has a following at the IAEA. Two random guys in Japan became more widely trusted by many than 60-years of UN-agency authority".

I urge you to go through the two websites mentioned, because although they are a bit lengthy, they are an accurate portrayal of the going-ons within the IAEA, and show how the Safecast team earned their fans within the crowd.

In our modern day and age, where the proliferation of the internet and increasingly smarter devices is making information more accessible, it is important to remember that sources of information must ensure

independence, transparency, scientific verifiability, and adhere to international standards. It is when these four criteria are met that a source of information is afforded trust and belief. The NAIIC report was also executed with these four criteria in mind.

But can the same be said of the Japanese government, the authorities at TEPCO, the bureaucracy, the companies, media, universities, all these organizations dependent on maintenance of the status quo? How do they measure up to the needs for public disclosure, transparency, and international standards?

You can be a part of the Safecast network in various ways: one could perhaps build one's own sensor and upload the data from the readings. This network of cooperation is slowly but surely being cast across Japan and the rest of the world.

Interview with ex-Futaba mayor

Fukushima disaster: Tokyo hides truth as children die, become ill from radiation - ex-mayor http://rt.com/shows/sophieco/fukushima-disaster-radiation-children-740/

April 21, 2014 08:30 Download video (210.95 MB)

The tragedy of the Fukushima nuclear plant disaster took place almost three years ago. Since then, radiation has forced thousands out of their homes and led to the deaths of many. It took great effort to prevent the ultimate meltdown of the plant – but are the after effects completely gone? Tokyo says yes; it also claims the government is doing everything it can for those who suffered in the disaster. However, disturbing facts sometimes rise to the surface. To shed a bit of light on the mystery of the Fukushima aftermath, Sophie Shevardnadze talks to the former mayor of one of the disaster-struck cities. Katsutaka Idogawa is on SophieCo today.

Follow @SophieCo_RT

Sophie Shevardnadze: *Mr. Idogawa, welcome to the program. Your town of Futaba was heavily dependent on cash coming in from the nuclear reactors and you yourself approved building more reactors. Did you believe back then, that something could go wrong?*

Katsutaka Idogawa: Yes, I suspected it might, but I didn't expect an accident of such proportions.

SS: You've said before that you knew right away that the government, that TEPCO – the plant's operator, would lie about the consequences of the accident at Fukushima. When did you lose trust in the authorities?

KI: This was even before the accident, when I first came to see the management of the power plant. I asked them about potential accidents at a nuclear power plant, pretending I didn't know anything about it, and it turned out they were unable to answer many of my questions. Frankly, that's when it first crossed my mind that their management didn't have a contingency plan. It was then that I realized the facility could be dangerous.

SS: March 11, 2011 - the day the devastating earthquake and tsunami hit Japan...where were you that day?

KI: I wasn't in Futaba that day, but I was near. I went to a nearby town on business. That's where I was when the earthquake hit.

SS: What did you see around you?

KI: As for the aftermath of the earthquake, there were no destroyed buildings or water pipes ripped out of the ground in the town where I was. But I saw all that on my way back to Futaba. As soon as it happened, I jumped into my car and drove to Futaba. I managed to get there before the bigger tsunami came. It was only later that I realized that I escaped the water...

SS: When a catastrophe of this scale happens, I understand that it is very difficult to control your emotions, it is difficult to get a hold of yourself, take any action. What were your first actions?

KI: The earthquake was very strong. I just kept thinking, "If it's *that* strong, what will happen to the power plant? What if the reactor is damaged? What if the water leaks? What will the city do? What am I to do as mayor?

SS:*I* can only imagine how much worry you felt at that moment. Do you remember what you did right after the disaster hit?

KI: It took me 20-30 minutes to get back to my office in Futaba. There was a traffic jam, so I chose an alternative route along the coast. At that moment I wasn't thinking about anything except the fact that I had to get back as soon as possible. I heard a tsunami warning on my car radio. Tsunami waves had never been higher than 60 cm before. I thought that even if it's big, the wave would be about 6 meters at most. I had no idea the road I was on could be washed away by the tsunami. I got lucky.

The tsunami came after I drove off that road and up the mountains. I got to my office in Futaba and started checking for damage. I walked around every floor, and on the 4th floor I looked out the window. Usually you couldn't see the sea from there, but that time I could see it just 300-500 meters away. It was a truly terrifying sight. I had all these thoughts swirling in my head: "What should I do?

How to evacuate people? Where do we run? How do we save ourselves?" Also, I realized that the power plant would be damaged, and I didn't know what to do about it. Looking back, I think I didn't deal with the crisis well enough. I think I didn't ask myself enough questions.

SS: As I understand, you gave orders to evacuate your city right away?

KI: Yes. I didn't sleep at all that night. I was watching TV, since it was the only source of information. I kept thinking what to do with radiation, how to inform and evacuate the people. Mobile phones didn't work because there was no signal, so radio was the only way. On the morning of March 12, I announced an emergency evacuation. I assumed radiation would not reach the mountains and we would be safe if we left the city. I told the people to go to Kawamata, a town 50 km away. There's just one road that goes there, and it was packed with cars. Later, I learned that not all the Futaba residents heard my announcement. I feel guilty about that. Back then, I believed that it would be safe to go to Kawamata, which was further away from the plant than the government-recommended 10-20 km. Later, I found out that Fukushima Prefecture hadn't given me all the information in a timely fashion. And now the government isn't taking any steps to ensure people's safety from radiation and isn't monitoring the implementation of evacuation procedures.

SS: You decided to evacuate people from Futaba as far as possible without consulting anybody - so you completely assumed responsibility?

KI: Our city always had an emergency plan in case of a fire or an accident at the plant. Every year, we had special drills in case there was a fire at the plant. I think it's the central government and the Fukushima Prefecture authorities that bear the most responsibility for what happened. As mayor, it is my responsibility to take care of the people of Futaba. At that time, I had no time to get advice. I tried talking to the prefecture authorities but there was absolute chaos. It was impossible to get advice or hold a meeting. So I chose to act on my own, and I decided to start with evacuating the people as far from the radiation as possible.

SS: Your town is moving to a new location, to the neighboring city of Iwaki. Is it safe there? Do you see this as a new start for the people?

KI: I'd like to show you a table with radiation levels around Chernobyl. Radiation levels around Fukushima are four times higher than in Chernobyl, so I think it's too early for people to come back to Fukushima Prefecture. Here you can see radiation levels in our region, Tohoku. This is ground zero, and the radiation radius is 50-100km, even 200km in fact. Fukushima Prefecture is at the very center. The city of Iwaki, where Futaba citizens moved, is also in Fukushima Prefecture. It is by no means safe, no matter what the government says. Exposing people to the current levels of radiation in Fukushima is a violation of human rights. It's terrible.

SS: Evacuation advisories are being lifted for some cities in the Fukushima area, but you're saying that the government is allowing this, despite the danger of radiation?

KI: Fukushima Prefecture has launched the Come Home campaign. In many cases, evacuees are forced to return. Here is a map of Fukushima Prefecture, with areas hit by radiation highlighted in yellow, and you can see that the color covers almost the entire map. Air contamination decreased a little, but soil contamination remains the same. And there are still about two million people living in the prefecture, who have all sorts of medical issues. The authorities claim this has nothing to do with the fallout. I demanded that the authorities substantiate their claim in writing but they ignored my request. There are some terrible things going on in Fukushima. I remember feeling so deeply for the victims of the Chernobyl tragedy that I could barely hold back the tears whenever I heard any reports on it. And now that a similar tragedy happened in Fukushima, the biggest problem is that there is no one to help us. They say it's safe to go back. But we must not forget the lessons of Chernobyl. We must protect our children. I talked to local authorities in different places in Fukushima, but no one would listen to me. They believe what the government says, while in reality the radiation is still there. This is killing children. They die of heart conditions, asthma, leukemia, thyroiditis...Lots of kids are extremely exhausted after school; others are simply unable to attend PE classes. But the authorities still hide the truth from us, and I don't know why. Don't they have children of their own? It hurts so much to know they can't protect our children.

SS: I understand that many children who have been evacuated are now living in the Fukushima district again; new schools have opened for these children, and you say they are facing radiation there...Is anything being done to help the children affected by the nuclear fallout?

KI: Officially, both the central government and the prefecture authorities say there is no radiation. They're not doing anything, and they're not going to do anything. They say Fukushima Prefecture is safe, and that's why nobody's working to evacuate children, move them elsewhere. We're not even allowed to discuss this. **SS:** So after the tragedy, the government wanted to build nuclear waste storage facilities on the territory of Futaba. You were against that, but now, as I understand, these facilities are going to be built after all. Do you fear that that will prevent residents from ever returning to their town?

KI: Media report it as the final decision has been made. But that's not true. The problem is with the decision-making process. That's why I keep saying no. The central government makes all the decisions by itself the way it pleases. It ignores the victims. Actually, we have a rule in our country saying that decisions can't be made without taking people's opinion into consideration, but the government ignores this rule and just does everything the way they see fit. After all, this matter is up to landowners. Unless they agree, nothing can happen. That's how things work in Japan. And even though there's been much speculation, nobody has talked to landowners yet. So media reports suggesting that the final decision has been made are premature. In reality, nothing has been decided.

It is not clear at this point what will happen. All we know right now is that there will be repositories built and that land will be nationalized. Radiation is a big problem today but even this problem hasn't been solved yet. Without consulting with us, with the people, that is, Fukushima Prefecture announced that people will be relocated from the prefecture for 30 years, but they failed to keep this promise as well. It's all very unreasonable. All the unpopular decisions were made without us. That's why I've been saying no all the time.

SS: In the beginning of the program you touched upon the inability of TEPCO to manage the situation at the nuclear plant. They have been struggling to contain the situation for over three years now. Why are they failing?

KI: That's the way TEPCO works. The problem is with its structure. People working at the headquarters are in privileged conditions, but those working in the field work in very difficult conditions. That's the way it was even before the accident. That's how this company works. When the accident happened, TEPCO couldn't give us or its own employees the names of the people responsible for the accident. They couldn't do that because the company doesn't have real professionals.Even before the accident, I would sometimes go to their office as mayor, ask them a lot of questions: "Do you train your personnel? Is everything okay? Is there any chance that your old equipment may fail?" In response, they only gave me a lot of nice words. But they didn't take any practical steps; they hardly ever did anything. TEPCO thinks too high of itself, delegating almost everything to subcontractors. That's why, when something happens, there's nobody to be held accountable. In addition, the company doesn't follow the situation on the ground. Even today, we received a report saying that they made a mistake and used the wrong pump, and as a result contaminated water ended up in a wrong place. As for the restoration of the city, I am really concerned about the future of my hometown, the future of Futaba.

SS: Now, Japan's homeless are among those recruited to take part in the major cleanup - are they a viable workforce in this case? Is this because there's a lack of qualified workers, or because those people are considered sort of 'disposable?' Is this even true?

KI: Unfortunately, it's true. If you use workers on a one-off basis, you don't need to watch radiation; you don't need to care about their health. We must respect people, care about them. When talking about the Tokyo Olympics in 2020, Prime Minister Abe likes to talk about Japanese hospitality, and he uses this Japanese word "omotenashi," which literally means that you should treat people with an open heart. But we don't see that in our situation. While Prime Minister Noda was preoccupied with self-promotion, authorities started caring less about people who worked at the Fukushima plant. Their equipment was getting worse; preparation was getting worse. So people had to think about their safety first. That's why those who understood the real danger of radiation began to quit. Now we have unprofessional people working there. They don't really understand what they're doing. That's the kind of people who use the wrong pump, who make mistakes like that. I'm particularly concerned about their leaders. It seems to me their crew leaders aren't real professionals. They don't know what they're doing. I'm really ashamed for my country, but I have to speak the truth for the sake of keeping our planet clean in the future.

SS: Does the fact that the government was covering up the real scale of the disaster for so long have anything to do with the traditional Japanese fear of losing face?

KI: It's just that they wanted to avoid responsibility.

SS: No, I understand, but why keep this quiet for so long? They didn't tell the world how bad it really was - why is that?

KI: There were some sad chapters in the history of Japan. The same thing happened with Hiroshima and Nagasaki. The authorities lied to everyone. They said it was safe. They hid the truth. That's the situation we are living in. It's not just Fukushima. Japan has some dark history. This is a sort of a sacrifice to the past.

SS: The United Nations report on the radiation fallout from Fukushima says no radiation-related deaths or acute diseases have been observed among the workers and general public exposed - so it's not that dangerous after all? Or is there not enough information available to make proper assessments? What do you think?

KI: This report is completely false. The report was made by a representative of Japan – Professor Hayano. Representing Japan, he lied to the whole world. When I was mayor, I knew many people who died from a heart attack, and then there were many people in Fukushima who died suddenly, even among young people. It's a real shame that the authorities hide the truth from the whole world, from the UN. We need to admit that actually many people are dying. We are not allowed to say that, but TEPCO employees also are dying. But they keep mum about it.

SS: Do you have an estimate of casualties?

KI: Today I don't have the numbers with me.

SS: *Mr. Idogawa, we only need an estimate, just to understand the scale of the tragedy you're talking about.*

KI: It's a huge responsibility to give specific numbers. It's hard for me, because I haven't studied this matter personally. But it's not just one or two people. We're talking about ten to twenty people who died this way.

SS: You say that despite the Fukushima disaster, Japan is planning to build more nuclear reactors, eventually satisfying at least half of its energy needs with nuclear energy. Obviously you're against that - but Japan really has no other choice in terms of energy, does it?

KI: Yes, it has. Japan has plenty of rivers, but hydro energy is not used at all. Why? Because it's not as profitable for big companies. Actually, we can provide electricity for a large number of people even with limited investment, without taxes. Just use gravity, and we may have so much energy that there'll be no need for nuclear plants anymore. And we also need to change our laws. There are many laws in Japan, perhaps too many. There are laws about rivers and the ways they're used. We could change laws regarding agricultural water use and start using rivers to produce electricity. Changing just this law alone will allow us to produce a lot of energy. We can solve the problem by using natural energy, without contaminating our planet. But this does not appeal to big companies, because you don't need big investments, you don't need to build big power plants. It's not that profitable for investors, for capitalists. But people in Japan begin to realize that we need to avert nuclear disasters, so 60-70 percent of the population are in favor of using natural energy. It took us a long time, but one day we'll follow the example of Europe, of Germany.

SS: Have you personally felt the consequences of the catastrophe? Has your health been affected?

KI: I now get exhausted quickly, it's harder to speak, I often get colds. My eyesight worsened. I have a cataract. My stomach hurts. My skin is very dry. I have muscular weakness in different parts of my body. These are the consequences of the catastrophe.

KI: No, I'm not getting any treatment right now. Actually, there's no place I could go for help. I now live in Saitama. The nearest hospital refused to treat me. So I'm trying to restore my health through nutrition.

Iodine availability

May 9, 2014

Areas near reactors checked for iodine supply

http://www3.nhk.or.jp/nhkworld/english/news/20140509_21.html

Japan's government has begun checking whether 24 of the country's prefectures have supplies of iodine tablets required for people living within 30 kilometers of nuclear power plants.

The prefectures' governments must store such tablets to be distributed to residents in case of nuclear emergencies. The central government finances such supplies.

Iodine is said to be useful in preventing the thyroid gland from absorbing radioactive substances.

The government began the investigation after Niigata Prefecture was found to have failed to store more than 1.3 million tablets necessary for residents within 30 kilometers of the Kashiwazaki-Kariwa plant.

A prefectural official admitted to forging documents and pretending to buy the tablets. His boss did not confirm delivery.

Government officials in charge of nuclear disaster prevention are to visit Niigata Prefecture next week to look into the case. May 9, 2014 - Updated 06:46 UTC

Idogawa adamant he won't retract

May 10, 2014

Ex-mayor lashes back at criticism over depiction of nosebleeds in manga about Fukushima plant

http://mainichi.jp/english/english/newsselect/news/20140510p2a00m0na014000c.html

The former mayor of a Fukushima Prefecture town near the crippled Fukushima No. 1 Nuclear Power Plant says he has no intention of retracting comments from a manga series in which he appears as himself, claiming he has been experiencing nosebleeds.

Katsutaka Idogawa, 67, former mayor of the Fukushima Prefecture town of Futaba, is featured in the popular comic series "Oishinbo." The main character is a newspaper reporter who goes to cover the crippled Fukushima plant and later experiences nosebleeds when he comes back to Tokyo. Idogawa says his nose bleeds regularly and that there are many others in Fukushima who have developed similar symptoms.

After receiving inquiries about the depiction in the story, publisher Shogakukan released a statement saying it decided to publish the issue respecting the author's expression, which was based on thorough research.

A depiction from an Oishinbo story where the main character bleeds from the nose after visiting the Fukushima No. 1 Nuclear Power Plant. (Mainichi) 拡大写真



Idogawa told a news conference on May 9 in Tokyo that he has heard many stories about local residents experiencing nosebleeds. He says his nose bleeds every day, especially in the mornings.

"There is no way I would retract my comments in the manga," Idogawa said. Responding to Environment Minister Nobuteru Ishihara's criticism of the depiction, Idogawa commented, "The minister has no business with my physical condition."

Manga author Tetsu Kariya wrote in his blog, "I am responsible for everything (in the story)." He asked readers not to complain to the publisher.

The editorial department of Big Comic Spirits, the weekly magazine that carries the manga series, posted a comment on its website that the story was not intended to judge the cause of nosebleeds or spread harmful rumors about areas near the nuclear plant.

May 10, 2014 (Mainichi Japan)

Niigata &iodine stockpiling

May 13, 2014 Govt. checks Niigata's iodine tablet stockpiles

http://www3.nhk.or.jp/nhkworld/english/news/20140513_21.html

Officials from Japan's central government are checking whether Niigata Prefecture is properly stockpiling iodine tablets in case of a nuclear accident. The prefecture is home to the Kashiwazaki Kariwa nuclear plant, the largest in Japan.

Prefectural governments are required to store iodine tablets that can be handed out in an emergency to people living within 30 kilometers of a nuclear facility. The tablets are said to prevent the thyroid gland from absorbing radioactive iodine.

Niigata's prefectural government was found last month to have failed to procure some 1.3 million tablets needed for its residents. It reportedly neglected to make the purchase for more than one year. Officials say they have since secured more than half the necessary amount.

Cabinet Office inspectors in charge of nuclear disaster prevention began investigating storage sites in Niigata on Tuesday.

At a facility in Kashiwazaki City, officials checked the condition and expiry dates of 5,000 tablets. The city is about 7 kilometers away from the nuclear plant run by Tokyo Electric Power Company.

A prefectural official in charge of pharmaceutical affairs said he hopes the 3-day inspection will help Niigata regain residents' trust.

Cabinet Office inspectors are also checking inventories at 23 other prefectures that are home to nuclear plants or lie within the 30-kilometer radius. May 13, 2014 - Updated 03:51 UTC

True information key to ensuring safety from radiation

May 17, 2014

As I See It: Gov't must delve deeper into radiation exposure from Bikini Atoll incident

http://mainichi.jp/english/english/perspectives/news/20140517p2a00m0na005000c.html

Sixty years have passed since crew members of the Daigo Fukuryu Maru, a tuna fishing boat based in Yaizu, Shizuoka Prefecture, were exposed to radiation following a nuclear test that the United States conducted on Bikini Atoll in the Pacific Ocean. At the time, the Japanese and U.S. governments played down the damage caused by the incident, announcing that the Daigo Fukuryu Maru was the only vessel affected by "death ash" even though nearly 1,000 vessels, including Japanese freighters and fishing boats, may have been exposed to radiation.

Now, the Japanese government is underestimating Fukushima residents' exposure to radiation following the outbreak of the crisis at the tsunami-hit Fukushima No. 1 Nuclear Power Plant, while making haste to restart idled atomic power stations across the country. This suggests that the history of placing priority on national policy over people's health is being repeated in Japan. The government should conduct a detailed survey on people's exposure to radiation in the Bikini Atoll incident and learn lessons from the case.

In January this year, Hajime Kikima, 69, a doctor living in Hamamatsu, Shizuoka Prefecture, examined an 88-year-old retired employee of a company that owned the Daigo Fukuryu Maru, and felt that his patient was suffering from the effects of a radiation-related disease. The patient was involved in work to remove water from the tuna fishing boat over a period of two months after it came back to the Yaizu fishing port. At the time, he felt dizzy and lost a considerable amount of his hair, but did not receive any treatment. After he passed the age of 60, the patient suffered from stomach and colon cancer as well as a thyroid gland disorder. Workers at a local public health office who looked after crew members of the boat are also reportedly showing symptoms suggesting they had indirect exposure to radiation.

A health ministry survey shows that 856 fishing boats across the country dumped fish they caught because of the nuclear test on Bikini Atoll. Some researchers point out that over 1,000 vessels were affected by radiation from the nuclear test in one way or another. A citizens group in Kochi Prefecture, where about one-third of fishing boats operating around the atoll were based, claims that many former crew members of these vessels are suffering from cancer or other diseases. The organization has joined hands with Hiroshima University in investigating whether and how former crew members' exposure to radiation has affected their health.

Not everyone affected by radiation in the incident is known. If the government had conducted an extensive survey, the results could have helped conduct better surveys on Fukushima residents' exposure to radiation following the nuclear plant accident.

The government should have identified those who are suspected of having been exposed to radiation in the Bikini incident and examined their health conditions. However, the testimonies provided by those involved in efforts to get to the bottom of the incident highlight the selfishness with which the United States, a nuclear superpower, attempted to cover up the incident, and the cowardliness with which the Japanese government went along with such attempts by Washington.

At that time, less than a decade after the atomic bombings of Hiroshima and Nagasaki in August 1945, the United States feared that the Bikini incident could ignite anti-U.S. and anti-nuclear sentiment. Amid the Cold War, Washington was extremely wary about details of the nuclear test on Bikini Atoll, such as how fishermen operating nearby were exposed to radiation, coming to light. The Daigo Fukuryu Maru is now on display in Tokyo thanks to a preservation campaign by citizens, even though the United States had proposed that Japan sink the fishing boat for the purpose of protecting secrets.

In January 1955, less than a year after the incident, Washington paid a total of roughly 720 million yen to crew members of fishing boats and people in the fisheries industry across Japan as "consolation money." Since then, Tokyo has maintained the position that the matter has been settled. That same year, Tokyo and Washington signed an agreement on bilateral cooperation in promoting the peaceful use of nuclear energy, and Japan enacted the Atomic Energy Basic Act, based on which the country began nuclear power development as a national policy while drawing the curtains on the Bikini incident.

Sixteen of the 23 crew members of the Daigo Fukuryu Maru have already passed away. Most of them died of liver cancer and other liver ailments. The majority of medical experts believe that the crew members were infected with hepatitis C through blood transfusions as part of their treatment. However, the government recognized the death of only Aikichi Kuboyama, 40, chief radio operator of the vessel who passed away six months after the nuclear test, as being directly related to the incident.
"The Japanese government has followed U.S. nuclear policy because of the bilateral security arrangement and for economic reasons, and has turned a blind eye to its own people's exposure to radiation," says Hiroko Takahashi, a lecturer at the Hiroshima Peace Institute of Hiroshima City University, who conducts research on atomic bombs and U.S. nuclear tests.

"The government has failed to proactively release the amounts of radiation that Fukushima residents have been exposed in the nuclear crisis. Its attitude has remained unchanged since the Bikini incident.

Following the Bikini incident, Yaizu-based fishermen were forced to discard fish that they had just landed at the local fishing port. Local residents reportedly tended to regard the Daigo Fukuryu Maru as a nuisance. Some local residents even looked coldly at crew members of the vessel saying, "Fish in Yaizu are no longer selling well because of you."

One of the former crew members, 87-year-old Susumu Misaki, opened a tofu shop after the incident. One local branded his tofu "nuclear weapon tofu." The Bikini incident dealt a serious blow to the nation's fisheries industry as a whole.

Now, the agricultural and fisheries industries in Fukushima Prefecture face harmful rumors about their products, and it is ordinary citizens who are being made to pay for problems deriving from national policy.

Some people may have died even without knowing that they were exposed to radiation from the nuclear test on Bikini Atoll. Documents on the mariners' insurance program provide details on the crew members of ships, the period and locations of their operations and their health conditions. The documents are preserved at the Japan Pension Service, which falls under the supervision of the Health, Labor and Welfare Ministry. The government could clarify the causal relationship between crew members' exposure to radiation and their health problems if it closely reviewed those documents.

Kuboyama passed away after saying, "We should be the last victims of atomic and hydrogen bombs." To make sure that no more people will be killed by radiation, the government must get to the bottom of the Bikini incident. (By Yuta Hiratsuka, Shizuoka Bureau)

May 17, 2014 (Mainichi Japan)

More cases of thyroid cancer among Fukushima children

May 20, 2014

Number of Fukushima kids with thyroid cancer jumps by 17 from December

http://www.japantimes.co.jp/news/2014/05/20/national/number-fukushima-kids-thyroid-cancer-jumps-17-december/#.U3xUhSji-1v

FUKUSHIMA – The Fukushima Prefectural Government has confirmed in a new report that 50 children in the prefecture have developed thyroid cancer, an increase of 17 from previous study last December, sources said Monday.

The latest report, made Monday to an expert panel examining the results of health checkups on Fukushima residents, also detailed 39 children suspected of having developed cancer, sources said.

The cancer figure was taken at the end of March among Fukushima residents who were 18 or younger at the time of the March 2011 nuclear accident at Tokyo Electric Power Co.'s Fukushima No. 1 atomic plant.

After studying data provided so far, including the new cancer figures, the panel said it was difficult to determine that a causal link existed between the children's cancers and the triple meltdown at the nuclear plant.

The Fukushima health examination program covers some 370,000 residents. Of them, some 80 percent have already received the checkups.

Once the results of the first round checkups become available, likely in August, the panel will again assess the thyroid cancer numbers and any possible connection between the cancers and the accident, the sources say.

UNSCEAR report very hopeful

May 28, 2014 Fukushima given UN report on effects of radiation

http://www3.nhk.or.jp/nhkworld/english/news/20140528_27.html

The head of a UN scientific panel has submitted to Fukushima Prefecture its report on the effects of radiation exposure on humans from the Fukushima Daiichi nuclear accident 3 years ago.

Chair of the UN Scientific Committee on the Effects of Atomic Radiation Carl-Magnus Larsson visited the Fukushima vice-governor Fumio Murata on Wednesday.

More than 80 experts across the world worked on the report released by the committee last month.

The document says no deaths or serious illnesses have so far been reported from radiation exposure from the accident.

The report also said no future increase of the rate of cancer is expected from the exposure Fukushima residents received. It cited a 1 year-old child's exposure at between 1.6 to 13 milisieverts.

As for thyroid cancer in children, which increased after the Chernobyl accident, the UN report said it will not rise in the same way as their exposure was far below Chernobyl levels.

Larsson told reporters that the team's assessment of residents' health is based on scientific data and reports collected over time.

He related that he believes their report gives an overall picture of the possible impact. Larsson added their predictions may not be perfect as it's only 3 years since the accident.

The UN committee is considering holding explanatory sessions in the prefecture to help people understand the report's contents.

Make sure people are aware of radiation dangers in unchecked food

June 17, 2014

Food not checked for radiation poses risk in Fukushima: study

http://www.japantimes.co.jp/news/2014/06/17/national/food-checked-radiation-poses-risk-fukushima-study/#.U5_m0yji91s

by Mizuho Aoki Staff Writer

Eating unchecked homegrown vegetables and wild game from radiation-tainted areas on a regular basis can lead to high levels of internal radiation exposure, according to the results of a study published Tuesday in the U.S. online science journal PLOS ONE.

However, levels of radioactive cesium detected in the bodies of the study's participants declined once they stopped eating highly contaminated food, said the researchers, who called for renewed efforts to raise people's awareness of risky foods at a time when public interest appears to be dwindling. The study focused on Minamisoma, which stretches about 14 to 38 km north of the Fukushima No. 1 nuclear plant. Researchers followed nine people, who were the only ones out of 30,622 examinees from the city to have internal cesium-137 levels greater than 50 becquerels per kilogram in screenings between March 11, 2012, and March 10, 2013. That's roughly equal to 0.1 to 0.2 millisieverts per year.

Cesium-137 levels among the nine participants ranged from 3,230 to 15,918 becquerels per body, which corresponds to between 0.07 to 0.53 millisieverts per year, the report said. The International Commission on Radiological Protection set a radiation exposure limit under normal situations of 1 millisievert per year and said cumulative exposure of 100 millisieverts would increase the chance of death by cancer by 0.5 percent.

The study said the participants, aged 60 to 74, consumed "homegrown produce without radiation inspection, and often collected mushrooms in the wild or cultivated them on bed-logs in their homes."

The person with the highest levels regularly ate wild boar meat and river fish, the report said. Wild game, river fish and wild mushrooms are highly contaminated and banned from being shipped out of Fukushima Prefecture.

A few months after being screened, the participants were advised to consume mainly food from supermarkets and to refrain from eating potentially contaminated foods, such as mushrooms, mountain vegetables and wild game, without having it inspected first. The researchers found that the degree of contamination fell across the board. Most of the cesium-137 levels were halved in about three months and dropped to less than a third in six months.

The study was led by Masaharu Tsubokura, a physician at the University of Tokyo's Institute of Medical Science. He said **even though most of the Minamisoma residents' internal radiation exposure level are non-detectable, it's time to think about ways to support those who have little knowledge about, or interest in food contamination, as prolonged internal exposure may increase their risk of developing cancer.**

Fukushima's children & thyroid cancer

Fukushima's Children are Dying

http://ecowatch.com/2014/06/14/fukushima-children-dying/

Harvey Wasserman | June 14, 2014 10:11 am | Comments

Some 39 months after the multiple explosions at Fukushima, thyroid cancer rates among nearby children have skyrocketed to more than forty times (40x) normal.

More than 48 percent of some 375,000 young people—nearly 200,000 kids—tested by the Fukushima Medical University near the smoldering reactors now suffer from pre-cancerous thyroid abnormalities, primarily nodules and cysts. The rate is accelerating.

More than 120 childhood cancers have been indicated where just three would be expected, says Joseph Mangano, executive director of the Radiation and Public Health Project.

The nuclear industry and its apologists continue to deny this public health tragedy. Some have actually asserted that "not one person" has been affected by Fukushima's massive radiation releases, which for some isotopes exceed Hiroshima by a factor of nearly 30.

More than 48 percent of some 375,000 young people—nearly 200,000 kids—tested by the Fukushima Medical University near the smoldering reactors now suffer from pre-cancerous thyroid abnormalities, primarily nodules and cysts.

But the deadly epidemic at Fukushima is consistent with impacts suffered among children near the 1979 accident at Three Mile Island and the 1986 explosion at Chernobyl, as well as findings at other commercial reactors.



The likelihood that atomic power could cause such epidemics has been confirmed by the Canadian Nuclear Safety Commission, which says that "an increase in the risk of childhood thyroid cancer" would accompany a reactor disaster.

In evaluating the prospects of new reactor construction in Canada, the Commission says the rate "would rise by 0.3 percent at a distance of 12 kilometers" from the accident. But that assumes the distribution of protective potassium iodide pills and a successful emergency evacuation, neither of which happened at Three Mile Island, Chernobyl or Fukushima.

The numbers have been analyzed by Mangano. He has studied the impacts of reactor-created radiation on human health since the 1980s, beginning his work with the legendary radiologist Dr. Ernest Sternglass and statistician Jay Gould.

Speaking on www.prn.fm's Green Power & Wellness Show, Mangano also confirms that the general health among downwind human populations improves when atomic reactors are shut down, and goes into decline when they open or re-open.

Nearby children are not the only casualties at Fukushima. Plant operator Masao Yoshida has died at age 58 of esophogeal cancer. Masao heroically refused to abandon Fukushima at the worst of the crisis, probably saving millions of lives. Workers at the site who are employed by independent contractors many dominated by organized crime—are often not being monitored for radiation exposure at all. Public anger is rising over government plans to force families—many with small children—back into the heavily contaminated region around the plant.

Following its 1979 accident, Three Mile Island's owners denied the reactor had melted. But a robotic camera later confirmed otherwise.

The state of Pennsylvania mysteriously killed its tumor registry, then said there was "no evidence" that anyone had been killed.

But a wide range of independent studies confirm heightened infant death rates and excessive cancers among the general population. Excessive death, mutation and disease rates among local animals were confirmed by the Pennsylvania Department of Agriculture and local journalists.

In the 1980s federal Judge Sylvia Rambo blocked a class action suit by some 2,400 central Pennsylvania downwinders, claiming not enough radiation had escaped to harm anyone. But after 35 years, no one

knows how much radiation escaped or where it went. Three Mile Island's owners have quietly paid millions to downwind victims in exchange for gag orders.

At Chernobyl, a compendium of more than 5,000 studies has yielded an estimated death toll of more than 1,000,000 people.

The radiation effects on youngsters in downwind Belarus and Ukraine have been horrific. According to Mangano, some 80 percent of the "Children of Chernobyl" born downwind since the accident have been harmed by a wide range of impactsranging from birth defects and thyroid cancer to long-term heart, respiratory and mental illnesses. The findings mean that just one in five young downwinders can be termed healthy.

Physicians for Social Responsibility and the German chapter of the International Physicians for the Prevention of Nuclear War have warned of parallel problems near Fukushima.

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) has recently issued reports downplaying the disaster's human impacts. UNSCEAR is interlocked with the United Nations' International Atomic Energy Agency, whose mandate is to promote atomic power. The IAEA has a long-term controlling gag order on UN findings about reactor health impacts. For decades UNSCEAR and the World Health Organization have run protective cover for the nuclear industry's widespread health impacts. Fukushima has proven no exception.

In response, Physicians for Social Responsibility and the German International Physicians for the Prevention of Nuclear War have issued a ten-point rebuttal, warning the public of the UN's compromised credibility. The disaster is "ongoing" say the groups, and must be monitored for decades. "Things could have turned for the worse" if winds had been blowing toward Tokyo rather than out to sea (and towards America).

There is on-going risk from irradiated produce, and among site workers whose doses and health impacts are not being monitored. Current dose estimates among workers as well as downwinders are unreliable, and special notice must be taken of radiation's severe impacts on the human embryo.

UNSCEAR's studies on background radiation are also "misleading," say the groups, and there must be further study of genetic radiation effects as well as "non-cancer diseases." The UN assertion that "no discernible radiation-related health effects are expected among exposed members" is "cynical," say the groups. They add that things were made worse by the official refusal to distribute potassium iodide, which might have protected the public from thyroid impacts from massive releases of radioactive I-131.

Overall, the horrific news from Fukushima can only get worse. Radiation from three lost cores is still being carried into the Pacific. Management of spent fuel rods in pools suspended in the air and scattered around the site remains fraught with danger.

The pro-nuclear Shinzo Abe regime wants to reopen Japan's remaining 48 reactors. It has pushed hard for families who fled the disaster to re-occupy irradiated homes and villages.

But Three Mile Island, Chernobyl and the plague of death and disease now surfacing near Fukushima make it all too clear that the human cost of such decisions continues to escalate—with our children suffering first and worst.

Harvey Wasserman edits www.nukefree.org and wrote SOLARTOPIA! Our Green-Powered Earth. His Green Power & Wellness Show is at www.prn.fm.

Sick cow taken to Tokyo

June 21, 2014 **Fukushima cattle farmer brings cow for protest at farm ministry** http://mainichi.jp/english/english/newsselect/news/20140621p2g00m0dm051000c.html

TOKYO (Kyodo) -- A cattle farmer from near the Fukushima Daiichi nuclear power plant brought one of his cows to central Tokyo's Kasumigaseki administrative district on Friday to protest against the government's policy of culling cattle exposed to radiation in the wake of the nuclear crisis at the plant.

Defying a government ban on taking livestock outside a 20-kilometer radius of the Tokyo Electric Power Co. plant, Masami Yoshizawa, 60, whose farm is located within the radius, transported the cow by truck to the farm ministry.

"For 40 years the prefecture of Fukushima sent electricity to Tokyo. But now we are abandoned," Yoshizawa said using a microphone. Some of his supporters joined him in the protest.

When Yoshizawa tried to get the cow off the truck, police officers stopped him and an argument ensued. Yoshizawa later submitted written requests to a farm ministry official related to cows in areas near the TEPCO plant, including conducting a study on the animals and securing feed for them. June 21, 2014 (Mainichi Japan)

Nagasaki people not told about radiation

June 21, 2014

Archive photo shows Nagasaki residents wearing masks a month after atomic bombing

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201406210014



People wearing masks walk near ground zero in Nagasaki in a photo taken on Sept. 16, 1945. Two firewalls in the background are remains of Mitsubishi Heavy Industries Ltd.'s Urakami dormitory. (Provided by the U.S. National Archives and Records Administration)

By SHOHEI OKADA/ Staff Writer

WASHINGTON--A U.S. government archives photo taken weeks after an atomic bomb was dropped on Nagasaki shows residents wearing surgical masks on the street in the devastated city, in apparent response to rumors that many people were dying due to poison gas from the blast. The photo, dated Sept. 16, 1945, is among the images a research group from Nagasaki visiting the National Archives and Records Administration (NARA) here have found. It was taken about a month after an atomic bomb was dropped on the city during the final days of World War II.

"This is a rare photo," said Yoshitoshi Fukahori, 85, an atomic bomb survivor who heads the photo resources research section of the Nagasaki Foundation for the Promotion of Peace.

The photo provides valuable proof that many people possibly believed poison gas was used in the attack on Aug. 9, he said.

With citizens not being informed of the atomic bombing, they believed acute symptoms they were suffering were caused by poison gas, not high doses of radiation.

The photographer is "Goldberg," whose other pictures taken on the same day have also been found. The researchers believe Goldberg is a member of an advance troop of Allied forces since the photos were taken a week before the visit of the occupation forces on Sept. 23.

Four residents, including women wearing masks, are seen walking in Nagasaki's Hamaguchi district (the present Kawaguchi district), about 500 meters south of ground zero. Two firewalls seen in the background were the only remains of the Urakami dormitory of Mitsubishi Heavy Industries Ltd.'s Nagasaki Shipyard.

The caption describes "radiation fears."

But Fukahori said the caption is not correct.

"In those days people did not know about radiation," said Fukahori.

Even among those who were not seriously injured in the initial blast, many suffered from acute hair loss, bleeding and diarrhea and died in rapid succession.

"People were saying poison gas was released," he recalled.

Fukahori recalled his family members asking him, "Didn't you breathe poison gas?" when they were reunited.

The group is scheduled to conduct research on documents related to the atomic bombing through June 27.

No safe dose of radiation

July 2, 2014



Playing it safe: Children play in an indoor sand pit at a kindergarten in Koriyama, about 50 km from the Fukushima No. 1 nuclear plant. The city recommended that children aged 3 to 5 limit their time outdoors to 30 minutes per day in the wake of the 2011 nuclear disaster. The limits were lifted in 2013, but many of the region's kindergartens continue to adhere to them because of parents' concerns. | REUTERS

Health studies explode the myth of the 'safe' nuclear power plant

http://www.japantimes.co.jp/community/2014/07/02/voices/health-studies-explode-myth-safe-nuclear-power-plant/#.U7USKLHi91s

Special To The Japan Times

Dear Minister of Economy, Trade and Industry Toshimitsu Motegi,

Despite the continuing disaster at Fukushima No. 1, there remains one final myth regarding nuclear power plants in Japan: Namely, that in the absence of a major accident, a normally operating nuclear power plant is safe. However, the now-verifiable reality is that it is not, at least not for residents living in the vicinity of the plant.

As early as 2007, Germany's Federal Office for Radiation Protection published a thoroughly researched study titled "Childhood Cancer Rates Near Nuclear Power Plants." The study covered 24 years (1980-2003) and included 1,592 children with cancer and 4,735 controls living around 16 nuclear power sites throughout Germany.

At all 16 sites, the study found that children under 5 years of age had a higher risk of developing cancer the closer they lived to a plant. Risk was most increased within 5 km of the plants, i.e. by 60 percent. Seventy-seven children living within 5 km of a nuclear plant were found to have cancer, considerably higher than the 48 that would be expected statistically.

For leukemia, the risk increase was 120 percent: 37 cases instead of the expected 17. In other words, within the 5-km range, 29 children suffered from cancer (of whom 20 had leukemia) simply because they lived in these areas. Altogether, there were up to 275 more cases of cancer than would be expected statistically at these sites.

Even normally operating nuclear power plants constantly release radioactive elements into the air and cooling water. The excess cancers among children living near nuclear facilities are likely established during the embryonic stage when the embryo is extremely radiosensitive. This is the time when cells are proliferating rapidly and are much more vulnerable than in later, more stable growth phases. Damaged cells proliferate easily, paving the way for cancer and other diseases.

Additional studies have been conducted in both Britain and the U.S. with similar, if not even more disturbing, results. In 2006, in conjunction with Welsh broadcaster S4C, an environmental consultancy produced a report based on interviews with villagers in the vicinity of the Trawsfynydd nuclear power station in north Wales.

Researchers focused on almost 1,000 people of all ages who had been living in three communities close to the power plant throughout the 1996-2005 period. The incidence of cancer (of any type) among women younger than 50 was reported to be more than 15 times the national average.

Furthermore, breast cancers in women aged 50-61 were five times the average level for women of that age. Overall, the survey revealed double the risk for cancer (of any type) relative to the average rates for England and Wales.

As for the U.S., on March 20 of this year, the Cape Cod Times reported the court testimony of Richard Clapp, who was the director of the Massachusetts Cancer Registry from 1980. He told the court: "In the first two years (of his tenure), we found an excess of leukemia in Plymouth and towns near the Pilgrim Nuclear Power Station. There was a fourfold excess of leukemia in people who lived and worked near the plant."

On March 4, the Cal Coast News reported on a recent study conducted by the nonprofit World Business Academy business think tank concerning the Diablo Canyon Nuclear Power Plant in San Luis Obispo County, California. The study found that those living within a 25-km radius of the plant had a significantly increased incidence of various cancers, including thyroid, breast and melanoma. Further, since the Diablo Canyon Nuclear Power Plant opened in the mid-1980s, San Luis Obispo County changed from a relatively low-incidence county in terms of cancer to a high-incidence county, translating to an additional 738 people diagnosed with cancer between 2001 and 2010.

Cancer incidence in San Luis Obispo County rose from 0.4 percent below the California average to 6.9 percent above that figure, giving it the highest cancer rate of all 20 counties in Southern California. After Diablo Canyon began operating, the incidence of thyroid and female breast cancer also showed a significant increase.

Perhaps most disturbingly, after Diablo Canyon began operating, both infant mortality and child/adolescent cancer mortality rose significantly. The incidence of melanoma soared from 3.6 percent above to 130.2 percent above the state incidence rate. It now has the highest rate of all the counties in California.

The preceding reports demonstrate yet again the scientifically established fact that *there is no safe dose of radiation*, no matter how small, bearing in mind that dangerous radioactive elements constantly accumulate in the body. Thus, with each nuclear reactor the Japanese government allows to restart, residents living as far away as 25 km will once again be placed at a higher risk of falling victim to life-threatening illnesses.

Finally, The Associated Press has just released an investigation showing that radioactive tritium has leaked from three-quarters of U.S. commercial nuclear power sites, often into groundwater, from buried piping that has corroded. What's more, as America's nuclear power reactors continue to age, the number

and severity of the leaks has been escalating, even as U.S. regulators extend the licenses of more and more reactors. Considering Japan's own fleet of aging reactors, can you guarantee such leaks won't occur in Japan?

In light of this evidence, let alone the possibility of future major accidents, Minister Motegi, are you and the rest of the Abe administration still determined to restart the reactors?

BRIAN VICTORIA

Kyoto

Send your comments or submissions (of between 500-700 words, addressed to local, regional or national politicians, officials, ministries or other authorities) here: community@japantimes.co.jp

Tim Mousseau: Radiation & Wildlife in Chernobyl and Fukushima

Abnormalities, Deformities, and Resilience: New Research on Radiation and Wildlife in Chernobyl and Fukushima

http://akiomatsumura.com/2014/07/abnormalities-and-deformities-dr-mousseau-explains-the-effects-of-radiation-on-chernobyl-and-fukushima-wildlife.html

Dear Akio,

Thank you for the opportunity to share a brief summary of my research activities in Ukraine, Belarus and Japan, as well as my vision for future studies in these regions. My goal for the coming year is to further strengthen our ongoing multinational collaborative, continue our ongoing research efforts in both Fukushima and Chernobyl, and obtain support to coordinate and initiate new avenues of research involving researchers in Japan and elsewhere.

At present, there is no other central group organizing or sponsoring such activities and we are thus missing invaluable opportunities to observe and understand the impacts of radiological accidents on natural populations that may be critical for predictions of long-term impacts on human populations stemming from nuclear accidents and other sources of radiation in the environment. Without such research there can be no confidence in assessments of the hazards to human populations living in or visiting Japan in the future.

Best wishes,

Timothy Mousseau, PhD University of South Carolina



Mutant Dandelions in Fukushima. Photo by Timothy Mousseau

The Chernobyl + Fukushima Research Initiative

Timothy Mousseau, PhD

The Initiative and Its Research

The Chernobyl + Fukushima Research Initiative (CFRI) is centered at the University of South Carolina, Columbia, and began formal research activities in Ukraine in 2000, Belarus in 2005, and Fukushima, Japan, in July 2011. To date, the group has conducted more than 30 research expeditions to Chernobyl and 10 expeditions to Fukushima.

The nuclear accidents at both Chernobyl and Fukushima released enormous quantities of radioactive elements that were dispersed by the prevailing weather at landscape scales with approximately 200,000 km² and 15,000 km² land area significantly contaminated in these regions, respectively.

These radioactive materials were not uniformly dispersed and created a mosaic of "hot" and "cold" microhabitats scattered across these regions. This radioactive patchwork has provided a unique opportunity to investigate the genetic, ecological and evolutionary impacts on biological systems with a degree of detail and replication, and hence scientific rigor, not possible using laboratory or traditional field studies, which are often constrained to a limited and rather unnatural range of environmental

heterogeneity. This is important, as it is expected that the interactions between natural environmental factors and radioactive contaminants likely play a large and significant role in determining biological outcomes of these disasters. Thus it is imperative that studies of radiation effects be conducted in nature, at a landscape scale. Studies of human populations alone have many constraints that limit their utility for developing an understanding of longterm impacts of radiation.

University of South Carolina's CFRI was the first and currently is the only research group to utilize a multidisciplinary approach to address the health and environmental outcomes of radiation effects in freeliving natural populations. This has permitted the investigation of both acute (short term) and chronic (long term and multi-generational) exposures.

The Chernobyl + Fukushima Research Initiative is also currently the only research team working in both Chernobyl and Fukushima.

Key funding sources have included the Samuel Freeman Charitable Trust, the CNRS (France), the National Science Foundation, and the National Geographic Society. Subsequently, additional funding sources have included NATO, the Civilian Research Development Foundation (CRDF), the National Institutes of Health (NIH), Qiagen GmbH, the Fulbright Foundation, the University of South Carolina Office of Research and the College of Arts and Sciences, the Academy of Finland, and gifts from private citizens.

To date, more than 60 scientific publications have resulted from this initiative, most in the past seven years (copies of most of these papers are available on our website http://cricket.biol.sc.edu). This research has been highlighted in many newspaper reports and television programs including the *New York Times, The Economist, Harpers*, the BBC, CNN, and PBS *News Hour* (see website for details). The team has pioneered the use of ecological, genetic and dosimetric technologies in order to unravel the health and environmental consequences of chronic low-dose exposure resulting from the Chernobyl and Fukushima disasters. These have included massively replicated ecological censuses of natural populations of birds, mammals and insects to investigate population and demographic effects; DNA sequencing and genotoxicity testing to assess short and long term genetic damage to individuals living in the wild; and the use of miniature dosimeters attached to wild animals and field measurements of whole body burdens of radioisotopes in birds and mammals to obtain accurate estimates of realized external and internal radiation doses to animals living under natural conditions. Recently, the group has expanded to include epidemiological and genetic studies of human populations (especially children) living in Chernobyl-affected regions of Ukraine.

Key results published in 2013-14 include the discovery of tumors, cataracts and damaged sperm in birds from high radiation areas of Chernobyl, and impacts on biodiversity in Fukushima. Exciting new results include the discovery that some species of birds may have developed resistance to the effects of radiation through changes in the allocation of antioxidants, although many birds are sterile in areas of high contamination. Also, we have recently discovered effects on neurological development in small mammals in both Chernobyl and Fukushima.

These two disasters differ in the time since the events, and the amount and diversity of radionuclides that were released, although the predominant source of radiation is cesium-137 in both locations.



Yellow Bunting near Chernobyl

Research Highlights

Highlights from research published by the Chernobyl Research Initiative include the following:

• Population sizes and numbers of species (i.e. biodiversity) of birds, mammals, insects, and spiders are significantly lower in areas of high contamination in Chernobyl.

• For many birds and small mammals, life spans are shorter and fertility is depressed, in areas of high contamination.

• In Fukushima, only birds, butterflies, and cicadas showed significant declines during the first summer following the accident. Other groups were not negatively affected. Efforts are ongoing to track changes through time on these populations.

• There is considerable variability among species in their sensitivity to radionuclides. A few species are not affected, and some species even appear to increase in numbers in areas of high contamination in both Chernobyl and Fukushima, presumably in response to competitive release (i.e. more available food and shelter), fewer predators and perhaps adaptation to radiation effects.

• Many species show evidence of genetic damage stemming from acute exposures and the differences observed between Fukushima and Chernobyl suggests some species may show the consequences of mutation accumulation over multiple generations.

• Some individuals and species show no evidence of genetic damage in relation to radiation exposure and some even show evidence of evolutionary adaptation to the effects of radiation through increased antioxidant activity, which may provide protection against ionizing radiation.

• The bird species that are most likely to show declines in numbers in response to radiation are those that historically have shown increased mutation rates for other reasons possibly related to DNA repair ability or reduced defenses against oxidative stress.

• Deleterious effects of radiation exposure seen in natural populations in Chernobyl include increased rates of cataracts, tumors, growth abnormalities, deformed sperm, sterility, and albinism.

• Neurological development is impacted as evidenced by depressed brain size in both birds and rodents and consequent effects on cognitive ability and survival have been demonstrated in birds.

• In Fukushima, the first signs of developmental abnormalities have been observed in birds in 2013, although significant genetic damage has not yet been documented for birds or rodents.

• Tree growth and microbial decomposition in the soil are also depressed in areas of significant radiation.

In sum, these findings clearly demonstrate landscape-scale individual, population and ecosystem consequences of these nuclear disasters, with many examples of developmental abnormalities and deformities that likely contribute to the depressed abundances and biodiversity seen in radioactive parts of the Chernobyl and Fukushima regions. These findings contrast starkly with the optimistic unsupported claims made by the UN's Chernobyl Forum and UNSCEAR committees. Continued study will be required to determine not only the time-course for population and community adaptation to this perturbation, but also if and when these regions will ever again be suitable for human habitation.



Goals for 2014-15

We are currently seeking funding to support the following ongoing and planned future research activities of the Chernobyl + Fukushima Research Initiative:

1) Continued monitoring of Fukushima populations of birds, small mammals, and insects in order to test for changes in population sizes (abundances) and numbers of species (biodiversity) through time. This study will allow long term predictions of time to recovery.

2) Continued monitoring of barn swallows and rodents (mice and voles) populations for cancers, survival, reproduction, and genetic damage in Fukushima and Chernobyl (in collaboration with the CNRS, France, Rikkyo University, Tokyo, the Wild Bird Society of Japan, the National Institute of Forestry, Japan, and the University of Jyvaskyla, Finland).

3) Initiate a new project to study effects of radiation on tree growth and soil microbial activity in Fukushima (in collaboration with Chubu University, Nagoya, Japan).

4) Initiate a new project to investigate effects of radiation growth, fertility, and genetic damage in cows living in highly radioactive regions of Fukushima (in collaboration with the Fukushima Cattle Ranchers Association).

5) Initiate a new project to examine mutation rates in humans using whole genome DNA sequencing. Initially this project will focus on families living in contaminated regions of Ukraine. The project is in collaboration with the Montreal Neurological Institute and Hospital at McGill University, the Center of Radiological Research at Columbia University, and the Institute for Radiation Medicine in Kiev, Ukraine.

6) Continued development of new methods for measurement of dose and genetic damage in wild populations of animals.

7) Coordination of an international consortium of independent scientists to provide unbiased evidencedbased information concerning the health and environmental risks related to nuclear accidents. This group will compile, evaluate, and interpret the current scientific and medical literature and develop a literature suitable for public distribution via the print and internet media, as well as public presentations in Japan and internationally.

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New radiation measurement confuses people

July 20, 2014

New radiation measurement method spreads confusion

http://www.japantimes.co.jp/news/2014/07/20/national/new-radiation-measurement-method-spreads-confusion/#.U8vQnLHi91s

Fukushima Minpo

Confusion is spreading among towns and cities tasked with radiation cleanup in the face of a new decontamination policy to be released by the Environment Ministry as early as this month.

The government has been decontaminating areas whose aerial radiation reading is 0.23 microsievert per hour or more, based on its policy of keeping annual radiation exposure for individuals at 1 millisievert or less. It arrived at the estimated dose of 0.23 microsievert per hour by assuming that an individual spends eight hours outdoors and 16 hours indoors.

Under the new policy, however, the government will determine decontamination needs by **using** radiation exposure data collected from individual dosimeters, which tend to be lower than the estimated dose, thus reducing the areas subject to government-mandated decontamination.

While some municipalities welcome the move, saying it will allow them to scale down decontamination efforts in areas where radiation levels are unlikely to go down significantly, others are worried that residents will be confused.

The Environment Ministry unveiled its plan to use the individual dosimeter data last month at its meetings with officials from the cities of Fukushima, Koriyama, Soma and Date. According to Date officials, the city measured the radiation exposure of its 52,000 citizens wearing dosimeters from July 2012 through June 2013. The results showed that per-year exposure levels for nearly 70 percent of residents, even in areas where aerial radiation levels exceeded 0.23 microsievert per hour, was less than 1 millisievert in total.

"We should break the spell of aerial radiation soon," said a Date official, pinning hopes on the ministry plan.

An official of the city of Tamura, on the other hand, expressed shock, saying the city has been cleaning up contaminated areas based on aerial readings, and if the cleanup projects are scaled back as a result of a policy change, it would cause anxiety among residents. Tamura, therefore, will not change its decontamination plan, the official said.

Experts are similarly divided. Junichiro Tada, a member of the board of directors at nonprofit organization Radiation Safety Forum, said he agrees with the ministry. "We should change the way radiation doses are managed from an aerial radiation basis to an individual exposure basis," he said. "That way, we will do away with ineffective decontamination work."

But Keizo Ishii, director of the Research Center for Remediation Engineering of Living Environments Contaminated with Radioisotopes at Tohoku University, remains cautious.

"Many residents of Fukushima have deliberately stayed indoors since the nuclear disaster. If they start to go out like they used to before the quake, the individual radiation doses might go up and will not necessarily fall below the 1 millisievert threshold," Ishii said. "As such, we should aim for continued use of aerial figures for decontamination."

Sanae Sato, a 54-year-old homemaker from the city of Fukushima, said she wants standards that are easy to understand. "I hope the national, prefectural, municipal governments, as well as experts, will come to a consensus and create the same standards," she said.

This section, appearing every third Monday, focuses on topics and issues covered by the Fukushima Minpo, the largest newspaper in Fukushima Prefecture. The original article was published on June 22.

IPPNW scathingly critical of UNSCEAR report

http://www.fukushima-disaster.de/fileadmin/user_upload/pdf/english/Akzente_Unscear2014.pdf

IPPNW affiliates criticize UNSCEAR report on Fukushima

http://peaceandhealthblog.com/2014/06/06/unscear-fukushima/

June 6, 2014

tags: Fukushima, health, nuclear energy, radiation by IPPNW

Physicians from 19 IPPNW affiliates have published a critical analysis of a major new UNSCEAR report to the UN General Assembly on the health effects of exposure to ionizing radiation from the nuclear reactor disaster at Fukushima in March 2011. UNSCEAR—the United Nations Scientific Committee on the Effects of Atomic Radiation—published Levels and effects of radiation exposure due to the nuclear accident after the 2011 great east-Japan earthquake and tsunami on April 2, 2014. A summary report was sent to the UNGA in October 2013.

Alex Rosen of IPPNW-Germany, one of the lead authors of the critique, said UNSCEAR "is comprised of delegates from nuclear states with vested interests and a biased view on nuclear energy. Their report on the Fukushima nuclear disaster draws mainly on data from the nuclear industry's publications rather than from independent sources, omits or misinterprets crucial aspects of radiation exposure and uses questionable assumptions as the basis for its calculations.

"Many of us are concerned that the apparently systematic underestimations and questionable interpretations in the report will be used by the nuclear industry to downplay the expected health effects of the nuclear catastrophe in Fukushima. For these reasons, we have put together this comprehensive analysis."

In a one-page summary of their critique, the authors credited UNSCEAR committee members with attempting to evaluate "the extensive and complex data concerning the Fukushima nuclear catastrophe." They argue, however, that UNSCEAR has systematically underestimated the health effects of exposure to fallout from the Fukushima reactors, in part because of reliance on flawed or misleading data from Japanese authorities and the nuclear industry, and also because of faulty assumptions about the effects of exposure to low-level ionizing radiation. They cite 10 areas of concern that are examined in further detail in the 28-page critique:

- 2. The validity of UNSCEAR's source term estimates is in doubt
- 3. There are serious concerns regarding the calculations of internal radiation
- 4. The dose assessments of the Fukushima workers cannot be relied upon
- 5. The UNSCEAR report ignores the effects of fallout on the non-human biota
- 6. The special vulnerability of the embryo to radiation is not taken into account
- 7. Non-cancer diseases and hereditary effects were ignored by UNSCEAR
- 8. Comparisons of nuclear fallout with background radiation are misleading
- 9. UNSCEAR'S interpretations of the findings are questionable
- 10. The protective measures taken by the authorities are misrepresented
- 11. Conclusions from collective dose estimations are not presented

See also :

http://www.counterpunch.org/2014/07/18/fukushima-bad-and-getting-worse/ Weekend Edition July 18-20, 2014 Global Physicians Issue Scathing Critique of UN Report on Fukushima

Fukushima: Bad and Getting Worse

by JOHN LaFORGE

There is broad disagreement over the amounts and effects of radiation exposure due to the triple reactor meltdowns after the 2011 Great East-Japan Earthquake and tsunami. The International Physicians for the Prevention of Nuclear War (IPPNW) joined the controversy June 4, with a 27-page "Critical Analysis of the UNSCEAR Report 'Levels and effects of radiation exposures due to the nuclear accident after the 2011 Great East-Japan Earthquake and tsunami."

IPPNW is the Nobel Peace Prize winning global federation of doctors working for "a healthier, safer and more peaceful world." The group has adopted a highly critical view of nuclear power because as it says, "A world without nuclear weapons will only be possible if we also phase out nuclear energy."

UNSCEAR, the United Nations Scientific Committee on the Effects of Atomic Radiation, published its deeply flawed report April 2. Its accompanying press release summed up its findings this way: "No discernible changes in future cancer rates and hereditary diseases are expected due to exposure to

radiation as a result of the Fukushima nuclear accident." The word "discernable" is a crucial disclaimer here.

Cancer, and the inexorable increase in cancer cases in Japan and around the world, is mostly caused by toxic pollution, including radiation exposure according to the National Cancer Institute.[1] But distinguishing a particular cancer case as having been caused by Fukushima rather than by other toxins, or combination of them, may be impossible – leading to UNSCEAR's deceptive summation. As the IPPNW report says, "A cancer does not carry a label of origin..."

UNSCEAR's use of the phrase "are expected" is also heavily nuanced. The increase in childhood leukemia cases near Germany's operating nuclear reactors, compared to elsewhere, was not "expected," but was proved in 1997. The findings, along with Chernobyl's lingering consequences, led to the country's federally mandated reactor phase-out. The plummeting of official childhood mortality rates around five US nuclear reactors *after they were shut down* was also "unexpected," but shown by Joe Mangano and the Project on Radiation and Human Health.

The International Physicians' analysis is severely critical of UNSCEAR's current report which echoes its 2013 Fukushima review and press release that said, "It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workers."

"No justification for optimistic presumptions"

The IPPNW's report says flatly, "Publications and current research give no justification for such apparently optimistic presumptions." UNSCEAR, the physicians complain, "draws mainly on data from the nuclear industry's publications rather than from independent sources and omits or misinterprets crucial aspects of radiation exposure", and "does not reveal the true extent of the consequences" of the disaster. As a result, the doctors say the UN report is "over-optimistic and misleading." The UN's "systematic underestimations and questionable interpretations," the physicians warn, "will be used by the nuclear industry to downplay the expected health effects of the catastrophe" and will likely but mistakenly be considered by public authorities as reliable and scientifically sound. Dozens of independent experts report that radiation attributable health effects are highly likely.

Points of agreement: Fukushima is worse than reported and worsening still

Before detailing the multiple inaccuracies in the UNSCEAR report, the doctors list four major points of agreement. First, UNSCEAR improved on the World Health Organization's health assessment of the disaster's on-going radioactive contamination. UNSCEAR also professionally "rejects the use of a threshold for radiation effects of 100 mSv [millisieverts], used by the International Atomic Energy Agency in the past." Like most health physicists, both groups agree that there is no radiation dose so small that it can't cause negative health effects.. There are exposures allowed by governments, but none of them are safe.

Second, the UN and the physicians agree that areas of Japan that were not evacuated were seriously contaminated with iodine-132, iodine-131 and tellurium-132, the worst reported instance being Iwaki City which had 52 times the annual absorbed dose to infants' thyroid than from natural background radiation. UNSCEAR also admitted that "people all over Japan" were affected by radioactive fallout (not just in Fukushima Prefecture) through contact with airborne or ingested radioactive materials. And while the UNSCEAR acknowledged that "contaminated rice, beef, seafood, milk, milk powder, green tea, vegetables, fruits and tap water were found all over mainland Japan", it neglected "estimating doses for Tokyo ... which also received a significant fallout both on March 15 and 21, 2011."

Third, UNSCEAR agrees that the nuclear industry's and the government's estimates of the total radioactive contamination of the Pacific Ocean are "far too low." Still, the IPPNW reports shows, UNSCEAR's use of totally unreliable assumptions results in a grossly understated final estimate. For example, the UN report ignores all radioactive discharges to the ocean after April 30, 2011, even though roughly 300 tons of highly contaminated water has been pouring into the Pacific every day for 3-and-1/2 years, about 346,500 tons in the first 38 months.

Fourth, the Fukushima catastrophe is understood by both groups as an ongoing disaster, not the singular event portrayed by industry and commercial media. UNSCEAR even warns that ongoing radioactive pollution of the Pacific "may warrant further follow-up of exposures in the coming years," and "further releases could not be excluded in the future," from forests and fields during rainy and typhoon seasons – when winds spread long-lived radioactive particles – a and from waste management plans that now include incineration.

As the global doctors say, in their unhappy agreement with UNSCAR, "In the long run, this may lead to an increase in internal exposure in the general population through radioactive isotopes from ground water supplies and the food chain."

Physicians find ten grave failures in UN report

The majority of the IPPNW's report details 10 major errors, flaws or discrepancies in the UNSCEAR paper and explains study's omissions, underestimates, inept comparisons, misinterpretations and unwarranted conclusions.

1. The total amount of radioactivity released by the disaster was underestimated by UNSCEAR and its estimate was based on disreputable sources of information. UNSCEAR ignored 3.5 years of nonstop emissions of radioactive materials "that continue unabated," and only dealt with releases during the first weeks of the disaster. UNSCEAR relied on a study by the Japanese Atomic Energy Agency (JAEA) which,

the IPPNW points out, "was severely criticized by the Fukushima Nuclear Accident Independent Investigation Commission ... for its collusion with the nuclear industry." The independent Norwegian Institute for Air Research's estimate of cesium-137 released (available to UNSCEAR) was four times higher than the JAEA/UNSCEAR figure (37 PBq instead of 9 PBq). Even Tokyo Electric Power Co. itself estimated that iodine-131 releases were over four times higher than what JAEA/UNSCEAR) reported (500 PBq vs. 120 BPq). The UNSCEAR inexplicably chose to ignore large releases of strontium isotopes and 24 other radionuclides when estimating radiation doses to the public. (A PBq or petabecquerel is a quadrillion or 10¹⁵ Becquerels. Put another way, a PBq equals 27,000 curies, and one curie makes 37 billion atomic disintegrations per second.)

2. Internal radiation taken up with food and drink "significantly influences the total radiation dose an individual is exposed to," the doctors note, and their critique warns pointedly, "UNSCEAR uses as its one and only source, the still unpublished database of the International Atomic Energy Association and the Food and Agriculture Organization. The IAEA was founded ... to 'accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.' It therefore has a profound conflict of interest." Food sample data from the IAEA should not be relied on, "as it discredits the assessment of internal radiation doses and makes the findings vulnerable to claims of manipulation." As with its radiation release estimates, IAEA/UNSCEAR ignored the presence of strontium in food and water. Internal radiation dose estimates made by the Japanese Ministry for Science and Technology were 20, 40 and even 60 times higher than the highest numbers used in the IAEA/UNSCEAR reports.

3. To gauge radiation doses endured by over 24,000 workers on site at Fukushima, UNSCEAR relied solely on figures from Tokyo Electric Power Co., the severely compromised owners of the destroyed reactors. The IPPNW report dismisses all the conclusions drawn from Tepco, saying, "There is no meaningful control or oversight of the nuclear industry in Japan and data from Tepco has in the past frequently been found to be tampered with and falsified."

4. The UNSCEAR report disregards current scientific fieldwork on actual radiation effects on plant and animal populations. Peer reviewed ecological and genetic studies from Chernobyl and Fukushima find evidence that low dose radiation exposures cause, the doctors point out, "genetic damage such as increased mutation rates, as well as developmental abnormalities, cataracts, tumors, smaller brain sizes in birds and mammals and further injuries to populations, biological communities and ecosystems." Ignoring these studies, IPPNW says "gives [UNSCEAR] the appearance of bias or lack of rigor."

5. The special vulnerability of the embryo and fetus to radiation was completely discounted by the UNSCEAR, the physicians note. UNSCEAR shockingly said that doses to the fetus or breast-fed infants "would have been similar to those of other age groups," a claim that, the IPPNW says, "goes against basic principles of neonatal physiology and radiobiology." By dismissing the differences between an unborn and an infant, the UNSCEAR "underestimates the health risks of this particularly vulnerable population." The doctors quote a 2010 report from American Family Physician that, "in utero exposure can be teratogenic, carcinogenic or mutagenic."

6. Non-cancerous diseases associated with radiation doses — such as cardiovascular diseases, endocrinological and gastrointestinal disorders, infertility, genetic mutations in offspring and miscarriages — have been documented in medical journals, but ate totally dismissed by the UNSCEAR. The physicians remind us that large epidemiological studies have shown undeniable associations of low dose ionizing radiation to non-cancer health effects and "have not been scientifically challenged."

7. The UNSCEAR report downplays the health impact of low-doses of radiation by misleadingly comparing radioactive fallout to "annual background exposure." The IPPNW scolds the UNSCEAR saying it is, "not scientific to argue that natural background radiation is safe or that excess radiation from nuclear fallout that stays within the dose range of natural background radiation is harmless." In particular, ingested or inhaled radioactive materials, "deliver their radioactive dose directly and continuously to the surrounding tissue" — in the thyroid, bone or muscles, etc. — "and therefore pose a much larger danger to internal organs than external background radiation."

8. Although UNSCEAR's April 2 Press Release and Executive Summary give the direct and mistaken impression that there will be no radiation health effects from Fukushima, the report itself states that the Committee "does not rule out the possibility of future excess cases or disregard the suffering associated..." Indeed, UNSCEAR admits to "incomplete knowledge about the release rates of radionuclides over time and the weather conditions during the releases." UNSCEAR concedes that "there were insufficient measurements of gamma dose rate..." and that, "relatively few measurements of foodstuff were made in the first months." IPPNW warns that these glaring uncertainties completely negate the level of certainty implied in UNSCEAR's Exec. Summary.

9. UNSCEAR often praises the protective measures taken by Japanese authorities, but the IPPNW finds it "odd that a scientific body like UNSCEAR would turn a blind eye to the many grave mistakes of the Japanese disaster management..." The central government was slow to inform local governments and "failed to convey the severity of the accident," according to the Fukushima Nuclear Accident Independent Investigation Commission. "Crisis management 'did not function correctly,' the Commission said, and its failure to distribute stable iodine, "caused thousands of children to become irradiated with iodine-131," IPPNW reports.

10. The UNSCEAR report lists "collective" radiation doses "but does not explain the expected cancer cases that would result from these doses." This long chapter of IPPNW's report can't be summarized easily. The doctors offer conservative estimates, "keeping in mind that these most probably represent underestimations for the reasons listed above." The IPPNW estimates that 4,300 to 16,800 excess cases of cancer due to the Fukushima catastrophe in Japan in the coming decades. Cancer deaths will range between 2,400 and 9,100. UNSCEAR may call these numbers insignificant, the doctors archly point out, but individual cancers are debilitating and terrifying and they "represent preventable and man-made diseases" and fatalities.

IPPNW concludes that Fukushima's radiation disaster is "far from over": the destroyed reactors are still unstable; radioactive liquids and gases continuously leak from the complex wreckage; melted fuel and used fuel in quake-damaged cooling pools hold enormous quantities of radioactivity "and are highly vulnerable to further earthquakes, tsunamis, typhoons and human error." Catastrophic releases of radioactivity "could occur at any time and eliminating this risk will take many decades."

IPPNW finally recommends urgent actions that governments should take, because the UNSCEAR report, "does not adhere to scientific standards of neutrality," "represents a systematic underestimation," "conjures up an illusion of scientific certainty that obscures the true impact of the nuclear catastrophe on health and the environment," and its conclusion is phrased "in such a way that would most likely be misunderstood by most people..."

John LaForge works for Nukewatch, a nuclear watchdog and anti-war group in Wisconsin, and edits its Quarterly.

Notes.

[1] Nancy Wilson, National Cancer Institute, "The Majority of Cancers Are Linked to the Environment, NCI *Benchmarks*, Vol. 4, Issue 3, June 17, 2004

Interview with US sailor Steve Simmons



On Libbe HaLevy's podcast : July 8, 2014

http://www.nuclearhotseat.com/2008/ http://lhalevy.audioacrobat.com/download/audioacrobat-10760-u-1710978-s-1.audio.mp3

INTERVIEW:

Steve Simmons, a 17-year Navy veteran who served on the **USS Ronald Reagan** when it was called to do humanitarian aid work in Japan following the 9.0 earthquake and tsunami on March 11, 2011, which began the Fukushima nuclear disaster. He is one of 112 sailors currently suing Fukushima Daiichi power plant operator Tokyo Electric Power Company – TEPCO – to create a \$1 billion fund to cover medical expenses for all the armed forces personnel whose health has been devastated by their exposure to radiation.

For other USS Reagan/Fukushima radiation victims to contact the attorneys for the TEPCO lawsuit: www.victims.net

To contact lead attorney Paul Garner: PCG@Garner law.com

Without the data suspicion of overdiagnosis ever present

July 31, 2014



A doctor conducts a thyroid examination on a 5-year-old girl at a clinic in a temporary housing complex in Nihonmatsu, Fukushima Prefecture, in February. | REUTERS

Experts worry that radiation fears are leading to unnecessary surgery for children

Experts question Fukushima thyroid screening

by Mizuho Aoki

http://www.japantimes.co.jp/news/2014/07/31/national/science-health/experts-question-fukushima-thyroid-screening/#.U9ozyGPi91s

More than three years after the triple core meltdown in Fukushima Prefecture devastated the lives of thousands of residents, the effect that the radiation release is having on children's thyroid glands still weighs heavily on residents' minds.

The iodine-131 released into the air by the meltdowns accumulates in the thyroid gland, increasing the risk of thyroid cancer. The gland is responsible for regulating hormone levels in the body.

Children are considered especially vulnerable. After the 1986 Chernobyl disaster, more than 6,000 children were diagnosed with thyroid cancer by 2005, according to the U.N. Scientific Committee of the Effects of Atomic Radiation.

Given the local anxiety, the Fukushima Prefectural Government in October 2011 started offering free thyroid screenings for everyone who was 18 or younger at the time of the disaster. The prefecture has 370,000 residents in that age group, and 300,000 had received voluntary checkups by the end of March.

The program may look good on paper, but it has drawn flak from medical experts who say it is far from adequate in determining a link between the cancers found and radiation exposure.

At the core of the criticism is the prefectural government's policy of not releasing data on the results of the checkups, such as what stage of cancer the examinees are in.

This lack of disclosure — based on prefectural privacy policies — has made it hard for experts to accurately judge whether the abnormally high incidence of thyroid cancer in Fukushima is being caused the nuclear debacle or the higher screening rate.

In addition, the prefecture has no authority to follow up on children who test positive for cancer, meaning its data on the medical effects of the aftermath of the disaster will be limited.

As of March, the prefectural government found 90 children with suspected thyroid cancer after nearly 300,000 examinations. The prefecture was able to confirm that 51 of them opted to have surgery to remove part or all of their thyroid gland.

This figure is clearly high compared with a thyroid cancer registry rate of around one to nine per 1 million teens in Japan, experts say.

But because thyroid cancer often causes no symptoms and thus goes undiagnosed, experts point to the possibility that the ratio in Fukushima has turned out to be higher simply due to the widespread screening.

"The screenings may have ended up finding cancer that would have never have caused a health problem for their entire lives even if left unattended," said Kenji Shibuya, a professor and chairman of the department of global health policy at the University of Tokyo.

The thyroid cancer rate among children near the Chernobyl plant started to rise four to five years after the catastrophe, mainly because they kept drinking highly contaminated milk and local produce, according to UNSCEAR.

But in Fukushima, several studies have confirmed that internal and external exposure levels were indeed much lower than those around the former Soviet power plant, which met a much more violent fate.

In April, UNSCEAR said that in Fukushima "the occurrence of a large number of radiation-induced thyroid cancers as were observed after Chernobyl can be discounted because doses were substantially lower."

"Given the low radiation exposure levels, it is possible that detected cancers were the kind of cancers that would never do harm. But they were found because of the screenings," said Shibuya, a member of a panel tasked with assessing the result of the thyroid examinations in Fukushima.

He added that there is also a possibility that patients underwent unnecessary surgery.

To examine the possibility of overdiagnosis— diagnosis of a malady that never causes symptoms or death — Shibuya and other medical experts have urged Fukushima Medical University, which is heading up the examination program, to disclose its findings on treated patients, such as the percentage of thyroid cancer cases that spread to the lymph nodes or elsewhere in the body. The university refuses to disclose the data for privacy reasons.

The Fukushima Prefectural Government meanwhile says it doesn't have the authority to track down and gather the information from medical institutions because treatment after diagnosis is outside its jurisdiction.

Fukushima official Yukio Kakuta acknowledged that the prefecture can't track down all patients.

"Under the current system, we can't follow up on all of the patients," Kakuta said. "In addition to the issue of privacy, it's my understanding that some patients and their parents are skeptical of the prefecture-led health checkup program itself, and that some people don't trust Fukushima Medical University.

"I believe some of those people have gone to other hospitals to get their thyroid glands checked and treated," which makes it difficult for the prefecture to find out what happens to them over the long term, he said.

Kakuta said the information disclosure issue will be discussed at the next meeting of a local committee in late August but will stay in place for now.

Shibuya of the University of Tokyo pointed out that the disclosure of information on the stages of the cancers does not violate patient privacy.

"They only have to disclose information on percentages of various cancer stages, such as the cases when the lymph nodes are infiltrated with malignant cells," he said.

"If all of the treated cancers were such cases, then we would know (what's happening in Fukushima) is not normal, and start discussions on the potential effects of the radiation," he said. "**But without disclosing the data, the suspicion (of overdiagnosis) will never go away."**

With the spreading use of sonography, overdiagnosis of thyroid cancer has become a concern worldwide. While the number of cases is on the rise, experts say the mortality rate remains unchanged. Papillary thyroid cancer, the type that appears most prevalent among children in Fukushima, is known for having a slow growth rate and very low risk of death, the experts say. Therefore, many hospitals in Japan nowadays tell patients that long-term observation of their condition is an option to surgery.

Iwao Sugitani, a professor and chairman of the department of endocrine surgery at Nippon Medical School Graduate School of Medicine, said about 90 percent of thyroid cancer cases in Japan involve papillary thyroid cancer. While around nine out of every 10 patients with this type of cancer face no immediate threat to their lives, experts are divided on whether to perform surgery in such cases.

According to a study conducted by the Cancer Institute Hospital in Tokyo from 1995 to 2009, a total of 283 papillary thyroid cancer patients chose not to have surgery and opted instead to be monitored on a regular basis. None died nor saw the cancer spread, according to the study.

"Early detection and early treatment is recommendable for most cancers. But I don't see much meaning in finding and conducting surgery on people with a small papillary thyroid cancer that would go undetected for their entire lifetimes" without screening, Sugitani said.

Shibuya of the University of Tokyo also questions whether the mostly benign nature of papillary thyroid cancer and the option of having no surgery are being fully explained to the children and their parents in Fukushima.

"Without such knowledge, it's natural for most parents to ask doctors to perform surgery," Shibuya said.

By going under the knife, "children will have scars on their necks, and they may suffer from the thought that they developed cancer due to radiation exposure," he said. "Some of them might have to take hormone tablets during their entire lives. (The Fukushima government) must think harder on whether it should continue the program as it is now."

From 0.23 to 0.3-.06 microsieverts (hourly dose)

July 31, 2014

Gov't raises max allowable ambient radiation level in nuclear disaster cleanup zones http://mainichi.jp/english/english/newsselect/news/20140731p2a00m0na022000c.html

The government will raise the maximum ambient radiation level target for the cleanup operation around the stricken Fukushima No. 1 nuclear plant from an hourly 0.23 microsieverts to 0.3-0.6 microsieverts.

The Environment Ministry made the decision after analysis showing that people living in contaminated zones would still have an annual dose of less than the 1 millisievert maximum even at the new, higher hourly target. While relaxing the 0.23 microsievert hourly maximum (which does not include normal background radiation) will make the cleanup operation more efficient, residents of the municipalities affected may find the sudden shift upwards of the "safe" dose worrying.

The ministry will present the revised number to municipalities concerned at a meeting sometime soon. At the same time, the government will present a plan to distribute dosimeters to residents to track their individual doses. Individual exposure varies depending on the person's location and their daily activities, and the ministry plans to use this detailed data to adjust the intensity of the cleanup operations to best suit local conditions and focus on areas of the most need.

In short, the government is looking to shift away from the blanket cleanup operation of the past three years to prioritizing reducing the radiation doses of residents.

Environment Ministry guidelines issued for the cleanup areas in 2011 advised residents to stay indoors 16 hours a day, adding that the dose absorbed inside a wooden structure was 40 percent of that when in the open air. The ministry also stated that it had calculated the maximum hourly ambient radiation level at 0.23 microsieverts for residents to stay under the prescribed 1 millisievert per year dose.

Based on the ministry advisory, the cities of Fukushima, Koriyama and other local bodies drew up plans to clear away contaminated soil to get the radiation level below the 0.23 microsievert per hour mark. Authorities discovered, however, that the lower the radioactive contamination in a particular spot, the less effective was the cleanup operation in getting rid of it. There have been many cases where radiation levels have remained stubbornly above 0.23 microsieverts per hour even after decontamination, sparking resident demands that cleanups be repeated.

The cities of Date and Soma, meanwhile, distributed dosimeters to their residents in affected areas, and compared ambient radiation levels with the actual doses absorbed by their citizens. Environment Ministry analysis of the data showed that residents living in areas with an ambient radiation level of 0.3-0.6 microsieverts per hour for the most part stayed under the maximum annual dose of 1 millisievert.

With these results in hand, the ministry declared that it was "necessary to respond to the actual situation with respect to resident's radiation dose levels" and embarked on the policy shift.

Studying teeth of people exposed to Bikini Atoll test

August 8, 2014 **Bikini Atoll nuclear test exposed fisherman to radiation level equivalent to Hiroshima** http://mainichi.jp/english/english/newsselect/news/20140808p2a00m0na008000c.html

A fisherman around 1,300 kilometers from a United States nuclear bomb test site at the Bikini Atoll in 1954 was affected by a radiation amount about the same as being 1.6 kilometers from the Hiroshima atomic bomb hypocenter, according to research results.

The findings were revealed by professor Shin Toyoda of Okayama University of Science at a meeting of experts on Aug. 7. Toyoda's research group used technology called "electron spin resonance" to measure the number of unpaired electrons in the enamel of two molars and one canine tooth provided by two men on fishing boats exposed to the Bikini Atoll nuclear test.

Toyoda says the researchers took advantage of the fact that unlike in cells, digestion does not occur in tooth enamel, so the effects of radiation exposure remain unaltered. They found evidence of up to 414 millisieverts of radiation exposure from the nuclear test from the enamel of a Kochi Prefecture man in his 80s. The other man was found to have been exposed to up to 252 millisieverts. The researchers accounted for additional radiation exposure over the years from sources like medical x-rays.

The research group was put together at the urging of Hiroshima University's professor emeritus Masaharu Hoshi. It aims to uncover information about the Bikini Atoll nuclear test by researching official documents as well as the teeth and chromosomal abnormalities of people who were on boats exposed to the radiation. The group is continuing to ask for teeth from exposed people for further research.

August 08, 2014(Mainichi Japan)

More thyroid cancer cases in young people

August 25, 2014

More thyroid cancer cases reported in Fukushima Pref. health survey

http://mainichi.jp/english/english/newsselect/news/20140825p2a00m0na005000c.html An ongoing health survey of Fukushima Prefecture residents conducted in the wake of the Fukushima nuclear disaster has uncovered seven new cases of thyroid cancer among people who were aged 18 or under when the disaster broke out in March 2011.
The new cases reported since the previous announcement in May bring the total number of thyroid cancer cases among prefectural residents in this age group to 57. Including suspected cases, the figure rose by 14 to 103.

Fukushima Medical University, which is in charge of the health survey, says it is unlikely that these young people developed cancer as a result of exposure to radiation, as there was little variance in the rate of cases among different districts, and because there were few cases among children aged 5 and under, who are more susceptible to the effects of radiation exposure.

The new cases were reported at a health survey committee meeting in the city of Fukushima on Aug. 24. A breakdown of data from four districts of the prefecture showed little variance in the rate of occurrence between three of the districts: 13 municipalities including areas designated as evacuation zones after the outbreak of the nuclear disaster at Tokyo Electric Power Co.'s Fukushima No. 1 Nuclear Power Plant; the Hamadori district including the city of Iwaki; and the Nakadori district extending to the cities of Fukushima and Koriyama. In these districts, the rate averaged 33.5 to 36.4 cases per 100,000 people. In the Aizu district, the average was lower, at 27.7 per 100,000, but officials suspect this is due to the fact that thyroid testing in this district has not progressed. August 24, 2014

Thyroid cancer diagnosed in 104 young people in Fukushima

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201408240011 By YURI OIWA/ Staff Writer

The number of young people in Fukushima Prefecture who have been diagnosed with definitive or suspected thyroid gland cancer, a disease often caused by radiation exposure, now totals 104, according to prefectural officials.

The 104 are among 300,000 young people who were aged 18 or under at the time of the 2011 Fukushima nuclear disaster and whose results of thyroid gland tests have been made available as of June 30. They were eligible for the tests administered by the prefectural government.

Of these 104, including 68 women, the number of definitive cases is 57, and one has been diagnosed with a benign tumor. The size of the tumors varies from 5 to 41 millimeters and averages 14 mm.

The average age of those diagnosed was 14.8 when the Great East Japan Earthquake and tsunami triggered the meltdowns at the Fukushima No. 1 nuclear power plant in March 2011.

However, government officials in Fukushima say they do not believe the cases of thyroid gland cancer diagnosed or suspected in the 104 young people are linked to the 2011 nuclear accident.

The figure can be extrapolated for comparison purposes to an average of more than 30 people per population of 100,000 having definitive or suspected thyroid gland cancer.

The figure is much higher than, for example, the development rate of thyroid cancer of 1.7 people per 100,000 among late teens based on the cancer patients' registration in Miyagi Prefecture.

But experts say the figures cannot be compared because the test in Fukushima Prefecture covers a large number of people who have no symptoms.

Experts are divided over whether the cases of thyroid gland cancer diagnosed or suspected in the 104 young people should be linked to the 2011 nuclear accident.

In connection with the 1986 Chernobyl disaster, the number of young people diagnosed with thyroid cancer rose only after four years. The cancer is also known to develop slowly.

But some researchers say that the occurrence of thyroid gland cancer is likely to be increased by the Fukushima nuclear accident.

"Many people are being diagnosed with cancer at this time, thanks to the high-precision tests," said Yoshio Hosoi, professor of radiation biology at Tohoku University. "We must continue closely examining the people's health in order to determine the impact of radiation exposure on causing thyroid tumors." By regions, 27.7 people per 100,000 people have been diagnosed with definitive or suspected thyroid cancer in the Aizu region, located 80 kilometers or farther from the crippled nuclear plant. The number could increase after thorough examinations are completed for people in the region

Around 35 people per 100,000 have been diagnosed with definitive or suspected cancer in the Nakadori region, which includes Fukushima city and several municipalities designated as mandatory evacuation zones, and the coastal Hamadori region.

Hokuto Hoshi, who chairs a panel that discusses matters related to the prefectural survey on the health impact from radiation on Fukushima's residents, said the panel's subcommittee will soon analyze the test results to determine the impact of the accident on the thyroid tumor rate.

"In order to scientifically compare the results of the development rates of each region, we must take into account age and other characteristics (of the 104 people)," he said.

The prefecture also plans to continue medical checkups on residents in the prefecture and use the test results as a basis for comparison in the future, prefectural officials said.

Impact of radiation on living things

August 15, 2014

The Ecosystem Are Being Slowly Revealed

http://www.businessinsider.com.au/the-serious-biological-effects-of-fukushima-radiation-on-plants-insects-and-animals-is-slowly-being-revealed-2014-8

Chris Pash Yesterday at 5:50 AM 421

Cattle graze in the distance at Masami Yoshizawa's cattle farm where protest signs cover the landscape close to the devastated Fukushima plant. Masami Yoshizawa who runs the sanctuary, 'Ranch of Hope' for contaminated cattle, leads the movement among self-sacrificing farmers to protect cattle that were left behind in the exclusion zone in Fukushima after the nuclear disaster of Fukushima Daiichi Nuclear Power Plant following the earthquake and tsunami in March 11, 2011. (Photo by Paula Bronstein/Getty Images) A range of scientific studies at Fukushima have begun to reveal the impact on the natural world from the radiation leaks at the power station in Japan caused by an earthquake and tsunami in 2011.

Biological samples were obtained only after extensive delays following the 1986 Chernobyl nuclear power plant meltdown, limiting the information which could be gained about the impact of that disaster.

Scientists, determined not to repeat the shortcomings of the Chernobyl studies, began gathering biological information only a few months after the meltdown of the Daiichi power plant in 2011.

Results of these studies are now beginning to reveal serious biological effects of the Fukushima radiation on non-human organisms ranging from plants to butterflies to birds.

A series of articles summarising these studies has now been published in the Journal of Heredity. These describe widespread impacts, ranging from population declines to genetic damage to responses by the repair mechanisms that help organisms cope with radiation exposure.

"A growing body of empirical results from studies of birds, monkeys, butterflies, and other insects suggests that some species have been significantly impacted by the radioactive releases related to the

Fukushima disaster," says Dr Timothy Mousseau of the University of South Carolina, lead author of one of the studies.

Common to all of the published studies is the hypothesis that chronic (low-dose) exposure to ionizing radiation results in genetic damage and increased mutation rates in reproductive and non-reproductive cells.

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After three days, a number of effects were observed, including activation of genes involved in self-defense, ranging from DNA replication and repair to stress responses to cell death.

"The experimental design employed in this work will provide a new way to test how the entire rice plant genome responds to ionizing radiation under field conditions," says Dr Randeep Rakwal of the University of Tsukuba in Japan, one of the authors of the study.

Another team of researchers examined the response of the pale grass blue butterfly, one of the most common butterfly species in Japan, to radiation exposure at the Fukushima site.

They found size reduction, slowed growth, high mortality and morphological abnormality both at the Fukushima site and among laboratory-bred butterflies with parents collected from the contaminated site. "Non-contaminated larvae fed leaves from contaminated host plants collected near the reactor showed high rates of abnormality and mortality," says Dr Joji Otaki of the University of the Ryukyus in Okinawa, Japan.

Some of their results suggested the possible evolution of radiation resistance in Fukushima butterflies as well.

This is a pale grass blue butterfly, one of the most common species of butterfly in Japan. Recent research has revealed major impacts on this species from the radiation leaks at the Fukushima nuclear power plant. Credit: Joji Otaki, University of the Ryukyus, Okinawa, Japan

A review of genetic and ecological studies for a range of other species at both Chernobyl and Fukushima (Mousseau 2014) revealed significant consequences of radiation. Population censuses of birds, butterflies, and cicadas at Fukushima showed major declines attributable to radiation exposure. Morphological effects, such as aberrant feathers on barn swallows, were also observed. The authors suggest that long-term studies at Chernobyl could predict likely effects in the future at the Fukushima site.

The scientists say there is an urgent need for greater investment in basic scientific research of the wild animals and plants of Fukushima.

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http://www.japantimes.co.jp/news/2014/08/15/national/science-health/japan-u-s-warn-of-species-mutations-in-fukushima/#.U-78KmOnq1v

Kyodo

WASHINGTON – In a set of papers published Thursday in the Journal of Heredity, a U.S. publication, Japanese and U.S. scientists warned that radioactive materials released from by the core meltdowns at the Fukushima No. 1 power plant could have caused abnormalities in the genes of nearby birds and insects. In a paper published on the journal's website, Mousseau said barn swallows with abnormal white spots on their plumage were found near the Chernobyl plant after the disaster and that the discovery of similarly plumaged swallows in Fukushima was also reported in the wake of the 2011 crisis.

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Tim Mousseau on genetic abnormalities in nature



August 15, 2014

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Nuclear plants and leukemia in children

Childhood Leukemias Near Nuclear Power Stations: new article

http://www.ianfairlie.org/news/childhood-leukemias-near-nuclear-power-stations-new-article/ Posted on July 25, 2014

In March 2014, my article on increased rates of childhood leukemias near nuclear power plants (NPPs) was published in the Journal of Environmental Radioactivity (JENR). A previous post discussed the making of the article and its high readership: this post describes its content in layman's terms.

Before we start, some background is necessary to grasp the new report's significance. Many readers may be unaware that increased childhood leukemias near NPPs have been a contentious issue for several decades. For example, it was a huge issue in the UK in the 1980s and early 1990s leading to several TV programmes, Government Commissions, Government committees, a major international Conference, Government reports, at least two mammoth court cases and probably over a hundred scientific articles. It was refuelled in 1990 by the publication of the famous Gardner report (Gardner et al, 1990) which found a very large increase (7 fold) in child leukemias near the infamous Sellafield nuclear facility in Cumbria. The issue seems to have subsided in the UK, but it is still hotly debated in most other European countries, especially Germany.

The core issue is that, world-wide, over 60 epidemiological studies have examined cancer incidences in children near nuclear power plants (NPPs): most (>70%) indicate leukemia increases. I can think of no other area of toxicology (eg asbestos, lead, smoking) with so many studies, and with such clear associations as those between NPPs and child leukemias. Yet many nuclear Governments and the nuclear industry refute these findings and continue to resist their implications. It's similar to the situations with cigarette smoking in the 1960s and with man-made global warming nowadays.

In early 2009, the debate was partly rekindled by the renowned KiKK study (Kaatsch et al, 2008) commissioned by the German Government which found a 60% increase in total cancers and 120% increase in leukemias among children under 5 yrs old living within 5 km of all German NPPs. As a result of these surprising findings, governments in France, Switzerland and the UK hurriedly set up studies near their own NPPs. All found leukemia increases but because their numbers were small the increases lacked "statistical significance". That is, you couldn't be 95% sure the findings weren't chance ones.

This does **not** mean there were no increases, and indeed if less strict statistical tests had been applied, the results would have been "statistically significant". But most people are easily bamboozled by statistics

including scientists who should know better, and the strict 95% level tests were eagerly grasped by the governments wishing to avoid unwelcome findings. Indeed, many tests nowadays in this area use a 90% level.

In such situations, what you need to do is combine datasets in a meta-study to get larger numbers and thus reach higher levels of statistical significance. The four governments refrained from doing this because they knew what the answer would be, viz, statistically significant increases near almost all NPPs in the 4 countries. So Korblein and Fairlie helped them out by doing it for them (Korblein and Fairlie, 2012), and sure enough there were statistically significant increases near all the NPPs. Here are their findings-

Studies of observed (O) and expected (E) leukemia cases within 5 km of NPPs

```
0
Е
SIR=0/E
90% CI
p-value
Germany
34
24.1
1.41
1.04-1.88
0.0328
Great Britain
20
15.4
1.30
0.86-1.89
0.1464
Switzerland
11
7.9a
1.40
0.78-2.31
0.1711
Franceb
14
10.2
1.37
0.83-2.15
0.1506
Pooled data
79
57.5
1.37
1.13-1.66
0.0042
```

a derived from data in Spycher et al. (2011).

b acute leukemia cases

This table reveals a highly statistically significant 37% increase in childhood leukemias within 5 km of almost all NPPs in the UK, Germany, France and Switzerland. It's perhaps not surprising that the latter 3 countries have announced nuclear phaseouts and withdrawals. It is only the UK government that remains in denial.

So the matter is now beyond question, ie there's a very clear association between increased child leukemias and proximity to NPPs. The remaining question is its cause(s).

Most people worry about radioactive emissions and direct radiation from the NPPs, however any theory involving radiation has a major difficulty to overcome, and that is how to account for the large (\sim 10,000 fold) discrepancy between official dose estimates from NPP emissions and the clearly-observed increased risks.

My explanation does involve radiation. It stems from KiKK's prinicipal finding that the increased incidences of infant and child leukemias were closely associated with **proximity to the NPP chimneys**. It also stems from KiKK's observation that the increased solid cancers were mostly "**embryonal**", ie babies were born either with solid cancers or with pre-cancerous tissues which, after birth, developed into full-blown tumours: this actually happens with leukemia as well.

My explanation has five main elements. First, the cancer increases may be due to radiation exposures from NPP emissions to air. Second, large annual spikes in NPP emissions may result in increased dose rates to populations within 5 km of NPPs. Third, the observed cancers may arise in utero in pregnant women. Fourth, both the doses and their risks to embryos and to fetuses may be greater than current estimates. And fifth, pre-natal blood-forming cells in bone marrow may be unusually radiosensitive. Together these five factors offer a possible explanation for the discrepancy between estimated radiation doses from NPP releases and the risks observed by the KIKK study. These factors are discussed in considerable detail in the full article.

My article in fact shows that the current discrepancy can be explained. The leukemia increases observed by KiKK and by many other studies may arise in utero as a result of embryonal/fetal exposures to incorporated radionuclides from NPP radioactive emissions. Very large emission spikes from NPPs might produce a pre-leukemic clone, and after birth a second radiation hit might transform a few of these clones into full-blown leukemia cells. The affected babies are born pre-leukemic (which is invisible) and the full leukemias are only diagnosed within the first few years after birth.

To date, no letters to the editor have been received pointing out errors or omissions in this article. REFERENCES

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SPEEDI budget slashed



August 25, 2014

Major budget cut planned for radiation forecasting tool for nuclear accidents http://ajw.asahi.com/article/0311disaster/fukushima/AJ201408250028

By TOSHIO KAWADA/ Staff Writer

The Nuclear Regulation Authority is planning a major slash in the budget for a forecasting tool for the spread of radioactive substances that was at the center of a controversy during the 2011 Fukushima nuclear accident.

The System for Prediction of Environmental Emergency Dose Information (SPEEDI) was designed to help government officials decide early on whether local residents should be evacuated.

However, a lack of information from the Fukushima No. 1 nuclear power plant made it difficult for the SPEEDI to operate as intended. Moreover, high-ranking government officials at the time, including Prime Minister Naoto Kan and Chief Cabinet Secretary Yukio Edano, were not informed of the existence of the system in the initial stages of the nuclear accident.

With some experts also raising doubts over whether it would be possible to improve the forecasting accuracy of the SPEEDI, the NRA had already downgraded data coming from the system to only "reference material" when it revised in 2013 its guidelines for dealing with nuclear accidents.

For the next fiscal year budget, the NRA will request less than half of what has been budgeted for the SPEEDI this year. About 500 million yen (\$4.8 million) has been set aside for maintenance and management of the radioactive contamination forecasting system.

The NRA plans to divert the money that had been going to the SPEEDI for measures that would involve actual measurement of radiation levels.

One such measure is the installation of more monitoring posts in local communities near nuclear plants. Greater emphasis will be placed on actual measurement of radiation levels in deciding if residents should be evacuated in the event of a nuclear accident.

The revised guidelines call for making an evacuation decision for residents living within a 30-kilometer radius of a nuclear plant based on actual measurements from monitoring posts in the area.

In the event of a serious accident that could lead to the emission of large amounts of radioactive materials, residents within a 5-km radius will be ordered to evacuate immediately.

Those living within a radius between 5 kilometers and 30 kilometers will be asked to remain indoors before a decision is made on evacuation based on the actual radiation measurements.

The thinking behind the new guidelines is that quicker and more appropriate decisions can be made based on actual measurements rather than depending on forecasts that may not be totally accurate.

In line with those guidelines, the NRA has begun installing a system for sharing of radiation data among central and local governments. Officials involved in making evacuation decisions will be able to access data on their computer screens as the measurements are being made.

The money that had been going to the SPEEDI will also instead be used to improve the central government's monitoring of the new information-sharing system as well as for its maintenance.

Local governments are being asked to install monitoring posts in areas that could become subject to evacuation. The recommendation has been made to install monitoring posts at intervals of five kilometers depending on whether the area is residential or hilly and also on past spreading of radioactive materials. Local governments had used the SPEEDI to put together their evacuation plans, and some officials are calling for maintaining the forecasting system.

With the shift toward a new system based on actual measurements, local government officials will now be faced with deciding how to utilize that information and how to transmit it to local residents in the event of a serious nuclear accident.

What is a hospital "designated" to treat radiation?

September 29, 2014

Hospitals nominally designated for radiation treatment double from 2011 Kyodo http://www.japantimes.co.jp/news/2014/09/29/national/science-health/japan-more-than-doubles-the-number-of-hospitals-designated-as-radiation-treatment-centers/#.VCkUkBanp1s

The number of hospitals locally "designated" to treat radiation exposure has grown to 201 from 83 before the Fukushima nuclear disaster, a survey says.

But the survey, conducted by Kyodo News, also showed that the so-called designated hospitals, as of August, were **still struggling with shortages of skilled personnel and equipment as central government pushes to restart dozens of idled reactors, many of them old.**

The hospitals were designated by local governments as medical institutions that will provide emergency treatment for radiation exposure if nuclear accidents occur. **But there are no requirements for**

receiving the designation — **including number of doctors specialized in radiation treatment.** This step was advised through a report compiled by the now-defunct Nuclear Safety Commission after the deadly 1999 criticality accident at a uranium-processing plant in the village of Tokai, Ibaraki Prefecture. The Nuclear Regulation Authority is reviewing medical preparedness for nuclear disasters as part of a package of initiatives introduced in response to the Fukushima nuclear disaster but has not hammered out any specifics.

The survey was conducted from July to September, 15 years after the criticality accident at JCO Co. in Tokai on Sept. 30, 1999, which killed two people.

Responses were received from all 24 prefectural governments selected for their proximity to nuclear facilities.

Timothy Mousseau & low-level radiation

Nuclear Watch :

http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20141001.html

Impact of Low-Level Radiation

Scientists from Japan and abroad have been trudging through the abandoned fields and forests of Fukushima looking for clues. They're trying to find out how the radiation released by the damaged nuclear plant there is affecting animals and insects. And some are paying particular attention to how or even if low-level contamination is affecting organisms. NHK WORLD's Craig Dale has the story. Bug hunting in Fukushima is how biologist Timothy Mousseau spends much of his time in Japan.

The US-based scientist has set up his mobile lab about 30 kilometers northwest of the Fukushima Daiichi nuclear plant.

He's working to find out how insects, birds, and other organisms are affected by different levels of radiation.

"Some organisms seem to show consequences and others show no signs whatsoever."

Timothy Mousseau / Professor, University of South Carolina

Mousseau and his colleagues started looking for those signs in July 2011, a few months after the nuclear accident. They've come back to Fukushima prefecture again and again to survey 400 locations.

They record radiation levels and note changes in diversity and abundance among other things. Mousseau is particularly interested in the effects caused by low-dose radiation.

("They may be small. They may not be of profound significance. But they are measurable and real.) And this is what we really want to know. At what resolution is required to consider an area safe or not?" *Timothy Mousseau / Professor, University of South Carolina*

Mousseau's work in Japan has built on his 14 years of research in Ukraine. He's been studying the uninhabited area around the crippled Chernobyl nuclear plant.

He's observed even low-level radiation has a negative impact on the abundance of birds and mammals and disrupts development among a variety of organisms.

"This gives us some ability to predict what the consequences could be for human populations even those living in much lower levels of radiation."

Timothy Mousseau / Professor, University of South Carolina

"Scientists studying the impact of the nuclear accident are looking for patterns. They want to see how different levels of radiation are affecting not only individual species, but the entire food chain."

Craig Dale / NHK WORLD

Japanese entomologist Yoshiko Ayabe is also working in Fukushima scouring the forests and collecting samples.

"I think it's necessary to look at areas that are less contaminated."

Yoshiko Ayabe / Nagoya University

In the lab, Ayabe is working to paint a picture of how radiation is making its way up the forest food chain. Radioactive particles from Fukushima Daiichi fell on trees and made their way into the soil. Plants absorbed them. Then insects ate those plants and other insects ate those insects.



Ayabe's results show contamination is relatively low in worms, crickets, and horseflies -- but higher in spiders an apex predator. She says needs to do further research to find out what that means for the entire forest ecosystem.



"We have data about Chernobyl, but not about Fukushima. Are the situations the same? We must study to get answers."

Yoshiko Ayabe / Nagoya University

Timothy Mousseau says it will take up to a decade of rigorous work to really understand the impact of the Fukushima nuclear accident. He's calling for a greater investment in research.

"So that we can actually answer the questions that people want answers to which is how big an effect does this radiation have? How much radiation is required in order to show an effect of some significance?" *Timothy Mousseau / Professor, University of South Carolina*

And so Mousseau will keep coming back to Fukushima in search of answers. To observe how a man-made disaster is playing out in nature and to help figure out what it could mean for people living in this area.

Misunderstanding? Misinformation?

November 5, 2014

COMMENTARY: Birth defects never increased in Fukushima Prefecture

http://ajw.asahi.com/article/views/column/AJ201411050012

By AKIKO OKAZAKI/ Staff Writer

The rate of birth defects in babies born in Fukushima Prefecture remains no different from the national average even after the nuclear disaster there, says a report recently worked out by a study group of the health ministry.

Three surveys have targeted expectant and nursing mothers in Fukushima Prefecture following the 2011 accident at the Fukushima No. 1 nuclear power plant.

The first, on which the latest health ministry study group report is based, was conducted by the Japan Association of Obstetricians and Gynecologists; the second is the prefectural government's health survey of all residents in the prefecture; and the third was carried out by Fukushima Medical University.

The prefectural government's survey covers women who have received Maternal and Child Health Handbooks and uses postal mail to ask them questions, including on the outcome of their pregnancies, whether they have breast-fed their babies, and whether they are feeling depressed.

Those who were pregnant at the time of the disaster and gave birth outside Fukushima Prefecture are also eligible for the survey, which has found, like the health ministry report, that the birth defect rate was no different from the national average.

The university's survey studied the rates of miscarriages and abortions, which were found to have remained unchanged before and after the nuclear disaster.

Keiya Fujimori, a Fukushima Medical University professor of obstetrics and gynecology, said he has seen a number of pregnant women who were concerned about the impact of the nuclear disaster on their babies. Fujimori was involved in all three surveys.

A total of 13,770 babies were born in Fukushima Prefecture in 2012, the year following the nuclear disaster, down nearly 10 percent year on year. The number rebounded slightly in 2013, but has yet to recover to pre-disaster levels.

"I hope more people will see the figures from the surveys in Fukushima and decide to give birth and raise their children in Fukushima," Fujimori said.

It is believed that exposure to high doses of intense radiation during pregnancy can cause spina bifida and other birth defects. But the International Commission on Radiological Protection has recommended there is no need for an abortion when fetal doses remain less than 100 millisieverts.

And the total radiation dose over the first four months of the disaster remained less than 5 millisieverts for 99.8 percent of the population of Fukushima Prefecture.

Current available figures appear to be enough proof of the safety of giving birth and raising babies in Fukushima Prefecture. But it is one thing for humans to understand something in their minds, and another to have matching emotions.

That is typically exemplified by the high rates of those who say they are in a state of depression. While about 10 percent of postnatal women generally suffer from depression, that ratio rose to 27 percent across Fukushima Prefecture, and to more than 30 percent in the prefecture's Soso area hosting the nuclear plant, in the fiscal 2011 survey. The ratio continued to exceed 25 percent in fiscal 2012. Women who are pregnant or are giving birth are so nervous about their babies' health that even the slightest concern can set them on edge.

The crudest sorts of slanderous accusations have lessened, but some online postings continue to say, for example, that Down syndrome and deformities occur frequently among babies in Fukushima.

The prefectural government is sending out, along with its survey forms, booklets that explain the impact of radiation on babies and other issues. Midwives and other experts are also available for direct telephone counseling for those who suffer from high levels of anxiety.

But misunderstanding may die hard unless the information is delivered to all people across Japan--not just to expectant and nursing mothers in Fukushima Prefecture. I hope to continue being a deliverer of up-to-date information myself.

Wrong results, sorry

November 7, 2014 Fukushima sends out wrong thyroid test results http://www3.nhk.or.jp/nhkworld/english/news/20141107_42.html Nov. 7, 2014 - Updated 13:51 UTC+1 A hospital in Fukushima Prefecture mailed the results of thyroid examinations to incorrect addresses. Nearly 200 people received somebody else's test results.

The prefecture is checking the thyroid glands of all people who were aged 18 or younger at the time of the March 2011 nuclear accident at the Fukushima Daiichi plant.

Officials at **Fukushima Medical University** say 186 people underwent preliminary ultrasound examinations at 7 medical institutions in the prefecture in September.

The officials say someone else's examination results were sent to 173 of them.

Two of them were found to have lumps in their thyroid glands large enough to require a second, more detailed examination. They were incorrectly informed that they do not need to undergo re-examination.

The officials say staff at the university made mistakes in creating a list of addresses of the examinees.

A senior official at the medical university apologized for the mistakes, saying that the incident should never have happened.

The official said he wants to apologize to the people involved in person and work with all his colleagues to prevent a recurrence.

More child thyroid checks needed

November 27, 2014

Experts call for more child thyroid checks http://www3.nhk.or.jp/nhkworld/english/news/20141127_13.html Nov. 27, 2014 - Updated 02:07 UTC+1 Experts say there is no evidence yet that cases of thyroid cancer in children around the Fukushima Daiichi power plant are a result of the 2011 nuclear accident.

They say health authorities need to perform more checks to determine if the accident led to an increase in the disease.

The expert panel set up by the Environment Ministry released an interim report on Wednesday.

The report says children in Fukushima Prefecture were likely exposed to lower levels of radiation than in the accident at the Chernobyl plant in Ukraine in the 1980s.

It says health authorities should compare results from children near the Fukushima plant with medical data from children in safe areas to verify if the accident has caused an increase in thyroid cancer cases.

Baverstock on UNSCEAR report: does not qualify as "scientific"

December 1, 2014

British researcher blasts U.N. report on Fukushima cancer risk as unscientific

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412010036

By MASAKAZU HONDA/ Staff Writer

A British scientist who studied the health effects of the 1986 Chernobyl disaster panned a United Nations report that virtually dismissed the possibility of higher cancer rates caused by the 2011 Fukushima nuclear crisis.

Keith Baverstock, 73, made the comments during a visit to Tokyo at the invitation of a citizens group related to the Fukushima disaster.

In response to questions from The Asahi Shimbun, Baverstock said a report released in April by the U.N. Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) was "not qualified to be called 'scientific'" because it lacked transparency and independent verification. He added that the committee should be disbanded.

The U.N. report said any increase in overall cancer rates among residents of Fukushima Prefecture due to fallout from the accident was unlikely.

However, Baverstock, former head of the radiation-protection program at the World Health Organization's Regional Office for Europe, said radiation levels shown in the report were enough to cause a spike in cancer rates.

For example, the report said nearly 10,000 workers at the crippled Fukushima No. 1 nuclear plant were exposed to radiation levels exceeding 10 millisieverts over about 18 months following the outbreak of the crisis in March 2011.

Baverstock said such an exposure level was enough to cause an increase in cancer among about 50 of the workers.

After studying the health effects from the Chernobyl nuclear disaster, Baverstock was the first to point out an increase in thyroid cancer among residents of areas hit by radioactive fallout.

He also questioned UNSCEAR's neutrality, given that members are nominated by nations that have a vested interest in nuclear power. He noted that such nations provide funds to the committee.

Baverstock also suggested a conflict of interest, as committee members are not required to disclose their history working in the nuclear industry or sign pledges stating that no conflict of interest exists in evaluating radiation risks.

Baverstock said that when he was working for the WHO, he felt constant pressure from the International Atomic Energy Agency, a major promoter of nuclear power. He also questioned why it took more than three years for UNSCEAR to release its Fukushima report.

Referring to what he called inside information, Baverstock raised the possibility that the delay was caused by criticism about the report's conclusion and the influence of other U.N. agencies, such as the IAEA.



Eco-radiation Institute in Fukushima

The germanium semiconductor detector at Fukushima University's Institute of Environmental Radioactivity on Dec. 3 (Yukiko Kiyono)

December 4, 2014

Global eco-radiation research institute opens in Fukushima

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412040069 THE ASAHI SHIMBUN

FUKUSHIMA--With its team of international researchers, Fukushima University's Institute of Environmental Radioactivity moved into full-scale operation on Dec. 3.

An official ceremony was held to mark the opening of its new two-story-high facility built with a government subsidy of roughly 1.8 billion yen (\$15 million).

Established in July 2013, the institute studies the effects of the fallout from the Fukushima No. 1 nuclear power plant accident triggered by the 2011 earthquake and tsunami disaster as well as various forms of environmental contamination globally.

"With varying factors such as terrain, soil composition, water flow and vegetation, each region is influenced differently by radiation," said Takayuki Takahashi, director of the institute and a professor of robotics at the university. "Rather than conducting symptomatic treatments, we aim to take part in the recovery efforts by clarifying what effects radiation has in a scientific scope."

There are currently 13 researchers at the institute, nine of whom are from Russia, Ukraine or other nations. They have already begun conducting studies in cooperation with other research organizations and universities looking at lake beds and marshlands using underwater drones. They have also surveyed the distribution of radioactive materials in the oceans, woodlands and other parts of the ecosystem. The first floor of the facility has nine germanium semiconductor detectors that study radioactive content such as cesium levels in water, plants and soil samples. Some of the equipment is so sensitive they can detect the most miniscule traces of radiation while other machines are capable of studying 50 samples simultaneously.

The facility also has an electron microscope that can magnify images up to 3 million times. The researchers plan to use the device to observe how radioactive substances attach themselves to minerals in the hope of finding more effective decontamination methods.

"When we make progress, we will inform the public to give them a better understanding of our work," Takahashi said.

Keith Baverstock on UNSCEAR report (2)

www.iwanami.co.jp/kagaku/Kagaku_201410_Baverstock.pdf

2013 UNSCEAR Report on Fukushima:

a critical appraisal <mark>Keith Baverstock</mark> Department of Environmental Science, University of Eastern Finland, Kuopio Campus, Finlan

Back to 250 millisieverts in case of emergency?

December 10, 2014

NRA mulls raising exposure limit in emergency

http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html

Dec. 10, 2014 - Updated 11:21 UTC+1

Japan's nuclear regulation authority is considering raising the radiation exposure limit for workers in the event of an emergency, such as a nuclear accident.

During the Fukushima Daiichi plant's accident in 2011, many workers were exposed to radiation beyond the government limit of 100 millisieverts.

The government had to raise the limit for workers to 250 millisieverts, as a temporary exception.

Commissioners at the Nuclear Regulation Authority on Wednesday discussed revising the existing limit during an emergency.

They agreed that **the revision should require power companies to get the prior consent of workers for possible health risks.** Companies would also be required to provide education and training for workers to avoid unnecessary exposure.

NRA Chairman Shunichi Tanaka proposed that it would be appropriate to set the new limit at 250 millisieverts. He cited the temporary increase to that level during the Fukushima Daiichi accident.

Tanaka also said the emergency limit would be comparable to medium exposure levels set by countries overseas. He also stressed the importance of gaining prior consent and providing training for workers.

The commissioners agreed to continue discussing details of the new rules based on Wednesday's talks.



Why should Japanese pay for corporate negligence?

December 10, 2014

Question of negligence hangs over nuclear firms in U.S. case over Fukushima fallout

http://www.japantimes.co.jp/community/2014/12/10/voices/question-negligence-hangs-nuclear-firms-u-s-case-fukushima-fallout/#.VIi973t1AW4

Dear Minister of Economy, Trade and Industry Yoichi Miyazawa,

As you may be aware, a federal judge in the U.S. recently ruled that a class-action lawsuit filed by about 200 U.S. Navy sailors can proceed against Tokyo Electric Power Co. and other defendants they blame for a variety of ailments caused by radiation exposure following the nuclear reactor meltdowns at Fukushima No. 1.

The sailors allege that Tepco knowingly and negligently gave false and misleading information concerning the true condition of the Fukushima No. 1 nuclear power plant to the public, including the U.S. military. They further allege that Tepco knew the sailors on board the USS Ronald Reagan would be exposed to unsafe levels of radiation because Tepco was aware three nuclear reactors at the site had already melted down.

In this connection, the lawsuit notes that on Dec. 14, 2013, Naoto Kan, Japan's prime minister at the time of the disaster, told a gathering of journalists regarding the first meltdown: "People think it was March 12 but the first meltdown occurred five hours after the earthquake."

The sailors in question were participating in Operation Tomodachi, providing humanitarian relief in response to the Japanese government's calls for assistance. In accordance with the U.S.-Japan Security Treaty, **these sailors literally risked their lives to aid and protect the people of Japan**.

The sailors accuse Tepco of negligence, failure to warn of the dangers, and design defects in the construction and installation of the reactors, among a total of nine claims for damages. To date, the sailors have experienced such illnesses as leukemia, ulcers, brain cancer, brain tumors, testicular cancer, dysfunctional uterine bleeding, thyroid illnesses, stomach ailments and a host of other complaints unusual in such young adults.

One of the major questions to be decided by the lawsuit is **who will pay for the military members' ongoing and possibly lifelong medical treatment. In addition to addressing specific illnesses, funding will be required for future medical monitoring for themselves and their children,**

including monitoring for possible radiation-induced genetic mutations. Some of the radiological particles inhaled by these service personnel have long half-lives, from six to 50 or even 100 years. Needless to say, the Japanese government has a wealth of information about what actually happened, and when, at Fukushima No. 1. Thus it would seem legally as well as morally appropriate for the government to share its Fukushima-related knowledge with the Federal Court in the Southern District of California. This could be done, for example, in the form of an amicus curiae brief — that is, a brief submitted by someone not a party to a case who nevertheless possesses relevant information that may assist the court. My first question to you, Minister Miyazawa, is: Are you and the Japanese government willing to submit such a brief?

It is significant that the builders of the Fukushima No. 1 reactors — General Electric, EBASCO, Toshiba and Hitachi — are also defendants. This is because the reactors for Units 1, 2 and 6 were supplied by General Electric, those for Units 3 and 5 by Toshiba, and Unit 4 by Hitachi. General Electric, however, designed all six reactors, and the architectural plans were done by EBASCO.

In particular, GE knew decades ago that the design of its Mark I reactors installed at Fukushima No. 1 was faulty. Thirty-five years ago, Dale G. Bridenbaugh and two of his colleagues at General Electric resigned from their jobs after becoming convinced that the Mark I's design was so flawed it could lead to a devastating accident. They publicly testified before the U.S. Congress on the inability of the Mark I to handle the immense pressures that would result if the reactor lost cooling power.

Their concerns proved all too accurate at Fukushima No. 1, a disaster that has yet to end given the continued massive radioactive contamination of the ocean.

In light of this, Minister Miyazawa, I end this message with one final question: Why hasn't the Japanese government, like the American sailors, filed its own lawsuits against these same companies to determine their legal liability? In other words, **why are the Japanese people being forced to pay for the possibly negligent actions of some of the world's largest corporations?**

BRIAN VICTORIA

Yellow Springs, Ohio

Brian A. Victoria is a professor of Japanese Studies at Antioch University in Yellow Springs, Ohio. Send your comments or submissions (of between 500-700 words, addressed to local, regional or national politicians, officials or other authorities) here: community@japantimes.co.jp

Class action against operator: It is possible

December 16, 2014

S. Korea cancer victims bring class action against nuclear operator

http://ajw.asahi.com/article/asia/korean_peninsula/AJ201412160080 REUTERS

SEOUL--A group of South Korean thyroid cancer patients living near nuclear plants have filed the country's first class action suit against the operator, after an October court ruling in favor of a plaintiff claiming a link between radiation and the cancer.

Worries about the safety of nuclear power in the world's fifth-largest user of the energy source have intensified after a 2012 scandal over the supply of reactor parts with fake security certificates, as well as the 2011 Fukushima disaster in Japan.

A total of 1,336 plaintiffs, including 301 cancer patients living near four nuclear plants, and their families, filed the suit in a court in the southeastern city of Busan against Korea Hydro and Nuclear Power Co. (KHNP), part of state-run Korea Electric Power Corp., a statement from a group of environmental organizations representing the plaintiffs said.

"We hope that the relationship between thyroid cancer and nuclear power plants will be proved at court so it will make the government take a full-scale inspection on nuclear energy," Seo Eun-kyung, a lawyer leading the suit, told Reuters.

The suit seeks 15 million won (1.6 million yen) in compensation for each patient and between 1 million won and 3 million won for each family member, an environment group official said.

A KHNP spokesman said the firm believes there is no link between low-level radiation from nuclear power generation that is within government guidelines and thyroid cancer, and said the plaintiffs should have waited until a higher court had ruled on the earlier case after the verdict was appealed.

In October a district court ordered KHNP to pay 15 million won to Park Geum-sun in compensation for her thyroid cancer after she lived about 7.7 kilometers from a nuclear complex for more than 20 years.

Views on the link between nuclear radiation and cancer are mixed. The World Health Organization on its website cites a U.N. report over the Chernobyl accident that no evidence indicates living in known high background radiation areas of the world poses a health risk.

Ye Bu-hae, a 69-year-old rice farmer living less than 5 km from the Kori nuclear plaint, joined the class action on Dec. 16 with 66 other thyroid cancer patients in his village, which is home to 3,000 people.

"After seeing too many thyroid cancer cases and Japan's tsunami, we have become more and more scared," Ye, whose wife had surgery for thyroid cancer, told Reuters by phone. "Our action is for our next generation."

South Korea runs 23 nuclear reactors supplying a third of its power, and plans 11 more by 2024.

Four more cases of thyroid cancer?

December 24, 2014

Four more Fukushima children suspected of having thyroid cancer

http://www.japantimes.co.jp/news/2014/12/24/national/science-health/four-fukushima-children-suspected-thyroid-cancer/#.VJqzGv-cJA

Kyodo

FUKUSHIMA – Four more children are suspected of suffering from thyroid cancer in the latest survey on the possible health impact of the 2011 triple meltdown at Tepco's wrecked Fukushima No. 1 plant, sources said Tuesday.

The four, who were 6 to 17 years old at the time of the disaster, had been diagnosed as not having the cancer in the first survey that was conducted within three years of the meltdowns, they said.

The first survey covered all 370,000 children in the prefecture who were aged 18 or younger at the time of the disaster. The second survey , which began last April, covers some 385,000 children, adding those born a year after the disaster struck.

Researchers at Fukushima Medical University, which has been leading the study, will work to confirm if the four have developed the cancer and carefully study if the cases are due to the influence of radiation, according to the sources.

The university takes the results of the first survey as the basic data in assessing whether cases of the cancer may increase in the future.

The Fukushima Prefectural Government said in August that 57 children in the first survey had been confirmed as suffering from thyroid cancer and 24 others were suspected of having it.

The four lived in the municipalities of Okuma, Fukushima, Date and Tamura at the time.

External radioactive exposure levels in three of the four municipalities were estimated to be up to 2.1 millisieverts within four months of March 11, 2011, the day of the Great East Japan Earthquake and tsunami that triggered the nuclear meltdowns, the sources said.

Thyroid cancer: Four new cases (2)

December 25, 2014

4 youths in Fukushima found with thyroid cancer

http://www3.nhk.or.jp/nhkworld/english/news/20141225_37.html

Dec. 25, 2014 - Updated 12:44 UTC+1

Health officials in Japan's Fukushima Prefecture say 4 local young people may have thyroid cancer, even though they cleared a screening shortly after the nuclear power plant accident there in 2011. A panel of experts on Thursday announced the results of the latest round of screening, which started in April. The 4 people were 6 to 17 years old at the time of the Fukushima Daiichi accident. Fukushima Prefecture has been conducting thyroid checkups regularly on more than 380,000 residents who were younger than 18 at the time of the disaster. Some scientists say radioactive isotopes of iodine released in the accident may accumulate in children's thyroids and cause cancer. The first round of screening in 2011 found 108 confirmed or suspected cases of cancer. The panel says it doesn't have enough data to prove nuclear fallout caused those cases or the 4 found in the latest screening. The experts say that's because radiation levels in areas where those people lived are not thought to be high enough to cause thyroid cancer. The panel also says the cases are not concentrated in any particular areas with high radiation levels. It says much is unknown about how children develop thyroid cancer, and that it will keep monitoring the situation closely.

Feeling isolated and anxious about radiation

December 26, 2014

INTERVIEW/ Yukihiko Kayama: Experts should help Fukushima mothers speak up about radiation fears

http://ajw.asahi.com/article/views/opinion/AJ201412260004

By YURI OIWA/ Staff Writer

FUKUSHIMA--Psychiatrist Yukihiko Kayama said it is becoming more embarrassing, with the passage of time since the Fukushima nuclear disaster of 2011, for mothers in Fukushima Prefecture to casually discuss their fears of radiation.

In a recent interview with The Asahi Shimbun, Kayama attributed the trend to a "division" within the population of Fukushima Prefecture, whereby a divergence in their lifestyles according to their residential areas, available economic resources and other factors has made it difficult for them to relate to each other's feelings.

He proposed meetings of experts with small audiences of residents, where participants could feel at ease talking about their own experiences, concerns and other problems. That would ease the speakers' emotions to a certain extent, Kayama said.

Excerpts of the interview follow:

* * *

Question: You and your colleagues surveyed, between late 2013 and January, some 250 mothers of infants aged between 3 and 6 in the prefectural capital of Fukushima, which showed that 24 percent of the respondents were strongly depressed. What can you say about that?

Kayama: Depression rates are usually around 15 percent in similar surveys conducted in Japan. We found the more you were concerned about the effects of radiation on your children's health, the more depressed you tended to be.

We also found that depression was being caused by a sense that you are out of sync with others in how you perceive the effects of radiation.

Q: The city of Fukushima lies tens of kilometers from the crippled Fukushima No. 1 nuclear power plant, and has never been included in evacuation orders. What do you say to that?

A: The additional post-disaster radiation dose, above and beyond natural background levels that have nothing to do with the nuclear disaster, is under 1 millisievert per year as long as you lead a normal life in the city of Fukushima. That is less than one-half the annual background dose, but that still makes some people anxious.

The level of anxiety differs from person to person. Some don't allow their children to eat food products from Fukushima because that makes them afraid, and don't allow their children to play outdoors, either. Others do worry about food but don't worry about playing outdoors. Still others don't worry about either. **Q**: And those individual differences in the level of anxiety are leading to the sense that you are out of sync with others, right?

A: Yes. You wonder, for example, if you will not be taken for being too nervous if you drive your child to a day-care center because you are afraid of radiation exposure along the way, or if you will not be considered too insensitive if you feed your child with food products from Fukushima Prefecture. The different levels of anxiety about radiation exposure manifest themselves in how differently from others you behave in your everyday life. That makes you feel isolated and anxious and causes depression. Anxiety about radiation exposure can differ between husband and wife or between parent and child, who may have different ideas about evacuation, too. That has caused friction or divorce among some couples. **Q:** As a resident of the city of Fukushima myself, I used to believe that people no longer talk about

radiation that often these days probably because they no longer care. What do you think?

A: Officials at one day-care center in the city of Fukushima thought about no longer holding an annual lecture session by a radiologist this summer because few parents were talking about radiation anymore. When they surveyed the parents just to be sure, they found, to their surprise, that a majority of the parents wanted to attend a lecture session if it is held.

They said parents wanted to ask an expert questions such as, can't you get radiation from a bruise suffered from a tumble, is it safe to have licked a toy with sandbox earth on it, and will it be safe to continue raising your child in the city of Fukushima.

Q: Why, then, do people talk less often about radiation?

A: For one thing, people consciously keep from talking about radiation because many of them have found their own ways of coming to terms with radiation in their lives. But rather, I think it is truer to say that, with the passage of time since the nuclear disaster, it is becoming more embarrassing to talk about radiation at all.

That is partly because you are afraid you could be taken for being eccentric if you don't react to radiation concerns the way others do. Some are concerned they could be taken for nervous ones who still worry about radiation if they just mentioned the topic of radiation.

You also tend to keep your mouth shut when you don't know the background of the people you are talking to.

Let's say you evacuated from the city of Fukushima to somewhere outside the prefecture of your own volition with your child. You want to share the hardships you had to endure away from home, but it would

be embarrassing to do so if the person you are talking to came from an evacuation zone and has no way of returning to her home.

When you begin thinking this way and that like this, you can no longer open your mouth.

Q: I have been told that you can share your experiences more easily with people from outside Fukushima Prefecture than with people from within. What do you think?

A: Things were not like that until about half a year after the nuclear disaster. Residents of Fukushima Prefecture were able to share their accounts of hardships, like how frightened they were during the early phase of the disaster, with outright sympathy for each other. With the passage of time, however, their lifestyles have diverged according to the locations of their homes, the economic resources of their families and other factors, which has precluded mutual sympathy and has divided the population.

The reparations being paid by Tokyo Electric Power Co., the nuclear plant operator, is also engendering disparity. Residents from evacuation zones receive 100,000 yen (\$840) per month per head, which means a family of four is entitled to receive 400,000 yen a month. Everyone is not happy with that, however, so slanderous fliers have been tossed into temporary housing for people from evacuation zones, and cars with license plates from areas close to the nuclear plant have been honked at by following cars while driving in the city of Fukushima.

It is becoming more awkward to touch on private issues in general. It may appear on the surface that the lives of Fukushima Prefecture's residents are settling down, but I suppose the bonds of fellow community members have been hurt deep down, so they can no longer find common values or topics that they can share.

Q: Do you think there are ways to turn things around for the better?

A: During the early phase of the disaster, a majority of Fukushima Prefecture's residents, including doctors like myself, knew almost nothing about radiation. That is why lecture sessions, where radiologists spoke to large audiences, were useful. But the issue of radiation exposure has been individualized now. Talking about kinds of greatest common measures at public lectures would no longer help dissolve anxiety. I think it would be more effective for experts to hold meetings with small audiences of residents so both parties can better recognize each other.

Q: You have been assisting a self-help group of people with eating disorders for more than 20 years by holding group meetings with patients and their family members. Do you have any advice to give from that?

A: My experiences with the group meetings indicate it is essential to have participants suffering from anxiety talk at length about their own experiences, concerns and other problems, instead of having experts give one-sided talks. Just talking eases the speakers' emotions to a certain extent. If anyone in the group has had similar experiences, a show of mutual sympathy can give comfort to the speakers.

Q: Do you mean down-to-earth efforts to hold small meetings would pay off better in the end? **A:** Exactly. But that rests on the basic premise of mutual trust between the radiologists, health professionals and other providers of support and the Fukushima Prefecture residents who come to the meetings. If there is no trust, the residents won't listen, and they won't speak their minds. Experts and other providers of support should make sure they are ready to wholly accept what other people are and will always be on their side.

Some people worry about radiation doses that cannot have any health impact from a scientific viewpoint. If you deny such anxiety for being "unscientific," you will end up being mistrusted. You might as well explain scientific knowledge, but apart from that, you should maintain the stance that you are ready to accept the personalities and lives of other people who come to you.

Q: In your survey of mothers in the city of Fukushima, you asked them what provided moral support as they raised their children. Among the answers, the very presence of their own children fetched the highest score of 3.76 on a scale of four, whereas the central, prefectural and municipal governments got the lowest score of 2.25. What do you have to say about that?

A: Raising your children is not without problems, but the very presence of your children motivates you to pluck up the courage to live on amid anxiety. While we have yet to find out why the central and local governments were given the low ratings, I think their inconsistent remarks and slow response during the early phase of the disaster may have taken a toll.

If you look at how central government officials respond to the Sendai nuclear plant and other issues, their emphasis is always on the need for restarts and safety, and you don't really know how they plan to defend residents from radiation in the event another accident should occur. They can hardly win the trust of residents unless they demonstrate unambiguously that they are paying attention to the skeptics of nuclear restarts.

My daily medical practice makes me realize that trust carries enormous weight in our society. The Fukushima nuclear disaster has brought that home to me.

Born in 1945, Yukihiko Kayama became a professor of neurophysiology with Fukushima Medical University in 1987. He has been professor with Fukushima College since 2011.

"Yoku Wakaru Hoshasen Kyoshitsu"



'Yoku Wakaru Hoshasen Kyoshitsu," left, and its English version, "Radiation and Health Seminar," contain content from radiation seminars. (Yukiko Seino)

December 29, 2014

Fukushima mothers compile booklet derived from radiation seminars

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412290023

By YUKIKO SEINO/ Staff Writer

MINAMI-SOMA, Fukushima Prefecture--Mothers living near the stricken Fukushima No. 1 nuclear plant have compiled a booklet offering basic knowledge about radiation and explanations addressing safety concerns arising from the disaster.

The booklet, titled "Yoku Wakaru Hoshasen Kyoshitsu" (Radiation and Health Seminar), is available in both Japanese and English and was created by the Veteran Mothers' Society, which consists of five mothers from the city of Minami-Soma.

The members, some of whom are former high school classmates, decided to create the booklet "for children's sake."

The information incorporates lessons learned from doctors at seminars the group organized following the accident at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant in March 2011.

Amid the confusion and fears over radiation after the disaster unfolded, the mothers convened their first seminar for children and guardians in December 2011. They invited Masaharu Tsubokura, a doctor of

hematology from the University of Tokyo's Institute of Medical Science who had been providing consultations at the Minami-Soma municipal general hospital.

Other physicians later joined the effort to spread accurate information about radiation, and the mothers have held the sessions once or twice a month.

In the seminars, the children peppered Tsubokura with questions, such as "Can I touch my pets?" and "Is it OK to lick the snow?"

Ikumi Watanabe, the society's 54-year-old vice chairwoman, recalled that Tsubokura's explanations "were spoken in an easy-to-understand manner so the information popped straight into our heads. It was nice that we could talk with him on the same level and in person."

Even now, the nature of the questions has not changed much.

"People have felt pressured not to talk about radiation, and some mothers have finally gotten the information only now, more than three years after the accident," Tsubokura said. "I hope I can help them make decisions without thinking negatively about themselves or losing their self-confidence."

In addition to basic knowledge, such as the differences between external and internal radiation exposure and between becquerels and sieverts, the booklet answers questions like: "Can radiation be transmitted from one person to another?" and "Is the tap water OK?"

According to the Veteran Mothers' Society, 20,000 copies of the Japanese version were distributed to schools, companies and other organizations. The English version has been ordered by international schools, international exchange organizations and other groups.

Inquiries to the Veteran Mothers' Society can be made via email (beteranmama0808@gmail.com).

Why 60 years after?



January 5, 2015

Health Ministry to recheck boat crews for effects of H-bomb test radiation

http://mainichi.jp/english/english/newsselect/news/20150105p2a00m0na007000c.html

The Health, Labor and Welfare Ministry is set to launch follow-up health checks for crewmembers of boats that operated near the site of a 1954 U.S. hydrogen bomb test in the Pacific Ocean, it has been learned. The decision comes after radiation exposure level records for the crewmembers were discovered last year. The ministry has so far conducted follow-up health checks only for the crew of the Daigo Fukuryu Maru based in Yaizu, Shizuoka Prefecture, though some 10,000 people on at least 500 vessels are believed to have been exposed to radiation in the H-bomb test.

The Daigo Fukuryu Maru, a tuna fishing boat, came home on March 14, 1954, after being exposed to radiation in the U.S. hydrogen bomb test in the Bikini Atoll in the Pacific Ocean. Radiation was detected from other fishing boats that operated near the atoll and in tuna on some of these vessels.

On March 18, 1954, the government ordered fishing boats operating near the area to return to one of five ports, including Tokyo Port. The government then ordered the crewmembers to discard their catches if their radiation levels exceeded 1,000 counts per minute (cpm) from a distance of 10 centimeters. Moreover, the government pledged to conduct detailed health checkups on crewmembers if their radiation levels exceeded 500 cpm. However, the government stopped conducting radiation tests on crewmembers at the end of that year.

Japan and the United States settled the dispute over the incident with a Jan. 4, 1955 agreement paying Japan 2 million dollars in compensation -- or 720 million yen at the exchange rate of that time. However, the settlement stopped short of holding Washington legally responsible.

In April 1955, the Cabinet decided to allocate part of the compensation to medical treatments for 123 crewmembers of vessels other than Daigo Fukuryu Maru, and to cover the discarded contaminated fish caught by 992 fishing boats. However, the government has since failed to conduct follow-up health checks on fishermen other than those on Daigo Fukuryu Maru.

In a House of Representatives Budget Committee session in March 1986, then Health and Welfare Minister Isamu Imai denied that records of fishermen's radiation exposure existed, and suggested the government would not take any action because it was difficult to investigate a more than 30-year-old incident. However, a move by the Kochi Prefecture Pacific Ocean Nuclear Test Suffering Support Center, a citizens group, has prompted the government to drastically change its response to the issue. The center has conducted interviews with boat crewmembers since the 1980s.

After the health ministry disclosed in 2013 some of the radiation test results that it had provided to the U.S. via the Foreign Ministry following the Bikini incident, Masatoshi Yamashita, executive director of the support center, demanded in July 2014 that the ministry fully disclose the data.

In response, the ministry disclosed the records of radiation tests for crewmembers on 473 vessels to the citizens organization in September. A senior ministry official suggested that the ministry had no choice but to launch health checkups on crewmembers on the heels of its disclosure of radiation test results.

"The health ministry is sensitive about being accused of concealing documents, as it came under fire over information on HIV infections caused by contaminated blood products," the official said.

Shin Toyoda, professor at Okayama University of Science, reported to a study group in Hiroshima in August 2014 that checks on the teeth of crewmembers of boats based in Kochi Prefecture that were operating about 1,300 kilometers east of the H-bomb test site showed that they were exposed to up to 414 millisieverts of radiation. The study group was set up by Hiroshima University professor emeritus Masaharu Hoshi, and comprises experts in radiation exposure as well as Yamashita. The group is also examining chromosomal abnormalities in the blood of those exposed to radiation.

According to sources close to the planned follow-up investigations, an expert research team will be set up to assess how victims were exposed to radiation near the H-bomb test site based on ministry records and compare the results with data on Daigo Fukuryu Maru and its crewmembers.

Moreover, the ministry team will interview Hoshi's study group about its research results.

Possible H-bomb test radiation victims have mixed reaction to gov't health checks

Ryoichi Terao, extreme left, and Yutaka Kuwano, extreme right, are pictured with other crewmembers of the Daini Kosei Maru in this photo taken before ship and crew were exposed to radiation from U.S. hydrogen bomb tests near the Bikini Atoll in the Pacific Ocean in 1954. (Photo courtesy of Yutaka Kuwano) 拡大写真

http://mainichi.jp/english/english/newsselect/news/20150105p2a00m0na009000c.html

Reactions were mixed among fishing boat crewmen who may have been exposed to radiation from U.S. hydrogen bomb tests in the Pacific, as well as the families of those who have died, to the government's decision to conduct health checks on the fishermen after decades without providing care. Many of them wondered why the decision came so late, while others urge the government to thoroughly investigate the matter to provide useful information.

"I'd like the government to conduct thorough investigations and gather data that will be helpful in the future, bearing in mind the Fukushima nuclear crisis," says Masako Terao, 71, wife of Ryoichi Terao, a fisherman who died at age 40 after operating near U.S. hydrogen bomb tests near the Bikini Atoll in 1954. The Daini Kosei Maru fishing boat he was aboard was sailing halfway between Japan and a designated danger zone when the United States conducted its first hydrogen bomb test on March 1, 1954, and was near the Bikini Atoll when two more tests were conducted on March 27 and April 7 that year. The vessel returned to Muroto, Kochi Prefecture, where it was based, on April 15 after completing its fishing excursion. It had already been reported that the Daigo Fukuryu Maru was exposed to radiation, and fish on the Daini Kosei Maru were discarded. By that time, however, crewmembers had eaten some of the fish they'd caught during their trip.

In December 1966, Ryoichi Terao married Masako. Some 10 years later, Ryoichi suddenly vomited blood and was rushed to hospital. He died of a ruptured varicose vein about a week later. "He'd shown no symptoms," Masako recalls.

Ryoichi would never talk about his experience off the Bikini Atoll to his family, but he did quit fishing and became a fish vendor instead.

"I'd wondered why he developed that disease even though his job wasn't particularly tough," says Masako. However, she chose not to keep asking why, and put her energies into her job as a life insurance saleswoman and providing for her sons, one of whom was in kindergarten and the other in elementary school.

Masako began to suspect a causal relationship between the hydrogen bomb tests and her husband's death after an acquaintance looking into victims of the tests contacted her in 2013.

Masako's elder brother, who was on a fishing boat near the test site at the time of the detonations, developed stomach cancer and told her, "My disease may have something to do with the hydrogen bomb tests."

Masako's grandchild will enter a post-graduate course this coming spring. She says she wanted to show that to her husband.

"Frankly speaking, I don't know whether there was causal relationship between the hydrogen bomb tests and my husband's illness because he's already dead and no documents remain," she says. "I'm not hoping that the government will do something for us. I'd rather like the government to use the results of its follow-up investigations as an information resource for the future."

There were reportedly 24 crewmembers on the Daini Kosei Maru, but only three remain living. One of them, 78-year-old Hisashi Kubo, was a junior high school classmate of Terao and began fishing at the same time. He is furious about the government's failure to launch follow-up health checks before now. "Why now?" Kubo says.

"At the time, we were so young and we didn't even think about being exposed to radiation. People only came to realize how damaging radiation is after the Chernobyl and Fukushima nuclear crises. The government is slow to begin probes -- it took them 60 years from the time of the incident. We hardly remember what happened," he says. "It's regrettable that Japan did so little about the incident, because Japan was only obedient to the United States then."

Yutaka Kuwano, 82, another crewmember on the Daini Kosei Maru, is also critical of the government's response.

"Just like those on the Fukuryu Maru, all the fishermen who were operating around Bikini should have been made to stay in hospital for about a year. However, the government failed to conduct checkups on people, and only examined the fish," Kuwano says.

"There are people who died while shedding tears and saying, 'Why do I have to die so young?'" he laments. Kuwano fell into alcoholism for a time as he saw his coworkers die early, and he was afraid of the possible after-effects of radiation exposure on himself.

"I want the government to search for survivors and provide care for them if they show symptoms," he says.

Masatoshi Yamashita, 69, a former high school teacher who now serves as executive director at the Kochi Prefecture Pacific Ocean Nuclear Test Suffering Support Center, urges the government to conduct a survey on former seamen's health at an early date.

"Those who should be given follow-up checkups can be identified easily by examining records of their mariners' insurance policies," he says.

January 05, 2015(Mainichi Japan)

"Please have the courage to flee from Fukushima"

February 2, 2015

Manga artist claims again Fukushima radiation is causing nosebleeds

http://www.japantimes.co.jp/news/2015/02/02/national/manga-artist-claims-again-fukushima-radiation-is-causing-nosebleeds/#.VM_xfy51Cos

Tetsu Kariya, author of the gourmet manga "Oishinbo," says in the series' latest edition that radiation is so high in Fukushima Prefecture it is causing nosebleeds among local residents.

The theme echoes one in a previous story that critics panned when Kariya had the main character suffer a nosebleed after visiting the Fukushima No. 1 nuclear power plant.

The controversial episodes ran in Shogakukan Inc.'s Big Comic Spirits magazine last May. But when the manga was compiled into book form, critical passages, including one linking nosebleeds and radiation exposure, were watered down.

In his latest book, published by Yugensha, Kariya questions the Environment Ministry's assertion that radiation is unlikely to be causing nosebleeds locally. He cites surveys that found that "many people" have been suffering nosebleeds in the prefecture.

Kariya has written extensively about the plight of Fukushima farmers and fishermen, whose troubles he has studied at first hand. He has visited places around the nuclear power station.

He said he altered some controversial episodes in the new book to prevent misunderstanding and to protect real people who were identifiable in previous episodes and who others criticized.

JIJI

In the final chapter, Kariya emphasizes that the reconstruction of the lives of the people is far more important than the recovery of the land of Fukushima.

"It is only you who can protect yourselves," he said, addressing them in general. **"Please have the** courage to flee from Fukushima."

Taking the initiative to measure radiation

February 8, 2015

Skeptical Fukushima residents monitoring radiation levels in their communities

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201502080025

THE ASAHI SHIMBUN

On a recent day in late January, a minicar departed from the litate village office in Fukushima Prefecture with stickers attached that said, "We are driving slowly because we are measuring radiation levels." The vehicle, operated by Fukushima Saisei no Kai (Resurrection of Fukushima), a local residents' nonprofit organization, is equipped with GPS and radiation measurement equipment, allowing it to record locations and airborne radiation levels.

"Although the level has decreased considerably from immediately after the Fukushima nuclear accident, it is still high," said Mitsukazu Sugiura, 65, the driver of the vehicle, on Jan. 28.

Distrust of the central government, a need to know to make future plans and a desire to maintain ties with neighbors have led to groups of residents around Fukushima Prefecture taking the initiative to monitor radiation levels on their own.

All of Iitate village, which is divided into 20 districts, has been designated as an evacuation zone. While the village government measures radiation levels at two locations in each district, it has also commissioned Fukushima Saisei no Kai to conduct more detailed measurements.

The organization's vehicle is driven by village residents who commute from where they have evacuated to, such as Minami-Soma or Fukushima cities.

Twice a month in each district, group members conduct measurements along almost all areas along roads where residents lived.

Average radiation levels for each 100-meter-square area have been posted on the group's website. The near-term goal of the litate village government is to encourage residents to return with the planned lifting in March 2016 of the evacuation order. However, residents cannot erase concerns about radiation effects on their health as well as questions about the possibility of resuming agriculture.

Local farmer Muneo Kanno, 64, established Fukushima Saisei no Kai three months after the March 2011 accident at the Fukushima No. 1 nuclear power plant along with scientists and friends. Kanno felt that scientific data would be needed to decide whether to return to litate and resume farming.

"In order to tie it with the resurrection of the community, it will be important to have local residents directly involved," he said.

Residents of the Okubo-Yosouchi district in central litate began measuring radiation levels near their homes and in the farm fields from 2013. The catalyst was the monthly meetings that were held for the 14 households in the hamlet that had gone their separate ways after the evacuation order was issued. At those meetings, residents were curious about the radiation levels. However, some said the central government could not be trusted, so they decided they had to check for themselves what the radiation levels were.

Immediately after the nuclear accident, the residents were slow to evacuate because they were not informed by the central government about the estimated spread of radioactive materials. Masuo Nagasho, 67, a former village government employee, suggested residents conduct their own

measurements.

"The attraction of the village was the people," he said. "What I most regretted was the destruction of ties between people and the life of the community that had led before to working together for festivals and rice planting."

In 2014, the monitoring effort spread to the entire district, which has about 70 households. The measurement has provided the perfect opportunity for residents to maintain their neighborly ties by having lunch together. The meals are provided by a local women's group.

TARGETING WATERS OFF NUCLEAR PLANT

Another citizens' group, Umilabo, has been monitoring radiation levels off the coast of the crippled Fukushima No. 1 nuclear plant since November 2013.

One member, Riken Komatsu, 35, works at a fishcake manufacturing plant in Iwaki. He was born and grew up in the area, but when customers asked about the safety of the fish being used, he could only pass along data collected by Tokyo Electric Power Co., the Fukushima No. 1 plant operator, and the Fukushima prefectural government.

"I wanted to go out into the ocean and pass along data I was certain about," Komatsu said.

He and other fishing enthusiasts began the project to collect soil from the seabed and fish, which were taken to the local aquarium for measurement of the amount of radioactive materials they contained. In November 2014, 10 flatfish were caught about 1.5 kilometers off the coast from the nuclear power plant. Radioactive materials tend to accumulate in flatfish because it lives near the seabed. Although radioactive cesium was detected in five of the 10 flatfish, the concentration was less than half of the standard in the Food Sanitation Law of 100 becquerels or less per kilogram.

There has been no detection of radioactive materials for almost all of the fish born after the nuclear accident.

In the Oguni neighborhood of Date city's Ryozenmachi district, a resident's group began taking airborne radiation level measurements from six months after the nuclear accident. Data for each 100-meter-square area were listed on a map, and the information has been updated annually since.

"The radiation has no color or smell, but the map has enabled us to see it," said Soyo Sato, 66, who heads the group.

The neighborhood has a mix of households that were designated for evacuation because of high radiation levels as well as those that were not so designated. Residents who were exempt from the designation used the data on the map to argue that there was very little difference in radiation levels with areas designated for evacuation.

That led to a settlement with TEPCO for compensation levels that were close to those offered to residents living in the designated areas.

Hideki Ishii, a project associate professor of landscape architecture at Fukushima University, has provided support for self-monitoring efforts.
"When residents see the actual data for their community that they collected, they will think more seriously about whether people can live there and if the compensation levels offered are appropriate," Ishii said. "It also fosters the ability to not only think about the current situation, but also the future." (This article was written by Yukiko Seino and Yu Kotsubo.)

More thyroid cancers in Fukushima children

February 12, 2015

Thyroid cancer case found in 2nd survey of Fukushima children

http://mainichi.jp/english/english/newsselect/news/20150212p2g00m0dm067000c.html

FUKUSHIMA, Japan (Kyodo) -- A child has been diagnosed with thyroid cancer after the latest survey on the health impact of the 2011 Fukushima Daiichi nuclear power plant accident, sources close to the matter said.

A total of seven others in the survey of 385,000 Fukushima Prefecture children that began in April last year are suspected of having thyroid cancer but have not received a definitive diagnosis, the sources said. A prefectural government committee will determine whether the cases are due to the influence of radioactive contaminants.

The child diagnosed with the cancer and the seven others tested negative in the first survey covering all 370,000 children in the prefecture who were aged 18 or younger at the time of the disaster, not including those born a year after the accident.

In the first survey, 86 children were confirmed to have thyroid cancer and 23 were suspected of having it. In both surveys, children's thyroid glands were first scanned with ultrasound to measure the size and shape of any lumps, and assigned four grades of severity. Those children assigned the two highest grades were then given blood tests and cell biopsies.

According to the sources, the child confirmed to have thyroid cancer and those seven children suspected of having it were between six and 17 years old at the time of the accident.

February 12, 2015(Mainichi Japan)

Better late than never

February 21, 2015

Symposium 61 years after Bikini Atoll nuke test

http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html

Feb. 21, 2015 - Updated 14:22 UTC+1

A symposium has been held in Tokyo to mark the 61st anniversary of a US hydrogen bomb test on the Bikini Atoll in the Marshall Islands in the Pacific.

The United States carried out the test on March 1st, 1954. Local residents as well as the crewmembers of a Japanese fishing boat were exposed to radiation.

About 100 people attended the event at Meiji Gakuin University in Tokyo on Saturday.

Residents of the Marshall Islands were invited to share their experiences. Many still have health concerns.

One of the islanders, Tempo Alfred, said he was fishing when the skies suddenly turned bright, and he heard a loud noise. He said he thought a war had begun.

He said he still worries about his health. He said he wants to work together with Japanese to rid the world of nuclear weapons, as Japan is the only country to have suffered an atomic bombing.

23 crewmembers on the Japanese fishing boat, Number 5 Fukuryu Maru, were exposed to radiation following the nuclear test.

The symposium heard suggestions that health checkups should be conducted on crewmembers of other fishing boats that were operating in the region at the time.

Documents uncovered last year showed that some of them had higher than usual levels of radioactivity.

Some continue to measure radioactivity

February 24, 2015

Hot on the trail of radioactivity, despite dwindling public interest in the issue

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201502240004

By YUKARI TAKAHASHI/ Staff Writer

Although there is less call for their services, a number of Tokyo-based citizens groups continue to monitor radioactivity levels to assuage those still not convinced that the worst of the 2011 nuclear crisis is over. One such organization, Albireo, works out of the Mukodai district of Nishi-Tokyo in the capital's western suburbs.

At an event in November attended by local residents, participants put pears harvested in Fukushima and Nishi-Tokyo into a blender and then heated the mash. The samples were put in a container set onto radiation measurement apparatus made in Belarus.

Homemaker Rumiko Hashiba, 55, is a local resident who participated in the exercise. She too purchased instruments to measure atmospheric radioactivity levels shortly after the disaster at the Fukushima No. 1 nuclear power plant triggered by the Great East Japan Earthquake and tsunami in March 2011.

She started to take readings in her garden, local parks and elsewhere, always paying close attention to the radioactivity levels of the water and food she consumed.

In recent months, Hashiba has become increasingly concerned about a drop in media coverage on radiation levels and lack of interest in the issue by those around her.

"We don't know anything until we actually take measurements," Hashiba said after the event. "I was relieved to be able to discuss issues I can't talk about in my daily life."

In the 30-minute session that day, neither of the pears from Fukushima or Nishi-Tokyo registered cesium levels above the detection limit.

Albireo came into being in July 2012, after Makoto Yamada, a 73-year-old local doctor, bought dosimeters and other devices to detect radiation. Yamada is the head of a nationwide network of pediatricians to protect children from radioactivity.

Albireo has 30 or so staff members who are trained in measuring radiation levels. They mainly determine radioactivity in food, but also monitor fruit juice and other drinks.

The facility received around 10 requests for radioactivity measurements in the first few months after it opened. But these days, only one or two requests come in each month.

Dwindling interest has made it difficult for the operators to cover expenses for rent, the cost of promotional material for meetings and so on, with fees for dealing with measurement requests. The operators opted to run the service through a membership system last October.

Albireo currently has 45 members who regularly give lectures to inform local citizens of their activities. Now that almost four years have passed since the crisis unfolded, Albireo is not the only privately-funded group that is feeling the pinch.

Another is **Shinjuku-Yoyogi Shimin Sokuteijo** (Shinjuku-Yoyogi citizens radioactivity measurement station), which was established in 2012 in Tokyo's Shibuya Ward.

The group specializes in detecting radioactive materials in urine, a rarity in the field. As it is equipped with powerful devices such as an accurate germanium semiconductor detector, the group even receives requests for radiation readings from other monitoring stations. Yet, requests from the public for readings on food have declined significantly with only one case or so coming in each week.

Expenses including rent are paid by Hiroyuki Kuwano, the 52-year-old chairman.

"We're not making any profit, but we want to continue our services for people who are worried, even if we have scale down our operations," he said.

Yamada of Albireo, who continues to provide consultation services with regard to the health of children in Fukushima Prefecture following the disaster, said: "We don't know what could happen 10 or 20 years from now. That's why we have to continue making efforts as citizens to respond in case of future events. If people can maintain their interest in the issue and continue measuring radioactivity levels, we can keep the memories of the Fukushima nuclear crisis from fading."

Focusing on low-exposure victims

March 2, 2015

Nuclear Regulation Authority shifts disaster focus to treating minor radiation

exposure

http://mainichi.jp/english/english/newsselect/news/20150302p2a00m0na015000c.html

The Nuclear Regulation Authority (NRA) has decided to shift Japan's radiation treatment strategy in the event of a nuclear disaster from focusing on directly exposed people to focusing on low-exposure victims, it has been learned.

The decision comes after it was seen that in the Fukushima nuclear disaster, many people died from the worsening of their pre-existing illnesses during evacuation, even when they had low radiation exposure. The NRA will set up a working group of experts within the fiscal year, and update its nuclear disaster response policy after they work out details. Municipalities will then reflect the changes in their local nuclear disaster countermeasures.

Until now, nuclear disaster response has focused on high-level radiation exposure, as in the fatal exposure of two workers to radiation in the 1999 Tokaimura nuclear accident. However, in a combined disaster like the 2011 Fukushima nuclear accident where an earthquake or tsunami happens alongside a nuclear disaster, most medics will likely to be deployed to treat low-level radiation exposure among evacuees with pre-existing illnesses and injuries when they flee to safe areas. In this case, the treatment of those illnesses and injuries must be prioritized, but at the time of the Fukushima disaster, facilities were not prepared to take on a large number of such patients.

After the readjustment, treatment of direct radiation exposure will be handled by specialists at places like the National Institute of Radiological Sciences in Chiba and university hospitals. Local hospitals, on the other hand, will focus on screening and removal of radioactive material from people's bodies, as well as treatment of diseases and injuries that are not radiation-related. Radiation protection suits and masks will be kept on hand, and these hospitals will temporarily quarantine people with high radiation doses in such locations as their infectious disease wards.

The NRA has been planning this readjustment using Aomori Prefecture as a model, as it already has the kind of medical system officials are aiming for. An official at the NRA secretariat's department on nuclear disaster countermeasures and protection against nuclear materials says, "When you say 'radiation exposure,' some medical institutions cannot easily accept patients. We want to create a system that can accept them, by separating the treatment roles."

Interactive map of food radiation levels

March 6, 2015

University releases interactive map of Japanese food radiation levels

http://mainichi.jp/english/english/newsselect/news/20150306p2a00m0na012000c.html



The map showing food radiation amounts by area is seen in this screenshot. (Image from Tokyo Polytechnic University software design laboratory website)

A software design lab at Tokyo Polytechnic University has released an interactive online map of radiation levels in Japanese foods by production area, based on measurements taken since the Fukushima No. 1 Nuclear Power Plant disaster.

Different colors are used to separate areas based on the proportion of foods from those areas that have exceeded radiation safety standards during screenings.

"I want people to see for themselves how safe their food is," said associate professor Yasushi Noguchi, 44, who developed the map.

The Ministry of Health, Labor and Welfare regularly posts screening results for radioactive cesium in food, while Tokyo Electric Power Co. (TEPCO) posts results for Fukushima Prefecture's marine products. However, the results are merely displayed as lists of readings and times. Noguchi wanted to apply his knowledge in computer programming and design to combine the figures and display them in an accessible format.

With the assistance of students, Noguchi harvested data from the ministry and TEPCO, and also obtained the radiation safety standards of various countries and regions. Over the course of about a year, he set up a system to display radiation levels for different products by area following the 2011 nuclear disaster. Radiation safety standards for Japan, the United States, Ukraine (where Chernobyl is located) and Europe can be compared for various products. The map can be viewed at http://foodradiation.org/map/index_e.html

March 06, 2015(Mainichi Japan)

Fukushima volunteers

March 13, 2015

Volunteers risk radiation exposure to decontaminate Fukushima zone

http://mainichi.jp/english/english/newsselect/news/20150312p2a00m0na011000c.html

MINAMISOMA, Fukushima -- On Feb. 21, 24 volunteers cleared away a 10-meter-tall bamboo grove in the Odaka district here -- an area contaminated with radioactive materials from the Fukushima nuclear disaster.

The group used handsaws and chainsaws to cut down the stems on a slope, and then fed them into a wood chipper. Half of the volunteers were women, and some of them were still of high school age. Among them was a 17-year-old girl from Chiba Prefecture, who took part in the program for the first time with her classmate. "I'm glad I can be of help to someone," she said.

The Odaka district, which lies within a 20 kilometer radius of the crippled Fukushima No. 1 Nuclear Power Plant, is designated as a "zone preparing for evacuation orders to be lifted" where residents are not allowed to take up lodgings as a general rule. Although the district is subject to government-led decontamination efforts, workers have yet to come into the area and its vicinity to do their work. The 17-year-old girl admitted that her family was worried about her taking part in the volunteer program, but she said, "I thought it would be all right after seeing their activities online."

According to Mitsuo Matsumoto, who heads the Minamisoma Volunteer Activity Center, airborne radiation levels are measured in the area before any work is done, and if the level is 2.5 microsieverts per hour or more, no work is carried out. If air dose rates are 1.5 microsieverts per hour or higher, only older volunteer workers are sent to the site. The level at the site on Feb. 21 was below 1.0 microsieverts per hour, Matsumoto says.

Mayuko Izumida, a 43-year-old part-time worker from Yokohama comes to the district approximately once every three months.

"I have been visiting 'at my own risk,' no matter what happens in the future," she says.

Ichiro Higashikawa, a 48-year-old man in the restaurant business from Tokyo's Koto Ward, was removing mud from a ditch next to a rice field in the Odaka district on Feb. 21. He said that he initially brought a dosimeter with him to measure air doses. He no longer does so, however, because he has gotten used to the situation in the area. Still, this does not mean he is unconcerned. "Under normal conditions, this is what the government should do more, not us," he says.

A worker engaged in government-led decontamination work in a different area was surprised to learn about the volunteer work.

"That's the same as some of our work," the worker said. "Caution should be exercised because air doses on the mountainside can be about 2 microsieverts per hour higher than those in other places." Usually, volunteer work is not ongoing like the work of those hired specifically to do the cleaning. Still, the

question remains as to why volunteers are risking exposure to radiation to perform their tasks. The reason is because the decontamination policy of the Ministry of the Environment does not live up to residents' expectations.

According to the Ministry of the Environment, decontamination work, as a general rule, does not extend to felling trees. Workers merely prune evergreen conifers, such as cedars, to a height of 4 meters from the ground. As for forest zones within a radius of 20 meters from residential areas, decontamination workers make it a standard practice to remove fallen leaves. They prune trees only when they judge them to be greatly affecting human life. The decontamination policy focuses on ground surfaces where radioactive substances move around in rain and with fallen leaves over time. However, the 4-meter rule for evergreen trees is scientifically invalid.

Municipal governments follow the central government's decontamination policy. But in the Fukushima Prefecture city of Nihonmatsu, the local government felled almost all trees at elementary and junior high schools in fiscal 2012 at its own discretion because radiation dose remained high around trees there even after cleansing work was carried out. As result, airborne radiation levels at all 23 schools dropped by as much as 20 percent. Such being the case, it is natural that some people want to have trees cut down. The Mainichi Shimbun accompanied Matsumoto on a survey. Behind the house of the 67-year-old woman who requested the survey was a bamboo grove. She said she was told by a decontamination worker commissioned by the Environment Ministry, "We're not going to cut down the bamboo grove. If you want to have it cleared, please ask volunteers." The woman has been living alone in a temporary housing unit away from her son's family, with whom she had lived before the triple disaster. Volunteers are her only source of help.

When the woman bowed her head and apologized for requesting the work, Matsumoto told her, "The government is to blame. In fact, you could go further and lay the blame on Tokyo Electric Power Co. (TEPCO)." Among sites Matsumoto's group has surveyed are those with air dose rates of 8 microsieverts per hour or higher. Matsumoto pulled out a dosimeter from his work clothes and said, "There were times when the accumulated dose reached 2,500 microsieverts in one month."

The Mainichi visited an office of an Iwaki-based group which was conducting volunteer activities in "difficult-to-return zones," where people are not allowed to enter, with the exception of reconstruction workers and residents returning to their homes temporarily.

Tsutomu Hirayama, 48, who heads "So-So Volunteer," is from the Fukushima Prefecture town of Tomioka. At the request of his friend, he took up volunteer work, shuttling local residents to and from their homes in "no-go zones" for temporary visits. He founded the volunteer organization in 2013 after seeing residents dumfounded when they returned to their homes temporarily. The grass was growing in front of the doorsteps of their houses and the rooms inside were in wild disorder, having been burgled. After he had his group's flyers inserted in public relations magazines published by local governments in the Futaba district, his group started to receive requests for help.

Five to eight volunteer workers can enter a local resident's home as "accompanying business operators" when that resident makes a temporary visit. Up to two cars carrying volunteer workers can travel with the local resident on their temporary visit. Wearing radiation protection suits, the volunteer workers, equipped with dosimeters, clean up their homes and mow the grass, among other tasks.

"When the airborne radiation level exceeds 10 microsieverts per hour, we will consult with volunteer workers on the spot," Hirayama said. "But they come to do the work with full knowledge (of the risks), and they all carry out their work." When he was cleaning up the house of a woman in her 80s in Futaba who had lost her husband after the triple disaster, Hirayama found her husband's favorite items. The woman was overjoyed. Hirayama commented, "At the very least, I hope they will find motivation for living during temporary returns to their homes."

An official of the Tomioka Labor Standards Supervision Office, which oversees the Futaba district, looked miffed when the topic of volunteers came up.

"Volunteers are not under our jurisdiction." The official said. "Volunteer work in difficult-to-return zones? I have never heard of it." (By Shunsuke Sekiya and Tomoki Okuyama, Tokyo City News Department)

March 13, 2015

Regulatory limits (food) need to be adapted

Conclusion of an article recently published in *Environmental Science & technology*, 2015, 49, 2875-2885

Analysis of Japanese Radionuclide Monitoring Data of Food Before and After the Fukushima Nuclear Accident

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http://pubs.acs.org/doi/pdf/10.1021/es5057648

[...]

Lessons Learned.

An ample set of food monitoring data allows for the observation of general radioecological trends, such as the mobility and bioavailability of radionuclides. In this particular case, the long series of pre-Fukushima monitoring data teach us that the 90Sr/137Cs activity ratio is not constant in foodstuffs but constantly increases with time, thus causing an underestimation of the internal exposure as long as a constant (and low) ratio is assumed by the regulatory bodies. Data from pre-Fukushima monitoring campaigns revealed that animal products tend to be higher contaminated with radiocesium, whereas vegetarian produce exhibited higher activity concentrations in radiostrontium. The stunning amount of post-Fukushima food monitoring data clearly allows the identification of radioecologically"sensitive"foodstuffs. For the vegetarian food sector, these sentinels are primarily mushrooms and to a lower extent yuzu (citrus fruits), berries and Japanese radish. Due to its special diet, the boar is a suitable sentinel in the animal product sector as it feeds on mushrooms and other hyperaccumulators.

In summary, the Fukushima nuclear accident triggered an unprecedented monitoring campaign for radionuclides in food.Vegetables from Fukushima prefecture exhibited high radio-cesium activity concentrations soon after the accident.

However, by late summer of 2011, it was mostly mushrooms or dried vegetarian foodstuffs that exceeded the provisional regulatory limit. A similar picture was observed in other affected prefectures: after an initial high, activity concentrations invegetable dropped quickly, but peaked again due to mushroomsand dried vegetables. This confirms the necessity to monitor mushrooms as sentinel species for radiocesium [30].

Monitoring of meat/eggs started with significant delay after the accident, especially in prefectures other than Fukushima. Due to the constant intake of contaminated pasture, radiocesium concentrations in animal products from Fukushima built up relatively

slowly and peaked for the first time in early July 2011. In this initial period, it was mainly beef responsible for exceedances of the provisional regulatory limits. After the peak, activity concentrations dropped again

to rise back from September2011. This time, it was mainly boar meat that was highlycontaminated. Iodine-131 in tap water exhibited high levelsshortly after the accident in several affected prefectures, but no exceedances of the limit were observed after March 2011.

Radiocesium levels in tap water were rather low. Given the high monitoring density, the mostly rapid response of Japaneseauthorities and the rapid decrease of very high initial contamination levels of the most common foods, it seems very unlikely that more than very few members of the public in Japan exceeded the maximum permissible internal exposure of 1 mSv/year. This observation is in agreement with the results of previous studies. [9–11, 21, 49–51]

A key finding of this study is that the correlation between 90Sr and 137Cs may soon no longer follow the assumption of a maximum 90Sr/137Cs activity ratio of 0.1 or even 0.003 in food. Background data from Japan suggested that after several years following the release into the environment, the 90Sr/137Cs activity ratio observed in food rises significantly (most of the samples showing a ratio > 2). This calls for an adaption of the current policy and also increased monitoring efforts with respect to 90Sr. The diminution of the regulatory limit (90Sr/137Cs = 0.003) as of April 2012 was an adaption into the wrong direction. The Japanese authorities are urged to reimplement the "old" limit (90Sr/137Cs = 0.1), which probably will have to be raised further in the future. This observation fosters the need for continuous monitoring of both137Cs and 90Sr; otherwise the 90Sr content of food will soon be underestimated.

More precise estimates of radiation doses to thyroid

March 23, 2015

Team develops method to estimate thyroid radiation dosage soon after Fukushima accident

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201503230055

By YURI OIWA/ Staff Writer

A team of researchers has developed a method to more precisely estimate the doses of radiation to the thyroid glands of people who received medical examinations shortly after the Fukushima nuclear crisis unfurled.

The method came after researchers looked at the radiation exposure records for about 500 people within about a week after the accident in March 2011 and their daily whereabouts.

The team, led by researchers at International University of Health and Welfare in Otawara, Tochigi Prefecture, hopes that the new calculation method will also help estimate doses of radiation to thyroid glands of another 42,000 people who received radiation checkups at evacuation centers.

Gen Suzuki, the director of International University of Health and Welfare Clinic, who heads the team, said it may be used to determine the relationship between thyroid cancer among Fukushima residents and their exposure to radioactive iodine.

"The lack of a reliable estimate on the level of internal exposure in their thyroids, together with the lack of knowledge about the causal relationship between thyroid cancer and exposure to radioactive iodine, is a main cause of anxiety among Fukushima residents," Suzuki said.

Internal exposure comes from mainly absorbing radioactive materials into the body through consuming contaminated food and other means, whereas external exposure comes from outside sources of radiation.

Radioactive iodine accumulates in the thyroid and causes internal exposure. It is suspected to be a cause of thyroid cancer. But there is almost no data on the amount of such radiation exposure among residents, with the material having a short half-life of around eight days.

To assess the amount of exposure of each resident to radioactive iodine, the team used records of external radiation exposure checkups conducted on a total of 42,500 people at Fukushima Medical University and evacuation centers within about a week from the accident.

The records have not been used for the purpose because the simple test did not specify the radioactive materials they were exposed to.

However, the team discovered that a portion of about 500 people who took an additional test at the medical university have results that specify each radioactive material, including radioactive iodine, and its rate of external exposure.

By adding up the total amount of radiation exposure and the rate of each radioactive material, the researchers say that it is possible to estimate the total amount of radioactive iodine in the environment around each subject.

Thus, the researchers say they can assess the amount of radioactive iodine taken in by each person and the level of internal exposure caused by the material.

The 500 examinees also have detailed records of what they did and where they went in the wake of the accident at the Fukushima No. 1 nuclear power plant.

The researchers said they can estimate the amount of radioactive iodine taken into the body of residents who do not have a record on the percentage of radioactive material for their external exposure by closely examining their daily accounts following the accident.

They said they will also investigate if the remaining 42,000 people who took the test at evacuation centers have similar daily accounts to assess the amount of their internal exposure through radioactive iodine. Of medical tests on about 385,000 people in Fukushima Prefecture who were 18 years or younger when the nuclear disaster started, 87 have been found to be suffering from thyroid cancer by the end of 2014.

Fukushima dismisses radiation as cause of youth thyroid cancers

March 25, 2015

Fukushima gov't says nuclear disaster 'unlikely' cause of thyroid gland

cancer

http://mainichi.jp/english/english/newsselect/news/20150325p2a00m0na006000c.html

FUKUSHIMA -- Prefectural authorities here have dismissed any effect of radiation from the Fukushima No. 1 Nuclear Power Plant disaster on 86 thyroid gland cancer patients found in the prefecture as of the end of 2014.

An interim report compiled by the Fukushima Prefectural Government, released at a meeting of experts on March 24, stated that the cancer was "hardly attributable to the effects of radiation."

The meeting was convened to evaluate thyroid gland testing of children in the prefecture.

In giving reasons for ruling out the possibility of the nuclear catastrophe having contributed to cancer development, the report noted that the radiation exposure doses were lower than those in the Chernobyl disaster in 1986. It additionally pointed out that no cancer had been found among children aged 5 or under -- the group most susceptible to radiation effects.

Thyroid gland testing covered some 370,000 residents aged 18 or younger. Of these, about 300,000 have undergone the first round of screening. The second round started in April last year and is scheduled to be completed by the end of fiscal 2015.

Reassuring?

comment from the blogmaster : don't quite know what to make of this

March 21, 2015

Survey by Fukushima students seeks to address radiation fears

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201503210039

By YURI OIWA/ Staff Writer

A group of Fukushima students will head to France in the coming week to present results of a study showing minimal differences in radiation levels between local communities in Japan and locations in three other countries.

Five students attending Fukushima High School embarked on the survey to clarify their situation for people outside Japan. They said they were baffled when foreign teenagers they have chatted with online since 2012 expressed disbelief that life was back to normal following the triple meltdown at the Fukushima No. 1 nuclear power plant in March 2011.

About 220 teachers and students living at a combined total of 30 sites in Japan, France, Belarus and Poland participated in the study.

The foreign participants used the same type of dosimeters as the students, and annual radiation exposure for individuals at each site was calculated based on readings over a two-week period between June and October last year.

The results showed that the median figure for the annual radiation exposure in Fukushima Prefecture was between 0.63 millisievert and 0.97 millisievert.

Meanwhile, figures for locations in France, Belarus and Poland were between 0.51 millisievert and 1.17 millisieverts.

The reading for Fukushima was 0.86 millisievert, while the figures for Nihonmatsu and Iwaki, both in Fukushima Prefecture, were 0.97 millisievert and 0.69 millisievert, respectively.

Figures in the more-distant Yokohama and Ena, Gifu Prefecture, were 0.59 millisievert and 0.87 millisievert, respectively.

"The difference (in annual radiation dosage levels) between municipalities outside the nuclear disaster zone in the prefecture and those overseas was insignificant," said Haruka Onodera, a second-year student

at the school. She will discuss the results at the International Radiation Protection Workshop for High School Students in France, which starts from March 23.



Government putting residents in danger

A young girl is checked for internal radiation exposure using the Baby Scan device in Minami-Soma, Fukushima Prefecture, in September 2014. (Asahi Shimbun file photo)

April 1, 2015

Fukushima residents suing government for lifting evacuation advisories

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504010062

By MASAKAZU HONDA/ Staff Writer

MINAMI-SOMA, Fukushima Prefecture--Hundreds of residents here plan to sue the central government for lifting evacuation advisories near the crippled Fukushima nuclear plant, saying the decision endangered their lives because radiation levels remained high around their homes.

In the lawsuit that will be filed with the Tokyo District Court, the 535 plaintiffs from 132 households in the city just north of the nuclear plant will demand that the government retract its decision to lift the advisories and pay 100,000 yen (\$837) in compensation to each plaintiff.

According to the plaintiffs, the government's cancellation of the advisories goes against the Law on Special Measures Concerning Nuclear Emergency Preparedness, which states that its purpose is to "protect the lives, bodies and properties of citizens from a nuclear disaster."

After the crisis started at the Fukushima No. 1 nuclear power plant in March 2011, the government issued evacuation orders for areas within 20 kilometers of the plant. The plaintiffs' homes are in areas that were issued evacuation advisories and surrounding neighborhoods.

During the decontamination process for areas around the plant, the government initially wanted to lower annual radiation exposure doses to 1 millisievert. After that goal proved impossible, the target became 20 millisieverts.

"The government has selfishly raised the limit on annual public radiation exposure from 1 millisievert set before the nuclear crisis to 20 millisieverts, having residents return to their homes still exposed to high doses of radiation," said Kenji Fukuda, an attorney representing the plaintiffs. "**This is an illegal act that violates the residents' right to a healthy environment guaranteed by the Constitution and international human rights laws.**"

A public relations official at the government's nuclear disaster response headquarters denied the government had put residents in danger.

"Annual radiation exposure levels in all areas that were previously issued the advisories have fallen below 20 millisieverts following decontamination procedures," the official said. "With the radiation levels unlikely to have a significant effect on the residents' health, we have called off the advisories by going through legal procedures."

The government issued the advisories to households starting in June 2011, urging pregnant women and children in particular to evacuate their homes.

The advisories, issued to 281 households in Fukushima Prefecture, were all lifted by the end of last year. But many of the 152 households that were issued advisories in Minami-Soma opposed the government's decision.

"The woodlands and farmlands of the surrounding areas are still contaminated, leaving many of the radiation levels unreduced," said Shuichi Kanno, the 74-year-old chief of a ward in Minami-Soma who heads the plaintiffs. "Radiation levels have even increased in some areas. There is no way our children and grandchildren will be returning to their homes like this."

Working without being notified of risks

April 3, 2015

100 people worked near Fukushima nuclear plant without radiation knowledge



A man holds a copy of his radiation control notebook, which does not mention his radiation dose from his work as a traffic patrol worker. (Mainichi)

http://mainichi.jp/english/english/newsselect/news/20150403p2a00m0na015000c.html

Roughly 100 people worked in a former no-go zone near the crippled Fukushima No. 1 Nuclear Power Plant between December 2012 and March 2013 without knowledge that their work was subject to a special radiation dose limit, it has been learned.

The workers were employed by a contractor that secured jobs for them under a deal with the central government's Cabinet Office to monitor passing vehicles. Labor standards authorities ordered the contractor to correct its practices after the problem came to light.

The contractor says it had only about two weeks to begin work after winning the government contract, and did not have much time to check pertinent laws. The case highlights the central government's hasty approach in requesting such work -- without a sufficient preparatory period or explanation.

The Health, Labor and Welfare Ministry has asked both contractors and outsourcers to comply with legal requirements.

According to the Cabinet Office and other sources, the deal called on the contractor to assign 20 regular cars to the former no-go zone within 20 kilometers of the nuclear plant run by Tokyo Electric Power Co. to direct and monitor other motor vehicles. The Cabinet Office hastily asked a local taxi company to do the job after local governments were given permission to issue passes to local government officials and reconstruction workers in December 2012.

The taxi company, which had handled requests from local residents for temporary homecomings, procured regular vehicles and temporary workers to do the job.

However, the Tomioka Labor Standards Inspection Office was alerted by third parties about a possible violation of regulations for jobs other than decontamination work that are subject to special radiation limits. It launched an investigation and ordered the contractor in August last year to rectify the situation,

pointing out that the job fell under the category of work in which people would be exposed to an air dose of over 2.5 microsieverts per hour.

Although the contractor independently monitored the traffic patrol workers' radiation exposure through their dosimeters, it did not check their respective radiation exposure records, conduct an 150-minute course on radiation effects on the human body and measurement methods, carry out advance research on air doses or issue dose records.

The contractor sent workers their radiation dose records after receiving the improvement order from the labor standards inspection office, but some of the records returned unopened because the workers had changed their addresses.

The Cabinet Office says the traffic patrol work has changed somewhat in content since April 2013, and another contractor is now engaged in tasks subject to the special radiation dose limit.

The health ministry's guidelines for jobs subject to the radiation limit say that an outsourcer can place an order after confirming that a contractor has in place a system to secure enough workers who have been educated to carry out the assignment.

The taxi company's president told the Mainichi Shimbun that his company barely managed to secure enough people and cars. The company, he said, is a novice when it comes to nuclear radiation. He said that the firm might have checked the special radiation dose regulations if there had been a longer preparatory period. The Cabinet Office says it has no clear-cut recollection of its request, but acknowledged that the request was urgent. It added it was not required to explain whether or not the job was subject to the special radiation dose limit because the contractor was primarily responsible for making judgments. The health ministry declined comment on the specific case other than to say that it has urged outsourcers including the Cabinet Office and contractors to honor pertinent regulations.

A 63-year-old man who was a member of the vehicle patrol team says the central government should care more for people working in no-go zones.

The man was recruited after a suspension of decontamination work. He and other prospective workers assembled at an izakaya restaurant in Iwaki, Fukushima Prefecture, and were briefed in December 2012. They received explanations about granting motor vehicles passes and reporting suspicious vehicles, but were not notified about outdoor radiation levels.

On the evening of the following day, the man and another man got into a used car and set up four checkpoints along National Route 6 in the onetime no-go zone and checked passing vehicles from their car. The closest checkpoint was less than 2 kilometers from the nuclear plant, and they were scared as their dosimeters showed high levels of radiation.

The man learned about the special radiation dose limit last year and inquired with the Cabinet Office. He was told that the contractor said the job was not subject to radiation dose limits. He wanted to know his overall radiation dose because he had engaged in decontamination work in the past.

After the labor standards inspection office issued its order, he received his radiation dose record for his traffic patrol duty. It said his dosage was less than 1 millisievert.

"It's wrong to continue to work without advance notification of the risks," he said. April 03, 2015(Mainichi Japan)

Nuclear decontamination workers: Within limit

April 16, 2015

Average radiation exposure of Fukushima decontamination workers within limit: gov't

http://mainichi.jp/english/english/newsselect/news/20150416p2a00m0na007000c.html

The average radiation exposure of workers removing radioactive contamination from the Fukushima nuclear disaster has been 0.5 millisieverts a year, according to an April 15 announcement from the Radiation Effects Association (REA), which is managing workers' radiation exposure.

It was the first release of such information from the REA, and it covered around 26,000 workers. The highest yearly radiation exposure for any of the workers was 13.9 millisieverts, and the Ministry of Health, Labor and Welfare says, "We have been able to see that the health limit of 50 millisieverts of exposure per year was abided by."

The radiation exposure of decontamination workers is required to be recorded by ministry order, and businesses involved in the work have been registering their records with the REA. The data released by the REA covered areas including the special decontamination areas under direct management by the national government.

In the data, the highest average exposure for a yearly quarter was 0.8 millisieverts, for January through March in 2012. April through June that year saw an average of 0.4 millisieverts, and for the quarters afterwards up to December 2014, the averages were between 0.2 and 0.3 millisieverts. The number of decontamination workers covered by the data was 11,058 for 2011 and 2012, and 20,564 for 2013. The average yearly exposure for both the 2011 through 2012 period and for 2013 was 0.5 millisieverts per worker.

According to the Ministry of Health, Labor and Welfare, the average radiation exposure for nuclear plant workers not involved with the Fukushima cleanup is one millisievert, twice that of the decontamination workers.

Radiation exposure of cleanup workers around Fukushima plant well under safety ceiling

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504160052

THE ASAHI SHIMBUN

Cleanup crews around the crippled Fukushima No. 1 nuclear power plant were exposed to an average dose of 0.5 millisievert of radiation per year, well below the government safety standard, a report shows. Released April 15 by the government-affiliated Radiation Effects Association, the report said the maximum dose for decontamination workers was 13.9 millisieverts per year, while the average dose was half the mean exposure level for ordinary nuclear plant workers of 1 millisievert.

Decontamination work is currently under way in broad areas near the Fukushima plant, which experienced a triple meltdown in the 2011 earthquake and tsunami disaster.

The association surveyed individuals who had been involved in state-led decontamination work between 2011 and 2013.

According to the report, no cleanup workers exceeded the health ministry's annual exposure limit of 50 millisieverts during the study period.

The report said 11,058 individuals were engaged in decontamination work around the Fukushima plant in 2011 and 2012. The highest exposure level of 13.9 millisieverts was detected during the period for one worker, with the average radiation dose being 0.5 millisievert.

In 2013, 20,564 people were engaged in the cleanup work and were exposed to a maximum radiation level of 6.7 millisieverts. The average exposure for 2013 was 0.5 millisievert per year.

The association also released preliminary readings for each quarter.

According to the data, cleanup crews received an average radiation dose of 0.8 millisievert between January and March 2012. The figure was relatively high compared with other quarters because the government conducted decontamination in areas with higher radiation levels on a trial basis during the period.

However, the health ministry said the number of workers surveyed is different from the total number of cleanup personnel reported by the Environment Ministry, which could mean the association failed to record radiation doses of all individuals working around the Fukushima plant.

Decontamination workers got up to 13.9 millisieverts of radiation

 $http://www.japantimes.co.jp/news/2015/04/16/national/science-health/fukushima-decontamination-workers-got-up-to-13-9-millisieverts-of-radiation/\#.VS_qN5PwlLM$

JIJI

The decontamination workers cleaning up the hot zone around the Fukushima No. 1 power plant received as much as 13.9 millisieverts of radiation from 2011 to 2013, well within government-mandated levels, the Radiation Effects Association said in its first report on the subject.

The average cumulative dose was 0.6 millisievert among the 26,382 workers tasked with decontaminating 11 municipalities in Fukushima Prefecture tainted by fallout from the March 2011 core meltdowns, said the association, which is in charge of managing their radiation exposure.

The Health, Labor and Welfare Ministry's present limit for decontamination workers is 50 millisieverts a year and 100 millisieverts over five years.

According to the association's tally, the cumulative radiation received by 22,015 workers, or 83.4 percent of the total, was 1 millisievert or lower, but 34 workers, or 0.1 percent, received a dose of over 10 millisieverts.

The association reported on Wednesday that a group of 6,037 people, or 22.9 percent, worked on different projects, with seven of them completing seven assignments. Their average radiation dose came to 2.6 millisieverts for workers who engaged in six different decontamination projects.

Exposure levels were higher for decontamination workers in municipalities in the northern part of Fukushima, including the village of Iitate and the city of Minamisoma, with the average in 2012 standing at 0.8 millisievert.

The number of decontamination workers in the northern municipalities was about half the number in the southern ones, including the village of Kawauchi.

Some 15.4 percent of the total in 2013 were aged 60 to 64. Most were men, with women only accounting for 2.6 percent.

Quarterly records show that the number of decontamination workers is climbing and totaled 17,988 in the July-September quarter of 2014, according to the association.

The average radiation dose peaked at 0.8 millisievert in January-March 2012 but leveled off to 0.2 to 0.3 millisievert after October-December 2012.

The association is commissioned to keep records of worker radiation doses in a database linked to general contractors and other companies that undertake the decontamination work. Since 2014, the database has covered at least 99 percent of the workers, according to the association.

Separately, a Fukushima Labor Bureau survey of 1,152 companies in charge of the decontamination work found some 800 violations of safety and sanitary regulations had been committed, including the failure to measure aerial radiation levels and have workers carry dosimeters.

If violations of labor regulations are included, nearly 70 percent of the companies committed violations, according to the bureau of the ministry.

According to the Environment Ministry, which is supervising the decontamination effort, some 12,000 people work on the cleanup every day. Work is complete in four of the 11 municipalities, and the ministry aims to finish the rest by March 2017.

April 15, 2015

Clean-up workers' radiation exposure released

http://www3.nhk.or.jp/nhkworld/english/news/20150416_07.html

Apr. 15, 2015 - Updated 23:12 UTC+2

A survey shows that radiation exposure was below the legal limit for workers engaged in the decontamination effort after the Fukushima Daiichi accident in 2011.

The Radiation Effects Association gathers radiation data for people engaged in government-run projects of soil decontamination and radioactive waste disposal.

The association announced on Wednesday the results of the survey on more than 26,000 people who worked before 2014.

This is the first time exposure levels for workers in the decontamination effort have been made public.

Association officials said no worker's exposure reached the legal limit of 50 millisieverts a year.

They said the average exposure was 0.5 millisieverts a year.

They also said that in 2013, 14.6 percent of workers were exposed to an annual dose of more than one millisievert. One millisievert is the annual permissible level for the general public.

Health ministry officials said they will continue to supervise operators undertaking the work so that radiation exposure can be properly managed.

Thyroid cancers in youths

May 19, 2015

Fukushima finds 16 new cases of thyroid cancer in young people

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505190041

By YURI OIWA/ Staff Writer

Sixteen young people who lived near the crippled Fukushima No. 1 nuclear power plant have been diagnosed with thyroid cancer, prefectural authorities said May 18, although they added it is "unlikely" a direct result of the nuclear accident.

Fukushima Prefecture has been conducting thyroid tests on about 385,000 residents and others who were 18 years old or younger at the time of the onset of the March 2011 nuclear disaster caused by the Great East Japan Earthquake and tsunami.

A prefectural panel said the results of the first round of tests that concluded in March 2014 revealed the ratio of those diagnosed or suspected of having thyroid cancer who live near the Fukushima plant was no different than the ratio of the same age group from elsewhere in Japan.

The 16 new cases were detected between January and March, and bring the total number of young people diagnosed with the disease in the testing program to 103. Thyroid cancer can be confirmed only after surgery.

The prefecture is currently conducting its second survey of test subjects, which will be concluded in March 2016.

The latest 16 include 12 individuals who were suspected of having the disease during the first study, and four who were believed to have the disease during the second study.

According to prefectural officials, 112 young people were diagnosed or suspected of having thyroid cancer during the first study, with the figure at 15, thus far, in the second survey, bringing the total to date to 127 people.

Because babies and small children are particularly susceptible to the effects of radiation, many cases of thyroid cancer in infants were reported after the 1986 Chernobyl disaster. However, this has not proven to be the case so far with regard to the Fukushima nuclear crisis.

The prefectural panel will further study the impact of radiation exposure on the frequency of thyroid cancer cases by comparing the findings of the first survey with results of the second study and future check-ups.

4 new thyroid cancer cases emerge in latest checks on Fukushima children

http://mainichi.jp/english/english/newsselect/news/20150519p2a00m0na002000c.html

Four children have been diagnosed with thyroid cancer in a second round of health checks performed by the Fukushima Prefectural Government in the wake of the Fukushima nuclear disaster, it has been learned.

The prefectural government has been testing Fukushima Prefecture residents who were aged 18 or under when the nuclear disaster broke out in March 2011. The four children, who were diagnosed by the end of

March, were not among those confirmed to have or suspected of having cancer during the first round of checks.

The four new cases were reported to experts at a prefectural inspection committee meeting on May 18. The first cancer case confirmed during the second round of checks emerged in February. The newest cases bring the number diagnosed with thyroid cancer during secondary checks to five.

A total of 385,000 people were targeted during the second round of checks. As of the end of March, the test results for 120,000 of them had been finalized.

Altogether, 10 children were "suspected" of having cancer. An official from the prefectural inspection committee commented, "At this stage, there's no need to revise the evaluation that any effect of radiation is unlikely."

During the first round of checks, around 300,000 of the 370,000 people eligible to undergo screening were tested, and by the end of March, 99.9 percent of the test results had been finalized. A total of 98 people were diagnosed as having thyroid cancer, up from 86 people as of the end of last year.

May 19, 2015(Mainichi Japan)

"No need to worry"

June 15, 2015

No need to worry about kids' 'low' radiation exposure in Fukushima city: study

http://mainichi.jp/english/english/newsselect/news/20150615p2a00m0na001000c.html

Elementary and junior high school students' average radiation exposure in a city near the Fukushima No. 1 nuclear plant was mostly beneath the government-set safety limit in the year beginning April 2012, according to the results of a new study.

The 881 students in the study had lived in the city of Minamisoma in locations from 10 to 40 kilometers from the crippled nuclear plant. Their average radiation exposure, aged 6 to 15, was 0.7 millisieverts over the second year after the nuclear meltdowns. Around 80 percent of the students were within the national government's safety limit of 1 millisievert.

"The radiation exposure of elementary and junior high students has been kept low, and there's no need to worry about the effects on their health," says Masaharu Tsubokura, specially-appointed researcher at the University of Tokyo's Institute of Medical Science and the research team's representative. His comment referred to all the children in the study, including the child with the highest exposure of 3.49 millisieverts. Since fall 2011, Minamisoma residents have received regular screenings for internal and external radiation exposure. Researchers looked at this data for the students.

Around 90 percent of the radiation exposure seen for the children was external. In 99.7 percent of cases, their internal radiation exposure was too low to be detected by the measuring devices.

There is research for the Chernobyl nuclear disaster in the former Soviet Union indicating that around 40 percent of the residents' radiation exposure occurred internally. The team for the Fukushima research suggests that the low internal exposure seen in Minamisoma "was largely thanks to radiation standards"

for shipping products that are stricter than international standards and prevented contaminated food products from entering the market."

The research was published in the U.S. academic journal PLOS ONE. It was the first expert, one-by-one evaluation of a group of people's combined external and internal radiation exposure for a relatively early period after the March 2011 nuclear disaster.

June 15, 2015 (Mainichi Japan)

"Radiation prevention measures are lagging behind"

June 21, 2015

Protecting nuclear disaster evacuees from radiation still a concern

http://mainichi.jp/english/english/newsselect/news/20150621p2a00m0na010000c.html

As prefectures and municipalities that host or border nuclear plants upgrade their regional disaster prevention plans based on the nuclear disaster response guidelines for citizen evacuation protocols announced by the Nuclear Regulation Authority (NRA) in April, **the problem of how to measure and prevent radiation exposure among evacuees continues to loom large.**

"Reactor No. 1 (at the Fukushima No. 1 Nuclear Power Plant) had exploded, and the inside of the offsite center (which was established as the disaster response base of operations within Fukushima Prefecture) also had high radiation levels. The figures for the screenings we were conducting into whether or not residents had been exposed to radiation were raised immediately afterward."

So recalls Tsuyoshi Ebine, 62, chief councilor in charge of nuclear power measures with the Nagasaki Prefectural Government. He was working for the secretariat of the Cabinet Office's Nuclear Safety Commission at the time the nuclear accident occurred, and headed shortly thereafter to the town of Okuma in Fukushima Prefecture to begin engaging in disaster response measures at the offsite center amidst the unfolding chaos.

According to the Fukushima Prefectural Government and other bodies, standards that were in place prior to the nuclear accident held that decontamination procedures should be performed on anyone for whom radiation levels measured near the skin stood above 13,000 counts per minute (cpm). In the case of a one year-old child who had inhaled radioactive substances, this would be equivalent to the thyroid gland being exposed to 100 millisieverts of radiation. (The permissible level of radiation exposure for the average adult is one millisievert per year.)

Following the hydrogen explosion at the No. 1 reactor at the Fukushima plant, however, which took place on March 12, 2011 -- dispersing enormous amounts of radioactive materials -- screening centers for local evacuees were thrown into a state of total confusion. Escaping to safety became the top priority, and **acceptable levels of radiation exposure were raised tenfold to some 100,000 cpm.** Readings exceeded this level for a total of 102 residents -- **a figure, moreover, that represented only those cases that were recorded**. According to the NRA's proposed measures for dealing with nuclear power disasters, the radiation exposure level at which decontamination is to take place is set at above 40,000 cpm for screenings conducted within one month following a nuclear accident.

"For residents, the objective is evacuation -- and speed is top priority," comments Shinichi Araki, who heads the department of nuclear emergency response and radioactive material protection at the NRA's secretariat office. "Here, we are applying the lessons learned from the experience of evacuations following the nuclear accident in Fukushima."

A manual was additionally compiled outlining guidelines for conducting examinations of residents leaving specific areas following exposure to radiation. Hair and shoes are identified in the manual as areas where such exposure generally occurs, and it is explained that if a water source is available, hair should be washed -- and clothing should additionally be changed -- in order to help bring radiation levels down. If subsequent testing reveals a figure below 40,000 cpm, the guidelines continue, the individual can then proceed to evacuate.

In cases whereby residents evacuate knowing that they have already been exposed to radiation, however, alleviating their concerns is difficult.

"I hope that trainings can be conducted in order to avoid the type of chaos that we saw following the Fukushima nuclear accident," comments Araki. "The next step we must take is to allay the fears that exist among residents who have faced radiation exposure."

Nagasaki Prefecture, where radiation exposure has been experienced from the atomic bombing, has been rapidly implementing measures for dealing with potential nuclear power accidents -- with four of its cities lying within a 30-kilometer radius of the Kyushu Electric Power Company's Genkai Nuclear Power Plant. The prefecture revised its regional disaster prevention plan in June 2012, prior to the national government announcing its future disaster policy guidelines. Provisions were made within the prefectural supplementary budget for radiation-blocking stable iodine tablets, and revisions were made to its emergency radiation exposure medical manual the following year in 2013, including efforts such as increasing the number of medical facilities specializing in early-stage radiation exposure from two to at least three.

Still, however, Ebine comments, "Radiation prevention measures are lagging behind." The number of medical team specialists remains insufficient, and plans are not in place for evacuations at social welfare facilities or other establishments of a similar nature.

"If there were to be an accident at the Genkai Nuclear Power Plant that resulted in residents being exposed to more than 40,000 cpm of radiation, it would not be enough to do as the government advises -- which is to simply undertake decontamination until the figure falls below the target level," Ebine adds. "It is preferable to continue decontaminating until the lowest possible radiation exposure levels are reached -- but no (government) standards are in place in terms of the purpose and methods in this regard."

The medical manual for radiation exposure that was put together by Nagasaki Prefecture includes information regarding concrete methods for decontamination, such as using moist towelettes to wipe away radioactive substances.

"Nagasaki Prefecture has experience with the eruption of the Fugen-dake peak of the Unzen volcano, and we also sent our employees to Fukushima Prefecture following the nuclear accident there," notes Shinichi Yoshida, director of the prefecture's crisis management department. "In addition, we have a framework in place based upon research conducted at Nagasaki University with respect to our history with the atomic bombing."

"Following the Fukushima nuclear disaster, decontamination had to be undertaken with no available water source -- and nobody there knew what was going on," Yoshida added. "We must be ready for any possible contingency -- and we have no choice but to make efforts to educate as many residents as possible about the realities of radiation." June 21, 2015(Mainichi Japan)

New NRA plan for emergency medical care

June 24, 2015

Nuclear regulators to revise medical care plan http://www3.nhk.or.jp/nhkworld/english/news/20150624_24.html

Jun. 24, 2015 - Updated 07:54 UTC+2

Japan's nuclear regulators have come up with a revised plan to provide emergency medical care to residents after accidents at nuclear power plants.

The government has until now helped set up hospitals near nuclear plants to treat small numbers of workers exposed to radiation in accidents.

But in the 2011 nuclear disaster at the Fukushima Daiichi plant, local medical facilities were unable to adequately treat the many residents thought to have been exposed to radiation.

At their meeting in Tokyo on Wednesday, officials of the Nuclear Regulation Authority, or NRA, presented a draft of revised guidelines for creating a network of medical facilities. The plan proposes that prefectures within 30 kilometers of plants designate 1 to 3 hospitals as base facilities to deal with nuclear disasters.

The hospitals are to have teams of experts treat patients after accidents and go to other prefectures where nuclear accidents occur.

The draft also calls for designating hospitals and other facilities within around 30 kilometers of nuclear plants as "cooperating organizations." The facilities would check evacuees for exposure to radiation and treat the injured and sick.

The NRA is to decide on the revised guidelines after soliciting opinions from the public for 30 days from Thursday.

New permissible radiation level for bus drivers and local officials

June 30, 2015

Gov't to raise maximum annual radiation exposure ahead of restart of nuclear reactors

http://mainichi.jp/english/english/newsselect/news/20150630p2a00m0na018000c.html

The government will raise the maximum permissible radiation dose for people including local government officials and bus drivers who will give evacuation guidance to local residents or transport materials in the event of a nuclear accident from the current 1 millisievert per year.

At the time of the outbreak of the crisis at the Fukushima No. 1 Nuclear Power Plant, efforts to evacuate and transport materials were hampered because a sufficient number of necessary people such as government staff were not secured for the local task force near the crippled nuclear power complex. The government plans to set a new standard for a permissible upper limit of radiation exposure in order to ensure steady and smooth evacuation of local residents as part of preparations ahead of a restart of idled nuclear reactors. But it is likely to raise concerns among local governments near nuclear power plants over whether they will be able to secure sufficient staffing numbers.

The government plans to set up a working group within the Cabinet Office as early as next month to start discussing a new standard. The new maximum permissible radiation dose will be applied mainly to local public servants other than police and fire department officials and local bus and truck drivers.

Under the scheme worked out by the then-Nuclear Safety Commission in 1999, those people who are supposed to guide local residents to evacuate, among other tasks, in the event of a nuclear accident are listed as "persons in charge of anti-disaster operations." Of such people, police and fire department officials as well as national public servants and other relevant personnel are allowed to be exposed to up to 100 millisieverts per year in emergency situations -- far higher than 1 millisievert set for ordinary residents. On the other hand, there is currently no special standard for a permissible upper limit for such people as local government officials and bus drivers and they are subject to the same standard as that for ordinary local residents even in emergency situations.

The working group to be established in the Cabinet Office will be comprised of seven experts including Nagasaki University Vice President Shunichi Yamashita. Apart from the Cabinet Office, the Health, Labor and Welfare Ministry and the nuclear regulatory agency, industry organizations such as the Nihon Bus Association will join the working group.

The working group will ascertain radiation doses to which workers such as local government officials were exposed while working outside the premises of the crippled Fukushima nuclear complex. Based on the findings, the Cabinet Office and the health ministry will set a specific maximum permissible radiation dose.

Currently, nuclear plant workers are allowed to be exposed to up to 100 millisieverts per year and decontamination workers 50 millisieverts per year. The then-Nuclear Safety Commission had held the view that the "appropriate" level of the permissible maximum radiation dose for "persons in charge of anti-disaster operations" was 50 millisieverts per year. But before the commission formally decided on the standard, the Fukushima nuclear accident occurred. A Cabinet Office official in charge said, "As it is possible that local officials and bus drivers will carry out their duty where radiation levels are relatively high, we need a new standard in order to provide effective evacuation guidance as well." June 30, 2015 (Mainichi Japan)

Fukushima people take offense over "psychological issue"...

July 7, 2015

Fukushima town residents protest official's comment about radiation safety

http://mainichi.jp/english/english/newsselect/news/20150707p2a00m0na019000c.html

Nuclear evacuees from the Fukushima Prefecture town of Naraha have protested over a government official's comment that he thinks the safety of the town's drinking water is "a psychological issue." The whole town was designated as a no-entry zone after the Fukushima No.1 Nuclear Power Plant disaster, but is set to have its evacuation order lifted on Sept. 5, as announced by Vice-Minister of Economy, Trade and Industry Yosuke Takagi on July 6 when he visited the town. After the announcement, he held a press conference where, in response to a reporter's question he pointed out that radioactive cesium amounts in Naraha tap water are below the detectable level, and said, "People differ in how they think about radiation. I think whether you think (the water source is) safe or not is a psychological issue." There is deep-rooted concern among town residents after sampling in July last year by the Ministry of the Environment found up to 18,700 becquerels of radioactive cesium per kilogram of soil at the bottom of the reservoir at the Kido Dam. That reservoir is the source of tap water for the town.

After Takagi's comment, a Naraha resident in his 60s who has already finished reconstructing his house in preparation for returning to the town said, "That comment makes me lose my desire to go back. Does he intend to say it's people's own fault (that they feel unsafe)?"

Another resident in her 50s said, "If he (vice-economy minister Takagi) could understand the feeling of wanting to return to one's hometown, he would not have said such a thing."

Naraha will be the third no-go zone to have its evacuation order rescinded, after the withdrawal of one for the Miyakoji district of the city of Tamura in April last year, followed by the eastern part of the village of Kawamura in October. It will be the first of the seven municipalities in the prefecture where all residents had been ordered to evacuate to have the order lifted.

At first, the government was aiming to have Naraha's order lifted in early August, but after criticism that there were not enough measures in place to help residents live there, the government delayed the lifting of the evacuation order by around a month to prepare additional measures such as increasing the number of free buses.

"We are reminded once again that the government can't be trusted," said Naraha resident Noboru Endo, 43, who is living in the western Tokyo suburb of Musashino as an evacuee with his 9-year-old son Shota. He feels that the national government is not listening to the voices of those calling for the safety and ease of mind of Naraha residents.

Endo's wife Katsuko, 40, stayed behind in Iwaki, Fukushima Prefecture for her job, but Endo, who worked as a cook in Naraha, decided to evacuate with Shota, a kindergartener at the time of the disaster, for the sake of his son's health.

These days, Shota is enjoying school in Musashino. He has made many friends there and says he doesn't want to leave. With over four years having passed since the nuclear disaster, life as evacuees is changing into the norm for this family.

Every day, however, Endo wants more to return to his hometown and live there with his family. There was a briefing in late June held in Tokyo by the national government for Naraha residents ahead of the

scheduled lifting of the evacuation order. Endo brought Shota with him to let him know about the current situation in Naraha and so he wouldn't forget about going back to their hometown.

However, Endo is dissatisfied with the national government not showing any concrete measures for what it will do about the high levels of radioactive cesium at the bottom of the reservoir.

"Even if the government tells us our tap water is safe, how can we relax? If my generation, who have children, do not return, my hometown will not recover. That's why I want to return, and I want the government to do everything it can to prepare a safe living environment there," Endo says.

New radiation data publication system (for the next emergency)

July 20, 2015

Tests begin on radiation data publication system

http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html

Jul. 20, 2015 - Updated 01:32 UTC+2

Japan's nuclear regulators have begun testing a new radiation data-publicizing system for residents near a power plant.

The Nuclear Regulation Authority says it has begun to test-run the system it has developed in an area surrounding the Sendai nuclear power plant in Kagoshima Prefecture, western Japan.

Kyushu Electric Power Company aims to bring the plant back online next month.

The new system enables the central government and municipalities to provide their radiation data online for other organizations as well as for local residents during emergencies.

The system will allow users to access a special site on the Authority's website to obtain such data in the event of a nuclear accident.

In the case of the Sendai plant, the website provides updated figures from 73 observation points within a 30-kilometer radius from the plant, as well as from cars equipped with radiation-monitoring equipment.

Figures are colored in red or yellow when they exceed government standards.

New nuclear emergency guidelines call for the evacuation of residents within a 5- to 30-kilometer radius from a power plant if radiation levels exceed the government limit.

The government reviewed the guidelines following the 2011 Fukushima Daiichi accident.

The regulators say they will fully launch the system in August after one month of testing. They say they will also set up web sites for other nuclear power plants.

Risk of death from leukaemia increases with radiation doses

Thanks to Georges of the « Vivre après fukushima » blog for his article on this extremely interesting piece of information :

http://www.vivre-apres-fukushima.fr/meme-a-de-faibles-doses-lexposition-aux-rayonnements-accroit-le-risque-de-deces-par-leucemie-chez-les-travailleurs-du-nucleaire/

PRESS RELEASE N° 235 22 June 2015

Even low doses of radiation increase risk of dying from leukaemia in nuclear workers, says IARC

Lyon, France, 22 June2015-

A study coordinated by the International Agency for Research on Cancer (IARC), the specialized cancer agency of the World Health Organization, shows that protracted exposure to low doses of ionizing radiationcan cause leukaemia. The study, published today in The Lancet Haematology, shows that the risk of death from leukaemia increases linearly with the radiation dose.

«Ionising radiation and risk of death from leukaemia and lymphoma in radiation-monitored workers (INWORKS):an international cohort study

This study provides strong evidence of positive associations between protracted low-dose radiation exposure and leukaemia.

Summary of the article in English :

http://dx.doi.org/10.1016/S2352-3026(15)00094-0

The complete article in English :

http://www.thelancet.com/journals/lanhae/article/PIIS2352-3026%2815%2900094-0/fulltext

2nd generation hibahusha still worried about health

July 30, 2015

Survey: 61% of 2nd-generation hibakusha feel anxiety over parents' radiation exposure

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201507300072



A mushroom cloud forms over Nagasaki after a U.S. atomic bomb was dropped on the city on Aug. 9, 1945. (Provided by the U.S. military)

By AZUSA ITO/ Staff Writer

More than 60 percent of second-generation hibakusha still feel anxiety over their parents' exposure to radiation from the atomic bombings of Hiroshima and Nagasaki 70 years ago, a survey showed. The Tokyo Federation of A-Bomb Sufferers Organizations released its study report on July 29, the first in Japan covering children of those exposed to the 1945 nuclear attacks.

The group sent questionnaires to 2,391 residents of the capital who are children of atomic bomb survivors in Nagasaki or Hiroshima. It received 660 responses.

Analysis of the data by Yoshihiro Yagi, a sociology researcher at Ehime University, revealed that 61 percent of second-generation hibakusha feel anxiety about problems and issues related to their parents' exposure to atomic bomb radiation.

About 20 percent of the respondents said they suspect that any health problems they may suffer could be associated with the 1945 atomic bombings.

According to the results, around 20 percent are worried about diseases related to radiation, while another 20 percent are also concerned that the effects of radiation exposure could appear in their children and grandchildren.

"It is difficult for people to find effective ways to address problems if their causes are unclear," Yagi said. "The central government needs to carefully examine the mental conditions of second-generation hibakusha and provide some care."

The survey also asked the children of hibakusha to specify their health problems.

The results showed the largest group, or 12.3 percent of the respondents, cited blood-pressure problems, while 6.5 percent have developed cancer or leukemia, and 6.2 percent have diabetes.

Sixty percent said they do not know if their conditions are related to the U.S. atomic bombs dropped 70 years ago.

But 20 percent said they believe their health problems are a result of their parents' exposure to radiation because they could find no other reason why they develop those conditions. They also said they feel more vulnerable to diseases compared with those around them.

Toyoko Tasaki, 47, who heads a group of second-generation hibakusha in Tokyo, said her mother was exposed to radiation in Hiroshima in 1945.

"Many second-generation victims cannot talk about their anxieties in fear of prejudice," Tasaki said. "The latest findings could be a good way to represent the silent voices of those people.

Short-sighted vision?

July 31, 2015

In major nuclear disasters, mental health the No. 1 casualty, studies find

http://www.japantimes.co.jp/news/2015/07/31/national/science-health/major-nuclear-disasters-mental-health-key-casualty-studies-find/#.Vbsld_nwmos

Reuters

LONDON – People caught up in a nuclear disaster are more likely to suffer severe psychological disorders such as depression and post-traumatic stress disorder rather than harm from radiation, scientists said Friday.

Factors such as having to evacuate their home or simple fear itself contribute to the trauma, the scientists said in studies published in The Lancet to mark the 70th anniversary of the U.S. atomic bombing of Hiroshima and Nagasaki.

The studies counter the misconception that nuclear disasters have caused widespread death and physical illness, with the researchers finding that the mental health effects were far more profound.

"In most nuclear accidents very few people are exposed to a life-threatening dose of radiation," wrote Akira Ohtsuru of **Fukushima Medical University.**

Nuclear accidents are rare but five that were rated as "severe" have occurred during the past 60 years — Russia's Kyshtym in 1957, Windscale in Britain in 1957, Three Mile Island in the United States in 1979, Chernobyl in 1986 and Fukushima in 2011.

Koichi Tanigawa of Fukushima Medical University, who led one of the studies, said the psychological burden for people living in affected regions is often overlooked.

In 2006, the U.N. Chernobyl Forum report found that accident's most serious public health issue was its damage to mental health, an effect made worse by poor communication about the health risks of reported radiation levels.

Even now, 20 years after the accident, rates of depression and PTSD remain higher than normal, the researchers said.

Similar problems were seen after Fukushima, with the proportion of adults with psychological distress almost five times higher among disaster evacuees — at 14.6 percent compared with just 3 percent in the general population.

"Although the radiation dose to the public from Fukushima was relatively low, and **no discernible physical health effects are expected,** psychological and social problems, largely stemming from the differences in risk perceptions, have had a devastating impact on people's lives," Tanigawa said. Some 170,000 residents were evacuated from a 30-km radius of the Fukushima plant, the researchers said.

At least a third of the world's 437 nuclear power plants have even more people living within that distance — 21 have more than 1 million people nearby, and six have more than 3 million.

Radiological health experts said analyzing such events gives vital information on how best to protect those living near nuclear power plants.

Radiation exposure limit more than doubled for workers in emergencies



Rows of tanks storing radiation-contaminated water occupy the compound of the Fukushima No. 1 nuclear power plant on July 28. (Eiji Hori)

July 31, 2015

Nuclear watchdog proposes raising maximum radiation dose to 250 millisieverts

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507310057

By HIROMI KUMAI/ Staff Writer

Nuclear plant workers in Japan will be allowed to be exposed to more than twice the current level of radiation in emergency situations, according to the Nuclear Regulation Authority's Radiation Council.

The radiation exposure limit will be raised from the current 100 millisieverts to 250 millisieverts in emergencies, the radiation council announced in a report released July 30.

The higher level is still only half of the accepted international safety level of 500 millisieverts set by the International Commission on Radiological Protection, an influential independent organization that provides guidelines on radiation protection, for rescue workers in emergency situations at nuclear facilities.

The new cap will be activated from April 2016 after revisions to the nuclear reactor regulatory law and the Industrial Safety and Health Law.

The limit was temporarily raised to 250 millisieverts by the radiation council following the triple meltdown at the Fukushima No. 1 nuclear power plant triggered by the Great East Japan Earthquake and tsunami in March 2011.

The decision was quickly made by the council members through e-mail discussions as the 100 millisieverts limit could have caused a shortage of workers tackling the emergency at the plant. Later, the limit was returned to 100 millisieverts.

Under the revised law, the exposure limit for plant workers will be immediately raised to 250 millisieverts when certain conditions arise, including the risk of radioactive materials leaking from the facility into the surrounding area.

The workers affected will include employees of utility companies and their contractors, inspection officers from the Secretariat of the NRA and other on-field workers.

Of the 174 workers who were exposed to radiation doses more than 100 millisieverts following the Fukushima accident, six were exposed to 250 millisieverts or more.

The radiation council decided that workers are protected if they wear masks and other gear even when exposed to 250 millisieverts. The health damage from acute radiation poisoning below that limit is negligible, it said.

The council's report calls for nuclear plant operators to carefully explain to workers tackling emergency situations about their tasks and obtain their consent to work in such an environment.

It also requests utility companies to conduct proper training of workers, while one of the council members also called on them to conduct follow-up medical checks to detect cancer and other illnesses.

The report also acknowledges that nuclear plant workers could be required to engage in tasks that cause them to be exposed to more than 250 millisieverts in acute emergency situations.

At Kyushu Electric Power Co.'s Sendai nuclear power plant in Kagoshima Prefecture, which the company aims to restart in August, workers will carry out their tasks with an exposure limit of 100 millisieverts until the maximum limit is raised to 250 millisieverts.

A plant worker who has worked at nuclear facilities for 20 years said he suspects that workers from subcontractors will agree to work under the raised limit.

"The cancer checkups and other measures also sound to me as stopgap efforts to ease our anxiety," he said.

Hibakusha and health effects of 1945 radiation

August 2, 2015

Survey: 55% of hibakusha stressed over health impact of 1945 radiation exposure

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508020021

By TAKASHI OKUMA/ Staff Writer

More than 55 percent of survivors of the 1945 atomic bombings still feel anxiety over the impact of radiation exposure on their health, and nearly half fear their descendants may also be affected, an Asahi Shimbun survey showed.

To mark the 70th anniversary of the Aug. 6 bombing of Hiroshima and the Aug. 9 bombing of Nagasaki at the end of World War II, The Asahi Shimbun sent questionnaires to about 22,000 hibakusha.

Of the 5,762 people who gave valid responses, 3,193, or 55.4 percent, said that whenever they become ill or feel subpar, they fear their conditions could be a result of their exposure to radiation from the atomic bombs.

In addition, 2,801 respondents, or 48.6 percent, said they feel anxiety over whether their exposure to radiation may have affected the health of their children and grandchildren, although such genetic effects have not been scientifically confirmed.

The questionnaires were sent to atomic bomb survivors around Japan through organizations under the umbrella of the Japan Confederation of A- and H-Bomb Sufferers Organizations (Nihon Hidankyo). The respondents are from 46 prefectures, including 1,542 in Hiroshima Prefecture, 1,244 in Tokyo, 550 in Kanagawa Prefecture and 243 in Nagasaki Prefecture. Their average age is 81.1, up 8.7 years from the previous survey a decade ago.

Many survivors have grown alarmed by the threat of nuclear warfare in the current international situation, including heightening diplomatic tensions between the United States and Russia and Russian President Vladimir Putin's recent statement that the country was prepared to use nuclear weapons. As many as 3,656 respondents, or 63.5 percent, said the risk of nuclear weapons being used in warfare has increased over the past decade.

More than a quarter of the respondents, or 1,474, said it is unreasonable for Japan's national security to rely on the U.S. nuclear umbrella, while 2,519 people, or 43.7 percent, said such a policy is inevitable. The Asahi Shimbun's previous survey in 2005 to mark the 60th anniversary of the atomic bombings obtained responses from about 13,000 of around 40,000 hibakusha who were sent questionnaires. While the number of hibakusha has rapidly decreased over the past decade because of their aging, 1,246 respondents in the latest survey, or 21.6 percent, pointed to the "fading of memories of the atomic bombings" as one of their most poignant experiences during the past decade.

A combined 2,214 respondents, or 38.4 percent, said their firsthand experiences of the nuclear devastation have been sufficiently or somewhat sufficiently handed down to younger generations, while 2,919 people, or 50.7 percent, said their experiences have not been handed down at all or sufficiently. The latest survey also asked hibakusha about their sentiments toward nuclear power generation following the Fukushima nuclear disaster that started in March 2011.

More than 66 percent of the respondents, or 3,842, said they are opposed or somewhat opposed to nuclear power generation as an energy source.

see also : July 30, 2015

Survey: 61% of 2nd-generation hibakusha feel anxiety over parents' radiation exposure

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201507300072

New limit for workers official

August 6, 2015

NRA OKs bill to raise exposure limit for workers Aug. 6, 2015 - Updated 05:16 UTC+2 http://www3.nhk.or.jp/nhkworld/english/news/20150806_16.html Japan's nuclear regulators have approved an amendment bill to raise the maximum radiation exposure for nuclear plant workers in emergencies.

The Nuclear Regulation Authority approved on Wednesday a limit up to 250 millisieverts in the event of a severe accident.

The revised bill stipulates that the government basically maintains the current limit of 100 millisieverts.

But it says the limit will be raised up to 250 millisieverts if there's a possibility that radioactive materials could disperse from a nuclear plant to outside of the facility compound.

The bill also requires nuclear plant operators get prior written consent from those who might work in emergencies. The operators must give workers prior education on the health impact of radiation and measures to prevent radiation exposure.

The Authority says it will check whether nuclear power companies are providing workers adequate education on the health risks.

The bill is expected to come into effect in April, 2016.

The approval came based on lessons from the Fukushima Daiichi nuclear plant's accident in 2011. In the accident, many workers were exposed to radiation beyond the government limit of 100 millisieverts.

The government had to temporarily raise the limit for workers to 250 millisieverts as an emergency measure.

Effects of residual radiation secretly studied by US military

August 9, 2015

U.S. military secretly studied residual radiation in Hiroshima and Nagasaki even after denying risks

http://mainichi.jp/english/english/newsselect/news/20150809p2a00m0na014000c.html

Invested in building its nuclear prowess during the Cold War, the U.S. military secretly continued to study the effects of residual radiation from the atomic bombs in Hiroshima and Nagasaki even after it denied any risks from residual radiation shortly after the end of World War II, the Mainichi Shimbun has learned. The U.S. government issued an official statement in September 1945 saying that any residual radiation from the two atomic bombs that were dropped on Japan had no effects on the human body. It had emerged, however, that scientists from both Japan and the U.S. had surveyed residual radiation in Hiroshima and Nagasaki multiple times until 1948.

Internal U.S. military documents obtained by the Mainichi now show that the military had secretly studied residual radiation levels in Hiroshima and Nagasaki in March 1950, four-and-a-half years after the atomic bombs were dropped, with researchers reporting to officials in the U.S. that their findings proved that radioactive residue remained for a long time. The survey was led by the Armed Forces Special Weapons Project (AFSWP), which was established in 1947 to promote the U.S. military's nuclear strategy. The approximately 100 pages of documents were found in the National Academy of Sciences archives, and include letters exchanged between senior officials of the Atomic Bomb Casualty Commission (ABCC), which was based in Hiroshima and Nagasaki, and scientists in the U.S., as well as the minutes from meetings. They noted that the radioactive materials that were found had relatively low levels of radiation, but that the study's results should be classified. According to researchers, many AFSWP documents relating to nuclear policy have not been declassified.

In March 1950, two American scientists and an ABCC doctor gathered samples from 11 sites in the Koi district of Hiroshima and the Nishiyama district of Nagasaki, where radioactive "black rain" fell after the bombings, according to the documents. Using film and instruments that detect radioactivity, the researchers found that radiation at 10 of the 11 sites clearly exceeded those of environmental radiation levels.

The scientists reported that some of the samples were taken from soil on farms where vegetables were being grown, prompting senior ABCC officials to consider studying whether radioactive materials could be absorbed by the human body through breathing and food. The samples collected by the researchers were sent to the U.S.

"The U.S. military's denial of the effects of residual radiation at such an early point in time was a political move to stop the U.S. from being held responsible for the various effects of the atomic bombings," says Hiromi Hasai, a nuclear physicist and professor emeritus at Hiroshima University. "In the 1950s, meanwhile, the ABCC was considering conducting a long-term study on the effects of residual radiation, so they were probably concerned about it."

On March 29, 1950, in a letter to scientists at the National Academy of Sciences-National Research Council -- which had established the ABCC in 1947 -- then ABCC director Carl Tessmer wrote that while some may say that the radiation levels that had been detected were low and did not have any effects, it was not advisable to neglect the issue for the next 10 years. He stressed that the effects of low-level residual radiation was unknown territory, and needed to be uncovered.

The ABCC's studies on the effects of radiation involved comparing the rate at which cancer and birth defects were found in groups of people who were exposed to the atomic bomb and those who were not. The data would then be used to estimate the risks people faced by radiation exposure doses. Tessmer explained concern that if there were those who were not in Hiroshima or Nagasaki at the time of the atomic bombings but lived there afterward and suffered internal radiation exposure, the study would fail to provide an accurate assessment of the risks.

Scientists in the U.S. advising the ABCC instructed the researchers to determine if local residents had absorbed radioactive materials through water, food, or breathing. They recommended testing the local drinking water and the lung cells of dead people who had lived in one of the two cities but were not exposed to the actual bombs for radioactive material. They also suggested the possibility of testing the bones of those who were exposed to the bombs and were buried in communal graves.

Downplaying the risks of radiation

August 15, 2015

Psychology is where real radiation risks lie

http://www.japantimes.co.jp/news/2015/08/15/national/science-health/psychology-real-radiation-risks-lie/#.VdNZlZfwmov

by Rowan Hooper

Misinformation breeds discrimination. As if it wasn't enough to experience the trauma of a nuclear bomb, many *hibakusha* (atomic bomb survivors) also faced appalling discrimination.

It appears their children and grandchildren still do — as do those who were caught up in the Fukushima No. 1 nuclear disaster in 2011.

Problems arise because the general public is not properly informed about radiation. Stories in newspapers often exaggerate the risks and fears surrounding radiation, as do lobby groups opposed to nuclear energy. I've been thinking about this when reading some of the first-hand accounts of nuclear war from surviving hibakusha.

Shimako Yamaguchi, 94, recounted her memories of the Nagasaki bomb to the Asahi Shimbun. She's been plagued by nightmares about the dying people she had to leave behind.

Crawling across a bridge covered in bodies on the morning of Aug. 9, 1945, she had to free herself from a hand that grasped her ankle. Sometimes, guilt-ridden, she still feels the grip of that hand.

However, she said, throughout her life she's been called a *marugen* ("nukey"), even in hospitals when she's gone for checkups.

Hiroshima resident Shizuoka Abe, 18 at the time of the bomb and now 88, told the British Broadcasting Corp. that her children were bullied. They were called "A-bomb children" and faced discrimination. Perhaps even more troubling, misinformation may still cause discrimination, fear and suffering today. I heard from a friend of a friend in Hiroshima, a granddaughter of a hibakusha, that she was afraid to have children in case they had genetic problems. I was shocked by this — the woman herself is fine but she was still worried about her genes. She should not be concerned. Several studies have shown that the children and grandchildren of hibakusha do not have any increased risk of genetic problems. It's horrifying that people should still be worried about this; the general public should be reassured that they are OK.

In a paper published earlier this month in The Lancet medical journal, professor Kenji Kamiya of Hiroshima University and colleagues reported on the long-term health impact of radiation exposure from Hiroshima and Nagasaki. Kamiya's team looked at evidence from a life span study that followed 94,000 atomic bomb survivors from 1950 (five years after the bombings) to the current day.

Yes, they found that survivors of the bombs face an increased lifetime risk of cancer. The risk was found to be proportional to dose for "solid cancers" — all cancers other than leukemia — and people exposed as children had a higher risk.

However, hereditary effects have not been detected. In other words, the children of hibakusha are not at any greater risk of developing cancer during their lives.

In a 2003 study conducted by Dale Preston of Hirosoft International Corp., researchers found that hibakusha had a 10.7 percent greater risk of developing a solid cancer than other Japanese who were not exposed to radiation.

In addition, the Radiation Effects Research Foundation found that a person who receives a whole-body dose of radiation will carry a cancer risk that is less than five times that of an unexposed individual. It is uncontroversial to conclude, therefore, that the psychological effects of radiation exposure may be worse than the actual physiological effects. Certainly, the psychological stigma seems to have been worse for a number of descendants of hibakusha and for people living near the Fukushima nuclear power plant. Koichi Tanigawa of Fukushima Medical University agrees that the worst outcome of the disaster was the psychological problems it caused.

"Although the radiation dose to the public from Fukushima was relatively low, and no discernible physical health effects are expected, psychological and social problems, largely stemming from the differences in risk perceptions, have had a devastating impact on people's lives," Tanigawa wrote in findings published in The Lancet.

Tanigawa's colleague, Akira Ohtsuru, also at Fukushima Medical University, has also published a paper that addresses concerns about mental health in the wake of a nuclear accident.

"One of the key tasks of the health services is to reliably communicate that in most nuclear accidents very few people are exposed to a life-threatening dose of radiation," Ohtsuru wrote.

He also wrote that "screening for mental illness in residents relocated from their homes and providing mental health care will be essential."

It is not really surprising that the obvious physical effects of radiation exposure are the ones that doctors have focused on over the years. First the immediate effects of exposure to radiation, then the potential increased risk of cancer.

Radiation is invisible and that's one of the reasons it is so feared. However, the psychological effects of exposure — even of small, harmless amounts — are hard to see, too. Even reading the accounts of the
hibakusha can be harrowing. Nothing most of us have experienced comes close. It is vital that their stories are told so people never forget what they went through.

We can now, in the month of the 70th anniversary of the nuclear bombing of Hiroshima and Nagasaki, at least acknowledge the psychological burden carried by those caught up in nuclear accidents — especially those living around Fukushima — to make their internal suffering visible. This is the conclusion of Kamiya's paper.

"Psychosocial problems in Fukushima have a devastating effect on people's lives," he wrote. "In addition to the natural science of radiation effects, psychosocial studies should be integrated into recovery planning after nuclear accidents such as that at Fukushima."

Rowan Hooper is the news editor of New Scientist magazine. The second volume of Natural Selections columns translated into Japanese is published by Shinchosha. The title is "Hito wa Ima mo Shinka Shiteru" ("The Evolving Human"). Follow Rowan on Twitter @rowhoop.

New guidelines for radiation treatment

August 26, 2015

Nuclear regulator designates 5 treatment centers

http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html

Aug. 26, 2015 - Updated 13:53 UTC+2

Japan's nuclear regulator has designated 5 medical institutions as treatment centers for people exposed to heavy doses of radiation in the event of an accident at a nuclear plant.

The Nuclear Regulation Authority released its revised disaster preparedness guidelines on Wednesday. The new rules reflect lessons learned from the 2011 accident at the Fukushima Daiichi power plant.

Prefectures within 30 kilometers of a nuclear plant are now required to designate one to 3 medical institutions as base hospitals.

In addition, 5 institutions were chosen to take charge of serious radiation exposure cases if the base hospitals are unable to. The 5 institutions are in Chiba, Hiroshima, Nagasaki, Fukushima and Aomori prefectures.

The guidelines also stipulate that if an accident is severe, the 5 institutions and the base hospitals will work together to send medical teams to affected areas.

The government's previous plan called for medical institutions around nuclear plants to provide treatment. This plan assumed that only a few plant workers would be affected by a nuclear accident.

Many evacuees potentially exposed to radiation in the Fukushima Daiichi disaster did not receive adequate medical attention through the system.

Japan revises guideline on medical care in nuclear emergency

http://mainichi.jp/english/english/newsselect/news/20150826p2g00m0dm065000c.html

TOKYO (Kyodo) -- Japan's Nuclear Regulation Authority on Wednesday revised a guideline on measures against nuclear emergency to boost the country's medical preparedness for nuclear disaster, reflecting lessons learned from the Fukushima meltdowns triggered by a huge earthquake and tsunami in 2011. The regulator aims to build a medical service network to that end across the country over the next three years or so by obliging local municipalities hosting nuclear plants to designate one or more hospitals as medical institutions that can provide emergency treatment for radiation exposure.

The disaster at Tokyo Electric Power Co.'s Fukushima Daiichi complex, which resulted in the massive leakage of radioactive materials, exposed the vulnerability of hospitals and medical networks in the event of a nuclear emergency, with many evacuees not given proper treatment.

The regulator designated a total of five university hospitals and research institutions, including Fukushima Medical University and Hiroshima University, as facilities for treatment of a large number of people exposed to high levels of radiation, who could not be treated within the framework of local medical networks.

Under the revised guideline, the regulator also calls for strengthening advanced education on radiation treatment for medical staffers, while organizing teams -- comprising doctors, nurses and nuclear experts -- which will be dispatched to support local hospitals in the event of a nuclear emergency.

On Aug. 11, a nuclear reactor located on the southwestern Japanese main island of Kyushu came back online, becoming the first reactor in Japan to be reactivated under the post-Fukushima, upgraded safety regulations.

The government seeks to reactivate the remaining idled reactors that have cleared the regulator's safety screening, but strong safety concerns over the use of nuclear power remain among the public.

Abnormal growth in Fukushima fir trees

August 29, 2015

Abnormalities found in trees near Fukushima plant

http://www3.nhk.or.jp/nhkworld/english/news/20150829_05.html

Aug. 29, 2015 - Updated 01:55 UTC+2

Japan's Environment Ministry has found abnormalities in fir trees near the crippled Fukushima Daiichi nuclear power plant.

The ministry has been observing about 80 species of wild animals and trees near the plant since 2011, when Japan suffered its worst nuclear accident.

At the request of the ministry, the National Institute of Radiological Sciences analyzed fir trees in areas where radiation levels are relatively high and published the results on Friday.

The results show that Japanese fir populations in the area showed a significantly increased number of morphological defects, including deletions of leader shoots of the main branch axis. The study shows that 98 percent of fir trees in a 3.5-kilometer area from the damaged plant have defects. The radiation dose in the area is about 34 microsieverts per hour.

The results also show that 44 percent of fir trees have defects in an 8.5-kilometer zone with 20 microsieverts of radiation, and 27 percent in a 15-kilometer zone with 7 microsieverts of radiation.

The institute says the results indicate that radioactive materials emitted after the nuclear accident may have caused such morphological abnormalities.

The results have been also posted on the website of the British science magazine, Scientific Reports.

The institute's Satoshi Yoshida says conifers such as fir trees are more susceptible to radiation.

But he said relations between such defects and radiation are still unclear and that further studies are necessary.

The Environment Ministry says no abnormality has so far been confirmed in other animals and trees.



Fukushima fir trees in higher radiation areas showing abnormal growth

A fir tree missing its top bud. (Photo courtesy of National Institute of Radiological Sciences)

http://mainichi.jp/english/english/newsselect/news/20150829p2a00m0na017000c.html

Abnormal growth has been detected in fir trees in three areas of Fukushima Prefecture exposed to high radiation levels in the wake of the Fukushima nuclear disaster, say researchers. Research published in the academic journal Scientific Reports on Aug. 28 showed that the top buds of many fir trees in heavily contaminated areas were missing. Researchers examined fir trees in three areas in the Fukushima Prefecture towns of Okuma and Namie, using fir trees in the city of Kitaibaraki, Ibaraki Prefecture, as a control group. The researchers checked between 111 and 202 fir trees in each location.

In the area with the highest radiation level of 33.9 microsieverts per hour, located in Okuma, 97.6 percent of the observed fir trees did not have a top bud -- without which the trees' growth cannot continue. In two areas of Namie where radiation levels reached 19.6 microsieverts per hour and 6.85 microsievers per hour, the same abnormality was seen in 43.5 percent and 27 percent of the fir trees, respectively. In Kitaibaraki, where radiation stood at 0.13 microsieverts per hour, the abnormality was seen in 5.8 percent of the fir trees.

The researchers say that these abnormalities have increased in prevalence since 2012. The Fukushima disaster occurred in 2011. At the same time, they say that more research is needed into the causal relationship between radiation and the abnormalities, and the underlying mechanisms of how the abnormalities occur.

In wild animal and plant life surveys being conducted by the Ministry of the Environment since fiscal 2011, around 80 species have been observed, but fir trees are the only one to have shown abnormalities, the ministry says.

Conifers are known to be susceptible to the effects of radiation. Abnormalities in Scots Pines were reported after the Chernobyl nuclear disaster in the former Soviet Union in 1986. However, the underlying mechanisms behind the changes are unknown.

Atsushi Kasai, a former senior researcher at the Japan Atomic Energy Research Institute, who is knowledgeable about the Chernobyl disaster, says, "The areas in Chernobyl where tree abnormalities appeared had much higher radiation levels than those in this new research. It is necessary to carefully look into the causes, taking into effect environmental factors such as weather conditions."

Morphological defects found in Japanese fir trees around Fukushima nuclear plant

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201508290045

August 29, 2015

THE ASAHI SHIMBUN

Radiation spewed out by the crippled Fukushima No. 1 nuclear power plant may be responsible for differences in the growth of native Japanese fir trees in the area.

Researchers primarily from the National Institute of Radiological Sciences said Aug. 28 that many fir trees near the plant, as well as other areas, had undergone "morphological defects."

They intentionally avoided words like abnormality, but used morphological defects and change. Their studies showed that the changes occurred more frequently in areas with higher air rates of radiation.

"But it is still unclear whether the phenomenon has been caused by radial rays," a team member concluded, adding that exposure to higher levels of radiation is "one possible cause."

Conducted in January, the survey covered the town of Okuma in Fukushima Prefecture, located 3.5 kilometers from the plant, where radiation levels of 33.9 microsieverts per hour were detected, and two locations in the town of Namie, also in the prefecture.

While one of the Namie investigation sites is 8.5 km from the plant and measured 19.6 microsieverts per hour, readings of 6.85 microsieverts were detected at the other spot, located 15 km from the facility. All the sites are within the government-designated difficult-to-return zone, meaning that the residents were evacuated and are prohibited from living there.

The team also examined firs in distant Kita-Ibaraki, Ibaraki Prefecture, which had radiation levels of 0.13 microsieverts per hour, for comparison.

In each of the four sites, the scientists checked 100 to 200 fir trees.

They found that more than 90 percent of firs in the Okuma site were not growing normally. Fir tree boles normally extend upward with two or so branches arising from them horizontally each year. But this was not the case.

Similar changes in shape were found in more than 40 percent of firs and around 30 percent of the trees, respectively, in the two Namie locations. Less than 10 percent of fir trees in the Kita-Ibaraki survey site also were different.

According to the NIRS, findings of studies concerning the 1986 Chernobyl nuclear disaster and other research revealed that conifers, such as firs and pine trees, are vulnerable to the effects of radiation. However, the scientists noted that the problems reported in their latest survey may have been caused by animals, tree sickness or cold weather, not by exposure to strong radiation.

The Environment Ministry has been examining the impact of radial rays on local ecosystems since the nuclear crisis unfolded at the Fukushima nuclear plant four years ago. The NIRS study is part of those ministry efforts.

The governmental agency has to date monitored 44 kinds of animals and plants in areas around the damaged facility, but no other significant changes or abnormalities have been reported.

'LABORATORY EXPERIMENTS ESSENTIAL'

Tomoko Nakanishi, a professor of radiation plant physiology at the University of Tokyo, said the latest findings are invaluable as researchers have difficulty doing surveys in the difficult-to-return zone due to high radiation readings.

"There had been so little data on such areas," she said.

But Nakanishi also pointed out it will require further research to conclude the morphological changes have been caused by exposure to radial rays.

"Other factors may have affected fir trees," Nakanishi said. "Researchers need to examine through lab experiments what will happen when firs are exposed to high levels of radiation."

104 cases of thyroid cancer among Fukushima children

September 1, 2015

Fukushima Pref. to examine incidence of thyroid cancer in children

http://mainichi.jp/english/english/newsselect/news/20150901p2a00m0na002000c.html

The Fukushima Prefectural Government has established a research team at Fukushima Medical University to examine health data taken after the nuclear disaster to determine whether the prefecture's children have a higher rate of thyroid cancer than is natural, the prefectural government announced on Aug. 31. The research will use health records collected since the Fukushima No. 1 Nuclear Power Plant accident on residents 18 and younger at the time of the disaster. As of April 30 this year, 300,476 of the 367,685 residents in the prefecture who are subject to the study had taken thyroid cancer examinations, and as of that time, 98 had been diagnosed with thyroid cancer and 14 had been diagnosed with possible thyroid cancer.

Researchers will compare such data to national data on thyroid cancer patients, also taking into account factors like the speed at which thyroid cancer develops. Later they intend to look into differences in thyroid cancer incidence based on age and location.

The prefectural government says the team will include researchers from Osaka University, Nagoya University and the Radiation Effects Research Foundation. The research results are to be compiled within this fiscal year.

The prefectural government also announced on Aug. 31 that in the second round of thyroid cancer tests being conducted from April last year, as of the end of June this year one child who had not been diagnosed with thyroid cancer in the first round of tests was diagnosed this time. A total of six children were diagnosed with thyroid cancer in this second round of tests, and nine children were diagnosed with possible thyroid cancer, making a new total of 19 children possibly having the disease.

New case of thyroid cancer diagnosed in Fukushima; brings number to 104

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201509010056

THE ASAHI SHIMBUN

FUKUSHIMA--An investigation into health problems triggered by the 2011 nuclear disaster here turned up a new case of thyroid cancer in a young person who lived near the stricken plant.

The latest diagnosis brings to 104 the number of people out of the 385,000 or so Fukushima Prefecture residents who were 18 years old or younger at the time of the accident that are confirmed to have thyroid cancer, prefectural authorities said Aug. 31.

However, the prefectural government committee investigating the issue of health problems said that "as of now, it is unlikely for the thyroid cancers found in Fukushima Prefecture to have been caused by the nuclear power plant accident."

The latest check was conducted between April and the end of June.

New PLOS ONE study

September 12, 2015

Evacuation of Fukushima elderly riskier than then-exposure to radiation: study

 $http://www.japantimes.co.jp/news/2015/09/12/national/science-health/nursing-home-evacuation-fukushima-accident-higher-radiation-risk-study/\#.VfW_ZpfwlLN$

by Tomoko Otake Staff Writer

Following the March 2011 Great East Japan Earthquake and the ensuing nuclear disaster at the Fukushima No. 1 power plant, hundreds of nursing-home residents and staffers living close to the plant rushed to evacuate.

But, according to the results of a joint study published Friday in the science journal PLOS ONE, the evacuations posed a far greater health risk to the evacuees than the radiation they would have endured had they decided to stay.

Co-author Masaharu Tsubokura, a University of Tokyo researcher, said the study should be used as a resource in evacuation planning, as many of the nation's nuclear power plants are waiting for the green light to restart operations.

The researchers, led by Michio Murakami of the University of Tokyo, examined the risks for 191 residents and 184 staffers at three nursing homes 20 to 30 km away from the plant, outside the compulsory evacuation zone.

While all nursing home residents chose to be evacuated due to radiation fears, concerns over the plant's stability and a lack of resources such as medical drugs, the decision ended up boosting the number of deaths due to the burden of the evacuation itself, changes in medical staff members and a lack of preparation at the sites where patients were sent.

The researchers calculated the "loss of life expectancy" under four scenarios: the next-day evacuation, which is what happened; delayed evacuation three months later; and nonevacuation scenarios with first-year radiation exposures of 20 and 100 millisieverts.

The results showed the next-day evacuation was 400 times more detrimental to the evacuees' life expectancy than delayed evacuation, and riskier than scenarios where they stayed and were exposed to radiation, which is known to increase the risk of developing cancer.

"The purpose of the study is not to discuss whether the evacuation was appropriate or not," said Tsubokura. "The study shows that, in preparing for nuclear disasters, evacuation-tied risks need to be reduced through detailed planning in advance."

New PLOS ONE study (2)

September 24, 2015

Sudden evacuation more harmful to elderly care patients than radiation: study

http://mainichi.jp/english/english/newsselect/news/20150924p2a00m0na002000c.html

The sudden evacuation of elderly nursing home residents with long-standing ailments or disabilities after the Fukushima No. 1 Nuclear Power Plant disaster was more harmful to their health than radiation exposure had they remained at the homes, suggests a new study.

Researchers looked at 191 residents and 184 employees at three special care elderly nursing homes in Minamisoma, Fukushima Prefecture, within 20 to 30 kilometers of the stricken Fukushima plant. The residents were evacuated to other municipalities around 10 days after the disaster. Researchers compared data on their deaths afterwards to a hypothetical situation where they stayed at the homes and faced no added risks to their health besides radiation exposure.

The researchers determined that the evacuation caused a combined loss of 11,000 days to the lifespans of the evacuated residents. A possible reason, they say, is a drop in the level of care due to the sudden evacuation. On the other hand, if the residents had stayed at the homes for 100 days, the researchers estimated based on radiation exposure data from Hiroshima and Nagasaki atomic bombing survivors that the drop in lifespan would have been a combined 27 days, a difference of around 400 times.

Researchers also considered a case where non-evacuating residents were exposed to 100 millisieverts of radiation, an amount at which the International Commission on Radiological Protection says that health effects from radiation are highly likely to appear. Even in that case, the lost lifespan was a combined 5,800 days. In a case of 20 millisieverts the lost lifespan was 1,100 days. Both were less than what was estimated lost from the hasty evacuation.

Former University of Tokyo instructor Michio Murakami, one of the researchers, said, "It is important to plan evacuations of the elderly ahead of time to reduce risk factors, such as not making them feel a sudden change in their environment."

The research results were carried in the American science journal Plos One.

Health effects of 3/11 (Ian Fairlie)

Summing the Health Effects of the Fukushima Nuclear Disaster

http://www.ianfairlie.org/news/summing-the-health-effects-of-the-fukushima-nuclear-disaster/

August 16, 2015

New emerging evidence from Fukushima shows that nuclear disasters *and their aftermaths* can kill thousands of people due to necessary evacuations. Between 2011 and 2014, about 2,000 Japanese people, including many old people, died from ill-heath and suicides connected with the evacuations. Some nuclear advocates, including government officials, have said these deaths are the fault of the evacuations, as if they were unconnected with the nuclear disaster. This is incorrect: the evacuations were necessary to avoid large radiation exposures from the radioactive fallout due to the plumes from the Fukushima explosions and meltdowns.

In future, such deaths should be included in assessments of the fatalities from nuclear disasters. **A fuller report on the health effects from Fukushima is available here.** Summing up the Effects of the Fukushima Nuclear Disaster 10

To stay or not to stay



September 29, 2015

Reluctant to speak, Fukushima moms admit fear of radiation, pressure from families

http://www.japantimes.co.jp/news/2015/09/29/national/social-issues/reluctant-speak-fukushima-moms-admit-fear-radiation-pressure-families/#.Vgowz5fwmid

by Megan Green

Staff Writer

To stay or to flee.

Mothers in Fukushima had to make harsh decisions for their families after the nuclear disaster of March, 2001. More than four years on, they still have to.

Those who remained in Fukushima Prefecture live in constant fear for their children's health. But choosing to flee opens them to accusations of being bad wives who abandoned their relatives, community and husbands tied to jobs.

It is a no-win situation for those who face the decision to stay or go, because they may be unable to live up to the ideal of a *ryosai kenbo* (good wife, wise mother).

"Consciously or subconsciously, women are aware of the role we are expected to play in a family. After the earthquake and nuclear disaster, however, everything changed," said Yukiko (not her real name), a mother and voluntary evacuee in her 30s. "I can't live up to those expectations any more, and society judges me."

All women interviewed for this story spoke on condition of anonymity.

As the crisis at the Fukushima No. 1 nuclear power plant began to play out, Tokyo Electric Power Co. established a 20-km no-go zone around the site, outside of which the government said conditions were safe. Many did not believe the assertion.

As the crisis at the Fukushima No. 1 nuclear power plant began to play out, Tokyo Electric Power Co. established a 20-km no-go zone around the site, outside of which the government said conditions were safe. Many did not believe the assertion.

Yuriko, a woman in her 70s who lives in Minamisoma, Fukushima Prefecture, believes the zone restrictions divided the community.

"Some people trusted the government's word and continued to live here, but others couldn't stand living every day in fear and moved out," Yuriko said. "Nobody knew what to believe and communities have fallen apart."

The fear of radiation, rumors and media reports about the safety of local food prompted many mothers just outside the no-go zone to evacuate voluntarily for the sake of their children's health. Some moved to neighboring prefectures, including Iwate and Miyagi, and others made the great leap south to Tokyo.

"To be honest, I didn't have much knowledge about the nuclear reactors in Fukushima. But I did know how deadly high exposures of radiation could be," said Yuko, in her 30s, who has a 6-year-old daughter. "I evacuated to Tokyo within a week of the disaster. My husband stayed in Fukushima, but I was determined to leave to prioritize the safety of my daughter."

In many cases, voluntary evacuees like Yuko are mothers who fled with their children while their husbands remained in Fukushima to work.

Some were accused of abandoning or running away from their families, particularly those they married into. Relatives labeled the wives disloyal and overly sensitive.

The worried mothers meanwhile believe they are wise to protect their children from radiation exposure. But with no concrete scientific or medical proof to justify their decision to flee, they often feel guilty for leaving a tight-knit community.

"Every time I go up to visit my hometown in Fukushima for a funeral or a traditional holiday, I'm always asked the same question by my relatives," Yuko said.

" 'When are you moving back home?' they ask. 'It's safe now.' The relationship I have with my family has become distant."

Even those who evacuated to Tokyo may not find life any better.

The government helps evacuees whose homes were within the 20-kilometer zone with free accommodation and a monthly stipend. But voluntary evacuees do not qualify for this and thus struggle to make a living.

Life is just as difficult for mothers who remain in Fukushima. They have constant qualms about the invisible dangers of radiation and about whether they made the right choice by staying.

Some said they decided to stay for the sake of their husbands, to avoid separating the family. Some, like Hiroko, felt they had no choice — they had no money to evacuate, they could not find housing for a family of five with pets, and had a life in Fukushima they did not want to risk losing.

"It is strange because nobody talks about their worries dealing with 3/11," said Hiroko, a 30-something who now lives in the town of Kashima, Fukushima Prefecture. "It's almost like the disaster never happened and people erased the crucial reality."

Mothers who stay also face being branded as bad.

"Sometimes when I'm alone in the house, I start to cry, imagining the future of my children," Hiroko said. "I fear my children may become sick, and the ones who I love most will hold a grudge against me for failing to protect them. That is my biggest fear."

As reconstruction speeds up in the prefecture, with posters everywhere boasting slogans such as "Ganbaro Nippon" (Stick it out, Japan) or "Gambaro Fukushima," there is pressure on mothers to keep their worries to themselves.

What has saved some mothers are peer support groups — organizations specifically created for women to share information and give each other mutual support.

Among them is Beteran Mama no Kai (Veteran Mom's Group), an organization based in both Fukushima and Tokyo.

The group's main goal is to encourage mothers who were victims of 3/11 to speak to other women in a similar situation and make connections. Monthly events are held to check up on each other and to relieve stress.

Akiko was among the women who joined the group.

"I was able to speak to other women about topics I would have never been able to talk about on a daily basis, such as food regulations or radiation levels," Akiko said. "I was able to make friends within the group, and I don't feel so alone anymore."

Academic experts say women have long been known to suffer heavily following a trauma like this. "A disaster such as Fukushima is not a single event, but a period of struggle that continues to change over time," said David Slater, professor of anthropology at Sophia University. "And women often carry the heaviest burden, working behind the scenes."

While mothers who live in Fukushima fear for their children's health and dread health checkups because of the risk of getting a bad diagnosis, those who voluntarily evacuated to Tokyo are contemplating whether to move back up north.

Some mothers worry that their children need a father figure in their lives.

Moreover, balancing two households, in Fukushima and Tokyo, is financially and emotionally difficult — and there is always the emotional pressure from relatives in Fukushima nagging them about their return. Yet, some fear returning.

"If I am forced to move back to Fukushima, I have to pretend I don't care about radiation — when I actually do," said Yuko, the Tokyo evacuee.

Anxiety about radiation everyday stress

October 2, 2015

Study: Radiation-related stress not easing among Fukushima mothers

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201510020006



THE ASAHI SHIMBUN

FUKUSHIMA--Psychological stress from the accident at the Fukushima No. 1 nuclear plant has remained around the same level as in 2014 among mothers and children living in Fukushima city, a study found. The stress levels had been dropping since 2011, the year the nuclear disaster started, but apparently bottomed out last year, according to surveys conducted by the Center for Psychological Studies of Disaster at Fukushima University.

"Even after decontamination work is done, the radiation levels remain higher than in pre-accident measurements," said Yuji Tsutsui, director of the center. "Residents have no choice but to be conscious about radiation in their daily lives, and such anxiety prevents the stress levels from dropping."

In the latest survey, whose results were released on Sept. 30, mothers with children in kindergarten and elementary school were asked about their and their children's emotional state.

Mothers who evacuated from no-entry areas around the nuclear plant and residents living in Iwaki and Soma in Fukushima Prefecture were part of the survey for the first time.

Questionnaires were also sent to mothers in Marumori and three other municipalities in southern Miyagi Prefecture, near the Fukushima Prefecture border.

To compare stress levels around the nation, the survey covered mothers in Hyogo Prefecture in western Japan and Kagoshima Prefecture in Kyushu.

The survey yielded 4,733 responses.

The respondents were asked a number of questions, such as if they have flashbacks about the Great East Japan Earthquake and tsunami that caused the nuclear accident and whether they are easily startled by noises. The researchers quantified the levels of the respondents' stress on a scale ranging from zero to 3.

The average stress level for mothers in Fukushima city was 1.36, the same as that of 2014. It was 1.63 in 2011.

The stress level for children in Fukushima city was 0.66 this year, down just 0.01 point over 2014. The level was 0.83 in 2011.

Mothers who left areas where evacuation orders have been issued showed the highest stress level, at 1.85. In Soma, the level was 1.48, while it was 1.29 in Iwaki.

In Hyogo and Kagoshima prefectures, the average stress level was 1.06.

An average of 35 percent of the respondents in Kagoshima and Hyogo prefectures said they had felt depressed.

In contrast, 67 percent of nuclear evacuees felt depressed, followed by 55 percent of respondents in Miyagi Prefecture. In Fukushima city, Soma and Iwaki, the "depressed" ratios were 45 percent or higher. "We want to support mothers and children with psychiatric treatment so they can live carefree and positively even with their stress," Tsutsui said.

In Miyagi Prefecture, the average stress level of mothers with children in the lower grades of elementary school was 1.40. It was 1.42 among mothers with upper-grade children.

On a 2-point scale for anxiety, the levels of mothers in Miyagi Prefecture were 0.47 and 0.53, respectively. Those figures were about the same as those for mothers in Fukushima city.

Hiroko Yoshida, a lecturer at Cyclotron and Radioisotope Center at Tohoku University, has been monitoring airborne radiation levels in the southern areas of Miyagi Prefecture.

"The radiation levels there are no less than those in Soma and Date in northern Fukushima Prefecture," she said. "**The emotional effect caused by the nuclear plant accident is not an issue only for Fukushima Prefecture.**"

JFBA calls for more gov't support for People affected by 3/11

October 2, 2015

Lawyers' group calls for more government support for those affected by Fukushima radiation

 $http://www.japantimes.co.jp/news/2015/10/02/national/lawyers-group-calls-for-more-government-support-for-those-affected-by-fukushima-radiation/\#.Vg_H4Zfwmic$

Kyodo

CHIBA – Japanese lawyers urged the government Friday to enhance health support for people affected by the 2011 Fukushima nuclear disaster, at a time when around 110,000 people are living away from their homes with the prospect of returning still uncertain.

"The state should provide periodical and continual medical checkups for free to those who lived or live in radiation-hit areas," the Japan Federation of Bar Associations said in a resolution adopted during its annual human rights conference at the Makuhari Messe convention center near Tokyo.

"The results of the checkups should be widely shared, with consideration given to privacy, so experts can examine them to study the effects of low-dose exposure and map out countermeasures," the JFBA noted. Among the 110,000 evacuees, around 45,000 are living outside Fukushima Prefecture, home to the disaster-hit Fukushima No. 1 nuclear complex, and have to decide whether to return home.

"The evacuees may face difficulties even if they return home, as many communities have been disbanded during the four-and-a-half years since the earthquake, tsunami and nuclear disasters, while medical and administrative services will not be sufficiently provided there," the federation said.

"On the other hand, some of those who decide to stay where they are now will carry double debt loads for their old and present homes," it said.

Given the situation, the JFBA also pressed the government to expand support for housing and psychological counseling so evacuees can reconstruct their lives.

The adoption of the resolution followed a symposium the previous day, at which lawyers, medical experts and municipal leaders discussed how to address nuclear-related issues generated by the triple meltdowns at the Fukushima plant.

Among the panelists was Masaharu Tsubokura, a physician involved in medical practices in areas neighboring the crippled plant.

"The health problems the evacuees face have been caused not only by radiation exposure but also the changes to their living conditions as a result of evacuation," he said. "Amid social isolation, those suffering strokes and developing diabetes are growing."

The resolution also touched on the issue of where to ultimately dispose of radiation-tainted waste from the Fukushima disaster, with the mayors of the two towns the central government has selected as candidate sites appearing at the symposium.

Shioya Mayor Kazuhisa Mikata and Kami Mayor Hirobumi Inomata said they opposed the government plan, as the chosen sites are vulnerable to natural hazards and the facilities, if constructed, would damage their municipalities' water resources.

Opposition to the sites has grown partly because the government failed to include local residents in the decision-making process and did not provide a clear explanation, the federation said.

Based on the view that the nuclear disaster violated people's fundamental human rights, including the right to healthy living, the JFBA urged the government during a previous human rights meeting to review its pro-nuclear energy policy and eliminate nuclear power generation.

No harm to hibakusha children: To be confirmed

October 6, 2015

Researchers: A-bomb radiation does not increase cancer mortality risk in 'hibakusha' children

By YOHEI IZUMIDA/ Staff Writer

Children whose parents were directly exposed to radiation from the 1945 atomic bombings have the same death rate from cancer as the general population, the latest study by a joint Japanese-U.S. research institute showed.

The Radiation Effects Research Foundation (RERF) said it found "no indications of deleterious health effects" among the children of people exposed to the atomic bombings of Hiroshima and Nagasaki. However, it said **further studies are needed to confirm the findings**.

RERF's three previous surveys all reported no association between the deaths of children of "hibakusha" survivors of the 1945 U.S. atomic bombings and their parents' exposure to radiation.

But around half of hibakusha still feel anxiety that their exposure has put their offspring at risk. The research on the effects of the nuclear attacks was initially started by the Atomic Bomb Casualty Commission, the RERF's predecessor set up by the United States in 1947.

According to the RERF, the latest survey covered 75,327 individuals born between 1946 and 1984, including both second-generation hibakusha and people whose parents were not exposed to radiation from the atomic bombs.

According to the survey results, which were released on Oct. 5, 1,246 of all subjects died of cancer and 3,937 died for other reasons. There were no differences in the rates between the children of hibakusha and the others.

The findings were published in the online edition of the British medical journal Lancet Oncology on Sept. 14.

RERF said the latest results need to be "complemented by sensitive molecular techniques," and that it intends to compile its findings of the next survey in around 10 years.

A survey recently conducted by The Asahi Shimbun showed that 2,801 of 5,762 hibakusha feel anxiety over whether their exposure to radiation may have affected the health of their children and grandchildren. **Megu Otaki, a professor at Hiroshima University's Research Institute for Radiation Biology and Medicine, said it is too early to conclude that second-generation hibakusha need not worry about the effects of the nuclear attacks.**

"Such diseases as cancer frequently appear only after the patients become old, so it could simply be that the effects of radiation will become observable in the future," Otaki said.

New report shows link between thyroid cancers and Fukushima disaster

October 7, 2015

New report links thyroid cancer rise to Fukushima nuclear crisis

http://www.japantimes.co.jp/news/2015/10/07/national/science-health/new-report-links-thyroid-cancer-rise-fukushima-nuclear-crisis/#.VhT2JSvwmos

Kyodo

Thyroid cancer in local children and adolescents following the Fukushima nuclear disaster was probably caused by radiation released in the accident, four researchers said Tuesday in a report. Annual thyroid cancer incidence rates in Fukushima Prefecture from March 2011 through late last year were 20 to 50 times the national level, said a team led by Toshihide Tsuda, professor of environmental epidemiology at Okayama University. The findings were published in the electronic edition of the journal of the International Society for Environmental Epidemiology. The finding, based on screenings of around 370,000 Fukushima residents aged 18 or younger at the time of the accident, "is unlikely to be explained by a screening surge," the researchers said, pointing to radiation exposure as a factor behind the rise in thyroid cancer cases.

But their conclusion is refuted by other epidemiology experts, including Shoichiro Tsugane of the National Cancer Center, who said the results are premature.

"Unless radiation exposure data are checked, any specific relationship between a cancer incidence and radiation cannot be identified," said Tsugane, director of the Research Center for Cancer Prevention and Screening. He said there is a global trend of over-diagnosis of thyroid cancer.

As of late August, the Fukushima prefectural government identified 104 thyroid cancer cases in the prefecture.

But the prefectural government and many experts have doubted whether these cases are related to the nuclear disaster, as the amount of radioactive iodine released during the crisis was smaller than that following the 1986 Chernobyl nuclear accident.

New report shows link between thyroid cancers and Fukushima disaster (2)

October 7, 2015 http://journals.lww.com/epidem/Abstract/publishahead/Thyroid_Cancer_Detection_by_Ultrasound_Amo ng.99115.aspx# Epidemiology: Post Author Corrections: October 5, 2015 doi: 10.1097/EDE.00000000000385 Original Article: PDF Only

Thyroid Cancer Detection by Ultrasound Among Residents Ages 18 Years and Younger in Fukushima, Japan: 2011 to 2014.

Tsuda, Toshihide; Tokinobu, Akiko; Yamamoto, Eiji; Suzuki, Etsuji

Open Access Published Ahead-of-Print

Abstract

Background: After the Great East Japan Earthquake and Tsunami in March 2011, radioactive elements were released from the Fukushima Daiichi Nuclear Power Plant. Based on prior knowledge, concern emerged about whether an increased incidence of thyroid cancer among exposed residents would occur as a result.

Methods: After the release, Fukushima Prefecture performed ultrasound thyroid screening on all residents ages <=18 years. The first round of screening included 298,577 examinees, and a second round began in April 2014. We analyzed the prefecture results from the first and second round up to December 31, 2014, in comparison with the Japanese annual incidence and the incidence within a reference area in Fukushima Prefecture.

Results: The highest incidence rate ratio, using a latency period of 4 years, was observed in the central middle district of the prefecture compared with the Japanese annual incidence (incidence rate ratio = 50;

95% confidence interval [CI] = 25, 90). The prevalence of thyroid cancer was 605 per million examinees (95% CI = 302, 1,082) and the prevalence odds ratio compared with the reference district in Fukushima Prefecture was 2.6 (95% CI = 0.99, 7.0). In the second screening round, even under the assumption that the rest of examinees were disease free, an incidence rate ratio of 12 has already been observed (95% CI = 5.1, 23).

Conclusions: An excess of thyroid cancer has been detected by ultrasound among children and adolescents in Fukushima Prefecture within 4 years of the release, and is unlikely to be explained by a screening surge. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially. Copyright (C) 2015 Wolters Kluwer Health, Inc. All rights reserved.

New report shows link between thyroid cancers and Fukushima disaster (3)

October 8, 2015

New study claims a 30-fold increase in thyroid cancer in Fukushima

http://www.beyondnuclear.org/home/2015/10/8/new-study-claims-a-30-fold-increase-in-thyroid-cancer-in-fuk.html

A study examining thyroid cancer among children 18 years and younger when the Fukushima nuclear catastrophe began, found an increase in thyroid cancers, as predicted by World Health Organization (WHO) initial dose assessments.

However, lead researcher, Toshihide Tsuda an epidemiologist at Okayama University, says "[t]his is more than expected and emerging faster than expected..." by either WHO predictions (slide 4) or studies of thyroid cancers after the Chernobyl nuclear explosion in 1986 (slide 31). Tsuda was urged by international experts, and the publishing journal, to publish his study as early as possible, due to its potential implications for public health.

The study, published in *Epidemiology*, analyzed prefecture data up to December 31, 2014 and pointed out, along with the press conference and press release, these additional observations:

There were no precise measurements of internal or external radiation exposure, so researchers used residential addresses at the time the catastrophe began in 2011 as a surrogate for dose.

A second round of screening, to be completed in March 2016, will include those who were in utero in 2011. Data already show an additional 25 thyroid cancers.

The highest incidence rate ratio was among people whose district was not evacuated, 50 to 60 km (30 to 40 miles approximately) west from the Fukushima nuclear reactors. Data show 605 thyroid cancer cases per million examinees. The expected cases of thyroid cancer for children is 1-2 per year per million. Ground contamination does not necessarily reflect exposure. Some of the most exposed people came from areas where radionuclide deposition was minimal, but radioactive iodine in the air as a result of the catastrophe still exposed them.

The magnitude of the increase is too great to be explained by increased screening since available data show a 2 to 3- and at most a 6 to 7–fold increase would be attributable to enhanced screening efforts. The data examined by Tsuda show cancer cases an order of magnitude higher.

The cancers found by this screening in Fukushima prefecture had metastasized to lymph nodes in 74% of cases (40 cases out of 54), meaning these cancers were not in early stages of development. Therefore, when interpreting the data, overtreatment is also not an issue; a conclusion shared by doctors who helped treat these patients.

Contrary to claims that we would not be seeing an increase in cancers this early (within a year after exposure to radioactivity), radioactivity from Fukushima could have caused this increase in thyroid cancers because excess cancers were observed subsequent to Chernobyl in the earlier years. Further, the US CDC recognizes (slide 8) a minimum empirical induction time for thyroid cancer of 2.5 years in adults; and 1 year in kids for all cancers including thyroid. The minimum latency for leukemia is 0.4 years (146 days).

Residents who were older than 18 years in 2011 should also be monitored for thyroid cancers. In addition to predicting increases in thyroid cancers, the WHO also predicted increases in leukemias and breast cancer among others. The WHO acceded to demands by the government of Japan to reduce estimated doses (slide 5 and also this link). As a result, doses listed in the WHO's report are 1/3 to 1/10th lower than initially drafted.

The study concludes: "In Chernobyl, excesses of thyroid cancer became more remarkable 4 or 5 years after the accident in Belarus and Ukraine, so the observed excess alerts us to prepare for more potential cases within a few years. Furthermore, we could infer a possibility that exposure doses for residents were higher than the official report or the dose estimation by the World Health Organization, because the number of thyroid cancer cases grew faster than predicted in the World Health Organization's health assessment report."

Babyscan study: No radioactive cesium in Fukushima children

October 9, 2015

Extensive radiation study finds no internal cesium exposure in Fukushima children

http://www.japantimes.co.jp/news/2015/10/09/national/science-health/extensive-radiation-study-finds-no-internal-cesium-exposure-fukushima-children/#.Vhfnuivwmot

by Mizuho Aoki Staff Writer



An extensive study of internal radiation exposure in Fukushima Prefecture children detected no radioactive cesium among the examinees, according to the results of a study published Friday. The study, the first of its kind, involved over 2,700 infants and small children mostly from Fukushima who could have been exposed to radiation during and after the Fukushima No. 1 power plant crisis in 2011. The children were examined by three local medical institutions: Hirata Central Hospital, Minamisoma Municipal General Hospital and Tokiwakai Hospital.

Published in the Proceedings of the Japan Academy magazine, the study examined 2,707 children up to 11 years of age from December 2013 to March 2015, using newly developed whole body counters designed especially for scanning small children.

The study found no cesium in the children, indicating that even if they did ingest food and water tainted with radiation, the levels of any radioactive isotopes present must have been negligibly low to avoid detection by such a high-precision machine.

The results were the same among children who ingested local produce and tap water and those who did not, the study showed.

Most were residents of Fukushima, but some were from neighboring prefectures, such as Ibaraki. The new whole body counter, called a Babyscan, can detect as little as 50 becquerels of cesium in a young human body, which is about a fifth or a sixth of the amount measurable by other devices widely used to scan adults, the study said.

Even if cesium below Babyscan's capabilities was present, the resulting exposure level would be less than 16 microsieverts a year, which is negligible, the study said.

The International Commission on Radiological Protection's exposure limit under normal situations is 1 millisievert per year. It says a cumulative exposure of 100 millisieverts per year increases the chances of dying from cancer by 0.5 percent.

Masaharu Tsubokura, a University of Tokyo researcher who examined some of the children at Minamisoma Municipal General Hospital, which is less than 30 km from the crippled nuclear plant, said the result was quite surprising, given the Babyscan's high sensitivity. Roughly speaking, the study showed the children weren't consuming even a becquerel of cesium per day, said Tsubokura, who co-wrote the report.

Although overall public interest in radiation exposure has declined in the past four years, anxiety lingers among many parents with small children, he said. Sadly, their understanding of radiation has not deepened much, he said.

Although several studies have shown that the internal radiation exposure of Fukushima residents is low, Tsubokura said there are plans to continue monitoring children.

"There are people who want us to continue the examinations and reserve a place where they can consult about them. And there are still many people who say they can't eat produce grown in Fukushima. I believe our job is to continue checkups and to deal with each one of them sincerely," he said.

Of the children examined, 638 were living in Minamisoma, 218 were former Minamisoma residents, and the rest were from outside the 30-km hot zone.

The latter group includes 1,579 mostly from Koriyama and Miharu, west of the doomed plant, and from Daigo, Ibaraki Prefecture, as well as 272 mostly from Iwaki, to the south of the plant.

No radioactive cesium detected in Fukushima children: survey

http://mainichi.jp/english/english/newsselect/news/20151009p2a00m0na025000c.html

A group of researchers announced on Oct. 8 that no radioactive cesium was detected in the bodies of 2,707 children in Fukushima and other prefectures.

The medical survey covered children aged between 0 and 11 years old in Fukushima, Miyagi, Ibaraki and other prefectures between December 2013 and March 2015 to see if they suffered internal exposure to radioactive materials emanating from the Fukushima No. 1 nuclear plant disaster.

It is the first time that the results of a large-scale survey on internal radiation exposure among children including babies and toddlers have been released in connection with the March 2011 Fukushima meltdowns.

Researchers from the University of Tokyo and other institutions carried out the survey at three hospitals in Fukushima Prefecture, using test devices whose measurable limits were set at 50 becquerels -- about one-fifth of the adult equivalent. About 70 percent of the children were living in Fukushima Prefecture at the time of the survey.

The researchers also queried the parents and guardians of the surveyed children over whether they avoided using Fukushima-produced rice, vegetables and tap water. In response, only 4 percent of 362 respondents from Miharu, Fukushima Prefecture, said they avoided all of those items produced in the prefecture.

"Our study has confirmed that there is a low risk of internal exposure even among children who eat food produced in Fukushima Prefecture," said one researcher.

The survey results were to be published on Oct. 9. in the online edition of a science magazine issued by the Japan Academy.

First cancer case confirmed for nuclear worker

October 20, 2015

First cancer case confirmed from Fukushima cleanup

http://www3.nhk.or.jp/nhkworld/english/news/20151020_27.html

Oct. 20, 2015 - Updated 07:03 UTC+2

Japan's labor ministry has confirmed the first cancer case related to work at the Fukushima Daiichi nuclear plant.

The worker was involved in recovery and cleanup efforts at the plant after it suffered a meltdown in March 2011. He was in his late 30s at the time.

He has been diagnosed with leukemia and the ministry has approved workers' compensation. Radiation exposure has been linked to the onset of leukemia.

The plant's operator, Tokyo Electric Power Company, says **more than 44,000 people have been involved in the decommissioning work since the disaster.**

Worker cancer case confirmed (2)

October 20, 2015

Ministry recognizes link between Fukushima nuclear worker's leukemia and radiation exposure for 1st time

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201510200086

By YURI OIWA/ Staff Writer

Acknowledging a link between leukemia and exposure to radiation from the nuclear accident, the health ministry has awarded workers' compensation to a former worker at the Fukushima No. 1 nuclear power plant for the first time.

The recipient is a 41-year-old resident of Kita-Kyushu in Fukuoka Prefecture, who formerly worked for Tokyo Electric Power Co.'s partner company, and was engaged in construction and welding operations near the No. 3 and No. 4 reactors of the crippled Fukushima plant between 2012 and 2013.

In January 2014, the worker was diagnosed as suffering from acute myelogenous leukemia. While he had been exposed to 16 millisieverts of radiation at the Fukushima facility by that time, he also received a dose of 4 millisieverts during a three-month periodic inspection of the Kyushu Electric Power Co.'s Genkai plant in 2012.

At the worker's request, the Labor Standards Inspection Office examined the extent of his radiation exposure and work records. It concluded the state should pay compensation insurance for his temporary disability and medical expenses, after consulting an expert panel of the health ministry about the issue. According to government insurance standards for nuclear industry workers introduced in 1976, the government pays workers' compensation to those who are exposed to 5 millisieverts or higher levels of radiation annually and develop leukemia more than a year after they first engaged in work that could expose them to radiation.

In those cases, workers are eligible for insurance payments unless they are exposed to viruses and other factors that could cause leukemia.

The health ministry said eight people who have worked at the Fukushima plant since the 2011 accident have applied for workers' compensation after developing diseases that are said to be associated with radiation exposure.

In three of the eight cases, applicants were not granted compensation, while one worker later withdrew the application. The remaining three are now under consideration, and details of their applications have not been disclosed.

According to TEPCO, 21,000 of the 45,000 people who have worked at the Fukushima No. 1 nuclear plant since the disaster had been exposed to more than 5 millisieverts of radiation by the end of August. More than 9,000 workers have received a dose of 20 millisieverts or more, TEPCO said.

It is therefore expected that the number of applications for workers' compensation related to the Fukushima disaster will surge in the near future.

JP Gov admitted Fukushima worker's cancer from Fukushima accident for the first case

http://fukushima-diary.com/2015/10/jp-gov-admitted-fukushima-workers-cancer-from-fukushima-accident-for-the-first-case/

MHLW (Ministry of Health, Labour and Welfare) officially recognized a former Fukushima worker's leukemia to be caused by Fukushima accident. This is their first time to admit the connection between health effect and Fukushima accident.

This is a male nuclear worker (41), who was a subcontract worker of Tepco. He was involved in welding and construction near Reactor 3 and 4 in crippled Fukushima plant. The reported integral exposure dose was 16 mSv from 2012 to 2013, and he was diagnosed with acute myelogenous leukemia in January of 2014.

The investigation committee of MHLW to consist of experts admitted the relationship with radioactive exposure from medical viewpoints.

http://next2ch.net/poverty/1445321098 http://www.2nn.jp/newsplus/1445318376/

Worker cancer case confirmed (3)

October 20, 2015

NUCLEAR WATCH

http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20151020.html



Fukushima Cancer Case

Japanese officials have confirmed the first diagnosis of cancer related to work at the Fukushima Daiichi nuclear plant. The Ministry of Labor made the announcement on Tuesday.

The male worker was involved in recovery and cleanup efforts after the meltdown in March 2011. He has been diagnosed with leukemia and the Ministry has approved a workers' compensation payout. Radiation exposure has been linked to the onset of leukemia.

Officials at the plant's operator, Tokyo Electric Power Company, say more than 44,000 people have been

involved in the decommissioning work since the disaster.

Children cancers & radiation

Received from Dr. Gordon Edwards (Canadian Coalition for Nuclear Responsibility)

Background: October 26, 2015

Based on abstract mathematical argumentation, without any supporting medical evidence, and without knowing the individual doses of atomic radiation experienced by Japanese citizens living in the region where the Fukushima disaster took place, two international agencies associated with the United Nations -- UNSCEAR and WHO -- have not hesitated to pronounce that the harmful medical after-effects of the Fukushima disaster will not be "discernible as radiation-caused".

These agencies are not actually denying that there will be many cancers, leukemias, genetic effects and other diseases caused by the accident in the decades to come, they are simply saying that it is unlikely that anybody will be able to PROVE beyond a reasonable doubt, using statistical methods, that these extra deaths are caused by people's exposure to radioactivity from the Fukushima Daiichi reactors.

John Gofman, a pioneering nuclear physicist who subsequently became an award-winning medical researcher, has called it the "perfect crime" -- you know people are being killed, you know the cause of death, you know the perpetrator, but you can't actually prove it. And indeed, these two international agencies have done absolutely nothing to help gather the evidence that might have made it possible to prove something -- i.e. gathering data on individual exposures, which could have been done -- for example, by a systematic collection of baby teeth identified by geological location. The baby teeth would have absorbed strontium-90 and other bone-seeking radionuclides and would have given a rough estimate of radiation exposure to young children as a function of their location.

All radiation-induced illnesses following chronic low-level exposure have a "latency period" measured in years or even decades before the full medical effects are seen in the exposed population. Thyroid cancers have one of the shortest latency periods, especially in young children, so that disease is one of the first things to look for. In Belarus, more than five thousand children had to have their thyroid glands surgically removed following the Chernobyl accident, and in that case the latency period was roughly five years.

In the Fukushima region, childhood thyroid cancers are already so much greater than anticipated that it is difficult to escape the conclusion that these burgeoning cancers are radiationcaused. Ironically, those who put their faith in the hand-waving estimates of UNSCEAR and WHO maintain that a cause-effect relationship cannot be proven in the absence of individual dose measurements. So it is OK, in the absence of evidence, and without individual dose measurements, to conclude that cancers are NOT caused by radiation, but it is NOT OK to conclude that cancers ARE being caused by radiation based on a 20- to 50-fold increase in thyroid cancer, despite no individual dose dose data?

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) has been sharply criticized by the Nobel Prize-Winning Organization, International Physicians for the Prevention of Nuclear War (IPPNW), for having a biased approach towards the medical consequences of the Fukushima triple meltdown, designed to deny or to minimize the health effects of radioactive emissions from the crippled reactors.

"Alex Rosen of IPPNW-Germany, one of the lead authors of the critique, said UNSCEAR 'is comprised of delegates from nuclear states with vested interests and a biased view on nuclear energy. Their report on the Fukushima nuclear disaster draws mainly on data from the nuclear industry's publications rather than from independent sources, omits or misinterprets crucial aspects of radiation exposure and uses questionable assumptions as the basis for its calculations.'

" See http://tinyurl.com/n9wkqxr.

On the other hand the World Health Organization (WHO) is bound by an agreement signed long ago (1959) with the International Atomic Energy Agency (IAEA) restricting WHO's ability to conduct studies or publish reports on the health effects observed in populations exposed to atomic radiation from licensed nuclear facilities. Here is an excerpt from the Agreement:

"... it is recognized by the World Health Organization that the International Atomic Energy Agency has the primary responsibility for encouraging, assisting and co-ordinating research on, and development and practical application of, atomic energy for peaceful uses throughout the world without prejudice to the right of the World Health Organization to concern itself with promoting, developing, assisting, and co-ordinating international health work, including research, in all its aspects. Whenever either organization proposes to initiate a programme or activity on a subject in which the other organization has or may have a substantial interest, the first party shall consult the other with a view to adjusting the matter by mutual agreement."

By the way, I spoke about the high thyroid cancer incidence in the Fukushima region on a Canadian TV News show on the Third Anniversary of the disaster:

see https://www.youtube.com/watch?v=Xk1L_JHHFuA&feature=youtu.be.

The main source of dietary iodine in Japan is through seaweed, not through the ingestion of milk as is the case in European and North American populations. It is likely that this dietary iodine is the cause of the dramatic spike in thyroid cancer cases among Japanese children. Gordon Edwards.

CCNR Directory of Audio-Visual Resources on Fukushima: http://ccnr.org/index_fuk.html.

Researcher: Children's cancer linked to Fukushima radiation by Yuri Kageyama, American Press, Oct. 8, 2015 http://tinyurl.com/qcxtxsa

TOKYO (AP) — A new study says children living near the Fukushima nuclear meltdowns have been diagnosed with thyroid cancer at a rate 20 to 50 times that of children elsewhere, a difference the authors contend undermines the government's position that more cases have been discovered in the area only because of stringent monitoring.

Most of the 370,000 children in Fukushima prefecture (state) have been given ultrasound checkups since the March 2011 meltdowns at the tsunami-ravaged Fukushima Dai-ichi nuclear plant. The most recent statistics, released in August, show that thyroid cancer is suspected or confirmed in 137 of those children, a number that rose by 25 from a year earlier. Elsewhere, the disease occurs in only about one or two of every million children per year by some estimates.

"This is more than expected and emerging faster than expected," lead author Toshihide Tsuda told The Associated Press during a visit to Tokyo. "This is 20 times to 50 times what would be normally expected." The study was released online this week and is being published in the November issue of Epidemiology, produced by the Herndon, Virginia-based International Society for Environmental Epidemiology. The data comes from tests overseen by Fukushima Medical University.

Making sense of the relationship between radiation and cancer is precarious: It's scientifically impossible to link an individual cancer case to radiation. Looking harder with routine check-ups, like the one in Fukushima, leads to quicker discovery of tumors, inflating the tallies in a so-called "screening effect." Right after the disaster, the lead doctor brought in to Fukushima, Shunichi Yamashita, repeatedly ruled out the possibility of radiation-induced illnesses. The thyroid checks were being ordered just to play it safe, according to the government.

But Tsuda, a professor at Okayama University, said the latest results from the ultrasound checkups, which continue to be conducted, raise doubts about the government's view.

Thyroid cancer among children is one sickness the medical world has definitively linked to radiation after the 1986 Chernobyl catastrophe. If treated, it is rarely fatal, and early detection is a plus, but patients are on medication for the rest of their lives.

Scientists are divided on Tsuda's conclusions.

In the same Epidemiology issue, Scott Davis, professor at the Department of Epidemiology in the Seattlebased School of Public Health, said the key limitation of Tsuda's study is the lack of individual-level data to estimate actual radiation doses.

Davis agreed with the findings of the World Health Organization and UNSCEAR, or the United Nations Scientific Committee on the Effects of Atomic Radiation, both of which have carried out reviews on Fukushima and predicted cancer rates will remain stable, with no rises being discernable as radiationcaused.

David J. Brenner, professor of radiation biophysics at Columbia University Medical Center, took a different view. While he agreed individual estimates on radiation doses are needed, he said in a telephone interview that the higher thyroid cancer rate in Fukushima is "not due to screening. It's real." Conclusions about any connection between Fukushima radiation and cancer will help determine compensation and other policies. Many people who live in areas deemed safe by the government have fled fearing sickness, especially for their children.

An area extending about 20 kilometers (12 miles) from the nuclear plant has been declared an exclusion zone. The borders are constantly being remapped as cleanup of radiated debris and soil continues in an effort to bring as many people back as possible. Decommissioning the plant is expected to take decades. Noriko Matsumoto, 53, who used to work as a nurse in Koriyama, Fukushima, outside the no-go zone, fled to Tokyo with her then-11-year-old daughter a few months after the disaster. She had initially shrugged off the fears but got worried when her daughter started getting nosebleeds and rashes.

"My daughter has the right to live free of radiation," she said. "We can never be sure about blaming radiation. But I personally feel radiation is behind sicknesses."

Andrew F. Olshan, professor at the Department of Epidemiology at the University of North Carolina, in Chapel Hill, noted that research on what follows a catastrophe is complex and difficult.

"Dr. Tsuda's study had limitations including assessment of individual radiation dose levels to the thyroid and the ability to fully assess the impact of screening on the excess cases detected," he said.

"Nonetheless, this study is critical to initiate additional investigations of possible health effects, for governmental planning, and increasing public awareness."

Cancers after 3/11: But who to trust?

October 31, 2015

Cancer and Fukushima: Who to trust?

http://www.japantimes.co.jp/news/2015/10/31/national/media-national/cancer-fukushima-trust/#.VjTiCit1BLN

by Philip Brasor

Special To The Japan Times

South Korean director Kim Ki-duk is a noted provocateur. His latest movie, "Stop," is about a Japanese couple who were living near the Fukushima No. 1 nuclear power plant when it suffered a meltdown in March 2011.

They evacuate to Tokyo, where the wife is pestered by an underground cult that insists she abort her presumably irradiated fetus, and she becomes convinced she should. Her husband is equally convinced there is nothing wrong with the baby and ties his wife up to prevent her from doing anything. Kim's point seems to be that whichever position you take on the nuclear accident, it will invariably drive you insane. But these positions do divide families. In an interview that appeared Oct. 20 on Norikoe Net TV, writer Minori Kitahara remarks to filmmaker Hitomi Kamanaka that there are no men in her latest documentary, "Little Voices from Fukushima," which centers on a group of mothers trying to gain more information about the effects of radiation on their children's health, because the authorities give them none. Kamanaka says these women's husbands refused to appear on camera "even though they support what their wives are doing."

There are even more mothers involved in the movement whose spouses forbade them to participate in the filming. Because of their jobs, these men gravitate toward the establishment stance, which in this case holds that there is no solid evidence showing that the radioactivity released by the Fukushima accident has had a harmful effect on area residents, including children. Public health in Fukushima is, according to Kamanaka, a gender-identified issue. "The nuclear industry is very much a man's world," she says. The male-dominated media augments the confusion by throwing out stories related to radiation in Fukushima filled with unexplained statistics: three Fukushima hospitals ran tests on 2,700 children and discovered no radioactive cesium in their bodies; the International Atomic Energy Agency says an increase in the incidence of thyroid cancer in Fukushima is "unlikely." Then Toshihide Tsuda, a professor at Okayama University, contradicts the purport of these stories by publishing a study in the journal of the International Society of Environmental Epidemiology that found thyroid cancer incidence rates of Fukushima residents "under the age of 19" was 20 to 50 times the national level. News items that mention the study also point out that Tsuda's conclusions are questioned by experts who call them "premature" or indicative of a "screening surge," meaning that since so many people were tested more cancers than normal were bound to be found and these cancers may not have been caused by radiation. Tsuda addressed these doubts last month during a press conference at the Foreign Correspondents' Club of Japan, explaining that even if a screening surge is factored in, the incidence rate for thyroid cancer is well above the norm. Moreover, the rate of cancer incidence four years after the accident is comparable to the rate of thyroid cancer incidence in Belarus four years after the Chernobyl nuclear disaster, and that led to 6,000 children undergoing surgery. He called on the authorities to undertake "better and broader"

screenings and implement measures to address this probable increase in cancer cases.

The operative word here is "cancer," which dominates the conversation because of its terrifying overtones. However, it is treated by both sides as a quantitative matter: How many children will get cancer and how much of it was caused by radioactivity?

What's missing is the qualitative dimension. Katsuya Kodama, a medical researcher whose specialty is the effects of radiation on cells, pointed out during a recent discussion on the Internet news channel DemocraTV that DNA strands are always being damaged and repair themselves as a matter of course. Radiation above a certain level, however, can cause more permanent damage, which may lead to cancerous cell growth.

But all cancers aren't the same, and according to his research, the type of cell mutations found in the children in Fukushima don't usually lead to "shortened life spans." The small nodules found on the subjects' thyroid glands are cancerous but that doesn't mean they're fatal. Thyroid cancer develops very slowly, but once a parent hears from a doctor that his or her child "has cancer," the reaction is to have it removed immediately, even though it may not be necessary. Fifteen Chernobyl children diagnosed with thyroid cancer eventually died, but Kodama believes death was due to the effects of surgery and not the cancer itself. Though the number of thyroid cancer diagnoses has risen in the United States in recent decades, the number of annual deaths from the disease has remained unchanged. In Kodama's view, the argument has less to do with the effects of radiation than with how the medical community addresses cancer.

He isn't saying that radioactivity isn't dangerous or that people living in the area shouldn't be screened; he's saying the matter should be explained medically and not just statistically. Strangely enough, his research, like Tsuda's, has been rejected by the establishment. When he presented his findings to the Nuclear Regulation Authority, they told him they were afraid people would "misunderstand." In accordance with the official line regarding the possible health crisis in Fukushima, it's better not to talk about it *at all*.

This attitude only exacerbates the situation. Two years ago the government set up an advisory system for the regions affected by the nuclear accident. Residents could talk to experts about safety and relief measures. Last week, Tokyo Shimbun reported that the program has been a bust, since residents don't trust anyone representing the authorities to give them straight answers. As one person involved in the program told the paper, "Everyone has different opinions about the effects of radiation, and it always leads to conflicts."

A-bomb survivors demand extension of black rain area

November 5, 2015

Hiroshima A-bomb survivors demand recognition as 'black rain' victims

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201511050052

By GEN OKAMOTO/ Staff Writer

HIROSHIMA--A group of atomic bomb survivors here has filed a lawsuit against local governments demanding recognition as victims of radioactive "black rain" and access to free medical checkups.

In the suit filed at the Hiroshima District Court on Nov. 4, the 64 plaintiffs said the Hiroshima prefectural and municipal governments should retract their earlier rejections and certify the victims as hibakusha atomic bomb survivors.

The plaintiffs argue it is unacceptable that they have not received the hibakusha certificates despite their exposure to black rain.

The plaintiffs said they believe this is the first group lawsuit demanding recognition as victims of the radioactive black rain that fell shortly after the atomic bombing of the city on Aug. 6, 1945.

The central government in 1976 officially recognized atomic bomb survivors who were exposed to black rain in an area near ground zero. The decision was based on 1953 findings by the Hiroshima local observatory, which concluded that there was "heavy" precipitation of radioactive black rain in that area. Survivors in this area have been given free health checkups. If they develop cancer or cirrhosis, they can receive financial assistance for treatment as certified hibakusha.

But those exposed to black rain in other areas are not eligible for the relief measures. The Hiroshima prefectural and municipal governments have not issued certificates to these people in line with the central government's designation.

The plaintiffs said the central government's judgment was "extremely unfair."

"Some of us have suffered cancer and other illnesses and have been worried about our health over the years due to our exposure to black rain," one of the plaintiffs said.

After the suit was filed, Hiroshima Mayor Kazumi Matsui and Hiroshima Governor Hidehiko Yuzaki released statements that said they were taking seriously the fact that victims have resorted to legal action to seek relief measures.

The municipal and prefectural governments, they said, had no choice but to reject the plaintiffs' requests because the central government has not expanded the recognized area of heavy black rain.

The local governments have asked the central government to widen the recognized area for relief sixfold based on their study conducted in fiscal 2008.

But the central government declined that request in 2012, citing a health ministry panel report that concluded the proposed expansion lacked scientific grounds.

A-bomb survivors file suit demanding 'black rain' area be expanded

http://mainichi.jp/english/english/newsselect/news/20151104p2a00m0na020000c.html

HIROSHIMA -- A group of 64 Hiroshima atomic bombing survivors have filed a suit demanding local governments expand areas covered by free checkups for people exposed to radioactive "black rain" after the bombing.

The plaintiffs -- all residents of Hiroshima Prefecture -- are currently not receiving assistance under the Atomic Bomb Survivors' Assistance Law as they were outside the black rain area recognized by the

government. They had earlier applied to the Hiroshima prefectural and municipal governments for Abomb survivors' certificates, but their requests were rejected.

The group filed the suit with the Hiroshima District Court on Nov. 4, demanding the Hiroshima prefectural and municipal governments issue A-bomb survivors' certificates to them. While the Hiroshima Municipal Government is demanding the black rain area recognized under the assistance law be expanded, the national government has been lukewarm to the idea. Through the lawsuit, the plaintiffs are seeking to have the government review the system for recognizing A-bomb survivors and expand the designated black rain area.

According to the complaint, the plaintiffs -- who were 5 months to 20 years old at the time of the Aug. 6, 1945 atomic bombing of Hiroshima by U.S. forces -- currently suffer from cancer, anemia, hypothyroidism and other symptoms due to their exposure to the radioactive black rain, which hit the city shortly after the bombing.

In March this year, the plaintiffs started applying for A-bomb survivors' certificates and another type of certificate that could be converted into the first type once they develop certain diseases with the Hiroshima prefectural and municipal governments, claiming that they were "under circumstances susceptible to radiation from the atomic bombing" and were therefore eligible for the certificates. Their requests, however, were turned down.

In the suit filed with the Hiroshima District Court, the plaintiffs are demanding the Hiroshima prefectural and municipal governments nullify their decisions to turn down their applications for those certificates. However, because the local governments' decisions were based on current laws and ordinances, the plaintiffs are also contesting the relevance of the national government's relief measures for A-bomb survivors.

In 2010, the Hiroshima prefectural and municipal governments asked the national government to expand the recognized black rain area by six times the current size after conducting an independent survey on A-bomb survivors. However, the national government concluded in 2012 that it would not expand the recognized area on the grounds that an expert panel to the Ministry of Health, Labor and Welfare decided that there were "no scientific grounds" in the survey results.

Masaaki Takano, 77, head of the plaintiffs' group and chairman of an association of Hiroshima Prefecture black rain victims' groups, said, "The national government failed to recognize our longtime pleas and the prefectural and municipal governments' requests to expand the recognized area. We have no choice but to bring the case to court."

In comments released after the filing of the suit, Hiroshima Mayor Kazumi Matsui and Hiroshima Gov. Hidehiko Yuzaki said they understood that people who were not recognized by the law as A-bomb survivors felt compelled to opt for seeking legal judgment. In the meantime, they also said that they had no choice but to reject survivors' applications based on the current laws and government decrees, adding that they would respond to the matter properly after consulting with the national government.

Independent WHO: Genetic effects of radiation



Proceedings of the Forum on the Genetic Effects of Ionizing Radiation

http://independentwho.org/en/2015/11/05/proceedings-forum-2014/

"IndependentWHO – Health and Nuclear Power" organized a "Scientific and Citizen Forum on the Genetic Effects of Ionizing Radiation" on Saturday, November 29, 2014 in Geneva, with the participation of six international experts (Japan, USA, Finland, England, Germany).

The Proceedings of this forum have now been published. These Proceedings can be read or downloaded here on this page or, if you

prefer a hard copy, you can buy the Proceedings of the Forum on the Genetic Effects of Ionizing Radiation by ordering a printed copy directly from "Lulu.com".

"Read or download the Proceedings"

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A French version of these Proceedings also exists. "Go to the French version of the Proceedings"

Radiation center opens in Fukushima

November 18, 2015

Radiation monitoring center opens in coastal Fukushima

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201511180062 THE ASAHI SHIMBUN

MINAMI-SOMA, Fukushima Prefecture--A research headquarters to monitor radiation levels from the stricken Fukushima No. 1 nuclear power plant around the clock opened here Nov. 16.

A branch of the Fukushima Prefectural Center for Environmental Creation, the "environmental radiation center" in coastal Minami-Soma city operates with a total budget of 2.7 billion yen (\$21.88 million).

"The center will conduct more minute and precise radiation monitoring and release accurate data to the public to dispel the anxiety of Fukushima residents and negative publicity (about radioactive contamination)," Fukushima Governor Masao Uchibori said Nov. 16.

The 1.8-hecter facility was set up to oversee programs to monitor radiation and soil contamination levels in the prefecture's Hamadori coastal region.

It is tasked with monitoring airborne radiation levels on a full-time basis and conducting systematic soil surveys in areas around the crippled plant.

The center is also tasked with compiling comprehensive data on radioactive contamination and publicly disclosing the results of each survey.

In addition to prefectural officials, around 15 workers of the Japan Atomic Energy Agency (JAEA) staff the facility on a full-time basis to provide their expertise in developing monitoring methods.

Everyone has "the right to avoid nuclear damage"

November 23, 2015

Intl. forum calls for nuclear damage prevention

Nov. 23, 2015 - Updated 18:27 UTC+1

http://www3.nhk.or.jp/nhkworld/english/news/20151123_22.html

Nuclear victims attending an international forum in Hiroshima have called for the prevention of damage caused by nuclear substances.

The World Nuclear Victims Forum opened on Saturday, marking the 70th anniversary of the atomic bombings of Hiroshima and Nagasaki.

It has brought together people who have been exposed to radiation from 9 countries, including the United States and Australia.

They include those who were exposed to radiation due to nuclear bombs tests and uranium mining.

The participants wrapped up their 3-day meeting on Monday by unanimously adopting the Hiroshima Declaration.

The declaration says everyone has "the right to avoid nuclear damage" as well as the right to be free of pressure to engage in work that can be lead to radiation exposure.

The declaration notes people must not use nuclear energy because contamination will last for a long period of time should a nuclear disaster occur. It says there is no clear vision to secure the disposal of nuclear waste.

The declaration also says state governments promoting nuclear energy policies, as well as companies that cause contamination and their shareholders, should be held responsible in the event of a nuclear disaster.

The secretary general of the forum, Haruko Moritaki, said the participants were able to discuss what should be done in the future.

She added that she wants to create an international network with this week's meeting serving as a beginning.

More children diagnosed with thyroid cancer

December 1, 2015

Cases of thyroid cancer up among Fukushima kids in 2nd screening: prefectural panel

http://mainichi.jp/english/english/newsselect/news/20151201p2a00m0na007000c.html

FUKUSHIMA -- In its second round of health exams for residents who were 18 years old or younger at the time of the March 2011 nuclear meltdowns at the Fukushima No. 1 Nuclear Power Plant, 15 were confirmed to have thyroid cancer as of the end September this year, the prefectural government revealed Nov. 30.

This means that nine children who were not diagnosed as having thyroid cancer or suspected of having thyroid cancer in the first round were newly diagnosed with cancer. Moreover, the number of children suspected of having thyroid cancer went up by five in the second round, bringing the total number of suspected cancer cases to 24.

These results were revealed in a report compiled by a prefectural panel on the health effects of the nuclear disaster. "The dose of radiation exposure in the Fukushima crisis has been small compared to that in the Chernobyl disaster," said panel chairman Hokuto Hoshi. "Based on the fact that no cases of cancer have been identified among children who were five or younger at the time of the meltdowns, it is hard to believe -- as we have heretofore said -- that the cancer was caused by radiation."

The second round of screening began in April 2014, and as of the end of September this year, the test results of some 180,000 people of the approximately 380,000 people screened have been confirmed. In the first round of screening, some 300,000 people of the 370,000 people who were eligible for testing had undergone tests as of late April 2015. Ninety-eight people had been diagnosed with thyroid cancer in the previous announcement given at the end of June, but the number rose to 100 as of the end of September. Additionally, there are 13 suspected cases of thyroid cancer.

More children diagnosed with thyroid cancer (2)

December 1, 2015

Fukushima confirms 11 new thyroid cancer cases among young people

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512010072

By YURI OIWA/ Staff Writer

Eleven people in Fukushima Prefecture aged 18 or younger at the time of the 2011 triple meltdown were recently diagnosed with thyroid cancer, bringing the number of confirmed cases to 115 since the accident at the Fukushima No. 1 nuclear power plant.

Of the 11 new patients diagnosed, who were diagnosed between July and September, two were already suspected of having the disease in the first round of checks that concluded at the end of March last year, the prefectural government announced Nov. 30.

The other nine were identified as suspected cases in the second round of checks, which began in April 2014.

Their diagnoses were established during surgery where thyroid cancer was confirmed.

The Fukushima prefectural government has been conducting health checks on about 380,000 residents who were 18 or younger at the time of the nuclear disaster. The screening was conducted to detect thyroid cancer since young people are susceptible to the disease.

The number of patients with suspected or confirmed cases totaled 114 in the first round of screening, and 39 in the second round, for a total of 153.

Of the 39 suspected or confirmed cases that were reported during the second round, two patients were found to have a tubercle growth during the first round of screening. Doctors believe the lumps then become cancerous.

Of the 39, 19 were cleared during the first round of screening, but apparently developed cancer afterward. Hokuto Hoshi, who chairs a panel with the prefectural survey, downplayed the possibility that fallout from the Fukushima disaster is the culprit behind the incidences of thyroid cancer among young people. "As far as our data shows, the estimated internal doses of radiation of Fukushima residents for thyroid glands are lower than those of residents around the Chernobyl nuclear plant," Hoshi said. "It is unlikely that radiation is responsible for the recently reported thyroid cancer cases, given that there are no reports of cancer among infants, who are particularly susceptible to radiation."

The prefecture's screening for thyroid cancer began in autumn 2011 based on findings that thyroid cancer cases increased among children in the aftermath of the 1986 Chernobyl accident in what is now Ukraine.

Murphy's Law lives in Fukushima

December 14, 2015

Fukushima Amplifies Murphy's Law

http://www.counterpunch.org/2015/12/14/fukushima-amplifies-murphys-law/ by Robert Hunziker

Murphy's Law has found a permanent home in Fukushima: "Anything that can go wrong will go wrong."

For instance, only recently, radioactive cesium in tunnels at Fukushima suddenly spiked by more than 4,000 times similar measurements from one year ago. This spooky/huge spike in radiation levels hit 482,000 Becquerels per liter. TEPCO intends to investigate the reason behind the enormous anomalous increase, *Radiation Spikes in Fukushima Underground Ducts*, NHK World, Dec. 9, 2015. Over the course of a year, 4,000 times anything probably is not good.

Not only that but the barrier constructed at the Fukushima nuclear power plant to hopefully prevent contaminated water from leaking into the ocean is tilting and has developed a crack about 0.3 miles in length along its base. The wall is 0.5 miles long and 98 feet below ground.

An ocean barrier, indeed: "Higher levels of radiation from Japan's 2011 Fukushima nuclear accident are showing up in the ocean off the west coast of North America, scientists from the Woods Hole Oceanographic Institution reported," *Higher Levels of Fukushima Radiation Detected Off West Coast,* Statesman Journal, Dec. 3, 2015. Fortunately, so far, the detected levels still remain below U.S. government-established safety limits.
In the meantime, TEPCO battles one of the most perplexing disasters of all-time with an average number of daily workers more than 7,000. The difficulty of procuring workers at the site is beyond imagination. Homeless people are hired off the streets to do the dangerous decontamination work.

The Tokyo 2020 Olympics

The situation better get better really soon because the Olympics are scheduled for 2020, which brings to mind perilous lost corium, the sizzling hot melted core in Plant #2, that hopefully, keeping one's fingers crossed, has not burrowed into the ground, spreading deadly isotopes erratically, ubiquitously throughout. Still, nobody knows where this Missing Corium-Waldo of the Nuclear World is located. Meanwhile, Greenpeace/Japan accuses the International Atomic Energy Agency (IAEA) of downplaying the health risks of the 2011 Fukushima disaster and accuses the agency of acting in concert with Japanese Prime Minister Shinzo Abe's attempts to "normalize" the disaster, *Greenpeace Japan: IAEA Downplays Dangers of Fukushima Disaster*, Sputnik News, Feb. 9, 2015. Hurry, hurry, the Olympics is coming! One clever approach to the problem of too much radiation is to increase the "allowable limits": "The permissible annual level of radiation exposure has been dangerously heightened in Japan after the March 11th accident. One (1) millisievert (mSv) has been elevated to 20 mSv for residents in affected areas. The government increased the annual limit for nuclear workers' radiation exposure from 100 mSv to 250 mSv in 'emergency situations," Mitsuhei Murata (Executive Director of Japan Society for Global System and Ethics and former Japanese ambassador to Switzerland) *Nuclear Disaster and Global Ethics*, UN World Conference on Disaster Risk Reduction, March 16, 2015.

When the "permissible level" of radiation was initially moved higher, the Japan Medical Association stated: "The scientific basis for choosing the maximum amount of 20 mSv in the band of 1 to 20 mSv is not clear." Furthermore, according to Physicians for Social Responsibility, there is no safe level of radiation. Apropos the Fukushima situation: "It is unconscionable to increase the allowable dose for children to 20 millisieverts (mSv). Twenty mSv exposes an adult to a 1 in 500 risk of getting cancer; this dose for children exposes them to a 1 in 200 risk of getting cancer. And if they are exposed to this dose for two years, the risk is 1 in 100. There is no way that this level of exposure can be considered 'safe' for children." Recent studies confirm "exposure to low levels of radiation can cause cancer," specifically, "No matter whether people are exposed to protracted low doses or to high and acute does, the observed association between dose and solid cancer risk is similar per unit of radiation dose," (Source: British Medical Journal, Press Release, *Low Doses of Ionizing Radiation Increase Risk of Death from Solid Cancers*, International Agency for Research on Cancer, WHO, Oct. 21, 2015).

In sharp contrast to Japan's position, Chernobyl's officialdom has a different take on "permissible annual radiation exposure," specifically: "The radiation limit that excluded people from living in the 30km zone around the Chernobyl nuclear plant exclusion zone was set at 5mSV/year, five years after the nuclear accident. Over 100,000 people were evacuated from within the zone and will never return," (Greenpeace Japan). Never ever return!

Nuclear disasters don't go away easily. For example, Chernobyl is already facing a brand new crisis. The durability of the original decaying blighted sarcophagus expires within the next 12 months. However, the new replacement sarcophagus, the world's biggest-ever metallic dome, will not be accomplished in time as they are short of funds (615million EUR).

In addition to Ukraine's internal strife with pro-Russian citizens, the country has serious financial difficulties. All of this amounts to one more "spoke in the wheel" against nuclear reactor proliferation (Incidentally, China has 400 reactors on the drawing board). Who knows if and when a crippled reactor ends up in the hands of a financially strapped country? Then what?

Already, Ukraine has 15 nuclear reactors standing tall, so far, amongst whizzing bullets and powerful rockets. Dismally, Ukraine has conceivably become a nuclear holocaust tinderbox in the midst of cannon fire, rumbling tanks, and surface-to-air missiles, for example, Malaysia Airlines Flight 17 was shot down by a missile, supposedly by accident, on July 17, 2014, all 298 on board died.

Meanwhile, back in Japan, raising the level of permissible annual radiation exposure does not escape international notice. According to Dr. Ian Fairlie, former head of the Secretariat of the UK Government's CERRIE Committee on Internal Radiation Risks: "The Japanese government goes so far as to increase the public limit for radiation in Japan from 1 mSv to 20 mSv per year, while its scientists are making efforts to convince the International Commission on Radiological Protection (ICRP) to accept this enormous increase."

But, wait a moment; the Olympic Committee has already designated Tokyo 2020. Is it possible the IOC has the cart ahead of the horse, maybe way ahead?

As for the newly established higher acceptable Japanese limit for radiation: "This is not only unscientific, it is also unconscionable," Dr. Fairlie, *Unspoken Death Toll of Fukushima: Nuclear Disaster Killing Japanese Slowly*, Sputnik International, Aug. 8, 2015. After all, on a factual basis, "unscientific and unconscionable" are strong indictments.

Yet, the Olympic committee has already approved Tokyo 2020, and people from around the world will be making plans to attend. Withal, if the Olympic Committee is okay with Japan's capricious radiation conditions, then shouldn't everybody else be okay with it too? Well....

All of which brings to mind: If Fukushima's a canary in the mineshaft that exposes nuclear power's hidden dirty underbelly, meaning, once things go wrong they really go wrong, adhering to Murphy's Law, then what of the potential consequences of big ole nuke plants in war zones? How would Murphy's Law apply in a war zone? The most comfortable answer is: Don't even think about it.

Still, the world's 430 nuclear reactors are "big fat sitting ducks." According to former ambassador Murata, nuclear reactors are "the world's most serious security problem."

Thus, Fukushima may be more than the poster child of nuclear power's fragility vis a vis extreme forces of nature; it's also a surrogate poster child for lurking dangers behind and within terrorism and within war zones when "anything that can go wrong will go wrong," for example, a downed airliner over Ukraine.

Nuclear Reactors are as Dangerous as Nuclear Weapons (Murata)

Rockets have been fired at nuclear facilities in Israel. "Hamas claimed responsibility for the rockets, stating that it had been attempting to hit the nuclear reactor. Militants from Hamas's Qassam Brigades said they had launched long-range M-75 rockets towards Dimona" (The Jerusalem Post, July 9, 2014). As mentioned earlier, Ukraine is home to 15 nuclear reactors in the midst of a war zone. What if a missile accidentally, or purposefully, hits a nuclear reactor? Does Fukushima provide any clues as to the consequences of such a disaster?

Assuming Fukushima is truly a harbinger of how remarkably well nuclear disasters harmonize with, in fact, cohere to Murphy's Law, it probably implies that "all bets are off."

Postscript: "The future of the Olympic Games is at stake. It is as a believer in the spirit of the Olympic Games and the Olympic Movement that I am pleading for an honorable retreat, and this, in order for Japan to devote maximum efforts to controlling the Fukushima crisis," Mitsuhei Murata, Former Japanese Ambassador to Switzerland and Executive Director, Japan Society for Global System and Ethics, Tokyo, October 28, 2015. **Robert Hunziker** lives in Los Angeles and can be reached at roberthunziker@icloud.com Book on impacts of 3/11 on fish



http://link.springer.com/book/10.1007/978-4-431-55537-7

Impacts of the Fukushima Nuclear Accident on Fish and Fishing Grounds

Editors:

- Kaoru Nakata,
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Abstract

As a result of the Fukushima Dai-Ichi Nuclear Power Plant accident in March 2011, a large volume of radionuclides was released into the environment, thus contaminating marine and freshwater systems. The Fisheries Research Agency has conducted research beginning soon after the accident. Our research addressed the contamination processes of radionuclides (mainly radiocesium) through water, sediments, and food chains, in both marine and freshwater systems, based on a large volume of original in situ data. Our research has also provided important information on when and how marine fish have been contaminated. This chapter gives an overview of our research.

Trying to trace cesium spread in forests and soil

December 22, 2015

Researchers trying to unravel spread of cesium and its impact on ecosystem after Fukushima disaster

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512220004



Researchers measure the concentration of radioactive cesium in rainwater at a survey point in Kawauchi, Fukushima Prefecture, in late October. (Asahi Shimbun file photo)

THE ASAHI SHIMBUN

More than 90 percent of the fir trees in forests close to the site of Japan's 2011 nuclear disaster are showing signs of abnormality, and plant lice specimens collected in a town more than 30 kilometers from the crippled facility are missing legs or crooked.

But it remains unclear whether the mutations in plants and animals are definitively connected to the disaster at the Fukushima No. 1 nuclear power plant.

All that scientists in Japan are prepared to say is they are trying to figure out the effects of radioactive cesium caused by the release of huge amounts of radioactive materials from the triple meltdown at the Fukushima plant triggered by the Great East Japan Earthquake and tsunami.

Scientists are seeking answers to how radioactive cesium spread in forests and the soil after the accident, along with signs of mutation in plants and animals in areas close to the stricken nuclear plant.

Understanding how cesium and other radioactive particles spread after the disaster is key to putting the consequences of the nation's worst nuclear accident into perspective.

The research has major ramifications in terms of what authorities and residents living near a nuclear power plant can expect if a similar accident occurs again. It also offers valuable insight for evacuees weighing their options about rebuilding their lives near the stricken plant.

Among radioactive substances, cesium-137 is of primary concern as it has a half-life of 30 or so years. As forests were excluded from decontamination work, an undetermined amount of cesium is bound to remain in forests and lie buried in the ground for many years to come.

Mountainous forests cover 70 percent of the Fukushima Prefecture's land space.

The government-affiliated Japan Atomic Energy Agency (JAEA) is among research organizations studying the effects of radioactivity and the way cesium spreads in forested areas.

During a recent field trip in Kawauchi, radiation levels in the air showed 1.2 to 1.3 microsieverts per hour at a survey point.

Cesium in the soil registered between 300,000 and 400,000 becquerels of radioactivity per square meter. The survey point used to be in a "No Entry Zone," a designation covering a 20-km radius from the plant, which was evacuated soon after the nuclear accident triggered by the magnitude-9.0 earthquake and the towering tsunami it generated.

Now the survey site is designated as a "zone in preparation for the lifting of the evacuation order" in line with a government reassessment of the situation facing affected communities.

Rotting twigs and branches, along with leaf cover, blanket the steep slopes of the cedar forest. During the survey, researchers marked a 66-square-meter rectangular tract as a benchmark and collected rainwater and fallen leaves from the plot.

They also measured the radioactivity of rainwater. The researchers did this by wrapping tree trunks with a cover and collecting rainwater flowing down on to it.

Before the Fukushima disaster, the only data available to JAEA researchers on the long-term transfer of cesium in the soil was limited to work done in laboratories.

"We had to fumble our way to find out in what form cesium existed in the forest and housing areas after it was dispersed from the nuclear plant," said Kazuki Iijima, who is attached to the agency's Fukushima Environmental Safety Center.

Scientists had to gingerly examine a proposed method to decontaminate residential areas before cleanup operations got under way.

Cesium in leaves finds its way into the soil through defoliation, according to researchers.

In the case of cedar trees, for example, leaves are replaced every three to four years.

Fallen cedar leaves from the time of the nuclear accident were riddled with cesium, which then seeped into the soil. Each new bed of fallen leaves creates more weight on the topsoil and pushes the cesium down further.

This way, radiation levels in the air in the affected area drop faster than the natural decay of cesium over time.

Researchers' past studies of the forest showed that only 0.1 percent of the total amount of cesium in the surveyed sites spread from the area over a one-year period.

"Most of it remains on the topsoil up to 5 to 10 centimeters from the surface," Iijima said.

Because cesium attaches itself to dirt and dissolves in water, it is easily spread. It is also deposited in riverbeds and at the bottom of lakes.

At the Ogaki dam, almost 20 km northwest of the nuclear plant, researchers took cesium measurements of 800,000 becquerels per kilogram at a site 20 cm below the lake bed close to where the Ukedogawa river empties out.

But a reading close to the surface of the lake bed showed below 200,000 becquerels.

The difference, researchers say, is easy to explain: Dirt containing high levels of cesium flowed into the dam in the immediate aftermath of the accident, while dirt with lower radiation levels accumulated on top of it.

Researchers are still trying to figure out whether the release of radioactive materials affected the growth of plants and animals.

Scientists have reported on mutations and abnormalities among species varying from fir trees and plant lice to Japanese monkeys, carp and frogs.

The National Institute of Radiological Sciences (NIRS), a government-affiliated entity, said in late August that the trunks of fir trees are not growing vertically.

Fir trees are among the 44 species that the Environment Ministry asked the NIRS and other research organizations to study in trying to determine the effects of radiation on living creatures.

The NIRS reported that the frequency of these mutations corresponds to a rise in natural background radiation.

More than 90 percent of fir trees in the town of Okuma, just 3.5 kilometers from the crippled plant, showed signs of abnormal growth.

"We need to figure out cumulative radiation doses in fir trees when doing additional research," said an NIRS researcher.

Among other changes reported: the legs of plant lice collected in Kawamata, a town more than 30 km from the plant, were found to be missing or crooked and the white blood cell count of Japanese monkeys was lower in Fukushima, the prefectural capital, which is about 60 km from the plant.

Other studies by scientists who research living creatures in their field work monitored earthworms, carp, frogs, flies and gold beetles.

After the nuclear disaster, the researchers began looking at problems from a new perspective: flora and fauna affected by radiation.

Manabu Fukumoto, a professor of pathology at Tohoku University's Institute of Development, Aging and Cancer, cautioned not to jump to conclusions that nuclear fallout is the culprit behind all these findings.

"We cannot conclude definitively that they have been caused by radiation until (reliable estimates for) cumulative doses are calculated," said Fukumoto, who also serves as the chief of the Japanese Radiation Research Society.

But assessing the effect on animals in the wild is proving a challenge for scientists.

Before the Fukushima disaster, most experiments designed to evaluate the impact of radiation on animals had been conducted in laboratories.

In these experiments, animals were exposed to varying intensities of radiation under the supervision of researchers.

In the natural environment, however, estimating their external exposure is difficult as creatures roam rather than stay in one spot.

In addition, doses of their internal exposure can vary significantly, depending on what they preyed on when and how much.

There is also a possibility that some animals, even if they exhibited signs of radiation's effect, may no longer be alive for analysis. They may have been killed by their natural enemies.

In addition, scientists cannot rule out factors such as fluctuations in temperature, the presence of farm chemicals and heavy-metal contamination behind the abnormalities.

Experts say they need to produce similar results in lab tests based on their monitoring.

"We need to continue to monitor the environment for at least five or six more years," Fukumoto said. "And at the same time, we should start analyzing the reported phenomena."

Nuclear gypsies risking their lives in Fukushima

December 28, 2015

'Nuclear Gypsies' Risk Their Lives to Clean Up Fukushima

Cole Mellino

The Fukushima nuclear disaster happened more than four years ago and yet Japan is still reeling from the impacts and spending billions of dollars to clean up what photographers and filmmakers who've entered the so-called "no go zone" have described as a "post-apocalyptic wasteland."

More than 100,000 people remain displaced from the disaster, and the Japanese government is still working to decontaminate the area, which it estimates will cost \$50 billion. The people on the frontlines of that cleanup are known by some as the "nuclear gypsies," who are exposing themselves to dangerous amounts of radiation as they attempt to remove the nuclear waste.

Watch the "nuclear gypsies" risk their lives in this video from Seeker Stories:

The Nuclear Gypsies Risking Their Lives In Fukushima

https://www.youtube.com/watch?v=_Ng20Yl4j5Q

In memoriam



ISIS Report 07/01/16

Honouring the Life and Work of Chiyo Nohara

http://www.i-sis.org.uk/Honouring_the_Life_and_Work_of_Chiyo_Nohara.php

Chiyo Nohara, who died aged 60, was member of the research team that published the first scientific evidence of harm to a living organism from radioactive contamination due to the accident at the Fukushima Daiichi Nuclear Power Plant **Susie Greaves**

Courage and heroism

In August 2012, the journal *Nature* published evidence that artificial radionuclides from the Fukushima Daiichi Nuclear Power Plant caused physiological and genetic damage to the pale grass blue butterfly *Zizeeria mara* [1]. Among the team at University of the Ryukyus Okinawa undertaking the research was a mature student in her first year, Chiyo Nohara. Chiyo died on 28 October 2015 at the age of 60 from a heart attack. Chiyo was a scientist who set out to protect her fellow human beings despite great pressure from the authorities and at great risk to her own life.

Chiyo once said to a friend [2] "No matter how much you researched and knew, it would be pointless if you die before letting the world know about what you learned". Fortunately, Chiyo's research was published, and provided the first scientific evidence of harm to a living organism from the accident at Fukushima. I will not describe the research itself, which is available in print [1]. (See also [3] Fukushima Mutant Butterflies Confirm Harm from Low-Dose Radiation, *SiS* 56.) Instead, I would like to concentrate on her response to the accident at Fukushima, and pay tribute to the intelligence, courage, and energy of Nohara and her team-mates in initiating the research, in undertaking the fieldwork, conducting laboratory experiments, and later defending their work against critics.

Chiyo was born 8 May 1955 in Ube city of Yamaguchi prefecture. She studied economics at Okayama University and Aichi University; taught accounting at university level, publishing numerous papers and was involved in public auditing at a local and national government level. But in 2010, at the age of 55, partly because her own daughter suffered allergies, Chiyo became interested in environmental health. She resigned from her university post and enrolled in the Biology graduate school programme of the Faculty of Science at University of the Ryukyus.

Accident at Fukushima Daiichi nuclear power plant

When the accident at Fukushima occurred in March 2011, Chiyo was only in her first year of study. Nevertheless, she persuaded her team that research in the Fukushima area was of crucial importance, and that it had to be started immediately. She had already been active in donating money and supplies to the victims of the tsunami and earthquake, but she said [4]:"I want to go to Fukushima. I want to see the stricken areas with my own eyes". She said she "wanted to do anything" to help the people affected by the accident.

The graduate team, led by Associate Professor Joji Otaki, specialised in molecular physiology, and had been researching the mechanism of the pale grass blue butterfly's (*Zizeeria maha*) peculiar colour patterns which are influenced by environmental conditions such as temperature. He saw that this species of butterfly could be used as an environmental indicator.

Conducting research in the contaminated territories

After much heart-searching three members of the graduate school decided to go to the contaminated territories of Fukushima. They all signed a written disclaimer [4]: "I am fully aware of the dangers of my activities in relatively high radiation level areas". But several days before their scheduled trip to Fukushima, they were summoned to the Dean's office. Chiyo and her team were subjected to some aggressive and unpleasant questioning from the Dean, the sub-Dean, and another member of staff. They

were challenged with regard to their preparation and planning, and about the reaction they would elicit from people in Fukushima prefecture "when they see a team of the University of the Ryukyus pursuing butterflies with butterfly nets, while they are desperately searching for missing relatives [from the tsunami]."

Eventually, permission was given, subject to the correct radiological protection measures and strict crisis management planning in the event of another explosion at the nuclear power station. Interestingly the sub-Dean paid his respect to the team later saying that many research teams will not take risks for fear of losing funds but "this research team doesn't care about such risks. They just want to know what is happening there. I support their work, but they make me nervous".

The team left on 13 May 2011 for a six day field trip. They carried a Geiger counter to record radiation levels and gave themselves a strict 20 minute time limit at any one site. If no butterflies were found they moved on. They visited 15 sites in 4 prefectures (Tokyo, Ibaraki, Fukushima, Miyagi), and flew back to Okinawa on the 18 May with 144 butterflies.

Chiyo worries about her health

The work was continued over the next months in the university laboratories in Okinawa, and in September the team visited Fukushima prefecture once again and collected more specimens. Part of the laboratory research involved feeding the butterflies on *oxalis corniculata* contaminated by radionuclides from the Fukushima area. It was Chiyo and her husband who made the trips to the contaminated territories to collect contaminated *oxalis* - 15 trips in the space of 18 months. Inevitably Chiyo worried about her health. A friend said [2] "every time she went to Fukushima to collect butterflies, and every time she measured the radiation level of the contaminated oxalis, her physical condition deteriorated.But she did not want young students to do the job."

The team collected first-voltine adults in the Fukushima area in May 2011 and some of these showed abnormalities. They reared two generations of progeny in the laboratories in Okinawa and found that although these had not been exposed to radiation, they had more severe abnormalities. They were also able to produce similar abnormalities in individuals from non-contaminated areas by external and internal low-dose exposures. Adult butterflies were collected from the Fukushima area in September 2011, and these butterflies showed more severe abnormalities than those collected in May. The team concluded that the artificial radionuclides from the Fukushima nuclear power plant had caused physiological and genetic damage to this species of butterfly.

Research "important and overwhelming in its implications"

The research was first published in August 2012 in *Nature* and international response was immediate [2]. The BBC detailed the research findings and included the comment that the study was "important and overwhelming in its implications for both the human and biological communities in Fukushima" [5]. *Le Monde* in France was more explicit, saying that although officially no-one has yet died from the effects of the radiation from Fukushima, many experts believe that people will fall ill and die in the years to come [6]. The BBC and the German TV company, ARD, came to interview Professor Otaki in Okinawa, and the American TV networks ABC, CNN and Fox also covered the story.

The research elicited a huge number of comments (276 139 in the first six months up to January 2013, according to the publisher's website). The comments were answered by Chiyo and the team in a new paper in 2013 [7]. Eleven points were discussed in depth including the choice of this species as an environmental indictor, the possibility of latitude-dependent forewing-size reduction, the rearing conditions and the implications of the accumulation of genetic mutations. Many of the comments expressed were unscientific and politically motivated and could not be answered for that reason.

In Japan the research is not widely known

The mainstream Japanese media did not report the significance of this research, except for a few minor references. On personal blogs and Twitter accounts the research findings were widely disseminated but not always positively. The lack of press freedom in Japan since the Fukushima accident is very disquieting. In the 2010 Press Freedom Index of countries in the world, Japan ranked 11. By 2015 it had fallen to 61, and this is in large part due to secrecy about the accident at Fukushima [8]. In Europe and the United States, pictures of the pale grass blue butterfly, *Z. maha* and its abnormalities, post-Fukushima, can be accessed within seconds, but not so in Japan. The Japanese government's response to the accident has been overwhelmingly to give falsely reassuring "information". An example is Prime Minister Abe declaring to the Olympic Bid Committee in 2013 that "the Fukushima Daiichi nuclear plant is under control", which is clearly not true [9].

It is an uphill struggle. Scientists and non-scientists in the West have a duty to help the Japanese people. Just as at Chernobyl, there is [10] "a fragile human chain made up, in the East, of activists in a country trapped in radioactive contamination and in the West, by activists who support them against scientific lies." In 2014, Chiyo travelled to Geneva to present her research at the Forum on the Genetic Effects of Ionising Radiation, organized by the Collective IndependentWHO [11]. She was already ill. IndependentWHO have published the proceedings of this Forum and dedicated them to Chiyo Nohara, with the words "She died in the cause of scientific truth". Within the pages of *Science in Society*, dedicated to scientific independence, I salute her. But we would be doing Chiyo Nohara a disservice if we did not add that the implications of her research are that no-one, and especially not children, should be living in the areas contaminated by the accident at Fukushima.

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Chiyo Nohara (in Nature 2012 & 2014)

The biological impacts of the Fukushima nuclear accident on the pale grass blue butterfly http://www.nature.com/articles/srep00570

- Atsuki Hiyama
- , Chiyo Nohara
- , Seira Kinjo
- , Wataru Taira
- , Shinichi Gima
- , Akira Tanahara
- & Joji M. Otaki
- Scientific Reports **2**, Article number: 570 (2012)
- doi:10.1038/srep00570
- Download Citation
- •
- Biodiversity |
- Ecology |
- Environmental sciences |
- Pattern formation

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• Corrigendum (06 August 2013)

The collapse of the Fukushima Dai-ichi Nuclear Power Plant caused a massive release of radioactive materials to the environment. A prompt and reliable system for evaluating the biological impacts of this accident on animals has not been available. Here we show that the accident caused physiological and genetic damage to the pale grass blue *Zizeeria maha*, a common lycaenid butterfly in Japan. We collected the first-voltine adults in the Fukushima area in May 2011, some of which showed relatively mild abnormalities. The F1 offspring from the first-voltine females showed more severe abnormalities, which were inherited by the F2 generation. Adult butterflies collected in September 2011 showed more severe abnormalities than those collected in May. Similar abnormalities were experimentally reproduced in individuals from a non-contaminated area by external and internal low-dose exposures. We conclude that artificial radionuclides from the Fukushima Nuclear Power Plant caused physiological and genetic damage to this species.

The biological impacts of ingested radioactive materials on the pale grass blue butterfly http://www.nature.com/articles/srep04946

- Chiyo Nohara
- , Atsuki Hiyama
- , Wataru Taira
- , Akira Tanahara
- & Joji M. Otaki
- Scientific Reports 4, Article number: 4946 (2014)
- doi:10.1038/srep04946
- Download Citation
- •
- Environmental health |
- Environmental sciences |
- Risk factors

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Abstract

A massive amount of radioactive materials has been released into the environment by the Fukushima Daiichi Nuclear Power Plant accident, but its biological impacts have rarely been examined. Here, we have quantitatively evaluated the relationship between the dose of ingested radioactive cesium and mortality and abnormality rates using the pale grass blue butterfly, *Zizeeria maha*. When larvae from Okinawa, which is likely the least polluted locality in Japan, were fed leaves collected from polluted localities, mortality and abnormality rates increased sharply at low doses in response to the ingested cesium dose. This dose-response relationship was best fitted by power function models, which indicated that the half lethal and abnormal doses were 1.9 and 0.76 Bq per larva, corresponding to 54,000 and 22,000 Bq per kilogram body weight, respectively. Both the retention of radioactive cesium in a pupa relative to the ingested dose throughout the larval stage and the accumulation of radioactive cesium in a pupa relative to the activity concentration in a diet were highest at the lowest level of cesium ingested. We conclude that the risk of ingesting a polluted diet is realistic, at least for this butterfly, and likely for certain other organisms living in the polluted area.

_____See http://www.fukushima-is-still-news.com/article-butterflies-damages-by-radiation-from-fukushima-109033739.html

Reassuring?

February 8, 2016

External radiation doses in Fukushima comparable to those of Europe: study

http://www.japantimes.co.jp/news/2016/02/08/national/external-radiation-doses-fukushima-comparable-europe-study/#.VrmcPFKDmov

by Mizuho Aoki

Staff Writer

The external radiation exposure levels of high school students in Fukushima Prefecture are within the same range of those living in France, Poland and Belarus, a scientist and a high school student said Monday in Tokyo.

Both were among members of a research group that conducted a study on individual radiation levels. Speaking at the Foreign Correspondents' Club of Japan, Ryugo Hayano, a professor in the University of Tokyo's physics department, said that while the effect of the 2011 meltdowns at the Fukushima No. 1 nuclear plant definitely remains, radiation levels have fortunately lowered over the past five years. Because natural background radiation levels in Fukushima are lower than the world's average, even when the extra radiation dose from the nuclear disaster is added, the external exposure of Fukushima residents did not differ significantly from those measured in other parts of the world, they said.

The study does not include the evacuation zone around the crippled plant.

Initiated by a group of students at Fukushima High School, the study examined 216 students and teachers in 12 high schools — six in Fukushima and six in other prefectures such as Kanagawa and Nara — and compared the results with eight schools in Poland, four in France and two in Belarus for two weeks in 2014.

Each participant wore a personal electronic dosimeter and kept a journal of their activities.

According to the study, published in the Journal of Radiological Protection last November, the external doses received by participants in Fukushima during the two-week period were "well within the terrestrial background radiation levels of other regions or countries."

The median annual external radiation exposure of students in Fukushima was estimated to be 0.63 to 0.97 millisieverts, compared with 0.51 to 1.10 in Poland, France and Belarus, according to the study.

"I wanted to know how high my exposure dose was and wanted to compare that with people in other places," said Haruka Onodera, a student at Fukushima High School.

Although she knew nothing about external radiation at the start of the examination, through analyzing and collecting data, Onodera said she was able to deepen her understanding and realized the importance of evaluating risk based on objective scientific facts.

The International Commission on Radiological Protection (ICRP) sets recommended annual radiation exposure limits under normal situations at 1 millisievert. A cumulative dose of 100 millisieverts over a lifetime would increase the chance of developing cancer by 0.5 percent, according to the ICRP. The average terrestrial natural radiation level in Japan is around 0.33 millisieverts per year, the report said, which is lower than the world average of 0.48 millisieverts.

Minister apologises but what did she really say?

February 10, 2016

Environment minister apologizes for comments on Fukushima radiation limits

Japanese version

http://mainichi.jp/english/articles/20160210/p2a/00m/0na/013000c

Environment Minister Tamayo Marukawa apologized during a post-Cabinet meeting press conference on Feb. 9 over a report in the Shinano Mainichi Shimbun that quoted her criticism of the former government of the Democratic Party of Japan (DPJ)'s policy to lower the annual additional radiation exposure dose to 1 millisievert after the accident at the Fukushima No. 1 Nuclear Power Plant.

According to the newspaper report, Marukawa had criticized Goshi Hosono, former environment minister and chair of the now opposition DPJ's Policy Research Committee, when she spoke during a meeting of the House of Councillors members of the ruling Liberal Democratic Party (LDP) in the city of Matsumoto, Nagano Prefecture, on Feb. 7.

"It might sound strange to talk about an 'anti-radiation faction,' but there are some people who will say they are worried no matter how far you lower (the radiation level)," Marukawa was quoted as saying. "The former environment minister made the decision (to lower the radiation level) amidst the hype from

these kinds of people, without any sort of scientific basis whatsoever."

Marukawa offered an apology for the remarks during the Feb. 9 press conference, saying, "I do not recall using such wording. The general meaning of what I had been trying to say was not properly conveyed, and I am extremely sorry for the lack of clarity in my words."

"Our long-term (radiation level) objective will continue to be 1 millisievert," Marukawa added.

The DPJ, which was in power at the time of the nuclear disaster, had set the level of long-term radiation exposure (excluding natural radiation) for members of the general public at 1 millisievert, in accordance with recommendations issued by the International Commission on Radiological Protection.

Some governmental and ruling party figures see that this 1 millisievert level has become regarded as a "safety standard" and the figure is serving to prevent residents from being able to return home.

Marukawa was also quoted as saying during the Feb. 7 meeting, "There are people who remain unable to return home when they should be able to do so (because decontamination has not brought the radiation levels down to the specified level)."

Environment minister finally does about-face

February 13, 2016

Environment minister retracts radiation remarks, refuses to resign

http://mainichi.jp/english/articles/20160213/p2a/00m/0na/008000c

Environment Minister Tamayo Marukawa has retracted her controversial remarks that denied the scientific grounds for the radiation criteria set after the Fukushima No. 1 nuclear plant disaster, while ruling out the possibility of stepping down.

At a press conference on Feb. 12, Marukawa announced the withdrawal of her earlier comments in which she said "there is no scientific evidence" for the government's long-term goal of lowering the annual additional radiation exposure dose to 1 millisievert or less through decontamination and other efforts. Her retraction, which came five days after she made the remarks during a speech in Matsumoto, Nagano Prefecture, marks a major about-face as she had earlier practically denied making such comments, on the grounds that she had no recollection of them.

"I would like to extend my sincere apologies once again to disaster victims, including those in Fukushima," Marukawa said on Feb. 12. However, she stopped short of offering her resignation as a Cabinet minister. "I've concluded that I should retract my remarks in order to maintain my relationship of trust with people in Fukushima. It is my responsibility to work to live up to the wishes of Fukushima," the environment minister said.

Marukawa apparently surmised any further denial of her own remarks would aggravate her relations with the Fukushima Prefectural Government and other disaster-hit local governments, while opposition parties were eager to grill her further in the Diet. By retracting her statements the minister aimed to defuse the situation.

According to reports by the Shinano Mainichi Shimbun, Marukawa made the remarks during a meeting of House of Councillors members of the ruling Liberal Democratic Party on Feb. 7, where she said the government's long-term radiation goal was "decided by the then environment minister without any scientific grounds" -- accusing then Environment Minister Goshi Hosono of the Democratic Party of Japan (DPJ). In response, the DPJ demanded Marukawa step down from her post.

Later at a Diet session and on other occasions, Marukawa effectively denied making such remarks, saying, "I don't remember using such phrases. I'm sorry my point didn't get across due to insufficient explanation."

On Feb. 12, however, Marukawa said she came to believe she made those remarks after examining a note recording her remarks and a testimony by an attendee of the Feb. 7 meeting. She then telephoned Fukushima Gov. Masao Uchibori to offer an apology.

The long-term radiation goal, which was introduced during the reign of the DPJ government, provides that decontamination work and other efforts should be carried out to lower the annual radiation exposure dose for the general public at normal times to 1 millisievert or less after deducting exposure to natural radiation.

Marukawa said on Feb. 12, "The government will work together to achieve that goal," emphasizing that the current administration will uphold the long-range goal.

Environment minister withdraws radiation remark, apologizes to Fukushima residents

http://ajw.asahi.com/article/behind_news/politics/AJ201602130023

By YU KOTSUBO/ Staff Writer

Environment Minister Tamayo Marukawa retracted her remark about the government having "no scientific grounds" for its radiation decontamination target in the Fukushima nuclear disaster, saying she wanted to rebuild trust with local residents.

As the minister in charge of overseeing the decontamination efforts in Fukushima Prefecture, Marukawa, 45, said Feb. 12 she wants to "sincerely apologize to residents in Fukushima."

During a speech in Matsumoto, Nagano Prefecture, on Feb. 7, she labeled the government's long-term goal of reducing radiation levels near the crippled Fukushima No. 1 nuclear plant to an annual dose of 1 millisievert or less as having "absolutely no scientific grounds."

A local newspaper, The Shinano Mainichi Shimbun, picked up the story and reported her comments on Feb. 8, which she promptly denied having made.

At Diet sessions on Feb. 9 and 10, Marukawa stated that she had "no recollection of using such wording" in the speech.

Nevertheless, she told the news conference on the evening of Feb. 12 that she had decided of her own volition to "retract the remark in order to maintain a relationship of trust with residents in Fukushima." Marukawa went on to say that the government's decontamination target is "indeed scientific in the sense that it was set as a result of thorough discussions by scientists."

Her acknowledgment of making the faux pas will likely prompt the opposition camp to go on the offensive during Diet sessions in the coming week. For the time being, at least, Marukawa is standing firm. She said she has no intention of stepping down and wants to continue fulfilling her duties.

The decontamination goal was set by the Democratic Party of Japan-led government of the time on the basis of recommendations by the International Commission on Radiological Protection in the aftermath of the triple meltdown at the Fukushima plant triggered by the 2011 earthquake and tsunami disaster. After the newspaper covered her remarks, Marukawa told reporters on Feb. 8 that she did not remember using such wording as "scientifically ungrounded." She repeated the plea at Lower House Budget Committee sessions on Feb. 9 and 10.

During a regular news conference after the Feb. 12 morning Cabinet meeting, the minister finally acknowledged the possibility of making the remark.

She eventually retracted the comment later the day after obtaining a memorandum of her speech and confirming the content with attendants.

February 12, 2016

Environment minister withdraws radiation remarks

http://www.japantimes.co.jp/news/2016/02/12/national/japans-environment-minister-withdraws-radiation-remarks/#.Vr7vG-aDmos

Environment Minister Tamayo Marukawa on Friday withdrew remarks she reportedly made about the government's radiation decontamination target following the March 2011 Fukushima nuclear disaster. Speaking at a news conference, Marukawa said she apologizes from the bottom of her heart to those suffering from the nuclear accident, including people in Fukushima Prefecture.

She denied that she might step down over the remarks, saying she will continue to fulfill her duties. Marukawa has been under fire since a newspaper reported remarks she made in a speech in the city of Matsumoto in Nagano Prefecture on Sunday.

She was quoted as saying the government's long-term goal of reducing radiation levels near Tokyo Electric Power Co.'s crippled Fukushima No. 1 nuclear plant to an annual dose of 1 millisievert or less has no scientific grounds.

The goal was set by the government led by the now-opposition Democratic Party of Japan, based on recommendations from the International Commission on Radiation Protection and requests from the Fukushima Prefectural Government.

At Friday's news conference, Marukawa said that the central government will not drop the decontamination goal.

February 12, 2016

Environment minister apologizes to Fukushima governor over radiation comments

http://mainichi.jp/english/articles/20160212/p2a/00m/0na/014000c

Environment Minister Tamayo Marukawa said on Feb. 12 that she telephoned Fukushima Gov. Masao Uchibori to apologize over a report on her remarks allegedly denying scientific evidence for the government's long-term goal of lowering the annual additional radiation exposure dose to 1 millisievert after the 2011 meltdowns at the Fukushima No. 1 Nuclear Power Plant.

She also said at a post-Cabinet meeting news conference that she offered a similar apology to a local government leader in Fukushima Prefecture, saying she did not explain herself fully during a Feb. 7 meeting of House of Councillors members from the ruling Liberal Democratic Party in Nagano Prefecture. Marukawa emphasized, though, that she has no plan to retract her comment, saying there was no record of her remarks and she cannot independently confirm them. She added that the current government will continue to maintain its long-term radiation level objective, work hard to achieve this goal, and also restore the areas hard hit by the Great East Japan Earthquake, tsunami and Fukushima nuclear disaster.

Still nothing to do with 3/11...

February 16, 2016

Fukushima confirms 1 additional thyroid cancer case

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201602160050

THE ASAHI SHIMBUN

FUKUSHIMA--One more person was diagnosed with thyroid cancer in Fukushima Prefecture in a followup survey conducted last year.

It brings the total number of thyroid cancer cases to 116 among children and young adults in the prefecture who were age 18 or younger at the time of the Fukushima No. 1 nuclear power plant disaster, the Fukushima Prefectural government announced Feb. 15.

The survey involves keeping tabs on about 380,000 young people who were living in Fukushima Prefecture at the time of the disaster, triggered by the 2011 Great East Japan Earthquake and tsunami. The new patient received the check-up between October and December last year.

Since the doses of radiation found in the thyroids of Fukushima residents are lower than that in those affected by the Chernobyl nuclear accident, and no case has been found among infants in Fukushima---whereas the number of infant thyroid cancer cases rose following the disaster at the Chernobyl plant--the prefectural health investigation committee considers that the 116 cases are not related to the disaster.

Radiation as the culprit?

February 16, 2016

Child thyroid cancer in Fukushima many times national average: report draft

http://mainichi.jp/english/articles/20160216/p2a/00m/0na/010000c

An expert committee sanctioned by the Fukushima Prefectural Government has approved the final draft of a midterm report stating that **the proportion of child thyroid cancer cases being found in Fukushima Prefecture is many times higher than the national average.**

- [Related] Cases of thyroid cancer up among Fukushima kids in 2nd screening: prefectural panel
- 【Related】 Fukushima Pref. to examine incidence of thyroid cancer in children
- 【Related】 Fukushima gov't says nuclear disaster 'unlikely' cause of thyroid gland cancer

At the same time, the committee says it is "difficult to imagine" that the higher incidence is due to radiation.

The committee, consisting of experts in fields including epidemiology and cancer, examined health survey data for Fukushima Prefecture children who were 18 or younger at the time of the Fukushima No. 1 Nuclear Power Plant disaster.

Committee Chairman Hokuto Hoshi said at a press conference that the higher rate of thyroid cancer was due to "simultaneously checking" many patients at once.

The final draft is based on an initial round of diagnoses given between October 2011 and the end of April last year. Around 300,000 of about 370,000 potential survey subjects were examined. Based on national statistics, the survey should have only found around two people who were under 18 at the time of the

disaster with thyroid cancer, but instead 100 people with the cancer were found. Additionally, 15 suspected cases were found.

"We may be diagnosing many cases of cancer that would otherwise be diagnosed later in life or that are not life-threatening," part of the draft reads.

Among the reasons that the committee considers radiation exposure unlikely as a reason for the higher incidence of thyroid cancer are: the radiation exposure levels from the Fukushima disaster are low compared to those of the Chernobyl disaster, no thyroid cancer cases have been found in children who were 5 or younger at the time of the disaster, and no large differences in the rate of discovered cases were found by area within the prefecture.

Still, while the report calls the influence of radiation small, it says **it cannot be ruled out,** and it recommends that diagnoses continue. It also calls for the patients to be informed of the risk of causing them needless anxiety by diagnosing cancer cases that are not expected to worsen in the future. In the second round of diagnoses that began from April 2014, as of the end of last year, 16 people who had not been diagnosed with thyroid cancer or suspected thyroid cancer in the first round had been newly diagnosed with it, and 35 people had been newly diagnosed with suspected cases of the cancer. The midterm report will become official in March.

Joint research center on radiation in Hiroshima

February 18, 2016

Research center to use atomic-bomb studies to rebuild Fukushima communities

http://ajw.asahi.com/article/0311disaster/fukushima/AJ201602180036

By YOHEI IZUMIDA/ Staff Writer

Universities in Fukushima Prefecture and the atomic-bombed cities of Hiroshima and Nagasaki will deepen collaboration on radiation exposure studies and expand a research network to help rebuilding efforts around the stricken Fukushima nuclear plant.

Hiroshima University, Nagasaki University and Fukushima Medical University will establish a joint research center in Hiroshima in the 2016 academic year, which starts in April.

The education minister approved plans for the center last month, and the facility will be operated on government funds.

Hiroshima University and Nagasaki University both have core facilities that have conducted decades-long studies on radiation. The two schools have dispatched researchers to the Fukushima Medical University since April 2011 for studies on the health effects of the triple meltdown at the Fukushima No. 1 nuclear plant in March that year.

The three universities are expected to build research networks and expand cooperation at the new center. **"The study of low-level radiation exposure is growing urgent,**" Mitsuo Ochi, president of Hiroshima University, said Feb. 17, when the university presidents signed the agreement to set up the center. "We would like to fulfill our mission to contribute to Fukushima's rebuilding efforts based on the results of basic research conducted by our university."

The center will solicit research themes from across Japan in 10 areas, including assessments of the impact of low-level radiation doses on patients, development of methods to diagnose internal radiation exposure in patients, treatments of patients, and radiation protective agents.

Scientists who respond to the center's request are expected to work together with researchers of the three universities.

The research center is also expected to cooperate with the Fukushima prefectural government on a program that assesses possible correlations between diseases and radiation doses.

In addition, it plans to offer advice on training people who are tasked to provide health care to those exposed to radiation.

The project also envisages providing assistance for workers who are exposed to radiation levels beyond expectations during the decommissioning of the Fukushima No. 1 nuclear power plant.

Lifting evacuation orders doesn't erase radiation concerns

February 20, 2016

Gov't to lift evacuation order for Minamisoma, but radiation concerns linger

http://mainichi.jp/english/articles/20160220/p2a/00m/0na/021000c

The government has unveiled a plan to lift a nuclear evacuation order for the Fukushima Prefecture city of Minamisoma by the end of April, paving the way for more than 10,000 residents to return to their hometown, though some evacuees remain concerned about radiation levels in the area.

The government's on-site nuclear disaster response headquarters, led by State Minister of Economy, Trade and Industry Yosuke Takagi, revealed the plan on Feb. 19. It will be the first time for the evacuation order for a "restricted residency zone" to be lifted since the onset of the Fukushima No. 1 Nuclear Power Plant disaster in March 2011. The evacuation order, however, will remain in place for a "difficult-to-return zone" in Minamisoma that is home to a household of two residents.

Minamisoma is now set to become the fourth area to have its evacuation order lifted after the Miyakoji district of the Fukushima Prefecture city of Tamura, the eastern part of the prefectural village of Kawauchi, and the prefectural town of Naraha. Among the four areas, Minamisoma has the largest population subject to the lifting of an evacuation order.

A "restricted residency zone" is an area where residents are essentially prohibited from staying overnight due to high annual radiation doses of over 20 millisieverts but no more than 50 millisieverts. The government introduced the zone when it began realigning evacuation areas in April 2012 under three types of evacuation orders in accordance with radiation levels. The "restricted residency zone" is equivalent to level 2 in the three-tiered classification.

At a meeting of the Minamisoma Municipal Assembly on Feb. 19, the government's on-site headquarters presented documents showing that yearly radiation doses in the city have dropped to 20 millisieverts or less through decontamination efforts, indicating that evacuation orders can be lifted. "Once the conditions

are met, we will start preparations to lift the evacuation order by the end of April," an official with the onsite government task force told the meeting. The task force will begin holding briefing sessions for residents on Feb. 20 to seek their understanding.

After the meeting, Minamisoma Mayor Katsunobu Sakurai said, "I will decide whether to accept the central government's plan once the municipal government confirms the completion of decontamination work." Mayor Sakurai suggested that the lifting of the evacuation order may take place sometime after the "Golden Week" holiday period is over in early May as it will take some time to gain residents' understanding regarding the plan.

Evacuation orders will be lifted in what are known as "zones preparing for the lifting of evacuation orders" in the Odaka and Haramachi districts of Minamisoma, which are home to 3,536 households. They will also be lifted in a "restricted residency zone" in the Odaka district, which is home to 126 households. The population of people registered in both zones totaled 11,663 as of the end of September last year. According to the municipal government, a program allowing residents to stay overnight was introduced in August 2015 as part of preparations for the lifting of the evacuation order, but only 1,600 residents had signed up for the program as of Jan. 27 this year. Among them, about 30 percent -- mainly households of elderly residents -- are believed to have actually stayed over at their homes in Minamisoma. When it comes to the "restricted residency zone," only a few households have thus far stayed overnight in the city - a clear indication of lingering concerns about radiation levels among evacuees.

As almost five years have passed since the outbreak of the nuclear crisis, many residents have settled down in their evacuation destinations after landing jobs or building new homes. The municipal government presumes that about 90 percent of residents will not return to their hometown for a while even after the evacuation order is lifted.

Meanwhile, the central government is currently making arrangements with local governments to lift the evacuation orders for the "restricted residency zone" and the "zone preparing for the lifting of evacuation orders" simultaneously in the Fukushima Prefecture town of Kawamata and the village of Katsurao sometime in the near future.

Ex-fishermen claim compensation for exposure to radiation

February 22, 2016

Ex-fishers claiming fallout exposure seek benefits

http://www3.nhk.or.jp/nhkworld/english/news/20160222_11.html

Feb. 22, 2016 - Updated 04:29 UTC+1

A group of Japanese citizens is seeking insurance benefits, claiming they and their family members were exposed to fallout from US nuclear tests in the Pacific while fishing more than 60 years ago.

The United States conducted hydrogen bomb tests on the Bikini Atoll in the Marshall Islands in 1954.

In a widely reported case, 23 crew members of the Fukuryu Maru Number 5 fishing boat were working in the area when the fallout occurred. One died 6 months later. They were paid relief money.

The 7 former fishermen and bereaved relatives now seeking workmen's compensation say they were on other boats at the time.

A citizens' group said on Sunday the men suffered cancer and other illness due to exposure from the same nuclear testing.

The group says the former fishermen from Kochi Prefecture plan to apply for mariners' insurance benefits on Friday.

The group says their seaman's pocket ledgers will confirm they were working in waters surrounding the Bikini Atoll at the time.

It also says statements by doctors who have analyzed their medical certificates show clear links between the exposure and their diseases.

If the connection is determined, their past treatment cost would be covered by the mariners insurance. They will also be eligible for an increase in their pension payments. 83-year-old Yutaka Kuwano in Kochi City is one of the former crewmembers. He says he was 21 when he saw black ashes falling like snowfalls while working near the Bikini Atoll.

Kuwano has had nose bleeds, an abnormal increase in the number of white blood cells and other symptoms since the incident. He had surgery after being diagnosed with stomach cancer 12 years ago.

Kuwano says boats and tuna catches were tested for radiation when they returned to Japan, but his crew wasn't checked. He says he hopes other former fishermen will be able to receive relief measures if his approval comes through.

February 21, 2016

Fishermen want workers' comp for diseases allegedly linked to 1954 U.S. Hbomb tests

http://ajw.asahi.com/article/behind_news/social_affairs/AJ201602210032

THE ASAHI SHIMBUN

Former fishing boat crew members who developed cancer or heart diseases after being exposed to fallout from U.S. nuclear tests in the Pacific will apply for mariners insurance benefits more than 60 years after their exposure.

If their illnesses are found to be related to doses of radiation, the benefits will be effectively treated as workmen's compensation.

The planned claims involve five former crew members in their 80s and two relatives of the deceased fishing boat workers in Kochi Prefecture, according to the center for supporting victims of nuclear tests in the Pacific, a citizens' group based in Sukumo, Kochi Prefecture.

The number may rise by several other claimants, according to the group.

The United States conducted 67 hydrogen bomb tests on the Bikini Atoll and Enewetak Atoll in the Marshall Islands from 1946 to 1958.

The Japanese government acknowledged that a crew of 23 aboard the No. 5 Fukuryu Maru tuna trawler was extensively exposed to fallout from a hydrogen bomb test on March 1, 1954. One of them died of an acute radiation injury six months later.

But it was the only case the government certified as falling victims to the U.S. nuclear testing. The new claims will be filed with the Japan Health Insurance Association.

The claimants reportedly suffered from cancer, cerebral infarctions and other illnesses.

If their diseases were determined as being linked to their radiation exposure, their treatment costs will be covered.

Families of the deceased workers will be eligible to collect a survivor annuity.

One of the five former crew members showed a dose of up to 414 millisieverts during a check of his teeth for radiation exposure, according to Shin Toyoda, professor of radiation doses assessment at Okayama University of Science.

The figure is tantamount to the level survivors experienced from being within 1.6 kilometers from ground zero when the atomic bomb detonated above Hiroshima in 1945, Toyoda added.

There also exist the results of blood tests of other crew members from that time, showing a decline in their white cells.

Still, experts say that even if the scope of their radiation doses was established, it will be difficult to definitively conclude that their exposure from decades ago is responsible for the diseases they have incurred or their deaths.

It may be concluded that their current health conditions resulted from their lifestyles or other factors, they say.

Masatoshi Yamashita, who heads the secretariat of the center for supporting victims of nuclear tests in the Pacific, urged the public to pay heed to people who have never had access to relief measures despite their radiation exposure.

"At a time when we are asked whether we can live side by side with nuclear power in the aftermath of the Fukushima nuclear disaster, the entire society needs to share an understanding of what happened in the Marshall Islands," Yamashita, 71, said.

After the No. 5 Fukuryu Maru fishing boat suffered exposure to fallout from the hydrogen bomb test, two former crew members and relatives of five former crew members became eligible for mariners' insurance benefits.

But the government did not examine the cases of other fishermen who worked near the test sites in March and the following months that year.

A total of 1,000 vessels passed near the testing sites from March to May, including 270 that are believed to have sailed from Kochi Prefecture.

Hajime Kikima, a 71-year-old doctor who operates a clinic in Hamamatsu who has assisted former fishermen with exposure from the nuclear tests, called on the insurer to grant benefits to the claimants.

"They should be certified as eligible for insurance benefits since there is the fact that they were exposed to radiation and that they suffer from diseases whose causes are suspected to be linked to radiation," he said. (This article was written by Naomi Nishimura and Tatsuya Sato.)

Impact of radiation should not be played down

March 4, 2016

Mutations, DNA damage seen in Fukushima forests, says Greenpeace

http://www.japantimes.co.jp/news/2016/03/04/national/science-health/mutations-dna-damage-seen-fukushima-forests-greenpeace/#.VtnNnuaDmot

AFP-JIJI

Conservation group Greenpeace warned on Friday that the environmental impact of the Fukushima nuclear crisis five years ago on nearby forests is just beginning to be seen and will remain a source of contamination for years to come.

The March 11, 2011 magnitude-9.0 undersea earthquake off the nation's northeastern coast sparked a massive tsunami that swamped cooling systems and triggered reactor meltdowns at the Fukushima No. 1 nuclear plant.

Radiation spread over a wide area and forced tens of thousands of people from their homes — many of whom will likely never return — in the worst nuclear accident since Chernobyl in 1986.

As the fifth anniversary of the disaster approaches, Greenpeace said signs of mutations in trees and DNAdamaged worms were beginning to appear, while "vast stocks of radiation" mean that forests cannot be decontaminated.

In a report, Greenpeace cited "apparent increases in growth mutations of fir trees, … heritable mutations in pale blue grass butterfly populations" as well as "DNA-damaged worms in highly contaminated areas."

The report came as the government intends to lift many evacuation orders in villages around the Fukushima plant by March 2017, if its massive decontamination effort progresses as it hopes. For now, only residential areas are being cleaned in the short-term, and the worst-hit parts of the countryside are being omitted, a recommendation made by the International Atomic Energy Agency. But such selective efforts will confine returnees to a relatively small area of their old hometowns, while the strategy could lead to re-contamination as woodlands will act as a radiation reservoir, with pollutants washed out by rains, Greenpeace warned.

The conservation group said its report relies largely on research published in peer-reviewed international journals.

But "most of the findings in it have never been covered outside of the close circles of academia", report author Kendra Ulrich said.

The government's push to resettle contaminated areas and also restart nuclear reactors elsewhere around the country that were shut down in the aftermath of the crisis are a cause for concern, Ulrich said, stressing it and the IAEA are using the opportunity of the anniversary to play down the impact of the radiation.

"In the interest of human rights — especially for victims of the disaster — it is ever more urgent to ensure accurate and complete information is publicly available and the misleading rhetoric of these entities challenged," she said.

Scientists, including a researcher who found mutations of Fukushima butterflies, have warned, however, that more data are needed to determine the ultimate impact of the Fukushima accident on animals in general.

Researchers and medical doctors have so far denied that the accident at Fukushima would cause an elevated incidence of cancer or leukemia, diseases that are often associated with radiation exposure. But they also noted that long-term medical examination is needed, especially due to concerns over thyroid cancer among young people — a particular problem for people following the Chernobyl catastrophe.

Thyroid cancers in children: Why?

March 7, 2016

Experts divided on causes of high thyroid cancer rates among Fukushima children http://mainichi.jp/english/articles/20160307/p2a/00m/0na/022000c

A total of 166 children in Fukushima Prefecture had been either diagnosed with thyroid cancer or with suspected cases of cancer by the end of 2015 through screening conducted by the Fukushima Prefectural Government, following the 2011 nuclear plant crisis.

- 【Related】 Child thyroid cancer in Fukushima many times national average: report draft
- 【Related】 Cases of thyroid cancer up among Fukushima kids in 2nd screening: prefectural panel
- 【Related】 Fukushima Pref. to examine incidence of thyroid cancer in children
- 【Related】 4 new thyroid cancer cases emerge in latest checks on Fukushima children

The figure is several dozen times higher than the estimated number of thyroid cancer patients based on national statistics, according to a panel of experts with the prefectural government. While the panel and the Environment Ministry say the effects of radiation in these cancer cases are unlikely, opinions are divided among experts about the causes of such a high occurrence rate of cancer in children. "Compared to the estimated prevalence rates based on the country's statistics on cancer, which are shown in data including regional cancer registration, the level of thyroid cancer detection is several dozen times higher (in children of Fukushima Prefecture)," said the final draft for the interim report compiled by the prefectural government's expert panel on Feb. 15.

Most experts of epidemiology agree on the view that the number of thyroid cancer cases is high among over 300,000 targets in health checkups that started six months after the nuclear meltdowns. A research team led by Shoichiro Tsugane, head of the Research Center for Cancer Prevention and Screening of the National Cancer Center and a member of the Fukushima government's expert panel, published a research paper on the matter in January this year and another team headed by Okayama University professor Toshihide Tsuda also published their paper in October 2015. While their calculation methods differ, the two teams both concluded that the number of cancer cases found in Fukushima children was "about 30 times" that of national levels.

There has never been an attempt in Japan to check thyroid cancer among hundreds of thousands of children who are not self-aware about symptoms such as lumps. Because of this, some experts pointed out earlier that the screening detected cancer in advance in those who may develop the disease later, and as a result, the number of cancer patients spiked temporarily. While such a rapid increase in the number of patients by early detection has been reported in other types of cancer, the figure remains as high as "several times higher than national levels." Tsugane and Tsuda both agree that the "30 times higher (than the national occurrence rates)" is unexplainable.

At the moment, the most likely theories for such a high rate of cancer detection are the "overdiagnosis theory" held by Tsugane's team and the "radiation effect theory" that Tsuda's team supports.

Overdiagnosis refers to the diagnosis of cancer by detecting hidden cancer cells that are not harmful even if left untreated.

The concept of cancer overdiagnosis has been argued for decades in areas including the lungs, chest and prostate, and its negative effects on cancer screening takers' physical and psychological conditions have been pointed out as a problem. In 2004, the Ministry of Health, Labor and Welfare canceled examinations for neuroblastoma, a type of pediatric cancer, saying that the test would impose large disadvantages on screening subjects due to overdiagnosis.

In South Korea, thyroid cancer screening has been rigorously carried out from the late 1990s targeting adults, and as a result, the number of thyroid cancer patients spiked 15 times. In the meantime, thyroid cancer death rates have not changed, which has been interpreted in a way that non-harmful cancer was detected in the screening process.

While the Fukushima screening mostly targets children, Tsugane argues that it's rational to judge that the reason behind such a high prevalence is overdiagnosis as seen in South Korea's studies, on the grounds that the maximum amount of radiation exposure in the thyroids of children in Fukushima Prefecture is estimated to be several dozen millisieverts, which is not enough to cause an increase of 30 times in the number of patients. He also argues that it appears that no phenomenon has been reported where the number of patients becomes higher in areas with high radiation levels. The prefectural government shares his opinion on the matter.

At the same time, Tsugane is not completely denying the effects of radiation in children's cancer, saying, "It would not be strange if a small portion of cancer cases was caused by radiation exposure, but we do not know the precise percentage."

Tsuda, on the other hand, took the difference in the timing of screening among children into account and argues that radiation exposure is the main cause of the high prevalence of cancer in children, saying that the occurrence rate is 4.6 times higher in Futaba County near the crippled nuclear plant compared to the city of Sukagawa and other areas that are farther from the power plant.

He does not deny the possibility of overdiagnosis, but because the spread of cancer cells to lymph nodes and other tissues could be seen in 92 percent of patients, Tsuda believes that overdiagnosis makes up 8 percent of the patients at most.

In addition, Tsuda pointed to three research papers on the 1986 Chernobyl nuclear disaster that argue that thyroid cancer was not found in a total of 47,000 children who were born after the disaster and had not been exposed to radiation, and rejects the existence of overdiagnosis in children.

Tsuda also pointed out that non-harmful cancer should have been detected in the first round of screenings, drawing attention to the fact that 51 new patients were found in the second round that began in 2014.

In regard to the results of the second round of screening, Osaka University public health professor Tomotaka Sobue, who supports the overdiagnosis theory, confesses that while it is unlikely that the cancer was caused by radiation exposure, "overdiagnosis alone cannot explain the phenomenon for now." Cancer screenings of the same scale in other areas might help determine the main cause of the high prevalence in Fukushima children. Tsugane argues, however, that while screening is necessary in Fukushima Prefecture to confirm the effects of radiation, the same kind of screening should not be carried out in other prefectures as it will only increase the number of overdiagnosis cases.

Tsuda, on the other hand, pushes for screening in other prefectures, saying that the whole picture of thyroid cancer patients should be revealed so that the causal relationship is not blurred. In addition, he

calls for the cancer registration and establishing certificates for "hibakusha" (those exposed to radiation) to confirm radiation-induced cancer patients.

Both Tsugane and Tsuda based their research on the first round of screening conducted between 2011 and 2015. About 300,000 children were screened, and thyroid cancer was detected in 113 subjects, including suspected cancer cases at the time of analysis.

Tsugane's team estimated that if all 360,000 children targeted in the cancer screening had gone through the checkups, approximately 160 patients would have been found. The team also estimated that about 5.2 children out of 360,000 children in the same age group as the Fukushima screening subjects had thyroid cancer based on calculations on a national average of thyroid cancer patients. As a result, the team reached a result of "about 30 times higher" by comparing 5.2 and 160 drawn from the estimate on Fukushima children.

Tsuda, meanwhile, focused his attention on the national average of the thyroid cancer occurrence rate in the same age group as the targets in the screening in Fukushima Prefecture, which was around three in every 1 million children per year. A total of 113 cancer patients out of 300,000 screening takers have been found in Fukushima Prefecture, which can be converted into about 90 patients in 1 million children per year over a four-year period. With those figures, Tsuda's team concluded occurrence rates of about "30 times higher."

The prefectural government's expert panel drafted the interim report based on Tsugane's calculation method.

32,000 Fukushima workers exposed to more than 5mS

March 7, 2016

32,000 workers at Fukushima No. 1 got high radiation dose, Tepco data show

http://www.japantimes.co.jp/news/2016/03/07/national/science-health/32000-fukushima-no-1-workers-got-high-radiation-dose-tepco-data-show/#.Vt2YDuaDmot

JIJI

A total of 32,760 workers at the Fukushima No. 1 nuclear plant had an annual radiation dose exceeding 5 millisieverts as of the end of January, according to an analysis of Tokyo Electric Power Co. data. A reading of 5 millisieverts is one of the thresholds of whether nuclear plant workers suffering from leukemia can be eligible for compensation benefits for work-related injuries and illnesses.

Of those workers, 174 had a cumulative radiation dose of more than 100 millisieverts, a level considered to raise the risk of dying after developing cancer by 0.5 percent. Most of the exposure appears to have stemmed from work just after the start of the crisis on March 11, 2011. The highest reading was 678.8 millisieverts.

Overall, a total of 46,490 workers were exposed to radiation, with the average at 12.7 millisieverts. The number of workers with an annual dose of over 5 millisieverts increased 34 percent from fiscal 2013 to 6,600 in fiscal 2014, when workloads grew to address the increase in radiation-tainted water at the plant. The number was at 4,223 in the first 10 months of fiscal 2015, which ends this month, on track to mark an annual decline.

A labor standards supervision office in Fukushima Prefecture last October accepted a claim for workers compensation by a man who developed leukemia after working at the plant, the first recognition of cancer linked to work after the meltdowns as a work-related illness. Similar compensation claims have been rejected in three cases so far, according to the labor ministry.

The average radiation dose was higher among Tepco workers at the plant than among workers from subcontractors in fiscal 2010 and 2011. Starting in fiscal 2012, the reading was higher among subcontractor workers than among Tepco workers.

The average dose for subcontractor workers was 1.7 times the level of Tepco workers in fiscal 2013, 2.3 times in fiscal 2014 and 2.5 times in fiscal 2015 as of the end of January.

A separate analysis of data from the Nuclear Regulation Authority showed that the average radiation dose of workers at 15 nuclear power plants across the country, excluding the Fukushima No. 1 and No. 2 plants, fell to 0.22 millisievert in fiscal 2014, when none of the plants was in operation, down 78 percent from 0.99 millisievert in fiscal 2010.

Keeping babies' teeth to check exposure to radiation

March 7, 2016

Dentist urges people to keep kids' baby teeth to study Fukushima radiation exposure

http://mainichi.jp/english/articles/20160307/p2a/00m/0na/015000c

A movement calling on people to retain their children's baby teeth to help study radiation exposure in the wake of the Fukushima nuclear disaster is gaining momentum in Japan.

The radioactive material strontium-90 is easily absorbed into baby teeth, and last year a group of experts formed the "Preserving Deciduous Teeth Network (PDTN)," urging people to keep their children's baby teeth.

"Baby teeth are evidence of exposure to radiation. We urge people to keep them for the future," says Takemasa Fujino, 67, a joint head of the network.

Fujino is president of a medical institution that operates three dental clinics in the Tokyo metropolitan region. One clinic is in Matsudo, Chiba Prefecture, which was regarded as a "hot spot" with relatively high levels of radiation following the March 2011 outbreak of the Fukushima No. 1 Nuclear Power Plant disaster.

With residents feeling uneasy, in 2011 Fujino began calling for people to preserve their children's baby teeth, wanting to do something as a dentist to protect children's lives and health.

So far, Fujino has had about 500 baby teeth donated, and has commissioned a Swiss testing facility to analyze some of them. Next year the network plans to establish its own testing facility in central Japan. Baby teeth are formed from when the child is in the womb. "The teeth of children that were fetuses five years ago at the time of the accident will be coming at about this point exactly, and the movement to preserve them will become even more important," Fujino says.

NHK video

March 10 http://www3.nhk.or.jp/nhkworld/en/news/videos/20160310153451478/

Exploring Fukushima Health Effects

Video de 4 min

New report on cancers

Fukushima Report: 10,000 Excess Cancers Expected in Japan as a Result of 2011 Reactor Meltdowns, Ongoing Radiation Exposure

Report Gauges Cancer Prospects for Children, Rescue/Recovery Worker, and General Population; Japanese Government Criticized for "Disturbing" Failure to Examine Wider Radiation-Related Diseases

March 9, 2016

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The PSR/IPPNW report uses the best available science and data to gauge the excess cancer rates among children, rescue and clean-up workers, and the general population of Japan. In addition to the 200,000 Fukushima residents relocated nearby into makeshift camps, the exposed include millions of others in Japan as a result of fallout-contaminated food, soil and water. Fukushima is often incorrectly seen as a "past" event; the reality is that radioactive emissions from the wrecked reactors continue to this day both into the atmosphere and in the form of 300 tons of leakage each day into the Pacific Ocean. Key findings of the PSR/IPPNW report include the following:

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Catherine Thomasson, MD, report co-editor, and executive director, Physicians for Social Responsibility, said: "The health legacy of Fukushima will haunt Japan for years to come and it cannot be wished out of existence by cheerleaders for nuclear power. Unfortunately, the pro-nuclear Japanese government and the country's influential nuclear lobby are doing everything in their power to play down and conceal the effects of the disaster. The high numbers of thyroid cancers already verified with 50 additional waiting for surgery in the children of Fukushima prefecture is astounding. The aim seems to be to ensure the Fukushima file is closed as soon as possible and the Japanese public returns to a positive view of nuclear power. This rush to re-embrace nuclear power is dangerous to the extent that it sweeps major and very real medical concerns under the rug."

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Not worth it...

March 14, 2016

Fukushima evacuations were not worth the money, study says

http://www.japantimes.co.jp/news/2016/03/14/national/fukushima-evacuations-were-not-worth-the-money-study-says/#.VuaL4-aDmot

by William Hollingworth

Kyodo

LONDON – The costs of evacuating residents from near the Fukushima No. 1 plant and the dislocation the people experienced were greater than their expected gain in longevity, a British study has found.

The researchers found that at best evacuees could expect to live eight months longer, but that some might gain only one extra day of life. They said this does not warrant ripping people from their homes and communities.

The team of experts from four British universities developed a series of tests to examine the relocations after the Fukushima crisis and earlier Chernobyl disaster in 1986.

After a three-year study, the academics have concluded that Japan "overreacted" by relocating 160,000 residents of Fukushima Prefecture, even though radioactive material fell on more than 30,000 sq. km of territory.

"We judged that no one should have been relocated in Fukushima, and it could be argued this was a kneejerk reaction," said Philip Thomas, a professor of risk management at Bristol University. "It did more harm than good. An awful lot of disruption has been caused However, this is with hindsight and we are not blaming the authorities."

The team used a wide range of economic and actuarial data, as well as information from the United Nations and the Japanese government.

In one test, an assessment of judgment value, the researchers calculated how many days of life expectancy were saved by relocating residents away from areas affected by radiation.

They compared this with the cost of relocation and how much this expenditure would impact the quality of people's lives in the future.

From this information, they were able to work out the optimal or rational level of spending and make a judgment on the best measures to mitigate the effects of a nuclear accident.

Depending on how close people were to the radiation, the team calculated that the relocations added a period of between one day to 21 days to the evacuees' lives.

But when this was compared with the vast amounts of money spent, the academics came to the conclusion that it was unjustified in all cases.

In some areas, they calculated that 150 times more money was being spent than was judged rational. Thomas adds, the tests do not take into account the physical and psychological effects of relocating, which have been shown to have led to more than 1,000 deaths among elderly evacuees.

Other studies have also found that once people have lived away for a certain period of time it can become increasingly difficult to persuade them to return.

After Chernobyl, the world's worst nuclear disaster, around 116,000 people were initially relocated away from the disaster zone.

Looking back on the incident, the team judged it was only worthwhile to relocate 31,000 people because they would have lost in excess of 8.7 months in life expectancy had they remained.

However, for the rest of the 116,000 people, it would have been a more rational decision to keep them where they were, given that their average loss of life was put at three months.

Four years later, a further 220,000 people were relocated from areas close to Chernobyl. Researchers found this unjustified.

Thomas says the loss in life expectancy following a nuclear accident has to be put into context alongside other threats all people face.

For example, it has been claimed that the average Londoner will lose about 4½ months in life expectancy due to high pollution levels.

Thomas concludes governments should carry out a more careful assessment before mounting a relocation operation of at least a year. A temporary evacuation could be a good idea while authorities work out the risk from radiation, he said.

In the future, Thomas would like to see more real-time information made available to the public on radiation levels in order to avoid hysteria and bad planning.

On a plus note, the team found that other remedial measures — decontaminating homes, deep ploughing of soil and bans on the sales of certain food products — were far more effective.

Thomas has already discussed his findings with colleagues at the University of Tokyo and he is keen that his findings can help better quantify the risks from radioactive leaks.

The project was sponsored by the Engineering and Physical Sciences Research Council, Britain's main agency for funding research in engineering and the physical sciences. **It was intended to give advice for nuclear planners both in Britain and India**.

The research team comprised specialists from City University in London, Manchester University, the Open University and Warwick University.

Compare with recent report :

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Fukushima cancer patients form network

March 14, 2016

Families of Fukushima thyroid cancer patients launch support group

http://mainichi.jp/english/articles/20160314/p2a/00m/0na/006000c

Japanese version

Families of children in Fukushima Prefecture who were diagnosed with thyroid cancer through health checkups conducted by the prefectural government in the wake of the Fukushima No. 1 nuclear plant disaster launched a family association on March 12.
The "311 Thyroid Cancer Family Group" has been established with a goal of patients and their families interacting to share information regarding treatment and to reach out to the central and prefectural governments over the issue of child thyroid cancer in Fukushima.

By the end of 2015, a total of 166 people who were 18 years old or younger at the time of the nuclear meltdowns in March 2011 had been diagnosed with thyroid cancer or suspected of having thyroid cancer. The association members held a news conference on March 12 with the fathers of two thyroid cancer patients joining the conference via the Internet.

"It was painful to be told out of the blue that my son has cancer," said a father of a thyroid cancer patient who was aged between 11 and 19 at the onset of the Fukushima crisis, adding, "I was helped just by talking to those who can share each other's feelings. I believe that there are a lot of people who are distressed (by their family members' illness), but I hope they find the courage to join the group." The annual fee for membership is set at 1,000 yen per family. For more information on admission and consultations, call 070-3132-9155 or email to 311tcfg@gmail.com, or find out more about the association at http://311kazoku.jimdo.com/ (in Japanese).

March 12, 2016

Families of Fukushima cancer patients form network

http://www3.nhk.or.jp/nhkworld/en/news/20160312_22/

Family members of children who've been diagnosed with thyroid cancer in Fukushima Prefecture have formed a group to exchange information and share concerns.

Members of the group appeared with a lawyer at a news conference on Saturday. Two fathers joined via TV phone.

One said he was stunned to discover his child has cancer. He said being able to talk to other people has made it easier to cope. He also said he wants to know the cause.

The group includes 5 families. They plan to approach others to join.

Fukushima Prefecture has offered medical checkups to more than 380,000 people who were 18 or younger at the time of the nuclear accident 5 years ago.

Health authorities say the number of people so far diagnosed with cancer or suspected cancer is 167.

A committee of experts advising the prefectural government says it seems unlikely that the numbers are due to radiation. It says people have been exposed to low amounts.

Cesium

5 years after Fukushima meltdowns, wild game animals still show cesium contamination

http://mainichi.jp/english/articles/20160331/p2a/00m/0na/016000c

Concentrations of radioactive cesium from the Fukushima nuclear disaster in wild game animals in nine eastern Japanese prefectures have been dropping, but remain higher than the government-mandated limit for shipment to market in many areas

The upper limit for cesium concentrations in meat is 100 becquerels per kilogram. Shipments of seven types of wild game from areas of Fukushima, Miyagi, Yamagata, Ibaraki, Tochigi, Gunma, Chiba and Niigata prefectures have remained restricted since the March 2011 meltdowns at the Fukushima No. 1 nuclear plant as cesium contamination has yet to fall consistently below the government-set maximum. For example, wild boar meat examined at a processing plant in Nakagawa, Tochigi Prefecture, registered as much as 1,100 becquerels per kilo in fiscal 2012, and a high of 340 becquerels in fiscal 2015. According to ecology expert and Chiba University associate professor Masashi Murakami, the cesium fallout was deposited on fallen leaves by repeated rainfall. However, as time passes the radioactive element will be absorbed by clay particles in the forest soil, removing it from animals' food sources. As such, says Murakami, cesium levels in wild game animals will fall faster than the element's natural decay rate.

However, "there are large differences between the cesium concentrations of individual animals, so it will take a long time to 'consistently fall under the maximum concentration' as the government demands to lift shipment restrictions," says Murakami. For example, "even in Nakagawa, it may take 10 more years." A Ministry of Health, Labor and Welfare official in charge of the issue stated, "The only way for shipments to go ahead again is for every animal to be tested."

Braving constant radiation

April 5, 2016

Braving danger and radiation for chance to earn 11,000 yen a day

http://www.asahi.com/ajw/articles/AJ201604050034.html

By SAWAAKI HIKITA/ Staff Writer



Editor's note: An army of workers, 6,000 or so, battles daily on the front line of the stricken Fukushima No. 1 nuclear power plant to get the site ready for the decades-long process of decommissioning the reactors. An overwhelming majority of the men are hired by subcontractors and endure low pay, fragile job security and hazardous working conditions. Radiation exposure is a constant risk.

This three-part series is intended to shed light on conditions at the plant and how the people working there feel about their jobs.

It is winter and still dark when the man awakes at 3:30 a.m. to start his working day. He begins by putting on five layers of clothing under his protective gear, and dons two pairs of gloves and socks, the insides of which are stuffed with disposable hand warmers.

But even then, the 36-year-old native of Iwaki, Fukushima Prefecture, is cold.

Thirty minutes later, a cutting breeze blows from the ocean as the man climbs into a car ordered by his employer to take him to the J-Village facility, where the workers board buses to transport them to the crippled Fukushima No. 1 nuclear power plant 20 kilometers away. The man's job is to lay pipes containing contaminated water at the complex. He works for a fourth-tier subcontractor with Tokyo Electric Power Co., operator of the plant.

Five years after the triple meltdown, the plant premises are much tidier than in the immediate aftermath of the disaster. Today, the ground is covered with steel sheets.

However, the steel frames of the reactor buildings still stand exposed because the concrete walls were blown out in hydrogen explosions triggered by the overheating of reactor cores.

Inevitably, jobs near the reactor buildings pose radiation risks.

"The closer you get to the reactor buildings, the higher the radiation readings," the man said. He is required to carry a dosimeter whenever he is on-site.

Each time the man's dose climbs by 0.16 millisievert, an alarm sounds. If the alarm goes off three times in a single shift, he must stop what he is doing, no matter what work remains to be done.

With a full-face mask and protective gear, working in summer months can be more grueling--and even life-threatening.

He packs ice cubes under his clothes to keep cool, but they melt within 30 minutes.

One summer day, he saw a middle-aged man lying on the floor of a lounge where the workers congregate during their break.

The man had collapsed after the end of his shift. Although the individual was airlifted to a hospital by helicopter, he apparently died of heatstroke.

When the magnitude-9.0 Great East Japan Earthquake struck, the Iwaki man was working inside the No. 1 reactor building. The power went out and in the darkness he heard a loud crashing noise, as if a piece of equipment had suddenly ground to a halt.

He fled the building as fast as he could.

Fissures dotted the concrete surface of the ground and shards of glass were everywhere.

The man took refuge in a structure in the compound known as the "company building."

A roll call was taken to check that everybody was safe, and then he and his colleagues were dismissed in the evening.

The Iwaki man did not recall seeing the effects of the tsunami on his way home, which he reached at 8 p.m. By that time, he was running a fever and itched all over his body, probably the result of a stressful and nerve-racking day.

A hydrogen explosion rocked the No. 1 reactor building the following day, March 12.

Several days later, the man and his family evacuated to Nagoya, where he has relatives.

But around May, the president of the company he had worked for called and asked him to consider returning to the plant.

After giving the matter some thought, the Iwaki man accepted. His daughter had just turned 1 year old. He had a family to raise. Leaving his family behind, the man returned to Fukushima for a job that pays 11,000 yen (\$97) a day.

ANOTHER MAN'S STORY

A 44-year-old man from Nagano Prefecture landed a short-term position at the plant in 2012 after scouring job ads online.

"I wanted to help contain the spread of radioactive contamination," said the man, who previously worked in a local car dealership.

Shortly after replying to the ad, he was contacted by a subcontractor.

"We have a job to measure workers' radiation levels," the man was told. "It does not entail exposure to high levels of radiation."

Relieved, the man headed to Iwaki and signed a one-year contract with a company that called itself a fourth-tier subcontractor.

But when he attended a briefing held by a first-tier subcontractor several days later, he learned that the initial job description was far different from what he had just been told.

"As you know, you will be working in an area where radiation levels are high. That's because the mixers for contaminated water are there," the official said. "You will be able to stay in the area for five to 10 minutes, no longer."

The official added that the men would not be involved in replacing the mixers themselves as that is done by veteran workers.

What he and the others were required to do was lay rubber mats on the floor to lower those workers' radiation exposure to enable them to stay longer.

He was also told that workers have to carry breathing apparatus on their backs.

The Nagano man, upset by what he had just learned about the job, protested to the president of the fourthtier subcontractor afterward.

"It would be impossible for me to continue with this job as long as for a year if I had such a high level of radiation dose," he said. "This is not what I signed up for."

The president tried to appease him.

"Even if you had a reading of 1 millisievert a day, it would halve in a week," the president said. "If you quit at this stage, the company's reputation would be jeopardized."

As it happened, the assignment involving high radiation risks was canceled at the last minute.

Instead, the workers were required to clear the glass shards in the compound.

During a break on the first day of his job, in June 2012, he struck up a conversation with a regular employee of a first-tier subcontractor.

"Would you allow your son to work in a job that gives out several millisieverts of exposure a day?" he asked the middle-aged man.

The employee replied: "It will not be a problem legally, but I would not (send my son to do that kind of work)."

On his way back to his lodgings, the president of the fourth-tier subcontractor called him. He was told to stop by at the office of a third-tier subcontractor.

When he showed up, he was met by someone he didn't know.

"What you said at the work site gave us problems," the stranger said. "You do not need to come to work anymore."

After arguing with the official, the man returned to Nagano Prefecture three days later.

Later, he noticed his bank account had been credited to the tune of 24,000 yen, reflecting what was left over from several days of wages after accommodation costs had been deducted.

The man said he still has no idea at what point the original assignment to measure radiation doses was switched to one that was, without question, dangerous.

Objective and scientific?

Fukushima students reach out to tell truth about radiation

http://www.asahi.com/ajw/articles/AJ201604040044.html

By YURI OIWA/ Staff Writer

Struck by ignorance about the 2011 nuclear disaster, high school science club members in Fukushima Prefecture enlisted the help of fellow students around Japan and abroad for a comparative study on radiation doses.

The results surprised even those living in the prefecture that hosts the Fukushima No. 1 nuclear power plant.

"The individual doses (of external radiation exposure in high school students) were almost equal inside and outside of Fukushima Prefecture, and in European areas," Haruka Onodera, 18, said in English at the Foreign Correspondents' Club of Japan (FCCJ) in Tokyo on Feb. 8.

A German correspondent asked her, "Would you declare Fukushima now safe?"

"Actually, we didn't measure the doses in people living in the contaminated areas, so we can't say all of Fukushima is safe," Onodera answered, often pausing in thought in the middle of her words and phrases. "But I hope we will send (personal dosimeters) to contaminated areas and help do risk management for people living there in the future."

Onodera, a third-year student of Fukushima High School and member of the physics and radiation division of the school's Super Science Club, also showed explanatory slides at the FCCJ news conference titled, "Fukushima and radiation monitoring. The goal of the project is to show the realities of Fukushima Prefecture to the rest of the world.

The club's physics and radiation division started the project in summer 2014. It involved 216 high school students and teachers in Japan and abroad carrying personal dosimeters for two weeks.

Six high schools in Fukushima Prefecture--Fukushima, Adachi, Aizu Gakuho, Iwaki, Asaka and Tamura-and another six located elsewhere in Japan--including in Gifu, Kanagawa, Nara and Hyogo prefectures--were involved in the project.

They were joined by 14 high schools from France, Poland and Belarus.

According to the measurements taken by the students, the annual radiation doses in Fukushima Prefecture ranged between 0.63 and 0.97 millisievert. For elsewhere in Japan, the range was from 0.55 to 0.87 millisievert, while in Europe, the annual doses were between 0.51 and 1.1 millisieverts.

The similar levels of external doses are believed to be partly attributable to the lower level of natural background radiation in Fukushima Prefecture compared with that in western Japan. That finding came from an analysis of a database on the radioactive content of soil in areas surrounding the different high schools across Japan.

Onodera, who was seated next to Ryugo Hayano, a professor of physics with the University of Tokyo, at the FCCJ news conference, had also presented the study results last year to a workshop of high school students in France and a conference on Fukushima foodstuffs held on the sidelines of an international food exposition in Italy.

Two second-year students of the Super Science Club--Minori Saito, 17, and Yuya Fujiwara, 17--gave a talk at a workshop organized in Date, Fukushima Prefecture, by the International Commission on Radiological Protection late last year.

First- and second-year students who are members of the club, joined by eight high school students from France, visited peach farmers and shiitake mushroom growers in Fukushima Prefecture in summer last year. It was part of a program for studying the current state of Fukushima from diverse views. The students wanted to address global audiences after they were shocked by how little was known about the actual state of Fukushima Prefecture.

"Can humans live in Fukushima?" a French high school student asked the Fukushima students over Skype as part of an international exchange program in 2014.

That prompted the Japanese students to determine the actual situation on their own, and compare it with circumstances elsewhere in Japan and abroad. Hayano advised them to undertake the endeavor when he visited Fukushima High School to give a talk.

The findings of the study were surprising. Most of the Fukushima students expected the doses in Fukushima would be the highest, even by a large margin.

The students also studied how behavior affected the dose levels.

The Fukushima High School students were being exposed to lower radiation levels when they were at school than when they were at home. They believe the school's concrete buildings provided a more effective shield from radiation sources than the wooden houses did.

By contrast, students attending Ena High School in Gifu Prefecture were exposed to more radiation when they were at school, where granite, containing radiation sources, is used in the buildings.

Their analysis results were published in November in a British scientific journal on radiological protection. Onodera was involved in writing the research paper.

"The experience has brought home to me how important it is to address reality **objectively and scientifically**," she said.

Onodera said she was growing more interested in basic sciences and dreams of doing research on molecular biology at university.

"We hope to solicit help from people in evacuation zones within Fukushima Prefecture, and from high schools in countries we have yet to address, in further broadening our study," said Takashi Hara, a teacher and adviser to the science club's physics and radiation division.

The risks of "normalizing" radiation



Lessons from Fukushima and Chernobyl

http://www.beyondnuclear.org/chernobyl30-fukushima5/

The Risks of "Normalizing" Radiation: A Special Event

Leading international experts and compelling short films will headline a May 3rd Beyond Nuclear event in Washington, DC to mark the anniversaries of the Chernobyl and Fukushima nuclear disasters. Full program.

Beyond Nuclear and the Goethe-Institut, DC will co-host an afternoon and evening program that will mark the 5th anniversary of Fukushima and the 30th anniversary of Chernobyl. The legacy of both nuclear power plant disasters has included a marked increase in radiation-induced diseases and mutations, as found by some of the world's leading researchers, several of whom will be speaking at the event. The event takes place at the Goethe-Institut, DC, 1990 K St. NW (event entrance on 20th St.) The afternoon panel presentations run from 2pm to 5pm. The evening program is 7:30pm to 9pm. All events are free and open to the public. No registration required.

Dr. Timothy Mousseau, has conducted landmark research on wildlife and plant matter around both the Chernobyl and Fukushima sites. He has found significant alterations in plant decay and radiation-induced changes in wildlife including shortened life spans, smaller brain sizes, male infertility and cataracts.

Dr. Wladimir Wertelecki, has pioneered work on the the deleterious effects of disaster-related radiation on long-term child development, particularly in relation to the radiological contamination spread by the Chernobyl nuclear disaster. Dr Wertelecki has focused on teratogenesis – changes caused by environmental interference to a developing fetus, a fetus with with normal genes, as distinguished from gene mutations, inherited from parents.

Dr.Yuri Hiranuma, a Japanese doctor based in the U.S. has studied thyroid issues among post-Fukushima children. She has a particular focus on how affected people are coping (or not coping) with the disaster; how inefficient and dysfunctional the government agencies are at managing the problem; and the apparent systematic underestimation and dismissal of health effects. In June 2014 she co-authored a critique of the UNSCEAR 2013 report on the Fukushima disaster.

Additional speakers include: Lucas Hixson, who has taken radiation measurements at Chernobyl; and Beyond Nuclear experts Cindy Folkers, Kevin Kamps and Paul Gunter. Two short documentaries -- *Alone in the Zone*, on Fukushima, and *Champion in Chernobyl*, featuring tennis legend Maria Sharapova -- will be screened to open the evening program. Both the afternoon and evening programs will include discussion with the audience.

The event includes a special exhibition of Chernobyl and Fukushima photos by Gabriela Bulisova and Robert Knoth. For more information, email info@beyondnuclear.org

Coalition measures radioactive contamination of soil

May 6, 2016

30 groups show radioactive soil levels to address Fukushima fears

http://www.asahi.com/ajw/articles/AJ201605060006.html

By MASAKAZU HONDA/ Staff Writer

A coalition of 30 private groups is digging deeper into radiation contamination from the 2011 Fukushima nuclear disaster to address persistent concerns from the public around Japan.

The coalition's website, titled the East Japan Soil Measurement Project, shows radiation levels in soil samples taken from more than 1,900 sites in Tokyo and 16 prefectures, from northeastern Japan to the Pacific side of the central Japan.

The project was started partly because parents were concerned that local governments were using only airborne radiation levels to determine if outdoor areas were safe for children.

While radioactive contamination in the air decreases as time passes, that is not necessarily the case with radioactive substances in the ground.

The group's survey of land contamination has found "hot spots," where levels are significantly higher than in the surrounding neighborhoods, five years after the disaster unfolded at the Fukushima No. 1 nuclear plant.

The radiation levels in some of those areas are comparable to those at nuclear reactor buildings and medical institutions that provide radiation therapy, where public access is restricted because annual radiation doses can exceed 5 millisieverts.

Three citizens groups, including the nonprofit organization Fukushima 30-Year Project, created the website after forming an extensive network of private entities in October last year.

The groups conduct the measurements in a unified manner. About 1,000 cubic centimeters of soil samples are taken by digging 5 cm deep in the ground in the shape of a 10-cm-by-20-cm block in residential areas and districts that ordinary citizens are allowed to enter.

Extreme anomalies in the radiation measurements are not posted on the site because the purpose of the project is to show average contamination in local communities.

"We want to prevent viewers from misunderstanding the pollution level of a given community just because of isolated cases of high numbers," said Hidetake Ishimaru, head of the coalition's secretariat. "Viewers can get tips on how to avoid risks in daily life by comparing figures that were measured in a standardized manner."

The highest reading so far was 135,000 becquerels of radioactive cesium detected in a forest near a home in the Hiso district of litate village, northwest of the embattled Fukushima No. 1 nuclear power plant. The soil sample showed 111,028 becquerels of cesium-137 and 23,920 becquerels of cesium-134. Radioactivity readings at many observation spots in Shizuoka Prefecture, which is far from the nuclear plant, were below the lowest detectable level.

But the survey this year still found sites in the Kanto region, south of the Tohoku region where the Fukushima plant is located, with readings exceeding 10,000 becquerels.

Save Child Iwate, a group in Iwate Prefecture, was the first of the 30 collaborating private organizations to take measurements in the soil.

Save Child Iwate started measuring radiation doses in the atmosphere and radioactivity in the soil throughout the prefecture in spring 2012. Many of the sites were at schools and parks. It has measured doses at 316 spots and publicized the results.

Kazuhiro Sugawara, a 39-year-old staff member of Save Child Iwate's secretariat, said the group began measuring radioactivity in soil after local governments had insisted that it was safe to let children play outdoors.

Local officials cited low radiation doses in the air in their safety assurances.

But the group remained skeptical because the evacuation order for residents from the 1986 Chernobyl nuclear disaster was issued in part based on the extent of ground contamination.

Sugawara's daughter was 10 years old and attending an elementary school in Iwate Prefecture when the disaster started at the Fukushima nuclear plant. Like other parents in the area, Sugawara was most concerned about the safety of the children.

"We cannot feel safe without data on soil contamination because children play with earth, wipe the mouths with their dirty hands and inhale dirt blown up by wind, exposing themselves to the risk of internal radiation exposure," Sugawara said about why he undertook the project. "If local officials would not bother to measure soil contamination, we decided to do so on our own."

The highest land contamination figure Save Child Iwate recorded came from samples from private property in Kanegasaki in the prefecture in June 2012.

At that spot, the radiation level in the air was 0.24 microsieverts per hour, while radioactivity in the soil sample exceeded 4,500 becquerels.

The coalition accepts sample soils sent by concerned citizens for free measurements using funds provided by businesses and donations from the public.

It currently lacks sufficient data from Niigata, Tochigi and Gunma prefectures.

"Part of the reason we cannot enlist cooperation from groups in the three prefectures, where agriculture is thriving, is that they fear possible negative publicity," Ishimaru said.

The coalition plans to hold workshops for citizens around the nation on how to gather samples to broaden support for the endeavor.

Tetsuji Imanaka, a researcher with Kyoto University's Research Reactor Institute who has been monitoring land contamination in Fukushima Prefecture and elsewhere, stressed the importance of gaining data from soil.

"Since numbers on land contamination are basic data needed to study the scope of pollution in a given region, detailed surveys are necessary," he said. "Ideally, local officials should do the task. I am hoping that the coalition will play a significant role."

Ex-fishermen (Bikini atoll) sue Govt.

May 9, 2016

Ex-fishers sailing near Bikini Atoll file suit

http://www3.nhk.or.jp/nhkworld/en/news/20160509_23/

Former Japanese fishermen and their family members have filed a lawsuit against the government of Japan.

The men were on fishing boats near the site of a US hydrogen bomb test more than 60 years ago and say they may have been exposed to radiation.

The United States conducted the test on Bikini Atoll in 1954. 23 crewmembers from Fukuryu Maru No.5 were found to have been exposed to fallout from the test. One of them died 6 months later.

Supporters of the plaintiffs in the lawsuit say about 1,000 Japanese fishing boats were operating in nearby waters at the time.

45 plaintiffs filed the suit on Monday at the Kochi district court.

They are demanding the Japanese government pay about 18,000 dollars in compensation for each former crewmember. They say the government failed to monitor their radiation levels even after it learned about the case of the Fukuryu Maru No.5.

83-year-old Yutaka Kuwano is one of the plaintiffs. He was 21 years old at the time of the test, and was fishing for tuna near the atoll.

He was diagnosed with stomach cancer 12 years ago after developing symptoms such as nose bleeds and an abnormally high number of white blood cells.

The health ministry released records on the incident two years ago. They show crews on several boats other than Fukuryu Maru No.5 had higher than usual levels of radiation.

Radioactivity seriously damaging to wildlife

April 27, 2016

At Chernobyl and Fukushima, radioactivity has seriously harmed wildlife

http://www.theecologist.org/blogs_and_comments/commentators/2987625/at_chernobyl_and_fukushi ma_radioactivity_has_seriously_harmed_wildlife.html

The largest nuclear disaster in history occurred 30 years ago at the Chernobyl Nuclear Power Plant in what was then the Soviet Union. The meltdown, explosions and nuclear fire that burned for 10 days injected enormous quantities of radioactivity into the atmosphere and contaminated vast areas of Europe and Eurasia. The International Atomic Energy Agency estimates that Chernobyl released 400 times more radioactivity into the atmosphere than the bomb dropped on Hiroshima in 1945.

Radioactive cesium from Chernobyl can still be detected in some food products today. And in parts of central, eastern and northern Europe many animals, plants and mushrooms still contain so much radioactivity that they are unsafe for human consumption.

The first atomic bomb exploded at Alamogordo, New Mexico more than 70 years ago. Since then, more than 2,000 atomic bombs have been tested, injecting radioactive materials into the atmosphere. And over 200 small and large accidents have occurred at nuclear facilities. But experts and advocacy groups are still fiercely debating the health and environmental consequences of radioactivity.

However, in the past decade population biologists have made considerable progress in documenting how radioactivity affects plants, animals and microbes. My colleagues and I have analyzed these impacts at Chernobyl, Fukushima and naturally radioactive regions of the planet.

Our studies provide new fundamental insights about consequences of chronic, multigenerational exposure to low-dose ionizing radiation. Most importantly, we have found that individual organisms are injured by

radiation in a variety of ways. The cumulative effects of these injuries result in lower population sizes and reduced biodiversity in high-radiation areas.

Broad impacts at Chernobyl

Radiation exposure has caused genetic damage and increased mutation rates in many organisms in the Chernobyl region. So far, we have found little convincing evidence that many organisms there are evolving to become more resistant to radiation.

Organisms' evolutionary history may play a large role in determining how vulnerable they are to radiation. In our studies, species that have historically shown high mutation rates, such as the barn swallow (*Hirundo rustica*), the icterine warbler (*Hippolais icterina*) and the Eurasian blackcap (*Sylvia atricapilla*), are among the most likely to show population declines in Chernobyl. Our hypothesis is that species differ in their ability to repair DNA, and this affects both DNA substitution rates and susceptibility to radiation from Chernobyl.

Much like human survivors of the Hiroshima and Nagasaki atomic bombs, birds and mammals at Chernobyl have cataracts in their eyes and smaller brains. These are direct consequences of exposure to ionizing radiation in air, water and food. Like some cancer patients undergoing radiation therapy, many of the birds have malformed sperm. In the most radioactive areas, up to 40 percent of male birds are completely sterile, with no sperm or just a few dead sperm in their reproductive tracts during the breeding season.

Tumors, presumably cancerous, are obvious on some birds in high-radiation areas. So are developmental abnormalities in some plants and insects.

Given overwhelming evidence of genetic damage and injury to individuals, it is not surprising that populations of many organisms in highly contaminated areas have shrunk. In Chernobyl, all major groups of animals that we surveyed were less abundant in more radioactive areas. This includes birds, butterflies, dragonflies, bees, grasshoppers, spiders and large and small mammals.

Not every species shows the same pattern of decline. Many species, including wolves, show no effects of radiation on their population density. A few species of birds appear to be more abundant in more radioactive areas. In both cases, higher numbers may reflect the fact that there are fewer competitors or predators for these species in highly radioactive areas.

Moreover, vast areas of the Chernobyl Exclusion Zone are not presently heavily contaminated, and appear to provide a refuge for many species. One report published in 2015 described game animals such as wild boar and elk as thriving in the Chernobyl ecosystem. But nearly all documented consequences of radiation in Chernobyl and Fukushima have found that individual organisms exposed to radiation suffer serious harm.

There may be exceptions. For example, substances called antioxidants can defend against the damage to DNA, proteins and lipids caused by ionizing radiation. The levels of antioxidants that individuals have available in their bodies may play an important role in reducing the damage caused by radiation. There is evidence that some birds may have adapted to radiation by changing the way they use antioxidants in their bodies.

Parallels at Fukushima

Recently we have tested the validity of our Chernobyl studies by repeating them in Fukushima, Japan. The 2011 power loss and core meltdown at three nuclear reactors there released about one-tenth as much radioactive material as the Chernobyl disaster.

Overall, we have found similar patterns of declines in abundance and diversity of birds, although some species are more sensitive to radiation than others. We have also found declines in some insects, such as butterflies, which may reflect the accumulation of harmful mutations over multiple generations. Our most recent studies at Fukushima have benefited from more sophisticated analyses of radiation doses received by animals. In our most recent paper, we teamed up with radioecologists to reconstruct the doses received by about 7,000 birds. The parallels we have found between Chernobyl and Fukushima provide strong evidence that radiation is the underlying cause of the effects we have observed in both locations.

Some members of the radiation regulatory community have been slow to acknowledge how nuclear accidents have harmed wildlife. For example, the U.N.-sponsored Chernobyl Forum instigated the notion that the accident has had a positive impact on living organisms in the exclusion zone because of the lack of human activities. A more recent report of the United Nations Scientific Committee on the Effects of Atomic Radiation predicts minimal consequences for the biota animal and plant life of the Fukushima region. Unfortunately these official assessments were largely based on predictions from theoretical models, not on direct empirical observations of the plants and animals living in these regions. Based on our research, and that of others, it is now known that animals living under the full range of stresses in nature are far more sensitive to the effects of radiation than previously believed. Although field studies sometimes lack the controlled settings needed for precise scientific experimentation, they make up for this with a more realistic description of natural processes.

Our emphasis on documenting radiation effects under "natural" conditions using wild organisms has provided many discoveries that will help us to prepare for the next nuclear accident or act of nuclear terrorism. This information is absolutely needed if we are to protect the environment not just for man, but also for the living organisms and ecosystem services that sustain all life on this planet.

There are currently more than 400 nuclear reactors in operation around the world, with 65 new ones under construction and another 165 on order or planned. All operating nuclear power plants are generating large quantities of nuclear waste that will need to be stored for thousands of years to come. Given this, and the probability of future accidents or nuclear terrorism, it is important that scientists learn as much as possible about the effects of these contaminants in the environment, both for remediation of the effects of future incidents and for evidenced-based risk assessment and energy policy development.

Thyroid cancer: The agony of patients and families

May 12, 2016

Thyroid cancer spike fuels Fukushima fears but cause could be overdiagnosis

http://www.japantimes.co.jp/news/2016/05/12/national/science-health/thyroid-cancer-spike-fuels-fukushima-fears-cause-diagnosis/#.VzRZWORdeot

by Mizuho Aoki

Staff Writer

In March, two fathers spoke via Skype at a news conference, with their voices masked electronically and their faces not shown. They did not want to reveal their identities.

The men, whose children have been diagnosed with thyroid cancer, were speaking at an event to mark the launch of 311 Thyroid Cancer Family Group.

One of the men said his teenage daughter had a hoarse voice after having half of her thyroid gland removed, leaving her with a temporary speech disorder and deep depression.

But for the patients and their families, the bigger agony is that they feel they must remain quiet about their illness.

Despite the many worries and questions surrounding possible radiation exposure, they fear they will be criticized, that their speaking out will be taken as linking the illness to the Fukushima disaster — a link that has yet to be scientifically established. Sensitivity runs high among residents of the prefecture over negative news that could increase the stigma they already bear.

"I couldn't tell anyone that my child had cancer. My child was also unable to tell her friends," one of the fathers said, adding that they had to keep such talk within the family.

What is worse, amid possible over-diagnosis from the mass screenings underway, some patients may have had surgery for a condition that would not cause them trouble in their lifetime if left untreated. Medical science, so far, cannot prove it one way or the other.

"They were completely at a loss after being told their children had cancer and given little explanation," Motomi Ushiyama, a doctor at Sagami Seikyo Hospital in Kanagawa Prefecture and a member of the support group, told The Japan Times.

"They were blaming themselves," he said. "It's heart-wrenching to listen to such voices."

Girls who had undergone surgery were constantly covering scars on their neck, and their parents were worried they would have a relapse in the future, Ushiyama said.

As Fukushima Prefecture continues to conduct thyroid screening for some 380,000 children who were aged 18 and under at the time the Fukushima crisis began, the list of thyroid cancer patients is getting longer.

As of December, 166 children were diagnosed with suspected thyroid cancer. Of them, 116 were confirmed to have the cancer after undergoing surgery. Some 300,000 children voluntarily received the checks in the program's first round of screening, and another 230,000 by the end of last year in a second round, according to the prefectural government.

The accumulated data have shown that thyroid cancer was unlikely to be radiation-induced, given that the radiation release was lower than in the 1986 Chernobyl accident, according to an interim report released by a panel of experts through the Fukushima Prefectural Government at the end of March.

Even though younger children are more vulnerable to radiation exposure, no cancer was found among those under age 5 at the time of the nuclear disaster.

But the report also pointed out that a link to the nuclear disaster cannot be ruled out.

Scientists say the screening of an unprecedented number of children without prior symptoms may be the reason why the thyroid cancer rate was found to be higher than the national average.

Moreover, as ultrasonogram technology improves, over-diagnosis of thyroid cancer has become a concern worldwide, experts said.

In South Korea, the thyroid cancer rate in women spiked by 15 times in 2011 compared with that observed in 1993 after the nation added screening to other regular cancer-screening tests in 1999. And yet the number of deaths from thyroid cancer in South Korea remained unchanged.

Shoichiro Tsugane, a director at the National Cancer Center's research arm on cancer screening, said overdiagnosis is highly likely to be the reason behind the sudden rise in Fukushima.

"There are no data to support the assumption that the rise is due to exposure to radiation. ... And there are no data to confirm it is due to over-diagnosis," Tsugane said. "But based on scientific knowledge on thyroid cancer that we have, it is natural to think it is due to over-diagnosis."

Even so, quitting the screening program midway through is not an option, experts say.

The figures are the results of screening some 300,000 people, noted Kazuo Shimizu, a thyroid surgeon at Kanaji Hospital and professor emeritus at Nippon Medical School.

"There are no data in the world relating to symptomless children examined on this scale at one time," he said. "This will be the basic data for future use."

As the data are drawing global attention, "we have the responsibility to continue the examinations in Fukushima and release the data," Shimizu said.

Thyroid cancer usually causes no symptoms, and papillary thyroid cancer, the most common type diagnosed in Fukushima children, is known for its generally slow growth and very low fatality, Shimizu said.

According to a report released by Tokyo's Cancer Institute Hospital in January, the 10-year survival rate for thyroid cancer patients topped 90 percent, while the average rate of all cancers stood at 58.2 percent. Given such characteristics for thyroid cancer, some patients have opted for observation rather than immediate surgery. Shimizu said he has been observing such patients for two or three years, and their tumors often have not grown.

In some patients who opted to be observed, the size of their nodules shrank with time, according to a report by Kuma Hospital, which is well known for its thyroid specialists, in Kobe.

But whatever the reason, the agony of the patients and their families continues.

If the cancer diagnosis can be chalked up to over-diagnosis, it may mean some children underwent unnecessary surgery. If their thyroid cancer is related to the nuclear disaster, the news would be even more devastating for them.

"It's a tragedy," Tsugane of the National Cancer Center said.

What the patients and their families really want to know is the truth.

"If those cancers were found due to the screening effect, then if they didn't have to go through surgery. ... If that's the case, then we really want to know," Ushiyama of the 311 family group said.

Koizumi in California in support of US sailors

May 19, 2016

Former Prime Minister Koizumi backs U.S. sailors suing over Fukushima radiation

http://www.japantimes.co.jp/news/2016/05/18/national/former-prime-minister-koizumi-backs-u-s-sailors-suing-over-fukushima-radiation/#.Vz10GuRdeot



Former Prime Minister Junichiro Koizumi speaks at a news conference Tuesday in Carlsbad, California. | KYODO

Kyodo

CARLSBAD, CALIFORNIA – Former Prime Minister Junichiro Koizumi said Tuesday he stands behind a group of former U.S. sailors suing the operator of the Fukushima No. 1 nuclear plant, who claim health problems they now suffer were caused by exposure to radiation after three reactors melted down in the days after a devastating earthquake and tsunami in March 2011.

– Former Prime Minister Junichiro Koizumi said Tuesday he stands behind a group of former U.S. sailors suing the operator of the Fukushima No. 1 nuclear plant, who claim health problems they now suffer were caused by exposure to radiation after three reactors melted down in the days after a devastating earthquake and tsunami in March 2011.

Koizumi made the remarks at a news conference in Carlsbad, California, with some of the plaintiffs in a lawsuit brought in the United States in 2012 against plant operator Tokyo Electric Power Co., which has renamed itself Tokyo Electric Power Company Holdings Inc.

The plaintiffs include crew members of the U.S. aircraft carrier Ronald Reagan, which provided humanitarian relief along the tsunami-battered coastline in a mission dubbed Operation Tomodachi. "Those who gave their all to assist Japan are now suffering from serious illness. I can't overlook them," Koizumi said.

The former prime minister spent Sunday through Tuesday meeting with roughly 10 of the plaintiffs, asking about the nature of the disaster relief they undertook and about their symptoms.

"I learned that the number of sick people is still increasing, and their symptoms are worsening," he told the news conference. Koizumi called on those in Japan, both for and against nuclear power, to come together to think of ways to help the ailing U.S. servicemen.

The group of about 400 former U.S. Navy sailors and Marines alleges the utility, known until recently as Tepco, did not provide accurate information about the dangers of radioactive material being emitted from the disaster-struck plant.

This led the U.S. military to judge the area as being safe to operate in, resulting in the radiation exposure, the group claims.

One of the plaintiffs at the news conference, Daniel Hair, said Koizumi's involvement made him feel for the first time that Japan is paying serious attention to their plight.

According to lawyers for the group, seven of its members have died so far, including some from leukemia. Koizumi, who served as prime minister between 2001 and 2006, came out in opposition to nuclear power in the wake of the 2011 disaster. He has repeatedly urged the administration of Prime Minister Shinzo Abe to halt its efforts to restart dormant reactors across Japan.

An ongoing disaster

The Fukushima nuclear disaster is ongoing

by Andrew R. Marks, Op-Ed, Journal of Clinical Investigation, May 23, 2016 http://www.jci.org/articles/view/88434#B2 Abstract

The 5th anniversary of the Fukushima disaster and the 30th anniversary of the Chernobyl disaster, the two most catastrophic nuclear accidents in history, both occurred recently. Images of Chernobyl are replete with the international sign of radioactive contamination (a circle with three broad spokes radiating outward in a yellow sign). In contrast, ongoing decontamination efforts at Fukushima lack international warnings about radioactivity. Decontamination workers at Fukushima appear to be poorly protected against radiation. It is almost as if the effort is to make the Fukushima problem disappear. A more useful response would be to openly acknowledge the monumental problems inherent in managing a nuclear plant disaster. Lessons from Chernobyl are the best predictors of what the Fukushima region of Japan is coping with in terms of health and environmental problems following a nuclear catastrophe. Five years after a tsunami caused the Fukushima nuclear accident in Japan, cleanup of radioactive contamination is ongoing and a formerly vibrant farming region lays largely fallow. A recent visit to northeast Japan revealed wholly unexpected aspects of the impact of the meltdown of three nuclear reactors. The area devastated by the nuclear accident is easily accessed by a two-hour train ride from Tokyo to the city of Fukushima. It is then possible to rent a car and drive to within 18 kM of the reactors, which are still in meltdown.

On the train, digital banners in Japanese and English encourage passengers to visit the beautiful cherry trees in the Fukushima district. In the rental car agency, glossy pamphlets exclaim the beauty of the region and feature the brilliant pink blossoms. On a recent April afternoon, the cherry blossoms were indeed spectacular. The roads deep into the region affected by the radioactive plume that engulfed the area in March of 2011 are clearly marked and readily accessible in a car rented at the Fukushima rail station. My

Japanese-speaking colleague translated the rental agency's map as indicating an "area not to return to," which we carefully avoided.

Following route 114 traveling east toward the coast, progressively larger piles of large black plastic bags filled with dirt appeared on the roadside. At first, there were piles of several hundred such bags, each approximately five feet wide by five feet in height, methodically stacked one upon the other. Of note, similar bags appear to be used elsewhere in Japan to hold debris at construction and yard cleaning sites. Each bag was numbered with a white marker.

Approaching the eastern coast of Japan, the piles of bags on the roadside were more frequent and larger and larger and larger. As route 114 progresses toward the exclusion zone indicated on the car rental agency's map, the piles of plastic bags filled with dirt reach unimaginable dimensions. Numbered in the many thousands, they eventually fill entire valleys that recede off into the horizon. In some instances, the piles of black plastic bags are covered with blue tarps with pipes inserted into their tops, presumably to provide ventilation.

Roadside radiation monitoring stations are placed near now abandoned homes, many of which are still decorated with plantings of flowers and the blossoming cherry trees that are found in the yards of most homes in this region. The readings on the radiation monitors ranged from 0.2115 to 1.115 microsieverts per hour, a measure of the relative risks imparted to biological tissues by ionizing radiation. One microsievert per hour is equivalent to four airport security screenings per hour and is almost twice the annual limit for occupational whole-body radiation dose limits established by the nuclear regulatory commission. One sievert total exposure causes a 5.5% risk of cancer (1).

To understand the health risks associated with ongoing radiation contamination and cleanup in the Fukushima region, the best comparator is Chernobyl. Two of the most important public health issues related to both the Chernobyl and the Fukushima disasters are thyroid cancers and posttraumatic stress disorder (PTSD). Assessing the effects of these nuclear accidents on the risk of thyroid cancer is confounded by the fact that the mere collection of data required to make the diagnosis (e.g., thyroid scans and ultrasounds) necessitates extranormal surveillance. Thus, true control populations are not available. Nevertheless, there have been reports of increased rates of thyroid cancer following the Chernobyl nuclear accident (2), and extrapolation from that incident to Fukushima is reasonable but as-yet unproven. The incidence of PTSD is understandably quite high following nuclear accidents (3). There are no controlled experimental data available to assess the ongoing risks of chronic low-level radiation now present throughout the Fukushima region. Thus, it is imperative that epidemiological data are collected as thoroughly as possible to provide insight concerning the risks of long-term low-level environmental radiation. Similarly, it is imperative that data are collected concerning the spread of radioactivity from the nuclear plant disaster via water (e.g., streams running through the region should be sampled regularly) and via animals (in particular birds should be banded and monitored to determine how they may be vectors for spreading radioactivity in seeds and other forms throughout Japan).

Just outside the town of litate, brilliant pink flags, which are the same color used for the advertisements designed to attract tourists to view the cherry blossoms in the region, flap in the breeze, announcing (only in Japanese) "radioactivity removal." At one particularly large site near the town of litate, a constant stream of large trucks with entirely open containers was streaming into an excavation site located at a large mountain of brown dirt. Huge shovels were digging dirt and placing it onto conveyer belts pouring the dirt into the open trucks, which were leaving the site heading south. The men and women handling this contaminated dirt were wearing outfits similar to construction workers observed in other regions of Japan, including helmets, masks, gloves, and overalls (Figure 1). Over an approximately 5-hour period of driving through the region, the only police observed were at the turn around marking the edge of the

restricted zone. No military presence was observed. On several occasions, workers were seen handling the plastic bags of radioactively contaminated dirt without gloves.

[See also http://ccnr.org/Decontamination_Fuk_2014.pdf]

During the entire afternoon of driving through the region not a single sign warning of the potential dangers of radioactive contamination was observed in any language other than Japanese. There was no security at most of the contaminated sites, and thousands of plastic bags of contaminated dirt were piled high in areas without any supervision or even a fence to prevent access from the public roadway. Birds flew all through the area, presumably transporting radioactive seeds and leaving contaminated droppings throughout Japan.

It is estimated that over 100,000 individuals have been displaced from their homes due to the reactor meltdown (4). Some have been relocated to far away cities, including Tokyo. During my visit, a group of five elderly women arrived on the same train as we did and were escorted onto a waiting bus to be driven to see the cherry blossoms decorating the village they used to live in. Other displaced former residents of now unlivable villages are perhaps less fortunate and have been relocated to one of the numerous "temporary" dwellings dotting the region indicated by convenient roadside signs. Many of these were immediately adjacent to radioactivity detectors indicating levels of at least 1 microsievert per hour. Ironically, during my visit to Fukushima on April 14, 2016, an earthquake rocked the Kumamoto region of Japan, ultimately causing at least 42 deaths and displacing thousands. This region contains the only working nuclear reactor remaining in Japan. Too far away to be felt in Fukushima, it was nevertheless a harsh reminder of the continued risk for further damage to the reactors already in meltdown. The continued high level of radioactivity removal efforts in the Fukushima region (entire hill sides have been denuded of surface soil) indicate that the Japanese government knows the health threat caused by the contamination remains. The lack of security, the failure to provide any of the internationally accepted protective warnings against radioactivity contamination (e.g., the universal three-armed black and yellow sign warning of radioactivity), and the absence of any warning signs for non-Japanese-speaking individuals, despite the active advertising campaign to attract tourists to view the cherry blossoms on this beautiful region of Japan, is disturbing. The possibility that individuals could access enormous amounts of radioactively contaminated dirt and transport it to a sensitive area in Japan or elsewhere is frightening.

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Govt. withholds report on health effects of Chernobyl

June 4, 2016

Japanese gov't withheld report on Chernobyl disaster's health effects

http://mainichi.jp/english/articles/20160604/p2a/00m/0na/006000c

The Japanese government has withheld an investigative report it compiled on health effects from the 1986 Chernobyl nuclear catastrophe despite spending 50 million yen on the survey in the wake of the Fukushima nuclear disaster, it has been learned.

The government's investigation into the aftereffects of the Chernobyl disaster began in November 2012 -the year after the meltdowns at the Fukushima No. 1 Nuclear Power Plant -- under the then Democratic Party of Japan (DPJ)-led administration, and was completed in March 2013 after the Liberal Democratic Party returned to power.

The investigative report denies local documents that confirmed far more serious health hazards from the Chernobyl accident in the former Soviet Union than those recognized by international organizations. An expert familiar with information disclosure points out that the report "should be publicized as a resource for verification from a critical point of view, considering that public money was spent on it" amid sharply divided opinions over nuclear power in Japan.

The investigation was budgeted by the Ministry of Education, Culture, Sports, Science and Technology and was commissioned to a Tokyo-based consulting firm funded by power companies. A committee set up to evaluate the survey results was chaired by Nagasaki University professor emeritus Shigenobu Nagataki, who formerly served as chairman of the Radiation Effects Research Foundation. The investigative team primarily examined and assessed two local reports -- "Twenty-five years after the Chernobyl accident: Safety for the future" and "Chernobyl: Consequences of the catastrophe for people and the environment."

The "Safety for the future" report, which was compiled by Ukraine's Ministry of Emergencies in 2011, points out that the ratio of healthy workers dealing with post-disaster work in Chernobyl plunged from 67.6 percent in 1988 to 5.4 percent in 2008. The latter report, which was put together by local researchers in 2009, estimates that a total of 985,000 people died from the effects of the Chernobyl disaster between April 1986 and December 2004 after their constant exposure to radiation following the disaster triggered cancer, heart and vein disorders and other ailments.

Both reports claim far more serious health hazards than those recognized by international organs, and gained much public attention here in Japan after the reports were highly publicized in the wake of the 2011 Fukushima disaster.

The Japanese government report's assessment panel examined the two reports with regard to 124 parts concerning blood and lymphatic disorders and analyzed whether radiation dose assessments were carried out where radiation exposure was linked to health damage. The committee also conducted an on-site investigation and concluded that it couldn't find any resources with which they could determine the relationship between exposure doses and health damage, based on scientific grounds.

Subsequently, the science ministry department that was in charge of the survey was moved to the secretariat of the Nuclear Regulation Authority (NRA) in April 2013, and the Japanese government's report was not released. The NRA secretariat eventually placed the report in the National Diet Library by way of the Environment Ministry.

Nagataki told the Mainichi Shimbun, "After we filed the investigation report with the science ministry, the ministry department in charge was shifted to the NRA secretariat, leaving us no clues as to what has become of the report. I felt uncomfortable when I heard the report was kept at the National Diet Library, but I also thought it would be inappropriate for us to demand that the report be released." A source close to the government told the Mainichi, "The investigation was decided upon under the DPJ administration, and we had to use up the budget. As the government changed hands, we had no intention of proactively publicizing the report." Another government insider said, "Nondisclosure of the report was also intended to avoid causing fear among people in Fukushima. It was also aimed at preventing harmful rumors."

Only the Fukuryu Maru?

June 5, 2016

Fukuryu Maru got health-damaging dose from 1954 H-bomb tests, ministry claims

http://www.japantimes.co.jp/news/2016/06/05/national/fukuryu-maru-got-health-damaging-dose-1954-h-bomb-tests-ministry-claims/#.V1R_ZuRdeot Kyodo

No other Japanese ship was exposed to health-damaging radiation from the 1954 U.S. hydrogen bomb tests in the Pacific Ocean aside from the Fukuryu Maru No. 5, which was contaminated by fallout from one of the tests at Bikini Atoll, according to a recently released health ministry study.

"We were not able to confirm that the exposures (of other vessels) were around the levels that would have had an impact on their health," a health ministry team said in a report last week, adding that the maximum estimated external exposure was far below the international threshold of 100 millisieverts at which an increased risk of cancer is expected.

The study began after the health ministry disclosed an abundance of records in September 2014 that were related to radiation checks conducted on ships that were in the vicinity of Bikini Atoll in the Marshall Islands when the United States conducted its hydrogen bomb tests there in 1954.

With the disclosure, the ministry also retracted its earlier, long-held position that the radiation testing records no longer existed.

Supporters of the former Fukuryu Maru fishermen said that the health ministry's new study wasn't thorough enough.

"The government study is only checking radiation exposures from the first of the six tests held," said Masatoshi Yamashita, 71, an executive at a civic group who's been researching the Bikini Atoll case for over 30 years. "It's not enough."

While the story of the tuna trawler also known as the Lucky Dragon is well known for the fatal H-bomb fallout that rained down on its deck following the test on March 1, 1954, details about the radiation exposure received by other ships that were in the vicinity at the time have largely been a mystery. This is the first time that the government has come up with an estimate of the radiation received by other ships' crews, the Health, Labor and Welfare Ministry said.

Earlier this year, a group of former crew members from those ships applied for workers' compensation for cancer and other diseases that they say were caused by exposure to the atomic tests.

The report, however, says the health ministry team did not find clear signs that the radiation had affected the white and red blood cell counts of those who were exposed, based on blood tests and other data contained in the records disclosed in 2014.

It also reported that the maximum external exposure stood at 1.12 millisieverts, and claimed that internal exposure is likely to have been "quite small in comparison to the external exposure," based on other exposure studies related to the Fukuryu Maru's crew and to residents of the Marshall Islands.

All 23 members of the Fukuryu Maru began developing acute symptoms of radiation sickness shortly after the trawler was showered by fallout from the Castle Bravo H-bomb test on March 1, 1954.

One member of the fishing boat died about six months later at the age of 40.

New cases of cancer confirmed in children

June 7, 2016

15 more child thyroid cancer cases found in Fukushima

http://www.asahi.com/ajw/articles/AJ201606070042.html

By YURI OIWA/ Staff Writer

FUKUSHIMA--An additional 15 people in Fukushima Prefecture who were 18 or younger when the Fukushima nuclear disaster occurred have been diagnosed with thyroid cancer, including a child who was 5 at the time.

Fukushima prefectural authorities said June 6 that the new diagnoses, which were confirmed between January and March, raises the total number of confirmed cases to 131.

However, the prefecture's review panel has not yet concluded whether radiation exposure from when the crisis unfolded at the Fukushima No. 1 nuclear power plant in the prefecture, northeastern Japan, is responsible.

"It is difficult to conclude that thyroid cancer cases found so far were caused by the nuclear disaster," a panel member said.

The Fukushima prefectural government conducted a mass thyroid examination of about 380,000 people who were 18 or younger at the time of the disaster. The screening was divided into two rounds, one

undertaken between autumn 2011 and March 2014, and the other, larger scale one between April 2014 and March 2016.

As of the end of March, 173 people were suspected or confirmed of having developed thyroid cancers, the examination found.

Of these, 116 suspected or confirmed cases were found in the first round of screening and 57 such cases were revealed in the second round.

Among the cases detected in the first round of screening, 102 people underwent operations. One person was found to have a benign tumor, and the remaining 101 people were confirmed to have developed thyroid cancer.

For the cases found in the second round of screening, 30 people had surgery, all of whom were confirmed to have developed the cancers.

The panel has denied the causal link between thyroid cancers with radiation exposure.

It cited such reasons as the smaller amount of thyroid exposure to radiation among Fukushima residents compared with the 1986 Chernobyl nuclear accident, and the absence of cancer cases among children aged 5 years or younger that had been prevalent in Chernobyl.

Although the latest cases include that of the then 5-year-old child, a panel member said: "There were a spate of thyroid cancer cases in children aged between zero and 5 years in Chernobyl, but there is only one case in Fukushima Prefecture.

"That does not immediately lead to the conclusion that (the thyroid cancers in Fukushima Prefecture) were caused by radiation," the member added.

New cases of cancer in children (2)

June 7, 2016

30 Fukushima children diagnosed with thyroid cancer in second check but radiation said 'unlikely' cause

http://www.japantimes.co.jp/news/2016/06/07/national/30-fukushima-children-diagnosed-with-thyroid-cancer-in-second-check-but-radiation-said-unlikely-cause/#.V1bQsuRdeos

Kyodo

FUKUSHIMA – In a study that began in April 2014 to check the impact of the 2011 Fukushima reactor meltdowns, 30 children have so far been diagnosed with thyroid cancer and 27 others are suspected of having the disease, according to a prefectural government panel.

Most of them were thought to be problem-free when their thyroid glands were checked during the first round of the study conducted over a three-year period through March 2014, the panel said Monday. The first survey covered about 300,000 people who were under the age of 18 and living in Fukushima Prefecture when the nuclear disaster was triggered by the 3/11 earthquake and tsunami. The number of children diagnosed with thyroid cancer in the second round was up from 16 as reported at

the previous panel meeting in February.

Hokuto Hoshi, head of the panel and a senior member of the Fukushima Medical Association, maintained his earlier view of the correlation between the cancer figures and radiation, saying based on expertise acquired so far, it is "unlikely" that the disease was caused by radiation exposure. Hoshi also said: "Concerns have been growing among Fukushima residents with the increase in the number of cancer patients. We'd like to further conduct an in-depth study." When the results of the first and the ongoing second round of the heath study are combined, the number of children diagnosed with thyroid cancer totals 131, and 41 others are suspected of having it. According to Fukushima Medical University and other entities involved in the health checks, the 57 children in the second round of the survey either confirmed or suspected to have thyroid cancer were age 5 to 18 when the crisis started, and the sizes of their tumors ranged from 5.3 mm to 35.6 mm. The examiners were able to estimate how much external radiation exposure 31 of those children had over the four months immediately after the catastrophe started, with the maximum being 2.1 millisieverts. Eleven of the children were exposed to less than 1 millisievert.

New cases of cancer in children (3)

To refresh memories :

The recent report from the International Physicians for the Prevention of Nuclear War (IPPNW) and Physicians for Social Responsibility (PSR)

5 Years living with Fukushima : Summary of the health effects of the nuclear catastrophe

http://www.fukushima-is-still-news.com/2016/03/new-report-on-cancers.html

https://ippnw.de/commonFiles/pdfs/Atomenergie/Tschernobyl/Report_TF_3005_en_17_screen.pdf



the English version of the report : http://www.psr.org/assets/pdfs/fukushima-report.pdf

in French

• on the site "Vivre après Fukushima"

http://www.vivre-apres-fukushima.fr/le-rapport-des-medecins-de-lippnwpsr-sur-fukushima-5-ans-disponible-en-francais/

• on the site of IPPNW Europe :

http://www.ippnw.eu/fr/accueil.html

Stigma attached to cancer

June 7, 2016

Fukushima woman speaks out about her thyroid cancer

http://www.asahi.com/ajw/articles/AJ201606070049.html

THE ASSOCIATED PRESS

KORIYAMA, Fukushima Prefecture--She's 21, has thyroid cancer, and wants people in her prefecture in northeastern Japan to get screened for it. That statement might not seem provocative, but her prefecture is Fukushima, and of the 173 young people with confirmed or suspected cases since the 2011 nuclear meltdowns there, she is the first to speak out.

That near-silence highlights the fear Fukushima thyroid-cancer patients have about being the "nail that sticks out," and thus gets hammered.

The thyroid-cancer rate in the northern Japanese prefecture is many times higher than what is generally found, particularly among children, but the Japanese government says more cases are popping up because of rigorous screening, not the radiation that spewed from Fukushima No. 1 power plant.

To be seen as challenging that view carries consequences in this rigidly harmony-oriented society. Even just having cancer that might be related to radiation carries a stigma in the only country to be hit with atomic bombs.

"There aren't many people like me who will openly speak out," said the young woman, who requested anonymity because of fears about harassment. "That's why I'm speaking out so others can feel the same. I can speak out because I'm the kind of person who believes things will be OK."

She has a quick disarming smile and silky black hair. She wears flip-flops. She speaks passionately about her new job as a nursery school teacher. But she also has deep fears: Will she be able to get married? Will her children be healthy?

She suffers from the only disease that the medical community, including the United Nations Scientific Committee on the Effects of Atomic Radiation, has acknowledged is clearly related to the radioactive iodine that spewed into the surrounding areas after the only nuclear disaster worse than Fukushima's, the 1986 explosion and fire at Chernobyl, Ukraine.

Though international reviews of Fukushima have predicted that cancer rates will not rise as a result of the meltdowns there, some researchers believe the prefecture's high thyroid-cancer rate is related to the accident.

The government has ordered medical testing of the 380,000 people who were 18 years or under and in Fukushima prefecture at the time of the March 2011 tsunami and quake that sank three reactors into

meltdowns. About 38 percent have yet to be screened, and the number is a whopping 75 percent for those who are now between the ages of 18 and 21.

The young woman said she came forward because she wants to help other patients, especially children, who may be afraid and confused. She doesn't know whether her sickness was caused by the nuclear accident, but plans to get checked for other possible sicknesses, such as uterine cancer, just to be safe.

"I want everyone, all the children, to go to the hospital and get screened. They think it's too much trouble, and there are no risks, and they don't go," the woman said in a recent interview in Fukushima. "My cancer was detected early, and I learned that was important."

Thyroid cancer is among the most curable cancers, though some patients need medication for the rest of their lives, and all need regular checkups.

The young woman had one cancerous thyroid removed, and does not need medication except for painkillers. But she has become prone to hormonal imbalance and gets tired more easily. She used to be a star athlete, and snowboarding remains a hobby.

A barely discernible tiny scar is on her neck, like a pale kiss mark or scratch. She was hospitalized for nearly two weeks, but she was itching to get out. It really hurt then, but there is no pain now, she said with a smile.

"My ability to bounce right back is my trademark," she said. "I'm always able to keep going." She was mainly worried about her parents, especially her mother, who cried when she found out her daughter had cancer. Her two older siblings also were screened but were fine.

Many Japanese have deep fears about genetic abnormalities caused by radiation. Many, especially older people, assume all cancers are fatal, and even the young woman did herself until her doctors explained her sickness to her.

The young woman said her former boyfriend's family had expressed reservations about their relationship because of her sickness. She has a new boyfriend now, a member of Japan's military, and he understands about her sickness, she said happily.

A support group for thyroid cancer patients was set up earlier this year. The group, which includes lawyers and medical doctors, has refused all media requests for interviews with the handful of families that have joined, saying that kind of attention may be dangerous.

When the group held a news conference in Tokyo in March, it connected by live video feed with two fathers with children with thyroid cancer, but their faces were not shown, to disguise their identities. They criticized the treatment their children received and said they're not certain the government is right in saying the cancer and the nuclear meltdowns are unrelated.

Hiroyuki Kawai, a lawyer who also advises the group, believes patients should file Japan's equivalent of a class-action lawsuit, demanding compensation, but he acknowledged more time will be needed for any legal action.

"The patients are divided. They need to unite, and they need to talk with each other," he said in a recent interview.

The committee of doctors and other experts carrying out the screening of youngsters in Fukushima for thyroid cancer periodically update the numbers of cases found, and they have been steadily climbing. In a news conference this week, they stuck to the view the cases weren't related to radiation. Most disturbing was a cancer found in a child who was just 5 years old in 2011, the youngest case found so far. But the experts brushed it off, saying one wasn't a significant number.

"It is hard to think there is any relationship," with radiation, said Hokuto Hoshi, a medical doctor who heads the committee.

Shinsyuu Hida, a photographer from Fukushima and an adviser to the patients' group, said fears are great not only about speaking out but also about cancer and radiation.

He said that when a little girl who lives in Fukushima once asked him if she would ever be able to get married, because of the stigma attached to radiation, he was lost for an answer and wept afterward.

"They feel alone. They can't even tell their relatives," Hida said of the patients. "They feel they can't tell anyone. They felt they were not allowed to ask questions."

The woman who spoke to AP also expressed her views on video for a film in the works by independent American filmmaker Ian Thomas Ash.

She counts herself lucky. About 18,000 people were killed in the tsunami, and many more lost their homes to the natural disaster and the subsequent nuclear accident, but her family's home was unscathed. When asked how she feels about nuclear power, she replied quietly that Japan doesn't need nuclear plants. Without them, she added, maybe she would not have gotten sick.

Ash's video interview:

https://www.youtube.com/playlist?list=PLpmdZYCRIZfvTtTE1sbY3ynaGsfDYmNWn

IPPNW : More thyroid cancers (article in German)

https://www.ippnw.de/atomenergie/artikel/de/zahl-der-schilddruesenkrebsfaelle-in.html

Aus dem ATOM-Energie-Newsletter Juni 2016

Zahl der Schilddrüsenkrebsfälle in Fukushima steigt weiter an

14.06.2016

Ungefähr alle 3 Monate werden von der Fukushima Medical University die neuesten Daten der Schilddrüsenuntersuchungen aus Fukushima veröffentlicht. Seit 2011 werden bei allen Menschen, die zum Zeitpunkt des Super-GAUs jünger als 18 Jahre waren alle zwei Jahre die Schilddrüsen untersucht. Bereits jetzt, nach nur fünf Jahren, ist ein signifikanter Anstieg der Neuerkrankungsrate des seltenen Schilddrüsenkrebs zu verzeichnen. Auch die neuen Daten vom Juni 2016 bestätigen diesen Trend. Während die Erstuntersuchung bereits seit 2013 abgeschlossen ist, laufen die Zweituntersuchungen der 381.286 Kinder aktuell noch, so dass es sich bei den neuen Daten weiterhin nur um vorläufige Zwischenergebnisse handelt.

Validierte Ergebnisse liegen bislang nur von 256.670 Kinde0rn vor (67,3 %). Bei 169 von ihnen waren bislang aufgrund schwerer Veränderungen im Ultraschall Feinnadelbiopsien notwendig. Die mikroskopische Aufarbeitung ergab insgesamt 57 neue Krebsverdachtsfälle. 30 dieser Kinder mussten auf Grund von Metastasen oder gefährlich großem Wachstum des Tumors bislang operiert werden, bei allen bestätigte sich die Diagnose "Papilläres Schilddrüsenkarzinom".

Die Gesamtzahl von Kindern mit bestätigten Schilddrüsenkrebsdiagnosen liegt somit mittlerweile bei 131. 101 Fälle wurden im Erstscreening identifiziert, bei den 30 neu diagnostizierten Fällen muss sich der Krebs im Zeitraum zwischen der Erst- und der Zweituntersuchung entwickelt haben. Die Schilddrüsen dieser 131 Kinder mussten operiert werden – in den meisten Fällen aufgrund von Metastasierung (74%) oder zu schnellem Wachstum der Krebsgeschwüre. Bei 41 weiteren Kindern besteht der akute Verdacht auf ein Schilddrüsenkarzinom. Sie warten noch auf eine Operation. Im Zweitscreening wurden bei 60,8% Knoten oder Zysten gefunden. Im Erstscreening lag diese Rate noch bei 48,5%. Das bedeutet, dass bei 40.692 Kindern, bei denen im ersten Screening noch gar keine Schilddrüsenanomalien gefunden wurden, nun Zysten oder Knoten festgestellt wurden – bei 383 von ihnen sogar so große, dass eine weitere Abklärung dringend notwendig wurde. Zusätzlich wurde bei 865 Kindern mit kleinen Zysten oder Knoten im Erst-Screening in der Nachuntersuchung ein so rasches Wachstum festgestellt, dass weitergehende Diagnostik eingeleitet werden musste.

Leider werden die Daten bezüglich der neu diagnostizierten Schilddrüsenkrebsfälle von den Behörden zurückgehalten, so dass nicht bekannt ist, zu welchem Zeitpunkt genau das Erstscreening erfolgte. Geht man davon aus, dass zwischen den beiden Untersuchungen wie vorgesehen 2 Jahre liegen, dann ist von einer jährlichen Neuerkrankungsrate (Inzidenz) von derzeit 5,8 Fällen pro Jahr pro 100.000 Kinder auszugehen. Die Inzidenz für Schilddrüsenkrebs bei Kindern lag in Japan vor den Kernschmelzen von Fukushima bei 0,3 pro 100.000. Dieser Anstieg in der Inzidenz von Schilddrüsenkrebs bei Kindern um mehr als das 19-fache lässt sich nicht mehr mit einem sogenannten "Screening-Effekt" begründen.

In Japan gibt es ein Sprichwort, dass niemand der Nagel sein will, der aus dem Parkett herausragt. Die Betroffenen der Atomkatastrophe sollen ihr Schicksal still schweigend hinnehmen und möglichst nicht öffentlich darüber reden, denn dies würde nur andere Leute verunsichern und die staatliche Mär von der sicheren Atomkraft weiter in Frage stellen. Dennoch gibt es immer wieder mutige Menschen, die sich trauen, die strengen gesellschaftlichen Konventionen zu ignorieren, ihre Geschichte zu erzählen und kritische Fragen zu stellen. Auf dem IPPNW Kongress "5 Jahre Leben mit Fukushima - 30 Jahre Leben mit Tschernobyl" konnten die TeilnehmerInnen ein bewegendes Interview mit einer jungen Frau sehen, die kürzlich in Fukushima an Schilddrüsenkrebs erkrankt war. Nun wurde das Interview auch online veröffentlicht und auch andere Medien berichten mittlerweile über die mutige junge Frau, die sich traut, das gesellschaftliche Tabu zu brechen und offen über ihre Krankheit zu sprechen. Von Dr. Alex Rosen

Weiterlesen

- Video: Interview mit einer Betroffenen des Super-GAUs von Fukushima
- Originaldaten der Schilddrüsenuntersuchungen der Fukushima Medical University
- "Schilddrüsenkrebs in Fukushima Argumente der Atomlobby unter die Lupe genommen"
- IPPNW Bericht "30 Jahre Leben mit Fukushima 5 Jahre Leben mit Tschernobyl"

Rapport disponible (partie sur Fukushima) en anglais et en français

Cynicism and contempt



June 21, 2016

Fukushima 3/11 Breeds Cynicism

by Robert Hunziker

There's an old saying "disasters bring out the best in people," but Fukushima 3/11 of March 11, 2011 has put an exclamation point on cynicism rather than heartfelt concern.

Similar to America's experience of outright lies by its government about the Iraqi Massacre, the blowback of cynicism and contempt bring forth a strain of populism, rejecting establishment, attracting lowly dishonorable politics, as America gooses-up an abomination!

Fukushima's a horror story of hidden agendas, lies, scare tactics, and harsh secrecy laws, yet it's held up as a icon of safe nuclear power by clever mastery of pro-nuke Oceania Newspeak, which, in the novel 1984 penalized "rebellious thoughts" as illegal, similar to Japan's 2013 secrecy law wherein the "act of leaking itself" is bad enough for prosecution, regardless of what, how, or why, off to jail for 10 years. These decadent precepts are hard to accept with a straight face.

However, the day is fast approaching when the pro-nukie crowd, which claims Fukushima 3/11 caused few, if any, major radiation casualties, will be forced to "munch on their own words." As time passes, it becomes ever more obvious that pro-nuke arguments, supporting big fat cumbersome nuclear power plants, metaphorically, hang by fingertips on an electric fence.

As an aside, it is rumored, thru the grapevine in Japan, that hospitals have been instructed to categorize, and officially report, patients' radiation symptoms as "stress-related cases." Hmm! As for pro-nuclear news:

"In spite of this whole theatrical drama the result was...nobody killed or injured, and no indication of long term negative radiation effects on people. So the lesson of Fukushima is that nuclear power is much safer than people thought," Kelvin Kemm, The Lesson of Fukushima – Nuclear Energy is Safe, Cfact, Feb. 16, 2015.

Another example:

"No one has been killed or sickened by the radiation — a point confirmed last month by the International Atomic Energy Agency. Even among Fukushima workers, the number of additional cancer cases in coming

years is expected to be so low as to be undetectable, a blip impossible to discern against the statistical background noise," George Johnson, *When Radiation Isn't the Real Risk*, New York Times, Sept. 21, 2015 And, one more:

"There were no cases of radiation sickness among plant workers, because their radiation doses were too low to produce sickness," Georgetown Radiation Expert, Author Reflects on 5th Anniversary of Fukushima Meltdown, Georgetown University Medical Center, Newswise, Feb. 23, 2016.

Bunk! To the contrary, not only have several independent sources in Japan reported cover ups of Fukushima worker deaths, bodies incinerated with ashes hidden in Buddhist temples, and instances of hair falling out, nose bleeding, and assorted serious ailments unique to radiation poisoning, now several deaths of U.S. sailors may be closely linked to this disaster that a pro-nuclear crowd claims demonstrates how "safe" nuclear power really is.

Thus, begging the question: Are the pro-nukites liars and/or are they being lied to, or what's up? Who knows, and who really cares which, but their published articles, grandstanding nuclear power, are prominent throughout mainstream big time, and small time, magazines and newspapers and hyperspace, Oceania redux.

Whereas, in vivid contrast to this pro-nuke claptrap, one of Japan's most eminent former prime ministers Junichiro Koizumi (2001-06) declares support for the U.S. sailor's TEPCO lawsuit, more on this later. Additionally, PM Koizumi has repeatedly urged PM Abe to halt efforts to restart Japan's nuclear reactors. He is the second former Japanese prime minister, including PM Naoto Kan (2010-11), to plea for a halt to nuclear power. They claim nuclear power is not safe!

Luckily for the nuclear power industry, Abe is the prime minister.

Yet, there's a festering problem, prevalence of radiation-poisoned deaths:

"The ashes of half a dozen unidentified laborers ended up at a Buddhist temple in this town just north of the crippled Fukushima nuclear plant. Some of the dead men had no papers, others left no emergency contacts. Their names could not be confirmed and no family members had been tracked down to claim their remains. They were simply labeled "decontamination troops" — unknown soldiers in Japan's massive cleanup campaign to make Fukushima livable again five years after radiation poisoned the fertile countryside," Mari Yamaguchi, *Fukushima 'Decontamination Troops' Often Exploited, Shunned,* AP & ABC News, Minamisona, Japan, March 10, 2016.

And, here's another:

"It's a real shame that the authorities hide the truth from the whole world, from the UN. We need to admit that actually many people are dying. We are not allowed to say that, but TEPCO employees also are dying. But they keep mum about it," Katsutaka Idogawa, former mayor of Futaba (Fukushima Prefecture), *Fukushima Disaster: Tokyo Hides Truth as Children Die, Become Ill from Radiation – Ex-Mayor*, RT, April 21, 2014.

And, one more:

Mako Oshidori, director of Free Press Corporation/Japan, investigated several unreported worker deaths, and interviewed a former nurse who quit TEPCO: "I would like to talk about my interview of a nurse who used to work at the Fukushima Daiichi Nuclear Power Plant (NPP) after the accident... He quit his job with TEPCO in 2013, and that's when I interviewed him... As of now, there are multiple NPP workers that have died, but only the ones who died on the job are reported publicly. Some of them have died suddenly while off work, for instance, during the weekend or in their sleep, but none of their deaths are reported." "Not only that, they are not included in the worker death count. For example, there are some workers who quit the job after a lot of radiation exposure... and end up dying a month later, but none of these deaths are either reported, or included in the death toll. This is the reality of the NPP workers," (*The Hidden Truth*

about Fukushima by Mako Oshidori, delivered at the international conference Effects of Nuclear Disasters on Natural Environment and Human Health held in Germany, 2014 co-organized by International Physicians for Prevention of Nuclear War).

Still and all, PM Abe insists upon fireside chats with pro-nuke campers whilst reopening nuclear power plants even though Japan survived just fine for five years without. He appears to have ants in his pants, pushing hard to restart the ole nuke plants A-SAP.

Meanwhile, in another universe, former PM Koizumi supports the lawsuit of U.S. sailors aboard the USS Ronald Reagan that participated in Operation Tomodachi, providing humanitarian relief after the March 11th Fukushima meltdowns. Allegedly, they were assured that radiation levels were okay!

"There is no excuse for Tokyo Electric Power Co. not to give the 400 U.S. sailors and marines who are now suing the company the proper facts. Things are looking especially good for the plaintiffs now that former Prime Minister Junichiro Koizumi is backing the lawsuit over the Fukushima radiation," *Support for U.S. Sailor's Tepco Suit,* The Japan Times, June 17, 2016.

"Undoubtedly, Koizumi was convinced to help the sailors because they now suffer from radiation poisoning. He said: 'Those who gave their all to assist Japan are now suffering from serious illness. I can't overlook them," Ibid.

According to lawyers representing the sailors, Charles Bonner & Cabral Bonner & Paul Garner, Esq., Sausalito, CA, seven sailors have already died, including some from leukemia.

With passage of time, the number of plaintiffs and numbers of deaths grows as the latency effect of radiation sets in. Thus, over time, the latency effect works against the pro-nuclear squawk talk that "all's clear."

Initially, the lawsuit represented less than 200 sailors but over time, the latency effect brings forward 400 sailors claiming radiation-poison complications, including leukemia, ulcers, gall bladder removal, brain cancer, brain tumors, testicular cancer, uterine bleeding, thyroid illness, stomach ailments, and premature deaths. These are youngsters.

The lawsuit process has been exacting for the young sailors: "Lindsey Cooper, for example. The woman who started the whole thing was torn apart on a CNN program by atomic energy experts and was later mocked on conservative radio shows," Alexander Osang, *Uncertain Radiological Threat: US Navy Sailors Search for Justice After Fukushima Mission*, Spiegel Online International, Feb. 5, 2015.

As it happens, it's not disasters that turn people's stomachs as much as cover-ups and lying, bringing forth cynicism, contempt, and ultimately populist blowback as people get fed up with establishment politics. It is very likely that, similar to American populist blowback, Japan will meet the same fate.

On second thought:

"There is one thing that really surprised me here in Europe. It's the fact that people here think Japan is a very democratic and free country." (Mako Oshidori, director/Free Press Corporation/Japan, speech in Germany)

Join the debate on Facebook

Robert Hunziker lives in Los Angeles and can be reached at roberthunziker@icloud.com

Koizumi calls for help for participants of Operation Tomodachi

July 6, 2016

Koizumi appeals for help for U.S. vets who assisted in Fukushima

THE ASAHI SHIMBUN

Former Prime Minister Junichiro Koizumi is calling for donations to the relief fund he founded for U.S. veterans who claim their health problems resulted from radioactive fallout after the 2011 nuclear disaster.

Speaking at a news conference on July 5 alongside another former prime minister, Morihiro Hosokawa, Koizumi said of the U.S. veterans: "They went so far to do their utmost to help Japan. It is not the kind of issue we can dismiss with just sympathy."

More than 400 veterans who were part of the Operation Tomodachi mission to provide humanitarian relief after the Great East Japan Earthquake and tsunami have filed a mass lawsuit in California against Tokyo Electric Power Co., operator of the crippled Fukushima No. 1 nuclear plant. They are seeking compensation and an explanation for their health problems.

However, in a 2014 report released by the U.S. Defense Department, no link was established between radiation exposure and their ill health. The reason cited was that only a low level of radiation exposure occurred.

Koizumi, 74, visited some of the plaintiffs in the United States in mid-May. Although Koizumi was a supporter of nuclear power when he was prime minister between 2001 and 2006, he became an outspoken opponent after the triple meltdown at the Fukushima plant.

Koizumi calls for help for participants of Operation Tomodachi (2)



Former Japanese leader starts fund for US vets who helped Fukushima

By Aaron Kidd Stars and Stripes Published: July 7, 2016 http://www.stripes.com/news/former-japanese-leader-starts-fund-for-us-vets-who-helped-fukushima-1.417867

YOKOTA AIR BASE, Japan — A former Japanese prime minister is calling on his countrymen to donate to a fund for U.S. veterans who say they were sickened by radioactive fallout from the 2011 disaster at the Fukushima Dai-ichi nuclear power plant.

"They went so far to do their utmost to help Japan," Junichiro Koizumi told a news conference Tuesday in Tokyo alongside fellow former Prime Minister Morihiro Hosokawa, according to Asahi Shimbun. "It is not the kind of issue we can dismiss with just sympathy."

Hundreds of veterans, claiming a host of medical conditions they say are related to radiation exposure after participating in Operation Tomodachi relief efforts, have filed suit against the nuclear plant's operator, the Tokyo Electric Power Co. A massive earthquake caused a tsunami that swamped a large stretch of northeastern Japan and inundated the power plant. Experts are still dealing with continuing leaks from the reactors.

The suit asserts that TEPCO lied, coaxing the Navy closer to the plant even though it knew the situation was dire. General Electric, EBASCO, Toshiba Corp. and Hitachi were later added as defendants for allegations of faulty parts for the reactors.

Illnesses listed in the lawsuit, which is making its way through the courts, include genetic immune system diseases, headaches, difficulty concentrating, thyroid problems, bloody noses, rectal and gynecological bleeding, weakness in sides of the body accompanied by the shrinking of muscle mass, memory loss, leukemia, testicular cancer, problems with vision, high-pitch ringing in the ears and anxiety. People can donate to the fund, called the Operation Tomodachi Victims Foundation, at Japanese credit

union Jonan Shinyo Kinko, Eigyobu honten branch, account No. 844688.

Donations, accepted through March 31, 2017, will be transferred to a U.S. bank and used, under the management of a judge, to support the veterans, according to a news release from the credit union. *Stars and Stripes staffer Hana Kusumoto contributed to this report.* kidd.aaron@stripes.com

Iodine jelly to be distributed to 110,000 infants

July 14, 2016

Iodine jelly to be handed out to infants living within 30 km of nuclear plants

http://www.japantimes.co.jp/news/2016/07/14/national/iodine-jelly-works-infants-living-within-30-km-japans-nuclear-plants/#.V4fSnKJdeot

Kyodo

The Cabinet Office said it will soon start distributing iodine jelly to infants living within 30 km of nuclear power plants in a bid to protect their thyroids from possible radiation exposure in the event of a nuclear disaster.

According to the office, about 110,000 infants qualify for the iodine jellies.

There are 21 prefectures where the 30-km radius applies. In addition, infants living within three other prefectures — Kanagawa, Osaka and Okayama — which have nuclear fuel processing facilities are also part of the initiative.
Some local governments have been distributing iodine tablets to all residents for over three years, including in a tablet form for infants that would have to be crushed and mixed with syrup in the event of an accident. But to date this had not been in an iodine jelly form.

The local governments will receive about 300,000 packages, starting as early as this fall, which have a shelf life of three years, the Cabinet Office said.

There are two types of iodine jelly: one for babies under 1 month old and another for those over 1 month and up to 3 years.

Taking the jelly or tablets is supposed to stop the thyroid glands from absorbing iodine contained in radiation in the event of a nuclear disaster, as iodine tends to accumulate in the thyroid.

Iodine jelly for babies

August 1, 2016

Iodine jelly for infants to be stocked up for nuclear disasters

http://www.asahi.com/ajw/articles/AJ201608010008.html

By TAKASHI SUGIMOTO/ Staff Writer



Tubes of stable iodine jelly for newborns up to a month old (Provided by Nichi-Iko Pharmaceutical Co.) Fi

Tubes of stable iodine jelly for newborns up to a month old (Provided by Nichi-Iko Pharmaceutical Co.) Tubes of stable iodine jelly for infants, which would prevent radioactive iodine from being absorbed into their systems, will be stockpiled for emergencies in municipalities near nuclear power plants around Japan. The government will start distributing 300,000 doses of emergency iodine stock to the municipalities in a 30-kilometer radius from the nuclear plants for use in the event of major nuclear accidents, the Cabinet Office announced July 13.

There are about 115,000 infants under the age of 3 in those municipalities.

Previously, the emergency plan had called for feeding iodine to infants after evacuation by pharmacists dissolving iodine powder with syrup. However, the procedure has been reviewed as the protective measure could come too late for infants, whose thyroids are more susceptible to even small doses of radioactive iodine.

The new iodine supply for infants is strawberry-flavored jelly in a tube. It can be dissolved in hot water or milk to feed newborns. The efficacy is the same as ordinary iodine tablets, and it has a shelf life of three years.

Nichi-Iko Pharmaceutical Co. in Toyama has started production of the lot after receiving an order from the government. The government will provide financial support for the municipalities to stock up on the volume of jellies they need.

The distribution will start in September and is scheduled to be completed before the end of fiscal 2016.

"Unreasonable cancer diagnosis"

https://www.ippnw.de/atomenergie/gesundheit/artikel/de/unvernuenftige-krebsdiagnosen-in-f.html

"Unvernünftige Krebsdiagnosen" in Fukushima

Wie die Fukushima Medical University ihre eigene Studie sabotiert [in German] In the last bulletin of IPPNW, Dr. Alex Rosen describes how the Fukushima Medical University – who is in charge of the survey on thyroid cancers among Fukushima children – is sabotaging its own work. A manoeuver of manipulation. A professor of the University is going round schools in the Prefecture, carrying this message : "It is important to offer options to participate or not participate in the examination, after parents and children reach the understanding about the meaning and limitations of the examination."

See [in english] : 【Thyroid Cancer in Fukushima】 How the Thyroid Examination Should Be: "Respecting a Wish Not to Participate in the Examination"

http://fukushimavoice-eng2.blogspot.fr/2016/06/thyroid-cancer-in-fukushimahow-thyroid.html?m=1 « ...The article describes how Midorikawa is "accommodating" wishes of those children who do not want to participate in the thyroid examination that might lead to "unreasonable diagnosis of thyroid cancer." The "unreasonableness" is apparently based on the opinion of Fukushima Medical University that the thyroid cancer cases found during the first 4 years after the Fukushima Daiichi nuclear power plant accident are *not* due to radiation effects but simply a result of mass screening. In other words, these diagnoses are considered "unreasonable" because these cancers might never have been found until later in life without the mass screening. »

Fukushima worker's leukemia linked to job

August 19, 2016

Fukushima worker with cancer granted compensation

http://www3.nhk.or.jp/nhkworld/en/news/20160819_25/

Japan's labor ministry has certified that a former worker at the Fukushima Daiichi nuclear plant is eligible for compensation for developing leukemia.

The man in his 50s had worked at the plant for nearly 4 years since April 2011, soon after the compound suffered a meltdown.

The ministry says the man was in charge of mechanical repairs at the plant. It says he developed leukemia in January last year, and applied for workers' compensation.

Ministry officials say the man's radiation exposure has reached 54.4 millisieverts, and that they found no other plausible causes except his work.

He is the 2nd person to be awarded compensation in connection with the accident, following a case last October involving another man with leukemia.

In all, 14 nuclear plant workers in Japan have been granted compensation for work-related cancer.

About 47,000 people have worked at the Fukushima plant in the 5 years since the accident.

Man's leukemia deemed result of his work at Fukushima plant

THE ASAHI SHIMBUN August 20, 2016 at 16:15 JST http://www.asahi.com/ajw/articles/AJ201608200036.html

The labor ministry said a man who developed leukemia by helping in clean-up efforts at the crippled Fukushima No. 1 nuclear power plant is entitled to work-related compensation.

It marks the second such case since the 2011 nuclear disaster.

The Ministry of Health, Labor and Welfare recognized that the cancer was due to exposure to radiation at the facility and said the government will cover his medical expenses.

The ministry said Aug. 19 that the man, who is in his 50s, was involved in removing debris and repairing machinery that handled radioactive water at the plant between April 2011, a month after the triple meltdown triggered by the earthquake and tsunami disaster, and January 2015.

His accumulative radiation exposure was 54.4 millisieverts.

The man worked for a contractor with Tokyo Electric Power Co., the operator of the nuclear complex. He was diagnosed with leukemia in January 2015, and filed application for worker's accident compensation at the Fukushima Labor Standards Inspection Office, a regional branch of the ministry. Under the ministry's guidelines, eligibility for work-related compensation in such cases is granted if leukemia is diagnosed after the person worked for more than a year in an assignment which resulted in an annual dose of more than 5 millisieverts.

The ministry's decision to grant compensation in this case came after a panel of experts offered their opinions on the matter.

The ministry is scrutinizing the cases of five other former workers at the plant who have applied for compensation.

Compensation in such cases was first granted last October after a man in his early 40s was diagnosed with leukemia in January 2014. He was exposed to 16 millisieverts of radiation while he worked at the plant between 2012 and 2013.

Applications for the work-related compensation as a result of the Fukushima disaster are expected to increase in coming years, experts say.

According to TEPCO, those who had annual does of more than 5 millisieverts of radiation during fiscal 2015 numbered 4,952.

Koizumi wants to help radiation-sick US sailors

September 7, 2016

Sick U.S. sailors and Marines who blame radiation get support from Japan's exleader

By: Yuri Kageyama, The Associated Press, September 7, 2016 (Photo Credit: Seaman Nicholas A. Groesch/Navy)

https://www.navytimes.com/articles/sick-us-sailors-and-marines-who-blame-radiation-get-support-from-japans-ex-leader

TOKYO — Several hundred American service personnel who say they became sick from radiation after participating in relief operations for the 2011 tsunami that set off the Fukushima nuclear disaster are now getting high-profile support in Japan.

Junichiro Koizumi, prime minister from 2001 to 2006, told reporters Wednesday he has set up a special fund to collect private donations for the former service members, with the goal of collecting \$1 million (100 million yen) by the end of next March, mainly to help with medical bills.

"I felt I had to do something to help those who worked so hard for Japan," he said at the Foreign Correspondents Club of Japan. "Maybe this isn't enough, but it will express our gratitude, that Japan is thankful."

Former Japanese Prime Minister Junichiro Koizumi speaks at a press conference in Tokyo on Wednesday about American sailors who say they got sick from radiation after taking part in disaster relief for the 2011 tsunami that set off the Fukushima nuclear disaster in his country. Photo Credit: Yuri Kageyama/AP

Koizumi, 74, one of Japan's most popular prime ministers in recent decades, was in San Diego in May to meet with 10 of the former service members, who have joined a class-action lawsuit against Tokyo Electric Power Co., or TEPCO, the utility that operates the Fukushima Dai-ichi nuclear plant.

The lawsuit, filed in 2012, is ongoing, and a California judge has ruled it will proceed. More Navy personnel and Marines are joining the suit, now numbering about 400, according to Koizumi. Some 70,000 Americans took part in Operation Tomodachi, or Friend, flying in aid from an aircraft carrier and other warships off the coast of northeastern Japan.

In the photo at the top of this story, sailors are seen in 2011 aboard the aircraft carrier Ronald Reagan scrubbing the external surfaces on the flight deck to remove potential radiation contamination. The carrier was operating off the coast of Japan providing humanitarian assistance in support of Operation Tomodachi.

Since then, some servicemen and women have become sick with cancers, leukemia, thyroid ailments, brain tumors and other diseases, and they blame radiation. The ships to which they were assigned were in an area of the ocean in the direction of the radioactive plumes spewed from the Fukushima plant.

Aircraft carriers routinely use drinking water from the ocean, which the lawsuit says was contaminated with radiation, and service members showered in and ate food cooked in such water. Some Navy personnel also flew on helicopters to the disaster zone.

TEPCO denies any link between the illnesses and radiation, saying the radiation levels are too low.

Koizumi acknowledged he is not a medical expert, but said he had "common sense." He questioned why so many healthy young men and women were suddenly sick with symptoms often associated with radiation exposure, such as nosebleeds.

The U.S. command has said it was not told immediately about the reactor meltdowns at Fukushima.

The lawsuit alleges that TEPCO withheld key information and caused the Americans to be sent in harm's way.

Seven of those who joined the lawsuit have died.

Koizumi has raised 40 million yen (\$400,000) by charging people 10,000 yen (\$100) to attend his lectures, with help from Pritzker Prize-winning Japanese architect Tadao Ando.

Koizumi said he had been a proponent of nuclear power while prime minister, but living through the Fukushima disaster taught him that what experts said about atomic power being safe, cheap and clean was "all lies."

Even after the nuclear accidents at Three Mile Island in the United States and Chernobyl in Ukraine, the experts insisted that Japan's nuclear plants were different, he recalled.

"I became ashamed how I had believed such lies," Koizumi said. "They said Japan was safe. And that simply was not true."

Japan's ex-leader backs sick US sailors who blame radiation

http://japan.stripes.com/news/japans-ex-leader-backs-sick-us-sailors-who-blame-radiation#sthash.lNTlhfhZ.YQPnhTH7.dpbs

by: YURI KAGEYAMA | . Associated Press | . published: September 08, 2016

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Former Japanese Prime Minister Junichiro Koizumi has started a fund for U.S. veterans who say they were sickened by radioactive fallout from the 2011 disaster at the Fukushima Dai-ichi nuclear power plant. Courtesy of the U.S. Air Force

Koizumi, 74, one of Japan's most popular prime ministers in recent decades, was in San Diego in May to meet with 10 of the former service members, who have joined a class-action lawsuit against Tokyo Electric Power Co., or TEPCO, the utility that operates the Fukushima Dai-ichi nuclear plant.

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- See more at: http://japan.stripes.com/news/japans-ex-leader-backs-sick-us-sailors-who-blame-radiation#sthash.lNTlhfhZ.YQPnhTH7.dpuf

Koizumi still trying to raise money for US sailors

September 7, 2016

Ex-PM Koizumi backs sick U.S. sailors who blame radiation

THE ASSOCIATED PRESS http://www.asahi.com/ajw/articles/AJ201609070067.html Former Prime Minister Junichiro Koizumi is raising money for the hundreds of American sailors who say they got sick from radiation after taking part in relief operations for the 2011 tsunami that set off the Fukushima nuclear disaster.

Koizumi, prime minister from 2001 to 2006, told reporters Wednesday he recently visited San Diego to meet with former military service members, who have begun a class-action lawsuit against Tokyo Electric Power Co., the utility that operates the Fukushima No. 1 nuclear power plant.

Some 70,000 sailors and Marines took part in "Operation Tomodachi," flying in aid from an aircraft carrier and other warships off the coast of northeastern Japan.

Some got seriously sick with cancer and leukemia and blame radiation. TEPCO denies any link between the illness and radiation.

3/11 Children's Fund for Thyroid Cancer

September 9, 2016

Fund started to help Fukushima thyroid cancer patients cover expenses

http://www.japantimes.co.jp/news/2016/09/09/national/fund-started-help-fukushima-thyroid-cancer-patients-cover-expenses/#.V9LNJjVdeos

by Mizuho Aoki

Staff Writer

A group comprising medical and legal experts announced Friday it has launched a fund to provide financial support to children who were diagnosed with thyroid cancer after the 2011 nuclear meltdowns in Fukushima Prefecture.

The group, named 3/11 Children's Fund for Thyroid Cancer, will start accepting donations from Sept. 20, aiming to raise at least ¥20 million. The amount could provide at least ¥50,000 each for 200 to 400 people, it said.

Donated funds will be used primarily to cover medical expenses for thyroid cancer patients in Fukushima and neighboring prefectures, it said. The group will announce more details in November on the criteria that will be used to determine who is eligible to receive the aid before it starts accepting applications.

"They are struggling to pay medical bills," Hiroyuki Kawai, a lawyer and one of the founding members of the group, said at a news conference in Tokyo. "I don't think ¥50,000 will be enough for them, but they are impoverished and are struggling, and even that amount will be of help."

Currently, the medical expenses of children diagnosed with thyroid cancer in Fukushima Prefecture are covered by the prefectural government.

Patients, however, have to initially pay their medical expenses out of pocket until they start receiving refunds from the prefecture, placing great financial strain on many families, another member of the group said.

In addition to that, some parents often have to take leave from work to accompany their children during hospital visits, which also includes paying for travel expenses, they said.

According to the group, although medical treatment for thyroid cancer is covered by public health insurance, the patients still have to pay about ¥10,000 per examination and roughly ¥150,000 for surgical procedures. And if patients have to undergo endoscopic surgery, it would cost them an additional ¥300,000, it said.

Since October 2011, the Fukushima government has conducted thyroid screenings for some 380,000 children who were aged 18 or younger.

By the end of March, a total of 173 children were diagnosed with suspected thyroid cancer. Of those, 131 were confirmed to have the cancer after undergoing surgery.

A panel of experts under the prefectural government said in an interim report released in March that those thyroid cancer cases were unlikely to be radiation-induced.

The panel said the amount of radiation released was lower than in the 1986 Chernobyl accident, where more than 6,000 children were diagnosed with the cancer by 2005, and noted that no cancer was found among children aged under 5 at the time of the disaster who are more vulnerable to radiation exposure.

All's well in Fukushima's paradise

September 10, 2016

Study draws a blank on thyroid cancer and 2011 nuclear disaster

http://www.asahi.com/ajw/articles/AJ201609100031.html

By TERU OKUMURA/ Staff Writer

Researchers have found no correlation between radiation exposure and the incidence rate of thyroid cancer among 300,000 children living in Fukushima Prefecture at the time of the 2011 nuclear disaster. But the team at Fukushima Medical University, which carried out the study, cautioned that the health of local children should continue to be monitored to be more definitive.

"At the present stage, we have found no evidence pointing to any relationship between doses of external radiation resulting from the nuclear accident and the thyroid cancer rate," said Tetsuya Ohira, a professor of epidemiology at the university. "But we need to continue to look into the situation."

The study involves 300,476 children in Fukushima Prefecture who were aged 18 or younger when the Fukushima No. 1 nuclear power plant went into a triple meltdown in March 2011 after the Great East Japan Earthquake and tsunami.

The children underwent the first round of health checks between October 2011 and June 2015. Of the total, 112 were tentatively diagnosed as having thyroid cancer.

There are two types of radiation exposure: external exposure in which a person is exposed to radiation in the atmosphere, and internal exposure in which a person is exposed through the intake of contaminated food, water and air.

For the study, municipalities in the prefecture were classified into three groups based on the estimate for residents' external exposure. That data was obtained during a prefecture-wide health survey carried out after the disaster occurred.

The first group is a zone where people with an accumulative dose of 5 millisieverts or more represented 1 percent or more of the population there. The second group is a zone where people with an accumulative

dose of up to 1 millisievert account for 99.9 percent or more of the population. The third group is a zone that falls into neither of the other two groups.

The scientists looked at the incidence rate for thyroid cancer in each group and concluded there is almost no difference among the groups.

The number of subjects diagnosed with thyroid cancer was 48 per 100,000 people in the first group, 41 in the second group and 36 in the third group.

The finding was similar to a separate survey in which researchers looked into the possible association among 130,000 or so children whose radiation exposure had been estimated.

Hokuto Hoshi, head of a health survey panel set up at the prefectural government after the nuclear disaster, said he will closely follow the results of future studies to offer a more conclusive finding.

"The outcome of the recent study provides one indication in making any overall judgment," said Hoshi, who also serves as vice chairman of the Fukushima Medical Association. "The study is substantial and we are going to pay attention to the findings of further studies."

All's well in Fukushima's paradise (2)

"Prevalence of thyroid cancer for the location groups were 48/100,000 for the highest dose area, 36/100,000 for the middle dose area, and 41/100,000 for the lowest dose area."

http://journals.lww.com/md-

journal/Abstract/2016/08300/Comparison_of_childhood_thyroid_cancer_prevalence.15.aspx#

Abstract: The 2011 Great East Japan Earthquake led to a subsequent nuclear accident at the Fukushima Daiichi Nuclear Power Plant. In its wake, we sought to examine the association between external radiation dose and thyroid cancer in Fukushima Prefecture. We applied a cross-sectional study design with 300,476 participants aged 18 years and younger who underwent thyroid examinations between October 2011 and June 2015. Areas within Fukushima Prefecture were divided into three groups based on individual external doses ($\geq 1\%$ of 5mSv, <99% of 1mSv/y, and the other). The odds ratios (ORs) and 95% confidence intervals of thyroid cancer for all areas, with the lowest dose area as reference, were calculated using logistic regression models adjusted for age and sex. Furthermore, the ORs of thyroid cancer for individual external doses of 1mSv or more and 2mSv or more, with the external dose less than 1mSv as reference, were calculated. Prevalence of thyroid cancer for the location groups were 48/100,000 for the highest dose area, 36/100,000 for the middle dose area, and 41/100,000 for the lowest dose area. Compared with the lowest dose area, age-, and sex-adjusted ORs (95% confidence intervals) for the highest-dose and middle-dose areas were 1.49 (0.36–6.23) and 1.00 (0.67–1.50), respectively. The duration between accident and thyroid examination was not associated with thyroid cancer prevalence. There were no significant associations between individual external doses and prevalence of thyroid cancer. External radiation dose was not associated with thyroid cancer prevalence among Fukushima children within the first 4 years after the nuclear accident.

Comments from the webmaster: There seems to be a mistake in the way the groups were presented in the precedent article

Study draws a blank on thyroid cancer and 2011 nuclear disaster

http://www.asahi.com/ajw/articles/AJ201609100031.html

According to the above abstract, it should read: group 1: 48/100.000 group 2: 36/100.000 group 3: 41/100.000

More importantly, what we are talking about here is the possible effect of **external** radiation. Has the dose of internal radiation (inhaled or ingestedby the children) not been taken ito account at all in this study?

But is the concept of a legal radiation limit acceptable?

September 9, 2016

0.1% of food items exceed radiation limit 5 1/2 years after nuke disaster

http://mainichi.jp/english/articles/20160909/p2a/00m/0na/023000c

A total of 0.1 percent of major food products from the 17 prefectures northeast of Shizuoka Prefecture registered radioactive contamination released in the Fukushima nuclear crisis in fiscal 2015, according to the Ministry of Agriculture, Forestry and Fisheries.

The government has been measuring radioactive contamination levels in the farm and marine products regularly since the meltdown at the Fukushima No. 1 nuclear plant. Immediately after the outbreak of the nuclear disaster in March 2011, radioactive cesium was detected in domesticated rice and beef. However, as the government has taken measures to reduce radiation levels in food items, cesium exceeding the government-set limit is now detected only in wild vegetables, game meat and the like, raising questions over whether to continue the intense inspection regime.

The upper limit for radioactive cesium in food items is 100 becquerels per kilogram. This level was set in April 20112 to satisfy the safety concerns of the public, but is in fact more than 10 times stricter than the European Union standard.

According to the agriculture ministry, 260,538 food items were inspected in fiscal 2015, and 99 percent of farm products had cesium of less than 25 becquerels per kilogram. The tests showed that 264 items, or 0.1 percent of the total, had cesium exceeding the upper limit. Of these, 259 -- or 98 percent -- were wild mushrooms, game meat, freshwater fish and other so-called "hard-to-control items."

The remaining five cases were farmed produce: two cases of rice (in Fukushima Prefecture); two cases of soybeans (in Fukushima Prefecture); and one case of buckwheat (in Iwate Prefecture). The rice happened to be cultivated for private use. The government has been checking all bags of rice grown in Fukushima Prefecture as part of efforts to respond to consumer concerns. Therefore, there have been no cases of rice exceeding the upper cesium limit being shipped.

The agriculture ministry says it is known that plenty of potassium fertilizer can help curb cesium absorption. It was found that the soybeans and buckwheat exceeded the upper limit because they were grown in places that had insufficient potassium fertilizer. None of those products was shipped to market. Besides these fresh foods, 15 processed food items such as dried persimmons had cesium exceeding the upper limit.

Meanwhile, consumers have great concern over ocean fish caught near Fukushima Prefecture partly because of the contaminated water leaking from the crippled Fukushima nuclear power station. The local fishery has voluntarily abstained from operating along the Fukushima Prefecture coast, but fish such as flounder and Pacific cod have been caught in waters off the coast.

Shortly after the outbreak of the nuclear crisis, 6 to 16 percent of the fish caught off the coast exceeded the upper limit, but none of the fish caught in the same area exceeded the limit last year. However, river fish such as mountain trout and Japanese daces continue to register cesium exceeding the upper limit, as radioactive materials in un-decontaminated mountain forests flow into the rivers when it rains. Up to 240 becquerels of cesium was detected last year in freshwater fish in five prefectures including Fukushima, Tochigi and Miyagi.

In the wake of the nuclear accident, there was a spate of cases in which beef cattle which ate rice straw contaminated with cesium had cesium exceeding the safety limit. As such, all beef cattle and beef have been inspected for cesium in the 17 prefectures for the past five years. However, no beef cattle have registered cesium over the legal limit in the past three.

Strontium-90, which is believed to be easily absorbed into bones and cause cancer, was detected in two items. But the density of the radioactive isotope in those items was 0.35 becquerels per kilogram and 0.05 becquerels per kilogram -- about the same as before the nuclear crisis.

The cumulative cost of inspections in the 17 prefectures is about 4 billion yen. An official of the agriculture ministry's Food Safety Policy Division told the Mainichi Shimbun, "The cesium levels of 99.99 percent of vegetables, tubers and roots have dropped below 25 becquerels. There must be farm products for which we can scale down inspections if cultivation management continues to be carried out properly as in the past."

The Consumer Affairs Agency and other organizations hosted a symposium in Tokyo earlier this month on ways of handling radioactive materials in food products and conducting inspections, and to discuss a future inspection system. While a consumer group called on the government to continue the inspection system as the results would help the public feel secure, some stated that the risk of cesium contamination was extremely low and that it would be better to use the funds for fighting disease-causing germs that pose a higher risk.

Unfavorable reputations hurting specific production areas were also reported at the symposium. Osamu Kimijima, a 65-year-old shiitake mushroom farmer from Yaita, Tochigi Prefecture, who joined the symposium as a panelist, said, "We are still suffering from groundless rumors." He cultivated shiitake mushrooms on about 100,000 logs before the nuclear meltdowns, but he abandoned all of them after the nuclear incident and bought new logs from Kyushu.

Kimijima currently uses about 50,000 logs and ships about 7 to 8 metric tons of shiitake mushrooms each year. Only about 5 becquerels of cesium are detected in his shiitake, but the problem is that gate prices are low. Kimijima called for understanding from consumers to dispel groundless rumors.

"The prices are about half of those from other production areas simply because they are produced in Tochigi Prefecture. We are trying to sell them on a negotiation basis at direct sales depots and the like as much as possible," he said. Takeshi Yamasaki, head of the non-profit organization Science of Food Safety and Security and symposium attendee, said, "No matter how you look at it, it is excessive to inspect all cattle. Even if the scope of inspections is scaled down, there will be no change in risks involving beef." He emphasized that it will be enough to conduct monitoring specific to individual situations.

Apart from individual food products, what are radiation exposure levels of entire everyday meals? The Health, Labor and Welfare Ministry purchased 210 items such as rice, vegetables and fish at supermarkets in 13 prefectures including Tokyo, Fukushima and Iwate between September and October of 2015, and calculated the annual dosage of cesium individuals receive from each food product.

The results of the ministry's calculations were 0.0009 to 0.0015 millisieverts. Food products in other prefectures had 0.0006 to 0.0012 millisieverts. After all, there was little difference between them. The cesium dosages are about one-thousandth of the annual exposure of 1 millisievert -- the baseline for safety limits for food products. A health ministry official said, "The risk stemming from receiving cesium from meals as a whole is extremely small."

Fukushima cows' new purpose

September 23, 2016

Fate of tainted Fukushima cows takes scientific twist

http://www.japantimes.co.jp/news/2016/09/23/national/fate-tainted-fukushima-cows-takes-scientific-twist/#.V-YvRzVdeos

by Miki Toda AP

NAMIE, FUKUSHIMA PREF. – In an abandoned Japanese village, cows grazing in lush green fields begin to gather when they hear the familiar noise of the ranch owner's mini-pickup. This isn't feeding time, though. Instead, the animals are about to be measured for how they're affected by living in radiation — radioactivity that is 15 times the safe benchmark. For these cows' pasture sits in the town of Namie, Fukushima Prefecture, a name now synonymous with nuclear disaster.

The area was once a haven for agriculture with more than 3,500 cattle and other livestock. Ranchers who refused a government order to kill their cows continue to feed and tend about 200 of them. The herds won't be used as food; now science is their mission.

Researchers visit every three months to test livestock living within a 20-km (12-mile) radius of the Fukushima No. 1 nuclear plant, where three reactors had core meltdowns after the facility was swamped by a tsunami in March 2011. It is the first-ever study of the impact on large mammals of extended exposure to low-level radiation.

The ranchers are breeders, as opposed to those who raise cattle to sell beef, and tend to be attached to their animals. They treat them almost as if they were children, even giving them names. The research

gives them a reason to keep their beloved cows alive, and to hope that someday ranching might safely return there.

In drizzling rain, doctors and volunteers wearing blue Tyvek protective suits draw the cows into a handmade pen of aluminum pipes. Five to six cows line up in the cage and are tied with a rope around their head and through their nose ring for solid support, so they won't be hurt when the needle draws blood from their neck.

The gentle beasts moo from discomfort. The doctors work swiftly, drawing blood, collecting urine and checking for lumps or swollen lymph nodes. The check-up takes five minutes or less per cow.

Namie, 11 km (7 miles) northwest of the plant, is a ghost town with no prospect of being habitable for years. But 57-year-old Fumikazu Watanabe comes every day to a ranch to feed 30 to 40 cows owned by seven farmers.

"What is the meaning of slaughtering the cows?" Watanabe said at a worn-out barn where healthy cows used to spend the night tending to their calves. The bones of animals that have died litter the ground outside.

"Keeping the cows alive for research purposes means that we can pass on the study to our next generation instead of simply leaving a negative legacy," he said.

The research team, made up of veterinary and radiation experts from Iwate University, Tokai University and Kitasato University, was established a year after the meltdowns. They formed a nonprofit group called Society for Animal Refugee & Environment post-Nuclear Disaster. Members volunteer to take the blood and urine samples and test them.

In 2012, the government ordered all livestock in the restricted area killed for fear that the breeding cows would continue to reproduce, and that cows exposed to radiation would have no sale value.

Keiji Okada, associate professor of veterinary medicine and agriculture at Iwate University, said the government considered it pointless to study the animals, since it couldn't determine how much radiation they were exposed to immediately after the meltdowns.

Okada disagrees. He said the data will help researchers learn whether farmers can eventually work in tainted zones.

"There are no precedent studies of animals being exposed to low-dose radiation, and we have no idea what results we are going to get," he said. "That is exactly why it needs to be monitored."

So far, the animals' internal organs and reproductive functions have shown no significant abnormality particularly linked to radiation exposure, Okada said, but it's too early to draw conclusions about thyroid cancer and leukemia.

Radiation could cause leukemia, but so could mosquitoes, which have infected cattle around the world with bovine leukemia virus.

"Even if we detect leukemia in the cows, we don't know whether it's caused by radiation or if it's a bovine leukemia from a virus," Okada said. "It is this year's objective to be able to differentiate the two."

Many cows have died during the study period, but food shortages have played a role, making it all the more difficult for the doctors to determine causes. The dead cows are dissected and the radiation dosage in their organs is measured.

Is radiation killing the cows, or making them sick? Okada said the research team is working toward reaching a conclusion by March. The team worries that the study results could spark overly broad fears that the region will no longer be habitable or fit for agriculture.

Ultimately, Okada said, the team believes that further monitoring of the animals will show under what conditions it is safe to raise livestock exposed to low-level radiation, and how best to deal with such a leak should it happen again.

Yukio Yamamoto, owner of the large Yamamoto Ranch surrounded by a mountain, a river and a vast plain, travels three hours round-trip from his temporary home to feed his remaining cows.

Yamamoto initially followed government orders to kill his cattle. He watched a mother cow being killed while a calf was still suckling on its milk, and then the calf following that.

"The cows are my family. How do I dare kill them?" Yamamoto said. "If there is a God, I'm sure some day we would be rewarded for the sacrifice we are making."

He hopes one day to see his barn come to life again, filled with 100 cows and calves cared for by his children and grandchildren.

September 23, 2016

Cows in Fukushima radiation zone find new purpose: science

http://mainichi.jp/english/articles/20160923/p2g/00m/0fe/009000c



In this Aug. 27, 2016 photo, Yukio Yamamoto, owner of the large Yamamoto Ranch, looks at his cow after its medical check-up at his ranch in Namie town, 12 kilometers (7.5 miles) north of the crippled Fukushima Dai-ichi nuclear power plant. Ranchers who refused a government order to kill their cows continue to feed and tend about 200 of them as part of a study by researchers who formed the nonprofit Society for Animal Refugee & Environment post Nuclear Disaster. (AP

In this Aug. 27, 2016 photo, Yukio Yamamoto, owner of the large Yamamoto Ranch, looks at his cow after its medical check-up at his ranch in Namie town, 12 kilometers (7.5 miles) north of the crippled Fukushima Dai-ichi nuclear power plant. Ranchers who refused a government order to kill their cows continue to feed and tend about 200 of them as part of a study by researchers who formed the nonprofit Society for Animal Refugee & Environment post Nuclear Disaster. (AP Photo/Shizuo Kambayashi) NAMIE, Japan (AP) -- In an abandoned Japanese village, cows grazing in lush green plains begin to gather when they hear the familiar rumble of the ranch owner's mini-pickup. This isn't feeding time, though. Instead, the animals are about to be measured for how they're affected by living in radiation -radioactivity that is 15 times the safe benchmark. For these cows' pasture sits near Fukushima, a name now synonymous with nuclear disaster.

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Why don't you totally eliminate nukes?

October 3, 2016

Japan Political Pulse: A helping hand following radiation misfortune

http://mainichi.jp/english/articles/20161003/p2a/00m/0na/021000c

Recently former Prime Minister Junichiro Koizumi, 74, was seen talking to 62-year-old Prime Minister Shinzo Abe. Their encounter was recorded on a photo page of the Sept. 29 issue of the weekly magazine Shukan Bunshun.

• [Fukushima & Nuclear Power]

The scene was Aoyama Funeral Hall in Tokyo, where they had attended the Sept. 15 funeral of former Liberal Democratic Party (LDP) Secretary-General Koichi Kato and were waiting for their cars to arrive. For about 90 seconds the "master and disciple" stood side by side. Below are the details of Koizimi's comments and the prime minister's reaction, which didn't appear in Shukan Bunshun.

Koizumi: "Why don't you totally eliminate nuclear power plants?"

Abe: (Faint smile, bow)

Koizumi: "Having zero nuclear power plants is cheaper. Why don't you understand such a simple thing? It's all lies, what the Ministry of Economy, Trade and Industry is saying. The things advocates of nuclear power plants are saying -- they're all lies. Don't be fooled."

Abe: (Wry smile, bows again, and with head kept low heads to official vehicle)

Koizumi is currently pouring his efforts into a fund to support those who say they were affected by radiation during "Operation Tomodachi," a U.S. Armed Forces operation to support Japan in the wake of the March 2011 Great East Japan Earthquake and tsunami.

Over 400 soldiers from the USS Ronald Regan aircraft carrier and accompanying ships complained of illhealth after helping in rescue efforts following their urgent dispatch to the seas off Fukushima Prefecture in the wake of the earthquake, tsunami and ensuing meltdowns at the Fukushima No. 1 Nuclear Power Plant. Some of them are said to have died from causes including leukemia.

The aircraft carrier fleet worked intermittently in a radiation plume from the stricken power plant between March 13 and 17, 2011. After returning home from Japan, a stream of soldiers developed ailments including brain tumors and thyroid cancer. The nuclear plant's operator, Tokyo Electric Power Co. (TEPCO), and the Japanese and U.S. governments acknowledged that they had been exposed to lowlevel radiation, but do not accept a causal relationship between exposure and their illnesses.

Koizumi learned that some soldiers had left the military at a young age, had no insurance and couldn't pay their medical fees. It was in May this year that the former prime minister traveled to the United States and directly inquired about their circumstances.

Former soldiers earlier filed a lawsuit against parties including TEPCO, and oral arguments over whether jurisdiction of the case should lie in Japan or the United States were heard in an appeals court in California on Sept. 1. At the time, a Japanese government adviser is said to have supported an agent for TEPCO, stating that radiation exposure is the responsibility of the U.S. military.

Koizumi, who read a note on the hearing (carried in the Sept. 9 issue of the magazine Shukan Kinyobi), responded immediately.

"This is embarrassing. They were relief efforts for Japan, right? The American judge is said to have been appalled," he was quoted as saying.

On July 5, Koizumi appeared in a news conference with figures including former Prime Minister Morihiro Hosokawa, 78, and Tsuyoshi Yoshiwara, 61, an adviser at The Johnan Shinkin Bank, to announce the start of fundraising activities to help the U.S. soldiers. Koizumi himself approached the Japan Business Federation (Keidanren) but was turned away on the grounds that TEPCO is a member of the federation. Reinforcements have nevertheless appeared on the funding front. Japanese architect Tadao Ando, 75, posed the following question: "Mr. Koizumi, will you come to Osaka and give a lecture? I'll assemble 1,000 people. With a fee of 10,000 yen per person, that'll bring in 10 million yen."

When Koizumi appeared at the lecture in August, 1,300 people turned up. The same style of lecture is due to be held in Tokyo on Nov. 16, organized by the head of a group of managers of small- and medium-sized enterprises. Additionally, the president of a solar power generation company provided 10 million yen. Through these efforts, the total has climbed to 50 million yen. Koizumi apparently hopes to amass 100 million yen by next spring.

The connection between radiation exposure and the development of illness is delicate. There's a possibility of developing cancer, but there are doubts about whether a person would suddenly die, experts say.

On Sept. 7, Koizumi spoke at the Foreign Correspondents Club of Japan in Tokyo's Yurakucho district. He was asked if it was responsible to talk about damage from radiation exposure without presenting scientific evidence.

Below is the gist of his reply:

"I'm no longer a member of the government. I'm a civilian. There are people who are actually suffering. It's common sense for me to support them."

Fundraising and service instead of criticism; denial of the perception of saying, "Radiation exposure is the responsibility of the U.S. military" to protect nuclear power policies ... I support this form of common sense from our former prime minister. (By Takao Yamada, Special Senior Writer)

Support for suffering US soldiers

October 11, 2016

Japan Political Pulse: 'Operation Tomodachi' members need support amid radiation fears

Many readers have offered support for a lawsuit filed by former U.S. servicemen and others claiming they were affected by radiation during "Operation Tomodachi," a U.S. Armed Forces operation to assist Japan in the wake of the March 2011 Great East Japan Earthquake and tsunami. These readers reacted to last week's installment of the Japan Political Pulse column that mentioned former Prime Minister Junichiro Koizumi's activities to support the lawsuit.

- 【Related】 Japan Political Pulse: A helping hand following radiation misfortune
- [Fukushima & Nuclear Power]

It has not yet been proven if there is a causal relationship between so-called second-hand exposure to radiation and health problems. Critics say emotional support for those who claim their health was affected by indirect exposure to radiation without scientific proof is irresponsible. Emotional support is important but objective facts should also be clarified.

Eight former U.S. soldiers who participated in Operation Tomodachi (friend) launched the lawsuit in California in December 2012. The number of plaintiffs has since surpassed 450.

In March 2011, 16 U.S. military vessels engaged in the operation, including the aircraft carrier Ronald Reagan, were exposed to radiation off Fukushima Prefecture. These vessels and the servicemen aboard them were engaged in the operation amid a radioactive plume from the tsunami-hit Fukushima No. 1 Nuclear Power Plant.

According to the lawsuit, the plaintiffs have been suffering from such illnesses as leukemia, testis cancer, colon bleeding, ringing in their ears and a decline in eyesight since they returned home after participating in the operation.

They are suing Tokyo Electric Power Co., the operator of the nuclear plant, Toshiba Corp., Hitachi Ltd., and other Japanese and U.S. atomic power station manufacturers, demanding that a 1 billion dollar (some 100 billion yen) fund be set up to help the plaintiffs receive medical examinations and treatment.

The plaintiffs are hoping that their suit will be tried in the United States, while TEPCO is demanding that the case be heard in Japan.

In June 2015, TEPCO's appeal over the jurisdiction over the trial was accepted, and a state appeal court is deliberating on the matter.

The aforementioned development of the case is based on interviews with former Prime Minister Koizumi, who met with some of the plaintiffs, and officials at the Foreign Ministry and the Agency for Natural Resources and Energy. TEPCO declined to comment on the matter on the grounds that the trial is ongoing. Under the civil discovery system established by U.S. law, those involved in civil lawsuits can be forced to disclose evidence. Those who refuse to comply could be imprisoned or slapped with a huge fine for contempt of court. Critics say TEPCO demands that the suit be tried in Japan for this reason. One cannot help but wonder what the company does not want to be exposed. There is a possibility that documents carrying information on the cause of the nuclear plant accident, TEPCO's initial response to the

disaster and observed data on aerial radiation levels -- which is different from what the utility has explained -- could be hidden. However, this is just a presumption without basis.

There is also an amicus curiae (court adviser) system, under which individuals or organizations appointed by courts provide information or express opinions on legal matters relating to individual court cases.

A former legislator has phoned the Mainichi Shimbun and raised questions about last week's installment of this column, which quoted a magazine article as saying that an adviser from the Japanese government stated that U.S. forces are responsible for servicemen's exposure to radiation while engaging in Operation Tomodachi.

Law360, a U.S.-based website specializing in information on legal affairs, lists the "Government of Japan" as the entity to which one of those who appeared in the oral proceeding on the lawsuit on Sept. 1 as court advisers belongs.

A senior official of the Agency for Natural Resources and Energy said, "The government isn't aware of such a figure." However, it would be no surprise if an adviser were to appear in court and develop a persuasive legal theory to pursue ways to evade legal responsibility on behalf of defendants.

Jonathan Woodson, assistant secretary of defense for health affairs who examined plaintiffs' assertions in 2014 at the request of U.S. Congress, stated there is no objective evidence that the plaintiffs' health hazard was caused by their exposure to radiation.

The March 13, 2016 issue of Stars and Stripes, a U.S. daily specializing in U.S. military information, covered Woodson's report along with a comment by Shinzo Kimura, associate professor of radiation hygiene at Dokkyo Medical University, that the possibility that the plaintiffs' symptoms were caused by their radiation exposure cannot be ruled out.

There is a long way to go before the causes of the plaintiffs' illnesses can be clarified. However, there is no denying that many people are suffering from illnesses after participating in Operation Tomodachi. Donations to a fundraising drive launched by former Prime Minister Koizumi are accepted at the Tokyobased Johnan Shinkin Bank. Koizumi will deliver a speech on the matter at a lecture meeting in Tokyo on the evening of Nov. 16. Those who want to listen to his speech are required to make reservations by calling the Japan Assembly for Nuclear Free Renewable Energy at 03-6262-3623. The admission fee of 10,000 yen per person will be fully donated to former U.S. soldiers who are suffering from illnesses. (By Takao Yamada, Special Senior Writer)

Children's thyroid cancers not a result of overdiagnosis/screening

from Beyond Nuclear (www.beyondnuclear.com)

After Fukushima explosions, health impacts continue to surface

A recently hosted conference and unrelated published paper each highlight impacts of radiation exposure during early life. At the "5th International Expert Symposium in Fukushima on Radiation and Health" held in Fukushima City, Japan, an increase of thyroid cancers among children was blamed on overdiagnosis and increased screening. However, when examining the cancer cases in detail, most had invaded other places like lungs, lymph nodes and trachea. This indicates that their surgical removal was medically necessary -- not a result of overdiagnosis or screening. Thanks to Fukushima Voice for translating information from this conference and assessing the data.

In areas contaminated with radioactive substances from the Fukushima nuclear disaster, perinatal mortality started to increase after the releases began despite a previous downward trend. These results are consistent with findings in Europe after Chernobyl. The researchers suggest "intensified research" is urgently needed on the association of natural and artificial environmental radiation with detrimental genetic health effects at the population level.

see:

http://fukushimavoice-eng2.blogspot.fr/2016/10/clinicopathological-findings-of.html

IPPNW on the latest figures on thyroid cancers in Fukushima children

Fukushima nach 5 Jahren - neue Erkenntnisse zum Schilddrüsenkrebs

12.10.2016

https://www.ippnw.de/atomenergie/gesundheit/artikel/de/fukushima-nach-5-jahren-neue-erk.html

Seit 2011 werden bei allen Bewohnern der Präfektur Fukushima, die zum Zeitpunkt des mehrfachen Super-GAUs im März 2011 jünger als 18 Jahre alt waren in zwei-jährlichen Abständen die Schilddrüsen untersucht. Während die Erstuntersuchungen zwischen Oktober 2011 und März 2014 liefen, erfolgten die Zweituntersuchungen von April 2014 bis April 2016 und die dritte Runde der Untersuchungen seit Mai 2016. Aus der dritten Untersuchungsrunde liegen bislang noch keine Ergebnisse vor, so dass sich die aktuelle Auswertung auf die Ergebnisse der ersten beiden Untersuchungsrunden beschränken muss. Von den anvisierten 381.281 betroffenen Kindern wurden in der ersten Runde insgesamt 300.476 untersucht, in der zweiten Runde lediglich 270.378 (70,9%). Das Schicksal der übrigen rund 110.000 Kinder, immerhin knapp 30% der betroffenen Bevölkerung, wird in keiner wissenschaftlichen Studie erfasst. Sie sind entweder unbekannt verzogen, wurden durch die restriktive Handhabung der Untersuchungen an einer Teilnahme am Screening gehindert oder lehnten die Untersuchung ab. Gerade diese letzte Variante wird seit kurzem von der Fukushima Medical University sogar aktiv unterstützt (siehe IPPNW ATOM-Energie-Newsletter August 2016).

Besorgniserregend ist die Tatsache, dass im Zweitscreening bei 59,8% Knoten oder Zysten gefunden wurden. Im Erstscreening lag diese Rate noch bei 48,5%. Das bedeutet, dass bei 42.422 Kindern, bei denen im ersten Screening noch gar keine Schilddrüsenanomalien gefunden wurden, im Zweitscreening Zysten oder Knoten festgestellt wurden – bei 393 von ihnen sogar so große, dass eine weitere Abklärung dringend notwendig wurde. Zusätzlich wurde bei 935 Kindern mit kleinen Zysten oder Knoten im Erst-Screening in der zweiten Untersuchung ein so rasches Wachstum festgestellt, dass weitergehende Diagnostik eingeleitet werden musste. Dies sind allesamt beunruhigende Zahlen, zeigen sie doch eine gewisse Dynamik in der Morbidität zwischen dem Erst- und Zweitscreening.

Bei insgesamt 721 Kindern waren bislang aufgrund schwerer Veränderungen in der Ultraschalluntersuchung Feinnadelbiopsien notwendig (545 in der ersten Runde, 176 in der zweiten Runde). Die mikroskopische Aufarbeitung ergab insgesamt 175 Krebsverdachtsfälle (116 in der ersten Runde, 59 in der zweiten Runde). 136 dieser Kinder mussten bislang auf Grund von Lymphknotenmetastasen (22,4%), Fernmetastasen (2,4%) oder gefährlich großem Wachstum des Tumors (Prozentsatz unbekannt) operiert werden (102 in der ersten Runde, 34 in der zweiten Runde). In etwa 91% der Fälle wurde nur ein Schilddrüsenlappen entfernt, in etwa 9% der Fälle musste die gesamte Schilddrüse entfernt werden. Bei 135 Kindern (99,3%) bestätigte sich in der feingeweblichen Aufarbeitung der Krebsverdacht. In 133 Fallen fand man histologisch ein "Papilläres Schilddrüsenkarzinom", in zwei Fällen ein "anderweitiges" oder "schlecht differenziertes" Schilddrüsenkarzinom. In einem Fall zeigte sich ein gutartiger Tumor. Bei 39 weiteren Kindern besteht weiterhin der akute Verdacht auf ein Schilddrüsenkarzinom (14 aus der ersten Runde, 25 aus der zweiten Runde). Sie warten noch auf eine Operation.

Bei den 102 Krebsfällen der ersten Screening-Runde lässt sich nicht eindeutig klären, in welchem Umfang diese auf den sogenannten Screeningeffekt zurückzuführen sind, also Diagnosen darstellen, die sich eigentlich erst später im Leben zeigen würden, durch die Reihenuntersuchungen klinisch gesunder Probanden aber frühzeitig erkannt wurden. Die 34 neu diagnostizierten Krebsfälle aus der zweiten Runde müssen sich allerdings im Zeitraum zwischen der Erst- und der Zweituntersuchung entwickelt haben. Geht man davon aus, dass zwischen der Erst- und Zweituntersuchung wie vorgesehen jeweils 2 Jahre liegen, dann ist von einer jährlichen Neuerkrankungsrate (Inzidenz) von derzeit 6,3 Fällen pro Jahr pro 100.000 Kinder auszugehen (34 Neuerkrankungen in einer Population von 270.327 Kindern über einen Zeitraum von 2 Jahren). Die Inzidenz für Schilddrüsenkrebs bei Kindern lag in Japan vor den Kernschmelzen von Fukushima bei 0,3 pro 100.000. Dieser Anstieg in der Inzidenz von Schilddrüsenkrebs bei Kindern um mehr als das 20-fache lässt sich nicht mehr mit einem sogenannten "Screening-Effekt" begründen.

Mittlerweile wurde zudem bekannt, dass es bereits die ersten Rückfälle gegeben hat, also Patienten, deren Krebs operiert wurde, die nun in den Folgeuntersuchungen erneut Krebsgeschwüre hatten. Professor Shunichi Suzuki der Fukushima Medical University sprach in einem Internationalen Symposium in Fukushima Stadt am 26. September 2016 von einer Rückfallrate von "einigen Prozent". Diese Informationen belegen erneut, dass es sich beim kindlichen Schilddrüsenkarzinom zwar prinzipiell um eine gut behandelbare Krankheit handelt, dass Komplikationen jedoch nie ausgeschlossen werden können. Neben dem lebenslangen Stigma, welches eine Krebserkrankung immer mit sich bringt, der Notwendigkeit einer dauerhaften Medikamenteneinnahme und regelmäßiger ärztlichen Untersuchungen stellt die Sorge um Rückfälle und lebensbedrohliche Komplikationen eine nicht zu vernachlässigende Belastung der betroffenen Patienten und deren Familien dar, die in den Statistiken und Pressekonferenzen der Fukushima Medical University schlichtweg ignoriert wird.

Zusammenfassung der Daten zu Schilddrüsenkrebs (Stand September 2016):

Quellen:

- "The 24th Prefectural Oversight Committee Meeting for Fukushima Health Managemant Survey" 15.09.2016
- "Thyroid Cancer: A Few Percent Recurred After Surgeries". NHK News. http://archive.is/XSVmR#selection-2965.1-2983.13. (Englische Übersetzung)

Call to end Govt.'s legal support of TEPCO

November 2, 2016

http://www.japantimes.co.jp/community/2016/11/02/voices/japans-government-stay-u-s-sailors-lawsuit-tepco/#.WBn6-smDmos

Japan's government should stay out of U.S. sailors' lawsuit against Tepco

Dear Prime Minister Shinzo Abe,

Let me first acknowledge that after four long years of silence, the Japanese government has finally taken a position regarding the lawsuit filed against Tokyo Electric Power Co. in the U.S. by more than 450 American sailors, marines and civilians who were on board the USS Reagan and accompanying military ships off the coast of Tohoku after 3/11.

These young people experienced serious health problems resulting from, they allege, radiation exposure while participating in Operation Tomodachi, the U.S. military's humanitarian rescue mission launched in response to the Great East Japan Earthquake, tsunami and multiple meltdowns at the Fukushima No. 1 nuclear plant on March 11, 2011.

While the Japanese government's acknowledgement of the suit is welcome, the unconditional support it has given to Tepco is a matter of deep concern. Even now, U.S. service personnel find themselves prevented from seeking justice because Tepco, with the support of the Japanese government, is doing its utmost to ensure the case will never be heard in an American court.

The Japanese government submitted an amicus curiae brief to the Ninth Circuit Court of Appeals on Feb. 3. An amicus curiae (friend of the court) brief is one presented by a party not directly involved in the suit in the hope of influencing the outcome. The brief contains two points:

1. "The Government of Japan has developed a comprehensive system to ensure compensation for victims of the Fukushima Nuclear Accident."

2. "Damage claims brought in tribunals outside of Japan threaten the continuing viability of the compensation system established by the Government of Japan."

Examining the first point, if the Japanese government truly had "a comprehensive system to ensure compensation for victims," there would be no need for the U.S. service members' lawsuit. Yet, as you know, the Japanese government and its subsidiaries have, to date, not paid a single yen to any non-Tepco-related victim of radiation exposure from Fukushima No. 1. This includes, as of March this year, a total of 173 children from the prefecture who underwent surgery after being diagnosed with suspected thyroid cancer, 131 of whom were confirmed to have had cancer.

If the Japanese government will not admit that the suffering of its own children was caused by radiation exposure, how confident can young Americans be that the apparently radiation-induced injuries they experienced will be recognized as such, let alone compensated for, in Japan?

Further, at least seven of these previously healthy young Americans have already died and many others are too ill to travel to Japan even if they could afford to, let alone reside in this country during lengthy legal procedures, which typically take years to resolve. This is not to mention the prospect of expensive legal costs, including for court fees, hiring Japanese lawyers, translation of relevant documents, etc. And let us never forget, Prime Minister, it was the Japanese government that requested the assistance of these American military personnel.

As for the second point above, I agree the U.S. military personnel's lawsuit threatens "the continuing viability of the compensation system established by the Government of Japan." For example, if a U.S. court were to ascribe the plaintiffs' illnesses to radiation exposure, how could the Japanese government continue to claim that none of the many illnesses the children and adults of Fukushima presently experience are radiation-related? The American service personnel truly serve as "the canary in the coal mine" when it comes to demonstrating the damaging effects of radiation exposure. Moreover, this canary is out of the Japanese government's ability to control.

Let us further suppose that an American court were to award \$3 million per person as compensation for the deaths, currently standing at seven, of the military personnel who were irradiated. By contrast, the Japanese government continues to deny compensation, for radiation-induced illnesses let alone deaths, to its own citizens. This would surely impact the "viability" (not to mention reputation) of the Japanese government in its ongoing denial of radiation-related injuries to non-Tepco employees.

Let me close by noting that there is one Japanese political leader who has accepted personal responsibility for the injuries inflicted on American service personnel. I refer to former Prime Minister Junichiro Koizumi who, after meeting with injured servicemen and women in San Diego in May, initiated a fund to meet as many of the medical needs of these sailors and marines as possible.

Fortunately, thanks to the support of thousands of ordinary Japanese, he has already raised \$700,000 toward his \$1 million goal. With tears in his eyes, Koizumi explained that he could not ignore the suffering of hundreds of formerly healthy young Americans who willingly put themselves at risk in order to render aid to the Japanese people.

Prime Minister Abe, I call on you to end the Japanese government's unconditional legal support of Tepco. Further, if the Japanese government has a conscience, please immediately provide medical aid and compensation to the hundreds of American victims of Operation Tomodachi.

BRIAN VICTORIA

Kyoto

Send your comments or submissions (addressed to local or national politicians, officials or other authorities) here: community@japantimes.co.jp

Should victims have to depend on charity?

Das Geschäft mit dem Krebs

Ein Meinungsartikel von Dr. Alex Rosen https://www.ippnw.de/atomenergie/gesundheit/artikel/de/das-geschaeft-mit-dem-krebs.html

11.10.2016

Der Umgang mit Betroffenen einer Katastrophe sagt viel mehr über eine Gesellschaft aus als statistische Daten wie Bruttosozialprodukt oder Wirtschaftswachstum. Seit 2011 werden die Schilddrüsen aller Bewohnern der Präfektur Fukushima, die zum Zeitpunkt des Super-GAUs von Fukushima unter 18 Jahre alt waren, regelmäßig auf Krebs- und Krebsvorstufen untersucht. Während die Kosten für Kinder unter 18 Jahren von der Regierung generell gedeckt werden, müssen die Familien diese zunächst für einige Zeit vorstrecken und bekommen sie erst mit einer Verzögerung zurück erstattet. Zudem wird im japanischen Gesundheitswesen generell verlangt, dass ab dem 18. Lebensjahr 30% aller medizinischen Behandlungskosten von den Patienten selbst getragen werden.

Dies gilt pikanterweise auch für die Schilddrüsenuntersuchungen bei Menschen, die radioaktivem Niederschlag ausgesetzt wurden, sowie für eventuell notwendige Biopsien, Operationen oder Langzeittherapien. Für eine Schilddrüsenuntersuchung fallen für die Betroffenen somit Kosten von ca. 10.000 Yen (ca. 87 Euro) an, für eine Operation zwischen 150.000 und 300.000 Yen (zwischen 1.300 und 2.600 Euro). Für viele der betroffenen Familien, die durch Evakuierung und den Verlust ihrer Heimat und Arbeit ohnehin schwer getroffen sind, sind diese Kosten nicht tragbar und verschärfen die soziale Abwärtsspirale von Verschuldung und Verarmung, in der sich viele von ihnen bereits befinden. Angesichts der Tatsache, dass im Zuge der Atomkatastrophe von 2011 von Seiten der Behörden bewusst auf die Ausgabe von Jodtabletten verzichtet wurde und Millionen von Menschen somit radioaktivem Jod ausgesetzt wurden, hat die Präfektur Fukushima letztes Jahr begonnen, auch den mittlerweile über 18 Jahre alten Patienten die Kosten für die Schilddrüsenuntersuchungen zu erstatten. Allerdings dauern auch diese Erstattungen Zeit und die Familien müssen die Kosten zunächst vorstrecken. Zudem sind Erstattungen nur möglich, wenn die Patienten sich in den offiziellen Einrichtungen der Fukushima Medical University untersuchen lassen. Jegliche Form von Zweitmeinung außerhalb des staatlich kontrollierten Systems würde so zu finanziellen Mehrbelastungen führt. Auch werden Begleitkosten, wie der Transport zu den Untersuchungen oder Kompensationen von Lohnausfällen der Eltern nicht berücksichtigt.

Da diese Kosten und die komplexen Erstattungsverfahren viele Familien weiterhin vor große finanzielle Probleme stellt, hat sich nun zusätzlich eine karitative Nicht-Regierungs-Organisation gegründet. Der "3/11 Children's Fund for Thyroid Cancer" will hilfsbedürftigen Familien in Fukushima bei den Kosten der Untersuchungen und Behandlungen selbst, wie auch bei eventuell anfallenden Begleitkosten unterstützen. Spenden aus der Bevölkerung sollen ab sofort entgegen genommen werden und man hofft, mehrere hundert Betroffene mit Beträgen ab 50.000 Yen (ca. 430 Euro) unterstützen zu können. Der Umgang mit Betroffenen einer Katastrophe sagt viel mehr über eine Gesellschaft aus als statistische Daten wie Bruttosozialprodukt oder Wirtschaftswachstum. Der Untersuchungsausschuss des japanischen Parlaments kam nach dem Super-GAU von Fukushima zu dem Schluss, dass die Atomkatastrophe "menschengemacht" war – und dass die Atomindustrie, die Aufsichtsbehörden und die Politik, die allesamt die Gefahren der Atomenergie und der grassierenden Korruption in der japanischen Atomwirtschaft jahrzehntelang ignoriert haben, eine bedeutende Mitschuld tragen. Angesichts des institutionellen Versagens der zuständigen Behörden und der anhaltenden Verschleierung des wahren Ausmaßes der Atomkatastrophe ist es besonders bitter, dass die vom radioaktiven Niederschlag betroffenen Familien, deren Angehörige ein signifikant erhöhtes Erkrankungsrisiko davontrugen, nun auch mit den finanziellen Lasten dieser Erkrankungen allein gelassen werden. Es kann nicht sein, dass in einem der reichsten Länder, mit einem der fortschrittlichsten

Gesundheitswesen der Welt, Menschen die durch staatliches Versagen zu Schaden gekommen sind, von barmherzigen Spenden und dem Engagement einiger Freiwilliger abhängig gemacht werden. Eine vernünftige Aufarbeitung der ökologischen, gesundheitlichen, psychologischen, sozialen und wirtschaftlichen Folgen der Atomkatastrophe ist in Japan dringend notwendig, wie auch eine Kehrtwende im Umgang mit denjenigen, die von der Atomkatastrophe und der freigewordenen Radioaktivität betroffen wurden und weiterhin in Gegenden mit erhöhten Strahlenwerten leben müssen. see also : http://www.fukushima-is-still-news.com/2016/09/3-11-children-s-fund-for-thyroid-cancer.html

Human Rights Now on Fukushima (August 2016)

August 30, 2016

"Fukushima: Human Rights Situation of people Affected by the Fukushima Dai-ichi Nuclear Power Station Accident"/Written Statement submitted to 33rd Human Rights Council session

http://hrn.or.jp/eng/news/2016/08/30/fukushima-human-rights-situation-of-people-affected-by-the-fukushima-dai-ichi-nuclear-power-station-accident-written-statement-submitted-to-33rd-human-rights-council-session/

Human Rights Now has submitted a written statement **"Fukushima: Human Rights Situation of People** Affected by the Fukushima Dai-ichi Nuclear Power Station Accident" to the 33rd session of Human

Rights Council, which is going to be held in Geneva from September 13, 2016.

HRN written statement on Fukushima for 33rd HRC [PDF]

We will deliver an oral statement in the HRC session in Geneva as well.

Fukushima: Human Rights Situation of People Affected by the Fukushima Dai-ichi Nuclear Power Station Accident

The 2011 accident at the Fukushima Dai-ichi Nuclear Power Station released an estimated 168 times more radiation than the atomic bomb dropped on Hiroshima over large regions of northwest Japan, and it continues to pose serious risks to the environment and residents' life and health.

Human Rights Now (HRN), a Tokyo-based international human rights NGO, continues to observe risks to people affected by the accident and insufficiencies by the Japanese government to protect their rights to life and health, particularly those most vulnerable to radiation and the displacement situation, such as infants, pregnant women, and the elderly.

27. The Current Situation of Affected People

As of 14 July 2016, approximately 148,000 evacuees from Fukushima Prefecture remain displaced, with about 47,850 living in nearby temporary housing, and the rest in other areas of Japan.[1] Evacuation was organized by the Japanese government in 2012 into three areas, where the annual radiation dose at the time was roughly (1) less than 20mSv/year, (2) 20-50mSv/year, and (3) 50mSv/year or areas not expected to drop below 20mSv/year before March 2016.[2] The government has gradually been lifting evacuation orders in Areas 1 and 2, saying it will lift all of them by March 2017.[3] TEPCO compensation payments, which cover evacuation expenses and pain and suffering of evacuees, are set to end by March 2018.[4]

These steps pressure evacuees to return to areas with exposures potentially up to 20mSv/year, much higher than the ICRP's 1mSV/year, recommended limit for public radiation exposure.[5] For persons evacuated from non-designated areas, TEPCO has not provided substantial support or compensation, and government support has been limited to free housing, ending in March 2018.[6] 70% of respondents to an evacuee survey living in temporary housing under Fukushima's free housing program stated that they have not been able to decide where they will live when the program ends.[7] Especially for persons evacuated to Tokyo, their greatest concern is their housing situation, primarily that their housing assistance period is too short, followed by insufficient living expenses and not knowing their future.[8]

There have also been increasing numbers of suicide in Fukushima due to their anxious situations.[9] In interviews, evacuees say they are pressured to return to their home areas after evacuation orders are lifted. The government has failed to have effective consultation with the affected citizens who have voiced their opposition to the government decision.[10] When evacuees are interviewed about why they do not want to return, they cite fears of health risks by radiation.[11]

Decontamination has not been completed in many areas, and more than six million bags of contaminated soil and waste remain stored in temporary storage sites which can be near residential areas or simply along the roadside, concentrating radiation exposure.[12]

28. Right to Health & Insufficient Medical Care

The government has not established free, periodic, and comprehensive health checks related to radiation for affected people, despite the need for consideration of health issues.

The only substantive health check conducted by prefectural governments is thyroid ultrasound examinations every two years; however, it is limited to children under age of 18 who live or used to live in Fukushima prefecture.[13] Adults and residents outside Fukushima prefecture are excluded.

As of March 2016, 172 children in Fukushima prefecture were diagnosed with or believed to have thyroid cancer. [14][15] [16]

It is very serious that 57 children are newly diagnosed with or believed to have thyroid cancer in the second survey conducted in 2014 and 2015.

However, prefecture government has not yet acknowledged the negative health impact of radiation for children residing affected area. There is no move to expand the scope of heath care and survey for the people living in contaminated area.

29. Failure to Implement UN Recommendations

The Special Rapporteur on the right to health, Anand Grover, issued a report at the 23rd Human Rights Council in May 2013 with recommendations to the Japanese government which have not been implemented.[17] These include:

• Formulate a national plan on evacuation zones and dose limits of radiation by using current scientific evidence, based on human rights rather than on a risk-benefit analysis, and reduce the radiation dose to less than 1mSv/year.

• Recommended evacuees to return only when the radiation dose has been reduced as far as possible and to levels below 1mSv/year.

 $\boldsymbol{\cdot}$ Before return, the Government should continue providing financial support and subsidies to all

evacuees so that they can make a voluntary decision to return to their homes or remain evacuated.
Continue monitoring the impact of radiation on the health of affected persons through holistic and comprehensive screening and health surveys for a considerable length of time.

• Health surveys should be provided to persons residing in all affected areas with radiation exposure higher than 1mSv/year.

In 2014 the UN Human Rights Committee also recommended that the Japanese government "lift the designation of contaminated locations as evacuation areas only where the radiation level does not place the residents at risk."[18]Nevertheless, the Japanese government has continually failed to implement these recommendations while implementing policies that are adverse to them.

30. Recommendations

HRN is gravely concerned over the persistent failure of the Japanese government to protect the rights of affected people.

It urges the Japanese government to reform all relevant policies based on UN recommendations and a victims-based and rights-based approach, including to:

1) Revise the decision to lift evacuation designations for areas above 1mSv/year;

2) Revise the decision to cease housing support for evacuees from non-designated areas;

3) Protect all affected evacuees as IDPs and provide all necessary financial and material support to ensure their rights to housing, heath, environment, and family;

4) Formulate a national plan on evacuation zones and dose limits of radiation to protect the most vulnerable people and reduce the radiation dose to less than 1mSv/year;

5) Provide funding for relocation, housing, employment, education, and other essential support needed by those who chose to evacuate, stay, or return to any area where radiation exceeds 1mSv/year;

6) Reform health monitoring policy and conduct comprehensive and long-term health check-ups for

affected people living in areas with radiation doses exceeding 1mSv/year;

7) Ensure effective consultation with affected people.

HRN requests the Human Rights Council to continuously monitor the human rights situation of people affected by the nuclear disaster and the implementation status of relevant UN recommendations. HRN further requests the UN special rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Mr. Baskut Tuncak, to conduct an official visit to Japan and make an effort to prevent further violations among affected people.

[1] http://www.reconstruction.go.jp/topics/main-cat2/sub-cat2-1/20160729_hinansha.pdf.
 [2] Ministry of Economy, Trade and Industry, March 30, 2012,

http://www.meti.go.jp/english/earthquake/nuclear/roadmap/pdf/20120330_01a.pdf

[3] http://www.reconstruction.go.jp/topics/main-cat1/sub-cat1-1/160809_mitinoritomitoshi.pdf.

[4] Tepco Press Release, 26 Aug. 2016, http://www.tepco.co.jp/cc/press/2015/1258474_6818.html.

[5] OHCHR, "Report of the [SR] on the right to [health], Anand Grover, Mission to Japan" A/HRC/23/41/Add.3/Annex, p. 16, para. 46,

http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-41-Add3_en.pdf (citing "IAEA, Radiation protection and safety of radiation sources: International Basic Safety Standards – Interim Edition, General Safety Requirements, No.GSR Part 3(Interim)(Vienna 2011), p.90; ICRP, 1990 Recommendations of the International Commission on Radiological Protection

, ICRP Publication 60 , Ann. ICRP 21 (1 – 3) ; and ICRP, 2007 Recommendations of the

International Commission on Radiological Protection, ICRP Publication 103, Ann. ICRP 37 (2 – 4).")

[6] Mainichi, 11 Mar. 2016, http://mainichi.jp/articles/20160311/ddm/010/040/006000c.

[7] Mainichi, "70% of voluntary Fukushima evacuees undecided where to live after free housing ends", 26

Mar. 2016, http://mainichi.jp/english/articles/20160326/p2a/00m/0na/012000c.

[8] Tokyo Shinbun, 10 May 2016, http://www.tokyo-

np.co.jp/article/tokyo/list/201605/CK2016051002000171.html, at 54%, 41%, and 40% respectively. [9] Fukushima Minpo 26 Aug. 2016

http://www.minpo.jp/pub/topics/jishin2011/2014/06/post_10230.html

[10] Yuri Kageyama, "Nuclear refugees tell of distrust, pressure to return to Fukushima", Japan Times, 11 Mar. 2016,

http://www.japantimes.co.jp/news/2016/03/11/national/nuclear-refugees-tell-distrust-pressurereturn-fukushima/#.V7ZxczWT7nc; Susumu Okamoto, "INSIGHT: Fukushima evacuees made to feel small if they don't return ", Asahi, 27 Jun. 2016, http://www.asahi.com/ajw/articles/AJ201606270009.html. [11] Japan Times, Id.

[12] Ministry of Environment Japan, "Progress on Off-site Cleanup and Interim Storage in Japan", July 2016, at 14, 23, http://josen.env.go.jp/en/pdf/progressseet_progress_on_cleanup_efforts.pdf.

[13] Fukushima Health Management Survey, http://fmu-global.jp/fukushima-health-management-survey/.

[14] http://www.pref.fukushima.lg.jp/uploaded/attachment/167944.pdf

[15] http://www.pref.fukushima.lg.jp/uploaded/attachment/167943.pdf

[16] http://www.minyu-net.com/news/news/FM20160826-103916.php

[17] HRC 23rd Session, "Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Anand Grover: Mission to Japan", 2 May 2013, http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-41-Add3_en.pdf.

[18] Id., Para. 78(a).

Man with (recognised) work-related cancer to sue TEPCO

November 18, 2016 **Cancer patient compensated for Fukushima work to sue TEPCO** http://www.asahi.com/ajw/articles/AJ201611180052.html

THE ASAHI SHIMBUN

November 18, 2016 at 14:10 JST

A 42-year-old man diagnosed with leukemia after working at the crippled Fukushima No. 1 nuclear plant plans to sue Tokyo Electric Power Co., saying the utility failed to take adequate precautions against radiation exposure.

He will also sue Kyushu Electric Power Co., operator of the Genkai nuclear plant in Saga Prefecture where he had also worked, in the lawsuit expected to be filed at the Tokyo District Court on Nov. 22. The man, who is from Kita-Kyushu in Fukuoka Prefecture, will demand about 59 million yen (\$541,000) in total compensation from the two utilities.

"TEPCO and Kyushu Electric, as the managers of the facilities, are responsible for the health of workers there, but they failed to take adequate measures to protect them from radiation exposure," said one of the lawyers representing him.

"The man was forced to undergo unnecessary radiation exposure because of the utilities' slipshod on-site radiation management, and as a result had to face danger to his life and fear of death," the lawyer said. The lawyers group said the man has a strong case, citing a ruling by labor authorities in October 2015 that recognized a correlation between his leukemia and his work in response to the 2011 Fukushima nuclear disaster.

It was the first time cancer was ruled work-related among people who developed the disease after working at the stricken Fukushima No. 1 nuclear plant.

The planned lawsuit will be the first legal action against TEPCO brought by an individual whose work-related compensation claim has already been granted.

Between October 2011 and December 2013, the man worked at the Fukushima No. 1 nuclear plant to set up a cover on the damaged No. 4 reactor building and perform other tasks.

The man also did regular maintenance jobs at the Genkai plant.

His accumulative radiation exposure at the two plants came to about 20 millisieverts.

He was diagnosed with acute myelocytic leukemia in January 2014.

Cancer-victim worker sues TEPCO

November 23, 2016

Ex-Fukushima nuclear plant worker with leukemia sues TEPCO, Kyushu Electric

http://mainichi.jp/english/articles/20161123/p2a/00m/0na/015000c

A former nuclear plant worker, left, speaks at a news conference at the press club in the Tokyo High Court building in Tokyo's Kasumigaseki district, on Nov. 22, 2016. (Mainichi)

A former worker at the crippled Fukushima No. 1 nuclear plant filed suit against plant operator Tokyo Electric Power Co. (TEPCO) as well as Kyushu Electric Power Co. at the Tokyo District Court on Nov. 22 demanding 59 million yen in compensation.

The 42-year-old plaintiff had been granted work-related compensation after he developed leukemia following his time at the stricken nuclear station.

The man from Kitakyushu, Fukuoka Prefecture is demanding compensation including consolation money under the Nuclear Damage Compensation Law, citing the high likelihood that his leukemia was caused by radiation exposure at work. It is the first lawsuit of its kind filed by a nuclear plant worker who was granted work-related compensation in the wake of the outbreak of the Fukushima nuclear disaster.

According to the complaint, the man was a welder for a construction firm when he worked at TEPCO's Fukushima No. 2 nuclear plant and Kyushu Electric's Genkai nuclear plant in Saga Prefecture from Oct. 2011 to March 2012. He then spent about six months from October 2012 constructing scaffolding as part of work to remove spent nuclear fuel from the Fukushima No. 1 plant's No. 4 reactor building. He worked on the premises of the Fukushima nuclear complex until December 2013, and was exposed to 15.68 millisieverts of radiation. All in all, his cumulative radiation exposure was 19.78 millisieverts, including that at other nuclear facilities.

After being diagnosed with acute myeloid leukemia in January 2014, he applied for worker's accident compensation. A health ministry panel subsequently determined that his leukemia met the conditions for worker's compensation, including the fact that the illness had developed more than a year after his first exposure to radiation, and that his annual radiation exposure was at least 5 millisieverts. The expert panel judged it reasonable to assume that his illness stemmed from work dealing with radiation. In October 2015, the Labor Standards Inspection Office certified the man for worker's compensation benefits. He is not physically fit to work, according to sources.

The Nuclear Damage Compensation Law stipulates that there is no limit for nuclear damage compensation liability amounts (no-fault liability), and that the nuclear plant operator must pay the compensation. There has apparently been no judicial precedent involving a former nuclear plant worker since the outbreak of the Fukushima disaster, although there have been cases in which nuclear disaster victims and companies won lawsuits and received compensation.

TEPCO commented, "We will properly deal with it," while Kyushu Electric stated, "We will go through the content of the suit and respond properly."

After filing the suit, the former worker expressed distrust of TEPCO, telling reporters at a news conference, "We workers are not pawns." When newspapers reported in October 2015 that the man was granted worker's compensation for leukemia, TEPCO released a statement saying, "We are not in a position to comment on a worker from a subcontractor." The former worker said of TEPCO's response, "They didn't apologize in the slightest. I was filled with shock and anger."

It was seven months after the outbreak of the nuclear disaster that the man decided to work at nuclear power plants "for the sake of Fukushima." Brushing aside family opposition, the man started working as a welder for a subcontractor. He said that at times he had to do his job without a protective lead vest because there were not enough of them.

At the news conference, the man's lawyer Yuichi Kaido said, "We want to pave the way for systematic reform by clarifying TEPCO's responsibility." The former nuclear plant worker said, "There are still employees working amid high levels of radiation in Fukushima today. I hope I'll be able to give encouragement to those who may develop cancer in the future."

As of the end of March 2016, 46,974 people had worked at the Fukushima No. 1 nuclear plant since the outbreak of the disaster. About 90 percent of them were not TEPCO employees, though they have played a key role in the plant's decommissioning process.

According to the health ministry, 11 people have applied for worker's accident compensation after developing cancer. Two people have been granted benefits, while five other cases are still under consideration.

November 22, 2016

Former Fukushima worker with cancer sues TEPCO

http://www3.nhk.or.jp/nhkworld/en/news/20161122_42/

A former worker at the Fukushima Daiichi nuclear plant has sued the operator, Tokyo Electric Power Company, saying he developed cancer because of unnecessary exposure to radiation.

The 42-year-old man is seeking around 59 million yen, or 530,000 dollars, in compensation.

He has also filed a lawsuit against Kyushu Electric Power Company, the operator of the Genkai nuclear plant.

The man says he was involved in setting up covers over reactor buildings at Fukushima, and pipework at Genkai between October 2011 and December 2013. He says he developed leukemia in January 2014.

He was exposed to a total of 19.8 millisieverts of radiation from his work at the plants.

The man says he sometimes had to work without a device for measuring radiation levels or a protective lead vest. He says the operators failed to provide essential safety precautions.

The man was granted compensation by the government for work-related cancer in October last year. His damages were the first awarded to a plant worker over the 2011 nuclear accident.

The man told reporters that nuclear plant workers are not an expendable workforce.

The utilities say they will handle the matter appropriately after they learn the details of the filing.

Children's Fund for Thyroid Cancer

November 28, 2016

Thyroid cancer fund to defray costs for young patients in Fukushima, 14 other prefectures

http://www.japantimes.co.jp/news/2016/11/28/national/thyroid-cancer-fund-defray-costs-young-patients-fukushima-14-prefectures/#.WDw2z32Dmos

Kyodo

A fund supporting children with thyroid cancer said Monday it will pay part of the medical costs for young patients in Fukushima Prefecture and elsewhere in Japan.

The fund, called 3.11 Children's Fund for Thyroid Cancer, will offer up to ¥200,000 to each patient 25 and under in 15 prefectures mainly in northeastern and eastern Japan, including Tokyo.

The regions were selected in accordance with various atmospheric dispersion models for radioactive iodine spread during the Fukushima nuclear crisis in 2011.

The fund will accept applications between December and March. After review, it will provide ¥100,000 for each case and additional ¥100,000 for relatively serious patients. A second round of applications will be accepted again from April.

The fund was initially promoted by politicians including former Prime Ministers Junichiro Koizumi and Morihiro Hosokawa, and supported by celebrities such as actress Sayuri Yoshinaga. It has received ¥20 million in donations from the public since September.

Some Japanese researchers published a report attributing most of the thyroid cancer cases found among children and adolescents after the disaster began to radiation spewed by the triple core meltdown at the tsunami-swamped Fukushima No. 1 power plant.

Private fund to help young thyroid cancer patients

http://www3.nhk.or.jp/nhkworld/en/news/20161128_17/

A Japanese private foundation will offer financial aid to young people who have been diagnosed with thyroid cancer since the accident at the Fukushima Daiichi nuclear power plant.

The foundation said on Monday it will provide a lump sum of 100,000 yen, or about 900 dollars, starting next month.

People aged 25 years old and younger who have been diagnosed with thyroid cancer, including suspected cases, are eligible for the aid. They should be residents of Fukushima or one of the 14 other prefectures in eastern Japan.

The foundation says it has raised about 20 million yen in public donations to help them.

Fukushima Prefecture has been conducting medical checkups for about 380,000 children aged 18 or younger after the 2011 accident. 175 have been diagnosed with thyroid cancer or are suspected cases.

The foundation's representative, Hisako Sakiyama, says these young people will have to live with the risk of cancer for many years. She says the foundation wants to provide psychological support as well.

Applications for the financial aid will be accepted through March next year

Human guinea-pigs

November 18, 2016

Hibakusha: Woman exposed to radiation while in womb fears another nuke plant tragedy

http://mainichi.jp/english/articles/20161118/p2a/00m/0na/017000c

NAGASAKI -- "I felt miserable and angry when I learned I was used as a human guinea pig," said Yoko Nakano, her voice rising as she addressed a meeting of those exposed to radiation from the Nagasaki Abomb while they were still in their mothers' wombs. The meeting was held in Nagasaki on Aug. 9, 2016, the 71st anniversary of the bombing of the city.

• [Hibakusha Series]

Nakano, 70, was enrolled in an "atomic bombing class" comprising 20 hibakusha (atomic-bombing survivors) and 20 non-hibakusha when she was a student at Nagasaki Municipal Shiroyama Elementary School. The U.S. Atomic Bomb Casualty Commission (ABCC) examined the children's physical and intellectual abilities. She learned from documents she obtained 13 years ago through a freedom of information request that her cells had been examined by the ABCC. She says she still cannot forget the shock she felt at the time.

"I suspect that my data may have been used as reference materials for building nuclear plants," she told the meeting. In fact, the Radiation Effects Research Foundation, a Japan-U.S. research organization that has taken over the ABCC, played an important role in setting radiation protection standards at nuclear facilities including atomic power stations.

Nakano came to seriously think that "hibakusha should be involved in addressing problems involving nuclear plants" after the outbreak of the Fukushima nuclear crisis in March 2011.

At 70, she has never had a serious disease, and her first grandchild was born eight years ago.

"Although I'm a hibakusha, I'm leading an ordinary life like other people," Nakano said. Still, she empathizes with Fukushima people who are worried that their internal exposure to radiation could adversely affect their descendants. Her late mother had been worried throughout her life about the future of her daughter, who was exposed to radiation before even being born.

All the more for that, Nakano cannot keep silent about the government of Prime Minister Shinzo Abe's policy of reactivating idled nuclear plants and promoting the exports of atomic power plants as part of Japan's growth strategy. On Nov. 16, the extension of operations at the aging No. 3 reactor of the Mihama nuclear plant in Fukui Prefecture, which has been in operations for over 40 years, was officially approved. "The government is yet to clean up after the Fukushima crisis and they say they'll create walls by freezing soil to prevent ground water from flowing in, but such an idea is just a product of people's shallow cleverness. Such facilities could make their own hibakusha even though they're not bombs," Nakano said. She is outspoken about not only nuclear power but also recent security legislation and other issues because she is worried that the country is moving in the wrong direction.

"I'm not thinking negatively. I'm horrified because I feel that risks are becoming realistic; they're beginning to take shape," she said. (By Emi Aoki, News Department, Kyushu Head Office) Profile:

Yoko Nakano was born six months after her mother was exposed to radiation about 3 kilometers away from the Nagasaki atomic bomb's hypocenter on Aug. 9, 1945. After getting married, she moved to Ashiya, Fukuoka Prefecture. While raising her children, she operated a piano school for about 30 years. She is now living with her husband in Fukutsu, Fukuoka Prefecture.

Human Rights Now on Fukushima (August 2016)

August 30, 2016

"Fukushima: Human Rights Situation of people Affected by the Fukushima Dai-ichi Nuclear Power Station Accident"/Written Statement submitted to 33rd Human Rights Council session

http://hrn.or.jp/eng/news/2016/08/30/fukushima-human-rights-situation-of-people-affected-by-the-fukushima-dai-ichi-nuclear-power-station-accident-written-statement-submitted-to-33rd-human-rights-council-session/

Human Rights Now has submitted a written statement **"Fukushima: Human Rights Situation of People** Affected by the Fukushima Dai-ichi Nuclear Power Station Accident" to the 33rd session of Human

Rights Council, which is going to be held in Geneva from September 13, 2016.

HRN written statement on Fukushima for 33rd HRC [PDF]

We will deliver an oral statement in the HRC session in Geneva as well.

Fukushima: Human Rights Situation of People Affected by the Fukushima Dai-ichi Nuclear Power Station Accident

The 2011 accident at the Fukushima Dai-ichi Nuclear Power Station released an estimated 168 times more radiation than the atomic bomb dropped on Hiroshima over large regions of northwest Japan, and it continues to pose serious risks to the environment and residents' life and health.

Human Rights Now (HRN), a Tokyo-based international human rights NGO, continues to observe risks to people affected by the accident and insufficiencies by the Japanese government to protect their rights to life and health, particularly those most vulnerable to radiation and the displacement situation, such as infants, pregnant women, and the elderly.

31. The Current Situation of Affected People

As of 14 July 2016, approximately 148,000 evacuees from Fukushima Prefecture remain displaced, with about 47,850 living in nearby temporary housing, and the rest in other areas of Japan.[1] Evacuation was organized by the Japanese government in 2012 into three areas, where the annual radiation dose at the time was roughly (1) less than 20mSv/year, (2) 20-50mSv/year, and (3) 50mSv/year or areas not expected to drop below 20mSv/year before March 2016.[2] The government has gradually been lifting evacuation orders in Areas 1 and 2, saying it will lift all of them by March 2017.[3] TEPCO compensation payments, which cover evacuation expenses and pain and suffering of evacuees, are set to end by March 2018.[4]

These steps pressure evacuees to return to areas with exposures potentially up to 20mSv/year, much higher than the ICRP's 1mSV/year, recommended limit for public radiation exposure.[5] For persons evacuated from non-designated areas, TEPCO has not provided substantial support or compensation, and government support has been limited to free housing, ending in March 2018.[6] 70% of respondents to an evacuee survey living in temporary housing under Fukushima's free housing program stated that they have not been able to decide where they will live when the program ends.[7] Especially for persons evacuated to Tokyo, their greatest concern is their housing situation, primarily that their housing assistance period is too short, followed by insufficient living expenses and not knowing their future.[8]

There have also been increasing numbers of suicide in Fukushima due to their anxious situations.[9] In interviews, evacuees say they are pressured to return to their home areas after evacuation orders are lifted. The government has failed to have effective consultation with the affected citizens who have voiced

their opposition to the government decision.[10] When evacuees are interviewed about why they do not want to return, they cite fears of health risks by radiation.[11]

Decontamination has not been completed in many areas, and more than six million bags of contaminated soil and waste remain stored in temporary storage sites which can be near residential areas or simply along the roadside, concentrating radiation exposure.[12]

32. Right to Health & Insufficient Medical Care

The government has not established free, periodic, and comprehensive health checks related to radiation for affected people, despite the need for consideration of health issues.

The only substantive health check conducted by prefectural governments is thyroid ultrasound examinations every two years; however, it is limited to children under age of 18 who live or used to live in Fukushima prefecture.[13] Adults and residents outside Fukushima prefecture are excluded.

As of March 2016, 172 children in Fukushima prefecture were diagnosed with or believed to have thyroid cancer. [14][15] [16]

It is very serious that 57 children are newly diagnosed with or believed to have thyroid cancer in the second survey conducted in 2014 and 2015.

However, prefecture government has not yet acknowledged the negative health impact of radiation for children residing affected area. There is no move to expand the scope of heath care and survey for the people living in contaminated area.

33. Failure to Implement UN Recommendations

The Special Rapporteur on the right to health, Anand Grover, issued a report at the 23rd Human Rights Council in May 2013 with recommendations to the Japanese government which have not been implemented.[17] These include:

• Formulate a national plan on evacuation zones and dose limits of radiation by using current scientific evidence, based on human rights rather than on a risk-benefit analysis, and reduce the radiation dose to less than 1mSv/year.

• Recommended evacuees to return only when the radiation dose has been reduced as far as possible and to levels below 1mSv/year.

• Before return, the Government should continue providing financial support and subsidies to all evacuees so that they can make a voluntary decision to return to their homes or remain evacuated.

• Continue monitoring the impact of radiation on the health of affected persons through holistic and comprehensive screening and health surveys for a considerable length of time.

• Health surveys should be provided to persons residing in all affected areas with radiation exposure higher than 1mSv/year.

In 2014 the UN Human Rights Committee also recommended that the Japanese government "lift the designation of contaminated locations as evacuation areas only where the radiation level does not place the residents at risk."[18]Nevertheless, the Japanese government has continually failed to implement these recommendations while implementing policies that are adverse to them.

34. Recommendations
HRN is gravely concerned over the persistent failure of the Japanese government to protect the rights of affected people.

It urges the Japanese government to reform all relevant policies based on UN recommendations and a victims-based and rights-based approach, including to:

1) Revise the decision to lift evacuation designations for areas above 1mSv/year;

2) Revise the decision to cease housing support for evacuees from non-designated areas;

3) Protect all affected evacuees as IDPs and provide all necessary financial and material support to ensure their rights to housing, heath, environment, and family;

4) Formulate a national plan on evacuation zones and dose limits of radiation to protect the most vulnerable people and reduce the radiation dose to less than 1mSv/year;

5) Provide funding for relocation, housing, employment, education, and other essential support needed by those who chose to evacuate, stay, or return to any area where radiation exceeds 1mSv/year;

6) Reform health monitoring policy and conduct comprehensive and long-term health check-ups for affected people living in areas with radiation doses exceeding 1mSv/year;

7) Ensure effective consultation with affected people.

HRN requests the Human Rights Council to continuously monitor the human rights situation of people affected by the nuclear disaster and the implementation status of relevant UN recommendations. HRN further requests the UN special rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Mr. Baskut Tuncak, to conduct an official visit to Japan and make an effort to prevent further violations among affected people.

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[2] Ministry of Economy, Trade and Industry, March 30, 2012,

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[8] Tokyo Shinbun, 10 May 2016, http://www.tokyo-

np.co.jp/article/tokyo/list/201605/CK2016051002000171.html, at 54%, 41%, and 40% respectively. [9] Fukushima Minpo 26 Aug. 2016

http://www.minpo.jp/pub/topics/jishin2011/2014/06/post_10230.html

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[12] Ministry of Environment Japan, "Progress on Off-site Cleanup and Interim Storage in Japan", July 2016, at 14, 23, http://josen.env.go.jp/en/pdf/progressseet_progress_on_cleanup_efforts.pdf.
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[18] Id., Para. 78(a).

Doused in radioactive coolant

December 1, 2016

Tsuruga nuke plant workers doused with radioactive coolant water

http://www.japantimes.co.jp/news/2016/12/01/national/science-health/10-tsuruga-nuke-plant-workers-doused-radioactive-coolant-water-operator-rules-exposure/#.WD_zFn2Dmos

JIJI, Kyodo

FUKUI – Japan Atomic Power Co. has revealed that 10 workers were doused in radioactive coolant water during maintenance work in an auxiliary building for reactor 2 at the Tsuruga nuclear power plant in Fukui Prefecture.

The 10 employees were not exposed to radiation, the company said on Wednesday.

Up to 160 liters of room-temperature coolant water containing 272,000 becquerels of radioactive substances was spilled — about one-tenth of the level that must be reported to the government, Japan Atomic Power said, adding that the amount of the hazardous materials was "not small."

Water from a pipe sprayed into a tank room on the second basement floor of the auxiliary building around 10:50 a.m. Wednesday, when a worker loosened a bolt on a valve from a pipe attached to a coolant storage tank, according to Japan Atomic Power.

Of the 15 workers from a subcontracting company who were in the room, four were soaked from head to toe, while six were partially soaked. The water splashed directly onto the faces of some of the workers, according to Japan Atomic Power.

When the water poured in, the workers, wearing jumpsuits, helmets, gloves and goggles, were trying to drain the pipe to allow the valve to be checked and to exchange a rubber part in a tank that temporarily stores coolant water while operations at the plant are halted.

Japan Atomic Power said there was more water in the pipe than had been anticipated.

In November last year, Japan Atomic Power applied to the Nuclear Regulation Authority for safety checks on the Tsuruga reactor. An NRA screening is required before the nuclear reactor is reactivated.

Still checking radiation in fish

December 6, 2016

Radiation in fish off Fukushima tests below detectable level

THE ASAHI SHIMBUN

http://www.asahi.com/ajw/articles/AJ201612060039.html

FUKUSHIMA--Radiation in all seafood caught off Fukushima Prefecture tested below the detectable level in November for the first time since the 2011 nuclear disaster.

Species including bass, rockfish and stone flounder--sales of which were banned by the central government--were tested between Nov. 11 and Nov. 28, and the prefectural government said they all fell below the detection threshold, meaning radioactive cesium was not detected in any samples.

The main reason is that most fish species have undergone a generation change over the past five years with the contaminated marine life dying out, said officials at the prefectural government's fisheries experimental station.

In addition, the passage of time helped fish exude radioactive cesium from their bodies.

The prefectural government began the tests in April 2011 following the disaster at the Fukushima No. 1 nuclear plant the previous month.

Forty thousand fish and shellfish samples have been checked from 186 species over the past five and a half years.

The initial tests found that more than 90 percent of the samples were contaminated with radioactive cesium above the central government's safety limit of 100 becquerels per kilogram.

The percentage of polluted fish and shellfish then declined annually.

The tests since April last year showed that the pollution in all samples was within the safety limit. The monitoring covers seafood caught in 30 locations, in waters with a depth of 5 meters and at a distance of hundreds of meters from the shore, including the area in a 20-kilometer radius of the crippled plant.

December 5, 2016

Volunteer group continues checking fish off Fukushima as radiation levels drop http://mainichi.jp/english/articles/20161205/p2a/00m/0na/022000c IWAKI, Fukushima -- As radioactive cesium levels in fish caught off the Fukushima Prefecture coast show lower levels that fall within safety limits set by the government, the Mainichi Shimbun recently accompanied a volunteer group that continues to measure these fish on one of its outings.

• [Fukushima & Nuclear Power]

The group, called "Iwaki Kaiyo Shirabetai Umi Labo" (Iwaki marine investigative squad ocean lab), began its activities three years ago. Rather than relying on the national government, Fukushima nuclear plant operator Tokyo Electric Power Co. or others for data on radioactive pollution in the ocean off Fukushima Prefecture, the group aims to obtain this information itself and share it across the country. On Nov. 13, a Mainichi Shimbun reporter boarded one of the group's fishing ships, which set out from Hisanohama Port in Iwaki, Fukushima Prefecture. Two kilometers from the disaster-stricken plant, the group pulled up a large, 90-centimeter, 7.7-kilogram olive flounder. This fish was caught by Eriko Kawanishi, a civil servant who came from Tokyo to participate in the outing and said it was her first time ever to hold a fishing rod. A 90-centimeter fish would be a rare catch even for a veteran fisherman. The olive flounder was refrigerated and taken back to veterinarian Seiichi Tomihara at the Aquamarine Fukushima aquarium in Iwaki for dissection. Based on the growth rings on its "otoliths," a structure located near the brain, Tomihara estimated the fish's age at 11 years. He said there is research estimating the life expectancy of olive flounders at around 12 years, adding, "This looks like one of the oldest (one can find)."

A 1-kilogram slice of the fish put in a detector showed 14.6 becquerels of radioactive cesium -- below the 100 becquerels-per-kilogram national safety limit for regular food products. Lately the research group has found no fish, including bottom-dwelling fish like olive flounder, that exceed this limit. In addition, radiation checks done by the prefectural government find hardly any cases of fish that top the safety limit. Riken Komatsu, 37, joint-representative for the group, says, "This is the first time for us to check such an old olive flounder, and I thought there would be dozens of becquerels detected. The result was lower than I had imagined and I feel relieved."

Fish that were already adult at the time of the disaster, with a slowed metabolism and a narrow range of habitat, tend to show high radiation levels, Komatsu says. With time having passed since the disaster, the generational replacement of the fish in the area has moved forward. The group says the highest radiation level it has detected so far was 138 becquerels from a 56-centimeter olive flounder in July 2014. Olive flounder caught off of Iwaki are known as "Joban-mono" and have a good reputation. There is hope among locals that the fish will regain their pre-disaster popularity.

Komatsu says, "The prefectural government and fishing cooperatives are also releasing radiation readings from fish taken off Fukushima Prefecture, but I feel there are few taken from waters near the nuclear plant. Stronger data showing the fish's safety (like data from fish near the plant) should raise the value of Fukushima olive flounder."

Tepco worker's cancer recognised as work-related

December 17, 2016

Tepco worker's thyroid cancer is recognized as work-related

http://www.japantimes.co.jp/news/2016/12/17/national/tepco-workers-thyroid-cancer-recognized-work-related/#.WFXGg32DlLM

JIJI

Japanese labor authorities have recognized the thyroid cancer of a man who worked at Tepco's stricken Fukushima No. 1 nuclear plant as a work-related, it was learned Friday.

It is the first time that thyroid cancer has been recognized as a work-related illness caused by radiation from the plant after it was damaged in the March 2011 earthquake and tsunami.

This is the third case labor authorities have linked to radiation exposure for workers at the Fukushima plant. The two previous cases involved leukemia.

At a meeting Friday, a Health, Labor and Welfare Ministry panel of experts presented for the first time criteria for recognizing thyroid cancer as a work-related disease from radiation, including doses of 100 millisieverts or more and a period of five years or more between exposure to radiation and the development of cancer.

Based on the criteria, a labor standards office in Fukushima Prefecture concluded that the cancer of the employee, who is in his 40s, was caused by radiation from the plant.

The man joined Tokyo Electric Power Company Holdings Inc. in 1992 and worked at several nuclear power plants for over 20 years.

After checking reactor instruments and carrying out other duties at the Fukushima No. 1 plant from March 2011 to April 2012, he was diagnosed with thyroid cancer in April 2014. His cumulative radiation dose after the accident stood at 139.12 millisieverts.

According to the International Commission on Radiological Protection, lifetime cancer mortality rises by about 0.5 percent for those exposed to a dose of 100 millisieverts.

December 17, 2016

Thyroid cancer compensation for Fukushima plant worker

http://www.asahi.com/ajw/articles/AJ201612170027.html

By YURI OIWA/ Staff Writer

A man who developed thyroid gland cancer after working at the stricken Fukushima No. 1 nuclear plant has for the first time won the right to work-related compensation.

While the case ranks as the third time a worker at the Fukushima plant has been recognized as eligible for work-related compensation because of cancer caused by radiation exposure, it is the first instance involving thyroid gland cancer.

The Ministry of Health, Labor and Welfare announced its decision Dec. 16.

The man in his 40s, an employee of plant operator Tokyo Electric Power Co., worked at the Fukushima plant after the triple meltdown triggered by the 2011 Great East Japan Earthquake and tsunami. He was diagnosed with thyroid gland cancer in April 2014.

The man worked at various nuclear plants, including the Fukushima facility, between 1992 and 2012. He was mainly involved in operating and overseeing reactor operations.

After the March 2011 nuclear accident, the man was in the plant complex when hydrogen explosions rocked the No. 1 and No. 3 reactor buildings. His duties included confirming water and pressure meter levels as well as providing fuel to water pumps.

The amount of his accumulated whole body radiation exposure was 150 millisieverts, with about 140 millisieverts resulting from the period after the nuclear accident. Of that amount, about 40 millisieverts was through internal exposure caused by inhaling or other ways of absorbing radioactive materials. Along with recognizing the first work-related compensation involving thyroid gland cancer, the labor ministry also released for the first time its overall position on dealing with compensation issues for workers who were at the Fukushima plant after the accident.

The ministry said it would recognize compensation for workers whose accumulated whole body dose exceeded 100 millisieverts and for whom at least five years have passed since the start of work involving radiation exposure and the diagnosis of cancer.

Ministry officials said the dose level was not a strict standard but one yardstick for recognizing compensation.

According to a study by TEPCO and a U.N. scientific committee looking into the effects of radiation, 174 people who worked at the plant had accumulated whole body doses exceeding 100 millisieverts as of this past March.

There is also an estimate that more than 2,000 workers have radiation doses exceeding 100 millisieverts just in their thyroid gland.

Plant worker's thyroid cancer certified as linked to nuclear disaster

http://mainichi.jp/english/articles/20161217/p2g/00m/0dm/025000c

TOKYO (Kyodo) -- A worker exposed to radiation when disaster struck the Fukushima nuclear plant has been found to have developed thyroid cancer caused by an industrial accident, the labor ministry said Friday.

The employee of Tokyo Electric Power Company Holdings Inc., the operator of the Fukushima Daiichi nuclear power plant, is the third person determined to be entitled to benefits due to illness caused by exposure to radiation released when three reactors melted down in the days after a massive earthquake and ensuing tsunami in March 2011.

The man is the first to be certified for developing thyroid cancer because of the nuclear disaster. The first two persons suffer from leukemia.

The man in his 40s was an operator of the Nos. 3 and 4 reactors at the nuclear plant.

The man had engaged in work involving radiation for 20 years, and worked at the Fukushima plant between March 2011 and April 2012, according to the Health, Labor and Welfare Ministry.

Over those 20 years, he was exposed to a total of 149.6 millisieverts of radiation -- but most of that, or 139.12 millisieverts, in the wake of the 2011 disaster.

He was diagnosed with thyroid cancer in April 2014.

10 new cases of thyroid cancer

10 more thyroid cancer cases diagnosed in Fukushima

http://mainichi.jp/english/articles/20161228/p2a/00m/0na/008000c

FUKUSHIMA -- Ten more people were diagnosed with thyroid cancer as of late September this year in the second round of a health survey of Fukushima Prefecture residents, which began in April 2014, a committee overseeing the survey disclosed on Dec. 27.

- 【Related】 Plant worker's thyroid cancer certified as linked to nuclear disaster
- 【Related】 Experts divided on causes of high thyroid cancer rates among Fukushima children

The number of people confirmed to have cancer during the second round of the survey stands at 44, while the overall figure including cases detected in the first round stands at 145.

The first round of checks -- covering people aged 18 or under who were living in the prefecture at the time of the outbreak of the nuclear disaster at the Fukushima No. 1 Nuclear Power Plant -- began in 2011. The second round covers about 380,000 people, including children who were born in the year following the outbreak of the disaster. The survey's third round began in May this year.

Some have pointed to the danger of "excessive diagnoses" during health checks in which doctors find cases of cancer that do not require surgery, which could place a physical and mental burden on patients. There have accordingly been calls for the Fukushima Prefectural Government to scale down the scope of its health survey.

During a meeting of the oversight committee in Fukushima on Dec. 27, Hokuto Hoshi, deputy head of the Fukushima Medical Association, requested that the prefectural government set up a third-party organization to independently gather scientific knowledge on thyroid cancer. "Scientific discussion should be conducted independently," he said.

Koizumi's antinuclear stance

December 31, 2016

See also : http://www.asahi.com/ajw/articles/SDI201701026164.html

A Maverick Former Japanese Prime Minister Goes Antinuclear

http://www.nytimes.com/2016/12/31/world/asia/a-maverick-former-japanese-prime-minister-goes-antinuclear.html?emc=eta1

By MOTOKO RICHDEC. 31, 2016

Former Prime Minister Junichiro Koizumi of Japan in September. Although he supported nuclear power during his run as prime minister from 2001 to 2006, Mr. Koizumi now actively opposes it. Credit The Asahi Shimbun, via Getty Images

TOKYO — William Zeller, a petty officer second class in the United States Navy, was one of hundreds of sailors who rushed to provide assistance to Japan after a giant earthquake and tsunami set off a triple meltdown at the Fukushima Daiichi nuclear power plant in 2011. Not long after returning home, he began to feel sick.

Today, he has nerve damage and abnormal bone growths, and blames exposure to radiation during the humanitarian operation conducted by crew members of the aircraft carrier Ronald Reagan. Neither his doctors nor the United States government has endorsed his claim or those of about 400 other sailors who attribute ailments including leukemia and thyroid disease to Fukushima and are suing Tokyo Electric, the operator of the plant.

But one prominent figure is supporting the American sailors: Junichiro Koizumi, the former prime minister of Japan.

Mr. Koizumi, 74, visited a group of the sailors, including Petty Officer Zeller, in San Diego in May, breaking down in tears at a news conference. Over the past several months, he has barnstormed Japan to raise money to help defray some of their medical costs.

The unusual campaign is just the latest example of Mr. Koizumi's transformation in retirement into Japan's most outspoken opponent of nuclear power. Though he supported nuclear power when he served as prime minister from 2001 to 2006, he is now dead set against it and calling for the permanent shutdown of all 54 of Japan's nuclear reactors, which were taken offline after the Fukushima disaster.

"I want to work hard toward my goal that there will be zero nuclear power generation," Mr. Koizumi said in an interview in a Tokyo conference room.

The reversal means going up against his old colleagues in the governing Liberal Democratic Party as well as Prime Minister Shinzo Abe, who are pushing to get Japan, once dependent for about a third of its energy on nuclear plants, back into the nuclear power business.

That Mr. Koizumi would take a contrarian view is perhaps not surprising. He was once known as "the Destroyer" because he tangled with his own party to push through difficult policy proposals like privatization of the national postal service.

Mr. Koizumi first declared his about-face on nuclear power three years ago, calling for Japan to switch to renewable sources of energy like solar power and arguing that "there is nothing more costly than nuclear power."

After spending the first few years of his retirement out of the public eye, in recent months Mr. Koizumi has become much more vocal about his shift, saying he was moved to do more by the emotional appeal of the sailors he met in San Diego.

Scientists are divided about whether radiation exposure contributed to the sailors' illnesses. The Defense Department, in a report commissioned by Congress, concluded that it was "implausible" that the service members' ailments were related to radiation exposure from Fukushima.

To many political observers, Mr. Koizumi's cause in retirement is in keeping with his unorthodox approach in office, when he captivated Japanese and international audiences with his blunt talk, opposition to the entrenched bureaucracy and passion for Elvis Presley.

Some wonder how much traction he can get with his antinuclear campaign, given the Abe administration's determination to restart the atomic plants and the Liberal Democratic Party's commanding majority in Parliament.

Two reactors are already back online; to meet Mr. Abe's goal of producing one-fifth of the country's electricity from nuclear power within the next 15 years, about 30 of the existing 43 reactors would need to restart. (Eleven reactors have been permanently decommissioned.)

A year after the Fukushima disaster, antinuclear fervor led tens of thousands of demonstrators to take to the streets of Tokyo near the prime minister's residence to register their anger at the government's decision to restart the Ohi power station in western Japan. Public activism has dissipated since then, though polls consistently show that about 60 percent of Japanese voters oppose restarting the plants. "The average Japanese is not that interested in issues of energy," said Daniel P. Aldrich, professor of

political science at Northeastern University. "They are antinuclear, but they are not willing to vote the L.D.P. out of office because of its pronuclear stance."

Sustained political protest is rare in Japan, but some analysts say that does not mean the antinuclear movement is doomed to wither.

"People have to carry on with their lives, so only so much direct action can take place," said Koichi Nakano, a political scientist at Sophia University in Tokyo.

Antinuclear activism "may look dormant from appearances, but it's there, like magma," he said. "It's still brewing, and the next trigger might be another big protest or political change."

Some recent signs suggest the movement has gone local. In October, Ryuichi Yoneyama was elected governor in Niigata, the prefecture in central Japan that is home to the world's largest nuclear plant, after campaigning on a promise to fight efforts by Tokyo Electric to restart reactors there.

Like Mr. Koizumi, he is an example of how the antinuclear movement has blurred political allegiances in Japan. Before running for governor, Mr. Yoneyama had run as a Liberal Democratic candidate for Parliament.

Mr. Koizumi, a conservative and former leader of the Liberal Democrats, may have led the way. "Originally, the nuclear issue was a point of dispute between conservatives and liberals," said Yuichi Kaido, a lawyer and leading antinuclear activist. "But after Mr. Koizumi showed up and said he opposed nuclear power, other conservatives realized they could be against nuclear power."

Since he visited the sailors in San Diego, Mr. Koizumi has traveled around Japan in hopes of raising about \$1 million for a foundation he established with another former prime minister, Morihiro Hosokawa, an independent who has previously been backed by the opposition Democratic Party, to help pay some of the sailors' medical costs.

Mr. Koizumi is not involved in the sailors' lawsuit, now before the United States Court of Appeals for the Ninth Circuit in San Francisco. Tokyo Electric is working to have the case moved to Japan.

Aimee L. Tsujimoto, a Japanese-American freelance journalist, and her husband, Brian Victoria, an American Buddhist priest now living in Kyoto, introduced Mr. Koizumi to the plaintiffs. Petty Officer Zeller, who said he took painkillers and had tried acupuncture and lymph node massages to treat his conditions, said the meeting with Mr. Koizumi was the first time that someone in power had listened to him.

"This is a man where I saw emotion in his face that I have not seen from my own doctors or staff that I work with, or from my own personal government," said Petty Officer Zeller, who works at the Naval Medical Center in San Diego. "Nobody has put the amount of attention that I saw in his eyes listening to each word, not just from me, but from the other sailors who have gone through such severe things healthwise."

Mr. Koizumi, whose signature leonine hairstyle has gone white since his retirement, said that after meeting the sailors in San Diego, he had become convinced of a connection between their health problems and the radiation exposure.

"These sailors are supposed to be very healthy," he said. "It's not a normal situation. It is unbelievable that just in four or five years that these healthy sailors would become so sick."

"I think that both the U.S. and Japanese government have something to hide," he added.

Many engineers, who argue that Japan needs to reboot its nuclear power network to lower carbon emissions and reduce the country's dependence on foreign fossil fuels, say Mr. Koizumi's position is not based on science.

"He is a very dramatic person," said Takao Kashiwagi, a professor at the International Research Center for Advanced Energy Systems for Sustainability at the Tokyo Institute of Technology. "He does not have so much basic knowledge about nuclear power, only feelings."

That emotion is evident when Mr. Koizumi speaks about the sailors. Wearing a pale blue gabardine jacket despite Japan's black-and-gray suit culture, he choked up as he recounted how they had told him that they loved Japan despite what they had gone through since leaving.

"They gave their utmost efforts to help the Japanese people," he said, pausing to take a deep breath as tears filled his eyes. "I am no longer in government, but I couldn't just let nothing be done." Makiko Inoue contributed reporting.

Farewell, Mr.Yablokov



January 10, 2017

http://bellona.org/news/nuclear-issues/2017-01-alexei-yablokov-grandfather-of-russian-environmentalism-dies-at-83

Published on January 10, 2017 by Charles Digges

Alexei Yablokov, the towering grandfather of Russian ecology who worked with Bellona to unmask Cold War nuclear dumping practices in the Arctic, has died in Moscow after a long illness. He was 83. As a member of the Russian Academy of Sciences, he was also the lead author of the seminal 2007 book, "Chernobyl: Consequences of the Catastrophe for People and the Environment." The book presented the conclusion that the 1986 Chernobyl disaster was responsible for 985,000 premature deaths – the boldest mortality tally to date – by analyzing 6,000 source materials on the accident.

Bellona President Frederic Hauge Tuesday remembered Yablokov as a friend of three decades standing. "He was an inspiration, a great friend and a great scientist, one of the world's most significant environmental heroes," said Hauge. "To know him and to work with him, someone of such cool and keen intellect is a memory we should all take care of and treasure."

Yablokov commanded a broad environmental and political mandate in Russia, and published over 500 papers on biology, ecology, natural conservation and numerous textbooks on each of these subjects. He founded Russia's branch of Greenpeace and was the leader of the Green Russia faction of the Yabloko opposition party.

While serving as environmental advisor to President Boris Yeltsin's from 1989 to 1992, Yablokov published a searing white paper that detailed the gravity of the radiological threat posed by dumped military reactors and scuttled nuclear submarines in the Arctic.

The catalogue of waste dumped at sea by the Soviets, includes some 17,000 containers of radioactive waste, 19 ships containing radioactive waste, 14 nuclear reactors, including five that still contain spent nuclear fuel; 735 other pieces of radioactively contaminated heavy machinery, and the K-27 nuclear submarine with its two reactors loaded with nuclear fuel.

Yablokov's white paper spearheaded an epoch of environmental openness that led to more than \$3 billion in international aid to Russia to clean up 200 decommissioned submarines and to secure decades of military nuclear waste.

The paper's findings dovetailed an early Bellona report in 1992 on radioactive waste dumped by the Russian Navy in the Kara Sea.

Hauge said that Yablokov was "the first person in a position of power in Russia who was brave enough to step forward and support our conclusions."

"He helped open serious discussion about what was a Chernobyl in slow motion," said Hauge. The partnership became critical. In 1995, Bellona's Alexander Nikitin was charged with treason for his contribution to a report expanding on Bellona's conclusions about nuclear dangers in the Arctic. The report was called "The Russian Northern Fleet: Source of Radioactive Contamination."

Throughout the endless hearings leading up to Nikitin's eventual acquittal, Hauge said Yablokov's "calm, collected" knowledge of the Russian constitution helped guide the defense.

"His coolness during the Nikitin case was remarkable," said Hauge on Tuesday. "He really emphasized that the constitution was the way to Nikitin's acquittal."

In 2000, Russia's Supreme Court agreed, and acquitted Nikitin on all counts, making him the first person to ever fight a treason charge in Russia and win.

Yablokov was a constant luminary at Bellona presentations in Russia, the European Union, the United States and Norway, most recently presenting his 2007 book in Oslo on the 30th anniversary of the Chernobyl disaster.

He was also a tireless defender of environmental activists in Russia, suggesting at a 2014 Bellona conference in St. Petersburg that ecological groups should publish a list of those government officials who harass them.

"We must constantly support our comrades who have been forced to leave the country or who have ended up in jail on account of their environmental activism," he told the conference.

That same year, Yablokov championed the presentation of a report on environmental violations that took place at Russia's showcase Winter Olympics in Sochi.

Yablokov arranged for activists from the Environmental Watch on the Northern Caucasus – many of whom were jailed, exiled or otherwise harassed into silence – to present their shocking report on Olympic environmental corruption in Moscow when every other venue had turned them away.

"He was a friend and advisor to us from the beginning and in a large part we owe the success of our Russian work to his steady advice and guidance," said Hauge.

Yablokov's death was mourned across the spectrum in Moscow. Igor Chestin, head of the WWF called Yablokov Russia's "environmental knight."

Valery Borschsev, Yablokov's colleague in the human rights faction of the Yabloko party said of him that "he was a person on whom the authorities had no influence."

Charles Digges

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The mothers of Fukushima (1)

An article in German by IPPNW https://www.ippnw.de/atomenergie/gesundheit/artikel/de/unabhaengige-untersuchung-undberatu.html aus dem ATOM-Energie-Newsletter Januar 2017

Die Mütter von Fukushima

Unabhängige Untersuchung und Beratung für Betroffene des Super-GAUs von Fukushima 09.01.2017

In Japan versuchen die Behörden weiterhin, die Bevölkerung bezüglich der Risiken der Atomenergie zu beruhigen. Ein enormer PR-Aufwand wird betrieben, um die Atomenergie in einem guten Licht darstehen zu lassen und gegenläufige Nachrichten, kritische wissenschaftliche Ergebnisse und unangenehme Fakten zu unterdrücken. Unabhängige Strahlenmessstellen sind für die japanische Atomlobby daher ein besonderer Dorn im Auge – besonders wenn diese von Müttern betrieben werden, die die Gesundheit und die Zukunft ihrer Kindern als Motivation für ihre subversive Arbeit anführen.

In der Stadt Iwaki, nur etwa 50 km vom havarierten AKW entfernt, führt das gemeinnützige "Mothers' Radiation Lab Fukushima" seit 5 Jahren unabhängige wissenschaftliche Strahlenmessungen durch. Der japanische Name (Iwaki Radiation Measuring Center Tarachine) spielt auf die "sorgsame Mutter" Tarachine in der japanischen Tradition an. Das Labor wurde von besorgten Müttern gegründet, die sich auf Demonstrationen gegen Atomenergie kennen gelernt hatten. Ihnen wurde bewusst, dass sie mit Demonstrationen alleine wenig bewirken konnten. Sie wollten etwas bewegen und das Schicksal ihrer Familien und ihrer Heimat nicht länger den Behörden in Tokyo überlassen, sondern in die eigene Hand nehmen. Daher fassten sie den Beschluss, eine unabhängiges Strahlenmess-Labor zu gründen und taten sich dafür mit Wissenschaftlern und Spezialisten zusammen. Sie sammelten Spenden, kauften die nötige Ausrüstung, bildeten sich fort und gründeten 2011 das Mother's Radiation Lab Fukushima. Heute hat das Labor 12 MitarbeiterInnen und mehr Aufträge als es bearbeiten kann. Seit dem mehrfachen Super-GAU von Fukushima sind in Japan mehr als 100 bürgerbetriebene Labore entstanden, aber das Labor der Mütter in Iwaki ist das einzige, das über die nötige Gerätschaft zur Testung von Betastrahlern verfügt. Das ist wichtig, um in Nahrungsproben, wie z.B. von wilden Pilzen oder Obst radioaktive Stoffe wie Cäsium-134, Cäsium-137, Strontium-90 und Tritium zu detektieren. Das Labor veröffentlicht seine Daten online und rät der Bevölkerung dazu, Orte und Lebensmittel mit hoher nachgewiesener Strahlenbelastung zu meiden. Diese fundierten Daten und Warnungen sind für viele Familien im Alltag sehr wichtig und ergänzen die dürftigen Informationen der Präfektur und der Zentralregierung. Diesen scheint vor allem an einer baldmöglichen Wiederbelebung der regionalen Landwirtschaft gelegen zu sein, so dass unangenehme Erkenntnisse über anhaltende Strahlenbelastungen in Fukushima mit dem Argument verdrängt werden, man m

üsse nun optimistisch in die Zukunft blicken.

Die Mütter wissen, dass viele Familien an der einfachen aber lebenswichtigen Frage verzweifeln: was können wie noch sicher essen? Die Kluft zwischen denen, die unbeschwert die eigene Ernte verzehren und denen, die nur getestete und für sicher befundene Nahrung für ihre Familie zulassen, ist groß und verläuft zum Teil zwischen Ehepartnern oder Generationen, wenn beispielsweise ältere Menschen wie gewohnt Obst und Gemüse für den Eigenbedarf anbauen und ihre Kinder die Ernte aber für sich und ihre Familien aus Sorge um radioaktive Belastung ablehnen. Hier bieten die Mütter mit ihrem unabhängigen Labor eine konkrete Lösung für potentiell verheerende Familienkonflikte. Die MitarbeiterInnen des Labors testen alles, was ihnen gebracht wird – von Reis über Laub bis hin zum Inhalt von Staubsaugerbeuteln.

Die Regierung testet Stichproben auf Großmärkten und im Handel, bietet aber keine Messungen von selbst angebautem Obst oder Gemüse an. Auch führte die Regierung groß angelegte Dekontaminationsprojekte in den Städten und Dörfern der kontaminierten Gebiete durch und stellte sicher, dass in Wohngebieten die Grenzwerte nicht überschritten werden. Mittlerweile sind diese Messungen jedoch teilweise schon Jahre her und die Flächen durch Pollenflug, Wind, Regen, Schnee und zum Teil auch Überschwemmungen bereits mehrfach rekontaminiert. Regelmäßige Messungen von Bodenproben oder Hausstaub werden von den Bewohnern der kontaminierten Gebiete dringend benötigt, von den Behörden jedoch nicht angeboten. In kommerziellen Laboren kosten solche Analysen rund 200.000-250.000 Yen (1.600-2.000 Euro). Im Mothers' Radiation Lab Fukushima kosten die selben Untersuchungen nur rund 3.000 Yen (25 Euro), so dass sich auch Privatleute eine Messung ihrer Ernte, ihrer Bodenproben, ihres Herbstlaubs oder ihres Hausstaubs leisten können.

Die Mütter bilden sich selber ständig fort und professionalisieren ihre Arbeit. Nun da sich das Labor mittlerweile etabliert hat, haben die Mütter vor, bis 2017 Japans erste von Bürgern betriebene Klinik zu gründen. Hier sollen die Betroffenen der Atomkatastrophe von Fukushima die Möglichkeit haben, Blutuntersuchungen, augenärztliche Untersuchungen auf Katarakte, Ultraschalluntersuchungen der Schilddrüse und Ganzkörper-Strahlenmessungen durchführen zu lassen. Einige dieser Angebote werden bereits jetzt unregemäßig von MitarbeiterInnen des Bürger-Labors und Spezialisten angeboten, die aus ganz Japan nach Iwaki reisen um die dortige Bevölkerung zu unterstützen.

Während die Schilddrüsen von Kindern in der Präfektur Fukushima alle zwei Jahre von der Fukushima Medical University untersucht werden, gibt es in der Bevölkerung wachsende Kritik und Zweifel an den Ergebnissen dieser Tests. Die Unterlagen und Daten werden den Familien nicht ausgehändigt, die Ultraschalltermine sind nur sehr kurz und dürfen nur alle zwei Jahre durchgeführt werden und obendrein hat die Studienleitung wiederholt angegeben, die Untersuchungen mit dem Ziel durchzuführen, die Bevölkerung zu beruhigen. Daher sind die unabhängigen Untersuchungen des Mothers' Radiation Lab Fukushima für besorgte Familien so wichtig. Die Mütter planen zudem die Einführung umfassender Beratungsangebote und psychologische Unterstützung. Laut Angaben einer Umfrage der Chukyo Universität von 2014 haben 50% aller Mütter in Fukushima Sorge um die Gesundheit ihrer Kinder. Der psychische Stress des Lebens in einer kontaminierten Umwelt macht sich bei den Müttern, aber auch bei den Kindern bemerkbar.

Von Dr. Alex Rosen

Mehr Informationen

über das Mothers' Radiation Lab Fukushima und Informationen, wie man die Einrichtung am besten unterstützen kann, findet man auf den folgenden Webseiten:

- https://www.facebook.com/Mothers-Radiation-Lab-Fukushima-686021531546687/
- http://www.iwakisokuteishitu.com/english/index.html
- http://www.bbc.com/news/magazine-35784923

The mothers of Fukushima (2)



In Japan the authorities continue to do their utmost to reassure the people about the risks of nuclear energy. Huge communication efforts are made to put nukes in a good light and play down new developments, critical scientific findings and unpleasant facts. People who have decided to measure radioactive contamination themselves are therefore seen as particularly obnoxious by the Japanese nuclear lobby. Even more so when this subversive initiative is taken by mothers reduced to it because their children's health and future is at stake.

For more information on the Fukushima mothers radiation lab, see :

http://www.iwakisokuteishitu.com/english/index.html video : https://youtu.be/dwq8bEZnJhU?t=51

see also:

http://www.bbc.com/news/magazine-35784923

Five years ago an earthquake off the coast of Japan triggered a tsunami and a series of meltdowns at the Fukushima nuclear plant. Kaori Suzuki's home is nearby - determined to stay, but worried about her children's health, she and some other mothers set up a laboratory to measure radiation.

A woman in a white lab coat puts some yellow organic material on a slide, while grey liquid bubbles in vials behind her. Other women, one of them heavily pregnant, discuss some data on a computer screen. A courier delivers a small parcel which is opened and its contents catalogued.

But this is no ordinary laboratory. None of these women trained as scientists. One used to be a beautician, another was a hairdresser, yet another used to work in an office. Together they set up a non-profit organisation - Tarachine - 50km (30 miles) down the coast from the Fukushima nuclear plant, to measure radiation in the city of Iwaki.

Kaori Suzuki, the lab's director, shows me a list of results. "This is the level of strontium 90 in Niboshi, dried small sardines, from the prefecture of Chiba," she says.

"What about this food?" I ask, pointing out a high number.

"Mushrooms have higher levels [of radiation]. The government has forbidden people from eating wild mushrooms, but many people don't care, they take them and eat," she says.

The lab mainly measures the radioactive isotopes caesium 134 and 137, and collects data on gamma radiation. Strontium 90 and tritium were only added to the list in April last year. "Since they emit only beta rays we weren't able to detect them until recently. Specific tools were necessary and we couldn't afford them," says Suzuki. Thanks to a generous donation, they now have the right equipment. Tarachine publishes its findings online every month, and advises people to avoid foods with high readings

as well as the places they were grown.

★Gamma-ray				(Bq.	Kg raw	Wei	sht of	raw sau	ple Bq/Kg dry:We	ight of	dried :	sample)
Samples	Sampling Point	Sampling Month	Measurement Result		U	ncerta	inty	Total Amount of Cesiu	Minimum Limit of Detection			
Rice	Aizu	0ct-15	Cs137	1244	Selle rat	±	-	By/Te cos	Under Minimum Limit of Detection	Cs137	2.5	Su/Ta ray
			Cs134	200	Juffe tos	±	-	la/la me		Cs134	2.3	Su'la ree
Rice	Ishikawa Ishikawa	0ct-15	Cs137	-	Suffic ree	±	-	Sa/Ta rea	Under Minimum Limit of Detection	Cs137	2.2	Julia rea
			Cs134	3222	Saffe ros	#	-	3q/fg ma		Cs134	2.1	34/5g ras
Brown rice	Sakai Osaka	0ct-15	Cs137	<u>E</u>	Ballig rue	±	-	34/54 me	Under Minimum Limit of Detection	Cs137	1.1	Julia ras
			Cs134	2	Bulls rie	±	-	h/le m		Cs134	1.0	de/la ree
Yuzu (citrus fruits)	Hobara Date	Jan-16	Cs137	8.8	Syfla ree	±	2.5	No/Ka ree	12.0	Cs137	2.4	No/Eq ree
			Cs134	3.2	Suffa ree	±	1.6	As/fa ree		Cs134	2.3	Su/Ta ree
Lemon	Ena Iwaki	Jan-16	Cs137	6.5	buffa rue	±	2.4	Se/Le rea	6.5	Cs137	4.7	Julla rue
			Cs134		Selfa rat	±	-	N/Te ree		Cs134	_	Su/Le rue
Kawano-natsudaidai orange (without peel)	Yunagaya Jyoban Iwaki	Jan-16	Cs137	5	Juffa ree	±	-	Sc/Eg ma	Under Minimum Limit of Detection	Cs137	1.2	Suffe ree
			Cs134	5.55	Reffix ros	±	-	Ju/Ta m		Cs134	1.1	Faffa ree
Apple (without peel)	Fukushima	Dec-15	Cs137	-	Reffe ree	±	-	lu/te no	Under Minimum Limit of Detection	Cs137	2.7	Su/Ta ree
			Cs134	100	Jufa na	±	-	hi/fe res		Cs134	2.5	34/Tg ras
Butterbur sprout	Kubo Kashima Iwaki	Jan-16	Cs137	-	Juffa cos	±	-	h/fa m	Under Minimum Limit of Detection	Cs137	2.3	3u/Ta ras
			Cs134	100	lufa rat	±	-	la/la na		Cs134	2.6	Julia ree
Dried persimmon	Touno Iwaki	0ct-15	Cs137	3.2	Sufit ree	±	1.5	ls/fa m	3.2	Cs137	2.1	3u/St raw
			Cs134	-	lafa re	±	-	ls/fg m		Cs134	1.7	Solfa rae
Pollution raw wood shiitake mushrooms	Nagasaki Iwaki	Jan-16	Cs137	198	Suffe ros	±	40.0	A/G m	253	Cs137	8.1	34/52 744
			Cs134	54.9	Juffe ros	±	12.8	Selfe me		Cs134	7.4	34/54 cas
Thinly sliced and dried strips of radish	Tabito Iwaki	unknown	Cs137	3.4	Juffe ros	±	1.9	\$6/\$8 me	3.4	Cs137	2.8	34/5g ras
			Cs134		SgRg rae	±	-	N/Te me		Cs134	2.5	56/Ta тан
Thinly sliced and dried strips of radish	Iwaki	unknown	Cs137	4.2	Balla rue	±	2.7	3s/ls no	4.2	Cs137	3.9	Julia ree
			Cs134	2	Buffe em	±		No/Te 110		Cs134	3.6	Sulla ree

Image Tarachine

Five years ago, Suzuki knew nothing about radiation. She spent her time looking after her two children and teaching yoga. The earthquake on 11 March 2011 changed everything.

"I've never experienced so much shaking before and I was very scared. Right from the moment it started I had a feeling that something might have happened to the nuclear plant," she says. "The first thing I did was to fill up my car with petrol. I vividly remember that moment."

The authorities evacuated the area around the nuclear plant - everyone within a 20km (12-mile) radius was told to leave, and those who lived up to 30km (18 miles) away were instructed to stay indoors. Despite living outside the exclusion zone, Suzuki and her family fled and drove south. The roads were congested with cars and petrol stations ran dry.

"We didn't come back home until the middle of April and even then we wondered if it was safe to stay," says Suzuki. "But my husband has his own business with 70 employees, so we felt we couldn't leave." Although radiation levels in Iwaki were officially quite low, the "invisible enemy" was all people could talk about. Conversations with friends changed abruptly from being about children, food and fashion, to one topic only: radiation. "You can't see, smell or feel it, so it is something people are afraid of," says Suzuki. Above all, people didn't know what was safe to eat.

"It was a matter of life and death," she says.

Fukushima is farming country and many people grow their own vegetables. "People here love to eat home-grown food and there's a strong sense of community with people offering food to their friends and neighbours," says Suzuki. This caused a lot of anxiety. "A difficult situation would arise where grandparents would be growing food, but younger mothers would be worried about giving it to their children."

Suzuki formed the group "Iwaki Action Mama" together with other mothers in the area. At first they organised demonstrations against nuclear power, but then they decided on a new tactic - they would learn how to measure radiation themselves.

They saved and collected \$600 (£420) to buy their first Geiger counter online, but when it arrived the instructions were written in English, which none of them understood. But they persevered and with the

help of experts and university professors, organised training workshops. Soon they knew all about becquerels, a unit used to measure radiation, and sieverts, a measure of radiation dose. They would meet

at restaurants and cafes to compare readings.

Becquerels and Sieverts

•A becquerel (Bq), named after French physicist Henri Becquerel, is a measure of radioactivity

•A quantity of radioactive material has an activity of 1Bq if one nucleus decays per second - and 1kBq if 1,000 nuclei decay per second

•A sievert (Sv) is a measure of radiation absorbed by a person, named after Swedish medical physicist Rolf Sievert

In November 2011 the women decided to get serious and set up a laboratory. They raised money and managed to buy their first instrument designed specifically to measure food contamination - it cost 3 million yen (£18,500, or \$26,400).

They named the laboratory Tarachine, which means mothers - in particular, "beautiful mothers that protect their families" according to Suzuki.

"We felt as though we were on the front line of a battlefield," Suzuki says. "When you're at war you do what you have to do, and measuring was the thing we felt we had to do."

Today Tarachine has 12 employees, and more work than it can handle. People bring in food, earth, grass and leaves from their backyards for testing. The results are published for everyone to see. At first the lab was able to provide results after three or four days, but its service has become so popular it can hardly keep up. "We have so many requests for strontium 90 now that it can take three months," says Prof Hikaru Amano, the lab's technical manager.

Amano confesses he was surprised that a group of amateurs could learn to do this job so accurately, but says it is important work.

People began to mistrust the nuclear contamination data provided by the government and by the Tokyo Electric Power Company (Tepco), which manages the nuclear plant, he says.

About 100 so-called "citizen laboratories" have since sprung up, but Tarachine is unusual because it monitors both gamma and beta rays - most can only measure gamma rays - and because it tests whatever people want, whether it's a home-grown carrot or the dust from their vacuum-cleaner.

The government does take regular readings from fixed points in Fukushima prefecture. It also check harvests and foods destined for the market - for example, all Fukushima-grown rice is required to undergo radiation checks before shipping.

But "if you want to know the level of strontium and tritium in your garden, the government won't do this measurement," says Suzuki. "If you decide to measure it yourself, you'll need 200,000-250,000 yen (£1,535, or \$2,200) for the tests, and ordinary people can't afford to pay these costs. We have to keep doing this job so that people can have the measurements they want." Tarachine only charges a small fee - less than 3,000 yen (£18, or \$27).

Image copyright Emanuele Satolli Image caption Mother of two Kaori Suzuki now spends much of her time at the laboratory

Tarachine also provides training and equipment to anyone who wants to do their own measurements. "Some of the mothers measure soil samples in their schools. It's fantastic, they really have become quite skilled at doing this," says Suzuki.

And the group keeps an eye on children's health. It runs a small clinic where doctors from all over Japan periodically come to provide free thyroid cancer check-ups for local children. Since screening began, 166 children in Fukushima prefecture have been diagnosed with - or are suspected of having - thyroid cancer. This is a far higher rate than in the rest of the country, although some experts say that's due to over-diagnosis.

And for parents who want to give their children a break from the local environment, Tarachine even organises summer trips to the south of the country.

Suzuki's own life has changed dramatically since 2011. "I was just a simple mother, enjoying her life. But ever since I started this, I've been spending most of my time here, from morning to night," she says. "I must admit, sometimes I think it would be really nice to have a break, but what we are doing is too important. We're providing a vital service.

"If you want to have peace of mind after an accident like the Fukushima one, then I believe you need to do what we're doing."

Kaori Suzuki spoke to Outlook on the BBC World Service

Fukushima : "It is too soon to let go"

Video from NHK, January 28, 2017

Learning from Chernobyl children

https://www3.nhk.or.jp/nhkworld/en/news/videos/20170126194429680/

A Japanese woman has received a prestigious award for supporting children who suffered from what's considered the worst nuclear disaster in history.

She's using the recognition to send a message to people in her own country.

The Ukrainian embassy honored Mari Sasaki for the work her organization, the Chernobyl Children's Fund Japan, has done for the past 26 years.

"With our utmost love and respect, on behalf of the whole nation of Ukraine, President Petro Poroshenko gives the most prestigious decoration to you. I wish your honored activities continue."

"We've supported children suffering from diseases caused by the Chernobyl disaster for a long time. I feel you've recognized our efforts," Sasaki responds.

In 1986, a reactor in the former USSR exploded, sending huge amount of radioactive substances into the air and contaminating wide areas. It had severe repercussions on residents' health.

The Chernobyl Children's Fund started 5 years later when it was clear kids were still physically suffering. Sasaki jointed in 1998, volunteering at hospices, and introducing Japanese culture to children undergoing operations.

The organization donated tons of relief supplies and equipment -- even an ambulance. It has supported almost 12,000 Ukrainian and Belarussian kids.

One of the main ways it has done that is by finding people in Japan to act as sponsors.

"I think we have a strong bond. My sponsor child can't use his hands properly, but he tries so hard to write. It makes me so happy," says one of the foster parents.

Sasaki visits Belarus and Ukraine every year to check in on the children.

One of them was Inna Polischuku. She underwent a thyroid operation at age 7. But it created complications. She later married and had a daughter, but died at the age of 24.

"They suffer from not just thyroid cancer, but brain cancer, liver cancer, or various diseases when they are still so young. The situation has continued for 31 years, and no one knows when it will end," explains Sasaki.

She says it shouldn't be an issue if their diseases aren't directly related to the accident. She says if there's even a slight possibility of a connection, they should be looked after.

After the Fukushima nuclear accident in 2011, the group decided to use their experience to offer support in Japan. They've been monitoring children's health and giving families information.

Sasaki feels most people in Japan are moving past concerns about the accident, but she warns it's too soon for that.

"People need to know that 3 decades after Chernobyl, the damage is still being felt. In Japan, we have to remember that we still don't know the full extent of the fallout even though it's already been 6 years. We need to keep watching the situation. "

Sasaki says the victims of the disasters need to be continually cared for, and she hopes the medal will serve as a reminder that the work will never end.

Former Fukushima worker sues TEPCO

February 2, 2017

Ex-worker during Fukushima disaster sues Tepco, Kyushu Electric over leukemia

http://www.japantimes.co.jp/news/2017/02/02/national/crime-legal/ex-worker-fukushima-disastersues-tepco-kyushu-electric-leukemia/#.WJMn2_KDmos Kyodo

A former worker who developed leukemia after combating the 2011 Fukushima nuclear crisis demanded ¥59 million (around \$524,000) in damages from two utilities Thursday at his first trial hearing at the Tokyo District Court.

The 42-year-old man from Fukuoka Prefecture is the first person to be recognized by labor authorities as having an illness linked to workplace radiation exposure since the triple core meltdown at the Fukushima No. 1 nuclear power plant.

The man-made disaster was triggered by the huge earthquake and tsunami on March 11, 2011.

"I worked there because of my ardent desire to help bring the disaster under control but I was treated as if I was a mere expendable laborer," the plaintiff said.

"I want Tokyo Electric to thoroughly face up to its responsibility," he said.

The defendants, Tokyo Electric Power Company Holdings Inc., which runs Fukushima No. 1, and Kyushu Electric Power Co., whose Genkai nuclear plant also employed the plaintiff, asked the court to reject the claim, questioning the connection between his radiation exposure and leukemia.

The man was engaged in welding operations at the Fukushima Nos. 1 and 2 plants and the Genkai complex in Saga Prefecture from October 2011 to December 2013. His exposure in operations subcontracted by the utilities consisted of at least 19.8 millisieverts, according to his written complaint.

The man was diagnosed with acute myeloid leukemia in January 2014 and later went into depression. Both ailments are recognized as work-related illnesses by the Health, Labor and Welfare Ministry. He said he has been unable to go back to work and is therefore seeking compensation from the utilities.

200 million yen for US veterans (Koizumi)

February 3, 2017 200 million yen raised for U.S. vets who helped in Fukushima THE ASAHI SHIMBUN http://www.asahi.com/ajw/articles/AJ201702030052.html

NAGOYA--Almost 200 million yen (\$1.8 million) has been donated so far to a foundation set up to support U.S. veterans who claim they were affected by radioactive fallout after the 2011 Fukushima nuclear disaster when they were in the region doing relief work.

Former Prime Minister Junichiro Koizumi, one of the founders of the fund, said the total is expected to "reach about 200 million yen by the end of March."

Koizumi, who said the high amount was totally unexpected, revealed the progress in a lecture he gave in Nagoya on Feb. 2.

The former prime minister initiated the original relief project and later set up the foundation in July along with others including another former prime minister, Morihiro Hosokawa, to assist the veterans, who were part of Operation Tomodachi mission to assist after the Great East Japan Earthquake.

"I initially hoped to gather 100 million yen by (the end of the donation period at) the end of March, but the target was surpassed last year," Koizumi said in the public talk.

Globally renowned architect Tadao Ando and several business leaders are also supporting the cause, according to Koizumi.

"Something like that could happen again in the future and even something more unthinkable could happen. That is what a nuclear plant accident is all about," said Koizumi in the lecture.

"Once the momentum to create a nation without relying on nuclear power generation picks up, the citizens and corporations will also stand up to help," predicted Koizumi, who has publicly campaigned for a nuclear-free Japan.

"Drastic increase in radiation level"?

February 5, 2017

Radiation at Fukushima Spikes to Highest Levels Since 2011

http://www.ecowatch.com/fukushima-nuclear-radiation-2240464475.html True Activist

Nearly six years after the initial explosion caused a catastrophic meltdown at the Daiichi nuclear power plant in the Fukushima prefecture of Japan, the situation has suddenly taken a drastic turn for the worst. Tokyo Electric Power Company (TEPCO), the company which owns and operates the now defunct power plant, announced Thursday that radiation inside the containment vessel of one of the plant's failed reactors has now reached levels undetected since the disaster first occurred in 2011. Radiation inside the reactor has reached 530 sieverts per hour, a drastic increase from the previously recorded 73 sieverts per hour recorded in the aftermath of the meltdown. **The level of radiation is so high that an official of the National Institute of Radiological Sciences** told the Japan Times **that**

medical professionals have never considered dealing with this level of radiation in their work. TEPCO has stated that the cause of the radiation spike is a 2 meter diameter hole inside the bottom grating of the containment vessel. The hole was likely caused by melted fuel.

Plans have been made to send a robot into the area to survey the damage as the true extent of the structural damage remains unknown. However, previous attempts to use robots to gauge damage or seal breaches at Fukushima have failed. Several robots were deployed to seal a breach in another containment vessel, which continues to release 300 tons of radioactive water a day into the Pacific Ocean. Due to the high temperatures present, all of the robots were rendered nonfunctional and unable to complete the task. While TEPCO previously claimed that most of the reactor's nuclear fuel remained contained in the pressure vessel, company spokesman Yuichi Okamura stated that "it's highly possible that melted fuel leaked through."

TEPCO has yet to state the expected impact of the radiation spike or the potential consequences of the nuclear fuel leak. The company is expected to detail its plan for containment and offer more details regarding the impacts of this latest development in the coming week. However, given that TEPCO

admitted to "covering up" the impact of the initial disaster with the full complicity of the Japanese government, it remains to be seen if they can be taken at their word. *Reposted with permission from our media associate* True Activist.

Even robots can't take it

February 16, 2017

Robot stops working in Fukushima reactor

https://www3.nhk.or.jp/nhkworld/en/news/20170216_34

The operator of the crippled Fukushima Daiichi nuclear power plant says it suspended a survey by a robot at one of its reactors after the device stopped working.

Tokyo Electric Power Company, or TEPCO, sent the scorpion-shaped robot into the containment vessel of the plant's No. 2 reactor on Thursday.

The company believes fuel in the reactor melted through its core during the 2011 accident and accumulated at the bottom of the facility's containment vessel.

The survey was aimed at getting a close look at what could be fuel debris -- a mixture of nuclear fuel and melted parts of the reactor.

The robot was also expected to measure radiation and temperatures there to gather data for scrapping the reactor.

TEPCO officials say the device was advancing on a metal rail leading to a central area below the reactor's core, but stopped moving before it could reach the center.

The officials say they decided to give up the robot and cut its remote-control cable.

TEPCO plans to analyze data collected by the robot and figure out how to carry out future probes.

Robotic reactor survey suspended midway

https://www3.nhk.or.jp/nhkworld/en/news/20170216_29/

The operator of the crippled Fukushima Daiichi nuclear power plant says it suspended a survey by a robot there after the device stopped working.

Tokyo Electric Power Company, or TEPCO, sent the scorpion-shaped robot into the containment vessel of the plant's No. 2 reactor on Thursday.

The survey was aimed at measuring radiation and temperatures there to gather data for scrapping the reactor.

TEPCO officials say the robot was advancing on a metal rail leading to a central area below the reactor's core while recording images and measuring radiation, but stopped moving before it could reach the center.

Where IS the fuel?



February 19, 2017

Radiation levels at Fukushima reactor puzzle nuclear experts

http://www.asahi.com/ajw/articles/AJ201702190042.html

THE ASAHI SHIMBUNThe Asahi Shimbun

A robot was expected to solidify ways to clean up the No. 2 reactor at the Fukushima No. 1 nuclear plant, but its short-lived mission raised puzzling questions that could derail existing decommissioning plans. The robot, Sasori, was abandoned in the melted-down reactor after it became stuck in deposits and other debris that are believed to have interfered with its drive system.

But it did take radiation measurements that indicate Tokyo Electric Power Co., operator of the plant, was too optimistic about the state and location of the melted fuel within the reactor. The melted fuel, in fact, may be spread out all over the reactor's containment vessel.

Scientists had believed the melted nuclear fuel fell through the reactor's pressure vessel and landed on metal grating and the floor of the containment vessel.

The results of Sasori's investigation, coupled with previous data taken from possible images of the melted fuel, show the situation within the reactor is much worse than expected. And a fresh investigation into the reactor is now nowhere in sight.

A remote-controlled video camera inserted into the reactor on Jan. 30 took what are believed to be the first images of melted fuel at the plant, which suffered a triple meltdown after the March 2011 Great East Japan Earthquake and tsunami.

Based on the images, TEPCO estimated 530 sieverts per hour at a point almost halfway between the metal grating directly beneath the pressure vessel and the wall of the containment vessel. Black lumps on the grating are believed to be melted fuel.

A different robot sent in on Feb. 9 to take pictures and prepare for Sasori's mission estimated 650 sieverts per hour near the same spot.

Both 530 and 650 sieverts per hour can kill a person within a minute.

Sasori, equipped with a dosimeter and two cameras, on Feb. 16 recorded a reading of 210 sieverts per hour near the same location, the highest figure measured with instruments in the aftermath of the disaster.

Sasori was supposed to travel along a rail connecting the outer wall of the containment vessel with the metal grating to measure radiation doses and shoot pictures inside, essential parts of work toward decommissioning the reactor.

After traveling only 2 meters, the robot became stuck before it could reach the metal grating. TEPCO at a news conference repeatedly said that Sasori's investigation was not a "failure" but had produced "meaningful" results.

However, an official close to TEPCO said, "I had great expectations for Sasori, so I was shocked by how it turned out."

Hiroaki Abe, professor of nuclear materials at the University of Tokyo who has studied TEPCO's footage, tried to explain why high doses were estimated between the pressure vessel and the containment vessel. "Instead of directly landing on the rail, the melted nuclear fuel may have flown off after it reacted violently with the concrete, which had a high moisture content, at the bottom of the containment vessel, just like what happens when lava pours into the sea," Abe said.

But he said this scenario raises a puzzling question, considering the estimated radiation readings near the area below the pressure vessel were down to 20 sieverts per hour, according to an analysis of the video footage.

"If nuclear fuel debris had splattered around, the radiation levels at the central area below the pressure vessel must be extremely high," he said. "In addition, deposits on the rail would have taken the shape of small pieces if they were, in fact, flying nuclear fuel debris. The findings are puzzling." Images by the remote-controlled camera also showed that equipment in the lower part of the pressure vessel was relatively well preserved, indicating that the hole at the bottom of the vessel is not very large. "How to remove nuclear fuel debris will all depend on how much remains inside the pressure vessel and how much fell out," Abe said.

Toru Obara, professor of nuclear engineering at the Tokyo Institute of Technology, stressed the need to retrieve substances from the bottom of the robots or elsewhere.

"We could get clues as to the state of the melted nuclear fuel and the development of a meltdown if we could figure out which materials mixed with the nuclear fuel," he said.

The surveys by the camera and robots were conducted from a makeshift center at the No. 2 reactor. The center's walls are made from radiation-blocking metal.

TEPCO and the government plan to determine a method to remove nuclear fuel debris in fiscal 2018 before they proceed with the actual retrieval process at one of the three destroyed reactors.

One possible method involves filling the containment vessels with water to prevent radioactive substances from escaping.

(This article was compiled from reports by Kohei Tomida, Masanobu Higashiyama and Takashi Sugimoto)

Greenpeace new report : No return to normal

« Our conclusion is that the highly complex radiological emergency situation in litate, and with a high degree of uncertainty and unknown risks, means that there is no return to normal in litate, Fukushima prefecture. » [executive summary]

http://www.greenpeace.org/japan/Global/japan/pdf/NRN_FINweb4.pdf **No return to normal :**

House Case Studies of the Current Situation and Potential Lifetime Radiation Exposure in Iitate, Fukushima Prefecture

Contents : EXECUTIVE SUMMARY 1. INTRODUCTION 2. SURVEY METHODOLOGY 3. 2016 IITATE SURVEY RESULTS 4. PROJECTIONS ON DOSE RATE AND LIFETIME EXPOSURE BUDGES 5. POTENTIAL LIFETIME DOSE FROM GROUND DEPOSITION FOR SURVEYED AREAS IN IITATE 6. LIFETIME EXPOSURE IITATE HOUSE SURVEY RESULTS 7. DOSE BADGES 8. RADIATION HOT SPOTS 9. CONCLUSION AND RECOMMENDATIONS

February 2017

Iltate's evacuees pressured to return (Greenpeace)



Government employees monitor radiation at a day-care center in litate in 2011

Fukushima nuclear disaster evacuees 'pressured' to return to contaminated homes, says Greenpeace

http://www.dw.com/en/fukushima-nuclear-disaster-evacuees-pressured-to-return-to-contaminated-homes-says-greenpeace/a-37639353

Even though radiation levels in a village near the site of the Fukushima nuclear disaster still exceed international guidelines, its evacuated residents are being coerced to return, according to a Greenpeace report.

Residents from the Japanese ghost village of Iitate will be allowed to return to their former homes at the end of March - the first time since they were forced to flee the Fukushima nuclear disaster in 2011. That's the date the Japanese government has set to lift evacuation orders.

But according to environmental organization Greenpeace, it's uncertain whether many will want to. Greenpeace says tests it has carried out on homes in litate show that despite decontamination, radiation levels are still dangerously high - but that's not stopping the Japanese governmenment from pressuring evacuees from returning, under threat of losing financial support.

Those who refuse to go back to their former homes, and are dependent on the Japanese government's financial help, are faced with a dilemma. After a year from when an area is declared safe again to live in, evacuated residents will see their compensation payments terminated by the government.

Radiation 'comparable with Chernobyl'

The nuclear disaster led to more than 160,000 people being evacuated and displaced from their homes. Of these, many tens of thousands are still living in temporary accommodation six years on.

The village of Iitate, lying northwest of the destroyed reactors at Fukushima Daiichi power plantand from which 6,000 citizens had to be evacuated, was one of the most heavily contaminated following the nuclear disaster.

Government employees monitor radiation at a day-care center in litate in 2011

Around 75 per cent of litate is mountainous forest, an integral part of residents' lives before the nuclear accident.

But according to Greenpeace's report, published on Tuesday, radiation levels in these woods are "comparable to the current levels within the Chernobyl 30km exclusion zone - an area that more than 30 years after the accident remains formally closed to habitation."

Put another way, Greenpeace said that in 2017, there clearly remains a radiological emergency within litate - defining emergency thus: "If these radiation levels were measured in a nuclear facility, not litate, prompt action would be required by the authorities to mitigate serious adverse consequences for human health and safety, property or the environment."

The environmental organization says decontamination efforts have primarily focused on the areas immediately around peoples' homes, in agricultural fields and in 20-meter strips along public roads. But these efforts ended up generating millions of tons of nuclear waste - these now lie at thousands of locations across the prefecture, but they haven't reduced the level of radiation in litate "to levels that are safe," says Greenpeace.

'Normalizing' nuclear disaster?

The organization has accused the Japanese government of trying "to normalize a nuclear disaster, creating the myth that just years after the widespread radioactive contamination caused by the nuclear accident of 11 March 2011, people's lives and communities can be restored and reclaimed.

"By doing so, it hopes, over time, to overcome public resistance to nuclear power."

Greenpeace also lambasted the government for leaving unanswered what it calls a critical question for those trying to decide whether to return or not: what radiation dose will they be subjected to, not just in one year but over decades or a lifetime?

Greenpeace says Japan's government wants to restore public confidence in nuclear power at the cost of harming residents

"Until now the Japanese government has exclusively focused on annual radiation exposure and not the potential radiation dose rates returning citizens could potentially face over their entire lifetime," says Greenpeace.

Greenpeace, which has been monitoring litate since 2011, carried out its latest survey in November 2016 It found that the average radiation dose range for litate beginning from March 2017 over a 70-year lifetime was between 39 millisieverts (mSv) and 183mSv - and that's not including natural radiation exposure expected over a lifetime, or the exposure received in the days, weeks and months following the March 2011 nuclear disaster. That exceeds yearly guidelines set by the International Commission on Radiological Protection (ICRP) when added up over a 70-year period - it puts the maximum recommended radiation exposure at 1mSv annually.

Greenpeace says: "The highly complex radiological emergency situation in litate, and with a high degree of uncertainty and unknown risks, means that there is no return to normal in litate, Fukushima prefecture." It has called on the Japanese government to cease its return policy, and to provide full financial support to evacuees, and "allow citizens to decide whether to return or relocate free from duress and financial coercion."

According to Greenpeace, "for the more than 6,000 citizens of litate, this is a time of uncertainty and anxiety."

Heinz Smital, nuclear physicist and radiation expert at Greenpeace Germany, and part of the team taking measurements at litate, told DW the residents were faced with a very difficult situation.

"If you decide to live elsewhere [and not return to litate], then you don't have money, you're sometimes not welcomed in another area so you are forced to leave, because people say, 'you're not going back but you could go back,'" he said. "But for people who go back, they have contaminated land, so how can they use the fields for agriculture?"

He urged the Japanese government to more involve those affected in the decision-making process and not try to give an impression that things are "going back to normal."

"It's a violation of human rights to force people into such a situation because they haven't done anything wrong, it's the operator of the power plant responsible for the damage it caused," said Smital.

"It's very clear that there's very serious damage to the property and the lifestyle of the people but the government doesn't care about this."

DW recommends

Tokyo under fire for plans to speed return of Fukushima evacuees

35. Japan aims to lift evacuation orders for many people forced from their homes by the Fukushima disaster, environmentalists say many areas still show highly-elevated levels of contamination and are unfit for habitation. (21.07.2015)

Radiation at Fukushima plant hits 5-year high

36. Japanese nuclear plant has recorded the highest radiation level since the 2011 earthquake and tsunami. The findings are likely to delay attempts to dismantle the plant and will likely increase decommissioning costs. (03.02.2017)

Living with radiation a year after Fukushima

37. food remains a worry for many Japanese a year after the March 11 9.0-magnitude earthquake and ensuing tsunami with up to 40-meter (130-ft.) waves which triggered the worst atomic disaster since Chernobyl. (10.03.2012)

Constant battle against radiation



Workers examine the inside of the No. 2 reactor containment vessel at the Fukushima No. 1 Nuclear Power Plant on Jan. 30, 2017. (Photo courtesy of Tokyo Electric Power Co.)

February 27, 2017

Proud workers at Fukushima No. 1 nuke plant risk deadly radiation danger

http://mainichi.jp/english/articles/20170227/p2a/00m/0na/007000c

Tokyo Electric Power Co. (TEPCO) has failed to grasp the entire picture of melted fuel possibly accumulating inside the container vessel of the No. 2 reactor at the Fukushima No. 1 Nuclear Power Plant. The radiation levels inside the vessel are extremely high, to the extent a human could be killed in less than a minute, and even a robot designed to conduct a probe inside went down quickly.

- 【Related】 Fukushima nuclear plant still plagued by tainted water 6 years after meltdowns
- 【Related】 In Photos: Inside the Fukushima No. 1 nuclear power plant
- 【Related】 2 more nuclear reactors effectively clear regulator's safety review

The Mainichi Shimbun visited the disaster-stricken plant late last year ahead of the sixth anniversary of the nuclear meltdowns at the facility in March.

On the early morning of Dec. 24, 2016, a group of 26 workers assembled at a building housing the No. 2 reactor when it was still dark outside. The workers were from heavy machinery giant IHI Corp. and other

companies engaged in disaster recovery work. On top of their protective Tyvek suits, they were wearing special protective ponchos. They also had four-layer gloves on, with plastic tape wrapped around their wrists. The outfit made them sweat though it was the middle of winter.

In order for TEPCO to move ahead with decommissioning work on the No. 1 through No. 3 reactors at the plant, the utility needs to find out how much melted nuclear fuel lies inside the facilities, and where, in the aftermath of the meltdown of 1,496 fuel rods. The 26 workers were tasked with drilling a hole measuring 11.5 centimeters in diameter in the No. 2 reactor's container vessel to open the way for the probe robot, using a remotely controlled machine.

Ryosuke Ishida, 28, an employee of a related company in Hokkaido, was in charge of removing the machinery that was used in the drilling work. In order to ward off the severely high radiation, he was wearing a lead jacket weighing 10 kilograms on top of his already tightly sealed protective gear. Each worker was allowed only five minutes for their task to keep their radiation exposure doses to no more than 3 millisieverts a day. The dosimeters they were carrying with them were set to beep when the radiation level reached 1.5 to 2 millisieverts, with an additional alarm set to go off when radiation doses hit every one-fifth of those levels.

Ishida's dosimeter beeped just under a minute after he stepped inside the No. 2 reactor building. "Is it beeping already?" he thought to himself. The radiation levels vary greatly depending on where one stands inside the facility. Although Ishida had got a firm grasp on where the hot spots were during pre-training, he found himself "inadvertently standing on highly radioactive spots as I was focused on work." While trying to calm himself down, Ishida sped up his manual work. Alas, a machine component for turning a bolt fell off and rolled on the floor. "Damn, I'm running out of time," he thought. His full face mask went all white as he sweated physically and emotionally, blocking his view. By the time he finished picking up the fallen component and wrapped up his work, he was sweating all over his body. "It's a battle against radiation at the site," Ishida recalled. He added, though, "Because nobody else wants to do the job, I find it all the more worthwhile and take pride in it." (By Mirai Nagira, Science & Environment News Department)

Normalizing radiation risks for women and children

March 8, 2017

Six years after Fukushima began, "normalizing" radiation exposure risks the health of women and children; evacuees are given few options but to return to contamination http://www.beyondnuclear.org/japan/2017/3/8/six-years-after-fukushima-began-normalizing-radiation-exposu.html

BEYOND NUCLEAR PRESS RELEASE FOR IMMEDIATE RELEASE: March 8, 2017 (International Women's Day) CONTACT: Cindy Folkers, Beyond Nuclear, 240.354.4314 Six years after Fukushima began, "normalizing" radiation exposure risks the health of women and children Evacuees are given few options but to return to contamination TAKOMA PARK, MD- Six years after the Fukushima nuclear catastrophe began, Japan is lifting evacuation orders in a narrow radius around the ruined reactors, and removing compensation for evacuees. These evacuees will be moving back to towns that are still contaminated with hazardous radioactivity that can reach 20 times the internationally recommended level for human exposure. Even at the recommended level, most people would end up doubling the annual dose that they normally receive from unavoidable natural background.

Radiation is associated with disease, even at low levels. Females, children and pregnancy are especially vulnerable to radiation damage, but many of these sensitivities are unaccounted for in international recommendations. Despite these unique vulnerabilities, and lack of protection for them, women and children are often accused of "radiophobia", characterized by nuclear proponents as an irrational fear of radiation exposure—a point highlighted in a recent article in *Counterpunch* by Beyond Nuclear's Radiation and Health Hazard Specialist, Cindy Folkers.

"Females, children and pregnancy pay a disproportionate health price for nuclear energy because they are especially vulnerable to radiation damage. When a catastrophe like Fukushima happens, they become targets of ridicule for asking about safety, and often end up socially isolated or worse.

"In reality, science shows that women have every right to express grave concern over exposure to radioactivity without unscientific, misogynistic terms like 'radiophobia'—or in the case of Japan, 'radiation brain mom'—being applied to them," said Folkers.

In the wake of catastrophes that release hazardous man-made radioactivity, national and international agencies have acted to "normalize" radiation exposure by endorsing higher levels of allowable exposures (sometimes up to 20 times recommended levels) as well as encouraging the growing, eating and distributing of contaminated foods.

In the United States, the Environmental Protection Agency has recently recommended levels of radioactive contamination that are hundreds, even thousands or more, times higher after a nuclear incident. Under these Orwellian-named Protective Action Guides (PAGs), people could be exposed to these unsafe levels for years.

"These attempts to 'normalize' radiation exposure, by telling people it's alright to get more radiation than they already are, will continue to leave women and kids unprotected both internationally, and in the event of another nuclear catastrophe in the U.S.," Folkers contends.

According to the first-of-its-kind United Nations investigation linking health impacts of industrial radiation from a nuclear catastrophe to human rights, economic convenience is an unacceptable reason for increasing allowable levels of exposure post accident. A just-released report details how the nuclear catastrophe at Fukushima, and the official response to it, continues to be in violation of women's and children's human rights. This report is by Kendra Ulrich, a senior global energy campaigner for Greenpeace Japan, and a Beyond Nuclear board member.

"On this International Women's Day, we need to remember, women's voices should count for more, not less. The fact is, women and children are more vulnerable to radiation's harmful impacts, and the lifestage of pregnancy is uniquely sensitive. Since they pay the highest price for nuclear power and its releases, they should have a greater say in the energy decisions we currently face, and in how we protect those whose lives are devastated by nuclear catastrophes," says Folkers.

-30-

Update on March 8, 2017 by admin

Also see the blog by Kendra Ulrich of Greenpeace Japan, as well as the video of some of the women fighting for compensation (please like and share it!).

March 11, 2017 Namie: one step forward, a few steps back

Home holds little appeal for Namie evacuees

http://www.japantimes.co.jp/news/2017/03/11/national/social-issues/namie-one-step-forward-steps-back/#.WMPqLvKlSos

by John L. Tran

Special To The Japan Times

"Shayo" ("Setting Sun") is a somber, somewhat ominous photographic image created in 1914 by Hidaka Chotaro (1883-1926). It is a sepia-toned picture of a small hamlet over which loom dark mountains and the oncoming night.

A member of the amateur Nagoya-based Ai-yu Photography Club, Chotaro sought out isolated mountain and coastal landscapes to create pictorial images of traditional life in response to a question that has troubled Japan since the country started on the road of industrialization: Can its rural communities survive, culturally and economically, in the modern world?

Chotaro's style was part of a worldwide trend of creating photographic prints that resembled Victorianera oil paintings and, as a result, was commonly used to romanticize nature and oppose modernity with nostalgia for a mythical past. "Shayo," whose title alludes to a more metaphorical decline, may not be a ground-breaking work of art in itself, but it has historical value as a representation of the anxieties of its time.

More than 100 years later, the issue of rural depopulation is more serious than ever and probably nowhere is this problem more acute than in the area around the Fukushima No. 1 nuclear power plant. The reason for empty houses, shops and businesses may on the surface seem to be obvious — and qualitatively different from what is causing the decline in other parts of Japan — but it's not just concern about radioactivity.

From April this year, parts of Namie, a region that was heavily contaminated by radiation from the meltdowns at the plant caused by the earthquake and tsunami that struck Tohoku on March 11, 2011, will be open for residents to reoccupy permanently, but far fewer people are taking up the offer than local and central governments would like. In a September 2016 poll, only 17.5 percent of evacuees responded that they intended to return to where they lived before the disaster.

A retired head teacher from the local primary school who is now head of one of the local residents' committees is fairly sanguine about radioactivity.

"I'm not worried about radiation," he says as he visits his property in the evacuated zone to till one of his fields, "but a lot of people are afraid to move back. They're more scared of crime."

Although he admits he has no justification for it, he presumes that a lot of the burglary has been perpetrated "by foreigners." Other concerns are the damage to property from vermin and other wildlife, and the dread of being constantly faced with traumatic memories and the thought of lost loved ones. The government is wasting huge amounts of money decontaminating areas for habitation when no one wants to move back, he says.



Shinichi Kaneyama, head of Namie's reconstruction effort, shares this point of view. Speaking in an empty town hall located at one end of Namie's deserted main street in January, Kaneyama expresses doubt that the main objective of reconstruction should be to sanitize areas in the expectation that evacuees would want to return to their homes.

"We don't have concrete plans on how to revitalize the area. It's something we're working on now," Kaneyama says, somewhat nervously.

"I used to love fishing around here when I was a kid," he says. "Fishing was important for the area generally and I wish we could revive that ... but, with the water carrying radiation down from the mountains, I don't know if that's possible."

Along with the local police, construction workers and radiation screening facility staff who work in the area and live nearby, Kaneyama is confident that he is not at risk from radiation, and that the reason many people don't want to move back is not knowing how they'd make a living.

A scant 39 businesses, of a pre-3/11 total of around 1,000, are listed as being open in the area, according to the 2017 Namie Reconstruction Report. This dearth of amenities and job opportunities forms part of a vicious circle — there is nothing to return to, because few people are coming back.



There is radiation as well, of course. The Environment Ministry map of Fukushima shows a red smear running northwest from the crippled nuclear plant. The Namie district is divided into three zones: A, B and C. Zone A, closest to the coast, is the one that is scheduled to be fully open from April. Zone B has an annual accumulated radioactivity reading of 20-50 millisieverts. As the safe limit for exposure to radiation was set after 3/11, not without controversy, at 20 mSv by the government, it is open for people to drive through and for property owners to check on their homes and buildings, but not deemed sufficiently decontaminated for re-population.

The area northwest of the plant, Zone C, which lay directly under the plume of radiation from the venting of containment vessels, is described elliptically in the Namie Reconstruction Report as having an annual reading of "50 mSv or more." Entry into this area, which constitutes 81 percent of the district, is strictly forbidden, and Zone C is considered too large to decontaminate in the foreseeable future.

Differences between how this situation is presented in the local council's Namie Reconstruction Report and how it is couched by the Environment Ministry and the Ministry of Economy, Trade and Industry (METI) are understandable, but telling nonetheless.

Decontamination is a priority for all three organizations, but Namie officials also view health care, education, housing and transport as issues that must be resolved. By comparison, the metrics of success for the Environment Ministry are the number of hectares decontaminated and the volume of radioactive soil put into interim storage.

METI's goals are defined in terms of returning people to their homes as quickly as possible, monitoring water quality and providing financial compensation to disaster victims. If you have any doubts that the central government may have been lacking in competency or transparency in its handling of the 3/11 nuclear crisis, do not watch their clumsy Orwellian video "Fukushima Today — For a Bright Future."

Noboru Takano used to run a construction business in Namie and now lives with his wife in temporary housing in Minamisoma. Takano doesn't see a future in going back. He's retired but does the odd contract job, as well as being head of a local residents' committee.

Speaking in a small community center in Minamisoma, Takano says that although people are gradually moving out of the temporary housing, they are not returning to Namie, and are instead choosing to live elsewhere. Like Kaneyama, Takano thinks that Namie is being cleaned up and new housing is being built because people get paid to do it, not because anybody is keen to move back.

"For older people there's nowhere convenient to shop. ... You'd need to drive a long way just to get groceries," Takano says. "There's nothing I want to go back to. For younger people, I'm worried that they have no opportunities.

Takano is both jovial and stoic when talking about his hometown and his present situation. He's reasonably comfortable and doesn't want to dwell on the past.

Not everyone has fared as well. Out of a total pre-March 2011 disaster population of 21,434, 399 Namie residents have died from "evacuation stress," as it is called in the Reconstruction Report — more than double the number of people who were killed by the earthquake and tsunami.

Kenji Kubota, a curator who founded Japan Art Donation to raise funds for artists to get involved with disaster relief within days of 3/11, understood very early that mental health would be a major issue and that people, not just structures, would also need rebuilding.

Kubota later worked with the University of Tsukuba on the Creative Reconstruction Project, in which a number of different art and design schemes were developed to provide emotional support for evacuees living in temporary housing.

A particularly acute problem, he noticed, was the uncertainty of not knowing how long the limbo of being displaced would last. He also wanted to show how disaster victims felt that they were being forgotten and that their concerns were not being heard.

One of the main outcomes from the array of art and design workshops and community activities that resulted from the project was the creation of a documentary film titled "Iwaki Note: Fukushima Voice." Essentially a student project, the documentary is a little rough around the edges and doesn't have a strongly constructed central narrative, something that professional filmmakers might have worked harder to create. It is, however, a more subtle and powerful piece of work as a result. Rather than providing viewers with an emotionally cathartic story of human triumph over adversity, it portrays people who have individual and complex identities, over and above being victims of a disaster, struggling together to find solutions to their problems.

How useful can art and design projects be in helping to alleviate the effects of natural — and not-sonatural — disasters? Where large projects funded by public money are concerned, there will always be questions about cost-effectiveness, especially since it's hard — and perhaps counterproductive — to measure success when it comes to matters of creative practice.

Chiba-based freelance designer Seiji Tarumi does have two stories that are fairly convincing, however. Working with independent collective Tsumugiya, he designed fashion accessories with the surplus materials of deer horn and fishing line. The aim was to provide an occupation for oyster farmers' wives in Makinohama near Ishinomaki after the tsunami destroyed the local oyster beds.

One woman, who had lost everything in the disaster and was suicidal with depression, wrote to Tsumugiya after joining the jewelry workshop to say that the opportunity to get together with other oyster farmers' wives and do something productive gave her a reason to smile and laugh for the first time since 3/11.

More recently Tarumi has been working with the Door to Asia designer-in-residence program, and designed packaging for an apple grower and winemaker based in Ofunato, Iwate Prefecture. The client had moved back to his hometown in the wake of 3/11 after living for a time in Tokyo. He had wanted to start a business that could revitalize the area but was having trouble promoting his brand.

Tarumi put his client's story in the packaging and gave the brand a fresh new look, which has helped it become a premium product in department stores and lifestyle shops nationwide.

One of the clearest examples of clever design being of direct practical use can be found in the city of Kamaishi, located a few kilometers up the coast from Ofunato.

Robin Jenkins, a senior lecturer in interior and spatial design at Chelsea College of Arts in London, worked in collaboration with nonprofit organization Future Lab Tohoku to devise the Lifeboat in a Box project. To keep costs and red tape to a minimum, a "lifeboat station" was designed to go in the container in which the U.K.-built rescue boat was shipped to Japan.

Annual training workshops are held to ensure that the lifeboat is maintained as a practical asset for the local community, and as an excuse for students of Jenkins' old school, UWC Atlantic College, to meet and work with the people of Kamaishi.

Art and design may not be the first things that come to mind when thinking of post-tsunami reconstruction. However, if the northeastern coastline of Japan is going to recover after the debris and irradiated soil are cleared away, it faces the same economic and social problems that threaten all rural areas of Japan.

In 1987, the Ministry of International Trade and Industry attempted to combat rural decline with the introduction of a Resort Law that parachuted theme parks such as Huis Ten Bosch into outlying areas. After the bubble burst, most of those theme parks had to close or restructure. No more bread for the circuses, as it were.

Can art and design succeed where leisure resorts failed? METI's Cool Japan/Creative Industries Policy was launched two months after the 2011 disaster, and the proliferation of regional art festivals and biennales around Japan ever since is evidence that they are taken seriously as tools of economic policy.

The notion of anything "cool" coming out of a central bureaucracy is lamentable but, at the very least, creative practice is seen as having value in the abstract. From this there is a space to think about what is possible, and that is better than being left to lament what is lost, or trying to return a status quo that already had inherent problems.

Low-dose radiation in Fukushima

https://www.youtube.com/watch?v=c9qb4rjC20Y **The dangers of low-dose radiation in Fukushima** March 15, 2017 Press conference with Keith Baverstock, Nanako Shimizu et Cécile Anasuma-Brice held at the Foreign Correspondants Club of Japan

Radiation fear & children

March 25, 2017

Radiation brings fear, and kids let it all out

http://www.japantimes.co.jp/news/2017/03/25/national/media-national/radiation-brings-fear-kids-let/

by Michael Hoffman

Radiation is a fearful thing. Colorless, odorless, undetectable except by special instruments, it's one of those evils you can dismiss from your mind altogether, until the special instruments start registering. Then suddenly it's everywhere, or seems to be — a ubiquitous and ineradicable contaminant. Children, as we all know, say and do the damnedest things. They mean no harm, they just know not what they do, sometimes. Their innocence is terrifying. Sometimes innocence looks anything but innocent. But

all societies recognize it.

Children are not legally responsible for their actions. Parents and teachers may punish them in order to teach them responsibility. But it's a long process. Until it's complete, the evil they do, when they do evil, gets filed under "mischief," in recognition of the spirit in which it was — probably — committed.

When Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant cracked under the strain of a tsunami six years ago and irradiated large swaths of Fukushima Prefecture, refugees streamed out of the stricken area, settling where they could. Forty thousand of them remain out-of-prefecture, 5,100 in Tokyo. Most of them will never go home again. Will they ever be at home where they are?

Josei Seven magazine raises the issue of "nuclear bullying." Children too young, one might think, to even know the word "radiation" picked it up under the circumstances, and flung it with what seems like gleeful malice at disoriented new classmates who had enough to cope with already. Six years on, says Josei Seven, they're still flinging it.

"It started immediately," says one refugee, recalling her son's transfer to a Tokyo elementary school in the immediate aftermath of the disaster. "'Fukushima kids are weird,' they'd shout at him. Kids would crawl under his desk and jab his feet with pencils. In the mornings he began saying he wasn't feeling well. At the time, frankly, I was too traumatized myself to take much notice."

Lawyer Yukio Yamakawa, director-general of the Tokyo Disaster Support Network, takes up the story with an account of other children he's spoken to. What starts with name-calling ("Hey, Radioactive!" "Hey, Bacteria!") easily escalates into what's hard not to call torture. One kid is forced to drink a bottle of ink. Another has his shoes tossed into the toilet. A third is met in the corridor by classmates poised as if brandishing guns: "Radiation! Bang! Bang!" A fourth suffers extortion of what adds up over time to ¥1.5 million: "You can afford it, your family gets (disaster victim) compensation payments!"

Yamakawa reports this taunt making the rounds: "Fukushima kids won't live past junior high school anyway, so you may as well die now."

"Tanaka-san," as we'll call the mother cited above, began to fear her son might commit suicide. A poem he wrote contained the line, "Oh, to be able to go to heaven." Fully focused now, she transferred the boy to another school. The peace that followed was short-lived. Name-calling, exclusion — it started all over again. The homeroom teacher was well-intentioned and put a stop to it — what she could see of it. What went on behind her back was beyond her control. A lot did, its viciousness increasing.

"I'd been bullied myself as a child," Tanaka says, incidentally reminding us that the problem is neither new nor necessarily nuclear-related. "I understood what he was going through."

She transferred him again. That seems to have ended the ugliest persecution, but, once a victim, you don't simply get over it. The boy as a small child had dreamed of being a botanist when he grew up. Now he simply says, "I have no dreams." Fukushima No. 1 destroyed much that is quantifiable — lives, property, livelihoods — and much that isn't.
What to make of little kids who inflict this torment on other little kids? Can innocence itself be evil? Or fictitious? One hypothesis Josei Seven raises is that children merely absorb what they hear from their parents. Lacking critical faculties and adult inhibitions, they act where grown-ups merely talk. The energy and imagination they put into it make it hard not to suspect they enjoy it. Enjoyment of other people's sufferings is a well-attested human trait, exploited for mass entertainment at least as far back as

the Roman circuses. Nothing has happened since to root it out of us, and if radiation stimulates it today, in that respect at least it breaks no new ground.

Naked fear is a factor too. Radiation, unseen, unheard, is the most fearful of stalkers. Might school kids seriously believe their Fukushima classmates are contagious? If so, the rational response would be to stay away from them, but fear and hatred merge, short-circuiting rationality and generating "Radiation, bang, bang!"

Radiation today, tuberculosis a century ago, different causes producing similar effects. Novelist Ayako Miura (1922-1999), herself a sufferer, made what might be called "tuberculosis bullying" a sub-theme of her novel "Shiokari Toge" (Shiokari Pass), set in late-19th-century Hokkaido: "It was an age when sufferers of tuberculosis were so hated and feared that they were even forced to leave the neighborhood." A character who innocently brings up the subject arouses horror in his listener: "Mr. Nagano, even if you only mention the name of that dreadful disease it makes your lungs rot!"

"Radiation, bang, bang!" Last July a 26-year-old man slipped into a facility for disabled patients in Kanagawa Prefecture and slaughtered 19 of them, his apparent intention being to free the world from the scourge of disability. Disability, bang, bang. In February Satoshi Uematsu was declared fit to stand trial. A psychiatric evaluation found in him symptoms of a personality disorder but not of incapacity to distinguish right from wrong.

The disorder in question, writes psychiatrist Rika Kayama in the weekly Spa!, amounts to an extreme form of self-love. "Of course," she writes, "we all love ourselves; we all at one time or another fantasize about being king or queen of the world …" We'd all, in short, be insane, more or less, if we let our fantasies rule our actions. Most of us know when to stop.

Uematsu's self-love, Kayama hypothesizes, took the form of a conviction of having a mission, a destiny to fulfill. Maybe we all have that too, to some degree. Adults usually stifle it. Children often don't.

Symposium in IItate

March 25, 2017

SYMPOSIUM: Locals, experts discuss radiation risks, solutions, future in litate

http://www.asahi.com/ajw/articles/AJ201703250003.html

By MASAKAZU HONDA/ Staff Writer

FUKUSHIMA--Even after six years, lingering concerns over radiation loom large over the lives of evacuees from a village in northeastern Tohoku ravaged by the Great East Japan Earthquake and nuclear disaster in 2011.

Residents have agonized over whether to return to their homes in the village of litate, one of the most heavily contaminated areas, since evacuation orders are to be lifted on March 31.

Masanobu Akaishizawa, 67, head of an administrative district of litate, expressed his concerns at a recent symposium held here in mid-February.

"Experts say radiation doses don't affect us as long as we stay home," he said. "But I wonder about the quality of my life if I can neither go to the mountains nor the river."

Itate was in the direct path of radioactive materials that spewed from the Fukushima No. 1 nuclear power plant, operated by Tokyo Electric Power Co., following the triple meltdown due to the earthquake, tsunami as well as the government and TEPCO's shortcomings on March 11, 2011.

Ahead of the lifting of the evacuation order for most of the village of litate on March 31, researchers and journalists, who have conducted field surveys since immediately after the accident, shared their views on radiation effects on health and avoiding health risks with villagers at the symposium.

The symposium, titled "Think about the future of litate villagers," was hosted by the litate-mura Society for Radioecology, which comprises academics and citizens who committed themselves to continue their support for residents through their expertise.

During the session, Tetsuji Imanaka, a researcher at the Kyoto University Research Reactor Institute, estimated the annual average radiation exposure to residents if they immediately return to the area after the evacuation orders are lifted. He put the figure at approximately 5 millisieverts of radiation.

"How can residents come to terms with the health risks caused by radiation exposure? That's the issue," Imanaka said.

Katsumi Furitsu, a doctor at the Hyogo College of Medicine, highlighted the government's responsibility. Furitsu has conducted research in the areas devastated by the crippled Chernobyl nuclear plant in Ukraine, site of the world's worst nuclear accident in 1986.

"Low-dose radiation exposure also has health risks in accordance with the amount," Furitsu said. "Offering appropriate health management and medical benefits (for the disaster victims who have been exposed to radiation) is the government's minimum responsibility just like it issued 'hibakusha' (A-bomb

victims) health books in Hiroshima and Nagasaki," Furitsu emphasized.

Hibakusha health books have been awarded to those certified by the government as radiation victims of the 1945 atomic bombings, making them eligible for special health-care benefits, including allowing them access to free medical assistance.

Such a book could also become a powerful weapon to force the government to take responsibility for Fukushima evacuees for future damage to their health potentially related to radiation exposure. Villagers expressed, however, concern that this could lead to possible future discrimination.

"We understand the necessity of issuing the radiation exposure record books to protect victim's health," said one resident. "But high school girls have fears and worries about possible future discrimination that is likely to be caused by possessing the books by posing such questions as, "Can we get married?" or "Can we have children?"

In response to those poignant voices from the disaster victims, Furitsu said, "In Hiroshima and Nagasaki, the same concerns were expressed. However, unjustified discrimination occurred not because of the health book, but because those who should take responsibility didn't take it."

"The government should take measures that help residents who had been burdened with unnecessary risks," Furitsu said, referring to such matters as providing health management, medical benefits, education and other activities to raise awareness of discrimination against disaster victims, especially if they have been exposed to low-dose radiation.

Yoshinobu Ito, 73, a farmer who moved to litate before the disaster, was especially worried about the risk radiation could have on children when they return to the village.

He released the results of measurements of radiation levels around his house that he has taken since the Fukushima nuclear disaster.

"Although the levels of radiation dose have dropped, they are still 10 times higher than the figures before the disaster. Even if I return to Iitate, rebuilding agriculture is a hardship," said Ito.

The effects of radiation also cast a shadow over Japanese cattle farmers such as Kiyomi Shigihara, 62, of Nagadoro in the southernmost section of litate. Nagadoro was designated as the only "difficult-to-return zone" in the village.

With regard to the government policy of decontaminating only reconstruction base areas and then lifting an evacuation order after five years, Shigihara said, "Under these circumstances, even if I return home, there's nothing I can do."

Unable to repress his emotions, Shigihara wiped tears from his eyes.

Fukushima medical records should be transparent

March 31, 2017

Fukushima child's case not found in Japan thyroid cancer records

http://www.asahi.com/ajw/articles/AJ201703310047.html

THE ASSOCIATED PRESS

A child diagnosed with thyroid cancer after the Fukushima nuclear accident is missing from government checkup records, an aid group said Friday, raising questions about the thoroughness and transparency of the screenings.

Japanese authorities have said that among the 184 confirmed and suspected cases of thyroid cancer in Fukushima, no one was under age 5 at the time of the 2011 meltdowns. They've said that suggests the cases are not related to nuclear-plant radiation, as many were after the 1986 Chernobyl disaster. The 3.11 Fund for Children With Thyroid Cancer, however, said Friday that one child who was 4 when the meltdowns occurred has been diagnosed with thyroid cancer. That case is not listed in data from Fukushima Medical University, which is overseeing thyroid-cancer screening and surgeries and had treated the child.

Hisako Sakiyama, a medical doctor and representative of the 3.11 Fund, which gives aid to families of children diagnosed with thyroid cancer, said that any missing case is "a major problem," and raises the possibility that others may also be missing from the data.

The university has been carrying out ultrasound screenings of some 300,000 youngsters in Fukushima 18 and younger at the time of the nuclear accident. It has repeatedly said it stands behind its data but declined to comment on individual cases, citing privacy concerns.

Seisho Tanaka, a spokesman for the screenings, said those who may have had tested negative could have developed cancer afterward and sought medical treatment outside the screening process. He declined to comment further.

The officials have argued the Fukushima cases are popping up because of "a screening effect," meaning the meticulous testing uncovered cases that would not be known otherwise.

Sakiyama, who has sat on a legislative panel investigating the Fukushima nuclear disaster, said the screening system was flawed. The child, a boy now 10, and one of the fund's aid recipients, had surgery at

Fukushima Medical University last year and is receiving treatment there, making it difficult to think the university could be unaware of the case, she added.

"It is very puzzling how they would not want to come forward with the case," she said, adding of the Fukushima cases and radiation: "There is no reason to outright deny the link."

The boy, who continues to receive treatment from the hospital, and his family have not spoken publicly. Thyroid cancer is usually not fatal with proper treatment. It's extremely rare among children and young adults under normal conditions, but since young people are not typically screened for it, it can go undetected for years.

Of the thousands of thyroid cancer cases that surfaced after Chernobyl, in the Ukraine and Belarus, about half or about 15 percent, depending on the study, were those under age 5 at the time of the accident. Keith Baverstock, professor at the University of Eastern Finland and an expert on health and radiation, thinks it's important Fukushima medical records be transparent.

Although it's still difficult to reach a conclusion on a link with radiation, studying the cancers and how they developed can shed light on the question, he said recently in a Skype call.

Battling TEPCO and leukemia

April 2, 2017

After Fukushima, battling Tepco and leukemia

http://www.japantimes.co.jp/news/2017/04/02/national/fukushima-battling-tepcoleukemia/#.WOEvMmekKos

Welder felt he had a duty to help at the No. 1 plant after 3/11. Now, in court, he is taking on the utility he says betrayed him

by Rob Gilhooly

Special To The Japan Times

Eight-year-old Kenji hands his mother a tissue, which she uses to dry her eyes beneath thick-rimmed spectacles, her free hand giving her son's closely cropped jet-black hair a gentle stroke. Michiko Ikeda has cried before, deeply, achingly, she admits, during a darker time when she faced the very real prospect of having to raise Kenji and his two siblings alone.

Then, Masaru, her husband of 15 years, had been diagnosed with leukemia following stints working at the stricken Fukushima No. 1 nuclear power plant and the neighboring Fukushima No. 2 facility, starting in the fall of 2011.

"Even when he first said it was leukemia I thought it must be a mistake," Michiko says as the afternoon sun streams through the window of the front room of her home in western Japan. "When the hospital confirmed it, my mind went blank. I couldn't stop crying, wherever I went. The only image I had in my head was that my husband was going to die."

The road to Fukushima for Masaru Ikeda began to unfold the day after the March 2011 disasters, when images from the tsunami-devastated Tohoku coast flooded the TV and internet. Among them was footage

of bodies being laid out in a makeshift morgue, the feet and legs sticking out from beneath mud-encrusted blankets clearly belonging to children.

"It was overwhelming and I couldn't help wondering how I'd feel if it was my kids lying there," says Masaru, 42, who, after 10 months of cancer treatment, was discharged from his hospital cleanroom, the cancer having been found to be one step short of incurable. "I knew I had to to do something to help." Shortly after, his boss at the construction company where he worked told him about a Fukushima contractor who was looking for labor to assist with the ongoing battle to bring the devastated nuclear facility under control. Even though he had never set foot in a nuclear power plant before, Ikeda's 15 years of experience as a welder would be invaluable.

"He asked if any of us were prepared to go up there, but nobody wanted to take the risk," he says, adding that he, too, had initially hesitated. "I talked with colleagues and they said, 'The workers at "1F" are like kamikaze pilots.' ... I still wanted to go, not for the sake of the country, but for the people of Tohoku." His family and friends objected vehemently. His father told him bluntly that if he went, he'd end up getting leukemia.

"He didn't say 'cancer,' or another illness, but 'leukemia,' possibly because of what happened after Hiroshima," Ikeda says, referring to the leukemia that was the earliest delayed effect of radiation exposure seen among A-bomb survivors. "I told him there was no way that would happen."

Ikeda's work at the plant was as varied as it was hazardous. At one point he helped construct a facility to dispose of workers' TyVek suits, the ubiquitous white hooded jumpsuits that after exposure to radiation were discarded onto mountainous piles inside the plant's evacuation zone.

Later he was involved in the construction of a temporary elevator at shattered reactor 3 and a 50-metertall heavy-duty steel structure to surround reactor 4 and support a huge overhead crane that was needed to remove the smoldering fuel assemblies in the fuel pool. These had been exposed to the elements following an explosion that blew away the reactor roof and the original crane.

"I was shocked when I first got there and saw the sheer volume of abandoned equipment and vehicles — including fire department and military trucks that had become irreversibly contaminated."

He was also surprised by the makeup of the on-site workers — a curious mixture of day laborers and the homeless — not to mention the pitiful shortage of suitable clothing and masks to protect them from radiation, he says.

"Later, when a lot of fuss was made about radioactivity, that kind of gear and PDMs (pocket dosimeters, which monitor radiation) became more commonplace, but before that it was basically regular work clothes and surgical masks," he says. "During work at reactor 4 the levels were so high we were supposed to wear lead vests, but there were not enough to go round so some of us had to do without."

Nonetheless, the high radiation levels meant that work close to the reactors rarely lasted more than an hour per day and on occasion was terminated after just 10 minutes.

In late 2013, Ikeda returned home for rest and recuperation following a dispute with a subcontracting firm that was refusing to honor the daily ¥6,000 hazard allowance promised to workers — considerably less than the ¥19,000 pledged by Tokyo Electric Power Co. (Tepco) president Naomi Hirose a month earlier.

It was about this time that he started to feel unwell. He couldn't shake off a dry cough and found himself tiring far more easily than usual. Twice he scraped the side of his car without even realizing it. In early 2014 a local doctor diagnosed him with a cold, making the news of a far more life-threatening illness during a company-sanctioned periodic health check a week later all the harder to swallow.

Results from a subsequent spinal tap revealed that 80 percent of the white blood cells in his bone marrow were abnormal. The doctor told him if he had waited a couple more weeks, treatment would not have been an option.

Nevertheless, it was still touch and go, and fearing he might not have much longer to live, Ikeda ignored the doctor's recommendation for immediate hospitalization, instead returning home to spend time with his children, who were then only 5, 7 and 9.

"It was only after I saw them through the glass of the cleanroom for the first time that I realized what a painful ordeal I had put them through," says Ikeda. "I don't regret going to Fukushima ... but I do regret the distress I caused my family."

Despite his father's pre-Fukushima dispatch prophecy, Ikeda had yet to contemplate the possibility that his illness may be tied to the plant. The seed of that idea was planted by a surprising source — an official at Kajima Corp., a company he praises despite it being implicated in a kickback scandal that led some workers who had received little or no hazard compensation to take legal action.

For the time being, however, he felt fortunate and relieved. The health and labor ministry had recognized the illness as workplace-related, though it stopped short of stating it was directly tied to the 19.8 millisieverts of radioactivity he had been exposed to while working at nuclear plants.

Under health ministry guidelines, workers who are exposed to 5 mSv of radiation in a year can apply for compensation insurance payments. Ikeda did so successfully, meaning the government would help cover Ikeda's medical costs and loss of income.

Shortly after, he was contacted by a friend still employed at the plant, who told him of a memo attached to a worker survey undertaken by plant operator Tepco.

"The memo told workers not to worry about the decision to recognize the connection between my leukemia and radiation — that it was bogus," Ikeda recalls. "It was as though Tepco was trying to erase the recognition of my work-related illness, which by law was its responsibility."

Until then Ikeda insists he had "no intention" of suing Tepco, but its attitude made him "feel sick to the bone."

"I started to wonder what kind of people they are," says Ikeda, who since his transfusions has suffered various ailments linked to the peripheral blood stem cell transplant he received for his acute myeloid leukemia (AML). "This is a company that for months denied the reactor meltdowns, and that caused the explosions by refusing to inject seawater (to cool the reactors) on the grounds it would render the reactors unusable. Then they turn a blind eye to a worker who helped clean up their mess. To them I was just another expendable laborer."

Incensed, Ikeda started legal proceedings against Tokyo Electric Power Co. Holdings Inc., accusing the now-nationalized utility of failing to take adequate precautions against radiation exposure. His first hearing, where he filed for ¥59 million damages against both Tepco and Kyushu Electric Power Co., at whose Genkai plant he had also worked, commenced at the Tokyo District Court on Feb. 2.

A Tepco spokesperson denied the claims, saying the utility has endeavored "to manage all radiation exposure of workers," adding there has been "no medical connection found (between radiation exposure and leukemia) ... even from third-party or any other medical experts."

A health ministry official stopped short of corroborating that view, saying it had awarded Ikeda compensation even though the "causal link between his exposure to radiation and his illness is unclear." Researchers worldwide are divided about the relation between radiation and leukemia and, indeed, some other cancers. Imperial College London cancer expert Geraldine Thomas, who is openly pro-nuclear, says there is in fact a connection, though leukemia and other cancers can also result from several factors. "AML ... does have an association with radiation exposure. However, it also has an association with smoking, exposure to benzene (one of the contaminants in cigarette smoke), etc.," says Thomas, who runs the Chernobyl Tissue Bank, which analyzes samples of tissue from people exposed to radiation after the Chernobyl nuclear disaster. "The problem with ... these cases is that it is easy to blame radiation exposure, but almost impossible to prove or disprove, as there are no biomarkers that can be used to distinguish between different etiologies."

The total dose Ikeda received was "very low," Thomas adds, leading her to suspect that exposure to cigarette smoke is more likely to be a higher risk factor. Ikeda says he only started smoking after a doctor had recommended it to counter the stress resulting from the sometimes debilitating side-effects of his treatment.

While scientists such as Thomas show caution in their assessment of low exposure doses, Hisako Sakiyama, a medical doctor and former senior researcher at Japan's National Institute of Radiological Sciences, is among those who insist that even lower doses can cause irreparable DNA damage known as "double strand breaks." Such doses are therefore "capable of inducing cancer," she says, "because the energy of radiation is stronger than that of the chemical bonds of DNA."

Thomas counters that this alone is not enough to prove nuclear plants are the root of the problem because "double strand breaks are not uniquely caused by radiation."

Ikeda's lawyer, Yuichi Kaido, concedes that it's scientifically problematic to prove his client's leukemia is tied to radiation, even though Ikeda's illness has been officially declared as being linked to his work. "More importantly, he has been exposed to a level of radiation clearly exceeding the standard set by the government, and incidences of leukemia (among the general public) are extremely low," he says, referring to the leukemia incidence rate in Japan of 6.3 per 100,000 people, or 1.4 percent of 805,236 cancers diagnosed in 2010. "In this case, I think it has been proven that the probable cause (radiation) is clearly far beyond the 51 percent probability normally required in these kinds of civil cases."

To assess Ikeda's case, painstaking investigations into his medical and employment background were undertaken. Ikeda himself said he had often noticed what he believes were public security officials in black vehicles who he alleges would park near his home and tail him wherever he went, presumably checking on his lifestyle habits and the types of people with whom he kept company.

The outcome of the official investigation was that no other factors, such as viruses or other illnesses, could have caused his leukemia, according to Kaido.

Until now, there have been only two other known lawsuits like Ikeda's. One of those — involving plumber Mitsuaki Nagao, who had been diagnosed with a type of bone marrow cancer after being exposed to 70 mSv of radiation at nuclear power plants including Fukushima No. 1 — was rejected by the Tokyo High Court in 2009, by which time Nagao had died. Kaido says that ruling could prove to be a "huge hindrance" in gaining justice for the likes of Ikeda.

"The big difference between then and now is the massive accident at Fukushima, where it is unthinkable that no health hazard resulted," Kaido says, adding that in a wider social context, it is unconscionable that the utility that caused such environmental destruction and has since paid trillions of yen already in compensation to atone for the disaster, should fail to recompense a man who fell sick after helping Tepco overcome the dire situation at Fukushima No. 1.

"Some people in Fukushima who were unable to return to their homes (because of high radiation levels) were paid hundreds of billions of yen, while my client hasn't received a penny. That's preposterous. Tepco has washed its hands of its social responsibility."

Although initially reluctant to take action, Ikeda hopes that his legal suit will encourage others to come forward, even though since 1976, when the compensation regulations were introduced, only 13 workers

have been officially recognized as having suffered illnesses related to workplace radiation exposure. Ikeda became No. 14, and the first since the meltdowns in Fukushima (see table).

"I have heard that there are probably many more, but you never hear about them because settlements are reached" to keep them hushed up, says Ikeda, adding that accusations on various internet forums that people like him are nothing more than greedy opportunists had distressed him greatly. "I wouldn't have taken this action if Tepco had shown some degree of remorse."

Ikeda's wife, Michiko, who works in an elderly care facility, says the most difficult time for her was during those long months of treatment, when her husband shed all his hair and over 20 kg in weight. He began to look pale and gaunt and didn't have the energy to talk for more than five minutes when she visited, even though she remembers him chatting at length with a fellow cancer patient in the cleanroom — a patient who died three days later.

She also remembers the various memory-making trips, to Hokkaido and Okinawa, among others — trips they hoped would remain with their children throughout their lives. Just in case.

"Nobody can say when (the leukemia) will return, and while I worry about that, there's nothing I can do," she says. "That's fate. I still can't help wishing he had never gone (to Fukushima), but also feel bitter that Tepco didn't try to prevent this from happening."

The family asked that their real names and location not be used. This article is based on a chapter from Rob Gilhooly's book "Yoshida's Dilemma: One Man's Struggle to Avert Nuclear Catastrophe: Fukushima — March

2011," published last month by Inknbeans Press (www.yoshidas-dilemma.com).

Nuclear plant workers' illnesses officially recognized by the health ministry as being workplace-related (between 1976 and June 2014 — a total of 13 workers):

Leukemia

(recognized limit: over 5 millisieverts/year)

Accumulated doses (mSv) of workers in six cases:

- 1) 129.8
- 2) 74.9
- 3) 72.1
- 4) 50.0
- 5) 40.0

6) 5.2

Malignant lymphoma

(recognized limit: over 25 mSv)

- 1) 175.2
- 2) 173.6
- 3) 138.5
- 4) 99.8
- 5) 78.9

Multiple myeloma

(recognized limit: over 50 mSv)

- 1) 70.0
- 2) 65.0

Anomalies in wildlife and the ecosystem around Chernobyl and Fukushima

https://vimeo.com/211662517 17 minutes Cynthia Folker

Dr. Timothy Mousseau, Professor of Biological Sciences, University of South Carolina. Mousseau discussed his many studies on the health impacts on wildlife and biota around Chernobyl and Fukushima which soundly debunk the notion that animals there are "thriving."

Hiroshima/Nagasaki: Indoors radiation much higher than previously thought

June 5, 2017

Radiation doses 29% higher than thought indoors after A-bombs

http://www.asahi.com/ajw/articles/AJ201706050048.html

By SONOKO MIYAZAKI/ Staff Writer

HIROSHIMA--People who were indoors when the atomic bombs struck Hiroshima and Nagasaki may have been exposed to a radiation dose 29 percent higher than previously believed, a study group said June 4. At an atomic bomb disease research meeting here, the group cited the overestimation of the shield effect of structures as a reason for the underestimated radiation levels.

In the study, the group reanalyzed the causal link between the frequency of chromosomal abnormalities of atomic bomb survivors--1,980 in Hiroshima and 1,062 in Nagasaki--and their exposed doses, which had been released by Radiation Effect Research Foundation, a Japan-U.S. joint research organization.

After the re-evaluation, the group concluded that radiation levels of indoor survivors had been underestimated when taking into consideration their chromosome abnormalities.

It also found that chromosome abnormalities occurred among atomic bomb victims who had been indoors at a 40 percent higher frequency than those who had been outdoors at the time of the atomic bombing in Hiroshima on Aug. 6, 1945.

This might have been caused by internal exposure to dust and other substances that entered the buildings and were not subsequently dispersed, the group pointed out.

The initial radiation released at the time of atomic bomb explosions had been previously used for calculating doses and the health hazard for people who were indoors were considered small in general. "The damage caused by radiation cannot be explained by only looking at the initial radiation," said a member of the group.

The scientific team included Megu Otaki, a professor emeritus of statistics at Hiroshima University, who has been involved in many studies on the effects of the atomic bombs.

More thyroid cancers

June 6, 2017

Seven more Fukushima residents diagnosed with thyroid cancer

http://www.japantimes.co.jp/news/2017/06/06/national/seven-fukushima-residents-diagnosed-thyroid-cancer/#.WTaqMNykJLM

JIJ

FUKUSHIMA – Seven more Fukushima Prefecture residents who were aged 18 or under at the time of the 2011 nuclear accident have been found to have thyroid cancer, the prefectural government said Monday. The number of Fukushima residents suffering from thyroid cancer now totals 152, the prefectural government said in a meeting of an expert panel.

Hokuto Hoshi, head of the panel and vice chair of the prefectural medical association, called it "unlikely" that radiation was responsible for the increase.

The prefectural government has conducted three sets of thyroid checkups following the March 2011 triple meltdown at Tokyo Electric Power Company Holdings Inc.'s Fukushima No. 1 nuclear power plant. The checkups also covered people who evacuated to other prefectures.

The second round of checkups from 2014 confirmed five new sufferers, and a third round launched in May last year uncovered two more.

The panel decided to consider improving its counting method, as the cancer can be detected during regular medical examinations, not only the government checkups.

5 workers exposed to radiation at JAEA's research facility in Ibaraki Pref

June 6, 2017

Radioactive substance exposure at JAEA facility

https://www3.nhk.or.jp/nhkworld/en/news/20170606_31/

Japan's nuclear regulator says 5 workers at a nuclear research facility have accidentally been exposed to a radioactive substance.

Officials at the Nuclear Regulation Authority secretariat say the incident happened at the Japan Atomic Energy Agency's O-arai Research and Development Center in Ibaraki Prefecture, shortly after 11 AM on Tuesday.

5 workers were inspecting fuel storage containers when a bag of powdered radioactive substance ripped and the contents spilled out.

The workers were wearing protective clothing and their faces were half-covered with masks, as they were in an area at risk of radioactive contamination.

Their hats and clothing were reportedly contaminated.

A maximum 24 becquerels of radioactive material was reportedly detected inside the noses of 3 of the 5 workers.

The facility tests and develops new-type fuel for fast-breeder reactors that run on plutonium.

Regulators say the material has not leaked outside the room where the spill occurred, and there has been no effect on the environment.

3 hours in contaminated room

June 9, 2017

Workers stayed in contaminated room for 3 hours

https://www3.nhk.or.jp/nhkworld/en/news/20170609_15/

The operator of a nuclear research facility north of Tokyo says the 5 workers who were accidentally exposed to radioactive substances had spent 3 hours in the contaminated room.

The workers were inspecting fuel storage containers at the facility of the Japan Atomic Energy Agency in Ibaraki Prefecture on Tuesday when the incident occurred.

Four of them suffered internal radiation exposure when a bag of powdered radioactive substances, including plutonium, ripped and the contents spilled out. One of the 4 was found to have 22,000 becquerels of plutonium 239 in his lungs.

The agency officials said on Friday that a tent was set up outside the room after the accident to prevent radiation from spreading.

They said the workers remained in the room for about 3 hours until the tent was ready.

The officials said they swiftly began preparations to evacuate the workers after instructing them to stay as far away as possible from the ripped bag.

The agency plans to investigate whether the evacuation procedures affected radiation exposure.

5 nuclear center workers stayed in contaminated room for 3 hours

http://www.asahi.com/ajw/articles/AJ201706090025.html

The type of filter-attached mask worn by the workers to cover the mouth and nose (Provided by the Japan Atomic Energy Agency)

The five workers who were exposed to radiation at a nuclear energy research center in Ibaraki Prefecture on June 6 remained in the contaminated room for about three hours, it has been disclosed.

The workers stayed in the room until measures were taken to prevent radioactive substances, including plutonium, from leaking outside.

The three-hour stay could have led to the worst internal radiation exposure case in Japan's history, in which 22,000 becquerels of plutonium were detected in the lungs of one of the workers.

According to the Nuclear Regulation Authority and the Japan Atomic Energy Agency, the accident, in which radioactive substances leaked from a container, occurred in an analysis room of a fuel research building of the JAEA's Oarai Research and Development Center in Oarai, Ibaraki Prefecture, at around 11:15 a.m. on June 6.

Those substances could have leaked out of the room if the workers had left through a door, so they asked colleagues outside to take measures to prevent such a leak.

The colleagues set up a closed space outside the door in which they could check the workers' bodies and decontaminate them.

The space was completed at around 2:30 p.m., which meant that the five workers stayed in the room for about three hours after the accident occurred.

The workers were wearing masks attached with filters to cover their mouths and noses, but they apparently inhaled radioactive substances through the gaps during the three hours in the room.

Numbers of the Day:

22,000 becquerels

https://www3.nhk.or.jp/nhkworld/nhknewsline/numbersoftheday/2017060702/

The level of radioactivity detected in the lungs of one of five people accidentally exposed to radioactive material at a nuclear research facility in Ibaraki prefecture

No plutonium in workers' lungs

June 12, 2017 **Plutonium not found in workers' lungs** https://www3.nhk.or.jp/nhkworld/en/news/20170612_24/

An institute in Japan treating 5 workers exposed to radioactive substances says it has not detected plutonium in any of their lungs.

An earlier report in another facility said one of them showed a high level of contamination in the lungs.

The accident took place last week at a research facility of the Japan Atomic Energy Agency in Ibaraki Prefecture, north of Tokyo.

The agency said it measured as much as 22,000 becquerels of plutonium-239 in the lungs of one of the

workers after powdered radioactive materials scattered in a room.

The workers were sent to the National Institute of Radiological Sciences.

Officials at the institute told reporters on Monday that they had conducted up to 4 examinations of the lungs of the 5 workers. No plutonium was detected.

They also said they detected another radioactive substance called Americium. But they did not disclose how much of the substance was found or from how many of the workers. They pointed out that Americium can be created after plutonium undergoes nuclear fission.

They noted that there has so far been no impact on the workers' health from the exposure.

Officials at the Japan Atomic Energy Agency also held a news conference. They said they may have overestimated internal exposure levels, as they detected plutonium on the workers' skin in the examinations.



Radiation safety limits exceeded in several schools

June 13, 2017

Radiation levels exceeding state-set limit found on grounds of five Chiba schools

http://www.japantimes.co.jp/news/2017/06/13/national/science-health/radiation-levels-exceeding-state-set-safety-limit-found-grounds-five-chiba-schools/#.WUA4ndykJLM

yodo, Staff Report

Radiation levels exceeding the government-set safety limit of 0.23 microsieverts per hour have been detected on the grounds of five schools in the city of Kashiwa, Chiba Prefecture, the prefectural board of education said Monday.

Between late April and mid-May, the board officials detected radiation levels of up to 0.72 microsieverts per hour in certain areas of the schools, including Kashiwa High School and Kashiwa Chuo High School. The areas — including soil near a school swimming pool and drainage gutters — are not frequented by students, but the board closed them off and will work to quickly decontaminate them, the officials said. Kashiwa has been one of the areas with high radiation readings since the 2011 nuclear disaster at Tokyo Electric Power Company Holdings Inc.'s Fukushima No. 1 power plant.

According to NHK, the board of education had been checking the soil on the school premises in Kashiwa after radiation levels beyond the state limit were detected in shrubbery near the city's public gymnasium. The board will announce the results of radiation tests at other schools in the prefecture around the end of July, NHK reported.

Workers blamed for accident



In this photo provided by the JAEA, the stainless steel radioactive material container involved in the June 6, 2017 accident is seen soon after the plastic bags inside burst, exposing five workers to powdered plutonium and uranium oxides, at the Oarai Research & Development Center in Oarai, Ibaraki Prefecture.

Nuclear workers Workers irradiated at nuclear R&D center ignored safety checklist item: JAEA https://mainichi.jp/english/articles/20170616/p2a/00m/0na/012000c In this photo provided by the JAEA, the stainless steel radioactive material container involved in the June 6, 2017 accident is seen soon after the plastic bags inside burst, exposing five workers to powdered plutonium and uranium oxides, at the Oarai Research & Development Center in Oarai, Ibaraki Prefecture. Workers exposed to radioactive materials at a Japan Atomic Energy Agency (JAEA) facility in Ibaraki Prefecture ignored a safety checklist item on whether the containers "could be ruptured," the agency revealed on June 15.

- 【Related】 Ibaraki nuclear facility where radioactive leak occurred was slack on safety
- 【Related】 4 workers suffer internal radiation exposure to plutonium
- 【Related】 Ibaraki nuclear research facility under scrutiny after accident; gas suspected in rupture

Five workers at the JAEA's Oarai Research & Development Center in Oarai, Ibaraki Prefecture, were exposed to uranium oxide and plutonium oxide powder when the bags holding the materials burst open during a June 6 inspection. The materials were kept in a polyethylene container double-wrapped in plastic bags, all in a stainless steel vessel.

According to the JAEA, the "regular safety checklist" was put together soon before the accident and listed 30 items for inspecting radioactive materials held at its nuclear R&D centers. One of those items called on workers to determine if there was a risk of fire, or were fears of "an explosion, a rupture, or scattering" of the powdered materials.

However, the workers at the Oarai facility apparently decided that the checks regarding the risk of "rupture" were "not applicable" because the materials had been double-wrapped in plastic bags, and they only checked the containers' exteriors.

The agency on June 15 also released footage of the radioactive materials container taken by one of the workers just after the accident. The image shows the plastic bags protruding from the top of the stainless steel vessel. The JAEA is scheduled to submit an accident report to the Nuclear Regulation Authority on June 19.

The accident occurred when one of the workers unsealed the stainless steel outer vessel, which had not been opened for 26 years. A JAEA spokesperson told reporters at a June 15 news conference that the workers' failure to consider the risk of rupture was "inappropriate."

US sailors

June 23, 2017

Court: Sailors can sue in U.S. over 3/11 Fukushima nuclear disaster

http://www.asahi.com/ajw/articles/AJ201706230015.html THE ASSOCIATED PRESS

SAN FRANCISCO--A federal appeals court says members of the U.S. Navy can pursue their lawsuit in a U.S. court alleging radiation exposure from Japan's Fukushima No. 1 nuclear power plant.

The 9th U.S. Circuit Court of Appeals in San Francisco ruled Thursday that the sailors for now don't have to make their legal claims in Japan.

Their lawsuit accuses Tokyo Electric Power Co. and the Japanese government of conspiring to keep secret the extent of the radiation leak following a 2011 earthquake and tsunami that killed thousands of people. The plaintiffs arrived off the coast of Fukushima aboard the U.S.S. Ronald Reagan and other vessels to provide humanitarian aid a day after the quake.

They filed their lawsuit in 2012 in federal court in San Diego.

An email to an attorney for Tokyo Electric was not immediately returned.

See also

http://www.japantimes.co.jp/news/2017/06/23/national/crime-legal/9thcircuit-court-navy-sailors-can-sue-u-s-fukushima-disaster-radiationexposure/#.WVEILlFpyos

Don't worry

July 10, 2017

Slightly higher cancer risk for nuclear worker

https://www3.nhk.or.jp/nhkworld/en/news/20170710_23/

Japanese experts say one of 5 nuclear facility workers who were recently exposed to radioactive substances may have a slight elevated risk of developing cancer over 50 years.

The workers were exposed when a bag containing plutonium burst open at the Atomic Energy Agency'sResearchandDevelopmentCenter,northeastofTokyo,lastmonth.

They are receiving medical treatment at the National Institute of Radiological Sciences in Chiba.

Institute officials say the internal exposure over 50 years for one of the 5 workers is estimated to be 100 to 200 millisieverts, with the risk of developing cancer increasing by about 0.5 percent.

For the remaining 4 workers, the institute does not project health problems.

IPPNW: Thyroid tests in Fukushima must be continued (Alex Rosen)

Aus dem IPPNW-Atomenergie-Newsletter Juli 2017

Die Schilddrüsenuntersuchungen in Fukushima müssen weitergehen

https://www.ippnw.de/atomenergie/gesundheit/artikel/de/die-schilddruesenuntersuchungen-in-f.html 12.07.2017

Am 5. Juni veröffentlichte die Fukushima Medical University (FMU) die neuesten Zahlen ihrer laufenden Schilddrüsenuntersuchungen. Seit 2011 werden bei Menschen in der Präfektur Fukushima, die zum Zeitpunkt der Kernschmelzen unter 18 Jahre alt waren, alle zwei Jahre die Schilddrüsen untersucht. Ursprünglich begonnen, um die Sorgen der Bevölkerung über gesundheitliche Folgen der Atomkatastrophe zu zerstreuen, haben die Untersuchungen mittlerweile besorgniserregende Ergebnisse zu Tage gefördert. Auch in der aktuellen Veröffentlichung muss wieder eine unerwartet hohe Anzahl neuer Schilddrüsenkrebsfälle bei Kindern verzeichnet werden. Diesmal waren es sechs neue Fälle, die seit der letzten Veröffentlichung im Dezember 2016 gefunden wurden.

152 bestätigte Krebsfälle, 38 Kinder warten noch auf OP

Laut Datenbank des Japanischen Krebsregisters betrug die Neuerkrankungsrate (Inzidenz) von kindlichem Schilddrüsenkrebs vor der Atomkatastrophe rund 0,35 pro 100.000 Kinder pro Jahr. Bei einer pädiatrischen Bevölkerung von rund 360.000 wären in der Präfektur Fukushima somit ca. eine einzige Neuerkrankung pro Jahr zu erwarten gewesen. Tatsächlich sind seit den multiplen Kernschmelzen im Atomkraftwerk Fukushima Dai-ichi mittlerweile bei 191 Kindern in der Feinnadelbiopsie Krebszellen gefunden worden. 153 von ihnen mussten aufgrund eines rasanten Tumorwachstums, einer ausgeprägten Metastasierung oder einer Gefährdung vitaler Organe mittlerweile operiert werden. In 152 Fällen bestätigte sich die feingewebliche Verdachtsdiagnose "Schilddrüsenkrebs", in nur einem Fall lag ein gutartiger Tumor vor. 38 Kinder warten weiterhin auf eine Operation.

Anzahl der Neuerkrankungen deutlich erhöht

Besorgniserregend ist bei der Publikation der neuen Daten vor allem die Zahl der Krebsfälle, die bei Kindern gefunden wurden, die vor zwei Jahren noch keine Auffälligkeiten hatten. In der zweiten Untersuchungsrunde wurden beispielsweise 49 Krebsfälle bestätigt – allesamt bei Kindern, die bei der Untersuchung zwei Jahre zuvor noch keine krebsverdächtigen Strukturen in der Schilddrüse hatten. 49 Neuerkrankungen in 2 Jahren entspricht 24,5 Fällen im Jahr. Bei einer bislang untersuchten Bevölkerung von 270.497 Kindern (71% der geplanten Anzahl von Untersuchungen) sehen wir während des Zeitraums von April 2014 und März 2016 somit eine Neuerkrankungsrate von rund 9 Fällen pro 100.000 Kinder pro Jahr. Noch stehen rund 30% aller Ergebnisse aus der Zweituntersuchung aus, aber sollte sich dieser Trend bestätigen (und danach sieht es der Tendenz des letzten Jahres aus), würde dies einem rund 26-fachen Anstieg der Neuerkrankungsrate entsprechen. Dieses Ergebnis ist höchst signifikant und lässt sich aufgrund der eindeutigen Voruntersuchungen aller Patienten auch nicht durch einen Screening-Effekt erklären oder relativieren.

Erste Daten aus der dritten Untersuchungsrunde veröffentlicht

Auch die ersten Daten der dritten Untersuchungsrunde wurden im Juni veröffentlicht. Bei den mittlerweile 105.966 untersuchten Kindern (31,5% der geplanten Anzahl von Untersuchungen) wurde bei 65,2% Knoten oder Zysten in der Schilddrüse gefunden. Bei der Zweituntersuchung zwei Jahre zuvor lag diese Quote noch bei 59,8%, bei der Erstuntersuchung sogar nur bei 48,5%. Dies entspricht einer durchschnittlichen Zunahme der Anzahl von Knoten oder Zysten im Ultraschall von ca. 2,7% pro Jahr, wobei ein Teil der Daten der zweiten und ein Großteil der Daten der dritten Untersuchungsrunde noch ausstehen. Allgemein kann jedoch festgestellt werden, dass die relative Zahl der Kinder mit auffälligen Schilddrüsenbefunden in der Präfektur Fukushima in den vergangenen sechs Jahren kontinuierlich gestiegen ist. Auch kamen in der dritten Untersuchungsrunde vier neue Verdachtsfälle hinzu, von denen sich zwei mittlerweile durch Operationen sichern ließen.

Untersuchungen werden unterminiert

Insgesamt ist festzuhalten, dass die Daten der Schilddrüsenuntersuchungen der FMU zunehmend komplexer werden. Dies ist zum Teil des Aufbaus der Untersuchungen geschuldet: zeitlich überlappende Untersuchungsrunden, die vorsehen, jedes Kind alle zwei Jahre zu untersuchen, bei denen jede Runde sich allerdings über zwei bis drei Jahre zieht und nach Regionen gestaffelt durchgeführt wird. Ein weiterer Faktor sind jedoch die offenkundigen Bestrebungen der Atomwirtschaft und der FMU, die Studie und ihre Aussagekraft zu unterminieren. So sollen die Untersuchungsintervalle entgegen ursprünglicher Pläne und Ankündigungen ab dem 25. Lebensjahr von 2 auf 5 Jahre ausgeweitet werden. Wichtige Informationen zu den operierten Fällen, die der statistischen Aufarbeitung und der Ursachenforschung dienlich wären, werden weiterhin nicht veröffentlicht. So wird es immer schwieriger, aus den publizierten Zahlen epidemiologische Schlüsse zu ziehen.

Hinzu kommt, dass die Teilnahmeraten an den Untersuchungen abnehmen. Gründe könnten sein, dass Mitarbeiter der FMU an Schulen gehen und dort Kinder über deren "Recht zur Nichtteilnahme" und dem "Recht zum Nichtwissen" "aufklären" oder dass ab dem Erreichen des 18. Lebensjahres die Kosten der Untersuchungen nicht mehr vollständig erstattet, sondern von den Patienten und deren Familien selbst erbracht werden müssen (wir berichteten). Dies führt zu einer systemischen Verzerrung der Testergebnisse, die langfristig die gesamte Studie entwerten könnte – eine Konsequenz, die der, um ihr Überleben kämpfenden, japanischen Atomindustrie nicht gerade unlieb sein dürfte.

Der Fall des verschwiegenen Krebsfalls

Schon jetzt übt die Internationale Atomenergieorganisation IAEO direkten Einfluss auf die Durchführung der Studie an der FMU aus. Diese Entwicklung dürfte sich in der Zukunft noch verstärken. Ein besonders gravierender Fall der Datenmanipulation wurde Anfang des Jahres bekannt, als die Familie eines an Schilddrüsenkrebs erkrankten Kindes aus der Präfektur Fukushima an die Öffentlichkeit ging und monierte, dass der Fall ihres Kindes in den offiziellen Daten der FMU nicht auftauchte. Die Studienleitung argumentierte, dass die Diagnose des Kindes nicht durch sie gestellt worden war, sondern durch eine kooperierende Klinik, an die der Junge zur weiteren Diagnostik und Therapie überwiesen wurde. Dass der Junge zum Zeitpunkt der Kernschmelzen in Fukushima gelebt hatte, in die Reihenuntersuchung der FMU aufgenommen war und aufgrund einer neu diagnostizierten Schilddrüsenkrebserkrankung operiert werden musste, wurde von den Datensammlern offenbar nicht für relevant gehalten. Wie viele weitere Fälle von Schilddrüsenkrebs bei Kindern ebenfalls nicht berichtet wurden, wie viele Fälle außerhalb der Grenzen der Präfektur auftraten oder bei Menschen, die zum Zeitpunkt der Kernschmelzen bereits über 18 Jahre alt waren, all dass wird wissenschaftlich nicht untersucht und damit vermutlich nie bekannt werden.

Das Recht auf Gesundheit

Es bleibt festzustellen, dass wir in Fukushima einen signifikanten Anstieg der Neuerkrankungsraten von Schilddrüsenkrebs bei Kindern sehen und dass diese Zahlen zugleich eine systematische Unterschätzung darstellen dürften. Zudem wird auch von einem Anstieg weiterer Krebsarten und anderer Erkrankungen gerechnet, die durch ionisierte Strahlung ausgelöst oder negativ beeinflusst werden. Die Schilddrüsenscreenings der FMU stellen die einzigen wissenschaftlich halbwegs soliden Untersuchungen dar, die Aufschlüsse über die gesundheitlichen Folgen der Atomkatastrophe von Fukushima liefern können. Und sie laufen derzeit Gefahr, von den Befürwortern der Atomenergie unterlaufen zu werden. Die Menschen in Japan haben ein Recht auf Gesundheit und ein Recht auf Information. Die Untersuchungen kindlicher Schilddrüsen kommt somit nicht nur den Patienten selber zu Gute, deren Krebserkrankungen frühzeitig detektiert und behandelt werden können, sondern der gesamten Bevölkerung, die durch die freigesetzte Strahlung beeinträchtigt wird. Die korrekte Fortführung und wissenschaftliche Begleitung der Schilddrüsenuntersuchungen liegen somit im öffentlichen Interesse und dürfen nicht durch politische oder wirtschaftliche Beweggründe konterkariert werden.

Dr. med. Alex Rosen

Vorsitzender der IPPNW

Erstuntersuchung (Oktober 2011 – März 2014): 367.649 Kinder	Juni 2017
Untersuchte Kindern:	300.473 (81,7%)
Knoten und Zysten im Ultraschall:	145.868 (48,5%)
Feinnadelbiopsien bei stark auffälligen Ultraschallbefunden:	547
Krebsverdachtsfälle durch Feinnadelbiopsie:	116
Operationen aufgrund von Metastasen oder schnellem Wachstum:	102
Bestätigung der Krebsdiagnose in der Histologie:	101
Gutartige Tumore in der Histologie:	1
Patienten, die noch auf OP warten	14
Errechnete Prävalenz von Schilddrüsenkrebs in der Studienkohorte:	33,6 pro 100.000
Zweituntersuchung (April 2014 - März 2016): 381.256 Kinder	Juni 2017
Untersuchte Kindern:	270.497 (70.9%)
Knoten und Zysten im Ultraschall:	161,801 (59,8%)
Davon neue, die im Erstscreening nicht aufgefallen waren:	
Davon Knoten > 5 mm, bzw. Zysten > 20 mm;	
Verschlechterungen von Stadium A2 auf B	
Feinnadelbiopsien bei stark auffälligen Ultraschallbefunden:	200
Krebsverdachtsfälle durch Feinnadelbiopsie:	71
Operationen aufgrund von Metastasen oder schnellem Wachstum	49
Bestätigung der Krebsdiagnose in der Histologie:	49
Gutartige Tumore in der Histologie	0
Patienten die noch warten:	22
Errechnete Inzidenz von Schilddrüsenkrebs zwischen Erst- und Zweitscreening:	9,1 pro 100.000
Drittuntersuchung (Mai 2016 - März 2018): 336 616	Juni 2017
Untersuchte Kindem	105 966 (31 5%)
Knoten und Zysten im Elltraschall:	69 038 (65 2%)
Davon neue die im Erstscreening nicht aufgefallen waren:	00.000 (00,270)
Davon Knoten > 6 mm, hzw. Zysten > 20 mm;	
Verschlechterungen von Stadium A2 auf B	
Feinnadelbionsien hei stark auffälligen Ultraschallbefunden:	11
Krehsverdachtsfälle durch Feinnadelbionsie:	4
Operationen auforund von Metastasen oder schnellem Wachstum:	2
Bestätigung der Krehediagnase in der Histologie:	2
Gutartine Tumore in der Histologie:	6
Patienten, die noch warten:	2
Frechnete Inzidenz von Schilddrüsenkrehs zwischen Frst- und Zweitscreening	0.9 pro 100.000
Enectmete inzidenz von Schindurusenkrebs zwischen Erst- und zweitscheening.	0,5 più 100.000
Gesamtzahlen:	Juni 2017
Gesamtzahl der Patienten mit Krebsverdacht:	191
Gesamtzahl der Patienten mit Operation:	153
Gesamtzahl der Patienten mit bestätigtem SD-Krebs:	152
Gesamtzahl der Patienten, die auf OP warten:	38

Ibaraki accident rated as level 2

August 2, 2017

Japan rates severity of June nuclear exposure accident as level 2

https://mainichi.jp/english/articles/20170802/p2g/00m/0dm/059000c#cxrecs_s

TOKYO (Kyodo) -- The Nuclear Regulation Authority said Wednesday that it assessed the severity of a nuclear exposure accident in June in eastern Japan provisionally as level 2 on the zero-to-seven international scale.

The June 6 accident at the Japan Atomic Energy Agency's Oarai Research and Development Center in Ibaraki Prefecture, east of Tokyo, left five workers internally exposed to radiation although no harmful consequences were detected for the surrounding environment.

Level 2 on the International Nuclear and Radiological Event Scale is a stage defined as an "incident." The Fukushima nuclear accident, triggered by the huge earthquake and tsunami in March 2011, was rated at the maximum level 7, on a par with the 1986 Chernobyl disaster.

When one of the five workers, a male in his 50s, opened a container in a storage room at the facility, a plastic bag inside it with plutonium and uranium powder samples ruptured.

The worker continued the check even when the plastic bag swelled, resulting in the inhalation of radioactive substances. Tests have found a small amount of radioactive materials -- plutonium and americium -- in the urine of the five workers, confirming they suffered internal radiation exposure. It was estimated one of the workers will be internally exposed to a radiation dose from 100 to 200 millisieverts in total over 50 years, a level that could slightly increase the risk of cancer.

NRA Chairman Shunichi Tanaka urged the JAEA to take measures to prevent further accidents, saying it is "responsible for ensuring the safety of workers."

Japan previously assessed as level 2 a critical-state accident at the No. 1 reactor of Hokuriku Electric Power Co.'s Shika nuclear plant in 1999. The utility hid the accident, which occurred while the unit's operation was suspended for regular checkups, until 2007.

Tokyo also rated as level 2 a 1991 accident at the No. 2 reactor in the Mihama plant run by Kansai Electric Power Co., in which one of a steam generator's tubes snapped, activating the emergency core-cooling system for the first time in the country.

Oarai nuclear accident rated as Level 2

https://www3.nhk.or.jp/nhkworld/en/news/20170802_22/

Japanese nuclear regulators have provisionally assessed an accident at a research facility north of Tokyo as Level 2 on an international scale.

In June, 5 workers at the Oarai Research and Development Center of the Japan Atomic Energy Agency were exposed to radioactive substances when a bag containing them burst open.

The agency reported to the Nuclear Regulation Authority that the highest possible level of exposure would be 100 to 200 millisieverts over a 50-year period.

The authority made the announcement on Wednesday.

Level 2 accident is third from the bottom on the 8-level nuclear and radiological event scale.

The last Level 2 accident in Japan was at Onagawa No.2 reactor in Miyagi Prefecture, where the tsunami triggered by the March 2011 earthquake flooded the reactor building basement and caused key pieces of equipment to stop operating.

The accident at Fukushima Daiichi nuclear plant caused by the same tsunami was rated far higher, at Level 7.

The sodium leak at the Monju fast-breeder reactor in 1995 was assessed as Level One.

Hot particles from Fukushima : Accurate risk assessment needed

Radioactively-hot particles detected in dusts and soils from Northern Japan by combination of gamma spectrometry, autoradiography, and SEM/EDS analysis and implications in radiation risk assessment

http://www.sciencedirect.com/science/article/pii/S0048969717317953

- Marco Kaltofena^{,,},
- Arnie Gundersenb

Show more : https://doi.org/10.1016/j.scitotenv.2017.07.091

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Highlights

•

Radioactive particles from Fukushima are tracked via dusts, soils, and sediments.

Radioactive dust impacts are tracked in both Japan and the United States/Canada.

•

Atypically-radioactive particles from reactor cores are identified in house dusts.

•

Scanning electron microscopy with X-ray analysis is used for forensic examinations.

Abstract

After the March 11, 2011, nuclear reactor meltdowns at Fukushima Dai-ichi, 180 samples of Japanese particulate matter (dusts and surface soils) and 235 similar U.S. and Canadian samples were collected and analyzed sequentially by gamma spectrometry, autoradiography, and scanning electron microscopy with energy dispersive X-ray analysis. Samples were collected and analyzed over a five-year period, from 2011 to 2016. Detectable levels of ¹³⁴Cs and ¹³⁷Cs were found in 142 of 180 (80%) Japanese particulate matter samples. The median radio-cesium specific activity of Japanese particulate samples was $3.2 \text{ kBq kg}^{-1} \pm 1.8 \text{ kBq kg}^{-1}$, and the mean was 25.7 kBq kg^{-1} ($\sigma = 72 \text{ kBq kg}^{-1}$). The U.S. and Canadian mean and median radio-cesium activity levels were < 0.03 kBq kg⁻¹. U.S. and Canadian samples had detectable ¹³⁴Cs and ¹³⁷Cs in one dust sample out of 32 collected, and four soils out of 74. The maximum US/Canada radio-cesium particulate matter activity was $0.30 \pm 0.10 \text{ kBq kg}^{-1}$. The mean in Japan was skewed upward due to nine of the 180 (5%) samples with activities > 250 kBq kg⁻¹. This skewness was present in both the 2011 and 2016 sample sets.

> 300 individual radioactively-hot particles were identified in samples from Japan; composed of 1% or more of the elements cesium, americium, radium, polonium, thorium, tellurium, or strontium. Some particles reached specific activities in the MBq μ g⁻¹ level and higher. No cesium-containing hot particles

were found in the U.S. sample set. Only naturally-occurring radionuclides were found in particles from the U.S. background samples. Some of the hot particles detected in this study could cause significant radiation exposures to individuals if inhaled. Exposure models ignoring these isolated hot particles would potentially understate human radiation dose.

[...]

4. Conclusions

The combination of gamma spectroscopy, autoradiography and SEM/EDS analysis was effective in isolating and analyzing hot particles. Many of these particles would have gone unidentified if only one of these techniques has been employed.

Samples have provided evidence that local hot spots of contamination existed at the time of the Fukushima Dai-ichi meltdowns in 2011. Local hot spots still persisted in 2016, five years after the containment failures in 2011.

Radioactively-hot dust and soil particles were routinely detected in samples from Northern Japan in both the 2011 and 2016 sample sets, with autoradiographic and SEM/EDS data showing that isolated particles could have substantially-higher specific activities than the bulk samples from which they were isolated. Radioactive ¹³¹I (April 2011 samples only), ¹³⁴Cs and ¹³⁷Cs were the most commonly encountered nuclides in Japan. Primordial nuclides unrelated to events in Japan were the dominant source of radioactivity in U.S. and Canadian environmental samples collected at the same times. Thorium was detected in radioactive particles from Japan, but this radioactive element has both natural and Fukushima Dai-ichi-related sources.

Fukushima Dai-chi-related radioactive contamination was found in 80% of the particulate matter samples from Fukushima Prefecture and surrounding areas in Northern Japan. This was true for both the 2011 and 2016 sample sets. Relative variability among dust samples from Japan was very high. The highest activity levels (3σ or more above the mean) are representative of the specific collection locations at the time of sampling, and are not representative of average Japanese radiation exposures. Most of the activity detected in Japanese samples came from ¹³⁷Cs and ¹³⁴Cs (and in the first post-accident weeks, from ¹³¹I), although there were isolated detections of ⁶⁰Co and ²⁴¹Am.

Individuals in the contaminated zone, and potentially well outside of the mapped contaminated zone, may receive a dose that is higher than the mean dose calculated from average environmental data, due to inhalation or ingestion of radioactively-hot dust and soil particles. Accurate radiation risk assessments therefore require data for hot particle exposure as well as for exposure to more uniform environmental radioactivity levels.



Fukushima 311voices : Do they really expect us to believe this?



September 11, 2017

New study says Minami-soma as safe as Western Japan cities – do they really expect us to believe this?

https://fukushima 311 voices.wordpress.com/2017/09/06/new-study-says-minami-soma-as-safe-as-western-japan-cities-do-they-really-expect-us-to-believe-this/

新しい調査によると、南相馬市は西日本の都市と同じくらい安全だそうです。こんな調査結果が信じ られるでしょうか?

On September 5, 2017, Minami-soma city made a statement on the city's radiation levels compared to 3 cities in West Japan, which has been reported in several newspapers. It's important to comment on this study because the statement is intended to persuade the population to return to live there.

We are publishing comments on the articles below after having discussed with M. Ozawa of the citizen's measurement group named the "Fukuichi Area Environmental Radiation Monitoring Project". For English speaking readers, please refer to the article of Asahi Shimbun in English. For our arguments we refer to other articles published in other newspapers – Fukushima Minyu and Fukushima Minpo – which are only in Japanese.

2017年9月5日、南相馬市は同市と西日本の3市の外部被曝ばく線量を測定し、その結果について 発表しました。いくつかの新聞が報道しています。この発表は住民帰還を促す意図を持っていますの で、コメントすることが重要かと思われます。

ふくいち周辺環境放射線モニタリングプロジェクトの小澤洋一さんにお話をお聞きし、以下のコメン トを投稿いたします。以下に引用するのは朝日新聞の記事ですが、これは英語と日本語と両方で報道 されているためです。朝日新聞には記載されていないことが福島民友と福島民報に報道されています ので、そちらも適宜引用させていただきます。

Here are the locations of Minami-soma and the 3 other cities.

南相馬市と記事に登場する3市の位置については下記の地図をご覧ください。

see above

Here is the article of the Asahi Shimbun:

Fukushima city shows radiation level is same as in west Japan

By SHINTARO EGAWA/ Staff Writer

September 5, 2017 at 18:10 JST

MINAMI-SOMA, Fukushima Prefecture–Radiation readings here on the Pacific coast north of the crippled Fukushima No. 1 nuclear power plant are almost identical to those of sample cities on the other side of Japan.

The Minami-Soma government initiated the survey and hopes the results of the dosimeter readings, released Sept. 4, will encourage more evacuees to return to their home areas after they fled in the aftermath of the 2011 nuclear disaster.

A total of 100 portable dosimeters were handed out to 25 city employees from each of four cities–Minami-Soma, Tajimi in Gifu Prefecture, Fukuyama in Hiroshima Prefecture and Nanto in Toyama Prefecture. They were asked to take them wherever they went from May 29 through June 11.

The staff members were evenly dispersed with their homes in all corners of the cities they represented. In addition, only those living in wooden houses were selected as different materials, concrete walls, for example, are more effective in blocking radiation.

In July 2016, evacuation orders for most parts of Minami-Soma were lifted, but not many residents have so far returned.

The city's committee for health measures against radiation, which is made up of medical experts, analyzed the data.

The median value of the external radiation dosage of the 25 staff of Minami-Soma was 0.80 millisieverts per annum, while the average value was 0.82 mSv per annum, according to Masaharu Tsubokura, the head of the committee and a physician at Minami-Soma general hospital.

No significant difference was found in the three western cities.

Both figures were adjusted to include the natural radiation dose, and are below the 1-mSv per annum mark set by the national government as the acceptable amount of long-term additional radiation dosage, which is apart from natural radiation and medical radiation dosages.

The radiation doses in all cities were at levels that would not cause any health problems, according to Tsubokura.

"Making comparisons with other municipalities is important," Tsubokura said. "I am intending to leave the survey results as an academic paper."

こちらが朝日新聞の記事です。

南相馬市での外部被曝線量、県外と「ほとんど差ない」

江川慎太郎

2017年9月5日13時00分

福島県南相馬市は4日、5月末から2週間、市と交流のある岐阜県多治見市など3市と協力し、そ れぞれの市職員に小型の線量計を持たせ、外部被曝(ひばく)線量を測定したところ、南相馬市と3 市の間で、測定結果に大きな差はなかったと発表した。

南相馬市では、昨年7月に小高区などで避難指示が解除されたが、住民帰還は思うように進んでい ない。調査は、市民に客観的なデータを示すことを目的に市が実施し、専門家による市放射線健康対 策委員会が分析などを担当した。

ほかに測定に参加したのは、広島県福山市と富山県南砺市。5月29日から6月11日まで、各市 職員25人ずつ計100人に小型軽量積算線量計を着用させ、測定してもらった。

測定地区の偏りをなくすため職員の自宅が市内一面均等になるようにし、住宅の構造は木造に統一 するように選定したという。

市放射線健康対策委員会委員の坪倉正治・市立総合病院医師によると、南相馬市の外部被曝線量の 年換算値は25人の中央値で0・80ミリシーベルト。平均値も0・82ミリシーベルトで、他の3 市と大きな差はなかったという。値はいずれも自然界の放射線量を加味したものだ。

国が追加被曝線量の長期目標として示している年間1ミリシーベルトを下回っており、どの市も健 康影響を考えるレベルにはないという。

坪倉医師は「ほかの自治体との比較は重要だ。今回の測定結果は論文化して残したい」と話し、学 会誌などで発表していく考えだ。

Our comments

こちらがコメントです。

1) The difference of life style between city employees and local agricultural population

As we see in the article, portable dosimeters were handed out to city employees. They spend most of their day time in an office protected by concrete walls which are efficient for blocking radiation as stated in the article. However, in Minami-soma, most of the population spends more time outside, very often working in the fields. Their life style is different and therefore the external radiation dose cannot be similar to those of city employees. The result of the comparison between the external radiation dose of city employees cannot be used as an argument to say that it is safe for the local population to live in Minami-soma.

市の職員と農業を主たる生業とする多くの南相馬市の住民との生活様式の違い

記事に書かれているように、市職員に小型の線量計を持たせ、外部被曝(ひばく)線量を測定しています。市職員は日中、ほとんどコンクリートの壁に囲まれた建物の中のオフィスで過ごしています。 そして、英文記事には書かれていますが、コンクリートは遮蔽効果が高いのです。しかし南相馬市では、住民の多くの方々は屋外で過ごされますし、農作業をなさることが多いのです。皆さんの生活様式は市職員のそれとは異なっていますから、当然外部被曝線量も同様ではないはずです。報道された外部被曝線量の比較の結果をもって、南相馬市に住むのは安全、ということはできません。 2) In the article of Fukushima Minyu, it is stated that in Minami-soma the radiation dose has a wider range than in the other three cities. This means that there are hotspots, which leads to higher risks of internal irradiation.

福島民友の記事には「他県3市に比べ南相馬市は外部被ばく線量のばらつきが大きかった。」とあり ます。これは南相馬市には内部被ばくのリスクにつながるホットスポットが存在する可能性を示唆し ます。

3) The radiation dose expressed in terms of Sieverts is relevant for radioprotection when the source of radiation is fixed and identified. This is the case for most of the nuclear workers. However, in the case of Fukushima after the nuclear accident where the whole environment is radio-contaminated and the radioactive substances are dispersed widely everywhere, it is not a relevant reference for radioprotection. It is important in this case to measure surface contamination density, especially of soil.

シーベルトの単位で表される外部被曝線量は放射線源がわかっていて、固定されている場合の放射線 防護に有効です。例えば放射線を扱う作業者の防護の場合などです。しかし、福島県のように、原発 事故以来、環境が放射能汚染され、放射性物質が拡散しているスペースでは、放射線防護に有効では ありません。この場合は表面汚染密度、特に土壌を測定することが重要です。

4) 6 years and 6 months since the accident, cesium has sunk in the soil. It is thought to be between 6 and 10 cm from the surface. This means the top layer of soil from 0 to 5 cm is blocking the radiation, reducing the measures of the effective dose. However, this does not mean that the population is protected from internal irradiation, since cesium can be re-scattered by many means, by digging or by flooding, for example.

事故以来6年半経った今、セシウムは土壌に沈着していっています。現在は地表から6センチから 10 センチくらいの深さにあるものと思われます。これは、0 から5 センチの土壌の層が放射線を遮 蔽していることを意味します。しかし、だからといって、住民が内部被曝から守られていることには なりません。というのは例えば掘り返えされたり、洪水にあったりなど、色々な原因でセシウムが再 拡散することが考えられるからです。

5) The reliability of individual portable dosimeters has already been raised many times. This device is not adequate to capture the full 360° exposure in radio-contaminated environments as described in point 3 above.

小型の線量計の信頼性はこれまでにも何度も指摘されて来ています。このツールは 3)で記述されたような環境全体が汚染されているような場合の 360 度方向からの外部被曝線量の測定には適していないのです。

6) In the article, it is stated that background radiation is included in the compared values, but it does not mention the actual background radiation measurements in the 4 cities.

報道によると、比較された4市の値には自然放射線量を加味してあるとあります。しかし、各市の自 然放射線量の値については記述がありません。

The Table of Fukushima Minyu Radiation dose of the 4 cities

Median values

Sum of the dose (microsievert)	Minami-soma
31.44	Tajimi in Gifu prefecture
27.55	Fukuyama in Hiroshima prefecture
30.41	Nanto in Toyama prefecture
30.91	0.81

Values include the background radiation dose 福島民報

To summarize, the sample study group does not represent the overall population. The study doesn't include the risks of internal radiation, for which the measurement of contaminated soil is indispensible. The dosimeters are not adequate to measure the full load of radio-contaminated environments. So, the research method is not adequate to draw the conclusion to say that it is safe for the population to return to live in Minami-soma.

要約すると、サンプルグループが全体の人口の代表していないこと、調査が内部被ばくのリスクを考慮していないこと(内部被ばくのリスクのアセスメントには土壌汚染測定が必須)、小型線量計は放射能汚染された環境の全体的な測定には不適格であることなどが挙げられます。結論として、南相馬に帰還しても安全という結論を導くには、この調査方法はとても適切とは言えません。

European parliament not happy about easing restrictions on Fukushima foods

September 14, 2017

EU parliament opposes bid to reduce testing of Fukushima food imports

https://www.japantimes.co.jp/news/2017/09/14/national/politics-diplomacy/eu-parliament-opposesbid-reduce-testing-fukushima-food-imports/#.WbqR7MZpGos AFP-IIII

STRASBOURG, FRANCE – The European Parliament on Wednesday warned against easing health controls imposed on food products imported from the Fukushima region in the wake of the nuclear meltdowns of 2011.

The checks were imposed on food from the area around the Fukushima No. 1 nuclear plant, which went into meltdown after being hit by massive tsunami, spewing radiation over a wide area in the world's most serious nuclear disaster since Chernobyl in 1986.

The European Commission, the EU's executive arm, wants to reduce the list of foods subject to radiation tests before they can be imported into the bloc, which currently includes rice, mushrooms, fish and other seafood.

A resolution passed by a large majority of MEPs called on the commission to withdraw its proposal, saying it was "very difficult to verify whether the measures proposed are sufficient" to protect European consumers and there was reason to think it "could lead to an increase in exposure to radioactive contaminated food.

French Green MEP Michele Rivasi said extra vigilance was needed as the EU negotiates a trade deal with Japan.

MEPs criticized the Commission for not providing them with the data used to decide it was acceptable to relax the restrictions.

The matter will be reviewed in the coming weeks by experts appointed by EU member states, ahead of a vote expected in October, a parliament spokesman told AFP.

Fukushima monkeys & radiation

Oct 30, 2017 @ 12:01 AM 48,728

Three Ways Radiation Has Changed The Monkeys Of Fukushima

Jeff McMahon , Contributor

I cover green technology, energy and the environment from Chicago.

https://www.forbes.com/sites/jeffmcmahon/2017/10/30/three-ways-radiation-has-changed-the-monkeys-of-fukushima-a-warning-for-humans/#4398332a65ea

This year the evacuated residents of Japan's Fukushima Prefecture began returning home, and as they resume their lives, the monkeys who have lived there all along have some cautions for them—in the form of medical records.

The Japanese macaques show effects associated with radiation exposure—especially youngsters born since the March 2011 meltdowns at the Fukushima-Daiichi Nuclear Power Plant, according to a wildlife veterinarian who has studied the population since 2008.

Dr. Shin-ichi Hayama detailed his findings Saturday in Chicago as part of the University of Chicago's commemoration of the 75th Anniversary of the first man-made controlled nuclear reaction, which took place under the university's football stadium in 1942 and birthed the technologies of nuclear power and nuclear weapons.

Hayama appeared alongside documentary filmmaker Masanori Iwasaki, who has featured Hayama's work in a series of annual documentaries exploring the impact of fallout from the reactor meltdowns on wildlife. The fallout led the Japanese government to evacuate residents from a highly contaminated area surrounding the plant and extending to the northwest. The plume crossed the Pacific Ocean and left much diluted quantities of fallout across the United States, an event closely monitored on this page. Since 2008, Hayama has studied the bodies of monkeys killed in Fukushima City's effort to control the monkey population and protect agricultural crops (about 20,000 monkeys are "culled" annually in Japan). Because he was already studying the monkeys, he was ideally positioned to notice changes affected by radiation exposure.

"I'm not a radiation specialist," Hayama said Saturday in Chicago, "but because I've been gathering data since 2008—remember, the disaster took place in 2011—it seems obvious to me that this is very important research. I've asked radiation specialists to take on this research, but they have never been willing to take this on because they say we don't have any resources or time to spare because humans are much more important.

"So I had to conclude that there was no choice but for me to take this on, even though I'm not a specialist in radiation," Hayama said, his remarks translated by University of Chicago Professor Norma Field. "If we don't keep records, there will be no evidence and it will be as if nothing happened. That's why I'm hoping to continue this research and create a record."

Fukushima City is 50 miles northeast of the Fukushima-Daiichi Power Plant, so the radiation levels have been lower there than in the restricted areas, now reopening, that are closer to the plant. Hayama was unable to test monkeys in the most-contaminated areas, but even 50 miles from the plant, he has documented effects in monkeys that are associated with radiation. He compared his findings to monkeys in the same area before 2011 and to a control population of monkeys in Shimokita Peninsula, 500 miles to the north. Hayama's findings have been published in the peer-reviewed journal Scientific Reports, *published by Nature*. Among his findings:

Smaller Bodies — Japanese monkeys born in the path of fallout from the Fukushima meltdown weigh less for their height than monkeys born in the same area before the March, 2011 disaster, Hayama said. "We can see that the monkeys born from mothers who were exposed are showing low body weight in relation to their height, so they are smaller," he said.



Nature: Scientific Reports

Red circles represent the body weight and height (CRL=crown-to-rump length) of monkeys born post-Fukushima. Blue triangles represent monkeys born before.

Smaller Heads And Brains — The exposed monkeys have smaller bodies overall, and their heads and brains are smaller still.

"We know from the example of Hiroshima and Nagasaki that embryos and fetuses exposed in utero resulted in low birth weight and also in microcephaly, where the brain failed to develop adequately and head size was small, so we are trying to confirm whether this also is happening with the monkeys in Fukushima," Hayama said.

And it appears that it is:



Nature: Scientific Reports

Blue triangles represent the head size of pre-disaster monkey fetuses relative to their height (CRL=crown-to-rump length). Red circles represent post-disaster monkey fetuses.

Anemia — The monkeys show a reduction in all blood components: red blood cells, white blood cells, hemoglobin, and the cells in bone marrow that produce blood components.

"There's clearly a depression of blood components in the Fukushima monkeys," said Hayama. "We can see that in these monkeys, that there is a correlation between white blood cell counts and the radio-cesium concentrations in their muscles. This actually is comparable to what's been reported with children of Chernobyl."



Nature: Scientific Reports

Monkeys with higher concentrations of radioactive cesium in their muscles, to the right on the graph, have lower white blood cell counts.

"We have taken these tests from 2012 through 2017, and the levels have not recovered. So we have to say this is not an acute phenomenon. It has become chronic, and we would have to consider radiation exposure as a possible cause," Hayama said.

Hayama has appeared in several documentaries by Masanori Isawaki, who was 70 years old in 2011 and ready to retire from a thirty-year career making wildlife documentaries—he is best known for his portrait of "Mozu: The Snow Monkey"—when the Fukushima reactors melted down.

"Having turned 70 I thought, I've done enough, I can sit back. And then the nuclear disaster struck," he said, his remarks also translated by Field. "I watched TV shows and read the newspaper for a year and kept asking myself, is there something left in me that I can do? A year later in 2012, with a cameraman and a sound engineer, the three of us just decided: In any case let's just go to Fukushima, see what's there." Since then he has made five films, one each year, documenting radiation impacts on wildlife, grouping them under the title "Fukushima: A Record of Living Things." Two episodes were screened Saturday in Chicago, their first screenings in the United States.

At first Iwasaki documented white spots and deformed tails on the reduced number of barn swallows who survived after the disaster.

"It's something we haven't seen anywhere else but Chernobyl and Fukushima," says the narrator of Iwasaki's 2013 film, "so it's clearly related to radiation. It probably doesn't hurt the bird to have some white feathers, but it's a marker of exposure to radiation.

"The barn swallows in Fukushima are responding in the same way as what we've seen in Chernobyl. The young birds are not surviving. They are not fledging very well."

The white spots also turned up on black cows. Some types of marine snails vanished, then gradually returned. Fir trees stemmed differently, and the flower stalks of some dandelions grew thick and

deformed. Dandelion stalks are a favorite food of Japanese monkeys, but the monkeys showed no obvious deformities, so Isawaki turned to Hayama to find out how radiation was affecting them.

Iwasaki's 2017 film, just completed, is his first to investigate effects in the monkeys' primate cousins, the humans: an unusually large number of children with thyroid cancer.

By Jeff McMahon, based in Chicago. Follow Jeff McMahon on Facebook, Google Plus, Twitter, *or email him* here.



Can't stay more than 20 minutes on the roof

Media representatives walk on top of the No. 3 reactor building at the Fukushima No. 1 nuclear power plant where a huge dome is being constructed over the storage pool for spent nuclear fuel. (Video footage by Shigetaka Kodama)

December 4, 2017

Fukushima dome roof takes shape, but radiation remains high

By CHIKAKO KAWAHARA/ Staff Writer

High radiation levels are still limiting recovery work at the Fukushima No. 1 nuclear plant, a stark reality that reporters saw firsthand when they observed efforts to remove risk factors there.

Media representatives were invited into the plant in early December to see construction work, with the building of a domed roof over the No. 3 reactor building as the main focus.

However, they were only allowed to stay on top of the roof for 20 minutes due to high radiation levels. The roof is being put together directly above the storage pool for spent fuel. The dome is designed to prevent the spewing of radioactive materials when the fuel is actually removed from the pool.

The original roof of the No. 3 reactor building was severely damaged by a hydrogen explosion in the days following the March 11, 2011, Great East Japan Earthquake and tsunami, which led to the crippling of the Fukushima No. 1 plant.

Spent fuel still remains in the storage pools located on the top floors of the No. 1 to No. 3 reactor buildings. Plans call for removing the spent fuel first from the No. 3 reactor building. Although the dome will help prevent the spread of radioactive materials, building parts and other debris as well as some equipment have still not been completely removed from the storage pool, which holds 566 fuel rods.

The collapsed roof and walls were removed to allow for the construction of the domed roof, which began in the summer. The domed roof is about 17 meters high, and a crane was also installed under it in November.

Plans call for the removal of the spent fuel from the No. 3 building to begin in the middle of the next fiscal year.

Internal radiation exposure levels were measured before media representatives headed to the No. 3 reactor building. They were also required to don protective clothing as well as a partial face mask covering the mouth and nose from about 100 meters from the building.

Radiation levels close to the building were 0.1 millisieverts per hour.

An elevator installed into the scaffolding next to the reactor building took the media representatives to the roof, which had been covered with metal plates.

The so-called operating floor looked like any other newly constructed building roof, a sharp contrast to the twisted metal parts that covered the building shortly after the nuclear accident.

Tokyo Electric Power Co., the plant's operator, captured video footage from within the reactors for the first time in July. Debris that appears to be melted nuclear fuel was found in various parts of the containment vessel.

To the south of the No. 3 reactor building stands the No. 4 reactor building, from where all the spent nuclear fuel has been removed.

To the north is the No. 2 reactor building, which avoided a hydrogen explosion. Beyond the building, cranes and other large equipment are working in preparation for the removal of debris from the No. 1 reactor building.

TEPCO officials cautioned media representatives about standing too long right next to the storage pool, which could be seen located about six meters below the roof. Debris was found within the pool while insulating material floated on the pool surface.

The radiation level near the pool was 0.68 millisieverts per hour. While that was a major improvement from the 800 millisieverts per hour recorded in the immediate aftermath of the nuclear accident close to seven years ago, it was still too high to allow for a stay of longer than 20 minutes.

How to protect yourself from nuclear attack or explosion

December 6, 2017

Chinese near North Korean border told how to survive a nuclear attack

https://www.japantimes.co.jp/news/2017/12/06/asia-pacific/chinese-near-north-korean-border-toldsurvive-nuclear-attack/#.WiffyHmDOos Reuters BEIJING – The official state-run newspaper in northeastern China's city of Jilin, near the border with North Korea, on Wednesday published a page of "common-sense" advice on how readers can protect themselves from a nuclear attack or explosion.

China has voiced grave concern over North Korea's nuclear and missiles program, as well as calling on the United States and South Korea to stop provoking Pyongyang.

U.S. bombers were to fly over the Korean Peninsula on Wednesday as part of a large-scale joint military drills with South Korea. The North has warned that the drills would push the Korean Peninsula to the "brink of war."

The full-page article in the Jilin Daily, which does not mention possible attacks by North Korea or any other country, explains how nuclear weapons differ from traditional arms and instructs people how to protect themselves in the event of an attack.

Nuclear weapons have five means of causing destruction, the article explained: light radiation, blast waves, early stage nuclear radiation, nuclear electromagnetic pulses and radioactive pollution. It said the first four kill instantly.

People who find themselves outside during a nuclear attack should try to lie in a ditch, cover exposed skin in light-colored clothing or dive into a river or lake to try to minimize the possibility of instantaneous death, it said.

Cartoon illustrations of ways to dispel radioactive contamination were also provided, such as using water to wash off shoes and using cotton buds to clean ears, as well as a picture of a vomiting child to show how medical help can be sought to speed the expulsion of radiation through stomach pumping and induced urination.

The paper also provided historical context, saying that when the United States dropped a nuclear bomb on Hiroshima in 1945, light radiation and the blast wave caused fires and storm winds that destroyed 81 percent of the buildings in the city, killing over 70,000 people.

North Korea last week tested what it called its most advanced intercontinental ballistic missile, which could reach all of the United States.

U.S. President Donald Trump has warned he would destroy the North Korean regime if it threatened the United States with nuclear weapons.

China has rejected military intervention and called for an end to the war of words between Washington and Pyongyang.

Beijing fears an outbreak of conflict or a chaotic collapse of the North Korean regime, which might see fighting or waves of refugees cross the border into China.

Perinatal mortality in Fukushima and other contaminated prefectures (2016 study)

Increases in perinatal mortality in prefectures contaminated by the Fukushima nuclear power plant accident in Japan

http://ebm-jp.com/wp-content/uploads/media-2016002-medicine.pdf

A spatially stratified longitudinal study

Hagen Heinrich Scherb, Dr rer nat Dipl-Matha,*, Kuniyoshi Mori, MDb, Keiji Hayashi, MDc

Abstract

Descriptive observational studies showed upward jumps in secular European perinatal mortality trends after Chernobyl. The question arises whether the Fukushima nuclear power plant accident entailed similar phenomena in Japan. For 47 prefectures representing

15.2 million births from 2001 to 2014, the Japanese government provides monthly statistics on 69,171 cases of perinatal death of the fetus or the newborn after 22 weeks of pregnancy to 7 days after birth. Employing change-point methodology for detecting alterations in longitudinal data, we analyzed time trends in perinatal mortality in the Japanese prefectures stratified by exposure to estimate and test potential increases in perinatal death proportions after Fukushima possibly associated with the earthquake, the tsunami, or the estimated radiation exposure. Areas with moderate to high levels of radiation were compared with less exposed and unaffected areas, as were highly contaminated areas hit versus untroubled by the earthquake and the tsunami. Ten months after the earthquake and tsunami and the subsequent nuclear accident, perinatal mortality in 6 severely contaminated prefectures jumped up from January 2012 onward: jump odds ratio 1.156; 95% confidence interval (1.061, 1.259), P-value 0.0009. There were slight increases in areas with moderate levels of contamination and no increases in the rest of Japan. In severely contaminated areas, the

increases of perinatal mortality 10 months after Fukushima were essentially independent of the numbers of dead and missing due to the earthquake and the tsunami. Perinatal mortality in areas contaminated with radioactive substances started to increase 10 months after the nuclear accident relative to the prevailing and stable secular downward trend. These results are consistent with findings in Europe after Chernobyl. Since observational studies as the one presented here may suggest but cannot prove causality because of unknown and uncontrolled factors or confounders, intensified research in various scientific disciplines is urgently needed to better qualify and quantify the association of natural and artificial environmental radiation with detrimental genetic health effects at the population level. **Abbreviations**: CP=change-point, O=odds, OR=odds ratio, PD=perinatal death, SAS=Statistical Analysis System, software produced by SAS Institute Inc., TEPCO =Tokyo Electric Power Company

Listen to children and families afflicted by thyroid cancer

December 7, 2017

Many children diagnosed with thyroid cancer after 3.11 disasters, families still worried

https://mainichi.jp/english/articles/20171207/p2a/00m/0na/012000c

Nearly 80 percent of respondents in a survey by a group supporting children diagnosed with thyroid cancer in the wake of the Fukushima nuclear disaster say they remain worried about the cancer, despite the prognosis for those who receive appropriate treatment being good.

- 【Related】 News Navigator: Do young people's cancers progress more quickly?
- 【Related】 10 more thyroid cancer cases diagnosed in Fukushima
- 【Related】 Families of Fukushima thyroid cancer patients launch support group

The survey was conducted by the 3.11 Fund for Children with Thyroid Cancer, an independent, not-forprofit organization providing support for child patients of thyroid cancer and their families. It was sent in August to 67 households of people who were living in Fukushima Prefecture at the time of the outbreak of the disaster at the Fukushima No. 1 Nuclear Power Plant in March 2011 and whose medical expenses the
fund has helped to cover. A total of 52 households responded -- a response rate of about 78 percent. Twelve of the respondents had received treatment themselves, while seven were fathers and 33 were mothers of those who had been treated.

A total of 40 respondents, or 77 percent, said they remained worried. When asked specifically what they were worried about, 23 people said "a relapse," nine each cited "metastasis" and "health status in general," while five each said they were worried about "pregnancy and childbirth" and "finding a job and working."

Among children, some worried about cancer testing being scaled back. A total of 28 respondents called for the status quo to be maintained, while another 17 respondents called for the testing system to be enhanced. None said it should be downsized.

"Excessive diagnosis" has been blamed in the past for the large number of thyroid cancer patients in the wake of the nuclear disaster, but when given space to write their own opinions, some respondents were supportive of testing from the perspective of early detection of cancer, saying, "It's better than finding out too late," and "If a person has cancer, they'll feel better if it's removed."

The fund's representative director, Hisako Sakiyama, commented, "There's a need to listen to what the afflicted people and their families want, and to hear what problems they are facing."

Third case of work-related (post-Fukushima) leukemia

December 14, 2017

TEPCO employee wins workers' compensation for leukemia

http://www.asahi.com/ajw/articles/AJ201712140025.html

By YOICHI YONETANI/ Staff Writer

A Tokyo Electric Power Co. employee who developed leukemia after battling the Fukushima nuclear disaster was awarded workers' compensation, the fourth responder whose cancer has been recognized as work-related, the labor ministry said.

The employee, who is in his 40s, worked at the now-stricken Fukushima No. 1 nuclear power plant from April 1994 to February 2016.

After the Great East Japan Earthquake and tsunami battered the nuclear plant on March 11, 2011, the employee was engaged in emergency operations to send water to cool the reactor containment vessels and assess the extent of damage. He continued in this emergency role until December 2011, the ministry said Dec. 13.

During his entire time at the plant, his overall radiation dose totaled 99 millisieverts. However, 96 millisieverts were logged after the crisis unfolded.

After he developed leukemia in February 2016, the employee applied for workers' compensation for his condition at the Tomioka Labor Standards Inspection Office in Fukushima Prefecture.

Four people, including the TEPCO employee, who were mobilized to deal with the nuclear crisis have been awarded workers' compensation for cancer. Three of the cases were for leukemia.

According to the Ministry of Health, Labor and Welfare, 16 workers have applied for workers'

compensation for cancer, saying their exposure to radiation during the emergency operation at the Fukushima No. 1 plant caused their disease.

Five workers had their applications denied, while two withdrew their claims.

Labor authorities are scrutinizing the remaining five cases.

Workers at nuclear facilities who develop leukemia are eligible for compensation under the following conditions: the disease is diagnosed more than a year after the first exposure to radiation; their annual radiation doses exceed 5 millisieverts; and other factors that could contribute to the onset of the disease can be ruled out.

The conditions were set in 1976.

TEPCO estimates that 10,553 workers had annual doses of more than 5 millisieverts in fiscal 2011, which ended in March 2012.

The number of such workers has been steadily declining, but there were still 2,860 workers in that category in fiscal 2016, according to TEPCO.

Experts say more workers will likely apply for workers' compensation for illnesses developed in the line of duty at the crippled plant.

Gov't certifies Fukushima TEPCO employee's leukemia as work-related illness

https://mainichi.jp/english/articles/20171214/p2a/00m/0na/001000c

The leukemia that developed in a Tokyo Electric Power Co. (TEPCO) employee in his 40s working on the aftermath of the damaged Fukushima No. 1 Nuclear Power Plant was certified as a work-related illness by the Ministry of Health, Labor and Welfare on Dec. 13, it has been learned.

- 【Related】 Many children diagnosed with thyroid cancer after 3.11 disasters, families still worried
- 【Related】 TEPCO unveils results of underwater footage taken inside Fukushima plant

According to the ministry, the man was in charge of ensuring the safety of the reactors at the Fukushima plant since April 1994. After the reactor meltdowns in March 2011, he donned protective clothing and a mask and also led the effort to cool the overheating reactors with water. He developed leukemia in February last year and is currently receiving treatment.

Over the roughly 19 years that he worked at the nuclear facility, he was exposed to some 99 millisieverts of radiation. Of that, approximately 96 millisieverts occurred after the accident. As the radiation exposure levels exceeded the ministry's baseline of 5 millisieverts per year multiplied by years of employment, his cancer was certified as being linked to his work at the nuclear power station.

This marks the third case of receiving work-related illness certification for developing leukemia in the aftermath of the nuclear disaster.

Officials deliberately downplayed Chernobyl disaster



The No. 4 reactor at the Chernobyl nuclear power plant shortly after the accident (Provided by Chernobyl nuclear power plant)

December 21, 2017

Papers show ministry played down Chernobyl nuclear disaster

http://www.asahi.com/ajw/articles/AJ201712210043.html

Foreign Ministry officials made a concerted effort to downplay the Chernobyl nuclear disaster in 1986 to promote nuclear power and avoid friction at a Group of Seven summit in Japan, ministry documents showed.

The documents released on Dec. 20 also showed a sense of overconfidence in the safety of nuclear power in Japan that may have led in part to the Fukushima nuclear disaster in March 2011.

Soviet officials announced on April 28, 1986, that a nuclear accident had occurred in Ukraine. It would become the worst nuclear plant disaster in history.

According to the documents, Foreign Ministry officials scrambled to gather information about the nuclear accident ahead of the Group of Seven summit in Japan that started on May 4.

The United States was initially passive about issuing a G-7 declaration that criticized the Soviet Union for the accident.

Washington and Moscow at that time were negotiating an agreement to reduce their nuclear arsenals, and U.S. officials did not want to push the Soviet Union into a corner with criticism about Chernobyl.

Although then Prime Minister Yasuhiro Nakasone wanted a G-7 statement that touched upon the nuclear disaster, Japan and other G-7 members were promoting nuclear energy. So the declaration that eventually

emerged downplayed the possible dangers to the environment and human health from the Chernobyl disaster.

The diplomatic documents showed that terms that might disrupt plans to push forward nuclear power generation were gradually deleted from the final statement.

"The confidence of national leaders about the safety of their own nation's nuclear plants emerges from the documents," said Kazuhiko Togo, a former Foreign Ministry official who now heads the Institute for World Affairs at Kyoto Sangyo University. "There was likely a sense of overconfidence that the accident happened because it occurred in the Soviet Union."

The course taken by Japan veered widely from that of European nations regarding nuclear power. Many European nations were directly hit by radioactive materials from the Chernobyl plant, and public sentiment in those nations quickly turned against nuclear power.

One year after the Chernobyl accident, the Green Party emerged as a political force in West Germany based largely on its anti-nuclear stance. A national referendum in Italy led to a landslide victory for anti-nuclear forces.

However, in Japan, the then Ministry of International Trade and Industry, which was in charge of nuclear power generation, showed a different stance in a statement issued on April 29, 1986, immediately after the Soviet Union announced the accident.

"The accident occurred at a nuclear plant unique to the Soviet Union, and such an accident would be unthinkable in Japan," the ministry's statement said.

Public debate on the need for greater safety at Japan's nuclear plants did not deepen despite cover-ups of problems at a nuclear plant operated by Tokyo Electric Power Co. and an accident at a Hokuriku Electric Power Co. nuclear plant.

"Japan did not think seriously or make preparations whenever it was faced with a nuclear incident," said Tatsujiro Suzuki, a former vice chairman of the Japan Atomic Energy Commission. "As a result, its failure to learn from its past lessons led to the Fukushima No. 1 nuclear plant accident."

Japan also failed to keep up with international moves to strengthen the safety of nuclear plants.

In 1988, the International Atomic Energy Agency asked member nations to establish measures to deal with severe accidents on the precondition that such events are possible.

However, Japan did not obligate nuclear plant operators to set up these measures.

The U.N. Convention on Nuclear Safety, which took effect in 1996, carried a provision calling on signatory nations to separate their safety oversight agencies from the agencies that promote nuclear power. Japan did not fulfill that obligation.

(This article was compiled from reports by Ryosuke Ishibashi, Masanobu Higashiyama and Toshihide Ueda, a senior staff writer.)

More cases of thyroid cancer

December 26, 2017

5 more minors in Fukushima Pref. at time of nuclear accident diagnosed with thyroid cancer https://mainichi.jp/english/articles/20171226/p2a/00m/0na/003000c

FUKUSHIMA -- Five more people in Fukushima Prefecture who were 18 and under at the time of the 2011 nuclear accident were diagnosed with thyroid cancer as of the end of September this year, a prefectural investigative commission announced at a Dec. 25 meeting.

- 【Related】 Many children diagnosed with thyroid cancer after 3.11 disasters, families still worried
- 【Related】 News Navigator: Do young people's cancers progress more quickly?
- 【Related】 10 more thyroid cancer cases diagnosed in Fukushima

Fukushima Prefecture established the commission to examine the health of residents after the March 2011 triple meltdown at the Fukushima No. 1 nuclear power plant. A total of 159 Fukushima prefectural residents who were aged 18 and under when the meltdowns occurred have now been diagnosed with thyroid cancer.

The commission stated on Dec. 25 that "it is difficult to think the cases are related to radiation exposure" from the disaster.

Human Rights, Future Generations and Crimes in the Nuclear Age

January 5, 2018

Paracelsus, the Nuclear Age, and Future Generations

http://akiomatsumura.com/2018/01/paracelsus-the-nuclear-age-and-future-generations.html *Emilie Gaillard and Andreas Nidecker*

The famous physician Andreas Paracelsus, who taught at the University of Basel in the early 16th century, wrote: "What sense would it make or what would it benefit a physician, if he discovered the origin of the diseases but could not cure or alleviate them?"

We are a lawyer and a radiologist, reporting from a recent three-day interdisciplinary symposium at the U of Basel. It was attended by physicians, lawyers, nuclear experts and scientists, entitled "Human Rights, Future Generations and Crimes in the Nuclear Age" and was sponsored by the Swiss branch of the International Physicians for the Prevention of Nuclear War (IPPNW) and the International Association of Lawyers Against Nuclear Arms (IALANA).

At our symposium we examined what effects policies relating to nuclear weapons have on the health and the environment. In that regard we considered the human rights situation of victims of nuclear tests and nuclear disasters. The recent success of 122 nations, which on July 7th accepted the UN "treaty on the prohibition of nuclear weapons" obliges in Article 6 nations to environmental remediation and to assistance for the victims, at least those of the use and testing of nuclear weapons.

Most of the discussions, however, focused on the implications of the nuclear weapons and civil use of nuclear energy for the future generations. It is they – our children, grandchildren and their descendants – who will continue to bear the risks of nuclear war and the potential health effects of the ongoing,

progressive global nuclear contamination. This started with the first atmospheric nuclear weapons test "Trinity" in July 1945, followed by some 2000 test explosions by nine nuclear states, hundreds of which were above ground thereby contaminating the biosphere. The Chernobyl nuclear reactor explosion lead to a regional but also widespread contamination of Europe and today there is the ongoing leakage into the pacific of high volumes of radioactively contaminated water from the damaged reactors in Fukushima. Financing the legacy of civil use of nuclear power, including the construction of safe waste storage repositories will be a further challenge we mainly leave to our children and grand-children.

Discussions finally questioned possible liabilities of Governments i.e. decision makers in nuclear weapon states, when intended or accidental launch of nuclear arms might eventually have global repercussions and could lead to the extinction of mankind. The very idea of recognizing crimes against future generations becomes now a new reality: any nuclear war should lead to a major response of international law as it closes the horizon of the future for ever.

Indeed, the entry into the nuclear age marks the unprecedented acquisition of power of humankind over the earth and all forms of life; geologists name this new era the Anthropocene. Many believe that in this era a new code of medical and legal ethics is necessary, as the specific challenges of facing nuclear risks and disasters require a paradigm shift in both disciplines. We must now seriously consider the transgenerational impacts of ionizing radiation on all forms of life and take effective measures to prevent serious health effects in today's populations, in particular young women and children. Yet we also must protect our descendants, as ionizing radiation may cause not only cancer and non-cancerous diseases but also may have genetic impacts in humans exposed today. These effects may even occur with long-term chronic exposure to very low doses of ionizing radiation. They will not become manifest in today's victims, but might present as disease in their offspring only decades later.

Thus we must also adapt the current legal framework of basic principles to this new reality and create new laws, designed specifically to protect and take into consideration the human rights of future generations. The Universal Declaration of Human Rights, although not legally binding, comprises some thirty individual rights. Some of them are pertinent to victims of nuclear accidents. Displaced people in the Fukushima prefecture e.g. should have the right to adequate living standards as well as the rights to express their opinion and the right to receive information. In fact, the Japanese constitution does recognize these rights and defends the trans-generational principle of human rights of future generations in Articles 11 and 97. Yet these rights presently are not respected, for in Japan the press is forbidden to report on current events in Fukushima and medical research on the effects of the reactor meltdown is restricted. Most radiation scientists in Japan, with some exceptions, minimize the risks of radiation and the official widely-observed policy is that small amounts of radiation are harmless: scientifically speaking this is untenable. Furthermore, the Japanese Government is trying to increase the public limit for radiation from 1 mSv to 20 mSv per year, a value generally allowed for radiation workers only. Its scientists are trying to force the International Commission of Radiation Protection ICRP to accept this large increase, yet many consider this not only unscientific but also unconscionable. This handling of the aftermath of the nuclear catastrophe of Fukushima therefore could be considered a violation of human rights and even a crime against future generations.

To voice concerns for the human rights of future generations today is not enough. New legal provisions to insure these rights must be created. Additionally concrete steps towards abolishing nuclear weapons in the coming years are urgently needed. Furthermore, due to the high costs for dismantlement of nuclear reactors and the enormous investments for safe nuclear waste storage, our generation should take responsibility and at least shoulder some of these costs and not burden them on our offspring only. *Emilie Gaillard* is an Assoc. Prof. of law and a researcher at the University of Caen Normandy (France). She is a member of the Pôle Risques, Qualité et Environnement Durable at Maison de la recherché et des Sciences de l'Homme (Caen).

Andreas Nidecker, M.D. (Switzerland), is a Professor Emeritus of Radiology at the University of Basel, Switzerland. Past president and board member of PSR / IPPNW Switzerland and member of the organizing Committees of the symposium "Human Rights, Future Generations & Crimes in the Nuclear Age" International Physicians for the Prevention of Nuclear War (IPPNW) received the Nobel Peace Prize in 1985. IPPNW has remained a leader in the global movement for a world without nuclear weapons, launching the International Campaign to Abolish Nuclear Weapons (ICAN) in 2007, and campaigning for a treaty to ban these instruments of mass extermination as a basis for their elimination. ICAN received the 2017 Nobel Peace Prize in recognition of its efforts to achieve the Treaty on the Prohibition of Nuclear Weapons, which was adopted at the UN in July 2017.

US sailors claim dismissed by US court

January 11, 2017

US court dismisses 'Operation Tomodachi' suit

https://www3.nhk.or.jp/nhkworld/en/news/20180111_33/ A US court has dismissed a suit demanding the operator of the Fukushima Daiichi nuclear plant set up a fund for US personnel claiming radiation exposure.

The lawsuit was filed last August by 157 plaintiffs, including crewmembers of an aircraft carrier that took part in the Operation Tomodachi relief effort immediately after the 2011 nuclear accident. They claimed they were suffering health problems as a result of exposure to radiation during the mission.

The plaintiffs demanded plant operator Tokyo Electric Power Company, or TEPCO, contribute at least 5 billion dollars to a fund to cover the costs of medical treatment.

The company says a federal court in California turned down the petition last Friday, citing its lack of jurisdiction and authority to hear the case.

But the court reportedly suggested it would not prevent the plaintiffs from filing a revised lawsuit.

A similar lawsuit filed 6 years ago is still underway.

TEPCO says it will keep an eye on what actions the plaintiffs take next.

Fukushima Health Management Survey & thyroid

Findings of thyroid ultrasound examination within three years after the Fukushima Nuclear Power Plant accident: The Fukushima Health Management Survey

Hiroki Shimura Tomotaka Sobue Hideto Takahashi Seiji Yasumura Tetsuya Ohira Akira Ohtsuru Sanae Midorikawa Satoru Suzuki Toshihiko Fukushima Shinichi Suzuki ... Show more The Journal of Clinical Endocrinology & Metabolism, jc.2017-01603, Published:

14 December 2017

https://academic.oup.com/jcem/advance-article-abstract/doi/10.1210/jc.2017-01603/4630428?redirectedFrom=fulltext

Abstract

Context

Childhood thyroid cancer is of great concern after the Fukushima Nuclear Power Plant accident. The baseline analytical data on thyroid ultrasound examination in children is quite important for future examination.

Objective

We analyzed the age and sex distribution of findings from the thyroid ultrasound examinations of children and adolescents in the Fukushima Health Management Survey (FHMS).

Design, Setting, and Participants

From October 2011 through March 2014, 294,905 participants aged 18 years or younger at the earthquake voluntarily had thyroid ultrasound examinations in the first round of the FHMS. A secondary confirmatory examination was performed in 2,032 subjects. Age- and sex-dependent prevalence and size of thyroid cysts, nodules, and caners were analyzed.

Main Outcome Measures

Age, sex, and size distribution of findings were analyzed.

Results

Thyroid cysts, nodules, and cytologically suspected cancers were detected in 68,009, 1,415, and 38 subjects in males and 73,014, 2455, and 74 subjects in females, respectively. There was an age-dependent increase in the detection rate of thyroid nodules and cancer, but that of cysts reached a peak at 11–12 years. Sex affected the prevalence of thyroid nodules and cancers after the onset of puberty, but only a small difference was exhibited in that of cysts.

Conclusions

The thyroid cancer detection rate in Fukushima was clarified and the proportion of those with thyroid nodules and cysts varied substantially by age. The results of this study will make a valid contribution to future epidemiological researches on nodular thyroid diseases in children and adolescents.

More information about the US sailors' lawsuit in California

US court dismisses 'Operation Tomodachi' suit

https://www3.nhk.or.jp/nhkworld/en/news/20180111_33/

Judge: Sailors' Fukushima Radiation Case Doesn't Belong in US

https://www.courthousenews.com/sailors-fight-to-keep-fukushima-radiation-case-in-us/ January 5, 2018 BIANCA BRUNO

SAN DIEGO (CN) – A federal judge on Friday dismissed without prejudice the latest class action filed by hundreds of U.S. sailors exposed to radiation in the Fukushima, Japan, nuclear disaster, finding a San Diego courtroom isn't the right place for the case.

U.S. District Judge Janis Sammartino issued a 15-page order dismissing the class action against Tokyo Electric Power Co. (TepCo) and General Electric, finding the service members who were stationed aboard the USS Ronald Reagan in San Diego have failed to establish how the Japanese utility's acts were directed at California.

"There is no targeting here. Plaintiffs' allegations that the effects of TepCo's conduct were felt by American citizens while on U.S. ships, one of which with a home port of San Diego, are too attenuated to establish purposeful direction," Sammartino wrote.

Sammartino added the sailors "have provided no information to support an assertion that TepCo knew its actions would cause harm likely to be suffered in California."

In an email, class attorney Cate Edwards said, "We appreciate the time and attention that Judge Sammartino gave our arguments. Per her order, we intend to refile the case on behalf of

the *Bartel* Plaintiffs and continue to fight for the justice these sailors deserve. We will also be moving forward with the *Cooper* case in due course, and look forward to reaching the merits in that case." The judge's order dismisses the most recent class action filed in San Diego Federal Court last August. It follows another class action filed by an initial group of sailors in 2012, a year after they were sent to render aid after the March 11, 2011 tsunami and earthquake which caused the Fukushima Daiichi nuclear plant to meltdown and release radiation. That case has survived dismissal and an appeal to the Ninth Circuit.

More than 420 U.S. service members in the two cases seek compensation and medical monitoring, testing and health care costs for exposure to radiation. Some sailors have died from complications of radiation exposure since the cases were filed, and more than 20 are living with cancer, according to the lawsuits. In a court hearing Thursday, Sammartino considered the motions to dismiss from TepCo and GE. They argued California courts have no jurisdiction over events in Japan. Sammartino also considered a choiceof-law motion from General Electric, which wants to apply Japanese law to the case or have it transferred to Japan.

TepCo operated the Fukushima nuclear plant, and GE designed its reactors.

TepCo attorney Gregory Stone, with Munger, Tolles & Olson in Los Angeles, said at the Thursday hearing all claims brought in the United States could be brought in Japan and that the statute of limitations has not run out there.

GE attorney Michael Schissel, with Arnold & Porter in New York, also said the case belongs in Japan, where the facts originated and the witnesses are. Schissel said the Japanese government declared the nuclear meltdown was not a natural disaster, so TepCo could be held liable for damages.

But former Sen. John Edwards, of the firm Edwards Kirby in North Carolina, said it's important to look at the situation "from altitude," to see things from the sailors' perspective.

"These are American sailors, American employees serving their country, who were sent on American ships on international waters at the request of the Japanese government ... their ally, which owns the majority of stock in defendant TepCo," Edwards said.

"Being on an American ship in international waters puts you on American soil."

Edwards said that since the vast majority of the sailor-plaintiffs were stationed in San Diego and GE designed the nuclear reactors at its San Jose headquarters, the case belongs in California.

"They want the case in Japan because they know it goes away; that's clearly their strategy," Edwards said. He added: "This case screams federal jurisdiction; this case screams United States of America. The underlying concept of this whole thing is fundamental and basic notions of fairness being met." Edwards' co-counsel Charles Bonner, with Bonner & Bonner in Sausalito, said if the case were transferred to Japan, where GE could be dismissed as a defendant, GE could "continue building their defective reactors with impunity."

Bonner added that California has a vested interest in applying its own laws, including strict liability for defective products, and punitive damages to deter companies from selling defective products. He pointed out that one-sixth of the U.S. Navy is based in San Diego, with 69 Navy ships in San Diego Harbor.

"(Japan's) compensation act has not been applied to their own citizens, only businesses. Why should we speculate their compensation act will help our sailors? It will not," Bonner said.

Stone countered that Bonner was "simply wrong" in claiming that the Japanese nuclear damage compensation act had not benefited individual Japanese citizens. He said it is the conduct of defendants TepCo and GE – which occurred in Japan – and not the plaintiffs' place of residence that should determine jurisdiction over the case.

The sailors' attorneys indicated Thursday if Sammartino dismissed the class action, they would seek leave to amend their first case, *Cooper v. TepCo*, to add additional plaintiffs who were dismissed from the second case, *Bartel v. TepCo*. The defendants are expected to oppose the motion.

Stone and Schissel did not immediately return phone and email requests for comment Friday.

Airborne radiation still much higher than official maximum

January 18, 2018

Airborne radiation near Fukushima nuke plant still far higher than gov't max

https://mainichi.jp/english/articles/20180118/p2a/00m/0na/020000c#cxrecs_s Airborne radiation in "difficult to return" zones around the Fukushima No. 1 nuclear plant was as high as around 8.48 microsieverts per hour as of summer last year, according to data presented by the government nuclear watchdog on Jan. 17.

- 【Related】 Excessive radiation detected in vehicles removed from Fukushima nuke plant
- 【Related】 Radiation in Fukushima reactor containment vessel at deadly level: TEPCO
- 【Related】 Fukushima Police Perspective: Fighting against radiation (Pt. 6)

The Nuclear Regulation Authority (NRA) released the results of the July-September 2017 measurements at a regular meeting on the day. The highest reading was taken in Futaba, Fukushima Prefecture -- one of the municipalities hosting the Fukushima No. 1 plant.

Following the March 2011 triple meltdown, the government set a long-term radiation exposure limit of 1 millisievert per year, which breaks down to an hourly airborne radiation dose of 0.23 microsieverts. The NRA took airborne radiation readings in the Fukushima Prefecture towns of Futaba, Okuma, Namie and Tomioka, and the village of Katsurao. The highest reading registered in the previous year's survey was 8.89 microsieverts per hour, in Katsurao.

Some of the NRA members at the Jan. 17 meeting pointed to study results showing that human exposure doses are relatively small compared to airborne doses. Regarding the calculation that an annual dose of 1 millisievert is equivalent to hourly exposure of 0.23 microsieverts, NRA Chairman Toyoshi Fuketa stated,

"That was decided right at the start of the nuclear disaster, so it can't be helped that it's a cautious number." He added, "If we don't revise (that calculation) properly, it could hinder evacuees' return home."



Fukushima workers don't find it so romantic

February 17, 2018

Media reports de-romanticize the cleanup work on the Fukushima nuclear power plant

https://www.japantimes.co.jp/news/2018/02/17/national/media-national/media-reports-de-romanticize-cleanup-work-fukushima-nuclear-power-plant/#.WomJyHwiGos

by Philip Brasor

Contributing Writer

Most of the reliable reporting about the clean-up of the Fukushima No. 1 nuclear power plant since it suffered three meltdowns in March 2011 has been from on-site workers. Even when articles appear in major media outlets about the situation at the crippled reactor, it's usually presented through the anonymous or pseudonymous firsthand experiences of the men on the front lines.

Some have become famous. The public would not know much about the situation without Kazuto Tatsuta's manga series, "Ichiefu" (or "1F" — shorthand for "Fukushima No. 1"), the writings of former letter carrier and cleanup worker Minoru Ikeda, or the books and tweets of a man known as "Happy" who has been working as an employee at the plant.

Because these individuals directly address what they and their colleagues have gone through on a daily basis, the work they do has been de-romanticized. It's not as heroic as initial foreign media reports made it out to be. If anything, it's tedious and uncomplicated.

Workers are concerned about those matters that all blue-collar laborers worry about — pay and benefits — which isn't to suggest they don't think about the possible health risks of radiation exposure. Last October, Ikeda talked to the comedy duo-cum-nuclear power reporters Oshidori Mako & Ken on the web

channel Jiyu-na Radio about potential false reports on radiation levels around Fukushima, although also touching on health issues that have not been reported by the mainstream media. His main point was that serious illnesses may not manifest themselves until years after workers quit the site and thus no longer qualify for worker's compensation. In other words, the workers understand the risk. They just want to be fairly compensated for it.

In that regard, one of the most common gripes from on-site reporters is the "hazard compensation" (*kiken teate*) workers are supposed to receive. Recently, Tokyo Electric Power Company Holdings Inc. (Tepco), which is both responsible for the accident and in charge of the cleanup, announced a reduction in outlay associated with the hazard compensation, which is paid as a supplement to wages. This compensation can add as much as ¥20,000 a day to a worker's pay, but now that Tepco says radiation levels have dropped, they will no longer provide the compensation, or, at least, not as much as they have been paying. A special report in the Jan. 22 Tokyo Shimbun attempted to explain how this change will affect workers and the work itself. In March 2016, Tepco divided the work area into three zones: red, for high radiation levels; yellow, for some radioactivity; and green, for areas that had no appreciable radioactivity. Workers interviewed by Tokyo Shimbun say they've never liked this system because they feel it "has no meaning." Rubble from the red zone is routinely transferred to the green zone, where heavy machinery kicks up a lot of dust, so there's no physical delineation between zones when it comes to radiation levels. On the ground, this reality is addressed by subcontractors who make their employees in the green zone — which constitutes 95 percent of the work site — wear extra protective gear, even though Tepco doesn't require it.

But the workers' main gripe about the zone system is that most of them ended up being paid less and, as on-site workers have often explained, they weren't getting paid as much as people thought they were. Contractors advertise high wages to attract workers, but then subtract things like room and board, utility fees, clothing and equipment. And it's been known for years that the hazard compensation was more or less a racket gamed by the contractors standing between Tepco, which distributes the compensation, and the workers, who are supposed to be the beneficiaries. There can be up to six layers of contractors between Tepco and a worker, and each layer may take a cut of the compensation. In 2014, four workers sued Tepco for ± 62 million, saying they worked at the site but received none of the promised hazard compensation.

That situation still seems to be in play, according to Tokyo Shimbun. Several subcontractors told the newspaper they receive the compensation for their workers not from Tepco directly but from the contractor that hired them, and in most cases the compensation has been reduced, sometimes by more than half. One subcontractor said that a company above them actually apologized for the paucity of the compensation they were handing down because their "revenues had decreased." The man known as Happy told Tokyo Shimbun that Tepco is ordering less work at the site, which means existing subcontractors may cut wages in order to compete for these dwindling jobs. Some contractors have even invested in the robots that are used to inspect the reactor, because they want the work to continue without interruption.

It was common practice to rotate out workers toiling in the highly radioactive areas regularly and quickly and then re-assign them to low-radiation areas. After some time they may have been rotated back into the high-radiation area, where pay is more. The man known as Happy says this sort of system now seems to be on the way out, and that makes sense if radiation is actually decreasing. However, he's afraid that if there is another emergency that requires a sudden influx of workers, they won't be available. Tepco is obviously thinking of its bottom line, and the man known as Happy thinks the work should be managed by the government, which is contributing tax money to the cleanup. However, it seems only the Japan Communist Party is reading the dispatches from the plant. Last May, Japanese Communist Party lawmaker Taku Yamazoe questioned Tepco President Naomi Hirose about the hazard compensation in the Diet, and why the structure of payments to workers wasn't clear.

Hirose said that while his company intends that the money goes to workers, he cannot say for sure that is the case because of the circumstances surrounding Tepco's relationships with contractors. With work on the wane, it seems unlikely that those workers will see any of the money that's owed to them, retroactively or otherwise.

Greenpeace study shows significant radiation risks to last for decades to come

March 1.2018

http://www.greenpeace.org/japan/ja/news/press/2018/pr201803011/

Greenpeace investigation shows Fukushima radiation risks to last into next century

Tokyo, 1 March 2018 - A comprehensive survey by Greenpeace Japan in the towns of litate and Namie in Fukushima prefecture, including the exclusion zone, revealed radiation levels up to 100 times higher than the international limit for public exposure.[1][2] The high radiation levels in these areas pose a significant risk to returning evacuees until at least the 2050's and well into next century.

The findings come just two weeks ahead of a critical decision at the United Nations Human Rights Council (UNHRC) review on Japan's human rights record and commitments to evacuees from the nuclear disaster. "In all of the areas we surveyed, including where people are permitted to live, the radiation levels are such that if it was in a nuclear facility it would require strict controls. Yet this is public land. Citizens, including children and pregnant women returning to their contaminated homes, are at risk of receiving radiation doses equivalent to one chest X-ray every week. This is unacceptable and a clear violation of their human rights, " said Jan Vande Putte, radiation specialist with Greenpeace Belgium and leader of the survey project.

Greenpeace Japan conducted the investigations in September and October last year, measuring tens of thousands of data points around homes, forests, roads and farmland in the open areas of Namie and Iitate, as well as inside the closed Namie exclusion zone. The government plans to open up small areas of the exclusion zone, including Obori and Tsushima, for human habitation in 2023. The survey shows the decontamination program to be ineffective, combined with a region that is 70-80% mountainous forest which cannot be decontaminated.

Key finding from the Greenpeace Japan survey:

• Even after decontamination, in four of six houses in litate, the average radiation levels were three times higher than the government long term target. Some areas showed an increase from the previous year, which could have come from recontamination.

• At a house in Tsushima in the Namie exclusion zone, despite it being used as a test bed for decontamination in 2011-12, a dose of 7 mSv per year is estimated, while the international limit for public

exposure in a non-accidental situation is 1 mSv/y. This reveals the ineffectiveness of decontamination work.

• At a school in Namie town, where the evacuation order was lifted, decontamination had failed to significantly reduce radiation risks, with levels in a nearby forest with an average dose rate of more than 10 mSv per year. Children are particularly at risk from radiation exposure.

• In one zone in Obori, the maximum radiation measured at 1m would give the equivalent of 101 mSv per year or one hundred times the recommended maximum annual limit, assuming a person would stay there for a full year These high levels are a clear threat, in the first instance, to thousands of decontamination workers who will spend many hours in that area.

This contamination presents a long term risk, and means that the government's long-term radiation target (1 m Sv/year which is equivalent to $0.23 \mu \text{Sv/hour}$) are unlikely to be reached before at least the middle of the century in many areas that are currently open and into next century for the exclusion zone of Namie. In an admission of failure, the government has recently initiated a review of its radiation target levels with the aim of raising it even higher.

The Government's policy to effectively force people to return by ending housing and other financial support is not working, with population return rates of 2.5% and 7% in Namie and litate respectively as of December 2017.

In November last year, the UNHRC's Universal Periodic Review (UPR) on Japan issued four recommendations on Fukushima issues. Member governments (Austria, Portugal, Mexico and Germany) called for Japan to respect the human rights of Fukushima evacuees and adopt strong measures to reduce the radiation risks to citizens, in particular women and children and to fully support self evacuees. Germany called on Japan to return to maximum permissible radiation of 1 mSv per year, while the current government policy in Japan is to permit up to 20 mSv per year. If this recommendation was applied, the Japanese government's lifting of evacuation orders would have be halted.

"Our radiation survey results provides evidence that there is a significant risk to health and safety for any returning evacuee. The Japanese government must stop forcing people to go back home and protect their rights," said Kazue Suzuki, Energy Campaigner at Greenpeace Japan. "It is essential that the government fully accept and immediately apply the recommendations at the United Nations." Notes:

[1] Reflections in Fukushima: The Fukushima Daiichi Accident Seven Years On

[2] The International Commission on Radiological Protection (ICRP) sets a maximum dose of 1 mSv/ year in normal situations for the public, and in the range of 1-20 mSv/y under post-nuclear accident situations, such as that resulting from Fukushima Daiichi. The ICRP recommends that governments select the lower part of the 1–20 mSv/year range for protection of people living in contaminated areas, and "to reduce all individual exposures associated with the event to as low as reasonably achievable."

Young cancer patients' relapses ignored

March 1, 2018

Thyroid cancer relapses in some Fukushima children

https://www3.nhk.or.jp/nhkworld/en/news/20180301_24/

A private fund offering financial assistance to young people diagnosed with thyroid cancer after the 2011 Fukushima nuclear accident has called for a detailed follow-up survey of those who have relapsed.

The 3.11 Fund for Children with Thyroid Cancer made the appeal at a news conference in Tokyo on Thursday.

The fund's name refers to March 11th, 2011, when a tsunami triggered by a powerful earthquake crippled a nuclear power plant in Fukushima Prefecture.

A survey conducted by the fund shows that cancer returned to 9.5 percent, or 8, of 84 children diagnosed with thyroid cancer after the accident. They had to undergo second operations as a result.

The fund says the 8 people were 6 to 15 years old at the time of the accident 7 years ago. Their cancers returned about 28 months on average after their first surgeries. One relapse occurred just a year later.

Fukushima Prefecture has been offering thyroid cancer screening for local residents who were 18 or younger at the time of the accident.

The 3.11 Fund pointed out that an expert committee advising the prefectural government has not taken up the issue of relapses among young thyroid cancer patients.

Fund director Hisako Sakiyama said that to get a clear picture of the health effects of the nuclear accident, it's important to continue screening with particular attention on relapses.

160 cases of thyroid cancers among Fukushima children

March 6, 2018

No. of children at time of Fukushima disaster diagnosed with thyroid cancer hits 160

https://mainichi.jp/english/articles/20180306/p2a/00m/0na/007000c

FUKUSHIMA -- The total number of children at the time of the 2011 nuclear disaster here who have since been diagnosed with thyroid cancer has reached 160, a prefectural investigative commission announced at a March 5 meeting.

- 【Related】 Many children diagnosed with thyroid cancer after 3.11 disasters, families still worried
- 【Related】 Experts divided on causes of high thyroid cancer rates among Fukushima children

• 【Related】 Child thyroid cancer in Fukushima many times national average: report draft

One more local person, who was aged 18 or under at the time of the meltdowns at the Fukushima No.1 Nuclear Power Plant, had been found to have thyroid cancer following health examinations as of the end of December. However, the commission has stated that "it is difficult to think that the cases are related to radiation exposure" from the disaster.

The first round of thyroid examinations started after the accident in 2011 for people who were 18 and under living in the prefecture at the time of the disaster. The second round covered about 380,000 people, including children who were born in the year following the meltdowns. The fourth round will begin next fiscal year starting April 1.

The not-so-Lucky Dragon



February 28, 2018

How the unlucky Lucky Dragon birthed an era of nuclear fear

https://thebulletin.org/how-unlucky-lucky-dragon-birthed-era-nuclear-fear11546 David Ropeik

David Ropeik is an instructor in the Environmental Management Program of the Harvard Extension School, a consultant in risk communication, and author of How...

Yumenoshima Park on a drizzly November day is a dreary place. It sits on an artificial island made of waste and landfill along one of the drainage canals that empty into Tokyo Bay, in Koto, a neighborhood in the Japanese capital that doesn't show up on any must-visit lists. Hundreds of thousands of people visit the famous Tsukiji fish market, a couple miles to the west, every year. Millions visit Tokyo Disney, a couple miles the other way. But few visit the Daigo Fukuryu Maru Exhibition Hall, a small A-frame building tucked in a corner of the park. More might, if they understood the significance of the weathered 94-foot long fishing boat on display inside.

The Lucky Dragon No. 5 looks odd sitting indoors, resting on the concrete floor supported by red metal posts under dim lighting. A ladder on the starboard side lets you climb up and peer at her deck and wheelhouse. Peer, and ponder what it must have been like on the morning in 1954 when the vessel bobbed in the Pacific Ocean near the Marshall Islands, and the sky in the west burst into eerie orange, like a bright sudden dawn, followed by a roar and a violent rush of waves. Ponder what the 23 crew members thought when a ghostly white rain, thick with ash, started to fall, coating them and their catch. Ponder

how profoundly the strange and frightening events that morning shaped so much of the world we now live in.

Just before dawn on March 1, 1954, most of the crew of the Daigo Fukuryu Maru were below deck asleep, having worked overnight at the grinding labor of long-line tuna fishing. Yoshio Masaki, the ship's fishing master, was on deck, and later recorded in his log the frightening things he saw and heard: "Suddenly the boat has been surrounded by a bright light. Such an early dawn is impossible. Makes feel something very dangerous." Another crewman wrote "Oh. What is that!? Shocked! Suddenly all over the west direction, as if having been inflamed, became deep and bright like sunrise. Terrible!" Masaki wrote, "nine minutes later a roaring sound arrives like overlapping avalanches. Bang, bang, bang, bang, an awful sound like the Marshall Islands are sinking as angry waves into the sea."

The crew raced to the deck. Someone yelled "atomic bomb!" Fear raced through men who just a few years previously had been combatants in World War II, men who knew about Hiroshima and Nagasaki. They searched for the mushroom-shaped cloud they had seen in pictures of those bombings. They scanned the sky for planes and the horizon for ships.

But what they had witnessed was far more than a Hiroshima-style atomic bomb. The glow and shock wave came from the test detonation of a thermonuclear weapon, a new version of mankind's most powerful tool of war. The test was code-named Castle Bravo, and it had gone frighteningly wrong. The bomb turned out to be more than twice as powerful as its designers predicted, and while the Lucky Dragon was 86 miles from the test site and outside the officially declared warning zone, it was well within the range of the bomb's impact.

The crew returned to work hauling in their catch, but as they watched, strangely layered circles of clouds slowly spread from the direction of the explosion. Then it started to rain. Pelting *white* rain, driven by suddenly howling winds that the US meteorologists assigned to the bomb test had predicted would blow the other way. The unnatural rain coated the ship and crew with a gritty ash that stuck to the men's hands, necks, faces, and hair and got in their mouths and eyes. It painted the dark blue tuna on the deck a ghostly grey.

The rain and ash fell on the Lucky Dragon for five hours. By the time it subsided, some of the crew were dizzy, vomiting, or had fevers. They had been covered in, swallowed, and inhaled the highly radioactive remains of corals incinerated by the immense nuclear explosion, the powdery remnants of which had been thrown into the sky and then rained back down across a vast area of ocean. By the time they got back to port two weeks later, most of the crew were suffering from headaches, bleeding gums, skin burns, and hair falling out in clumps. All the men were hospitalized.

Operation Ivy. The Japanese media devoted extensive coverage to the plight of the Lucky Dragon. The *Yomiuri Shimbun* reported "Japanese fishermen encounter Bikini A-bomb explosion test. 23 men suffer from A-bomb disease." Within days the international press was covering it too.

Though the world already knew that high levels of radiation had caused what was then known as "atomic bomb disease" among survivors of the weapons dropped on Hiroshima and Nagasaki, *that* illness was associated with the radiation generated at the moment the bombs exploded. Japanese medical investigators found that in *this* case, the men of the Lucky Dragon No. 5 were suffering from something else, an illness experts labeled "acute radiation disease" that was caused not by the bomb but the radioactive rain it produced. The Japanese began calling this rain *shi no hai*, death ash. The media, and the world, quickly began calling it by a new name that within weeks joined the global lexicon of fear: *fallout.* Japan, which for years had honored but also stigmatized and avoided the *hibakusha*, citizens from Hiroshima and Nagasaki who survived the atomic bombs, now poured out sympathy for the Lucky Dragon

crew and outrage at the United States for once again victimizing Japan with atomic weapons. "We are not guinea pigs!" wrote one newspaper.

Just days after the Lucky Dragon returned to port, a Japanese town passed a resolution against the use of atomic bombs. That action was widely reported and within weeks such resolutions were adopted across Japan, and within a few months, around the world. The first "World Conference Against A and H bombs" was held the following summer, in Hiroshima. This was fully nine years after such bombs had been used. It wasn't the World War II bombings but the Lucky Dragon No. 5 that finally triggered the world-wide call to ban the bomb, the first truly global protest movement of the modern era.

The Daigo Fukuryu Maru also peeled away the cloak of secrecy surrounding the US nuclear weapons testing that had been going on in the Pacific for eight years. The US military had made an hour-long film, Operation Ivy, focused on the 1952 test of a nuclear bomb nicknamed "Mike." The film was made for internal use only, and when President Dwight Eisenhower saw it, he was so shaken that he ordered it kept secret, afraid it would terrify the public—as it ultimately did. Within two weeks of the Lucky Dragon's return to port, with the world now aware of the tests and pressuring the American government to open up, the film was released to the public.

The first 50 minutes of the film, about technical preparations for the test, look like the stuff of standard military public relations. But at minute 54:39, everything changes. There is a final silent moment as we watch the bomb drop. Then it goes off, and the terrifying destructive power of thermonuclear weapons, which the world had never seen, becomes frighteningly real. With a roar accompanied by ominous music, the massive fireball lights the sky like a false sun, and a towering mushroom cloud slowly surges high into the atmosphere. This dramatic sequence goes on with no narration for nearly two minutes.

The film then shows just how massive the fireball was by overlaying it on the skyline of Manhattan. Over more ominous music the narrator says, "the fireball alone would engulf about one quarter of the island of Manhattan." Then there is a sequence showing the Pacific island on which the test was conducted, and the gaping ocean-filled crater that was all that was left of the island and surrounding reef after the explosion. A map of Washington DC is shown, and the narrator says, "with the Capitol at point zero there would be complete annihilation" for three miles in all directions.

These six brief minutes of film, released as a result of the Lucky Dragon incident, terrified the world. *Operation Ivy* played repeatedly on US television stations, and within days was being shown in dozens of countries. People already knew about atomic weapons and the Cold War, but the film made them aware that thermonuclear weapons posed an existential threat to life on earth.

The Lucky Dragon created new fears in other ways as well. News coverage showed the contaminated tuna the boat had brought in. Japanese health authorities ordered tests on any fish caught in a 2,500-kilometer radius around the bomb test site. Thousands of samples were radioactively contaminated.

Officials at the US Atomic Energy Commission, which shared authority for the test program, tried to play down the risk, but food companies around the world shut off fish imports from Japan. And the media reported that the radioactive cloud from an atmospheric nuclear bomb test rose so high into the stratosphere that winds carried the fallout around the world. Many soon believed that the threat was not just to a few unlucky Japanese fishermen, but that potentially dangerous radioactive rain could ultimately fall everywhere, on everyone, endangering the whole world's food and water.

The Lucky Dragon incident helped spread widespread fear of nuclear radiation into popular culture. The radioactive monster Gojira (known in subsequent Western films as Godzilla) rose from the sea on Japanese movie screens in the fall of 1954, just months after the Daigo Fukuryu Maru affair. In the original film, the crew of a fishing ship sees a strange orange underwater glow, recoils in terror at a blinding flash, and all that's left is the charred hull of the empty ship bobbing in the waves. An ancient monster stirred to

life by an immense human-made explosion then tramples an island village, leaving radioactive footprints. The beast attacks Tokyo, a strange electric glow lighting up along his spine just before he blows steamy radioactive breath that sets anything on fire.

Screenwriter Ishiro Honda, who had earlier started to make a more conventional monster movie, later wrote that he was inspired to change the film by the Daigo Fukuryu Maru incident, and that he "took the characteristics of an atomic bomb and applied them to Godzilla." The version shown in the United States two years later (adapted to be less anti-American) featured a radio journalist (played by Raymond Burr) watching the radioactive monster destroy Tokyo and telling his audience "I'm saying a prayer, a prayer for the whole world." The message was clear. The terrifying risk from nuclear weapons and radioactive fallout was global.

The modern genre of mutants-caused-by-radiation movies quickly sprang up. Some books and sci-fi movies had already touched on radiation fears, but now the subject exploded into all forms of popular culture, and the radiation-zapped monster remains a mainstay bogeyman in films, books, and visual art. The fear was born as the "death ash" rained down on the crew of the Daigo Fukuryu Maru. A plastic Godzilla toy stands over the bookshop at the museum that houses the vessel's remains.

The birth of modern environmentalism. The death ash played a huge role in creating the environmental movement as we know it. American biologist Barry Commoner, one of the founders of the movement to reduce air and water pollution from industrial chemicals, initially focused on the global environmental threat of radioactive rain. In 1956, Commoner was one of 24 Washington University scientists calling for a halt to atmospheric testing of nuclear weapons because of the threat it posed to human and environmental health. In 1958 he helped found the Greater St. Louis Committee on Nuclear Information. In the late 1950s, he helped run a study that documented trace amounts of a radioactive isotope in thousands of children's baby teeth, the result of nuclear tests. Commoner would later say that the US government's secrecy and dishonesty about the dangers of nuclear-weapon testing motivated him to act on environmental issues. "The Atomic Energy Commission turned me into an environmentalist," he said in a 1993 interview.

In 1960, Rachel Carson published *Silent Spring*, a foundational work in the establishment of modern environmentalism. Most people see the book as a cry against the indiscriminate use of DDT and other industrial chemicals, but the global threat of radioactive fallout also helped inspire her to write it. "In this now universal contamination of the environment," she writes, "chemicals are the sinister and littlerecognized partners of radiation in changing the very nature of the world—the very nature of its life." The central case made in *Silent Spring*, and by environmentalism generally, is that for all the benefits modern human-made technologies offer, they can also endanger the natural world. That belief profoundly shapes public attitudes and behaviors about a wide range of issues to this day. We have come to fear, not without reason, that the remarkable technological progress the world has enjoyed since World War II comes with frightening risks. Our threat perception has been shaped by Commoner, Carson, and the environmental movement they helped created. The Daigo Fukuryu Maru was the match that lit the fuse.

The danger from fear itself. Six months after the Lucky Dragon returned to port, Aikichi Kuboyama, the ship's radioman, died. The official cause of death was liver failure, from which he had been suffering for years. But it was clear that radiation had weakened his immune system so much that that was what actually killed him. "Has the death of a citizen ever been watched by so many eyes?" asked the Asahi Shimbun newspaper. "They are the eyes of a strong anger and protest against the 'ashes of death." Edward Teller, one of the brilliant people who developed the hydrogen bomb, commented dismissively that "it's unreasonable to make such a big deal over the death of a fisherman." How arrogant he was, and how utterly ignorant and mistaken. Kuboyama's death *was* a big deal. Nuclear radiation was a

killer. (The rest of the crew survived but suffered life-long health problems associated with prolonged exposure to such high doses.)

The Japanese word for fear is kyoufu. Ironically, while the modern world's kyoufu of radiation essentially began with the Lucky Dragon incident and Kuboyama's death, another Japanese experience—the atomic bombings of Hiroshima and Nagasaki—has taught us that radiation is nowhere near as dangerous as we have come to assume. A total of 86,600 *hibakusha* have been followed with regular medical examinations for 71 years and compared to 23,000 Japanese who were not exposed to radiation. It stuns most people to learn this (it sure stunned me), but the overall increased radiation-induced cancer death rate among atomic bomb survivors—thousands of whom instantly received high doses of radiation from the bombs themselves, then experienced extended exposure to fallout in their air, water, and food—is less than one percent. "Atomic bomb disease" has killed a total of only 586 of those 86,600 survivors. At lower but still substantial doses –doses far higher than those caused to the public by the nuclear accidents at Chernobyl in 1986 or Fukushima in 2011—radiation has caused no change in disease rates compared to the normal rates among the control population. The children of the *hibakusha* have also been followed and studied, and show no multi-generational genetic damage passed down from their parents, though children born to pregnant women among the *hibakusha* did suffer a higher rate of birth defects. (The 70-plus year-long study of the atomic bomb survivors continues, conducted by the Radiation Effects Research Foundation in Hiroshima.)

Based on this hard-won knowledge, experts can say with confidence that the increased lifetime cancer mortality rate from Chernobyl will be just 3 to 4 percent above normal cancer death rates for the affected population, according to a 2006 World Health Organization study. The Fukushima nuclear accident is unlikely to raise the rate of any disease associated with radiation above normal. The doses to which people were exposed at Fukushima were nothing near those experienced by the *hibakusha* closest to the blast in 1945, and nothing like the intense doses received by the crew of the Lucky Dragon. But though the information from health experts is reassuring, fear of radiation from Fukushima persists. It persists in the tens of thousands of people evacuated as a precaution when no one knew what was going to happen, who now won't move back even though radiation doses are low enough in most areas to allow them to safely do so. Families and entire communities have been decimated. Rates of unemployment, alcoholism, depression, and stress-related illnesses are elevated compared to other areas of Japan. As was sadly true for the *hibakusha* before them, some children from Fukushima prefecture are shunned and

stigmatized when they travel.

The fear persists across Japan, where sales of agricultural products from the Fukushima prefecture are lagging, echoing past fears of contaminated tuna from the Lucky Dragon, even though we now know that the actual risk from the infinitesimal doses around Fukushima is practically zero.

It persists with the hundreds of billions of yen being spent to collect water running through the Fukushima Daiichi nuclear plant site. The water picks up a radioactive molecule called tritium, which the world's top experts all agree causes such a low dose to anyone exposed that it poses no threat to human health. (Some of the red and green exit lights in theaters, designed to stay on when the power fails, are filled with tritium.) Japanese authorities will probably release all that tritium-tainted water into the ocean. Though this would pose no threat to the environment, the very idea is facing fierce resistance, fed by excessive fear of anything connected to the word "radiation."

Finally, *kyoufu* of radiation persists across Japan and elsewhere in the form of opposition to nuclear energy. Nuclear power produces neither greenhouse gasses, which contribute to climate change, nor particulate pollution, which sickens or kills tens of millions of people around the world every year. Having shut down its nuclear power fleet because of fear of radiation following Fukushima, Japan is now burning

more fossil fuels to produce electricity, contributing to short- and long-term health threats that are vastly greater than those posed by radiation. (So is Germany, and so are several US states.) Due to fear of radiation, some Japanese don't want to allow TEPCO, the electric company, to restart their Kashiwazaki Kariwa nuclear complex, where millions have been spent upgrading safety since Fukushima. Without revenue from that plant, TEPCO has to continue to borrow Japanese taxpayer money to pay for the clean-up at Fukushima, a multibillion-dollar effort to capture radioactive material that experts agree poses no threat to public or environmental health.

The fact that deep nuclear fear has persisted for so long, despite solid evidence that the risk isn't as great as we thought it was back in 1954, is perhaps the Daigo Fukuryu Maru Exhibition Hall's most profound lesson. The museum helps us understand the events and historic context that gave birth to our fear of radiation, and why it is so deeply engrained. It helps us realize how fear with such deep emotional roots is not readily overcome by objective consideration of the facts alone. It helps us see how easily fear can overpower reason, even when fear of a risk does more harm than the risk itself.

Fortunately, the museum also offers a cause for optimism. It suggests that with time, we might be able to put old fears in new perspectives. The curator of the Daigo Fukuryu Maru Exhibition Hall is Ichida Mari. When I visited recently I asked her what visitors to the museum say about Fukushima. She said there is still plenty of worry, but things seem to be changing. "At first after Fukushima people were feeling a lot more fear about it," she said, "but in the past three years, that fear and concern has decreased, and at the same time there has been a sense of increased knowledge about radiation."

Knowledge—based on history, scientific research, and experience—can help people in Japan and elsewhere move beyond their fears of radiation. Research on the psychology of risk perception has found that emotion and instinct play an oversized role in shaping our fears, and that once learned, those fears stubbornly resist change. But the research has also found that knowledge and time help give objective reasoning more influence over emotion as we make our choices and judgments about risk.

Knowledge from this obscure but immensely important little museum, plus knowledge from the study of the *hibakusha*, plus the amount of time that has passed since the Chernobyl and Fukushima disasters (31 and six years respectively) with no large death toll from either, might shift society's thinking about radiation. In that way, the Daigo Fukuryu Maru Exhibition Hall offers reason for hope.

Not thriving



© Courtesy of T.A. Mousseau

Not thriving, but failing

Posted on March 4, 2018 by beyond nuclear internationa

Animals in radiation zones are not doing well

https://beyondnuclearinternational.org/2018/03/04/not-thriving-but-failing/ By Linda Pentz Gunter

It started with wolves. The packs around the Chernobyl nuclear plant, which exploded on April 26, 1986, were thriving, said reports. Benefitting from the absence of human predators, and seemingly unaffected by the high radiation levels that still persist in the area, the wolves, they claimed, were doing better than ever.

Appearances, however, can be deceptive. Abundant does not necessarily mean healthy. And that is exactly what evolutionary biologist, Dr. Timothy Mousseau and his team began to find out as, over the years, they traveled to and researched in and around the Chernobyl disaster site in the Ukraine. Then, when a similar nuclear disaster hit in Japan — with the triple explosions and meltdowns at Fukushima Daiichi on March 11, 2011 — Mousseau's team added that region to its research itinerary.

Mousseau has now spent more than 17 years looking at the effects on wildlife and the ecosystem of the 1986 Chernobyl nuclear disaster. He and his colleagues have also spent the last half dozen years studying how non-human biota is faring in the wake of Fukushima. Ninety articles later, they are able to conclude definitively that animals and plants around Chernobyl and Fukushima are very far indeed from flourishing.

Great tits found near Chernobyl — bird at left is normal, right has a facial tumor

Mousseau's findings strongly contradicted earlier work including the 2006 Chernobyl Forum report which claimed the Chernobyl zone "has become a wildlife sanctuary," and a subsequent article published in Current Biology in 2015 that said wildlife was "thriving" around Chernobyl.

"I suppose everyone loves a Cinderella story," speculated Mousseau, who is based at the University of South Carolina. "They want that happy ending." But Mousseau felt sure the moment he read the Forum report, which, he noted, "contained few scientific citations," that the findings "could not possibly be true." What Mousseau found was not unexpected given the levels of radiation in these areas and what is already known about the medical effects of such long-term exposures. Birds and rodents had a high frequency of tumors.

"Cancers are the first thing we think about," Mousseau said. "We looked at birds and mice. In areas of higher radiation, the frequency of tumors is higher." The research team found mainly liver and bladder tumors in voles and tumors on the head, body and wings of the birds studied.

But Mousseau wanted to look beyond cancers, which is what everyone expects to find and what researchers had looked for, but only in humans. There were few wildlife studies, a fact Mousseau found surprising, given nature's ability to act as a sentinel for likely impending human health impacts.

Mousseau and his fellow researchers found cataracts in birds and rodents. Male birds had a high rate of sterility. And the brains of birds were smaller. All of these are known outcomes from radiation exposure. "Cataracts in birds is a problem," Mousseau said. "A death sentence."

Mental retardation has been found among children exposed to radiation in utero. Mousseau and colleagues discovered the same pattern in the birds they studied. "Birds already have small brains, so a smaller brain size is a definite disadvantage," he said.

There were also just fewer animals in general. "There were many fewer mammals, birds and insects in areas of higher radiation," Mousseau said. And they had their hunch as to why.

He and his colleagues extracted sperm from the male birds they caught and were shocked to find that "up to 40% of male birds in the radiologically hottest areas were sterile."

The birds' sperm were either deformed or dead. None would be able to reproduce. The discovery, he said, was "not at all surprising. These are the levels of radiation known to influence reproduction. At the same time, there is no safe level of radiation below which there aren't detectable effects."

Fewer birds have already been observed in the contaminated areas around Fukushima, said

Mousseau. "Although it's too early to assess the long term impact on abundance and diversity around Fukushima, there are very few butterflies and many birds have declined in the more contaminated areas. If abundance is compressed, biodiversity will follow."

The consequences of radiation exposure, says Mousseau, "will have a tremendous impact on the quality of life of these animals, and the length of quality of life. It need not necessarily be cancers," that cause these damages he said. "There is no doubt that the levels of radiation in Chernobyl and Fukushima generate genetic damage."

Read more about Dr. Timothy Mousseau's work.

Only 35% of workers checked

March 6, 2018

Only 35% of Fukushima Daiichi workers tested

https://www3.nhk.or.jp/nhkworld/en/news/20180306_21/

NHK has learned that only 35 percent of workers who responded to the March 2011 nuclear accident at Fukushima Daiichi plant have been checked for long-term effects of radiation.

A Japanese government-affiliated research organization began conducting the radiation-exposure

screenings 4 years ago. Some 20,000 workers who entered the plant within 9 months of the accident are to undergo life-long monitoring that includes blood tests and thyroid exams.

During the nuclear crisis, many plant workers were exposed to radiation beyond the government limit of 100 millisieverts. The government then temporarily raised the limit to 250 millisieverts so that work could continue.

The Radiation Effects Research Foundation aims to conduct regular screenings on at least 80 percent of those workers. But it says that as of January this year, it has only been able to check about 7,000 people.

Of the workers who remain untested, 35 percent have ignored calls to take a screening, 17 percent have refused to comply, and 8.5 percent cannot be reached.

Several non-participants have told NHK they cannot take days off from work, or that there are too few clinics where they can be tested.

Some were skeptical about the screenings, saying they doubt a checkup would help keep them healthy.

Tomotaka Sobue, a professor at Osaka University, was a member of a government panel that assessed the screening program.

He says the government has a responsibility to confirm whether people who took part in emergency work are facing any health risks.

He says efforts must be made to inform workers about the program, and to make it easier for them to take the tests.

A floating pariah

Injustice at sea

https://beyondnuclearinternational.org/2018/03/07/injustice-at-sea/ Posted on March 7, 2018 by beyondnuclearinternational

American sailors on the USS Ronald Reagan were exposed to radiation from Fukushima. Many are sick. Some have died. Why can't they get justice?

By Linda Pentz Gunter

"Coverage of the USS Ronald Reagan has been astoundingly limited," wrote Der Spiegel in a February 2015 story. Since then, nothing much has changed.

The German magazine was referring to the saga of the American Nimitz-class nuclear-powered aircraft carrier whose crew pitched in to help victims of the March 11, 2011 Tsunami and earthquake in Japan, then found themselves under the radioactive plume from the stricken coastal nuclear reactors at Fukushima. Since then, crew members in eye-popping numbers have come down with unexplained illnesses — more than 70 and still counting. Some have died. And many are suing.

The USS Reagan was part of Operation Tomodachi, a U.S. armed forces mission involving 24,000 U.S. service members, and numerous ships and aircraft bringing aid to the victims of the tsunami and earthquake.

Sailors wash down the decks of the radioactively contaminated USS Ronald Reagan. (US Navy) On January 5, 2018, a federal judge in San Diego, CA, dismissed the latest version of a class action lawsuit brought by USS Reagan sailors and US Marines. This was just the latest milestone in a long and winding path to justice strewn with roadblocks and delays.

The original class action lawsuit — Cooper et al v. Tokyo Electric Power Company, Inc., was filed in San Diego, the home port of the USS Reagan, on December 21, 2012. A second class action suit — Bartel et al v. Tokyo Electric Power Company, Inc. et al — was subsequently filed on August 18, 2017 and was the case dismissed in January.

The plaintiffs are represented by California attorneys Charles Bonner and Paul Garner, and by Edwards Kirby, the North Carolina firm led by former U.S. Senator, John Edwards.

Cooper now has 236 named plaintiffs and *Bartel* 157. But, wrote attorney Cate Edwards of Edwards Kirby and daughter of John Edwards, in an email,

"We have about 34 additional plaintiffs who have contacted us since the filing of the Bartel complaint, and that number continues to grow on a weekly basis." As a class action the suit also "encompasses additional, unnamed class members— up to 70,000 American servicemen and women who served in Operation Tomodachi and may have been exposed to the radiation from Fukushima," Edwards wrote.

Sadly those numbers sometimes also decline. Nine of the plaintiffs have already died. It is unknown how many others who took part in Operation Tomodachi, but did not join the suit, may also have died. The *Bartel* plaintiffs are requesting an award of \$5 billion to compensate them for injuries, losses and future expenses associated with their exposure to radiation, as a result of what they allege is TEPCO & GE's negligence. The *Cooper* plaintiffs have asked for an award of \$1 billion.

Bartel is an extension of *Cooper*, with different plaintiffs but virtually identical facts and claims. It had to be filed separately, explained Edwards, because at the time more sailors came forward, the *Cooper* suit was stuck in appeal. Eventually, Edwards said, the lawyers hope to consolidate the two suits "for litigation on the merits."

But almost seven years after the Fukushima disaster, those merits are yet to be heard, with the case mired in legal wrangling and delays brought by the defendants — TEPCO, along with General Electric, EBASCO, Toshiba and Hitachi, the builders and suppliers of the Fukushima nuclear reactors.

One such delay occurred when TEPCO and the Japanese government tried to force the case to be heard in Japan. But on June 22, 2017, the attorneys won in the US Court of Appeals for the Ninth Circuit and ensured the case would be heard in the U.S.

The plaintiffs charge that TEPCO lied to the public and the U.S. Navy about the radiation levels at the Fukushima-Daiichi nuclear power plant at the time the Japanese government was asking for help for victims of the earthquake and Tsunami. By doing so, TEPCO deliberately allowed those involved in Operation Tomodachi to sail into harm's way and become exposed to the radiation spewing from the stricken reactors on the battered Japanese coast.

A floating pariah

Whether or not U.S. military commanders knew of the radiation risks once the readings were in, is moot legally. The plaintiffs are barred from suing the U.S. Navy because of the Feres Doctrine, dating from the 1950s, and which prohibits any member of the military from recovering damages from the government for injuries sustained during active military service.

The USS Ronald Reagan arrived off the Japan coast before dawn on March 12, 2011 with a crew of 4,500. It had been on its way to South Korea but returned to join Operation Tomodachi.

But what actually happened to the Reagan after that is still clouded in confusion, or possibly cover-up. After it got doused in the radioactive plume, then drew in radioactively contaminated water through its desalination system — which the crew used for drinking, cooking and bathing — it turned into a pariah ship, just two and a half months into its aid mission.

Floating at sea, the USS Reagan was turned away by Japan, South Korea and Guam. For two and a half months it was the radioactive MS St. Louis, not welcome in any port until Thailand finally took the ship into harbor.

There is no disagreement that the radioactive plume from Fukushima — which largely blew out to sea rather onto land — passed over the Reagan. Radiation meters on board confirmed this. But the levels of exposure are disputed, as is how close the ship came to shore and the melting Fukushima reactors and how often it strayed into — or stayed within — the plume.

Some versions have the radiation readings on board at 30 times "normal," other 300 times. Official Navy reports say the ship stayed 100 nautical miles away from the Japan coast.

But some crew members dispute that, saying they were at times just two miles away from shore. In an interview with journalist Roger Witherspoon for his article in Truthout, Navy Quartermaster, Maurice Ennis described a "cat and mouse" game played by the ship to try to stay out of the plume.

"We stayed about 80 days, and we would stay as close as two miles offshore and then sail away," he told Witherspoon. "We kept coming back because it was a matter of helping the people of Japan who needed help. But it would put us in a different dangerous area."

How close the ship came to the Fukushima reactors specifically, as opposed to the Japanese shoreline, is also a matter of dispute. Until the plaintiffs' lawyers can issue subpoenas, hopefully getting a look at the ship's logs, it is an important question that remains unanswered.

Petty Officer 3rd Class Daniel Hair told Stars and Stripes that he was informed the Reagan came within "five to 10 miles off the coast from Fukushima." *Stars and Stripes* also reported that "many sailors have disputed the Navy's accounting, saying they were so close that they could see the plant."

Ship's personnel who flew missions to mainland Japan to aid the earthquake and Tsunami victims also risked exposure to the radiation from Fukushima. Their aircraft, like the ship's decks, had to be decontaminated upon return. In fact, a total of 25 US ships involved in Operation Tomodachi were found to be contaminated with radiation.

In the June 22, 2017 opinion allowing the class action lawsuits to be heard in the U.S., Judge Jay S. Bybee observed of the anomaly about the ship's location that:

"TEPCO makes much of Plaintiffs' allegations that the U.S.S. Ronald Reagan was initially positioned "two miles off the coast," while the Navy had been warned to stay at least "50 miles outside of the radius. . . of the [FNPP]." Appellant's Opening Brief 7. The SAC [Second Amended Complaint of plaintiffs] alleges, however, that the U.S.S. Ronald Reagan was situated so as to provide relief in the city of Sendai, which is located over fifty miles north of the FNPP. Thus, it is possible that the U.S.S. Ronald Reagan was at once two miles off the coast and fifty miles away from the FNPP. Although other portions of the SAC suggest that the U.S.S. Ronald Reagan was closer to the FNPP, where the U.S.S. Ronald Reagan was situated is unclear from the record before us, and further factual development is necessary to resolve this issue." No worse than flying or eating a banana

At first, any concerns about radiation exposure were dismissed by military brass. Sailors were told the exposures were no worse than flying or eating a banana, according to Naval officer Angel Torres, one of the plaintiffs.

What they didn't disclose was the very significant difference between eating a banana — during which the body ingests but also excretes identical amounts of radioactive potassium-40 to maintain a healthy balance — and exposure to nuclear accident fallout.

Fukushima was leaking cesium, tritium and strontium as well as radioactive iodine which attacks the thyroid. For example, cesium, can bind to muscle, or strontium to bone, irradiating the person from within. This is a very different effect than the brief visit cosmic radiation pays to the body when we fly in an airplane.

There was also, according to former Department of Energy official, Robert Alvarez, now a senior scholar at the Institute for Policy Studies, a problem with the dose methodology.

Alvarez told Who.What.Why that "the only way to get an accurate internal and external dose on any individual is to take continual measurements throughout the time they are exposed.

People must wear special monitoring equipment and undergo a regular regime of monitoring. This is especially important in trying to assess the health effects from a multiple meltdown situation with large explosions involving reactor cores, as occurred at Fukushima."

Who.What.Why was created by long-time journalist, Russ Baker because, as he writes on the site, "the media gatekeepers, both 'mainstream' and 'alternative,' will not allow the biggest, most disturbing revelations to see the light of day."

That is precisely the fate that appears to have befallen the undeniably disturbing USS Reagan story. It has been touched on hardly at all by the mainstream media in the US although Jake Tapper delivered a 7-minute piece about it in February 2014 on CNN. Local television news stations have carried reports when a sailor from their area joined the law suit but rarely covered the bigger picture. An article in the New York Times two days into the disaster, chose to downplay and dismiss radiation concerns. Aside from the legal trade publication, Courthouse News, most of the consistent coverage in the US has come, unsurprisingly, from the independent media. These include Counterpunch, Thom Hartmann's The Big Picture on RT (now off the air), Mother Jones and a second piece in Truthout in addition to the Witherspoon article, and the work of anti-nuclear activist reporters, Harvey Wasserman's Free Press and Libbe HalLevy's Nuclear Hotseat podcast.

Epidemic of illnesses among sailors too strange to be a coincidence

The delay in getting accurate information, then having to contend with disinformation and official downplaying of the severity of the exposures has cost many of the sailors dearly. Treatment by specialists has often had to come out of their own pockets. Many cannot afford it. Some have paid with their lives. The sicknesses range from the leukemias and cancers most often associated with radiation exposures, to immune system diseases, headaches, difficulty concentrating, thyroid problems, bloody noses, rectal and gynecological bleeding, weakness in sides of the body accompanied by the shrinking of muscle mass, memory loss, testicular cancer, problems with vision, high-pitch ringing in the ears and anxiety. Attorney Edwards sees the epidemic of illnesses among the Reagan crew as just too pronounced to be unconnected to Fukushima-related radiation exposure.

"Why are all these young, healthy, fit people getting cancer? Experiencing thyroid issues? It's too strange to be a coincidence," she told Courthouse News.

"That just doesn't happen absent some external cause," Edwards added. "All of these people experienced the same thing and were exposed to radiation at Fukushima. A lot of this is just common sense." Common sense, of course, does not usually prevail in such cases. There are far more powerful forces at work. And, as always, the burden of proof falls upon the victims, not the most likely perpetrator.

The case is dismissed but the lawyers aren't quitting

In her January 5, 2018 ruling in San Diego, federal judge Janis Sammartino sided with the defendant's request for dismissal, stating that the plaintiffs had failed to establish that TEPCO's actions were directed at California — a technicality. The judge also wrote that the plaintiffs "have provided no information to support an assertion that Tepco knew its actions would cause harm likely to be suffered in California." However, lawyers in the case plan to press on. "The Bartel case was dismissed without prejudice, which means that we are able to refile those claims," Edward said in her email. "We plan to refile those claims in the coming weeks, and are still working on determining the best course for doing so."

She told Courthouse News, that the team intends to "continue to fight for the justice these sailors deserve. We will also be moving forward with the Cooper case in due course, and look forward to reaching the merits in that case."

Meanwhile, the sailors in the lawsuit still struggle to get either justice or media attention. Official sources who could shed more light on what actually happened, aren't talking, including the ship's captain, Thom Burke, who has never spoken out.

Lead plaintiff, Lindsay Cooper, has been told by Veterans Administration officials that her symptoms are likely due to "stress" and has denied her claim for disability based on radiation exposure, claiming there is not enough proof. Yet Cooper suffers from continuous menstrual cycles, and a yo-yoing thyroid that results in massive weight gain and then weight loss every few months. Her gallbladder was removed because it ceased to function.

When another plaintiff, Master Chief Petty Office Leticia Morales, had her thyroid taken out, she learned her doctor had already removed thyroid glands from six other sailors on the Reagan.

As lawyer Garner put it: "These kids were first responders. They went in happily doing a humanitarian mission, and they came out cooked."

This article also appeared on Counterpunch, on March 7, 2018.

Dr.Ian Fairlie on nuclear evacuations



March 4, 2018

Fleeing from Fukushima: a nuclear evacuation reality check

https://beyond nuclear international.org/2018/03/04/fleeing-from-fukushima-a-nuclear-evacuation-reality-check/

By Dr. Ian Fairlie

(The following is an excerpt from a longer article on the subject of evacuations after severe nuclear accidents. While this section focuses on Fukushima, there are lessons here for all nuclear sites and the likely failure of "on paper" evacuation plans.)

If another severe nuclear accident, such as Windscale (in 1957), Chernobyl (1986) or Fukushima (2011) were to occur, then the most important response, in terms of preventing future cancer epidemics, is evacuation. The other main responses are shelter and stable iodine prophylaxis. Adverse health effects would primarily depend on wind direction and on the nature of the accident. This article looks primarily at the Fukushima evacuation and its after-effects.

When the Fukushima-Daiichi, Japan nuclear disaster began on March 11, 2011, evacuations were not immediate and some were hampered by the destructive after-effects of the Tsunami and earthquake that precipitated the nuclear crisis.

Once people were evacuated, little, if any, consideration seems to have been given to how long such evacuations would last. For example, the large majority of the 160,000 people who left or were evacuated from Fukushima Prefecture are still living outside the Prefecture.

Many are living in makeshift shelters such as shipping containers or prefabricated houses.

At present, the Japanese Government is attempting to force evacuees (by withdrawing state compensation) to return to less contaminated areas, with little success. Currently, seven years after the accident, an area of about 1,000 square kilometers is still subject to evacuation and no entry orders. This compares with the area of 2,700 square kilometers still evacuated and subject to no or restricted entry at Chernobyl, almost 32 years after the accident.

Experience of the Fukushima Evacuation

In 2015 and 2016, I visited Fukushima Prefecture in Japan with international study teams. These study tours were informative as they revealed information about the evacuations that differed from official accounts by TEPCO and the Japanese Government. From many discussions with local mayors, councillors, local health groups and small community groups, the following information was revealed.

The most common figure cited for evacuees is 160,000, of which 80,000 were evacuated by the authorities and the rest left to evacuate on their own, often on foot, cycles and carts. It took about two weeks to evacuate all parts of the initial 20 km (later 30 km) radius evacuation areas around the Fukushima reactors.

The main reason for the delays was that many roads in the Prefecture were jammed with gridlocks which sometimes lasted 24 hours a day, for several days on end on some roads. These traffic jams were partly due to the poor existing road infrastructure and partly due to many road accidents. These jams were of such severity that safety crews for the Fukushima nuclear station had to be moved in and out mostly by helicopter. All public transport by trains and buses ceased. Mobile telephone networks and the internet crashed due to massive demand.

Thousands of people either refused to leave their homelands or returned later. Older farmers often refused to leave their animals behind or be moved from their ancestral lands. In at least a dozen recorded cases, older farmers slaughtered their cow herds rather than leave them behind (dairy cows need to be milked daily): they then committed suicide themselves in several instances.

According to Hachiya et al (2014), the disaster adversely affected the telecommunications system, water supplies, and electricity supplies including radiation monitoring systems. The local hospital system was dysfunctional; hospitals designated as radiation-emergency facilities were unable to operate because of damage from the earthquake and tsunami, and some were located within designated evacuation zones. Emergency personnel, including fire department personnel, were often asked to leave the area. At hospitals, evacuations were sometimes carried out hurriedly with the unfortunate result that patients died due to intravenous drips being ripped out, medicaments being left behind, the absence of doctors and nurses who had left, and ambulance road accidents. Many hastily-allocated reception centres (often primary schools) were either unable or ill-equipped to deal with seriously ill patients.

Much confusion resulted when school children were being bussed home, while their parents were trying to reach schools to collect their children. Government officials, doctors, nurses, care workers, police, firepersons, ambulance drivers, emergency crews, teachers, and others faced the dilemma of whether to stay at their posts or return to look after their families. In the event, many emergency crews refused to enter evacuation zones for fear of radiation exposure.

Stable iodine was not issued to most people. Official evacuation plans were either non-existent or inadequate and, in the event, next to useless. In many cases, local mayors took the lead and ordered and supervised evacuations in their villages without waiting for orders or in defiance of them. Apparently, the higher up the administrative level, the greater the levels of indecision and lack of responsibility. In the years after the accident, the longer-lasting effects of the evacuations have become apparent. These include family separations, marital break-ups, widespread depression, and further suicides. These are discussed in a recent publication (Morimatsu et al, 2017) which relates the sad, often eloquent, stories of the Fukushima people. They differ sharply from the accounts disseminated by TEPCO.

Deaths from evacuations at Fukushima

Official Japanese Government data reveal that nearly 2,000 people died from the effects of evacuations necessary to avoid high radiation exposures from the Fukushima disaster, including from suicides. The uprooting to unfamiliar areas, cutting of family ties, loss of social support networks, disruption, exhaustion, poor physical conditions and disorientation resulted in many people, in particular older people, apparently losing their will to live.

The evacuations also resulted in increased levels of illnesses among evacuees such as hypertension, diabetes mellitus and dyslipidaemia, psychiatric and mental health problems, polycythaemia — a slow growing blood cancer — cardiovascular disease, liver dysfunction, and severe psychological distress. Increased suicide rates occurred among younger and older people following the Fukushima evacuations, but the trends are unclear. A 2014 Japanese Cabinet Office report stated that, between March 2011 and July 2014, 56 suicides in Fukushima Prefecture were linked to the nuclear accident.

Should evacuations be ordered?

The above account should not be taken as arguments against evacuations as they constitute an important dose-saving and life-saving strategy during emergencies. Instead, the toll from evacuations should be considered part of the overall toll from nuclear accidents.

In future, deaths from evacuation-related ill-heath and suicides should be included in assessments of the fatality numbers from nuclear disasters.

For example, although about 2,000 deaths occurred during and immediately after the evacuations, it can be calculated from UNSCEAR (2013) collective dose estimates that about 5,000 fatal cancers will arise from the radiation exposures at Fukushima, i.e. taking into account the evacuations. Many more fatal cancers would have occurred if the evacuations had not been carried out.

There is an acute planning dilemma here: if evacuations are carried out (even with good planning) then illnesses and deaths will undoubtedly occur. But if they are not carried out, even more people could die. In such situations, it is necessary to identify the real cause of the problem. And here it is the existence of nuclear power plants near large population centres. In such cases, consideration should be given to the early closure of the nuclear power plants, and switching to safer means of electricity generation.

Conclusions

The experiences of Japanese evacuees after Fukushima are distressing to read. Their experiences were terrible, so much so that it requires Governments of large cities with nearby nuclear power plants to reconsider their own situations and to address the question.... what would happen if radioactive fallout

heavily contaminated large areas of their city and required millions of residents to leave for long periods of time, for example several decades?

And how long would evacuations need to continue.... weeks, months, years, or decades? The time length of evacuations is usually avoided in the evacuation plans seen so far. In reality, the answer would depend on cesium-137 concentrations in surface soils. The time period could be decades, as the half-life of the principal radionuclide, Cs-137, is 30 years. This raises the possibility of large cities becoming uninhabited 'ghost' towns like Tomioka, Okuma, Namie, Futaba, etc in Japan and Pripyat in Ukraine.

This bleak reality is hard to accept or even comprehend. However it is a matter that some governments need to address after Fukushima. It is unsurprising therefore, that after Fukushima, several major European states including Germany and Switzerland have decided to phase out their nuclear reactors. *For the full article with references,* read here.

For more of Dr. Ian Fairlie's work, please visit his website.

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US sailors and Operation Tomodachi (Part 1)

An article published by the Nation

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Special investigation: US military personnel are sick and dying, and want the nuclear plant's designers and owners to take responsibility.

March 9, 2018

7 Years on, Sailors Exposed to Fukushima Radiation Seek Their Day in Court Special investigation: US military personnel are sick and dying and want the nuclear plant's designers and owners to take responsibility.

By Gregg LevineTwitter

At over 1,000 feet in length and weighing roughly 100,000 tons, the USS *Ronald Reagan*, a supercarrier in the United States Navy's Seventh Fleet, is not typically thought of as a speedboat. But on a March day in 2011, the *Nimitz*-class ship was "hauling ass," according to Petty Officer Third Class Lindsay Cooper. Yet, when the *Reagan* got closer to its destination, just off the Sendai coast in northeastern Japan, it slowed considerably.

"You could hardly see the water," Cooper told me. "All you saw was wood, trees, and boats. The ship stopped moving because there was so much debris."

Even after more then 20 years in the service, Senior Chief Petty Officer Angel Torres said he had "never seen anything like it." Torres, then 41, was conning, or navigating, the *Reagan*, and he describes the houses, trucks, and other flotsam around the carrier then as "an obstacle course." One wrong turn, he worried, "could damage the ship and rip it open."

The *Reagan*—along with two dozen other US Navy vessels—was part of Operation Tomodachi (Japanese for "friends"), the \$90 million rescue, disaster-relief, and humanitarian mobilization to aid Japan in the immediate aftermath of the Tohoku earthquake and tsunami. For the sailors, the destruction was horrific—they told me of plucking bodies out of the water, of barely clothed survivors sleeping outside in sub-freezing weather, and of the seemingly endless wreckage—but the response was, at first, something they'd rehearsed.

"We treated it like a normal alert," Cooper said. "We do drills for [these] scenarios. We went into that mode." She and her approximately 3,200 shipmates moved food, water, and clothing from below to the flight deck where it could be put on helicopters and flown to the stricken residents.

But that sense of routine soon changed.

"All of the sudden, this big cloud engulfs us," Torres said. "It wasn't white smoke, like you would see from a steam leak," he explained, but it also wasn't like the black smoke he saw from the burning oil fields during his deployment in Kuwait in 1991. "It was like something I'd never seen before."

Cooper was outside with her team, on the flight deck, prepping before the start of reconnaissance flights. She remembers it was cold and snowing when she felt, out of nowhere, a dense gust of warm air. "Almost immediately," she said, "I felt like my nose was bleeding."

But her nose wasn't bleeding. Nor was there blood in her mouth, though Cooper was sure she tasted it. It felt, she said, "like I was licking aluminum foil."

On March 11, 2011, at 2:46 pm local time, a 9.1 magnitude earthquake struck about 40 miles east of Japan's Oshika Peninsula. The quake, the world's fourth largest since 1900, devastated northern Honshu, Japan's main island. At the Fukushima Daiichi nuclear power plant, located near the epicenter on the Pacific coast, the temblor damaged cooling systems and cut all electrical power to the station—power that is needed to keep water circulating around the active reactor cores and through pools holding decades of used but still highly radioactive nuclear fuel.

Several of the diesel-powered emergency generators at Daiichi kicked in to restart some of the safety systems, but less than an hour after the earthquake a 43-foot-high wave triggered by the quake swept over the sea wall, flooding the facility, including most of the generators, some of which had been positioned in the basement by the plant's designer, General Electric.

Without any active cooling system, the heat in the reactor cores began to rise, boiling off the now-stagnant water and exposing the zirconium-clad uranium fuel rods to the air, which set off a series of superheated

chemical reactions that split water into its elemental components. Hundreds of workers from Tokyo Electric Power Company (TEPCO), the station's owner, struggled valiantly to find a way to circulate water, or at least relieve the pressure now building in the containment vessels of multiple reactors. But the die was cast by the half-century-old design, with results repeatedly predicted for decades. The pressure continued to build, and over the course of the next two days, despite attempts to vent the containment structures, hydrogen explosions in three reactor buildings shot columns of highly radioactive gas and debris high into the air, spreading contamination that Japan still strains to clean up today. And yet, despite this destruction and mayhem, proponents of nuclear power can be heard calling Fukushima a qualified success story. After all, despite a pair of massive natural disasters, acolytes say, no one died.

But many of the men and women of the Seventh Fleet would disagree. Now seven years removed from their relief mission, they'd tell you nine people have died as a result of the disaster at Fukushima Daiichi— and all of them are Americans.

For the sailors on the *Reagan* who have spoken about it, the reaction to encountering the cloud was bewilderment.

"At first, we were still dialed in," said Torres. "We didn't really have a chance to take in what we were experiencing. It was more like, 'Well, this was different." But when he came off watch, sitting in his office, his perception changed to "What the hell just happened?"

Cooper described the same response: "We didn't really know what was going on." But after about 10 minutes, the crew was told to go below deck. It was there, as she was first learning about the problems at Fukushima Daiichi from the television, that Cooper recalls hearing an announcement on the public-address system indicating that the ship might have been hit by a plume of radiation from the nearby power plant. Shortly thereafter, Cooper said, the mission got "hectic—just kind of a crazy mess." Cooper said the crew hadn't been warned in advance of any radiation risk, and she didn't think the *Reagan*'s commanding officers had any foreknowledge either. But after radioactive contamination was suspected, those aboard the carrier say, everything changed.

Everyone who, like Cooper, had been on the flight deck was ordered to the fo'c'sle, the forward part of the ship, to "implement decontamination." Cooper said she was instructed to "take anything you can off without getting naked." She was told to write her name on her discarded clothes and boots—which she saw being piled in the middle of the room—then the crew was "wanded," as Cooper described it, and given "white, plastic painters' suits."

For Torres, news of the radiation came through the rumor mill before he heard about it from his commanding officer. "It was minimal"—that was the impression Torres was given—still, the ship's meteorologist tracked the wind and talked with Torres about taking the *Reagan* north of whatever it was they'd just passed through. But Torres was soon instructed to head back toward the coast. They had a HADR, a humanitarian assistance and disaster relief mission, to complete, and since they'd already been exposed—though they'd take precautions such as turning off the ship's ventilation—they were going back to where they'd encountered the cloud.

It was likely about this time that Cooper recalled being woken up. "I was asleep in my rack when I had someone shake the living shit out of me." She said she was told with great urgency that she needed to get to the hangar bay immediately to get a gas mask.

As Cooper stood in her pajamas and flip-flops, waiting for her mask and filter canisters, she looked around: "People were shoving wet rags in the cracks of the hangar bay door so none of the air would seep through, and they had rags stacked high along the entire wall," she said. "It was crazy."

"After that," Cooper told me, "our ship went from 'OK, we got this,' to, like, 'Oh, my God... we have no idea what we're doing.""

For Marine Lance Corporal Nathan Piekutowski—who arrived several days later with the USS *Essex*, a Wasp-class amphibious-assault ship—there seemed to be some advanced warning, and he said his preparation initially proceeded in an orderly fashion: "They had us shut all the portholes, all the windows, all the doors." Piekutowski said they attempted to seal off the berthing area and stayed inside while they headed toward Japan. He was issued iodine tablets—which are used to block radioactive iodine, a common byproduct of uranium fission, from being absorbed by the thyroid gland—and fitted for an NBC (nuclear, biological, chemical) suit. He was also told not to drink water from the ship's desalination system.

(Those I spoke with from the *Reagan* said they'd filled out consent forms for iodine tablets, but then never received the pills.)

Piekutowski wasn't particularly troubled by these precautions. He knew they had plenty of bottled water on the ship, and, by the time they were near the coast, they were allowed back on deck with no special protection. "We were never once told to put on our NBC suits." He had been issued big rubber over-boots and a gas mask along with the suit. "Those were in sealed plastic, like freezer bags," he told me. "Mine stayed sealed till we got back to Hawaii."

Torres, the senior petty officer, recounted, "One of the scariest things I've heard in my career was when the commanding officer came over the loudspeaker, and she said, 'We've detected high levels of radiation in the drinking water; I'm securing all the water.'" That included making showers off limits. Torres described a kind of panic as everyone rushed to the ship store to buy up cases of bottled water and Gatorade—"they didn't want to dehydrate."

Cooper also remembers the announcement on the water contamination: "We were like, 'Are you fucking kidding me?" She was among those trying to buy bottled water, but said it was quickly taken off the shelves—reserved for "humanitarian assistance." Instead, Cooper said she was told she'd be issued rations of one bottle of water per day. For the long, hard shifts spent outside, Cooper said it was not nearly enough. She said an attitude set in among her shipmates, "We were like, 'Fuck that, we're already exposed—I'm gonna drink the water.'"

"We didn't know how else to handle it," she told me. "Like, you're exposed on the flight deck, you're exposed in the hangar bay, you're exposed in berthing, you're exposed walking, you're exposed eating— congratulations, now you're drinking it."

"You're working up top for like 18 hours, you're busting your ass off—you need to hydrate." Cooper described her days during Operation Tomodachi starting before dawn and ending after 8 pm, with one 30-minute break for lunch, using the bathroom, and any personal business she could squeeze in. "They didn't want you coming downstairs too many times because it just took too long," she said, describing a lengthy and isolating decontamination process that was supposed to keep her and about 20 of her shipmates on the flight deck from spreading radioactive contamination to the rest of the carrier. "If

you had to go to the bathroom, you were pretty much shit out of luck," Cooper said of the time and hassle required to get to the women's restrooms one floor below deck. "A lot of us females had to hold it in—it was miserable."

The long hours, the short rations, and the unrelenting tableau of death and destruction drifting by the ship combined with the constant reminders that they were exposed to an unknown amount of radioactive contamination wore on the crew. They felt committed to the mission, and gratified to help, but the threat of radiation presented an aggravating obstacle. "Every time we got close to do humanitarian assistance," said Cooper, "we'd need to dodge another plume."

Even when operating normally, reactors like the ones designed and built by General Electric at Fukushima Daiichi produce highly radioactive isotopes of noble gases such as xenon and krypton, explained nuclear engineer Arnie Gundersen, who encountered the phenomenon when he worked at the Millstone Nuclear Power Plant in Waterford, Connecticut, in the 1970s. Millstone's first reactor was a GE Mark 1 boiling-water reactor (BWR), the same model that failed at Fukushima. (Millstone 1 ceased operation in 1998; two other reactors of a slightly different design remain in use at the facility.)

But, as detailed by Gundersen—who is now one of the directors of Fairewinds Energy Education, a nuclear-industry watchdog—superheated "cracked fuel," like that in the crippled Daiichi reactors, "immediately releases noble gases."

"And that happens before the explosions" that destroyed the three reactor-containment buildings at Fukushima, he said. As Gundersen sets out the time line of the disaster, fuel began to crack within six hours of the earthquake, and TEPCO's plant operators would have known it. "They had to know," he told me, "because when the containment pressure started to go up, that was a clear indication that the fuel was failing."

So, in those early hours, pressure built inside the Mark 1's containment vessel to a point where it is thought to have broken the seal on the massive metal lid, and, as plant workers desperately tried to vent some of the gas and relieve that pressure, a radioactive plume formed over the coast.

And as the venting failed and the containments on three reactor units ruptured and exploded, a volume of radioactive xenon and krypton estimated to be about triple what was released in the 1986 Chernobyl disaster, wafted from Fukushima Daiichi over the next eight days. "Eighty percent of the radiation went out to sea," said Gundersen. "That's good for Japan, but it's not good for the sailors, that's for sure." Marco Kaltofen, president of Boston Chemical Data Corporation and an engineer with over 30 years of experience investigating environmental and workplace safety, noted that sensors in Richland, Washington, nearly 5,000 miles across the Pacific, saw a sixfold increase in radioactive noble gases in the days after the start of the Fukushima crisis. Chiba, the prefecture east of Tokyo, nearly 200 miles south of

Fukushima, recorded radiation levels 400,000 times over background after the explosions. Closer to the release, Kaltofen figured, would be orders of magnitude worse. "A bad place to be is a couple of miles offshore," he said.

When told what the sailors experienced in the earliest days of the operation, Gundersen and Kaltofen differ slightly on their interpretations. Gundersen finds symptoms like the metallic taste consistent with the radiation exposure possible from a plume of otherwise odorless xenon or krypton. Kaltofen thinks that indicates exposure to some of the radioactive particulate matter—containing isotopes of cesium, strontium, iodine, and americium—that was sent into the air with the hydrogen explosions. But both believe it speaks to a notable degree of radiation exposure.

US sailors and Operation Tomodachi (Part 2)

Cindy Folkers agreed. Folkers is the radiation-and-health specialist at the clean-energy advocacy group Beyond Nuclear, and when she hears the symptoms reported by the Tomodachi sailors, she hears the telltale signs of radiation exposure. And when told of what those relief workers experienced next, and the speed with which their symptoms manifested, she said she thinks the levels of exposure were higher than some have reported—or many would like to admit.
Just what the two large companies responsible for the design and operation of Fukushima Daiichi— TEPCO and GE—will admit is at the center of a pair of lawsuits currently moving through US courts. Or at least should be, if and when it gets in front of a jury.

"We're still trying to get to the merits," attorney John Edwards, the former US senator and Democratic vice-presidential nominee, told me, "because the merits of the case are so strong." Edwards, along with attorneys Cate Edwards (his daughter) and Charles Bonner, represent what Bonner told me were now upward of 400 sailors who accuse the Japanese utility and the US industrial giant of gross negligence in the design, construction, maintenance, and operation of the Fukushima Daiichi nuclear power plant, and of deliberately obscuring the radiologic disaster that rapidly unfolded after the March 2011 earthquake and tsunami.

And if that were all there was to it, many who have examined the Fukushima disaster—including the Japanese government's own investigation, Japan's prime minister at the start of the crisis, Naoto Kan, and even TEPCO itself—would say the plaintiffs have a point.

Before the first of the Daiichi reactors was brought online (construction began in 1967, and operation commenced in 1971), there were already open concerns about its design and placement. Originally conceived in the 1950s, the General Electric BWR Mark 1 was thought by some of its own designers to have too small a containment structure to survive a prolonged LOOP—a loss of onsite power. The ability to adequately vent the containment was also called into question, as was the resilience of the containment vessel's metal alloy. In 1976, three GE engineers who had worked on the Mark 1 quit to protest the manufacturer's lack of urgency in addressing flaws they said would cause reactor containment to fail in a loss-of-cooling accident.

In readying the site for Fukushima Daiichi, TEPCO opted to cut down the natural 115-foot sea wall, to less than 33 feet, to reduce construction costs and make it easier to access seawater for cooling. The emergency cooling systems were also placed close to shore and did not use submersible pumps. That whole facility was placed behind what was originally only a 13-foot-high sea wall (later raised to nearly 19 feet), despite evidence that eight tsunamis of at least 40 feet had hit the area in the 70 years prior to the agency's breaking ground on Daiichi. Many emergency generators were situated in the basement, and diesel-fuel tanks were placed on a flood plane, leaving them vulnerable to the massive wave that slammed the site in 2011.

Within two years of the containment breaches, Kan, by then the former prime minister, was telling experts and investigators, including nuclear engineer Gundersen, that TEPCO had withheld critical information about what was happening at Fukushima in the first hours and days of the crisis. In 2016, TEPCO was forced to admit it failed to publicly declare a meltdown at the three crippled reactors, even though its internal guidelines indicated from early on that meltdowns were indeed occurring. And just last spring, a Japanese court found TEPCO (along with the government) guilty of negligence, not just in handling the disaster but also, in the years prior, in declaring the events at Daiichi "predictable" and preventable. But none of that has been heard by a US jury. For over four years, a number of sailors, Marines, and other military-relief personnel have waited for their day in court while their attorneys wade through motions from the defendants, GE, and TEPCO, challenging venue and jurisdiction.

In an e-mailed statement, General Electric, while expressing "heartfelt sympathy for those affected by the earthquake and tsunami," and appreciation for "the hard work and dedication of our US service members," said claims "can and should be addressed under Japan's nuclear compensation law." TEPCO also "appreciates the plaintiffs' service on Operation Tomodachi," according to its e-mail, but declined to comment outside of court on pending judicial actions. TEPCO did add, "It is most unfortunate that some of the plaintiffs are ill."

Ruby Perez was a 22-year-old petty officer first class on the *Reagan* during Operation Tomodachi. She was also pregnant. Perez told her mother, Rachel Mendez, about the snow falling during the first days of the operation. She and her shipmates were excited by a moment of diversion from the misery around them. As Mendez relayed her daughter's story to me, "They were playing in it, eating the snow, making snow cones, making snowmen."

Cooper, part of the flight deck crew, remembers the snow, too, though not so much as a light moment but rather as a symbol of decaying morale. After days of long hours and short rations, feeling isolated from the below-deck crew, knowing she'd been exposed to some radiation, she felt "knocked down."

"Nobody really cared about anything. People were making radioactive snowmen on the flight deck out of radioactive snow," she said. Dealing with the contamination and the stress "completely changed the dynamic of the ship."

An official in protective gear checks for signs of radiation on a child who was evacuated from an area near Fukushima on March 13, 2011. (Reuters / Kim Kyung-Hoon)

"Stress" was what the *Reagan*'s medical staff told Cooper when she asked about her blurred vision, poor depth perception, and loss of equilibrium during the early days of the mission.

"Gastroenteritis" was what she and many of her shipmates were told as a wave of bowel problems swept through the carrier over the next several weeks.

"I had a lot of issues with the restroom," Cooper told me. "I don't think I was the only one. People would shit themselves on the flight deck so often that it wasn't even a surprise anymore. Like when you saw someone running from one side of the flight deck to go to decon[tamination], you knew something was happening."

Torres' experience was comparable. "I was going to the bathroom constantly," he said. "I would eat something and I would go to the bathroom almost immediately." It happened so often, Torres told me, that he developed severe internal hemorrhoids that eventually required multiple surgeries.

But when he visited the shipboard doctor, Torres was told he had diverticulitis, a disease not typically seen in men that young. "Watch your diet, don't eat spicy food, and drink lots of water, eat lots of fiber," that was the advice he said he received.

Cooper heard much the same: "Stay hydrated—drink water and eat a bland diet." But the symptoms didn't subside. "They didn't attribute it to anything except 'it's going around," she said. But if that's so, it's been going around a long time. "I haven't had a solid bowel movement since," said Cooper.

Soon after Operation Tomodachi ended, when the *Reagan* ported in Bahrain, Cooper, who was 21 at the time, noticed her hair thinning. "I used to have really, really thick hair," she said, but in Bahrain it became brittle and started falling out. Cooper said it still hasn't recovered.

She also told me she now bruises easily and gets "burning, tingling sensations" on her arms, and a rash that extends from her hands to her elbows—an area that coincides with where she'd had her sleeves rolled up when she encountered the cloud at the start of the Japan mission. Cooper has also recently needed veneers on teeth she said have started to "shatter and break."

For Piekutowski, the lance corporal from the *Essex*, he didn't feel particularly sick until over a year after Operation Tomodachi. He was back stateside in the fall of 2012, and felt fatigued and had lost weight, and in November of that year, his ankles swelled up to the size of his calves. "I'm an in-shape and slim guy, and usually have pretty good definition," he told me. His doctor thought it might be gout, though Piekutowski was skeptical. "I told him, I drink as much as the next 21-year-old, but I don't drink *that* much." Then, on Christmas Day, he lost the sight in his left eye. "That's when I knew I should probably get to the hospital," he said. In the ER, Piekutowski said the doctors seemed to recognize right away what a blood test and bonemarrow biopsy later confirmed: He had leukemia. "They were honestly surprised I was still walking," he said. Medical staff put him in a gown and rushed him to a bigger hospital.

Piekutowski was diagnosed with acute myelogenous leukemia (AML), an aggressive form of blood cancer most often seen in men over age 65. It is rare to see it in an otherwise healthy 21-year-old. He began treatment in Arizona, where he'd been living, but then moved to Chicago to be closer to his parents and what Piekutowski called "some pretty amazing doctors."

From Christmas 2012 to Valentine's Day 2014, Piekutowski figures he spent eight months in hospitals. He first went through a year of chemotherapy, but after four months in remission, his leukemia returned. He had radiation and a stem-cell transplant at the start of 2014, which has so far kept him cancer-free. But Piekutowski is still struggling to rebuild his immune system, and battling stiffness and stomach problems. "I feel like I'm 60," he said.

Petty Officer Perez gave birth to her daughter Cecilia on March 26, 2011, and it was soon afterward that she told her mom she was feeling ill. "She just kept saying her menstrual periods would keep going and going and never stop," said Mendez.

Despite her health, she reenlisted at the end of her tour. She was in San Diego trying to sort out some missing paperwork on her enlistment when she was hospitalized for a uterine hemorrhage. According to her mother, Perez was diagnosed with late-stage ovarian cancer in July 2016. Mendez wanted her daughter to come back to Texas, where she grew up, but Perez refused. She always believed she'd get better. "I can't go home," Mendez said Perez told her, "I just reenlisted. I still owe the Navy two years." On December 7, 2016, Ruby Perez died.

Perez is one of the eight deceased service members represented in the suits slowly making their way in US courts. Her daughter Cecilia, whose health will require a watchful eye well into adulthood, is also a plaintiff. So are 24 men and women currently living with various forms of cancer. So is a sailor whose son was born with brain and spinal tumors and lived only 26 months.

"We have a lot of clients with bone and joint issues, degenerative discs," Cate Edwards told me, "young, healthy, active individuals who have trouble walking now."

The most prevalent ailments, according to the younger Edwards, are thyroid-related. Thyroid cancers are some of the earliest to emerge after nuclear accidents because of the easy pathway for absorption of radioactive iodine. Childhood thyroid cancers skyrocketed in Belarus, Russia, and Ukraine in the first two decades after Chernobyl. According to a study published in the journal of the International Society for Environmental Epidemiology, individuals who were 18 or under at the time of the disaster in Fukushima Prefecture were 20-to-50 times more likely to be diagnosed with thyroid cancer in the period between the March 2011 and the end of 2014.

And health experts will tell you it is still too early to see many of the cancers and other illnesses that increase in incidence after exposure to ionizing radiation. Some can take 20 or 30 years to emerge. "That these sailors are getting the health effects they are already experiencing tells me that the radiation levels were extraordinarily high, and that we are likely just seeing the tip of the iceberg," said nuclear-engineer Gundersen. "I think we're going to see more of these people in the same boat as this initial wave of hundreds."

"I can't believe in a couple of years," he added, "we won't have thousands."

Which is why, Cate Edwards told me, everyone who was part of Operation Tomodachi, even those who haven't yet been diagnosed with particular ailments, are going to need additional medical monitoring for decades to come.

But General Electric and Tokyo Electric Power contend that these US citizens, from the US armed forces, who served on US ships, should seek their legal remedies in Japanese courts. "We believe these claims can and should be addressed under Japan's nuclear compensation law, which provides relief for persons impacted by these events," said GE in its e-mailed statement. (TEPCO did not respond specifically to a question about venue.)

The plaintiffs' lawyers dismiss this idea. "It's the difference between winning and losing," John Edwards told me. "If the case ends up in Japan, it just goes away."

The Edwardses and Bonner paint a picture of a Japanese legal system that is slanted in favor of industry. "You don't get a jury trial in Japan," said Bonner. "You don't get punitive damages. Plaintiffs have to pay exorbitant fees to have their cases tried before politically involved judges," and are not allowed to seek recovery of court costs, he said.

John Edwards added that Japan rarely awards damages for pain and suffering, loss of life, or the effects on a family. "They have an established compensation system," he said, "they have never paid a dime for personal injury—it's all for property damage."

Indeed, while there were rulings in Japan's courts last year against TEPCO and in favor of Japanese citizens, the awards were notably small (averaging \$5,400 per person in one case, \$1,500 in another), and were meant as compensation for residents of towns surrounding the nuclear plant who had to relocate. In a separate case in February, a Japanese court ordered TEPCO to pay \$142,000 to the family of a 102-year-old man who killed himself after being told he'd have to leave his home inside the Fukushima radiation zone. TEPCO is still considering whether it will appeal.

One group of Tomodachi plaintiffs has been cleared to proceed in the US by the US Court of Appeals for the Ninth Circuit. A second group is still fighting in San Diego to establish jurisdiction in California courts, a hurdle all three of the plaintiffs' attorneys are confident they will eventually clear.

And when the merits of the case have their day in a US court, "the only real defense," for TEPCO and GE, said John Edwards, "is to try to argue, 'Yeah, we screwed up, we know it was bad, but is that what really caused what happened to these people?" In other words, the defendants will concede there was a disaster at Fukushima Daiichi, but will contend the plaintiffs weren't harmed by it.

There are pretty strong indications that just such a defense is in the works. TEPCO spokesman Shinichi Nakakuki asserted in an e-mail to me that "objective scientific data demonstrates that plaintiffs were not exposed to amounts of radiation from the Fukushima Daiichi Nuclear Power Plant sufficient to cause illness." Nakakuki wrote that radiation estimates by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) "confirm that the doses received by the plaintiffs were below the level that would give rise to adverse health effects." The spokesman also referenced a report submitted by the US Defense Department to Congress in 2014 that downplayed the link between service on the Reagan during Operation Tomodachi and the specific cancers that had then emerged among crew members. Time is one of the keys to understanding both of these reports. The Defense Department looked at the cancer rates only three years removed from the service members' exposure, far too short a period to predict future numbers, according to radiation-expert Folkers. The UNSCEAR paper is even older than the DoD testimony, and has been roundly criticized for attempting to make bold predictions based on a small window and data extrapolated from analysis of Hiroshima and Nagasaki (which, aside from being drawn from a radically different exposure scenario, has itself been called into question by doctors and epidemiologists). UNSCEAR also appears to have averaged exposure over the entire island, not accounting for the notably higher exposures of those closest to the Daiichi reactors, according to analysis from Folkers's Beyond Nuclear.

Dr. Keith Baverstock, the former chief radiation-protection expert at the World Health Organization who studied the Chernobyl disaster, said at the time that the UNSCEAR report was "not qualified to be called 'scientific,'" and questioned the panel's impartiality because its funding and membership came from the countries with the largest nuclear-power programs.

All of the radiation experts interviewed wondered whether the true scale of the radiation doses sustained by the Tomodachi sailors was ever measured. Safety specialist Kaltofen argued that most measurements don't account for what are called "hot particles"—minute bits (6 to 9 microns in diameter) of intensely radioactive matter that can be extremely dangerous in close proximity, or if ingested, but are easily missed by measuring devices mere inches away. He also pointed out that different tissues are vulnerable to different isotopes in different ways, and that some parts of the body are much more sensitive to exposure than others. "One of them is the bowel," he said, "because your intestines have villi, which are rapidly reproducing cells, and that means that they are extremely susceptible to radiation." If radiation were ingested, or if the gut were exposed to a large external dose, you could see signs of real damage. These are deterministic signs of radiation exposure, said Kaltofen, meaning you get a specific biological effect that might not itself be cancer, but would indicate the size and kind of exposures that could cause cancers later on. Folkers, discussing the sailors, put it more starkly: "The people in this case might be the dosimeters."

Gundersen's experience with radioactive noble gases led him to make another observation about dose estimates. Unless measurements were taken during those first days when ships were likely cloaked in plumes of radioactive xenon and krypton, the exposure would be missed, thus contributing to far-lowerthan-accurate dose assessments. "Gases don't show up on swipe tests, or anything like that," he said. (Again, this level of methodological detail is not evident in the studies cited by TEPCO.) And Folkers stressed that the increased sensitivity to radiation seen in women and children is not part of most exposure models.

Folkers told me that there is a blood test that could more accurately estimate individuals' exposures. Karyotyping, mapping chromosomes to look for specific abnormalities closely tied to radiation damage, has been around for decades, she said, but is too rarely done. (No one interviewed for this story believes karyotyping was done on the participants in Operation Tomodachi.) Folkers said that the tests are not only capable of predicting some future illnesses; they can also be used to extrapolate backward to determine the time and intensity of suspected radiation exposure.

But that level of specificity is not the argument lawyers expect in court, nor is it the standard public-health experts would say is appropriate. "Definitive cause is not the standard for protecting public health," said Folkers, "association is the standard."

In the case of the Tomodachi sailors, there was exposure to radiation, even if there is some dispute over the size and kind of dose any particular individual received. There are a number of symptoms and illnesses, long associated with radiation, that have been reported in the service members. If people are sick, would doctors, epidemiologists, workplace-safety experts, or public-health officials wait for absolute certitude of a causal link before implementing treatments and preventive actions?

Folkers and Kaltofen each said they would not. Even Petty Officer Cooper's experience showed that the Navy—whether or not it acknowledges this now—had a basic recognition of this standard. "When you went down there," she told me about her trips to the medical station on board the *Reagan*, "you were supposed to tell them if you were on the flight deck." Depending on the answer, said Cooper, you might have seen a different doctor. "As soon as you said [where you worked], then, pretty much, they knew your issues."

Cooper had actually reenlisted after Operation Tomodachi, but when the Navy told her "OK, you're gonna do another sea tour with the *Reagan*," she said her response was "Nonononononononononon". She told me she didn't want any possible additional exposure to radiation on a ship she saw as contaminated from stem to stern. Cooper "took the hit" and applied for an "early out" from her reenlistment.

And the Navy, according to Cooper, "fast-tracked an early out because they understood." Asking off the *Reagan* became so common, she told me, that there was a little "cheat sheet" on how to expedite the paperwork. "An early out would normally have taken me six months," she said, "but they got it done in like two weeks."

Cooper said that because her commanders were there, they understood what she'd suffered through after the radiation exposure, and knew the toll it took on the *Reagan*'s crew. "That deployment took a lot out of people," she said. "A lot."

For Torres, readjusting to civilian life after 27 years in the Navy was made much more difficult because of his post–Operation Tomodachi health problems. His own gastrointestinal difficulties, surgeries for hemorrhoids and hernias, and low-energy levels when he returned stateside deeply affected his mood and his relationships. Torres also said he feels guilt over "the young 17-, 18-year-old kids standing outside," having to watch them "getting directly exposed" to the radioactive fallout as he stood inside conning the ship. "I have a lot of conflicted feelings," he told me. "Could I have done something more? All these 'what ifs.""

There are plenty of "what ifs" to go around, but Torres is probably one of the last people who should feel guilty. Sure, Cooper now expresses regret for drinking too much of the ship's tainted water. Piekutowski wishes he'd found a way to avoid spending five days exposed to the elements without any protection. Even Rachel Mendez, mother of Ruby Perez, wonders if she shouldn't have been so encouraging when her daughter decided to join the Navy.

And some who served question if the Navy did all it could to protect its personnel (though not all, and not all the time). Did the *Reagan* spend too much time too close to shore? Did commanders always put the health and safety of sailors first when addressing the contamination of the ship and the water system? Did the US military measure properly for radiation, or perform the right tests for exposure? Are they doing all they can now to track the health of, and to care for, the Tomodachi veterans?

Watchdogs and health experts will tell you those are valid questions—especially if they better ensure the well-being of all the sailors going forward—but the attorneys will say that, while the military and the VA have responsibilities for the medical care of service members and veterans, "they are not, in a legal sense," as Cate Edwards told me, "responsible for the exposure itself."

(The Navy, for its part, said in an e-mailed statement that it has "a long distinguished history with the successful management of its occupational ionizing radiation exposure program." It acknowledged some risk from radiation exposure at any level, but said the risks borne by the *Reagan* sailors were "small compared to other risk" accepted in work and everyday life. In making this assessment, they cite the same 2014 Defense Department report referenced by TEPCO.)

"The end of the road is not the VA," said John Edwards. The main issue, as Edwards put it, is, "If you're going to have nuclear plants, make sure they're designed, built, maintained, and monitored properly." And the question of whether TEPCO and GE did do those things properly is not just of interest to the sailors or the residents of northern Honshu—in the minds of all the attorneys and experts interviewed for this story, it is of keen relevance to tens of millions of people living in the United States.

"There's an obvious connection between what happened in Japan and what could happen in the United States," said John Edwards. "What they failed to do in the manufacture and maintenance of the facility in Japan also occurred, and is occurring, in the US."

There are currently 99 operating civilian nuclear reactors in the United States, and 22 of those are General Electric Mark 1 boiling-water reactors—the make and model identical to the three that melted down and exploded at Fukushima Daiichi. Based on a 1955 design, all but four of the US reactors have now been online for more than 40 years. All of them have the same too-small primary containment vessel, the same questionable alloys, the same bolted-on lid, the same safety systems, and (with one exception) the same vent "upgrade" that failed to prevent the tragic failures at the Japanese nuclear plant. Large US cities, such as Boston, Chicago, Detroit, Philadelphia, and Washington, DC, are all closer to BWRs than Tokyo is to Fukushima Daiichi.

"It starts with the design," Cate Edwards told me, and the complaint filed on behalf of the Tomodachi sailors goes into great detail about the flaws on the Japanese reactors that mirror the ones in the United States. "Each one of these Mark 1 BWRs is defective," said Bonner.

For Folkers, the lesson is to look at nuclear power plants through the lens of public health. Don't wait until after an incident to argue over which illnesses might or might not have been caused by a particular dose. Instead, Folkers urged, establish baselines for what the population's blood work and chromosomes look like beforehand. Then, instead of only starting the fact-finding after an accidental release of radiation, or when a mysterious cancer cluster emerges—when too many vested interests invoke "what-aboutism," as she called it, to obscure responsibility—already-informed public officials and medical professionals can focus on the response to emerging health problems.

For Kaltofen, the environmental-safety expert, the focus should be on prevention and planning before treatment and tracking. "It's very hard to come up with a response plan after the fact," he said. And, most importantly, for the sailors, Marines, and pilots who rushed into harm's way to provide emergency aid and humanitarian relief to people battling a devil's trident of disasters, the acknowledgment of their radiation exposure and the acceptance of responsibility by those who caused it could potentially be as life-changing as their service in Operation Tomodachi.

Sure, it might mean a measure of financial compensation were they to win a settlement, but for the sailors who spoke to me, that would be secondary. Foremost, a victory in court would mean a degree of respect for what they did, how they've suffered, and what they might need down the line—not just for those who are ailing today but also for the potentially thousands who might get sick in the future. As Angel Torres told me, "Set up an infrastructure to address those issues. Do the right thing and provide for people that were misled. Let them know, 'You are not alone.'"

Thai restaurants refuse to serve Fukushima fish

March 13, 2018

Bangkok restaurants stop serving fish recently imported from Fukushima Pref.

https://mainichi.jp/english/articles/20180313/p2a/00m/0na/002000c

FUKUSHIMA -- Eleven Japanese restaurants in the Thai capital of Bangkok have stopped serving imported fish caught off the coast of the Fukushima prefectural city of Soma, the prefectural government here said on March 12.

The decision of each restaurant came following fears that they might experience a backlash and a reduction in customer numbers -- fueled by citizen group protests that have spread online -- even though Thailand does not restrict the import of goods from Fukushima Prefecture.

Consignments of fresh seafood including flounder, fluke and octopus have been exported from Fukushima Prefecture to Thailand since late February -- the first export of seafood from the prefecture since the disaster at Tokyo Electric Power Co. (TEPCO)'s Fukushima No. 1 Nuclear Power Plant in 2011. It is not sure when the restaurants will start offering the fish again.

According to the Fukushima Prefectural Government, 143 kilograms of fish have been exported to Thailand since Feb. 28, with about 50 kilograms being consumed at an event starting on March 2 that was jointly hosted by the 11 restaurants.

However, consumer groups in Thailand have been directing protests toward the country's Ministry of Public Health, saying, "Don't make citizens here eat dangerous fish." Meanwhile, the ministry has stated that a thorough inspection has been conducted and the fish is safe.

Event promoting Fukushima fish cancelled

https://www3.nhk.or.jp/nhkworld/en/news/20180313_03/ An event in Thailand promoting flounder from Fukushima has been cancelled amid concerns from consumers.

The event was being held at a Japanese restaurant and scheduled to run through the end of the month. The export of flounder caught in waters off Fukushima was resumed on March 1st for the first time since the 2011 nuclear accident.

The Fukushima prefectural government says a consumer group raised concerns about the safety of the fish. The group said the fish were caught in contaminated waters and dangerous to eat.

The group also reportedly demanded the Thai government announce the name of a local restaurant that sold the fish.

Consumers took to social media to voice their concerns.

Organizers say they cancelled the event to avoid confusion.

Nearly 130 kilograms of flounder have been exported from Fukushima to Thailand but close to half remains untouched. Exports are essentially halted.

A Fukushima government official said the prefecture will continue to promote the safety of the fish in hopes of once again resuming the exports.

Thai govt. detects no radiation in Fukushima fish

https://www3.nhk.or.jp/nhkworld/en/news/20180313_31/ The government of Japan's Fukushima Prefecture hopes to export more flounder to Thailand after the Thai government's tests showed no radioactive substances in the fish.

Exports of flounder caught off Fukushima resumed on March 1st for the first time since the 2011 nuclear accident. The fish were the first marine products from the prefecture to be sold abroad since the accident.

The flounder was being promoted at Japanese restaurants in Thailand. But the promotion was cancelled on Monday after local consumers voiced concerns about the fish's safety. Flounder exports have essentially been halted.

Fukushima prefectural officials say they were notified late on Monday that the Thai health ministry detected no radioactive material in the fish.

They plan to call attention to the fish's safety through online video sites, social media and food tasting events for local consumers.

See also : https://www.japantimes.co.jp/news/2018/03/14/national/organizers-cancel-bangkok-event-promote-fukushima-fish-groups-voice-safety-concerns/#.WqkXQnzA-os



Operation Tomodachi's participants file suit against TEPCO

A U.S. Marine assists Japanese Self-Defense Force members in removing debris from the grounds of Minato Elementary School in Ishinomaki, Miyagi Prefecture, in this file photo taken on April 1, 2011. (Mainichi)

March 20, 2018

Americans seek \$1 bil. in damages over Fukushima nuclear disaster

https://mainichi.jp/english/articles/20180320/p2g/00m/0dm/023000c

TOKYO (Kyodo) -- Some 200 U.S. residents filed a suit against Tokyo Electric Power Company Holdings Inc. and a U.S. firm seeking at least \$1 billion to cover medical expenses related to radiation exposure suffered during the 2011 Fukushima nuclear disaster, the utility said Monday.

The lawsuit was filed last Wednesday with U.S. federal courts in the Southern District of California and the District of Columbia by participants in the U.S. forces' Operation Tomodachi relief effort carried out in the wake of the March 11, 2011, earthquake and tsunami that crippled TEPCO's Fukushima Daiichi nuclear plant.

Many of the plaintiffs are suing TEPCO and the U.S. company, whose name was withheld by TEPCO, for the second time after a similar suit was rejected by the federal court in California in January. They are seeking the establishment of a compensation fund of at least \$1 billion to cover medical and other costs, the utility said.

The plaintiffs claim that the nuclear accident occurred due to improper design and management of the plant by TEPCO. They are also seeking compensation for physical and psychological damage suffered as a result of the disaster, said the utility.

In Operation Tomodachi, which began two days after the natural disasters, the aircraft carrier Ronald Reagan and other U.S. military resources and personnel were deployed to deliver supplies and undertake relief efforts at the same time as three reactors at the Fukushima Daiichi complex suffered fuel meltdowns.

Remove those dosimeters...

April 5, 2018

NRA to remove most dosimeters in Fukushima as radiation drops

http://www.asahi.com/ajw/articles/AJ201804050009.html

By MASANOBU HIGASHIYAMA/ Staff Writer

Japan's nuclear watchdog will remove 80 percent of its radiation dosimeters in Fukushima Prefecture to slash costs and alleviate unnecessary concerns, as air dose rates have decreased significantly since the nuclear crisis unfolded in 2011.

The Nuclear Regulation Authority (NRA) on March 20 decided to stop using 2,400 of 3,000 radiation meters set up in elementary schools, parks and elsewhere in the prefecture.

While there are 600 extra monitoring posts for long-term radiation measuring, local municipalities and Tokyo Electric Power Co. have also introduced hundreds of dosimeters in the prefecture. The latest removal plan will not cover those long-term radiation meters.

"Although the number of radiation meters will be reduced, our measuring network will never fail to cover any locations when problems occur at the Fukushima No. 1 nuclear power plant," said an NRA official. The decision was reached because radiation figures are below the threshold level of 0.23 microsieverts per hour in most areas thanks to the progress of decontamination work, seven years after the disaster started at TEPCO's Fukushima plant.

Another reason behind the move is that radiation meters will soon reach the end of their operating lives. While the NRA plans to change the arrangement of dosimeters, those installed near the nuclear facility will be maintained.

Under the plan, real-time systems to measure dose rates around facilities for children could be removed in regions sufficiently far from the nuclear plant. Meters in cities, towns and villages that are currently or have once been home to evacuation zones will be maintained.

Most of those areas now report radiation levels as low as before the disaster and readings higher than 0.23 microsieverts per hour are measured at only several points.

The thousands of dosimeters require annual maintenance costs of 360 million yen (\$3.39 million). In addition, the NRA has received complaints from residents, with one of those saying, "The existence of radiation meters could mistakenly make people believe dose rates are high in the area."

In response to those issues, the NRA decided to reduce the number of dosimeters to around 600 in three years. It will determine which meters to remove after holding talks with residents, starting in April, according to NRA officials.

The Fukushima legacy

May 10, 2018

The Fukushima legacy: more than just cancer, diabetes diagnoses have increased six-fold

https://www.nexusnewsfeed.com/article/geopolitics/the-fukushima-legacy-more-than-just-cancer-diabetes-diagnoses-have-increased-six-fold/

It's not a secret that nuclear radiation is dangerous: Not only does it cause cancer, even seemingly small amounts of the stuff can be lethal. Exposure to high enough levels can be deadly in frighteningly short periods of time. But for the survivors of the Fukushima disaster, and those living in surrounding areas, radiation and cancer aren't the only health concerns. New research has shown that in communities nearest the power plant, cases of type 2 diabetes are on the rise.

Researchers have been analyzing the secondary health effects of the nuclear disaster, which took place seven years ago now. Dr. Masaharu Tsubokura, from the Department of Radiation Protection at Minamisoma Municipal General Hospital in Fukushima, has been working alongside other researchers to better understand the full scope of Fukushima's health consequences. Their findings indicate both an increase in the number of cases, and a rise in severity of, health conditions like diabetes, high blood pressure, obesity and depression.

Dr. Tsubokura says that the social disruption caused by the evacuation has played an under-reported role on public health. As the research reveals, the elderly in particular have been hardest hit by the disaster — especially when it comes to diabetes. In the wake of Fukushima, "diabetes trumps radiation as a threat to life expectancy by a factor of 33," sources say.

This is not to say that diabetes is more dangerous than radiation — but the finding shows that the number of people being afflicted by diabetes post-disaster is surprisingly high. The risk of type 2 diabetes, and poor diabetes management, as an indirect effect of the nuclear spill is substantial.

More than just a disrupted lifestyle?

The 2017 research paper highlights the fact that the effects of such disasters extend far beyond the acute: Indirect health issues abound after such an extreme disruption to normal life. But, is that really the only explanation?

Dr. Vivian Fonseca, assistant dean for clinical research at Tulane University in New Orleans reported similar effects in her post-Hurricane Katrina research. She noted that diabetes management "goes haywire" during the aftermath of a disaster — and the condition is heavily influenced by lifestyle factors like diet and exercise. The social stress of an evacuation and potential social isolation also weigh quite heavily on people who've already been diagnosed with the condition.

Scientists say the full scope of health ramifications is difficult to accurately ascertain; it's hard to say what the mediating factors are (outside of the radiation, of course). But, that hasn't stopped the Japanese government from wanting to build roads out of radioactive Fukushima dirt.

Some research from the Ukraine has documented a staggering increase in cases of diabetes and other noncancer endocrine disorders. Even 30 years after the Chernobyl power plant incident, increased cases of diabetes and other conditions in survivors are still being documented. Scientists from the Ukraine reported in 2017 that levels of diabetes in radiation-exposed survivors (including site clean-up workers) remain noticeably higher than the rest of the population.

This finding could raise questions about the purported increase of diabetes in Fukushima survivors. While scientists say that this increase is due to the massive social disruption caused by the evacuation, one might wonder if there's more to it than that. As the Ukrainian scientists note, research has shown that the endocrine system may be more affected by exposure to radiation than previously thought, especially the pancreas.

The idea that an increase in diabetes could be related to radiation exposure and not just lifestyle changes alone isn't all that far-fetched, is it?

Sources for this article include:

Ozy.com Endocrine-Abstracts.org FacebookTwitterGoogle+Share

Fukushima officially worst nuclear disaster in history

April 27, 2018

Move Over Chernobyl, Fukushima is Now Officially the Worst Nuclear Power Disaster in History https://www.counterpunch.org/2018/04/27/move-over-chernobyl-fukushima-is-now-officially-the-worst-nuclear-power-disaster-in-history/

by John Laforge

The radiation dispersed into the environment by the three reactor meltdowns at Fukushima-Daiichi in Japan has exceeded that of the April 26, 1986 Chernobyl catastrophe, so we may stop calling it the "second worst" nuclear power disaster in history. Total atmospheric releases from Fukushima are estimated to be between 5.6 and 8.1 times that of Chernobyl, according to the 2013 World Nuclear Industry Status Report. Professor Komei Hosokawa, who wrote the report's Fukushima section, told London's Channel 4 News then, "Almost every day new things happen, and there is no sign that they will control the situation in the next few months or years."

Tokyo Electric Power Co. has estimated that about 900 peta-becquerels have spewed from Fukushima, and the updated 2016 TORCH Report estimates that Chernobyl dispersed 110 peta-becquerels.[1](A Becquerel is one atomic disintegration per second. The "peta-becquerel" is a quadrillion, or a thousand trillion Becquerels.)

Chernobyl's reactor No. 4 in Ukraine suffered several explosions, blew apart and burned for 40 days, sending clouds of radioactive materials high into the atmosphere, and spreading fallout across the whole of the Northern Hemisphere — depositing cesium-137 in Minnesota's milk.[2]

The likelihood of similar or worse reactor disasters was estimated by James Asselstine of the Nuclear Regulatory Commission (NRC), who testified to Congress in 1986: "We can expect to see a core meltdown accident within the next 20 years, and it ... could result in off-site releases of radiation ... as large as or larger than the releases ... at Chernobyl.[3] Fukushima-Daiichi came 25 years later.

Contamination of soil, vegetation and water is so widespread in Japan that evacuating all the at-risk populations could collapse the economy, much as Chernobyl did to the former Soviet Union. For this reason, the Japanese government standard for decontaminating soil there is far less stringent than the standard used in Ukraine after Chernobyl.

Fukushima's Cesium-137 Release Tops Chernobyl's

The Korea Atomic Energy Research (KAER) Institute outside of Seoul reported in July 2014 that Fukushima-Daiichi's three reactor meltdowns may have emitted two to four times as much cesium-137 as the reactor catastrophe at Chernobyl.[4]

To determine its estimate of the cesium-137 that was released into the environment from Fukushima, the Cesium-137 release fraction (4% to the atmosphere, 16% to the ocean) was multiplied by the cesium-137 inventory in the uranium fuel inside the three melted reactors (760 to 820 quadrillion Becquerel, or Bq), with these results:

Ocean release of cesium-137 from Fukushima (the worst ever recorded): 121.6 to 131.2 quadrillion Becquerel (16% x 760 to 820 quadrillion Bq). Atmospheric release of Cesium-137 from Fukushima: 30.4 to 32.8 quadrillion Becquerel (4% x 760 to 820 quadrillion Bq).

Total release of Cesium-137 to the environment from Fukushima: 152 to 164 quadrillion Becquerel. Total release of Cesium-137 into the environment from Chernobyl: between 70 and 110 quadrillion Bq. The Fukushima-Daiichi reactors' estimated inventory of 760 to 820 quadrillion Bq (petabecquerels) of Cesium-137 used by the KAER Institute is significantly lower than the US Department of Energy's estimate of 1,300 quadrillion Bq. It is possible the Korean institute's estimates of radioactive releases are low. In Chernobyl, 30 years after its explosions and fire, what the Wall St. Journal last year called "the \$2.45 billion shelter implementation plan" was finally completed in November 2016. A huge metal cover was moved into place over the wreckage of the reactor and its crumbling, hastily erected cement tomb. The giant new cover is 350 feet high, and engineers say it should last 100 years — far short of the 250,000-year radiation hazard underneath.

The first cover was going to work for a century too, but by 1996 was riddled with cracks and in danger of collapsing. Designers went to work then engineering a cover-for-the-cover, and after 20 years of work, the smoking radioactive waste monstrosity of Chernobyl has a new "tin chapeau." But with extreme weather, tornadoes, earth tremors, corrosion and radiation-induced embrittlement it could need replacing about 2,500 times.

John Laforge's field guide to the new generation of nuclear weapons is featured in the March/April 2018 issue of CounterPunch magazine.

Notes.

[1] *Duluth News-Tribune & Herald*, "Slight rise in radioactivity found again in state milk," May 22, 1986; *St. Paul Pioneer Press & Dispatch*, "Radiation kills Chernobyl firemen," May 17, 1986;

Minneapolis StarTribune, "Low radiation dose found in area milk," May 17, 1986.

[2]Ian Fairlie, "TORCH-2016: An independent scientific evaluation of the health-related effects of the Chernobyl nuclear disaster," March 2016

(https://www.global2000.at/sites/global/files/GLOBAL_TORCH%202016_rz_WEB_KORR.pdf).

[3]*James K.* Asselstine, Commissioner, US Nuclear Regulatory Commission, Testimony in Nuclear Reactor Safety: Hearings before the Subcommittee on Energy Conservation and Power of the Committee on Energy and Commerce, House of Representatives, May 22 and July 16, 1986, Serial No. 99-177, Washington, DC: Government Printing Office, 1987.

[4] Progress in Nuclear Energy, Vol. 74, July 2014, pp. 61-70; ENENews.org, Oct. 20, 2014.

Fukushima mothers tell their story



May 28, 2018

Fukushima mothers at UN tell their story

https://beyondnuclearinternational.org/2018/05/28/fukushima-mothers-at-un-tell-their-story/ Posted on May 28, 2018 by beyondnuclearinternational

Evacuees from nuclear disaster urge the Japanese government to comply with UN Human Rights standards

By Linda Pentz Gunter, with contributions from Kurumi Sugita and Akiko Morimatsu When Kazumi Kusano stood in the CRIIRAD radiological laboratory in Valence, France listening to lab director, Bruno Chareyron, describe just how radioactive the soil sample taken from a school playground back home in Japan really was, she could not fight back the tears.

"This qualifies as radioactive waste," Chareyron told them. "The children are playing in a school playground that is very contaminated. The lowest reading is 300,000 bequerels per square meter. That is an extremely high level." (CRIIRAD is the Commission for Independent Research and Information about Radiation, an independent research laboratory and NGO).

Kazumi, a Japanese mother and Fukushima evacuee who prefers not to use her real name, was in France with two other mothers, Mami Kurumada and Akiko Morimatsu — all of whom also brought their children — as part of an educational speaking tour. Morimatsu was also invited to testify before the UN Commission on Human Rights in Geneva, to launch an appeal for the rights of nuclear refugees.

In Japan, seven years since the March 2011 Fukushima nuclear disaster began to unfold, the government is requiring some refugees to return to the region. Says Chareyron, whose lab has worked extensively in the Fukushima zone, "the Japanese government is doing everything to force citizens to return to lands where the radiation doses that citizens and children should be subjected to are largely over the typically acceptable norms."

"People in Japan still don't believe that the effects they are feeling are due to radiation," said Kusano during one of the tour stops in France. Indeed, when they took samples in their neighborhoods to be analyzed for radioactive contamination, they were mocked not only by their neighbors but by government officials.

"We don't take this seriously in Japan," said Kurumada, who expressed relief to be among those who understand the true dangers, like Chareyron and the French anti-nuclear activists with whom they met. "In our country, it's taboo to talk about radiation and contamination."

Both Kusano and Kurumada are among those who have brought lawsuits against Tepco and the Japanese government, seeking compensation for Fukushima evacuees. Several of these have already ruled in favor of the evacuees and have assigned responsibility for the accident to Tepco and the government while providing financial awards to the plaintiffs. (Kusano's son's testimony helped win one of those cases — see our earlier coverage.)

The Japanese government pressured evacuees to return to areas contaminated by the Fukushima disaster by withdrawing their government financial assistance. However, many in areas that were not obligatory evacuation zones also left the region, given the high levels of radioactive contamination.

In addition to the visit to CRIIRAD, the mothers also spoke at public meetings in Lyon, Grenoble and Valence where CRIIRAD is located. The short news video below, in French, captures their visit to the lab. https://youtu.be/HzfY0xIy0l8

At the UN in Geneva, Morimatsu's testimony was postponed several days by a workforce strike. But eventually, Morimatsu (pictured with her son above the headline) was able to deliver her speech. She said: "My name is Akiko Morimatsu. I am here with other evacuees and mothers, together with Greenpeace. I evacuated from the Fukushima disaster with my two children in May 2011. Shortly after the nuclear accident, radiation contamination spread. We were repeatedly and unnecessarily exposed to unannounced radiation.

"The air, water and soil became severely contaminated. I had no choice but to drink the contaminated water, to breast-feed my baby. To enjoy health, free from radiation exposure, is a fundamental principle. The Japanese Constitution states, 'We recognize that all peoples of the world have the right to live in peace, free from fear and want.'

"However, the Japanese government has implemented almost no policies to protect its citizens. Furthermore, the government is focusing on a policy to force people to return to highly contaminated areas.

"I call on the Japanese government to immediately, fully adopt and implement the recommendations of the UN Human Rights Council. I thank UN member states for defending the rights of residents in Japan. Please help us protect people in Fukushima, and in East Japan, especially vulnerable children, from further radiation exposure."

Earlier that month, the Japanese government had responded to its Universal Periodic Review, by stating that it "supports" 145 recommendations and "notes" 72. One of those recommendations from the UN Human Rights Council, and which Japan "accepted", was the paragraph that states: "Respect the rights of persons living in the area of Fukushima, in particular of pregnant women and children, to the highest level of physical and mental health, notably by restoring the allowable dose of radiation to the 1 mSv/year limit, and by a continuing support to the evacuees and residents (Germany);"

According to Hajime Matsukubo of Citizens Nuclear Information Center in Tokyo, while the Upper House of the Japanese Diet has indicated its willingness to decrease annual radiation exposures from 20 mSv, the Japanese government has only said it would "follow up" on the specific UN recommendation and report back later. There is no timeframe for such a change, hardly surprising since it would presumably

mean once more evacuating people the government has already pressured to return to contaminated areas. The practical implications of this happening leave it very much in doubt.

However, Matsukubo believes that even the commitment to follow up "is a strong tool for us to push the government forward." Aileen Mioko Smith of Kyoto-based Green Action agrees. "Now we have terrific leverage," she said. Her group, along with Greenpeace Japan will be looking to "keep the Japanese government's feet to the fire on this."

New research: Release of 3/11 radioactive particles was significant

Source : Eurekalert

https://www.eurekalert.org/pub_releases/2018-05/uom-frp052418.php

Fukushima radioactive particle release was significant says new research

University of Manchester Public Release: 24-May-2018

Scientists say there was a significant release of radioactive particles during the Fukushima-Daiichi nuclear accident.

The researchers identified the contamination using a new method and say if the particles are inhaled they could pose long-term health risks to humans.

The new method allows scientists to quickly count the number of caesium-rich micro-particles in Fukushima soils and quantify the amount of radioactivity associated with these particles.

The research, which was carried out by scientists from Kyushu University, Japan, and The University of Manchester, UK, was published in *Environmental Science and Technology*.

In the immediate aftermath of the Fukushima Daiichi nuclear accident, it was thought that only volatile, gaseous radionuclides, such as caesium and iodine, were released from the damaged reactors. However, in recent years it has become apparent that small radioactive particles, termed caesium-rich micro-particles, were also released.

Scientists have shown that these particles are mainly made of glass, and that they contain significant amounts of radioactive caesium, as well as smaller amounts of other radioisotopes, such as uranium and technetium.

The abundance of these micro-particles in Japanese soils and sediments, and their environmental impact is poorly understood. But the particles are very small and do not dissolve easily, meaning they could pose long-term health risks to humans if inhaled.

Therefore, scientists need to understand how many of the micro-particles are present in Fukushima soils and how much of the soil radioactivity can be attributed to the particles. Until recently, these measurements have proven challenging.

The new method makes use of a technique that is readily available in most Radiochemistry Laboratories called Autoradiography. In the method, an imaging plate is placed over contaminated soil samples covered with a plastic wrap, and the radioactive decay from the soil is recorded as an image on the plate. The image from plate is then read onto a computer.

The scientists say radioactive decay from the caesium-rich micro particles can be differentiated from other forms of caesium contamination in the soil.

The scientists tested the new method on rice paddy soil samples retrieved from different locations within the Fukushima prefecture. The samples were taken close to (4 km) and far away (40 km) from the damaged nuclear reactors. The new method found caesium-rich micro-particles in all of the samples and

showed that the amount of caesium associated with the micro-particles in the soil was much larger than expected.

Dr Satoshi Utsunomiya, Associate Professor at Kyushu University, Japan, and the lead author of the study says "when we first started to find caesium-rich micro-particles in Fukushima soil samples, we thought they would turn out to be relatively rare. Now, using this method, we find there are lots of caesium-rich microparticles in exclusion zone soils and also in the soils collected from outside of the exclusion zone". Dr Gareth Law, Senior Lecturer in Analytical Radiochemistry at the University of Manchester and an author on the paper, adds: "Our research indicates that significant amounts of caesium were released from the Fukushima Daiichi reactors in particle form.

"This particle form of caesium behaves differently to the other, more soluble forms of caesium in the environment. We now need to push forward and better understand if caesium micro-particles are abundant throughout not only the exclusion zone, but also elsewhere in the Fukushima prefecture; then we can start to gauge their impact".

The new method can be easily used by other research teams investigating the environmental impact of the Fukushima Daiichi accident.

Dr Utsunomiya adds: "we hope that our method will allow scientists to quickly measure the abundance of caesium-rich micro-particles at other locations and estimate the amount of caesium radioactivity associated with the particles. This information can then inform cost effective, safe management and clean-up of soils contaminated by the nuclear accident".

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Notes to Editor

For media enquiries please contact Jordan Kenny on 0161 275 8257 or jordan.kenny@manchester.ac.uk The paper, 'Novel Method of Quantifying Radioactive Cesium-Rich Microparticles (CsMPs) in the Environment from the Fukushima Daiichi Nuclear Power Plant' has been published in the journal Environmental Science and Technology - DOI:10.1021/acs.est.7b06693

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Radiation levels on top floor of No.2 still way too high for human work

July 3, 2018

Radiation still too high in reactor building

https://www3.nhk.or.jp/nhkworld/en/news/20180702_35/

A robotic probe has found that radiation levels remain too high for humans to work inside one of the reactor buildings at the damaged Fukushima Daiichi nuclear power plant.

Tokyo Electric Power Company, the operator of the plant, plans to relocate 615 units of nuclear fuel from the spent fuel pool, which is located on the top floor of the No. 2 reactor building and is separate from the reactor itself.

TEPCO says the relocation will help reduce risks, including possible damage caused by earthquakes.

The No. 2 reactor underwent a meltdown, but did not experience a hydrogen explosion in the 2011 nuclear accident. The building is likely to still have a high concentration of radioactive materials.

Last month, TEPCO drilled a hole in the wall of the building in order to use a camera-equipped robot to create a detailed map of the radiation on the top floor.

On Monday, workers started the survey and measured radiation levels at 19 points, mainly near the opening. **Up to 59 millisieverts were detected per hour.**

That's above workers' allowable annual exposure of 50 millisieverts and more than half of their 5year exposure limit. TEPCO has concluded it cannot let humans work inside the building.

TEPCO will use the results to determine specific ways to remove the fuel from the pool. It plans to start the work in fiscal 2023.

Torch relay in Fukushima to lift spirits?

July 13, 2018

1964 Olympic torch bearer hopes 2020 runners will spur hope in Fukushima

https://mainichi.jp/english/articles/20180713/p2a/00m/0na/018000c

YABUKI, Fukushima -- A 71-year-old man here who served as a torch bearer in the 1964 Tokyo Olympics looks to see young people from this prefecture encourage residents affected by the nuclear disaster through their torch relay ahead of the 2020 Tokyo Games.

- [Related] Tokyo 2020 torch relay plan draws attention to areas hit by March 2011 disasters
- 【Related】 2020 Olympic torch relay to start in Fukushima on March 26
- [Related] Tokyo Olympics

Fukushima Prefecture was on July 12 named the starting point for the 2020 Olympic torch relay in Japan. 1964 runner Masao Yabuki, a resident of the prefectural town of Yabuki, hopes that the relay will play a part in boosting disaster recovery, as touted by the Tokyo 2020 organizing committee.

"I hope the torch relay will uplift the spirits of those affected by the disaster, if only a little," said Yabuki, a former Japan Agricultural Cooperatives employee.

Yabuki was a third-year student and a member of a track team at what is now Shirakawa Jitsugyo High School in Shirakawa in southern Fukushima Prefecture, when he was chosen to run in the city, alongside two teammates. "I was probably picked as I was a third-year student back then. I was just lucky," he recalled.

He was assigned to run through an approximately 2-kilometer zigzag course from the entrance to the castle town's downtown area to the city hall. He practiced by holding a metal bat high up in the air with his right hand while running.

On Sept. 30, 1964, he covered the designated stretch with the real Olympic torch in his hand as some 100,000 spectators filled the streets.

"My mind was completely blank. I couldn't even hear cheers from spectators as I was so absorbed," he said.

Nearly half a century later, Yabuki's house was partially damaged due to a massive earthquake registering a lower 6 on the Japanese seismic intensity scale of 7 in his area on March 11, 2011.

In the wake of the Fukushima nuclear disaster triggered by the quake and ensuing tsunami, temporary housing units for evacuees from the nuclear disaster were built in the town of Yabuki. Seven years on, people who are still unable to return to their hometowns are living in those housing units.

Last year, Yabuki drove through areas along the Pacific Coast stricken by the tsunami and nuclear disasters. What he saw were rice paddies and fields long left unattended and almost empty streets, even in areas where nuclear evacuation orders had already been lifted. In other areas where such orders remained in place, towns were overgrown with wild grass and trees. Such landscapes saddened Yabuki. The Fukushima Prefectural Government will establish an organizing committee for the 2020 Games to select the specific torch relay path. The governments of 15 cities, towns and villages in the prefecture -- which were damaged by the 2011 tsunami and ordered to evacuate residents due to the nuclear crisis -- are calling for their streets to be included in the relay route.

While Yabuki wishes to once again become a torch bearer himself, even if to cover just 100 meters, he believes that the upcoming torch relay should be one that can uplift local residents by covering the coastal "Hamadori" region of Fukushima, not the mid-inland "Nakadori" region including the town of Yabuki, to embody the spirit of the "disaster recovery Olympics" by conveying the current situation to the rest of the country.

(Japanese original by Shuji Ozaki, Fukushima Bureau)

IPPNW launches a campaign about the "Radioactive Olympics"

International Campaign

"Tokyo 2020 - The Radioactive Olympics"

In 2020, Japan is inviting athletes from around the world to take part in the Tokyo Olympic Games. We are hoping for the games to be fair and peaceful. At the same time, we are worried about plans to host baseball and softball competitions in Fukushima City, just 50 km away from the ruins of the Fukushima Dai-ichi nuclear power plant. It was here, in 2011, that multiple nuclear meltdowns took place, spreading radioactivity across Japan and the Pacific Ocean - a catastrophe comparable only to the nuclear meltdown of Chernobyl.

The ecological and social consequences of this catastrophe can be seen everywhere in the country: whole families uprooted from their ancestral homes, deserted evacuation zones, hundreds of thousands of bags of irradiated soil dumped all over the country, contaminated forests, rivers and lakes. Normality has not returned to Japan.

The reactors continue to be a radiation hazard as further catastrophes could occur at any time. Every day adds more radioactive contamination to the ocean, air and soil. Enormous amounts of radioactive waste are stored on the premises of the power plant in the open air. Should there be another earthquake, these

would pose a grave danger to the population and the environment. The nuclear catastrophe continues today.

On the occasion of the Olympic Games 2020, we are planning an international campaign. Our concern is that athletes and visitors to the games could be harmed by the radioactive contamination in the region, especially those people more vulnerable to radiation, children and pregnant women.

According to official Japanese government estimates, the Olympic Games will cost more than the equivalent of 12 billion Euros. At the same time, the Japanese government is threatening to cut support to all evacuees who are unwilling to return to the region.

International regulations limit the permitted dose for the general public of additional radiation following a nuclear accident to 1 mSv per year. In areas where evacuation orders were recently lifted, the returning population will be exposed to levels up to 20 mSv per year. Even places that have undergone extensive decontamination efforts could be recontaminated at any time by unfavourable weather conditions, as mountains and forests serve as a continuous depot for radioactive particles.

Our campaign will focus on educating the public about the dangers of the nuclear industry. We will explain what health threats the Japanese population was and is exposed to today. Even during normal operations, nuclear power plants pose a threat to public health – especially to infants and unborn children.

There is still no safe permanent depository site for the toxic inheritance of the nuclear industry anywhere on earth, that is a fact.

We plan to use the media attention generated by the Olympic Games to support Japanese initiatives calling for a nuclear phase-out and to promote a worldwide energy revolution: away from fossil and nuclear fuels and towards renewable energy generation.

We need to raise awareness of the involvement of political representatives around the world in the military industrial complex.

We denounce the attempt of the Japanese government to pretend that normality has returned to the contaminated regions of Japan.

We call on all organisations to join our network and help us put together a steering group to coordinate this campaign. The Olympic Games are still two years away – now is still time to get organised. We look forward to hearing from you,

with best regards,

For the campaign "Nuclear Free Olympic Games 2020":

Annette Bänsch-Richter-Hansen

Jörg Schmid

Henrik Paulitz

Alex Rosen

Fukushima's radioactive legacy in Californian wine

July 23, 2018

Fukushima's Nuclear Imprint Is Found in California Wine (Drinkers, Don't Panic) http://www.asahi.com/ajw/articles/SDI201807235851.html By MIHIR ZAVERI/ © 2018 The New York Times Ever since a huge earthquake off the coast of Japan sent a tsunami crashing into a nuclear plant in Fukushima, setting off one of the world's worst nuclear crises, scientists have been uncovering the radioactive legacy of the 2011 disaster.

The government warned about contaminated seafood around Japan, and toxic water, sludge and rubble. More frighteningly, radioactive wild boars marauded Japanese towns and attacked people.

Now a group of French nuclear physicists say they have stumbled on Fukushima's signature in Northern California wine. (No, it's not believed to be dangerous.)

In a new study, the researchers report testing 18 bottles of California rosé and cabernet sauvignon from 2009 onward and finding increased levels of radioactive particles in the wine produced after the Fukushima disaster. In the case of the cabernet, the levels of the radioactive materials doubled.

"We can measure some radioactive level that is much higher than the usual level," said Michael Pravikoff, a physicist at a French research center who worked on the study.

The French research team has in recent years examined wines from around the world, trying to correlate the level of radioactive material with the date the wine grapes were picked.

Wines made around major nuclear events, including U.S. and Soviet nuclear tests during the Cold War and the Chernobyl accident, should show higher levels of radioactive isotopes, called cesium-137, according to the researchers. The man-made isotope cannot be found in nature and would be present only at certain levels after the nuclear events.

This method of analysis, Pravikoff said, has become a way of verifying the authenticity of wine as fraud continues to be a persistent and lucrative crime. Wine with cesium-137 cannot have existed before the mid-20th century, and certain nuclear events would leave unique signatures based on time and proximity to the grapes.

Ingesting cesium-137 can result in an elevated risk for cancer, but the level of radioactive material from Fukushima in food and drink in countries outside Japan has been too low to result in a health hazard, according to the World Health Organization.

While the 2011 earthquake and tsunami killed an estimated 16,000 people in the Fukushima area and across Japan and more than 160,000 fled the area around the plant, nobody was believed to have been sickened or killed by the radiation, as most of the fallout was swept out to sea.

Fish off the coast of Japan showed elevated levels of radiation, including cesium, resulting in the Japanese government's banning or limiting their sale.

The California wine, however, is not seen as a health hazard, Pravikoff said. While the radioactive cloud from the disaster floated over the Pacific Ocean to California, settling on grapes there, the radioactive levels were low and drop with each passing year.

"These levels are so low, way below the natural radioactivity that's everywhere in the world," Pravikoff said.

He said the team's special equipment helped detect the change in levels of radioactive material. The California Department of Public Health said Friday that it had not previously heard of the study, but that there were no "health and safety concerns to California residents."

"This report does not change that," a department spokesman, Corey Egel, said in an emailed statement. Pravikoff said the California bottles had radioactive levels so low that the researchers had to use a special technique to measure them: burning the wine to ashes.

In other cases, where radiation is higher, the team's equipment can measure the radiation through the glass of the wine bottle, so the bottle does not have to be opened.

Typically, the test has been conducted on unopened bottles.

Pravikoff said the method was developed three decades ago and gained prominence as people became more attuned to wine fraud.

Two years ago, he said, he was shopping at a supermarket when he found several bottles of cabernet sauvignon from California's Napa Valley, produced years before, but after Fukushima. That spawned the idea to test for the disaster's imprint.

"I just bought them, just to see," he said. "It is more for the pure scientific aspect that we were interested in measuring them."

Pravikoff said he would like to do more testing on bottles produced before the disaster to build more confidence in the team's findings.

Maureen Downey, a wine authentication expert who leads Chai Consulting, a wine collection consulting firm, called the French researchers' method "fantastic science."

But she said it was of limited use to those in the wine industry, as prices could vary by thousands of dollars between neighboring vineyards, for example.

"Fifteen feet away is a difference in your bottle worth \$15,000," she said.

Wine, for its part, still remains a hotly debated drink when it comes to health: One study found that patients with Type 2 diabetes who drank wine, most notably red wine, had a reduced cardiometabolic risk, or the chance of heart disease, stroke or other medical conditions. Many other studies warn of the health risks of alcohol abuse and the danger to pregnant women.

While radioactivity from Fukushima will probably not hurt those seeking California wines from 2011 and later, the lesson, as always, is to drink in moderation.

(July 20, 2018)

1945 shirt still contains cesium from black rain



'Black rain' radiation from 1945 Hiroshima A-bombing can still be detected on survivor's shirt: study

https://www.japantimes.co.jp/news/2018/08/06/national/black-rain-radiation-1945-hiroshima-bombing-can-still-detected-survivors-shirt-study/#.W2g7y8IyWos

by Sakiko Masuda

Chugoku Shimbun

Scientific tests on a shirt worn by a 16-year-old girl who was exposed to rain containing radioactive materials that fell after the Hiroshima atomic bombing on Aug. 6, 1945, known as "black rain," continue to detect slight amounts of cesium 137 more than 70 years after the attack.

The girl, Toyoko Kubota, washed the shirt for physical education classes a number of times on a washboard, but could not remove the dark stains left after her exposure to the rain. After marriage, she changed her surname to Matsumiya. She is now 89 and lives in Mihara, Hiroshima Prefecture. At the time of the bombing she was a student at Nishi Girls' High School, which was closed after the nuclear attack. When the bomb fell she was on the second floor of her school building, which was located in Higashikanon-machi, now part of the city's Nishi Ward, about 1.3 kilometers from the hypocenter. The teen was trapped under debris from the building but managed to free herself despite injuries. After that, she was exposed to the black rain near the school. Fatigued and with a high fever and anemia she lay down to rest, but managed to survive.

Kiyoshi Shizuma, 69, a professor emeritus at Hiroshima University and an expert in radiation physics, has been studying the radioactive fallout from the bomb — including the radioactivity of the black rain that was triggered by the bombing.

The storage room at Hiroshima Peace Memorial Museum holds many A-bombed artifacts that show traces of the black rain. In 2016, Shizuma received permission from the museum to measure the radiation found on four pieces of A-bombed clothing at Hiroshima University.

In addition to the girl's shirt, a small amount of cesium-137 was also detected on a sailor-style school uniform, a burned shirt and a loincloth. The items were believed to have been exposed to the black rain in present-day Naka Ward and Nishi Ward.

It is thought the black rain and its radioactive fallout affected a wide area of the city, not only downtown Hiroshima. How far it reached and what impact it had on humans are still debated.

Shizuma later reported his findings from the radiation tests to a study group focused on A-bombed artifacts at the museum. He also shared the results in an article in the group's journal.

"I would like to uncover the facts that have yet to be clarified, as much as possible," said Shizuma, whose grandfather was killed in the atomic bombing. The professor's father was also exposed to radiation as he entered the city center shortly after the attack.

This monthly feature focuses on topics and issues covered by the Chugoku Shimbun, the largest newspaper in the Chugoku region. The original article was published on June 25.

Confirmed: Death of Fukushima nuclear worker linked to job exposure

September 5, 2018

Fukushima nuclear plant worker died from radiation exposure on the job: ministry

https://mainichi.jp/english/articles/20180905/p2a/00m/0na/004000c

TOKYO -- The death from lung cancer of a male worker at the crippled Fukushima No. 1 Nuclear Power Plant operated by Tokyo Electric Power Co. (TEPCO) in the northeastern prefecture of Fukushima has been confirmed as work-related, the Ministry of Health, Labor and Welfare announced on Sept. 4.

- 【Related】 Gov't, TEPCO plan to dump treated water in sea angers Fukushima fishermen
- 【Related】 Gov't decides against increasing compensation fund for nuclear disaster
- 【Related】 TEPCO eyes 1st contact with fuel debris in damaged nuke reactor from Oct.

The announcement marks the government's first recognition of a fatality linked to radiation exposure at the facility since a triple core meltdown occurred there in March 2011.

The ministry ruled in favor of granting workman's compensation on Aug. 31. According to the ministry, the man had worked mainly at the Fukushima No. 1 nuclear plant and other atomic power stations nationwide over a period of about 28 years and three months between June 1980 and September 2015. He was exposed to a total radiation dose of approximately 195 millisieverts.

After the March 2011 disaster triggered by the massive Great East Japan Earthquake and tsunami, the worker, who was in his 50s, was exposed to roughly 34 millisieverts of radiation by December 2011. In September 2015, his exposure reached around 74 millisieverts. He was in charge of measuring radiation on the premises of the Fukushima No. 1 plant, and he is said to have worn a full-face mask and protective suit while working, according to the ministry.

The man was diagnosed with lung cancer in February 2016. The timing of his death was withheld in accordance with his bereaved family's wishes, ministry officials explained.

For the death by lung cancer of a worker at a nuclear power plant to be recognized as work-related under current guidelines, the individual must be exposed to 100 millisieverts or more of radiation and the development of the disease must happen five years or more after the exposure.

The ministry made the latest recognition based on opinions of a panel of experts specializing in radiology and other disciplines.

A public relations official of TEPCO Holdings Inc. commented, "We would like to continue to secure the safety of power plants and improve the work environment."

(Japanese original by Shunsuke Kamiashi, City News Department)

Confirmed: Death of nuclear worker due to exposure (2)

September 6, 2018

In a First, Japan Says Fukushima Radiation Caused Worker's Cancer Death

http://www.asahi.com/ajw/articles/SDI201809069818.html

By MOTOKO RICH/ © 2018 The New York Times

TOKYO--More than seven years after a devastating earthquake and tsunami triggered meltdowns at a nuclear power plant in Fukushima, Japan acknowledged for the first time this week that a worker died from cancer after being exposed to radiation.

Japan's Ministry of Health, Labor and Welfare said the man, who was not identified, had worked mostly at the Fukushima Daiichi plant over 28 years and had died of lung cancer, according to Japanese news media reports.

Three years ago the government awarded workers' compensation to a man who developed leukemia while working on the Fukushima cleanup, but this week marked the first acknowledgment that exposure to radiation at the site caused a death. The government has acknowledged that three other Fukushima workers developed leukemia and thyroid cancer after working on the plant cleanup. About 5,000 workers labor at the site daily.

The ministry said the man who died worked for a subcontractor to Tokyo Electric Power Co., the plant's operator. He was in his 50s and was diagnosed with lung cancer in 2016. His family did not wish his precise date of death to be released, according to the health ministry.

According to the government, the man was responsible for measuring radiation at Fukushima Daiichi and wore a protective jumpsuit and a full face mask while working. The ministry said he had been exposed to a lifetime dose of 195 millisieverts of radiation after working at Fukushima and other plants.

Safety regulators say workers can be safely exposed to up to 50 millisieverts a year, but if a worker with an accumulated 100 millisieverts develops an illness after five years of exposure, that can be ruled an occupational injury. According to an expert cited by the Mainichi Shimbun, a daily newspaper, the man had been exposed to 74 millisieverts at the Fukushima plant since the accident.

Fukushima has faced a long and painful aftermath from the 2011 disaster, with thousands of people evacuated for years, and the government and Tokyo Electric struggling to cope with a radioactive waste cleanup on an unprecedented scale.

Experts have been divided on whether exposure to radiation can be linked to other illnesses, including thyroid cancer, among children living near the plant. The government has said that the evacuation caused more fatalities than radiation exposure. Its Reconstruction Agency determined this year that stress, suicide and the interruption of medical care related to the nuclear crisis and evacuation had caused 2,202 deaths.

According to a report in the Asahi Shimbun, a daily newspaper, 17 Fukushima plant workers have filed for workers' compensation with the health ministry. Four have been granted compensation, and five claims have been rejected. Another five are pending, and two have withdrawn their claims. Courts have repeatedly found the government and Tokyo Electric negligent in failing to prevent the disaster. Three of the reactors at Fukushima Daiichi, which is on the eastern coast of Japan, melted down when 32-foot waves overpowered the plant's protective sea walls and flooded buildings, destroying diesel generators that were designed to keep critical systems functioning in a blackout.

IAEA wants quick fix to water problem

November 14, 2018

IAEA urges quick plan on Fukushima radioactive water cleanup

https://mainichi.jp/english/articles/20181114/p2g/00m/0dm/007000c

TOKYO (AP) -- Experts from the International Atomic Energy Agency urged the operator of Japan's tsunami-wrecked Fukushima nuclear plant on Tuesday to urgently decide on a plan to dispose of massive amounts of treated but still radioactive water stored in tanks on the compound.

- 【Related】 Nuclear experts to test water, fish around Japan power plant
- 【Related】Contaminated water, fuel extraction stand in way of decommissioning Fukushima plant
- 【Related】 3 years after new nuclear rules, work continues to evaluate safety of plants

A 13-member IAEA team told reporters in Tokyo after a weeklong review that managing nearly 1 million tons of radioactive water is critical to the plant's safe and sustainable decommissioning.

The IAEA team said in a preliminary report that hundreds of tanks currently used to store the water over large areas of the plant's compound can only be a temporary solution and must be removed "urgently."

The cores of three reactors at the plant suffered meltdowns following a massive 2011 earthquake and tsunami that devastated parts of northeastern Japan.

Radioactive water has leaked from the damaged reactors and mixed with groundwater and rainwater at the plant. The water is treated and stored in large tanks.

More than 7 1/2 years since the accident, officials have yet to agree on what to do with the radioactive water. A government-commissioned panel has picked five alternatives, including the controlled release of the water into the Pacific Ocean, which nuclear experts say is the only realistic option. Fishermen and residents, however, strongly oppose the proposal.

That option faced a major setback this summer when **the plant's operator**, **Tokyo Electric Power Co.**, **acknowledged that the water**, which it said had been carefully treated, was not clean enough. It said

the water contains cancer-causing cesium and other elements in excess of allowable limits for release into the environment.

The IAEA interim report said TEPCO could run out of space for tanks in a few years, and the water storage adds to safety risks and could hamper the decommissioning of the plant, which is already an unprecedented challenge.

It said the water problem has improved recently because of measures such as an underground frozen wall installed around the reactor buildings to keep the radioactive water from mixing with groundwater. It suggested that TEPCO could further reduce the amount of contaminated water by cutting back on the use of cooling water injected into the reactors because the temperature of the melted fuel has fallen significantly.

IAEA mission leader Christophe Xerri told reporters that it is uncertain whether all of the melted fuel can ever be successfully removed because too little is known about the damage to the cores of the three reactors.

TEPCO and government officials plan to start removing the melted fuel in 2021. Robotic probes inside the reactors have detected traces of damaged fuel but its exact location, contents and other details remain largely unknown.

"If you don't have the information it's very difficult to say it's possible or not" to remove all the fuel, Xerri said.

The team's final report from its review is expected in late January.

See also : IAEA urges quick plan to clean up Fukushima radioactive water THE ASSOCIATED PRESS

http://www.asahi.com/ajw/articles/AJ201811140010.html

IAEA urges Japan to reach decision soon on handling of radioactive water at crippled Fukushima nuke plant

https://www.japantimes.co.jp/news/2018/11/14/national/iaea-urges-japan-make-decision-treated-radioactive-water-crippled-fukushima-nuke-plant/#.W-v0mzGNyos

Kyodo

A team of nuclear experts from the International Atomic Energy Agency urged Japan this week to reach a decision quickly on what to do with treated water that contains low toxicity radioactive tritium, which is accumulating at the crippled Fukushima No. 1 nuclear plant.

"We advised the Japanese government that ... (a) decision should be taken very rapidly for the disposition path for water which is stored in these tanks," said Christophe Xerri, leader of the 13-member team, on Tuesday following a nine-day review of progress on scrapping the Fukushima No. 1 plant, which was damaged in the March 2011 earthquake and tsunami.

"There is space limitation, so some solution has to be decided and implemented," he said, adding that the volume of treated water containing tritium in tanks is expected to reach the planned capacity within the "coming three to four years."

As of last Thursday around 970,000 tons of tritium-containing water was stored on the premises of the plant, according to Tokyo Electric Power Company Holdings Inc.

The government has studied options for the tritium-containing water, including releasing it into the sea, as it is regarded as not harmful to humans. The tainted water has been stored in tanks after being produced as a byproduct of cooling the plant's reactors, which suffered core meltdowns following the 2011 disaster.

But local fishermen and residents have expressed concern about discharging the water, fearing the potential impact on food.

"Controlled discharge to the sea is something which is applied in many nuclear facilities, so it's not something which is new," Xerri said, while adding, "Our review was not to advise the Japanese government on one solution or another one."

"It is up to the Japanese government to decide — in engaging with stakeholders, of course — on the option Japan wants to implement," he said.

Toyoshi Fuketa, who heads the Nuclear Regulation Authority, has described discharging the water into the sea as the "only" solution.

Tepco has been running the Advanced Liquid Processing System, said to be capable of removing almost all radioactive materials from the toxic water except tritium.

It was the fourth such review conducted by a team of experts from the Vienna-based agency, following two in 2013 and one in 2015. The IAEA will issue its final report by the end of January 2019.

Xerri said his team was impressed by the progress that has been made at the plant since the previous review, including the full operation of a frozen soil wall around the reactors that has reduced the volume of groundwater that enters the reactor buildings.

But he acknowledged many challenges in the decommissioning process, which is set to take "30 to 40 years or even more," including the removal of melted fuel from the reactors — seen as the hardest part.

When asked about the possibility of discarding the fuel — the location and volume of which remaining within the reactors is yet to be grasped due to high levels of radiation — Xerri said, "We don't have enough information to tell you yes or no."

Fukushima monkeys & radiation



Two Japanese macaques are seen in the Fukushima Prefecture city of Fukushima in this photo provided by Fumiharu Konno from Shinichi Hayama's research team.

November 25, 2018

Effects of suspected radiation exposure seen in Fukushima wild monkeys: researchers https://mainichi.jp/english/articles/20181125/p2a/00m/0na/003000c

November 25, 2018 (Mainichi Japan)

TOKYO -- Researchers found fewer cells that become blood in the bone marrow of wild Japanese macaques living in northeastern Japan's Fukushima Prefecture along with the delayed growth of fetuses after the 2011 nuclear crisis, possibly due to radiation exposure.

- 【Related】 Amount of food with radioactive cesium exceeding gov't standards dropping: study
- 【Related】 Dairy farmer resumes operations 7 1/2 years after Fukushima disaster
- 【Related】 Fukushima flounder exported for first time since nuclear disaster

Findings of abnormalities in these monkeys have been continuously reported in British scientific journals. Researchers assume that the monkeys ingested items like tree bark contaminated with radioactive cesium emanating from the Fukushima Daiichi Nuclear Power Station.

Tohoku University's Department of Pathology professor emeritus Manabu Fukumoto and his research team performed hematological analysis of adult monkeys captured after the nuclear disaster. They inspected blood cell counts in the bone marrow of 18 monkeys caught in locations within 40 kilometers from the plant, including the city of Minamisoma and the town of Namie. Fukumoto's team then compared the data to that of monkeys from other areas. The results revealed various substances destined to mature into blood, like cells that develop into platelets, had decreased in Fukushima monkeys.

Furthermore, the team observed some blood components had greatly decreased in monkeys with higher internal radiation exposure per day. They estimated the radiation dose from the concentration of radioactive cesium in the monkeys' muscles. Fukumoto explained, "We need to conduct long-term research to see if it (the abnormalities) has an effect on the monkeys' health."

Meanwhile, wildlife zoology expert and Nippon Veterinary and Life Science University professor Shinichi Hayama and his research team examined fetuses in pregnant female monkeys. These monkeys were among those annually captured from 2008 to 2016 by the Fukushima Municipal Government to control their population size. Hayama's research team compared data on 62 fetuses around the time of the meltdowns. They learned that the fetuses had smaller heads and delayed development over their entire bodies after the nuclear incident, in comparison to those before the disaster.

However, the team could not find any change in the nutritional status of the mother monkeys. They concluded that the mother monkeys' radiation exposure may have had an effect on the fetuses.

Hayama assumed that Fukushima monkeys "must have been exposed to high doses of radiation on a whole different scale compared to humans." This is because the monkeys "had consumed food contaminated with radiation, in addition to living near the ground where there were high radiation doses."

Japanese macaques are not included in the wild animals and plants under investigation by the Ministry of the Environment to see the effects of radiation from the nuclear disaster. Five academic associations including the Primate Society of Japan (PSJ) have submitted a request asking that Japanese macaques be included in the research, along with other demands, to the environment ministry.

"Japanese macaques have a long life span of 20 to 30 years and are sedentary," said PSJ Chairman Masayuki Nakamichi. He claimed that "it's absolutely crucial, even for the world, to conduct research on the long-term effects of radiation exposure on Japanese macaques."

(Japanese original by Momoko Suda, Science & Environment News Department)

Stop forcing evacuees back!

December 2, 2018

Fukushima evacuees forced back into unacceptably high radiation zones https://beyondnuclearinternational.org/2018/12/02/fukushima-evacuees-forced-back-intounacceptably-high-radiation-zones/

One man is advocating for their protection

By Linda Pentz Gunter

A UN Special Rapporteur who last August joined two colleagues in sounding an urgent alarm about the plight of Fukushima workers, has now roundly criticized the Japanese government for returning citizens to the Fukushima region under exposure levels 20 times higher than considered "acceptable" under international standards.

He urged the Japanese government to "halt the ongoing relocation of evacuees who are children and women of reproductive age to areas of Fukushima where radiation levels remain higher than what was considered safe or healthy before the nuclear disaster seven years ago."

Baskut Tuncak, (pictured at top) UN Special Rapporteur on hazardous substances and wastes, noted during a October 25, 2018 presentation at the UN in New York, as well at a press conference, that the Japan Government was compelling Fukushima evacuees to return to areas where "the level of acceptable exposure to radiation was raised from 1 to 20 mSv/yr, with potentially grave impacts on the rights of young children returning to or born in contaminated areas."



Typical housing for evacuees. 20 m2 prefab cabins, evacuation site, Miharu, Fukushima, 46 km north west of Fukushima-Daichi Nuclear Power Plant. (Photo: Lis Fields.)

He described exposure to toxic substances in general as "a particularly vicious form of exploitation."

In August, Tuncak, along with Urmila Bhoola and Dainius Puras, expressed deep concern about the Fukushima "cleanup" workers, who include migrants, asylum seekers and the homeless. They feared "possible exploitation by deception regarding the risks of exposure to radiation, possible coercion into accepting hazardous working conditions because of economic hardships, and the adequacy of training and protective measures.

We are equally concerned about the impact that exposure to radiation may have on their physical and mental health."

Now, Tuncak is urging Japan to return to the 1 millisievert a year allowable radiation exposure levels in place before the 2011 Fukushima Daiichi disaster.



2011 map showing wide deposition of radioactive materials from Fukushima Daiichi nuclear power plant. (Courtesy 20 Millisieverts

A Year. https://lisfields.org/20msvyear/)

In a revealing response to Tuncak's presentation at the UN, the delegate from Japan claimed that 20 msv "is in conformity with the recommendation given in 2007 by the International Commission on Radiological Protection." He also claimed that Tuncak's press release would cause people in Fukushima to suffer "an inaccurate negative reputation" that was "further aggravating their suffering," and that the government and people of Japan were "making effort with a view to dissipating this negative reputation and restoring life back to normal."

This view is deeply characteristic of the Abe government which is desperately attempting to "normalize" radiation among the population to create a public veneer that everything is as it was. This is motivated at least in part by an effort to dissipate fears about radiation exposure levels that will still be present during the 2020 Summer Olympics there, with events held not only in Tokyo but also in the Fukushima prefecture.

However, Tuncak corrected the delegate's information, responding that:

"In 2007, the ICRP recommended deployment of "the justification principle. And one of the requests I would make for the Japanese government is to rigorously apply that principle in the case of Fukushima in terms of exposure levels, particularly by children, as well as women of reproductive age to ensure that no unnecessary radiation exposure and accompanying health risk is resulting." Tuncak said Japan should "expeditiously implement that recommendation."

He also reminded the delegate that "the Universal Periodic Review of the Human Rights Council last year, did issue a recommendation to lower the acceptable level of radiation back down from 20 millisieverts per year to one millisievert per year. And the concerns articulated in the press release today were concerns that the pace at which that recommendation is being implemented is far too slow, and perhaps not at all."

During the press conference Tuncak noted that Japan is a party to the UN Convention on the Rights of the Child and that forcing evacuees back into areas contaminated to 20 mSv/yr was against the standards contained in that Convention. "We are quite concerned in particular for the health and well-being of children who may be raised or born in Fukushima," he said.



The Yamagata family in front of their quake-damaged pharmacy in Namie, Fukushima Prefecture, Japan April 12 2011 (VOA – S. L. Herman)

Earlier, Japan had sounded tacit agreement to reducing allowable exposure levels back down from 20 mSv/yr to 1 mSv/yr. But few believed they would carry this out given that it is virtually impossible to clean up severely contaminated areas in the Fukushima region back to those levels.

Bruno Chareyron, the director of the CRIIRAD lab (Commission de Recherche et d'Information Indépendentes sur la RADioactivité), noted in an August 17, 2018 Truthout article that: "It is important to understand that the Fukushima disaster is actually an ongoing disaster. The radioactive particles deposited on the ground in March 2011 are still there, and in Japan, millions of people are living on territories that received significant contamination."

Of the cleanup process, Chareyron told Truthout: "The ground and most contaminated tree leaves are removed only in the immediate vicinity of the houses, but a comprehensive decontamination is impossible." He said in the article that the powerful gamma rays emitted by Cesium 137 could travel dozens of meters in the air. Therefore, the contaminated soil and trees located around the houses, which have not been removed, are still irradiating the inhabitants.

While the UN delegate from Japan claimed that no one was being forced to return and the decision rested with the evacuees alone, Tuncak expressed concern about coercion. "The gradual lifting of evacuation orders has created enormous strains on people whose lives have already been affected by the worst nuclear disaster of this century. Many feel they are being forced to return to areas that are unsafe, including those with radiation levels above what the Government previously considered safe."

福島原発事故3年	F チェ) 年間数は<量	ルノブイリ事故後5年 ウクライナ
帰還できる	20ミリ	
	10ミリ~	強制避難
	5ミリ~	移住の義務
	1ミリ~	移住の権利
	0.5ミリ~	医療支援

UKRAINE:

- >10 mSv per year: no entry zone
 >5 mSv per year: mandatory migration zone
- >1 mSv per year: the right to migrate zone
 >0.5 mSv per year: entitled to free medical care zone

JAPAN:

<20 mSv per year: fit to live in zone

Are Japanese more resistant to radiation than Ukrainians?

translated by Hervé Courtois

Recalling his efforts to protect Fukushima workers, Tuncak observed the irony that Japan had admitted that the death of a Fukushima worker from lung cancer was directly related to exposure to radiation at the stricken plant and "quite interestingly, the level of radiation that he was exposed to in the past five years was below the international community's recommendation for acceptable exposure to radiation by workers."

Tuncak's report did not focus solely on Fukushima. It also included exploitation and abuse of Roma people, South Koreans exposed to a toxic commercial product and air pollution in London. During his UN presentation, he observed that "over two million workers die every year from occupational diseases, nearly one million from toxic exposures alone. Approximately 20 workers will have died, prematurely, from such exposures at work by the time I finish my opening remarks to you."

Before addressing the plight of Fukushima evacuees, he pointed out how "exposure to toxic pollution is now estimated to be the largest source or premature death in the developing world, killing more people
than HIV AIDS, tuberculosis, and malaria combined." While noting that this problem exists to a greater or lesser degree the world over, he added that "pediatricians today describe children as born 'pre-polluted,' exposed to a cocktail of unquestionably toxic substances many of which have no safe levels of exposure."

Japan's decision to ignore pleas to halt repatriation of evacuees into high radiation exposure levels usually deemed unavoidable (but not safe) for nuclear workers, not ordinary citizens, will now tragically contribute to these numbers.

Mr. Baskut Tuncak is Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes. *As a Special Rapporteur, he is part of what is known as the* Special Procedures *of the Human Rights Council. Special Procedures, the largest body of independent experts in the UN Human Rights system, is the general name of the Council's independent fact-finding and monitoring mechanisms that address either specific country situations or thematic issues in all parts of the world.*

Thyroid cancer recognised as work-related

December 13, 2018

Tepco-linked firm employee's thyroid cancer caused by work after Fukushima nuclear plant meltdown, labor ministry admits

https://www.japantimes.co.jp/news/2018/12/13/national/tepco-linked-firm-employees-thyroid-cancer-caused-work-fukushima-nuclear-plant-meltdown-labor-ministry-admits/#.XBJRPmlCeos

JIJI

The labor ministry said Wednesday that the thyroid cancer of a male worker, exposed to radiation after the triple meltdown at the Fukushima No. 1 plant, has been recognized as a work-related disease.

Following the decision by a labor ministry panel of experts, the labor standards inspection office of Hitachi, Ibaraki Prefecture, reached the conclusion on Monday.

The man in his 50s became **the sixth person to be granted a workers' accident compensation insurance payment over cancer** caused by the March 2011 nuclear disaster at the plant operated by Tokyo Electric Power Co. Holdings Inc. He is the second person to be compensated due to thyroid cancer.

According to the ministry, the man, an employee of a Tepco-related company, was taking part in postaccident emergency work at the Fukushima plant that included a power recovery operation. He had worked at several nuclear plants for some 11 years since November 1993.

Of his cumulative radiation dose of about 108 millisieverts, he received 100 millisieverts after the meltdown.

The man applied for the insurance payment in August 2017, two months after he was diagnosed with cancer.

A total of 16 workers have requested such payments due to cancer they say was caused by the nuclear accident. Five have had their requests turned down while another five cases are still pending.

Doubts raised about radiation data for Date people

January 9, 2018

Radiation doses underestimated in study of city in Fukushima http://www.asahi.com/ajw/articles/AJ201901090057.html

THE ASAHI SHIMBUN

A nuclear physicist who has drawn attention for tweeting about fallout from the Fukushima nuclear disaster has admitted that he and a colleague underestimated radiation doses in an article for an international scientific journal.

Ryugo Hayano, professor emeritus at the University of Tokyo, said the error, which he recognized on Jan. 8, was "unintentional."

The article, carried in the Journal of Radiological Protection's online edition in July 2017, listed average radiation doses that were one-third of the actual levels for people in Date, a city around 60 kilometers northwest of the crippled Fukushima No. 1 nuclear plant, he said.

Hayano's admission came after an atomic nucleus expert contacted the journal last year to point out unnatural data carried in the report and call for a correction.

The radiation doses in the article were based on figures kept by Date residents after the nuclear accident unfolded in March 2011.

"Even if residents lived in the most contaminated area of Date for 70 years, the median of the doses would not exceed 18 millisieverts," the article concluded.

However, Shinichi Kurokawa, professor emeritus with the High Energy Accelerator Research Organization, an institute jointly used by national universities, raised doubts about the data presented in some sections of the report.

When Hayano and his colleague re-examined the figures, they found that they mistook a monthly dose recorded on a dosimeter as the figure for three months of exposure. Hayano said the conclusion of the report still stands. "Even after the error was fixed, I believe the average of annual doses will be within the 1-millisievert mark," he said.

The benchmark upper limit for radiation exposure among ordinary people is 1 millisievert a year.

Hayano has frequently tweeted about radiation levels and doses from the nuclear disaster.

He was also involved in another research paper that analyzed radiation doses among people in Date. Kurokawa also questioned the veracity of a chart in the second report. The second report has often been cited in discussions by the government's Radiation Council on setting standards for protecting people from radiation.

The two research papers were produced after the Date city government provided Hayano's research team with data on radiation doses of about 59,000 residents.

But it has emerged that data for 27,000 citizens were provided without their consent.

The city plans to set up an investigation panel to find out why it occurred. Date has a population of 61,000.

Young girl exposed to radiation of 100 millisieverts (Govt-set standard)

January 22, 2019

Girl, 11, exposed to high radiation levels after 2011 nuclear disaster

http://www.asahi.com/ajw/articles/AJ201901220056.html

THE ASAHI SHIMBUN

An 11-year-old girl who evacuated from the town of Futaba after the 2011 Fukushima nuclear disaster was likely exposed to radiation levels near the government-set standard, despite assurances that no children were exposed to such high doses.

The girl is said to have been exposed to a radiation dose of about 100 millisieverts, the threshold for enhanced risk of cancer, following the triple meltdown at the Fukushima No. 1 nuclear power plant.

The previously undisclosed case, which was reported to The National Institute of Radiological Sciences (NIRS) after the disaster, contradicts the central government's statement that "there has been no confirmed cases of children exposed to radiation doses of 100 millisieverts or higher."

According to the NIRS, the case was not disclosed at the time because the institute considered that the estimate was based on information from the site using a simple monitoring instrument and that the figures were not calculated precisely.

The Fukushima Prefecture town of Futaba co-hosts, along with Okuma, the crippled nuclear plant, which was inundated by massive waves triggered by the megaquake on March 11, 2011.

On around March 17, 2011, a radiological technician of the Fukushima prefectural government office engaged in radiation check-up tests on residents detected 50,000 to 70,000 cpm of radiation when checking the girl's thyroid gland using a radiation monitoring device at a gym in Koriyama, according to the NIRS and other sources.

Cpm, or counts per minute, is a measurement of radiation emitted per minute from radioactive substances detected by such a device.

No documents regarding the case remain, but the figures were conveyed to a team from Tokushima University that traveled to the site to provide support for the tests.

The team estimated that the radiation level in the girl's thyroid gland was likely a dozen kilobecquerels on the assumption that all the radioactive substances were absorbed by her thyroid gland and reported the estimated figures to the NIRS.

A becquerel is a measurement unit that indicates the ability of a radioactive material to emit radiation, or the intensity of radioactivity.

A sievert, in contrast, is a unit that focuses on the effects of radiation on human health. The NIRS shared the information on the case among its staff members and left memos indicating the dose that the girl may have been exposed to a radiation dose of around 100 millisieverts.

Children are said to be particularly vulnerable to thyroid gland cancer due to radiation exposure.

In March 2011, a government survey of 1,080 children in the three municipalities of Iwaki, Kawamata and Iitate in Fukushima Prefecture found a maximum level of 35 millisieverts of exposure, far lower than the 100-millisievert standard.

Cesium exceeding limit found in Fukushima fish

February 2, 2019

Radioactive cesium above legal limit detected in fish caught off Fukushima

https://www.japantimes.co.jp/news/2019/02/02/national/science-health/limit-cesium-detected-fish-caught-off-fukushima/#.XF2wXaBCeos

JIJI

FUKUSHIMA - Radioactive cesium exceeding the state limit has been detected in fish caught off Fukushima Prefecture for the first time in about four years, the prefecture's fisheries cooperatives association has said.

The cesium level of 161 becquerels per kilogram, exceeding the limit of 100, was detected in a skate, a type of ray, caught at a depth of 62 meters during test fishing Thursday.

The association stopped the shipments of skates caught in the waters. The fish will be taken off the market until safety is confirmed.

The prefecture will collect more samples for research and the central government will judge the safety of the fish.

In radiation checks of fish by the Fukushima Prefectural Government, a cesium level exceeding the limit was last detected in a stone flounder in March 2015, at 140 becquerels per kilogram.

The prefecture is home to Tokyo Electric Power Company Holdings Inc.'s crippled Fukushima No. 1 nuclear power plant.

8 years on

http://akiomatsumura.com/?p=2525

Eight years on, Fukushima Still Poses Health Risks for Japanese and American Children *Akio Matsumura*

High Radiation Levels Continue at Damaged Reactors

On March 11, 2019, we commemorate the 8th anniversary of the Fukushima nuclear disaster. To an outside observer, this anniversary passes as a technical progress report, a look at new robot, or a short story on how lives there are slowly returning to normal.



A child inspected in Fukushima prefecture, Japan

Yet in Japan, the government has not figured out how to touch or test the irradiated cores in the three crippled reactors, which continue to contaminate water around the site of the melt down. The government does not know where it will put that radioactive material once it can find a way to move it. Meanwhile, the government and site operator are running out of room to store the contaminated water, which is filling up more and more tanks. The cleanup is estimated to take forty years and the cost is estimated at \$195 billion.

The latest publicly released findings of radiation levels are from 2017, when Tokyo Electric Power Company had to use a remote-controlled robot to detect the levels in Reactor 2, since no human can approach the crippled reactor. The rates read 530 sieverts per hour, the highest since the March 2011 meltdown. We have no reason to believe that they have fallen since then. Remote-control robots are being used in the other reactors as well, indicating that radiation levels are similarly high there. Even using the robot, work can only be carried out for very short times, since the robots can only stand 1000 sieverts of exposure – less than two hours in this case.

This is an extremely high amount of radiation. After TEPCO published the rate, the *Asahi Shimbun* reported that "an official of the National Institute of Radiological Sciences said medical professionals have never considered dealing with this level of radiation in their work."

The *Japan Times* quoted Dr. Fumiya Tanabe, an expert on nuclear safety, who said that the "findings show that both the preparation for and the actual decommissioning process at the plant will likely prove much more difficult than expected."

Fukushima's Children Need International Attention

There have been many victims of this disaster. Thousands of people have been displaced from their homes. Local fishermen are worried that the government will proceed with its plan to dump the storage tanks of contaminated water into the ocean. Others worry that the flow of the radioactive wind and contaminated water are reaching North America and will continue to do so for the next forty years. Above all of these important issues, it is the children of Fukushima who most need our attention. They are at risk of higher rates of cancer because of their exposure to the contamination from the initial explosion.

In Chernobyl, the only comparable case we have, more than 6,000 cases of thyroid cancer were found in children according to the UN through 2005.

There is evidence that thyroid cancer rates are higher among Fukushima's children than the national population, but it is a latent disease: it is still too early to tell what the full impact will be. But it is clear the case needs action.

Scientists will always offer different opinions, swayed first by uncertainty, but also, sadly, by politics, money, and ambition. Some will claim that the evidence has been exaggerated, underestimated, or that perhaps we're at too early a stage to be certain. Or that we need more time to clarify the results. I have seen many instances of these arguments at the United Nations and international science conferences. Why do we wait and make another mistake?

Helen Caldicott, a medical doctor and founding president of Physicians for Social Responsibility, part of a larger umbrella group that was awarded the Nobel Peace Prize in 1985, wrote: "The truth is that most politicians, businessmen, engineers and nuclear physicists have no innate understanding of radiobiology and the way radiation induces cancer, congenital malformations and genetic diseases which are passed generation to generation. Nor do they recognize that children are 20 times more radiosensitive than adults, girls twice as vulnerable as little boys and fetuses much more so."

UNICEF Can Lead

We face many complex challenges of climate change, poverty alleviation, and national security. The health and welfare of children must always be our top priority. They are our future; our deepest purpose is to care and provide for them. By deciding not to fully investigate the effects of Fukushima, we fail them. We all agree with that personally, but which institution is best positioned to carry out the mission? To me, UNICEF, the UN International Children's Emergency Fund, is the only answer. Indeed, putting children above national security is at UNICEF's core. Maurice Pate, an American humanitarian and businessman who joined UNICEF at its inception in 1947, agreed to serve as the Executive Director upon the condition that UNICEF serves the children of "ex-enemy countries, regardless of race or politics." In 1965, at the end of Pate's term, the organization won the Nobel Peace Prize.

To this day, its mission includes a commitment to "ensuring special protection for the most disadvantaged children – victims of war, disasters, extreme poverty, all forms of violence and exploitation and those with disabilities." The children of Fukushima deserve the protection of UNICEF.

Risk of thyroid cancer in Fukushima 15 times higher than normal



Artikel von Dr. Alex Rosen **15-faches Risiko für Schilddrüsenkrebs** https://www.ippnw.de/no_cache/atomenergie/gesundheit/artikel/de/15-faches-risiko-fuerschilddruesenk.html#c11062

8 Jahre Fukushima 28.02.2019

Zum achten Mal jährt sich diesen März die Atomkatastrophe von Fukushima. Kinder, die im Jahr der Kernschmelzen zur Welt kamen, besuchen heute die Grundschule, während viele der Kinder und Jugendlichen, die damals radioaktives Jod einatmeten oder mit der Nahrung aufnahmen, mittlerweile junge Erwachsene sind. Es ist viel Zeit vergangen seit den bewegenden Bildern der Explosionen in den Atomreaktoren von Fukushima Dai-ichi im März 2011. Das Thema ist größtenteils aus dem öffentlichen Bewusstsein verschwunden und in Japan mehren sich die Stimmen, die die Ereignisse von damals und ihre Folgen verdrängen wollen. Doch die Atomkatastrophe dauert an.

Weiterhin dringt Tag für Tag radioaktiv kontaminiertes Wasser von den havarierten Reaktorgebäuden in den Ozean und ins Grundwasser. Erst kürzlich musste die Betreiberfirma TEPCO zugeben, die Regierung und die Öffentlichkeit jahrelang über den Zustand des auf dem Gelände gelagerten kontaminierten Wassers getäuscht zu haben. Entgegen Beteuerungen des Unternehmens, dass dieses nur noch den radioaktiven Stoff Tritium enthalte, stellten die japanischen Behörden fest, dass rund 750.000 der insgesamt etwa 890.000 Tonnen Wasser die staatlichen Strahlengrenzwerte um mehr als das hundertfache übersteigen und auch hohe Konzentration an gefährlichen Radioisotopen wie Strontium-90 enthalten. In manchen Proben stellten die Behörden Strontium-90 Konzentrationen fest, die die staatlichen Grenzwerte um das 20.000 fache übersteigen. Erst kurz zuvor hatte TEPCO noch Pläne veröffentlicht, das kontaminierte Wasser in den Pazifik entsorgen zu wollen. Die neuesten Enthüllungen haben diesem Vorhaben erst einmal einen Riegel vorgeschoben.

Gleichzeitig wurden mittlerweile ganze Dörfer und Stadtteile in mühevoller Kleinarbeit vom radioaktiven Niederschlag befreit. Die unwegsamen Wald- und Gebirgsregionen Nordostjapans stellen jedoch ein unkontrollierbares Reservoir an radioaktiven Partikeln dar. Jedes Unwetter, jede Überflutung, jeder Waldbrand und jeder Pollenflug kann bereits dekontaminierte Landstriche wieder mit Cäsium-137 überziehen. So weisen zahlreiche Ortschaften, die nach den Vorstellungen der atomfreundlichen japanischen Regierung längst wieder besiedelt werden sollten, weiterhin erhöhte Strahlenwerte auf. Die Menschen kehren daher auch nicht zurück. Mehr als 50.000 der ursprünglich rund 200.000 Vertriebenen leben auch heute, acht Jahre nach Beginn der Katastrophe, weiterhin in Flüchtlingsheimen und Behelfsunterkünften. Jetzt sollen ihnen die staatlichen Unterstützungen gestrichen werden. So glaubt die Regierung, eine rasche Rückkehr der Menschen forcieren zu können. Der Menschenrechtsausschuss der UN sah sich bereits gezwungen, sich mit der Situation der Vertriebenen aus Fukushima zu befassen.

166 bestätigte Krebsfälle, 38 Kinder warten noch auf OP

Dass Strahlung krank macht, ist nirgendwo so anschaulich zu beobachten wie bei den steigenden Fällen von Schilddrüsenkrebs. Seit 2011 werden bei Menschen in der Präfektur Fukushima, die zum Zeitpunkt der Kernschmelzen unter 18 Jahre alt waren, alle zwei Jahre die Schilddrüsen untersucht. Von 2011 bis 2014 erfolgte die erste Untersuchungsreihe, von 2014 bis 2016 die zweite, von 2016 bis 2018 die dritte und seit 2018 die vierte. Während die Datenaufarbeitung der ersten Runde bereits vollständig abgeschlossen ist, sind die Daten der zweiten, dritten und vor allem der vierten Untersuchungsrunde bislang noch unvollständig. Dennoch lassen sich aus den derzeit

vorliegenden Untersuchungsergebnissen bereits erste Schlüsse ziehen. Ursprünglich begonnen, um die Sorgen der Bevölkerung über gesundheitliche Folgen der Atomkatastrophe zu zerstreuen, haben die Untersuchungen mittlerweile besorgniserregende Ergebnisse zu Tage gefördert.

Laut der Datenbank des Japanischen Krebsregisters betrug die Neuerkrankungsrate (Inzidenz) von kindlichem Schilddrüsenkrebs in Japan vor der Atomkatastrophe rund 0,35 pro 100.000 Kinder pro Jahr. Bei einer pädiatrischen Bevölkerung von rund 360.000 wären in der Präfektur Fukushima somit ca. eine einzige Neuerkrankung pro Jahr zu erwarten gewesen, also etwa 8 Neuerkrankungen seit Beginn der Atomkatastrophe im März 2011.

Tatsächlich sind seitdem bei mittlerweile 205 Kindern in der Feinnadelbiopsie Krebszellen gefunden worden. 167 dieser Kinder mussten aufgrund eines rasanten Tumorwachstums, einer ausgeprägten Metastasierung oder einer Gefährdung vitaler Organe mittlerweile operiert werden. In 166 Fällen bestätigte sich die feingewebliche Verdachtsdiagnose "Schilddrüsenkarzinom", in nur einem Fall lag ein gutartiger Tumor vor. 38 Kinder warten weiterhin auf eine Operation. Diese Zahlen basieren auf den aktuellsten Veröffentlichungen der Fukushima Medical University (FMU) vom 27. Dezember 2018 und umfassen alle Untersuchungsergebnisse, die bis Ende September 2018 erhoben wurden.

Die FMU teilte in ihrer aktuellen Veröffentlichung zudem mit, dass von mittlerweile 217.513 vollständig untersuchten Kindern (64,6% der gesamten Studienpopulation von 336.669 Betroffenen) bei 141.275 Kindern (65%) Knoten oder Zysten in der Schilddrüse gefunden wurden. Besorgniserregend ist dabei vor allem die Zahl der Pathologien, die bei Kindern gefunden wurden, welche in den Voruntersuchungen noch keine Auffälligkeiten hatten: bei 22.108 Kindern (10%) wurden in der dritten Untersuchungsrunde Zysten und Knoten entdeckt, die in der zweiten Runde noch nicht sichtbar gewesen waren. Bei 135 von ihnen waren die Knoten über 5 mm groß, bzw. die Zysten über 20 mm, so dass weiterführende Untersuchungen notwendig waren. Zusätzlich kam es bei 557 der Kinder, die in der zweiten Untersuchungsrunde noch kleine Knoten oder Zysten hatten, zu einem so starken Wachstum, dass ebenfalls weiterführende Diagnostik durchgeführt werden musste.

Bei insgesamt 54 der Kinder mit auffälligen Befunden wurden in der dritten Untersuchungsrunde Feinnadelbiopsien durchgeführt. Bei 18 ergab sich in der feingeweblichen Aufarbeitung ein Krebsverdacht. 13 dieser Kinder wurden bislang operiert, in allen Fällen bestätigte sich die Verdachtsdiagnose eines Schilddrüsenkarzinoms.

Somit sind seit dem letzten Jahr in der dritten Untersuchungsrunde 5 bestätigte Krebsfälle und 6 weitere Verdachtsfälle hinzugekommen. Etwa 35% der Daten aus der dritten Untersuchungsrunde steht aktuell noch aus, so dass abschließende Bewertungen noch nicht durchgeführt werden können.

Ein Screeningeffekt?

Von Seiten der Atomlobby wird immer wieder versucht, die hohe Zahl an Schilddrüsenkrebsfällen in Fukushima auf den sogenannten Screeningeffekt zu schieben. Dieses Argument mag für die 101 Schilddrüsenkrebsfälle der Erstuntersuchung noch durchgegangen sein, bei den Folgeuntersuchungen der 2. und 3. Runde ist es jedoch nicht mehr legitim. Die Krebsfälle, die hier detektiert werden, müssen seit der letzten Untersuchung neu aufgetreten sein. Betrachtet man ausschließlich die Schilddrüsenkrebsfälle, die in der 2. und 3. Untersuchungsrunde diagnostiziert wurden, kommt man auf eine Gesamtzahl von bislang 65 neu aufgetretene Schilddrüsenkrebsfälle (52 Fälle in der 2. und 13 Fälle in der 3. Runde). Dies entspricht bei einer untersuchten Studienpopulation von rund 270.000 Kindern und einem Zeitraum von 4,5 Jahren (April 2014-September 2018) einer jährlichen Inzidenz von ca. 5,3 neu aufgetretenen Fällen von Schilddrüsenkrebs pro 100.000 Menschen, die zum Zeitpunkt des Super-GAUs unter 18 Jahren waren. Wie oben bereits erläutert, beträgt die übliche Inzidenz dieser Krebsart in Japan 0,35 Fälle pro 100.000. Wir sprechen also in der Präfektur Fukushima von einer Neuerkrankungsrate (Inzidenz), die mehr als 15-fach über der japanischen Norm liegt. Man kann sagen: Menschen, die als Kinder in Fukushima waren als sich der Super-GAU ereignete, haben ein mindestens 15faches Risiko, an Schilddrüsenkrebs zu erkranken. Dieses Ergebnis ist höchst signifikant und lässt sich aufgrund der eindeutigen Voruntersuchungen aller Patient*innen nicht durch einen Screeningeffekt erklären oder relativieren.

Gleichzeitig muss berücksichtigt werden, dass mehr als 87.000 Kinder der ursprünglichen Studienpopulation nicht mehr nachuntersucht werden, ein Drittel der Daten der 3. Untersuchungsrunde noch ausstehen und alle Krebsfälle, die außerhalb der offiziellen Krankenhäuser diagnostiziert und behandelt werden, gar nicht in der Statistik aufgeführt werden, so dass die Dunkelziffer deutlich höher liegen dürfte.

Schilddrüsenkrebs - eine Bagatellerkrankung?

Angesichts dieser besorgniserregenden Entwicklungen muss daran erinnert werden, dass Schilddrüsenkrebs trotz relativ guter Behandlungmöglichkeiten und entgegen der Behauptungen der Atomlobby keine Bagatellerkrankung ist und mit schwerwiegenden Einschränkungen der Lebensqualität und der Gesundheit einhergehen kann. Die Operation der Schilddrüse hat bedeutende Risiken, und die Patient*innen müssen lebenslang Medikamente einnehmen, sich regelmäßig für Blutuntersuchungen bei Ärzt*innen vorstellen und leben ständig mit den Angst vor einem Rezidiv. Laut einer Studie der japanischen Stiftung für Kinder mit Schilddrüsenkrebs hatten bereits knapp 10% der operierten Schilddrüsenkrebspatient*innen Rezidive, also neue Krebsgeschwüre, die erneut operativ entfernt werden mussten: bei 8 von 84 betreuten Kindern aus der Präfektur Fukushima kam der Krebs innerhalb weniger Jahre wieder.

Geographische Verteilung der Schilddrüsenkrebsfälle

Bereits letztes Jahr hatten wir darauf hingewiesen, dass sich die Verteilung der Schilddrüsenkrebsfälle bei Kindern mit dem Grad an Kontamination mit radioaktivem Jod-131 in den unterschiedlichen Regionen der Präfektur deckt (siehe

www.ippnw.de/commonFiles/pdfs/Atomenergie/Fukushima/SD_Artikel_Fukushima_Maerz_2018.pdf). Am niedrigsten war die Inzidenz von krebsverdächtigen Biopsiebefunden mit 7,7 Fällen pro 100.000 Kindern pro Jahr in der am wenigsten radioaktiv verseuchten Region Aizu. Mit einer Inzidenz von 9,9 Fällen pro 100.000 Kindern pro Jahr lag an zweiter Stelle der Teil von Hamadori, der ebenfalls nur eine geringe radioaktive Verseuchung aufweist. Höher war die Inzidenz in der stärker radioaktiv verseuchten Region Nakadori (13,4 Fälle pro 100.000 Kindern pro Jahr) und am höchsten in den 13 am stärksten verseuchten Ortschaften rund um das AKW (21,4 Fälle pro 100.000 Kindern pro Jahr). Diese Inzidenzen dieser Studie beziehen sich nicht ausschließlich auf operativ bestätigte Fälle sondern schließen auch die Verdachtsfälle in der Biopsie mit ein und liegen daher höher als die oben aufgeführten Inzidenzen.

Versuche, die Schilddrüsenkrebsstudie zu entwerten

Den Verantwortlichen der FMU scheinen diese Daten unangenehm zu sein, widersprechen sie doch der seit Beginn der Atomkatastrophe verbreiteten These, dass der mehrfache Super-GAU zu keinen zusätzlichen Krebserkrankungen führen würde. Die FMU steht seit Beginn der Atomkatastrophe unter großem politischen Druck von Seiten der atomfreundlichen Regierung in Tokio und der mächtigen Atomindustrie im Land. Auch erhält sie finanzielle und logistische Unterstützung der internationalen Atomlobby in Form der IAEO. All dies stellt die wissenschaftliche Unabhängigkeit der FMU in Frage.

Bereits letztes Jahr hatten wir darauf hingewiesen, dass die Schilddrüsenuntersuchungen seit längerem durch die FMU selber unterminiert werden. So sollen die Untersuchungsintervalle entgegen ursprünglicher Pläne und Ankündigunen ab dem 25. Lebensjahr von 2 auf 5 Jahre ausgeweitet werden. Zudem wurde bekannt, dass Mitarbeiter*innen der FMU Schulen besuchen, um dort Kinder über deren "Recht auf Nichtteilnahme" und "Recht auf Nichtwissen" aufzuklären. Neuerdings gibt es auf den Formularen auch eine entsprechende "opt-out" Option, also eine Möglichkeit, aus dem Screening entfernt zu werden. Dies ist bemerkenswert, da die Teilnahme ja ohnehin freiwillig ist und bereits jetzt 20-30% der Kinder aus der Untersuchungskohorte nicht an den Untersuchungen teilnehmen. Kritisch wird auch gesehen, dass die Kosten für die Untersuchungen ab Erreichen des 18. Lebensjahres nicht erstattet, sondern von den Patienten und deren Familien selbst erbracht werden müssen. Es ist zu vermuten, dass die Bemühungen der FMU darauf abzielen, die Teilnahmequote weiter zu reduzieren und durch eine systematische Verzerrung der Testergebnisse langfristig die gesamte Studie zu entwerten – eine Konsequenz, die der japanischen Atomindustrie nicht gerade unlieb sein dürfte.

Auch muss erneut darauf hingewiesen werden, dass die Zahlen der FMU lediglich einen Teil der tatsächlichen Krankheitslast abbilden. Strahlenbedingte Erkrankungen jenseits des Schilddrüsenkarzinoms werden ebenso wenig erfasst wie Erkrankungen bei Patient*innen, die zum Zeitpunkt der Kernschmelzen älter waren als 18 Jahre, die außerhalb der Grenzen der Präfektur gemeldet waren oder die seither umgezogen sind oder sich aus eigenen Beweggründen nicht an den Erhebungen beteiligt haben. Ein weiterer Umstand, der zeigt, wie die offizielle Statistik manipuliert wird, ist das Herausrechnen von Schilddrüsenkrebsfällen die an Krankenhäusern diagnostiziert wurden, die nicht der FMU angehören. Anfang 2017 ging die Familie eines an Schilddrüsenkrebs erkrankten Kindes an die Öffentlichkeit und monierte, dass der Fall ihres Kindes in den offiziellen Daten der FMU nicht auftauchte. Die Studienleitung argumentierte, dass die Diagnose des Kindes nicht durch sie gestellt worden war, sondern durch eine kooperierende Klinik, an die der Junge zur weiteren Diagnostik und Therapie überwiesen wurde. Dass der Junge zum Zeitpunkt der Kernschmelzen in Fukushima gelebt hatte, in die Reihenuntersuchung der FMU aufgenommen war und aufgrund einer neu diagnostizierten Schilddrüsenkrebserkrankung operiert werden musste, wurde von der Studienleitung dabei nicht für relevant gehalten.

Ende Dezember 2017 wurde ein weiterer Fall von Schilddrüsenkrebs bekannt, der in den offiziellen Statistiken der FMU nicht vorkommt. Der Patient lebte zwar zur Zeit der Kernschmelzen in der Präfektur Fukushima und nahm an der Erstuntersuchung der Universität statt, wurde jedoch aus seiner Heimatstadt Koriyama evakuiert, so dass die Diagnosestellung und die Operation außerhalb der Präfektur statt fanden und somit nicht in die offizielle Statistik aufgenommen wurde.

Wie viele weitere Fälle von Schilddrüsenkrebs bei Kindern ebenfalls nicht berichtet wurden, wie viele Fälle außerhalb der Grenzen der Präfektur auftraten oder bei Menschen, die zum Zeitpunkt der Kernschmelzen bereits über 18 Jahre alt waren - all dass wird wissenschaftlich nicht untersucht und damit vermutlich nie bekannt werden.

Das Recht auf Gesundheit

Wir sehen in Fukushima einen signifikanten Anstieg der Neuerkrankungsraten von Schilddrüsenkrebs bei Kindern und diese Zahlen dürften aufgrund der besonderen Abhängigkeit der Studienleitung von der Atomlobby und der restriktiven Auslegung der Studie gleichzeitig eine systematische Unterschätzung darstellen.

Zudem wird auch mit einem Anstieg weiterer Krebsarten und anderer Erkrankungen gerechnet, die

durch ionisierte Strahlung ausgelöst oder negativ beeinflusst werden. Die Schilddrüsenuntersuchungen der FMU stellen die einzigen wissenschaftlichen Reihenuntersuchungen dar, die überhaupt relevante Aufschlüsse über die gesundheitlichen Folgen der Atomkatastrophe von Fukushima liefern können. Und sie laufen derzeit Gefahr, von den Befürwortern der Atomenergie unterminiert zu werden.

Die Bewohner von Fukushima und die Menschen in Japan haben ein unveräußerliches Recht auf Gesundheit und auf ein Leben in einer gesunden Umwelt. Die Untersuchungen kindlicher Schilddrüsen kommt dabei nicht nur den Patient*innen selber zu Gute, deren Krebserkrankungen frühzeitig detektiert und behandelt werden können, sondern der gesamten Bevölkerung, die durch die freigesetzte Strahlung beeinträchtigt wird. Die korrekte Fortführung und wissenschaftliche Begleitung der Schilddrüsenuntersuchungen liegen somit im öffentlichen Interesse und dürfen nicht durch politische oder wirtschaftliche Beweggründe konterkariert werden.

Dr. med. Alex Rosen Vorsitzender der IPPNW

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Foto: Ayotos Mutter sammelt alle Unterlagen über Untersuchungen und Strahlenbelastung ihres Sohnes, Foto: Ian Thomas Ash

Examining radioactive particle... to understand

March 9, 2019

U.K. and Japan scientists probe radioactive particles from Fukushima meltdowns

https://www.japantimes.co.jp/news/2019/03/09/national/science-health/u-k-japan-scientists-probe-radioactive-particles-fukushima-meltdowns/#.XIPeirjjLyQ

Reuters

OXFORD, ENGLAND - Eight years after the Fukushima nuclear meltdown, radioactive particles collected from the site are undergoing new forensic investigation in Britain in an effort to understand the exact sequence of events.

A 9.0 magnitude earthquake struck on March 11, 2011, off the Japanese coast, triggering tsunami that killed some 18,000 people and the world's worst nuclear disaster since Chernobyl in 1986. Meltdowns at three of the Fukushima No. 1 plant's six reactors spewed radiation into the air, soil and ocean, forcing over 100,000 residents to flee. Many have still not returned.

The Japan Atomic Energy Agency is currently collaborating with British researchers to learn more about the state of the radioactive particles created by the meltdown.

Dr. Yukihiko Satou from the JAEA oversaw the transportation of particles collected from within the restricted zone, very close to the disaster site, to Britain.

"The particles were fundamentally extracted from those attached to soil, dust and debris," Satou said. Encased in protective tape, the samples were brought to the Diamond Light Source, Britain's national synchrotron, or cyclic particle accelerator, near Oxford.

Here electrons are accelerated to near light speed until they emit light 10 billion times brighter than the sun, then they are directed into laboratories in "beamlines" which allow scientists to study minute specimens in extreme detail.

Researchers have created a 3D map of a radioactive sample using the synchrotron, allowing them to see the distribution of elements within the sample.

Understanding the current state of these particles and how they behave in the environment could ultimately determine if and when the area could be declared safe for people to return.

The head of the team leading the analysis, Tom Scott of Bristol University, said the particles have a structure like a pumice, a very light, porous volcanic rock.

"Studying ... this glassy matrix tells us how available within the environment they are," he said. The British and Japanese governments have awarded funding to the research team to examine larger particles closer to the site of the meltdown at Fukushima to better define radiation risk in the surrounding area.

The research could have significance beyond nuclear accidents, the team said, because the techniques employed could also be used to image particles in air pollution to better understand the risk they pose to human health

See also : http://www.asahi.com/ajw/articles/AJ201903090019.html

Is THIS justice?

March 5, 2019 San Diego judge dismisses U.S. sailors' Fukushima radiation lawsuits, rules Japan has jurisdiction Kristina DavisContact Reporter

A San Diego federal judge has dismissed two class-action lawsuits filed on behalf of hundreds of U.S. sailors who claimed they were exposed to dangerous levels of radiation during a humanitarian mission in Japan following 2011's devastating earthquake and tsunami.

In the end, the case came down to a jurisdiction issue. U.S. District Judge Janis Sammartino ruled in orders Monday that Japanese law applies to these claims and leaves open the possibility for the sailors to pursue recourse there.

The sailors were serving on the then-San Diego-based carrier Ronald Reagan off Korea when the earthquake struck on March 11, 2011. The quake set off a tsunami that flooded Japan's Fukushima-Daiichi Nuclear Power Plant, causing the plant's radioactive core to melt down and release radiation.

The Reagan and other crew in the vessel's strike force responded under a relief effort known as Operation Tomodachi — a Japanese word meaning "friends" — staying off the coast for more than three weeks aiding Japanese survivors. The Navy detected low levels of contamination in the air and on 17 crewmembers two days after the disaster and repositioned the ship.

Attorneys for the sailors said the radiation caused several ailments, including thyroid and gallbladder cancer, rectal bleeding, headaches and hair loss. Some have died.

The lawsuits blamed "negligently designed and maintained" boiling water reactors at the plant and also accused the power utility of denying and underplaying the disaster. The sailors sued the Tokyo Electric Power Company, known as TEPCO, as well as U.S. company General Electric, which designed the reactors in California.

The suits sought at least \$1 billion each and include more than 400 sailors.

The case has had a long history in both district and appellate court. One lawsuit was filed in 2012 and has had many reiterations. A second, separate class-action was also filed in 2017, then filed anew in 2018 adding 55 new plaintiffs. Jurisdiction has always been a problematic issue in the litigation.

Sammartino found on Monday that Japanese law applies. That means sailors can petition for relief under Japan's Compensation Act for all action tied to the operator — TEPCO.

Attorneys for the sailors have argued that their clients won't get a fair day in court under Japan's system. But the judge found "no convincing support" for that position.

"And while Plaintiffs' contention that litigating in the Japanese forum will be exponentially more difficult than litigating in California may be true, Plaintiffs have shown no law or facts which indicate that the Japanese forum is closed to any of the named, or unnamed, Plaintiffs," Sammartino said.

The Japanese government advocated for solving the litigation in its homeland, not the U.S. Japan has paid more than \$76 billion to resolve more than 17,000 claims and approximately 160 court proceedings through TEPCO's "Nuclear Damage Claim Dispute Resolution Center," the judge noted.

The judge also dismissed General Electric from liability, finding that if Japanese law applies, then the business is considered a manufacturer, not an operator, and is therefore shielded.

Sammartino sided with the 9th U.S. Circuit Court of Appeal's characterization of the legal battle as a "'close case' with competing interests pointing in both directions."

She later concluded: "Now, however, after considering the Japanese and United States governments' views, the Court finds that the foreign and public policy interests weigh toward dismissal."

Paul Garner, a Carlsbad attorney on the sailors' legal team, said Wednesday that he anticipates an appeal. He called the notion that any of the sailors would be paid for personal injury or wrongful death in Japan "a fiction," noting that Japanese citizens are only being compensated for damages such as loss of livelihood or losses due to relocation.

To seek remedy in Japan, the sailors would have to be able to afford the trip, be healthy enough to travel, hire a Japanese lawyer, have their medical records translated, and appear before a tribunal.

"I don't foresee any of them having the ability to go to Japan," Garner said.

A TEPCO spokesperson said in a statement late Tuesday: "We understand that the court agreed with our view. We will look into the court's ruling and continue to respond to this case appropriately."

Save us!

Fair judgment for the "Trial to Protect Children from Irradiation" in Fukushima

Nos Voisins Lointains 3.11 **a lancé cette pétition adressée à** The Civil Department of Fukushima District Court

https://www.change.org/p/the-civil-department-of-fukushima-district-court-fair-judgment-for-the-trial-to-protect-children-from-irradiation-in-fukushima-89e15e91-5be2-43dd-9b4b-

b04b97e70d4d?recruiter=38403170&utm_source=share_petition&utm_medium=copylink&utm_campaig n=share_petition&fbclid=IwAR2PvT_0aut7wbzkKf0Z8JcrAt7IXk5SL-MeG4F6M06l3MRj0P600G5jLVw

Please sign!

(Le texte en français se trouve après le texte en anglais).

There are two parts in the "Trial to Protect Children from Irradiation": the "Children's Rights Trial " and the "Parent-Child Trial". In the case of the first trial the defendants are the local governments. The plaintiffs demand the recognition of the right of primary and secondary school students of Fukushima Prefecture to enjoy education in a healthy environment. The second trial requires the recognition of the responsibility of the central and prefectural governments for not having taken the necessary protective measures and thus for unnecessarily exposing the children to radiation. The civil party, consisting of children and their parents who were residents in the Fukushima Prefecture when the Fukushima Daiichi nuclear accident occurred, seeks compensation from the Fukushima prefectural and Japanese central governments.

The Japanese government totally underestimates the health risks associated with low-dose radiation exposure, and with internal radiation from the soil, water or air, or from contaminated substances. As a result, many children are exposed to the radiation they could have avoided. According to the thyroid examinations performed on children and adolescents under the age of 18 at the time of the nuclear accident, as of December 25, 2017, the number of cancers diagnosed was 193 cases. However, the government continues to consider that there is no link between this fact and irradiation, and has not undertaken research to find out the cause of the greatly increased frequency*. We must protect children from radiation. Since the government refuses to take action, it is our deepest wish that the judiciary would make a reasonable judgment taking reality into account.

La 3e Pétition pour demander une délibération et un jugement justes pour « Procès pour protéger les enfants de l'irradiation »

Affaires civiles du Tribunal de district de Fukushima

Il existe deux volets dans le « Procès pour protéger les enfants de l'irradiation » : le « procès pour les droits de l'homme chez les enfants » et le « procès des parents-enfants ». Le premier demande la reconnaissance du droit des écoliers et des collégiens du département de Fukushima de jouir de l'éducation dans un environnement sain. La demande s'adresse aux gouvernements locaux. Le second demande la reconnaissance de la responsabilité des exécutifs de ne pas avoir pris des mesures nécessaires et ainsi d'avoir exposé les enfants aux radiations inutilement. La partie civile composée des enfants et de leurs parents, qui étaient résidents dans le département de Fukushima lors de l'accident nucléaire de Fukushim Daiichi, demande des indemnisations à l'Etat et au département de Fukushima. L'exécutif japonais sous-estime totalement les risques sanitaires liés à l'exposition aux faibles doses de radioactivité et à l'irradiation interne due à la contamination de l'environnement (notamment du sol) ou aux aliments contaminés. Du ce fait, de nombreux enfants subissent une irradiation qu'ils auraient pu éviter. D'après les examens de la thyroïde pratiqués sur les enfants et adolescents âgés de moins de 19 ans lors de l'accident nucléaire, à la date du 25 décembre 2017, le nombre de cancers diagnostiqués s'élève à 193 cas. Toutefois, l'exécutif persiste à considérer qu'il n'y a pas de lien entre ce fait et l'irradiation, et n'a pas ordonné d'enquête pour identifier la cause de la fréquence élevée des cancers. Il est urgent de protéger les enfants de l'irradiation. Puisque l'exécutif refuse de prendre des mesures en ce sens, c'est notre souhait profond que le pouvoir judiciaire rende un jugement se fondant sur le bon sens et tenant compte de la réalité de l'exposition aux éléments radioactifs.

Trois ans et six mois après avoir intenté l'accusation, le procès entre dans la phase où seront examinés les conséquences de l'exposition aux faibles doses ainsi que le risque d'irradiation interne du à la contamination de l'environnement (notamment du sol) ou aux aliments contaminés. Nous demandons au Tribunal du district de Fukushima une délibération et un jugement soignés, rapides et justes, par égard pour la situation et l'inquiétude des enfants et des parents qui ont été brutalement plongés dans un environnement radioactif.

Collateral Effects

Nuke accident impact Japanese exports

February 19, 2012

Japan's agricultural and fishery exports drop http://www3.nhk.or.jp/daily/english/20120219_12.html

Japan's exports of agricultural and fishery products in 2011 fell by about 8 percent from the figure for the previous year in the aftermath of the nuclear accident in Fukushima last March.

The Agriculture, Forestry and Fisheries Ministry says exports of farm, forestry and fishery products and processed food stood at about 5.7 billion dollars.

The drop is largely attributed to the nuclear accident at Tokyo Electric Power Company's Fukushima Daiichi plant caused by the March 11th disaster. 47 countries and territories imposed restrictions on food imports from Japan, including a request for radiation test certificates.

Shipments to China fell by 35.4 percent, centering on salmon and trout, followed by a 12 percent drop in exports to South Korea due to the decline in exports of Alaska pollack and confectionaries. Exports to Hong Kong saw an 8.1 percent drop on a decrease in purchases of powdered milk for babies.

An exodus of nuclear engineers?

February 16, 2012

South Korea headhunting top TEPCO nuclear engineers

http://mdn.mainichi.jp/mdnnews/news/20120216p2a00m0na012000c.html

South Korea has been trying to hire top nuclear experts from Tokyo Electric Power Co. (TEPCO) in the wake of the meltdowns at the Fukushima No. 1 nuclear plant.

South Korea is looking to expand its nuclear power program, and in the summer of 2011 -- about six months after the outbreak of the nuclear disaster -- a top engineer at TEPCO's nuclear power division was invited to dinner by a South Korean government official. The South Korean official asked the engineer, "How much of your salary has been cut?" and "Are you satisfied with your working conditions?" and sounded him out about joining South Korea's state-run power company, according to a TEPCO official close to the engineer.

At about the same time, another TEPCO employee was asked by a South Korean government official to have a meeting. When he met the South Korean, he was offered a job. "Please help us!" the South Korean government official was quoted as telling him. It is not clear what kind of job he was offered.

According to sources familiar with the matter, the two TEPCO employees turned down the job offers. "They are still working at the nuclear power division," a senior TEPCO official said. The two cases point to South Korea's drive to headhunt Japanese nuclear engineers expert in nuclear power plants designed and built by Japanese companies such as Toshiba Corp. and Hitachi Ltd.

The recruiting drive would not be the first coming from South Korea, as in the early 1990s Samsung Electronics began headhunting engineers from top Japanese firms such as Sony and Panasonic to boost the company's technological capabilities. Samsung is now the world's top electronics maker.

Regarding recent attempts to snap up Japanese nuclear engineers, a senior TEPCO official said, "TEPCO has become a headhunting ground for those from abroad and at home."

Employee turnover at TEPCO has been high since the outbreak of the Fukushima nuclear crisis as its business performance deteriorates, while the ruling Democratic Party of Japan (DPJ) has also settled on policies to reduce reliance on nuclear power and split up the utility. According to internal TEPCO documents, excluding mandatory retirees about 300 people have left the utility since the outbreak of the crisis -- more than three times the usual rate -- and 200-300 people are believed to be preparing to leave the company by the end of the business year.

The exodus has been led mainly by young engineers and "elite" staff, many of whom have moved to trading houses, major food companies and international financial institutions. There are no confirmed cases of a TEPCO employee joining an overseas nuclear energy related firm, but it has not been possible to trace where all the former employees got their next jobs.

About 30 percent of South Korea's energy output is nuclear. The South Korean government approved a plan in December to build two nuclear reactors in Uljin, in the east of the country, and President Lee Myung-bak vowed to promote nuclear power policy, saying, "Our country is an importer of energy. We will continue to have nuclear power."

Lee visited Turkey and held talks with Turkish Prime Minister Recep Tayyip Erdogan on Feb. 5. At the meeting, the two countries agreed to resume suspended negotiations on building nuclear power plants in Turkey. Japan suspended nuclear plant contract talks with Ankara after the Fukushima meltdowns, and South Korea appears to be trying to turn the tables on Japanese nuclear plant builders with offers of reactors of its own.

Following the outbreak of the Fukushima crisis, Germany, Italy and Switzerland declared an end to further nuclear plant construction. On the other hand, the United States, China and emerging economies in Southeast Asia have been moving ahead to build more nuclear reactors. China has reportedly launched a hiring offensive for German nuclear engineers, highlighting the increasingly hot cross-border competition for these experts.

The outflow of nuclear technologies could threaten global nuclear security measures to block proliferation of nuclear weapons. TEPCO operates "pluthermal" nuclear reactors burning so-called MOX fuel, made up of mixed oxides of uranium, and plutonium -- a fissile material used in nuclear bombs. A senior official of the Agency for Natural Resources and Energy said TEPCO's technologies for handling plutonium are also "capable of making nuclear weapons." One of the members of the House of Representatives Committee on National Security said, "TEPCO's technologies are objects of envy for countries promoting nuclear power. It would be a security problem if TEPCO's human resources and technologies were to flow out of Japan." Click here for the original Japanese story

Wanted : engineers

February 12, 2012

Civil engineers needed in 3 disaster-hit prefectures

http://www.yomiuri.co.jp/dy/national/T120211003359.htm

Many coastal Tohoku municipalities hit by the March 11 disaster and others affected by the Fukushima nuclear crisis are suffering from a severe shortage of civil engineers and other backup staff, according to a Yomiuri Shimbun survey.

The survey, which targeted 42 municipalities in Iwate, Miyagi and Fukushima prefectures, was conducted before Saturday, which marked 11 months since the Great East Japan Earthquake.

Thirty-three of the municipalities along the hard-hit coast or near the crippled Fukushima No. 1 nuclear power plant have called for outside help to meet the worker shortage, the survey found.

Even as disaster restoration work moves into high gear, 26 of the 33 municipalities are struggling to secure enough civil engineers and technicians.

An official at the Ishinomaki municipal government in Miyagi Prefecture said the city needed another 55 engineers.

"We've got a shortage of staff in every area of infrastructure maintenance, including collective relocation, land readjustment and port reconstruction projects," the official said.

An official at the Sendai municipal office said, "We need as much manpower as possible for collective relocation projects that are about to get into full swing."

The Otsuchi municipal government in Iwate Prefecture has called on the prefectural government to dispatch about 40 engineers, and also asked the Kobe municipal government to send officials who helped with reconstruction work after the 1995 Great Hanshin Earthquake.

Seven municipalities have asked to be sent nurses to help care for residents living in temporary housing units. Four municipalities in Fukushima Prefecture are seeking officials to oversee decontamination work. According to the Internal Affairs and Communications Ministry, municipalities have requested more than 500 personnel for the new fiscal year that starts in April. However, the ministry said it can only find "slightly more than half" this number of people willing to fill these positions.

An official at the ministry said about 40 percent to 50 percent of personnel requested by the municipalities were for civil engineers and construction workers.

Civil engineers accounted for about half of 535 personnel that the three disaster-hit prefectures have asked the National Governors' Association to dispatch.

Where have the students gone ?

Student numbers set to fall / Enrollment drops at primary schools affected by Fukushima N-crisis

http://www.yomiuri.co.jp/dy/national/T120220004440.htm

FUKUSHIMA--The number of new students enrolling in primary schools this spring in six municipalities affected by the crisis at the Fukushima No. 1 nuclear power plant is expected to be half that of the children currently in the first grade, it has been learned.

A total of 76 new students will enter classes at the primary schools, which have moved to other municipalities because they were located in or near no-entry zones created by the government. The six municipalities, all located in Fukushima Prefecture, are Namie, Okuma, Tomioka, Hirono, Kawauchi and Iitate. A primary school and middle school for each of them has been opened either in the municipalities where their municipal government offices have been temporarily relocated, or in neighboring towns.

About 20 percent of the 160 sixth-grade students currently enrolled in the six primary schools may enroll in middle schools operated by different municipalities.

School administrators and community representatives are trying to stem the falling student numbers at the schools run by the six municipalities, with one person saying, "If we cannot keep schools active, it will become difficult to maintain local communities."

Fujio Shono, head of the Tomioka board of education, is worried about the situation. "No new students will enter our primary school this year. We don't know what to do if we cannot get students in the future," he said.

Tomioka, which is in the no-entry zone, has moved its town office to Koriyama in the same prefecture. About 3,200 residents, or roughly 20 percent of the town's population, also moved to the city of Koriyama. Tomioka reopened its primary school at the site of a former factory in the neighboring town of Miharu in September last year. A total of 45 students attend the school and travel to and from their temporary housing by bus. The journey takes more than an hour each way for those who live far from the school. A 35-year-old company employee, who moved to Koriyama from Tomioka, will send his son, who will enter primary school in spring, to a school run by the Koriyama government. The man said he will do this because, "If something happens, I can't quickly go to my son if it takes more than 30 minutes to travel to the school by car."

Namie's town office and primary school have been moved to nearby Nihonmatsu. Only one new first-year student will enter the school. Namie town is in the government's no-entry and expanded evacuation zones. The town's board of education says many students who would normally enter Namie's primary school are instead enrolling at schools in the municipalities that they have relocated to. This is because the children want to attend the same schools as their friends in kindergarten.

Kawauchi's village office has been relocated to Koriyama, but it plans to return to its village in April. The principal of a private kindergarten in Koriyama said, "Many parents say, 'We cannot bring our children back [to the village] where radiation levels are high.'"

Regarding the impact of reduced student numbers, a 51-year-old vice principal of a primary school in one of the affected municipalities said, "We can give lessons that would be more suitable for smaller groups of

children, but children will lose opportunities to develop through interaction with their peers, such as discussions during Japanese language classes."

If student numbers further decrease, it will become difficult to keep the schools open. A Fukushima prefectural board of education official said: "This is a matter for each municipal board of education. But if a school has no students, it may be closed."

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Maintaining communities

Schools are indispensable for maintaining communities at each of the affected municipalities. Kaname Hirose, the head of litate's board of education, is concerned about the situation. "Schools and residents support each other by forming communities," Hirose said. "If the village has no school, children have no place to return to, and the area will deteriorate."

Hirose said that before the nuclear crisis, local residents cleared snow from the school route in winter and children performed plays and dances at a nursing home in the village.

A survey, conducted by Fukushima University in September last year on households in eight municipalities around the crippled nuclear power plant, revealed that the younger residents are, the less hope they have of returning to their hometown. The survey found more than half of the respondents aged 34 or younger said they had no intention of returning.

To combat this, a group including parents of students attending Tomioka primary has begun offering information about local schools, and is using its website to call on residents to participate in meetings. Takashi Ichimura, 42, a representative of the group, said, "We have to keep townspeople connected to ensure they return someday."

In Namie, teachers have been sending letters to former students who transferred to other schools. The town government says directors of junior sport clubs have opened a training camp for children who have scattered due to the crisis.

Associate Prof. Tsuneya Sakurai from Takasaki City University of Economics is a member of Namie town's restoration study committee. He pointed out why making efforts to maintain local communities is necessary. "It is children who bear the role of restoring communities in the future. Even if they are attending schools in areas where they have been relocated, they need something that makes them feel like they still belong to Namie," he said.

Radioactive snow?

February 22, 2012

Naha snow event axed due to radiation fears

http://www.yomiuri.co.jp/dy/national/T120222005456.htm

NAHA--A children's event in Naha that was to have used snow shipped in from Aomori Prefecture has been canceled after some March 11 disaster evacuees living in the city raised concerns that the snow might be contaminated with radiation.

The Naha municipal government decided Tuesday to cancel the event, which was scheduled to be held Thursday, even though the snow had been checked and deemed safe. Aomori Prefecture is several hundred kilometers north of Fukushima Prefecture, where the crippled Fukushima No. 1 nuclear power plant is located.

According to sources, 630 kilograms of snow from Towada, Aomori Prefecture, was packed into 25 boxes and carried to Naha by Maritime Self-Defense Force patrol airplanes last Thursday. Radiation levels in the snow were measured when the boxes were taken on and off the planes, and the readings were found to be at safe levels.

The Naha municipal government explained the snow was safe to the evacuees at a meeting Monday. However, they were unable to assuage the evacuees' concerns.

"I can't trust the explanations given by the central government and the municipal government," one evacuee said.

A spokesman for the MSDF's Naha-based 5th Fleet Air Wing, which flew the snow to the Okinawa Prefecture capital, said: "Many children were looking forward to the event, so it's a shame it has been canceled. But the feelings of the evacuees can't be ignored."

However, one expert has criticized the Naha government's decision to cancel the event, in which children were to play in the snow.

"Under the current circumstances, radioactive materials aren't being scattered in the air, and people don't have to worry about radiation exposure through snow," said Atsushi Kumagai, a doctor of Nagasaki University Hospital. "If people just assume that everything from the Tohoku region is dangerous, they won't be able to make rational decisions" about whether there is a health risk.

"People should look at this matter calmly," Kumagai added.

Hospitals in time of crisis - and the human consequences

February 27, 2012

Patients fell victim as Fukushima hospitals were isolated in wake of nuclear

disaster

http://mdn.mainichi.jp/mdnnews/news/20120227p2a00m0na010000c.html

On March 15, 2011, four days after the Great East Japan Earthquake and tsunami hit, the government ordered residents within 20 to 30 kilometers of the Fukushima No. 1 Nuclear Power Plant to stay indoors following hydrogen explosions at the plant a day earlier.

Futaba Hospital in Okuma, Fukushima Prefecture, which was already under orders to evacuate, had trouble finding another medical institution to transport patients. As a result, patients started dying one after the other, making the situation at the Prime Minister's Office tense.

Chief Cabinet Secretary Yukio Edano and others said that patients within 30 kilometers of the crippled nuclear power plant were safe so long as they stayed indoors. They ordered officials concerned to secure hospitals to accommodate fleeing patients in case of another explosion.

But Takeshi Karasawa, councilor at the Ministry of Health, Labor and Welfare, predicted that hospitals within the 30-kilometer zone would become inoperative sooner or later. If orders to stay indoors

continued, he surmised, people and supplies would not reach the hospital. The facility would lose doctors and employees and become inoperative, and somebody would have to transport abandoned patients. But there had been no precedent for moving all hospital patients and long-term care recipients out of any particular prefecture. "We did not know who should do what and how to transport them," Karasawa recalled.

On March 15 Karasawa picked three young medical officials from among the ministry's staff and ordered them to go to Fukushima. One of them was Haruhiko Hakuno of the ministry's Health Science Division. "Please go to Fukushima now," Karasawa told Hakuno, who asked, "What's for?" Karasawa said, "Just go." Hakuno did not know details of his mission until his arrival in Fukushima Prefecture on March 16. At 9:30 a.m. that day, he learned for the first time that his immediate job was to produce a list of medical institutions and the number of patients within 20 and 30 kilometers of the stricken nuclear plant. Confusion was gripping Fukushima Prefecture's disaster measure headquarters on March 16. Hakuno's cell phone ran out of battery due to numerous phone calls from the ministry, the Prime Minister's Office and other parties.

There were six medical institutions within 20 to 30 kilometers of the nuclear plant, along with welfare facilities. Hakuno telephoned the hospitals to ask about them and their patients. The supply shortage was serious. "Patients will starve to death," a hospital official pleaded. Some patients were too frail to be relocated.

It was well after noon on March 17 that the prefectural disaster measure headquarters, the prefectural police, Self-Defense Forces and fire departments assembled for a joint meeting for the first time. One prefecture told them, "We are not going to allow patients to cross the prefectural border unless they are cleared of nuclear radiation."

Meanwhile, two seriously ill patients at a hospital in Minamisoma died due to a lack of medicine. On March 18, a campaign began to transport all patients within the 30-kilometer zone. But Tetsuya Yajima, deputy vice health minister for technical policy coordination who was assigned to the crisis management center at the Prime Minister's Office, told the Mainichi, "The order to evacuate patients did not come from the Prime Minister's Office." He expressed regret that the Prime Minister's Office and the Fukushima prefectural disaster policy headquarters operated independently without policy coordination. Click here for the original Japanese story

Tsubokawa needs money for his film - Every little bit will help

February 29, 2012

Fukushima film needs financial help

http://www.yomiuri.co.jp/dy/national/T120228004082.htm

The Yomiuri Shimbun

Production of "Hameln," a film set in Fukushima Prefecture that looks at changing Japanese values, has been delayed by problems ranging from an uncooperative ginkgo tree to the Tohoku disaster of last year, and a Tokyo-based support group is asking the public for donations so the movie can be completed. Work on the film, which is set in Showa, a village in the Oku-Aizu district of Fukushima Prefecture, began in 2009. It is scheduled to begin the final stages of filming in March.

Directed by Takushi Tsubokawa, 39, and starring Hidetoshi Nishijima and Chieko Baisho, the film questions what contemporary people have lost through the story of former students of a primary school located in a depopulated area that closed. Locally raised funds have financed the film until recently.

This is the third feature film for Tsubokawa, an up-and-coming director who won the Best Feature Film Prize at the Torino Film Festival in 2005 for his debut film "Utsukushiki Tennen" (Clouds of Yesterday). Shooting started in 2009, mainly at the former Kuimaru Primary School, which was established in 1937 and closed in 1980. However, shooting stopped in autumn 2010 as the leaves of a huge ginkgo tree, a symbolic theme in the film, did not change color due to an extremely hot summer.

Other scenes were scheduled to be filmed in May last year, but the Great East Japan Earthquake forced production to be postponed.

During production, Koin Baba, village chief of Showa, became the leader of the film's support group and promised to keep the wooden primary school, which was scheduled to be demolished, open until shooting finishes. The entire village with a population of 1,533 people was behind the film, with some villagers appearing as extras, while others prepared meals for the production staff.

However, it has become difficult to raise funds in the prefecture after the March 11 disaster even though more than one-third of the film's target production costs have already been collected.

Emi Nakamura, 47, an event producer who manages performers for the film, launched a Tokyo branch of the support group late last year.

Contributors of 10,000 yen or more can have their names included in the film's credits. Nakamura has called on people to donate or distribute leaflets, saying, "We'd like many people to feel as if they have created the film together."

For further information, visit the group's website at http://kyowado.jp/hameln (Feb. 29, 2012)

Even the French are affected

March 2, 2012 **French nuclear giant Areva reports massive loss** http://www3.nhk.or.jp/daily/english/20120302_27.html

French nuclear energy giant Areva suffered a massive loss in 2011.

This reflects how difficult a year it has been for the world's nuclear industry after the accident at Japan's Fukushima Daiichi nuclear power plant last March.

Areva announced on Thursday that its losses last year reached 2.4 billion euros, or about 3.2 billion dollars.

The loss is mainly due to a massive decline in the appraised value of the company's uranium mining

venture in Africa.

Areva says the production of plutonium-mixed fuel for Japan have also stalled since the March 11th disaster.

The effect of the Fukushima accident is forcing the world's leading nuclear conglomerate to scale down its businesses.

Areva is due to lay off up to 1,500 workers in Germany, following the country's decision to phase out nuclear powe

Fukushima disaster pushes France's Areva to record loss

(AFP) - 21 hours ago -

http://www.google.com/hostednews/afp/article/ALeqM5iOV39cTcXFRDaJaGyWZ108fOHw7Q?docId=C NG.4f45fdff3292f10f96f9f9caed149d3e.261

PARIS — French nuclear energy giant Areva reported Thursday a record loss for 2011 after taking massive provisions in the aftermath of Japan's Fukushima disaster but reaffirmed its forecasts to 2016. Areva said that, with the Fukushima meltdown jeopardising the outlook for the whole nuclear industry, it had to write down the value of key assets, such as its uranium mines, by some two billion euros.

The result was a 2.42 billion euros loss compared with a 2010 net profit of 883 million euros.

In December, Areva warned that it would take a hit of 1.46 billion euros to cover the revaluation of its Uramin unranium mines to 410 million euros, about a fifth of their purchase price in 2007.

Other provisions in 2011 covered the dismantling of nuclear installations, slower activity as a result of the Fukushima disaster and delays at its Olkiluoto project in Finland.

The results are the worst since Areva was formed in 2001 from the merging of Cogema, Framatome and CEA Industrie.

The group said that despite the loss, it still expected organic sales growth of 3.0 to 6.0 percent in 2012 and 2013, increasing to 5.0 to 8.0 percent in 2015 and 2016.

Areva also said that it had agreed the sale of its 26 percent stake in the Eramet mining company to state investment fund FSI for 776 million euros.

The disposal is part of planned sales worth up to 1.2 billion euros this year and next which it announced as part of efforts to strengthen its finances.

TEPCO and climate change

March 4, 2012

TEPCO plans to stop buying CO2 credits / Halt would hurt effort to fight global warming

http://www.yomiuri.co.jp/dy/national/T120303003969.htm

The Yomiuri Shimbun

Tokyo Electric Power Co. plans to give up purchasing carbon dioxide emissions credits in the next 10 years, a step that would be a serious setback to the country's efforts to address global warming, according to sources.

The company is expected to incorporate the decision in its comprehensive special business plan to be completed by the end of this month.

TEPCO, which supplies about 30 percent of domestic power, is **the country's largest CO2 emitter**.

The utility has been purchasing the emission credits as part of its efforts to tackle global warming. But the firm apparently found it difficult to continue due to **financial strain** in the wake of the crisis at its Fukushima No. 1 nuclear power plant.

Businesses and countries are allowed to trade emissions credits for greenhouse gas reduction. Companies that cannot meet their reduction targets can buy credits from companies that have managed to reduce emissions beyond their own targets.

Since TEPCO began buying emissions credits in fiscal 2007, the utility bought 41.7 million tons of credits, or about 40 percent of its annual CO2 emissions, during the four years up to fiscal 2010, spending 61.5 billion yen.

The company set a target of reducing CO2 emissions to 0.304 kilograms per kilowatt hour or lower, but it failed to achieve the target for three consecutive years beginning in fiscal 2008.

Though the firm had planned to buy emission credits worth about 10 billion yen in fiscal 2011, it has not announced whether it has purchased any since the March 11 disaster.

CO2 emissions generated in the country have increased since the Great East Japan Earthquake. The country's nuclear power plants, which emit no CO2 in generating power, have significantly decreased operations following the March 11 disaster. This has resulted in increased dependence on thermal power plants.

TEPCO's decision to give up the purchase of emissions credits may further increase the volume of CO2 emissions in the country, observers say.

Under the Kyoto Protocol, which took effect in 2005, Japan is obliged to cut greenhouse gas emissions by an average of 6 percent between fiscal 2008 and 2012, compared with fiscal 1990 levels.

Industries in the country set up voluntary targets for CO2 cuts. Though no penalties are imposed on companies if they fail to meet the goals, businesses that cannot achieve the goals on their own purchase emissions credits from other countries.

Last year, countries agreed to extend the Kyoto Protocol at the 17th Conference of the Parties to the U.N. Framework Convention on Climate Change in South Africa. Under the agreement, Japan will have no obligation from fiscal 2013 and will make voluntary efforts by setting a numerical target.

The government plans to revise its goal of cutting greenhouse gas emissions by 25 percent by 2020 from the 1990 levels.

Observers say, however, TEPCO's plan to stop the purchase of emission credits is likely to have a significant impact on future discussions on Japan's energy and global warming policies.

And some people were left behind

5 likely died of starvation in no-entry zone

http://www3.nhk.or.jp/daily/english/20120305_22.html

NHK has learned that at least 5 people probably died of starvation after being stranded in the evacuation zone around the Fukushima Daiichi nuclear plant following the disaster last year.

The earthquake and tsunami that struck eastern Japan in March last year left 1,605 people dead in Fukushima Prefecture.

Local authorities in the area say that at least 5 others found later in the no-entry zone around the Fukushima nuclear plant had starved to death.

The government evacuated residents around the plant after the accident.

But some people were left behind. One man in his 70s, who lived about 5 kilometers from the plant, was found in late March on the 2nd floor of his home. The 1st floor had sustained damage from the tsunami.

A woman in her 60s was found dead last April inside her home, where she lived alone. She had had trouble walking.

All of the 5 dead were found grossly under weight.

Police and medical authorities examined the 5 bodies and said they appeared to have been stranded, either because they were unable to evacuate on their own or could not ask for help.

Missing doctors

march 10, 2012

ONE YEAR AFTER THE DISASTER / Doctor shortage raises concerns in Tohoku / Patients in desperate need of diverse medical treatment

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/national/T120309006422.htm

"Your neutral fat level is a bit high. You should start walking when spring arrives," Dr. Minoru Kawashima recently advised a woman in her 60s. He also asked her if she was suffering from hay fever when he examined her at a hospital in Kesennuma, Miyagi Prefecture, which is still recovering from the March 11 earthquake and tsunami.

Kawashima, 37, is the director of the municipal Motoyoshi Hospital. The facility is located in the Motoyoshi area, which has a population of about 10,000 people.

After the disaster, the hospital was on the verge of closing as two full-time doctors left the institution. However, it was able to survive thanks to doctors like Kawashima who came to help from all over the nation.

Kawashima became the director in October at the hospital's request. He moved to the city, leaving his family behind in Yamagata Prefecture.

Kawashima treats many different kinds of ailments, ranging from infectious diseases such as influenza to stitching up cuts. He visits patients during the afternoon at their homes.

He also started a pediatric practice as the hospital did not provide such care before the March 11 disaster. In 2010, there were only 14 doctors per 10,000 people in coastal regions of the three hard-hit

prefectures, excluding Sendai. The figure is two-thirds of the national average, and only half that of Kyoto Prefecture, which has the nation's highest doctor-to-population ratio.

Put simply, there is only one doctor for every 700 people in the coastal areas.

According to a Yomiuri Shimbun survey conducted last month, 30 out of 106 participating hospitals in the coastal regions of the three prefectures said they had fewer doctors than before the March 11 disaster. Since medical needs are expected to increase further if evacuees return to their hometowns, securing doctors will become an immense challenge.

Miyagi Prefecture started hiring doctors as prefectural government officials and sent them to local government-run hospitals in need of doctors.

"Home doctors" like Kawashima who can satisfy various medical needs will be needed in areas with a considerably low number of doctors.

Hiroki Ohashi, director of the Japan Primary Care Association, said: "Doctors practicing in such areas are required to deal with a wide variety of problems, ranging from diseases and symptoms particular to the elderly, such as high blood pressure, diabetes and joint pain, to cancer. The ones who are able to do that are family doctors."

The Health, Labor and Welfare Ministry also is studying how to train home doctors.

It is also necessary to build a system that enables local communities to support patients by sharing functions between medical institutions and nursing-care facilities to improve efficiency.

In June, the health center in Ofunato, Iwate Prefecture, set up a panel to study measures to restructure the medical system.

A major discussion point was how to ease the burden on the prefectural Ofunato Hospital, which has only 489 beds. The hospital was the only designated emergency hospital in the area after the prefectural Takada Hospital was damaged in the disaster.

People in these areas are concerned that medical care, including surgery, will deteriorate unless a system to share responsibility among medical institutions and nursing-care facilities is established.

Ofunato Hospital accepted 1,760 emergency patients in January, up 20 percent from a year ago.

Additionally, the number of outpatients and inpatients at the hospital each rose 6 percent from a year ago. Following the panel's discussions, an Ofunato clinic was reportedly willing to accept patients from Rikuzen-Takata, Iwate Prefecture.

Jichi Medical University Prof. Eiji Kajii stressed the need to fully utilize facilities and manpower in the disaster-struck areas.

"Since there are limited medical and nursing-care resources in the region, it is necessary to utilize related facilities and human resources beyond the boundaries of local governments," he said.

Restrictions on Japanese food haven't really stopped

March 12, 2012

Few signs abroad of lifting of import restrictions on Japanese food products http://mdn.mainichi.jp/mdnnews/news/20120312p2a00m0na010000c.html

One year after the onset of the nuclear crisis at the Fukushima No. 1 nuclear power plant, there is still little sign of import restrictions overseas being lifted on food items made in Japan due to lingering radiation fears.

At present, 16 countries and regions across the globe entirely or partially ban the import of Japaneseproduced food. While there have been moves for easing such regulations, it appears to take time for such restrictions to be entirely lifted.

"The airborne radiation levels in Aizuwakamatsu (in Fukushima Prefecture) are the same level as those in Seoul and stay about the same as those in New York, but unfortunately other countries do not evaluate the levels on a scientific and rational basis," said Foreign Minister Koichiro Genba during a press conference on March 9.

According to the Ministry of Agriculture, Forestry and Fisheries, only four countries -- Canada, Chile, Mexico and Myanmar -- have lifted such regulations as obliging Japanese exporters to submit radiation screening certifications, while Kuwait and Mauritius in southern Africa still impose total embargos on Japanese-made food items. Fourteen other countries and regions, including China and Taiwan, continue to suspend the imports of some Japanese food items, such as those produced in and around the disasterstricken regions in northeast Japan.

Apart from this, 57 countries and regions oblige Japanese exporters to submit government certificates of origin and radiation screening, bringing the total number of countries and regions that maintain some kind of import control on Japanese food to 73.

The Japanese government has repeatedly asked other countries to lift such import regulations at international and bilateral meetings. While countries like China, Brazil and Malaysia had initially imposed a virtually entire ban on importing Japanese food items, they started to resume the import of some items depending on their type and areas of production.

However, fears for radiation contamination of Japanese-made food still linger abroad. "It took considerable time for import restrictions to be lifted in the aftermath of the Chernobyl nuclear disaster.

We're prepared for a long battle ahead and will continue our negotiations to promote deregulations," said a senior Japanese Foreign Ministry official.

Click here for the original Japanese story

Fishermen annoyed

Huge offshore wind-power project sparks backlash from Fukushima fishing community

http://mdn.mainichi.jp/mdnnews/news/20120318p2a00m0na003000c.html

The government-sponsored project to build a huge, floating wind-power installation in waters off Fukushima Prefecture has sparked a fierce backlash from local fishermen already hit hard by the ongoing crisis at the crippled Fukushima No. 1 nuclear plant.

At the request of the Fukushima Prefectural Government, the central government has come up with the idea of floating about 100 windmills in the Pacific Ocean off Fukushima to generate much-needed electricity. But the scheme could force the local fishing industry to restrict its operations, and the Fukushima prefectural federations of fisheries and fish processing cooperative associations stand firmly against the project.

Fish caught in waters off Fukushima Prefecture have registered more than the government-imposed limit of 500 becquerels of radioactive cesium per kilogram, but there are some kinds of fish whose radiation levels have begun to decline. The offshore wind power project surfaced suddenly at a time when the fishing body was considering resuming catches on an experimental basis, based on the results of fish inspections by the prefectural government.

Designating Fukushima Prefecture as the "pioneer land for renewable energy," the central government has set aside about 12.5 billion yen for research on the green energy project in the third supplementary budget for fiscal 2011. In what could be the world's biggest offshore wind-power project -- aimed at generating 1 million-kilowatts of power, equivalent to the generating capacity of one nuclear reactor -- about 100 windmills would likely be installed in the ocean. The government plans to build and float three windmills with a total output capacity of 16,000 kilowatts as an experiment from fiscal 2011 to 2015.

On March 6, the government commissioned a group comprised of the University of Tokyo and 10 private companies including trading giant Marubeni Corp. to carry out the project. Sources say that it is most

likely that the facility will be built in waters 100 to 150 meters deep and 20 to 40 kilometers away from the shore of Iwaki, Fukushima Prefecture.

The waters where the offshore wind turbines are likely to be built, however, is an excellent fishing ground. Akira Egawa, the 65-year-old deputy chief of the Iwaki Fisheries Cooperative Association, said, "If the fishing ground is destroyed, we will not be able to make a living. It is a life-or-death issue." While acknowledging that the project will cause trouble to people in the local fishing industry, the central government says it will consider possible compensation after the project is actually carried out. Meanwhile, Marubeni stated, "We would like to consider making rules to ensure they can fish safely."

According to the Fukushima fishing body, when private companies built a structure (about 90 meters tall from the ocean surface) and a submarine pipeline (about 40 kilometers long) in waters off Fukushima for the purpose of natural gas extraction, the local fishermen were paid one billion yen in compensation. The windmills to be built under the new project are believed to be about 200 meters tall, and submarine cables will also be laid.

Yoshihiro Niizuma, executive director of the Fukushima fishing body, said, "We fear that we may not be able to do trawl fishing anymore. That's the main line of our business. We can't cooperate with the plan easily also because the safety of the floating windmills is uncertain." Click here for the original Japanese story

Nukes and psychiatric impacts

March 26, 2012

Fear of radiation from Fukushima accident led to psychiatric disorder hospitalizations

http://mdn.mainichi.jp/mdnnews/news/20120326p2a00m0na011000c.html

Some 24.4 percent of people who were hospitalized in Fukushima with psychiatric disorders in the wake of the outbreak of the crisis at the crippled Fukushima No. 1 Nuclear Power Plant had done so possibly because of fears of radiation exposure, according to the results of research conducted by psychiatrists at Fukushima Medical University.

It has also been found that of all the outpatients at 27 hospitals in Fukushima Prefecture, 30 percent of them visited hospital apparently for reasons related to the nuclear crisis, according to the research conducted by psychiatrist Akira Wada and others at Fukushima Medical University. There is no data available in the world on the effects of nuclear accidents on psychiatric diseases that were taken

immediately after a nuclear accident, and therefore Fukushima Medical University plans to conduct a follow-up study on the effects on patients of the major nuclear accident and prolonged lives as evacuees.

Wada and others at Fukushima Medical University carried out a survey at 30 hospitals in Fukushima Prefecture for two months from March 12, 2011, and 27 of them responded to the survey.

Of the 610 inpatients who were admitted or readmitted to hospital, with men accounting for 49 percent and women for 51 percent, excluding those who were transferred to other hospitals because of the nuclear disaster, 74 of them, or 12.1 percent, were diagnosed as being related to their fears of radiation exposure, while 75 others, or 12.3 percent, were diagnosed as being possibly related to their fears of radiation exposure. People from the Soma, Futaba and Iwaki areas, which are close to the troubled nuclear power station, account for 23 to 27 percent of such inpatients.

Of all the 74 inpatients whose hospitalization was diagnosed as being related to their fears of radiation exposure, nine of them had never had consulted psychiatrists before. Most of the 74 people were admitted or readmitted to hospital within one month from the outbreak of the nuclear disaster, and nearly half of them were in their 40s and 50s. There were cases of people who were suffering from stress from living in evacuation centers in addition to their fears of radiation exposure.

At the same time, Itaru Miura, assistant professor at Fukushima Medical University, and others conducted a survey on outpatients at 77 hospitals and clinics in Fukushima Prefecture once a week for three months from March 12, 2011, to which 57 medical facilities responded.

Of the 410 outpatients at the medical facilities who were suffering from depression or anxiety disorders, 78 of them, or 19 percent, were diagnosed as being linked to the nuclear disaster, and 55 others, or 13.4 percent, were diagnosed as being possibly related to the nuclear disaster. Of all the 133 patients, 47 of them were suffering from depression and 38 others were suffering from acute stress disorder and posttraumatic stress disorder (PTSD), and 38 other outpatients were also suffering from adjustment disorders. Nearly half of them had stress from their lives as evacuees, 40 percent of them were worried about the effects of radiation on themselves, and 30 percent of them expressed fears that their children and families could be affected by radiation.

There were reports on the mental effects of radiation from the troubled Chernobyl nuclear power plant, but the research was conducted about 10 years after the outbreak of the nuclear disaster. Shinichi Niwa, professor at Fukushima Medical University, said, "I have the impression that the nuclear accident had such a great impact (that many people were admitted to hospital). Take decontamination work for example, people can feel secure if they do it themselves, rather than if they ask others to do it. It is also important to ease anxieties over radiation exposure with participation of local residents in such a program." Click here for the original Japanese story

New nuclear safety agency delayed - What it means

March 30, 2012

Failure to set up new nuclear regulatory agency on time to affect stress test screenings

http://mdn.mainichi.jp/mdnnews/news/20120330p2a00m0na006000c.html

A delay in establishing a new nuclear regulatory agency under the Environment Ministry means that the governmental Nuclear and Industrial Safety Agency (NISA) and the Nuclear Safety Commission of Japan (NSC) will continue to be in charge of nuclear power regulations.

But the government's decision to abandon the creation of the proposed agency on April 1 is likely to stymie the nation's vital functions such as the screenings of stress test results on idled nuclear reactors.

According to the government's bill, the proposed nuclear regulatory agency will take over the operations of NISA and the NSC, oversee research reactors under the jurisdiction of the Education, Culture, Sports, Science and Technology Ministry, function as a control tower of radioactivity monitoring and inherit from the Japan Atomic Energy Commission (JAEC) the functions of protecting nuclear materials.

The budget earmarked for the proposed regulatory agency will be allocated to the current ministries, agencies and other parties to allow the government to handle its nuclear regulatory policies for the time being at least from a standpoint of budgetary issues. Yoshinori Moriyama, NISA deputy director-general for nuclear accident measures, says, "We will do our best so long as our agency exists." But the NSC, which keeps tabs on NISA, is in a quandary and does not know how it will operate after April 1. The government bill stipulates that the NSC will cease to exist at the end of March, prompting NSC Chairman Haruki Madarame to complain, "It's irresponsible for the government to ask us to debate these issues without knowing how long our commission will last."

Of five NSC members whose appointments are subject to parliamentary approval, three other than Madarame and another NSC member will see their terms of office end on April 16. NSC workers are confused and wonder what they are going to do from April 2.

Controversy surrounding the proposed regulatory agency is likely to affect the examinations of stress test results on idled reactors. Of such stress test results on 16 reactors of eight electric power companies, the

NSC has just finished those on two of the reactors. Some municipal government leaders are calling for establishing the regulatory agency as a precondition for their consent to the restart of the reactors.

Yoshiaki Oka, a Waseda University professor who is well versed in nuclear regulations, says, "NISA and the NSC have lost public trust. The government should transfer its nuclear regulatory functions to the new structure at an early date."

Click here for the original Japanese story

Launch of new nuclear safety regulator delayed

http://www3.nhk.or.jp/daily/english/20120330_15.html

Japan's nuclear crisis minister says the current agencies on nuclear safety control will continue to function until a new regulator is set up.

The government had planned to launch a new nuclear regulator on April 1st, as part of steps to strengthen safety control and unify supervision of nuclear power generation. But little progress has been made in Diet deliberations on the required bills.

Nuclear Crisis Minister Goshi Hosono told reporters on Friday that he is disappointed about the delay, since boosting nuclear safety is the strong wish of the Japanese people. He added that the international community is closely watching Japan's nuclear safety measures.

Hosono called on lawmakers to speed up their deliberations to pave the way for the establishment of a new regulator.

He said the 2 current agencies on nuclear safety -- the Nuclear and Industrial Safety Agency and the Nuclear Safety Commission -- will continue to function until a new regulator is set up.

Impact of TEPCO raise on car manufacturing (for instance)

April 1, 2012

TEPCO raises electricity charges for some corporate customers http://mdn.mainichi.jp/mdnnews/news/20120401p2g00m0dm022000c.html TOKYO (Kyodo) -- Tokyo Electric Power Co. raised electricity rates for some of its corporate customers Sunday in an apparent effort to help finance fossil fuel costs stemming from boosting nonnuclear thermal power generation in the wake of the nuclear disaster at its Fukushima complex.

The utility, or TEPCO, had initially aimed to raise charges on all its 237,000 corporate customers at the same time, but only 11,000 of them had agreed to accept hikes as of March 22, citing lack of clarity over the reasons for the rate hike and insufficient explanations by the company.

TEPCO has come under fire for failing to generally explain that corporate customers can refuse to accept the rate hike if their current contracts with TEPCO have not yet expired. The utility gave the explanation only when customers made inquiries.

TEPCO President Toshio Nishizawa has said the company is ready to give a full explanation to unsatisfied customers, but some corporate managers are still expressing dissatisfaction.

Toshiyuki Shiga, chief operating officer of Nissan Motor Co., said, "We cannot pass the cost of the electricity rate hike on to car prices. I expect Tokyo Electric to understand how its move (to raise the charge) will affect manufacturing."

At Nissan's Tochigi plant, for example, the rate hike will add 3,500 yen to the electricity costs for making a car, according to Shiga.

One side-effect of the nuke crisis

April 3, 2012

Ratio of electric power generated by thermal plants surpasses 70% following nuke crisis

http://mdn.mainichi.jp/mdnnews/news/20120403p2a00m0na006000c.html

The ratio of electric power generated by thermal power plants in Japan has surpassed 70 percent following the March 2011 nuclear meltdowns, while that by nuclear plants, which stood at over one-fourth, has fallen below 3 percent, say industry insiders.

Since fuel for thermal plants is more expensive than that for nuclear plants, all nine electric power companies in Japan that have nuclear plants are estimated to have run into the red in the business year that ended in March this year. Okinawa Electric Power Co. in Okinawa Prefecture has no nuclear power stations.

In February last year, the month before the disaster, 36 of 54 commercial nuclear reactors owned by the nine companies were in operation, generating 26.81 percent of power consumed in their service areas.

Following the accident, however, many of the nuclear reactors were stopped one after another for regular inspections and for other reasons, and the number of such reactors in operation had decreased to a mere three by February this year. As a result, the ratio of power generated by such plants declined to 2.46 percent.
In contrast, the ratio of electricity generated by thermal power stations, which had stood at 50.08 percent, sharply rose to 73.82 percent. The ratio for hydraulic power stations remains largely unchanged.

"We've managed to make up for a decrease in power generated by nuclear plants by fully operating thermal plants," says a high-ranking official with the Osaka-based Kansai Electric Power Co.

Of the three reactors, the No. 3 reactor at Kansai Electric's Takahama Nuclear Power Plant was stopped for regular inspections that began on Feb. 20. Furthermore, the No. 6 reactor of the Kashiwazaki-Kariwa Nuclear Power Plant, the last reactor operated by Tokyo Electric Power Co. (TEPCO), stopped on March 25. Operations at the No. 3 reactor of Hokkaido Electric Power Co.'s Tomari plant, the last of the 54 nuclear reactors, are scheduled to be stopped on May 5.

As a result, utilities' reliance on thermal power will further increase. However, thermal power stations cannot be regarded as stable sources of electricity because they cannot endure full operations over a long period.

If power suppliers are forced to operate such plants over an extended period, they could develop technical problems one after another, according to a senior official with the Federation of Electric Power Companies of Japan.

Moreover, the nine power suppliers' increased reliance on thermal power pushed up their total fuel costs over the April-December period of last year alone by approximately 1.43 trillion yen.

As suspended nuclear reactors cannot be reactivated due to strong opposition from the communities that host them and other factors, "The more electricity we sell, the greater the deficits we suffer," says an official with the industry's regulator, the Economy, Trade and Industry Ministry.

TEPCO, the operator of the tsunami-hit Fukushima No. 1 Nuclear Power Plant, raised electric power charges for corporate customers in April this year.

Moreover, an increase in the dependence of utilities on thermal power will result in a rise in the emissions of carbon dioxide that is believed to cause global warming. The Institute of Energy Economics, Japan (IEE) estimates that Japan's carbon dioxide emissions in fiscal 2011 increased 2.1 percent from a year earlier.

"There are limits to Japan's excessive reliance on certain energy sources," says IEE Chairman and CEO Masakazu Toyoda.

Click here for the original Japanese story

Not enough domestic rice?

April 6, 2012

Consumers opt for cheaper imported rice

The Yomiuri Shimbun http://www.yomiuri.co.jp/dy/business/T120405005578.htm



Retail prices of rice (5kg)

Akita Komachi from (Califo	ornia	¥3,480
Koshihikari from the district in Niigata Pre	Uoni fectu	uma ire	¥2,999
Koshihikari from Niigata Prefecture		¥2,3	299
Akita Komachi from Akita Prefecture	¥	1,850	
Domestic blended rice	¥1,650		
Rice from Iilin			

867

As domestic rice prices increased following the crisis at the Fukushima No. 1 nuclear power plant, an increasing number of consumers are opting for cheaper imported rice.

Some restaurant operators started using imported rice on their menus in an apparent move to gauge customers' reactions with an eye on the Trans-Pacific Partnership trade negotiations, which Japan has expressed an intention to join.

Seiyu GK, a major supermarket chain operator in Kita Ward, Tokyo, started selling rice from China's Jilin Province on March 10 at its 149 stores in Tokyo and five other prefectures in the Kanto region, as well as Shizuoka Prefecture.

At Seiyu's Akabane store in the ward on Wednesday afternoon, a 45-year-old homemaker said she had tried the Chinese-grown rice once, which sells for 1,299 yen for five kilograms.

"We have no complaints about the taste," she said. "We appreciate the affordability as we have a son in middle school who has a big appetite."

The Jilin rice is increasingly popular as it is about 20 percent cheaper than the most affordable domestic product--a blended rice priced at 1,650 yen, according to a Seiyu public relations official.

"It's been selling much better than we expected," he said.

The hospitality industry is also seeing an increasing number of restaurant operators using imported rice. Kappa Create Co., an operator of a sushi restaurant chain in Saitama, for example, has been using U.S. rice at a restaurant in the city since January.

Matsuya Foods Co. in Musashino, Tokyo, which runs gyudon beef bowl restaurants, followed suit in February by mixing domestic and Australian rice at about 70 percent of its eateries.

The chain operator prefers harder rice because it soaks up less sauce than regular rice does. However, the company was unable to secure enough hard domestic rice this year.

"We realized that [gyudon] tastes better with harder Australian rice than with soft domestic rice," a Matsuya official said.

Many restaurant operators are willing to use imported rice due to shortages of affordable domestic rice.

The average trading price of rice was 15,327 yen per 60 kilograms in February--up 21 percent from a year before--according to the Agriculture, Forestry and Fisheries Ministry.

"Many farmers are unwilling to sell rice, expecting prices to rise," an official from a major rice wholesaler said of a possible factor behind the price increase.

The number of restaurant operators interested in using imported rice is believed to be rising dramatically, according to Toshikazu Nishira, 50, who runs a rice shop in Sanda, Hyogo Prefecture.

"We receive online orders for cheap Chinese rice from those we presume are in the hospitality industry," he said.

In July last year, a law concerning rice origins came into full effect. The law obliges restaurant operators to keep records on rice purchases and label the place of origin, making it easy for consumers and others to see where foreign rice is served.

=== Limited amount of imports

No matter how popular foreign rice becomes, however, only a limited amount can be imported.

The country currently imposes a 778 percent tariff on foreign rice to protect domestic farmers. Therefore, only 100 to 200 tons of rice is imported by paying the tariff each year.

Foreign rice currently available in the market has been imported through the so-called minimum access system.

Under the Uruguay Round in the General Agreement on Trade and Tariffs in 1993, Japan is required to import a specific amount of rice every year tariff-free. It currently imports about 770,000 tons of rice every year under the system, while about 8 million tons of rice is harvested domestically.

Most of the minimum access rice is used as animal feed or as an ingredient in processed food, with some sent as aid to foreign countries.

Under the minimum access system, a maximum of 100,000 tons of rice can be imported as staple food. Calls may come, however, to expand the amount if imported rice becomes more popular, experts said. (Apr. 6, 2012)

Nuke industry losing future human resources

April 16, 2012

University, grad school enrollments to study nuclear energy drop by 16%

http://mainichi.jp/english/english/newsselect/news/20120416p2g00m0dm051000c.html

TOKYO (Kyodo) -- Enrollments at departments offering majors in nuclear energy-related studies at seven universities in Japan have dropped by 16 percent this year in the wake of the nuclear crisis triggered by the massive earthquake and tsunami last March, a Kyodo News survey released Monday showed.

Students enrolling in undergraduate and graduate courses at the seven universities in the country allowing first-year students to choose their major in such fields totaled 223 this year, down by 16 percent from 264 last year.

An official of the education ministry said, "Students may be concerned whether the field of study is promising enough" after the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi power plant in Fukushima Prefecture in northeastern Japan.

Experts fear that the decrease in students in such fields may cause in the future a lack of engineers and experts necessary for reactor decommissioning and developing decontamination technology as well as employees for power companies. **Human resources in such fields will be needed even if Japan moves toward denuclearization,** they said.

The seven universities are the University of Tokyo, Kyoto University, Fukui University, Waseda University, Tokyo City University, Tokai University and Fukui University of Technology.

Fukui University of Technology saw the biggest decline among the seven, with students enrolling in the department of nuclear-related studies dropping to 10 from last year's 34, or by 71 percent. Fukui University saw the number drop to 25 from 42, a 40 percent drop.

Fukui Prefecture, in which the two universities are located, has a concentration of nuclear reactors.

The number of applicants for departments offering such majors at the seven universities declined by 12 percent to 647, according to the survey.

The number of applicants and enrollments last year was about the same as in the previous year, according to the universities.

"Students are anxious as it is unclear whether the idled reactors nationwide will actually be reactivated," said Fumio Nakayasu, a professor at Fukui University of Technology's department of the application of nuclear technology.

All but one of Japan's 54 commercial nuclear reactors are currently idled mostly after regular maintenance and no decisions have been made to restart any of them amid heightened public concern over the safety of nuclear power in the aftermath of the accident at the Fukushima plant.

Cherry blossom in Fukushima

Reporters visit cherry blossom beauty spot lost to Fukushima nuke disaster

Reporters and municipal staff in white protective suits walk along the "flower tunnel" in Tomioka, Fukushima Prefecture, inside the nuclear disaster exclusion zone on April 19. (Mainichi)



拡大写真

TOMIOKA, Fukushima -- The cherry blossoms are in full bloom here, and as in years past people have come out to see them, strolling beneath the pink canopy. However, unlike years past, the visitors have not come with picnic baskets and plenty to drink, but clad in white protective suits and masks. For Tomioka is a ghost town, lost to the Fukushima nuclear disaster.

The most glorious blossoms to be seen in the town, deep in the exclusion zone around the Fukushima No. 1 nuclear plant, are in Yonomori Park, which was opened to the news media on April 19. The centerpiece of the park is the "flower tunnel" -- about 2.5 kilometers of road running beneath cherry tree branches clad in powder pink blossoms. The road was the symbol of the town and a prime spot for cherry blossom viewing parties.

The nuclear disaster, however, put an end to all that, as all some 16,000 townspeople were forced to evacuate, and are now scattered across the country. However Tomioka Municipal Government officials decided that "at the very least" they wanted to show residents "the cherry blossoms of our hometown" via the media and allowed reporters into the exclusion zone.

What resulted was perhaps a much quieter than usual cherry-blossom viewing, with municipal staff and reporters wandering along the road in their white suits, birds chirping in the tree branches.

There are about 2,000 cherry trees planted in and around Yonomori Park. The first 300 were planted in 1900 to commemorate the settling of the town.

"I hope that by next year the evacuation order will have been lifted, so that the townspeople will be able to have their cherry blossom parties here again," a municipal official commented.

Not all radioactive contamination stems from Fukushima

Friday, April 20, 2012

Bridgestone to recall nearly 10,000 Jobno bicycles with radioactive baskets

By HIROKO NAKATA Staff writer http://www.japantimes.co.jp/text/nn20120420a6.html

Bridgestone Cycle Co. plans to recall 9,405 of its Jobno bicycles after radioactive materials were found in its Chinese-made stainless steel basket, the company said Thursday.

Radiation of 7.5 to 10.6 microsieverts per hour was detected on the upper edge of the baskets attached to the bikes, according to Bridgestone Cycle and the Education, Culture, Sports, Science and Technology Ministry.

The isotope was identified as cobalt-60, which was not present in the fallout spewed by the Fukushima No. 1 power plant, they said.

"We are examining why the stainless steel includes the radioactive material, but it probably got into it in the process of producing steel material," Bridgestone Cycle spokesman Toshikazu Sato said.

Riding the bicycle for an hour a day would expose the rider to 0.059 millisievert a year, the ministry said. The level is far below the 100-millisievert level thought to increase the risk of cancer.

Sato also said the company has not yet decided when to issue the recall.

Bridgestone Cycle, a unit of tire maker Bridgestone Co., will recall Jobno models JB40TP, JB60TP, JB63TP, JB70TP, JB73TP, JB40T, JB43T, JB60T, JB63T, JB70T and JB73T. The company's customer call center can be reached at 0120-72-1911.

Only 9% of Fukushima's farmland restored

April 2013

Only a third of disaster-ruined farmland restored http://www3.nhk.or.jp/daily/english/20120423_15.html

Japan's agriculture ministry says only a third of farmland damaged by last year's tsunami is ready for use again.

More than 24,000 hectares of farmland in 12 prefectures were damaged by salt from the tsunami, and suffered cracks and liquefactions from the earthquake.

The agriculture ministry says just over 8,000 hectares, or about 33 percent, had been cleared for cultivation.

In Fukushima, only 9 percent of damaged farmland has been restored, due to the effects of the nuclear disaster.

The ministry says the removal of salt and sludge in some areas is taking time, while in others no decision has been made on whether to repair farms at all.

The ministry hopes to restore 90 percent of all affected farmland by the spring of 2014.

A shortage of students of nuke technologies

May 14, 2012 Students shun nuclear majors / Govt, industry try to foster interest in the now-unpopular field

http://www.yomiuri.co.jp/dy/national/T120513002128.htm

The Yomiuri Shimbun

The number of students wishing to enter nuclear technology-related courses has been decreasing since the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant.

This is partly because the government's future energy policy remains unclear and the potential timing for the reactivation of idled reactors is also uncertain.

Nuclear industry workers have voiced concern that if the number of students majoring in the field continues to shrink, work to decommission the nuclear reactors at the accident site and those to improve safety controls at nuclear power plants will be adversely affected.

Tomonori Ihara, 23, a second-year graduate student at Tokyo Institute of Technology, said, "This year, the number of undergraduate students who attended the explanatory meeting for our graduate course drastically decreased."

The Department of Nuclear Engineering, to which Ihara belongs, was once regarded as one of the most prestigious in the university. Alumni include a number of prominent engineers, including Masao Yoshida, the former head of the Fukushima power plant who coordinated containment operations following the accident.

However, the number of undergraduate students who attended the explanatory meeting in March was only about 10 percent of the number in past years.

Ihara, who plans to continue his studies in a doctoral course, said: "The central issue in the accident was how the government and power companies dealt with regulations [on nuclear reactors].

"It wasn't a sign that Japan's nuclear industry hit bottom. I want the government to prepare an environment where we can safely engage in research and technological development of nuclear power."

According to a survey by the Education, Culture, Sports, Science and Technology Ministry, among those who took entrance exams this spring, 733 applied to enroll in three faculties and eight graduate school courses with the word "nuclear" in their titles at such prestigious schools as the University of Tokyo, Kyoto University and Waseda University. The number was down about 11 percent from the previous fiscal year.

The most significant drop was in Fukui Prefecture, where many nuclear power plants are located.

The number of students who applied for nuclear-related courses at the University of Fukui's graduate school fell 39 percent from 46 to 28. At Fukui University of Technology, applications for such courses dropped 60 percent from 60 to 24.

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Anxiety about nuclear jobs

The tendency to shun nuclear-related industries has also affected students' job-hunting trends.

"I no longer want to join the nuclear power industry; I'll search for a job in another field," said 23-yearold Isshin Takenaka, a first-year graduate student at the University of Tokyo in the Department of Nuclear Engineering and Management. Industry associations, such as the Japan Atomic Industrial Forum, which comprises electric power companies and nuclear energy-related manufacturers, hold seminars on the nuclear power industry in Tokyo and Osaka every year.

Many students who have later joined companies in the nuclear industry attended the seminars. In fiscal 2010--before the onset of the Fukushima nuclear plant crisis--a total of 1,903 students attended the event, but the number dived to 496 in fiscal 2011.

"The central government has presented its policy of ending the country's dependence on nuclear power in the long term," said an official in charge of the event at the forum. "So most students feel anxious about the future of the nuclear industry. Until recently, manufacturers had the advantage in recruiting qualified job applicants, so they are taking the situation seriously."

A 25-year-old second-year graduate student of Tokyo Institute of Technology who is majoring in a nuclear field has received an unofficial job offer from an electric power company.

"I had concerns about the future of nuclear power plants, but my desire to learn about nuclear energy was stronger. Because of the accident in our country, we have to work hard to ensure the safety of nuclear power."

Meanwhile, the Environment Ministry is actively trying to recruit talented individuals for a planned nuclear regulatory agency, a new entity that is scheduled to be established as its affiliate.

Though it still remains unknown when the new agency will be established, ministry officials held meetings last month at five universities that offer nuclear-related majors to explain the proposed system. The officials also joined the students for drinks.

A senior official of the ministry said, "Most of the students want to better utilize Japanese technologies. Even if the number of applicants is small, we're seeking qualified students who are enthusiastic about such regulatory administrative jobs."

Prof. Satoru Tanaka of the University of Tokyo, who also serves as president of the Atomic Energy Society of Japan, said: "The work to decommission reactors at the Fukushima No. 1 nuclear power plant is a new experience for this country and will last about 40 years.

"We also have to further ensure the safety of nuclear reactors for their reactivation. Demand for nuclear engineers will continue to increase."

Tanaka warned that once the cycle of developing human resources stops, recovery will not be easy.

"For Japan to survive as a technology-oriented nation, more efforts should be made in middle and high school education to stimulate young people's interest in the field," he said. (May. 14, 2012)

Metro buses in the red because of TEPCO

Tepco halts dividends, so metro buses to run red ink

By MINORU MATSUTANI Staff writer http://www.japantimes.co.jp/text/nb20120517a1.html

The Tokyo Metropolitan Government's bus operations, running in the black since 2003, probably lost money for the first time for fiscal 2011, and the major reason is the dividends from Tokyo Electric Power Co. shares have dried up.

While many bus operators, public and private, have been losing money for more than a decade amid the declining population and rise in other transportation options, the metropolitan government's bus operation has logged profits since 2003.

That doesn't mean, however, that metro bus operations had been a money generator until 2010. The truth is that it had been receiving all of the dividend payments from Tepco shares held by the metro government.

The payments far exceeded the bus operation's losses until the second half of fiscal 2010, when Tepco stopped paying dividends following its massive losses in connection with the nuclear disaster in Fukushima.

"We have not closed the books for fiscal 2011, but we will undoubtedly have posted losses," Atsuko Inagaki of the capital's Transportation Bureau said. "The largest reason is that we got no dividend" from Tepco shares.

The metropolitan government is Tepco's largest shareholder, owning 2.66 percent of the utility, or 42.7 million shares.

The metro government had budgeted for a net profit of ¥300 million from the bus business in fiscal 2011, under the assumption that it would receive ¥2.56 billion in dividends from Tepco shares. It created the budget in summer 2010, Inagaki said.

Tepco had paid a dividend of about ¥30 per share every six months from at least 2001 to the first half of fiscal 2010, translating into about ¥2.56 billion a year.

The profit from the bus operation has been smaller than the Tepco dividends since around 2001, which means the business would likely have posted losses had it not been for the utility.

The metropolitan government has counted Tepco dividend revenue in the bus operation budget since World War II.

The capital was invested in Tepco during the war by supplying power generation equipment through its Electricity Bureau, the predecessor of the Transportation Bureau, Inagaki said.

The bureau first folded the dividend income into the Toden tramway business, but because that operation shrank dramatically, it has been putting the money into the bus business since 1972, she said.

However, the utility, which announced its second consecutive annual loss in fiscal 2011, stopped paying dividends from the second half of 2010, which means Tokyo's bus business stopped receiving dividends in fiscal 2011, Inagaki said.

"The financial conditions are tough. We will continue to make efforts to increase passengers and cut costs," Inagaki said.

Only one out of 26 public bus operators as well as 67 out of 228 private bus entities were running in the black in fiscal 2010, according to statistics compiled by the transportation ministry. Combined, public and private bus operators have posted an accumulative loss every year since at least 2001.

With Tokyo's bus business likely to lose money, its drivers' high salary level may become a target of public criticism, as it has in the city of Osaka.

The metropolitan government pays its bus drivers an average annual salary of ¥7.36 million, compared with ¥5.73 million for drivers working for competing bus companies in Tokyo, according to the Transportation Bureau. The metropolitan government is trying to cut drivers' salaries, according to officials.

Osaka Mayor Toru Hashimoto has publicly criticized the salaries of his city's bus drivers, and the municipal government is negotiating with labor unions to cut their pay. Osaka's bus drivers earn an average of ¥7.39 million a year, compared with ¥4.6 million for drivers at private bus firms in the city, an Osaka official said.

Mutated canola?

http://fukushima-diary.com/2012/05/more-mutated-canola-in-noda-city-chiba/





Japan to deal with debris heading for America

May 19, 2012

Govt discussing ways to dispose of drifted debris

http://www3.nhk.or.jp/daily/english/20120519_22.html

Japan's government is discussing what to do about debris drifting across the Pacific Ocean from last year's disaster in Japan.

The Environment Ministry estimates that about 1.5 million tons of debris drifted out to sea following the tsunami that hit northeast Japan. The debris includes small fishing boats and waste from destroyed houses.

A fishing boat, fishing nets, and a motorbike were found on the Pacific coast of North America.

Discussions are under way among officials from government ministries, including the Environment Ministry and Foreign Ministry, on ways to dispose of the debris.

They have so far agreed that drifting fishing boats should be handled by the Fisheries Agency and other vessels by the Land, Infrastructure, Transport and Tourism Ministry.

If Japan is informed of any vessel being washed ashore, the relevant ministry will check its owner from its name and registration number. It will then judge whether to dispose of it or accept it by confirming the owner's intention.

International law does not require Japan to recover drifting debris. However, the government intends to study possible payment for disposal of the debris.

Officials say large amounts of debris, such as the wreckage of houses, may reach the western coast of North American countries from around October.

Evacuation from F. has caused terrible shortage of staff

May 21, 2012

Fukushima exodus a torment for the physically disabled

http://mainichi.jp/english/english/newsselect/news/20120521p2a00m0na021000c.html

FUKUSHIMA -- With more and more people evacuating from Fukushima Prefecture over radiation fears and the number of care workers diminishing, physically disabled patients here are beginning to lose hope for the future.

"Maki, would you like some tea?" a care worker asks, placing a straw in a disabled woman's mouth upon her affirmative nod.

The 39-year-old woman, Maki Kanno, a resident of Fukushima, is suffering from a rare disease known as fibrodysplasia ossificans progressiva (FOP), which causes her muscles to gradually transform into bones. She was diagnosed with the disease at the age of 4, and now, some 35 years later, it has progressed to a level where she can barely move only her neck and right limbs.

She is assisted by helpers on a 24-hour basis. They move her from her wheelchair to her bed and vice versa, and turn her body over every two hours, including at night, to prevent her from contracting bedsores.

To reduce her parents' burden of nursing her, Kanno moved out of her family home in 2009 and started life by herself at an apartment provided by a local non-profit organization (NPO).

Through services that provided her with nighttime and extended shift helpers, Kanno was even able to realize her dreams of going out at night and traveling to Hokkaido.

However, the outbreak of the nuclear crisis at the Fukushima No. 1 Nuclear Power Plant changed her lifestyle completely.

The helper who accompanied her on the trip to Hokkaido quit her job at the end of last year to evacuate outside the prefecture, "because of the radiation," Kanno recalls being told.

Kanno herself thought of leaving Fukushima and had planned to visit the Kanto and Kansai areas this April to look for nursing facilities. However, unable to find a helper to accompany her on the trip, she abandoned the idea.

Kanno began feeling the effects of the shortage in care workers around last summer. As many helpers became increasingly responsible for several patients at the same time, fewer of them were able to commit to long shifts. Even though there could be six helpers during the day, they took turns every two hours, making it difficult for her to plan regular commutes to her four doctors. Traveling outside of Fukushima, to visit her friends, for example, also became increasingly difficult.

Takenobu Katagiri, a professor at Saitama Medical University, and a long-year researcher of the rare disease, said about 60 patients suffer from FOP throughout Japan. The majority of them, Katagiri says, live with their families and are nursed by them.

"I've never heard of a FOP patient living alone, apart from Ms. Kanno," he said.

However, with her father having passed away last year and her 63-year-old mother being ill, it is not easy for Kanno to move back into her family's home.

While wishing to maintain her independence, Kanno can't help but worry about the future, if the shortage of helpers continues.

"I can't foresee the future," she said.

Seven of the 45 full-time staff members at the Fukushima-based NPO Kanno uses quit to evacuate from the prefecture.

According to a survey conducted by Shogaisha Jiritsu Shien Kyogikai, a Fukushima Municipal Government-entrusted committee supporting disabled people's independence, 10 of the city's care worker providers have experienced staff shortages after the nuclear disaster. Altogether, 24 companies of the 27 providers in the city responded to the survey. Of these, 71 percent, or 17 companies, answered that they were experiencing either "remarkable" or "relative" shortages of staff.

Seventy-five percent of the firms said that they were anticipating further staff shortages. Some said staff members were considering evacuating from Fukushima Prefecture out of fear for their children's health.

"The problem cannot be solved with independent efforts in the private sector," says Seiichi Nakate, the vice-chairman of the committee's life support department.

The continuing evacuation from Fukushima Prefecture has also had a major impact on staff members at hospitals and local governments.

According to Fukushima Prefectural Government officials, the number of full-time doctors in hospitals within the prefecture decreased from 2,026 in March 2011 before the disasters to 1,963 in April 2012.

A total of 105 employees left their jobs at the Minamisoma Municipal Government during fiscal 2011, choosing early retirement -- some four times more than during regular years.

Although the municipal government hired 33 new employees this April and has received 29 people on loan from other areas, including some from Tokyo's Suginami Ward, there are still not enough workers, officials say, given the large amount of work that is yet to be done in the wake of the disasters.

To secure more employees, the Minamisoma Municipal Government plans to hire staff members from August on a three-year contract.

TEPCO to reduce charges for PPS

June 12, 2012

TEPCO sets cut in charge for line access http://www.yomiuri.co.jp/dy/national/T120612005301.htm

The Yomiuri Shimbun



Tokyo Electric Power Co. will lower charges for power producers and suppliers (PPS) to use its electricity transmission lines by about 10 percent, sources said Tuesday.

This will be the first reduction of such charges in four years.

TEPCO, which has been forced to streamline its management, decided on the cuts after reviewing costs for construction and maintenance of its power line network, the sources explained.

The reduction will make it easier for independent small power suppliers to sell their own electricity to major clients such as factories and companies. Therefore, the rate cut is expected to revitalize the power market.

The PPS firms, such as major urban gas firms and oil wholesalers, have been selling electricity generated by their own thermal and other kinds of power sources to factories and office buildings.

However, the access charges for transmission networks usually comprises about 20 percent of their electricity charges for major clients. This cost burden has been a major obstacle for new companies that want to enter the business.

Within TEPCO's service area, PPS companies provide only 6 percent of all electricity sold.

TEPCO reviewed the basic factors for calculating electricity charges when it applied to the government for permission to raise electricity charges for households beginning this summer.

The review showed costs for construction and maintenance of transmission lines for its network will decrease, the sources said.

TEPCO will apply the reduction in access charges retroactively to April, they said.

If more companies and factories conclude the PPS firms' charges are attractive after the new access rate is implemented, the total power supply will also increase and may make up for the expected power supply shortage this summer, the sources said.

Beginning in April, TEPCO raised power charges for major clients such as factories and companies about 16 percent on average.

In the past, many corporations and local governments that wanted to conclude contracts with PPS companies with less expensive charges had to give up due to the scarcity of new companies joining the market.

If more new suppliers enter the business, clients will be able to choose from cheaper suppliers. TEPCO has repeatedly cut its transmission access charges after implementing its own cost-reduction measures.

For clients such as large factories with contracts for 2,000 kilowatts of power, the average charge was 3.32 yen per kilowatt-hour as of March 2000, when the electricity retailing business was liberalized.

TEPCO subsequently applied to the then International Trade and Industry Ministry for five more cuts. As of September 2008, it was cut to 2.25 yen, about two-thirds of the initial charge.

Public mistrusts scientists

Scientists lost public trust after March 2011 quake, nuclear disaster

http://mainichi.jp/english/english/newsselect/news/20120619p2g00m0dm101000c.html

TOKYO (Kyodo) -- Public trust in scientists has declined significantly since the March 2011 earthquake, tsunami and nuclear disasters, the government said in an annual report Tuesday.

Among the reasons for the decline, the 2012 white paper on science and technology noted the lack of Japanese-made robots able to be used at the stricken Fukushima Daiichi nuclear complex, and scientists' inability to predict the magnitude-9 temblor.

The survey also indicated that while about 65 percent of people in Japan still trust scientists, sharply down from the pre-disaster level of 76 to 85 percent, many scientists are unaware of a change in public perception.

The white paper did not show a clear stance on the government decision to set the allowable radiation level for children at 20 millisieverts per year after the outbreak of the nuclear disaster, and its failure to disclose data on predicted dispersion of radioactive materials collected by the System for Prediction of Environmental Emergency Dose Information, or SPEEDI.

Meanwhile, the government also issued an annual report on disaster prevention, stressing the need to review the current counter-disaster system by learning from the latest disaster.

Touching on the Fukushima nuclear disaster, the 2012 white paper on anti-disaster measures said it was regrettable that the prime minister's office could not obtain sufficient information amid the malfunction of the information collection and distribution networks, while the authorities could not provide sufficient support for evacuees.

The white paper also referred to a possible gigantic earthquake whose epicenter is focused on the Nankai Trough in the seabed off central to western Japan, saying it is necessary to establish a system for smooth evacuation from tsunami and prompt anti-disaster education.

On a possible earthquake whose epicenter is below Tokyo, the paper proposed strengthening measures to help those who cannot return home due to disruption of transport and enhancing anti-disaster measures for the central government's key functions.

Who's to pay for getting rid of the 1.5 million tons of debris?

June 24, 2012

Japan, US to discuss disposal of tsunami debris

http://www3.nhk.or.jp/daily/english/20120624_04.html

Japanese and US officials plan to exchange information on floating debris created by last year's massive tsunami. The debris is now turning up along the North American west coast after drifting across the Pacific.

The officials are scheduled to hold talks in Seattle on Monday.

The Japanese government estimates that **around 1.5-million tons of debris is now drifting in the Pacific.** It was washed out to sea in March last year by the tsunami waves that struck coastal areas of northeastern Japan.

Some of the debris has already washed up on the US and Canadian coasts. Much more is expected to arrive soon.

Japanese officials plan to explain that much of the wreckage of houses swept away by the tsunami is likely to reach the US coast in October.

The officials of the two countries hope to discuss who will bear the cost of disposal as well as whether Japan will send workers to help with retrieval efforts.

Lasting effects of the disaster on tourism

June 29, 2012

Many foreign tourists still steering clear of Tohoku region

http://www.yomiuri.co.jp/dy/national/T120628004802.htm

The Yomiuri Shimbun



Number of foreign guests at hotels in Iwate, Miyagi and Fukushima prefectures

Many foreign tourists are avoiding trips to the disaster-hit prefectures of Iwate, Fukushima and Miyagi due to lingering concerns about radioactive contamination and fears that another major earthquake or tsunami could strike the Tohoku region.

The number of tourists to the prefectures plunged after the Great East Japan Earthquake.

Although Japanese visitors have gradually returned in growing numbers, the same cannot be said for visitors from overseas. The number of foreigners staying overnight in the prefectures nose-dived to about 90,000 in 2011 from about 330,000 in 2010.

It likely will take more time before visitor numbers return to the level seen before the March 11, 2011, disaster. Most notably, China and South Korea--which account for about 40 percent of tourists to Japan--still advise their citizens to refrain from traveling to areas hit by last year's earthquake and tsunami.

On average, about 100,000 foreign tourists visited Fukushima Prefecture each year, including more than 40,000 South Koreans who came to play golf.

Flights between Fukushima Airport and Incheon Airport near Seoul, which were suspended after the disaster, have not resumed.

According to the Fukushima prefectural government, a group of 60 South Korean tourists came to play golf in the prefecture in May--the first group since the disaster.

"Unless flights from South Korea resume, the number of customers won't increase," said Masami Midorikawa, owner of the Shin-Shirakawa Golf Club in Shirakawa, Fukushima Prefecture. "Although private companies are getting the word out that [most of the] prefecture is safe to visit, there's only so much they can do. I hope the central and prefectural governments will provide detailed explanations" to reassure potential tourists.

While many countries advise their citizens to avoid only the area within 20 kilometers of Tokyo Electric Power Co.'s crippled Fukushima No. 1 nuclear power plant, South Korea still recommends its people refrain from visiting the entire prefecture. As a result, the number of South Korean tourists to Fukushima between April and December in 2011 dropped to just about 1,600.

China also recommends its citizens stay away from the prefecture and other areas hit hard by the disaster.

According to a preliminary estimate by the Japan Tourism Agency, about 20.5 million people--including Japanese and foreigners--stayed overnight in the three prefectures in 2011.

Many of these people apparently were engaged in reconstruction work, and the figure was up by about 1.2 million from 2010.

However, the number of foreigners staying overnight in the prefectures dropped to about 90,000 in 2011, down about 70 percent from the previous year.

Matsushima, Miyagi Prefecture, is famed for its scenic islets and is one of Tohoku's biggest tourist magnets.

About 9,000 visitors from China, Taiwan, Hong Kong and elsewhere stayed in Matsushima in 2010. In 2011, only about 1,000 came.

According to a union of pleasure boat operators who make tours around Matsushima islands, about 200 foreign tourist groups boarded these boats each year before the disaster, but only 40 groups did between January and June this year.

"There are also hardly any individual foreign tourists on our boats. They apparently are afraid not only of radioactive contamination but also of another earthquake and tsunami," said Kazuhiko Mano, director of the union.

A tourist information center for foreigners in front of JR Matsushima-Kaigan Station has seen its visitors plunge by about 85 percent.

"While the number of Japanese tourists has recovered to 70 percent of the figure before the quake, the number of foreign tourists remains small," said an official at the Matsushima Tourist Association, which operates the center.

It is a similar story in Iwate Prefecture.

Coastal areas are reporting only a handful of foreign visitors.

A tourism association of Miyako in the prefecture plans to set up an English website this fiscal year to try to attract more foreign tourists and publicize progress made in the recovery from the earthquake and tsunami.

"If foreigners who visit coastal areas tell other people that it's safe to come here, that can help our reconstruction efforts," said Hitoshi Matsudate, head of the commercial and tourism section at the Miyako municipal government.

=== Govt in promotion efforts

The central government is trying to encourage foreign tourists to return to disaster-hit areas.

The Japan Tourism Agency and nine prefectures in Tohoku and northern Kanto held promotion events in nine overseas cities such as Beijing and Hong Kong during the six months up to November.

"By holding business meetings, we hope to encourage participants to plan tours to Japan," an official at the agency's International Tourism Promotion Division said.

The Foreign Ministry will issue multiple-entry visas for individual Chinese tourists who plan to travel to Iwate, Fukushima and Miyagi prefectures from July.

The visa holders can enter Japan as many times as desired over a three-year period.

Under the government's "Cool Japan" campaign strategy to promote the nation, the Economy, Trade and Industry Ministry plans to export craft products and food culture distinct to the disaster-hit areas.

The ministry has chosen enterprises that applied to be part of the project, and is considering what products will be exported. The ministry will open an antenna shop in London in July, and plans to hold promotional events in China, Taiwan, India and France.

"We hope to unearth products that will appeal to foreigners and generate more interest in Tohoku," a ministry official in charge of the project said.

Anti-flotsam measures in US

July 7, 2012

4 U.S. states set up emergency funds to handle debris from Japan quake and tsunami



Local residents look at a dock from Misawa fishing port in Aomori Prefecture that washed up on Agate Beach in Newport, Oregon, on June 26. (Mainichi) 拡大写真

http://mainichi.jp/english/english/newsselect/news/20120707p2a00m0na011000c.html

LOS ANGELES, California -- Of the five U.S. states and one Canadian province that face the prospect of more rubble from last year's Great East Japan Earthquake and tsunami arriving on their shores, four have allocated emergency funds or are in the process of doing so, the Mainichi Shimbun has learned.

While debris has already begun to wash up on North American shores, the volume is expected to surge starting this fall, bringing with it concerns regarding disposal and impact on local ecosystems.

According to the Japanese government, up to 1.5 million metric tons of debris was washed away by tsunami generated by a massive earthquake that struck off the coast of northeastern Japan last March. Large-scale rubble has been found on the Pacific coast of Canada and the U.S. since April of this year; on April 6, the U.S. Coast Guard opened fire and sank a Japanese squid trawler off the coast of Alaska, and on June 5, a 20-meter-long dock from the Misawa fishing port in Aomori Prefecture washed up on a beach in Oregon.

The Mainichi Shimbun obtained information in writing and through phone interviews from the U.S. states of Alaska, Washington, Oregon, California and Hawaii, as well as from the Canadian province of British Columbia, regarding funds allocated for handling debris from the tsunami, as well as future budget considerations and other measures.

After a boat washed up onshore in Washington State on June 15, the state government set aside an emergency budget of \$600,000 and spent some 20,000 dollars on fact-finding investigations.

Meanwhile, Oregon raised its budget for anti-flotsam measures by \$50,000 from the previous year to \$135,000 and has spent approximately \$90,000 on dealing with the dock from Aomori Prefecture. Alaska budgeted \$200,000 for fact-finding investigations slated for August, and California, which has yet to find any large debris on its shores, is poised to allocate \$30,000 to its fiscal 2013 budget for the "minimum required for coastal cleanup."

Although the U.S. and Japanese governments have begun talks on dealing with the issue collaboratively, no international laws exist on the disposal of floating debris, and in the past, governments with jurisdiction over the shores where flotsam was found have customarily dealt with their disposal. With some 40,000 tons of rubble expected to drift onto North American shores between this coming fall and the new year, the aforementioned states and province set up a joint information center in March of this year. While the state and provincial governments intend to continue returning memorabilia and other personal items to their owners when possible, most of the rubble will likely face disposal, and they have turned to federal authorities for assistance.

The U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) has set aside \$618,000 for anti-rubble measures, part of which is being used to predict floating patterns of the

debris. However, fact-finding surveys have been left up to individual state governments, and it remains unclear how much the processing and disposal will cost overall.

About tsunami debris arriving in the US

July 9, 2012

News Navigator: What is the status of tsunami debris drifting towards North America?



Bobby Custard, of Phoenix, Ariz., in orange, watches as his children Jillian, left, 6, and Tyler, 4, investigate the aquatic life growing on the base of a fishing bin that washed up on Sunset Beach in Warrenton, Ore. on Monday, June 11, 2012. (AP Photo/The Daily Astorian, Alex Pajunas)

http://mainichi.jp/english/english/perspectives/news/20120709p2a00m0na002000c.html

The Mainichi answers common questions readers may have about debris from the Great East Japan Earthquake and ensuing tsunami that has arrived or is expected to arrive on the shores of the North American continent.

Question: How much debris from the earthquake and tsunami drifted out to sea?

Answer: The Ministry of the Environment estimates that about 5 million tons of debris was swept into sea following the tsunami, of which around 70 percent, or 3.5 million tons, sunk to the sea floor. The remaining debris -- about 1.5 million tons -- floated out into the Pacific Ocean.

Q: What kind of things drifted out to sea?

A: Many things like soccer balls and volleyballs used by schools have been found, but around 1.33 million tons of what floated out is wooden debris from houses. Boats, fishing equipment like buoys used in aquaculture, and plastic foam are also arriving on North American coastlines.

Q: How will the arrival rate change from now?

A: The ministry and other government organizations of Japan and the United States are predicting the arrival of debris based on ocean currents, satellite imagery and other data. Around 1.2 tons is expected to arrive in October, and 41,300 tons by February 2013. Fishing boats, buoys and other floating debris arrived quickly due to the influence of the westerlies. Wooden debris from houses receives little influence from the wind as only a small amount of it lies above the surface. However, such debris is expected to begin arriving in large amounts in the future.

Q: Objects with shellfish or seaweed attached to them have arrived. How could they affect ecosystems?

A: Even before the earthquake and tsunami, ocean garbage has been a serious problem, and many birds and ocean organisms die from getting caught in or consuming the garbage. Due to ocean currents and winds, garbage arrives on the west side of Japan from China, South Korea and other countries, while garbage from Japan arrives in Hawaii, the North American continent or elsewhere. It has long been pointed out that foreign species can attach themselves to ships or drifting objects that end up overseas. In the Great East Japan Earthquake, though, a large amount of debris was created at once -- a different scenario that needs more study.

It is thought that the amount of radioactive material on the debris is extremely small, as much tsunami debris had already drifted out to sea when the disaster at the Fukushima No. 1 Nuclear Power Plant broke out.

Q: Other countries are disposing of debris that arrives in accordance with customary practice, but what is Japan doing?

A: The Japanese government is compiling information at meetings of the Ministry of Foreign Affairs, the Ministry of Land, Infrastructure, Transport and Tourism and other relevant organizations, and sharing the information with other countries. In August, the nongovernmental organization JEAN, which is involved in activities to protect the marine environment, will be sent by the Environment Ministry to meet with U.S. NGOs. (Answers by Hiromi Nagano, Foreign News Department)

Help from the US authorities to dispose of debris

July 17, 2012

NOAA offers grants for tsunami debris disposal

http://www3.nhk.or.jp/daily/english/20120717_22.html

US federal authorities have decided to offer 250,000 dollars to 5 West Coast states to help them dispose of debris from last year's tsunami in northeastern Japan.

The National Oceanic and Atmospheric Administration said on Monday that the 5 states, including Oregon and Alaska, will each receive up to 50,000 dollars in grants.

The March 11th tsunami sent tons of debris adrift in the Pacific Ocean. Some has washed up on US shores, including a huge floating dock found in Oregon in June.

Oregon is seeking more federal aid, saying the dock alone will cost nearly 100,000 dollars to dispose of.

Funding will likely remain a problem, as more tsunami debris is expected to reach the US coast over the next several years.

A different vision of "responsibility"

July 18, 2012

3 more DPJ members to quit as nuclear power issue fractures party further

http://mainichi.jp/english/english/newsselect/news/20120718p2a00m0na010000c.html

Three more sitting Diet members of the ruling Democratic Party of Japan (DPJ) have announced they are leaving the party, not over the consumption tax hike bill that led to the defection of former leader Ichiro Ozawa and his followers, but over the government's decision to restart nuclear reactors.

"If the administration of Prime Minister Yoshihiko Noda says it will take responsibility for the restarts, then we want the government to take responsibility for stabilizing the Fukushima No. 1 nuclear plant reactors as well," said House of Councillors member Kuniko Tanioka at a July 17 news conference. "The administration's use of the word 'responsibility' is altogether too flippant."

The departure of Tanioka and fellow upper house members Yasue Funayama and Kuniko Koda points to smoldering differences within the DPJ not just over the tax hike bills passed by the House of Representatives against stiff opposition from the Ozawa camp, but over the issue of nuclear power in Japan.

Tanioka and Funayama had long made plain their opposition to reactor restarts, as they both joined a June 11 protest in front of the prime minister's office against the reactivation of two idled reactors at the Oi nuclear plant in Fukui Prefecture -- restarts green-lit by Noda. On July 17, all three Diet members cited the Noda administration's refusal to accept their plea to keep the Oi reactors offline as the reason for leaving the DPJ.

The departure of the three lawmakers would knock the DPJ's upper house caucus down to 88 members, and just three more defections would leave the largest opposition Liberal Democratic Party as the most numerous in the chamber. As the speaker of the upper house is traditionally a member of the largest party in the chamber, the DPJ could very well lose its hegemony over the management of Diet affairs.

Regarding the rash of recent defections, DPJ Secretary-General Azuma Koshiishi told a July 17 news conference, "I wonder if each of these (defectors) truly understands that they could destroy this administration even before it can put its case to the public (in the next general election)," revealing internal fears that the DPJ-led government could in fact fall.

Tanioka, Funayama and Koda were first elected in 2007, when Ichiro Ozawa was DPJ leader, and will all face re-election campaigns next summer. Though they arrived on the political scene under Ozawa's stewardship, Koda said that they "have no plans to join Ozawa's new party." Instead, they will join one other non-DPJ member of the upper chamber to form a new faction called Midori no Kaze (Green wind).

However, the three's opposition to both the consumption tax increase and nuclear power does put them in agreement with Ozawa, and they could yet cooperate with the latter's party's efforts to overthrow the DPJ-led government.

In related news, DPJ lower house member Hirosato Nakatsugawa also submitted his resignation from the party on July 18.

Unexpected impact of Fukushima

July 23, 2012

Egypt's atomic ambitions derailed by Fukushima crisis Jiji http://www.japantimes.co.jp/text/nn20120723a4.html#.UA0wTaBIwpU

DABAA, Egypt — The long-term plan for building Egypt's first nuclear power plant has become bogged down by protests as residents were awakened to the dangers of nuclear power mismanagement by the Fukushima crisis.

"After the Fukushima explosion, all the people became scared of the nuclear plant," said Mehana Abdel Hamid, the mayor of Dabaa, where the plant is scheduled to be built.

Local protests gained momentum after the triple meltdown at Tokyo Electric Power Co.'s Fukushima No. 1 plant, which lost its cooling systems and all power after it was hit by the magnitude-9 earthquake and subsequent tsunami in March last year.

The Arab Spring movement that led to the collapse of former President Hosni Mubarak's regime last year also helped raise awareness.

The plan to build the nuclear power station in Dabaa on the Mediterranean coast in northern Egypt was launched in 1981 under former President Anwar Sadat.

Continuing Sadat's authoritarian rule, Mubarak pushed the plan amid rapidly growing demand for electricity. In 2003, about 350 houses were bulldozed to make way for the plant.

But in January, residents blew up key work buildings and razed the walls around the site.

Mhanna Rahoma, the leader of the protesters, said their actions were initially prompted by the confiscation of land they inherited from their ancestors. The residents had undertaken hazardous work to clear mine fields in the area, which was part of the site of the famous battle of El-Alamein between the Axis and Allied powers during World War II.

The protesters were encouraged by the inauguration earlier this year of the new president, Mohammed Morsi of the Muslim Brotherhood, an Islamic fundamentalist group. Morsi hinted the project might be reviewed, although he lacks effective power because Egypt is still under military control.

On the other hand, the Ministry of Electricity and Energy is poised to forge ahead. It said it has submitted a document to the president emphasizing the project's importance and safety.

At the project site, residents have started cultivating farmland and putting up new buildings. Mastour Boushkara, 38, who has restarted farming, said he believes that there is a 90 percent chance the project will be scrapped and that he is determined to block it if it goes ahead.

Even cows are a problem

July 27, 2012

Cows pose road hazard, Tepco told

Jiji http://www.japantimes.co.jp/text/nn20120727a6.html Fukushima police and the central government's local office for national roads want Tokyo Electric Power Co. to be careful when traveling to and from the Fukushima No. 1 nuclear plant and steer clear of abandoned cattle on the roads.

There have been 27 accidents involving vehicles that hit stray cattle, mainly while carrying workers to and from the Fukushima No. 1 nuclear plant, since the no-entry zone was established in spring 2011.

At a meeting Wednesday with Tepco officials in Kawamata, Toshihiko Kiyokawa, a police chief based near the plant, urged that workers keep a closer lookout for cattle on roads, noting a car striking a cow can have grave consequences.

Pointing out that 26 of the 27 accidents occurred at night and mainly involved black cattle, the police chief urged drivers to put their headlights on high beam and drive more slowly at night.

Despite efforts by the prefecture to round up strays, some 300 cows are still thought to be living in the wild.

Japanese debris on US Pacific Coast - What to do?

August 5, 2012

Japan's debris team inspects Oregon coast

http://www3.nhk.or.jp/daily/english/20120805_91.html

A Japanese survey team has inspected a beach in Oregon and collected debris from last year's tsunami in northeastern Japan.

Part of the debris that was washed away by the tsunami has reached the US West Coast. The disposal of this garbage has become a big issue.

The Japanese government intends to help collect the debris. The 9-member survey team includes staff from JEAN -- a Japanese non-governmental organization dealing with the sea garbage issue -- and Environment Ministry officials.

They helped local volunteers to clean up Canon Beach on Saturday.

The amount of garbage that has drifted ashore has doubled or tripled since the start of this year. It's
believed that much of the debris came from Japan.

A surfer in his 20's says he has no idea what will come next, and he is worried that the beautiful beach will be contaminated.

A large floating pier from Aomori Prefecture recently washed ashore in Oregon.

The head of JEAN, Azusa Kojima, says she is impressed by the amount of preparation that was carried out before the debris started to arrive.

She said she will consult the other members to come up with the best measures to tackle the problem.

The survey team will stay in the US until Tuesday to discuss the scale of support that is needed.

The return of the CO2

September 20, 2012

Switch to thermal power sent utilities' CO2 emissions soaring 29% in 2011

http://www.japantimes.co.jp/text/nb20120920a4.html

Jiji

Carbon dioxide emitted by the nation's 10 regional utilities came to 409 million tons in fiscal 2011, up 29 percent from the previous year and breaking 400 million for the first time, according to data recently compiled by an industry body.

The shutdown of all of the nation's nuclear reactors due to the Fukushima disaster and the resulting return to thermal power generation contributed to the emissions spike, the Federation of Electric Power Companies of Japan announced Tuesday.

In the year to March 31, emissions of the heat-trapping gas amounted to 0.476 kg per kwh, a 36 percent surge from the year before, the report found.

As a result, last year's emissions level came close to matching the amount discharged in fiscal 1981, although the federation said a simple comparison is difficult because of transactions involving emission rights.

The federation has set a target of reducing carbon dioxide emissions by 20 percent from fiscal 1990 levels to 0.340 kg per kwh on average between fiscal 2008 and 2012. However, because the 10 power companies discharged an average of 0.387 kg in the three years through fiscal 2011, they will have to drastically reduce emissions in the final year to stand any chance of meeting this goal.

Realistically, this makes it "very difficult" for utilities to meet the target at a time when all their reactors remain offline for routine checks, with the exception of two reactivated units at the Oi nuclear plant in Fukui Prefecture, the federation concluded.

Unexpected effects of tsunami debris on Hawaii wildlife

March 16, 2013

Tsunami debris washing up in N. America far higher than expected

http://ajw.asahi.com/article/0311disaster/quake_tsunami/AJ201303160050

By HARUFUMI MORI/ Staff Writer

Some 2,000 tons of drifting debris from the earthquake and tsunami disaster in Japan two years ago have washed up on the shores of North America so far, and estimates are that more than 100,000 accumulated tons will have reached the West Coast by June.

The latest estimates, released March 15 by the Environment Ministry, are the result of updated simulation results of tsunami debris set adrift in the Pacific Ocean on March 11, 2011.

The ministry's previous calculations, released in November, were based on wind measurement data taken through June 2012. The latest update is based on data taken through September.

The new estimates said an accumulated 30,000 tons will have washed ashore on North America by April, 105,000 tons by June and 221,000 tons by October. The previous projection said only 33,000 tons will have reached North America by June 2013.

Many drifting objects are still traveling slowly eastward between the Hawaiian Islands and North America, ministry officials said.

The drifting objects are estimated to total about 1.5 million tons. Although some of them will wash ashore in the United States and Canada, winds and tides will drive others back westward and scatter them broadly across the North Pacific, the ministry officials said.

March 11, 2013

Japanese tsunami debris makes its way into Hawaiian birds

http://edition.cnn.com/2013/03/11/us/hawaii-japan-tsunami-debris/index.html

By **Kyung Lah,** CNN March 11, 2013 -- Updated 2028 GMT (0428 HKT)



Hawaii deals with Japan's tsunami debris STORY HIGHLIGHTS

• Debris apparently from 2011 Japan tsunami is washing ashore in Hawaii

- Hawaii Wildlife Fund organizes beach cleanups
- NOAA has been studying the effects of debris on fish

The Big Island, Hawaii (CNN)-- Your first view of Kamilo Beach on Hawaii's Big Island is of majestic rock, postcard-worthy waves and miles of uninhabited beach. But look closer at the sand and you see specks of blue, yellow and white plastic.

A piece of a bottle cap. A corner of a milk crate. Half a toothbrush.

Kamilo Beach is part of the devastating legacy of the March 2011 Japan tsunami.

"It's disheartening to come out here and see all this marine debris in an area that's otherwise so remote, debris that's washing up from other countries," said Megan Lamson, debris project coordinator for the Hawaii Wildlife Fund.

Photos: Japan quake, tsunami anniversary



2012: Japan's endless cleanup battle



Hawaii is in a unique geographical spot, the center of the Pacific Ocean, to witness the impact of the Japan tsunami. Debris swirls from Asia to the continental United States through Hawaii. The islands are, in effect, a comb of the Pacific.

The nonprofit Hawaii Wildlife Fund said marine debris has been a problem for years for the island state and tsunami debris has made things worse. According to Japan, 1.5 million tons of tsunami debris floated away. The wildlife fund organizes beach cleanups along Hawaii's shorelines and struggles to keep up with the marine debris, made up primarily of plastic.

Lamson pulled out part of a beer crate that read "Exclusively for Kirin Beer" in Japanese. She also found a Suntory Whisky bottle stamped "Japan." Lamson also found a small vitamin drink container with Japanese text. Since fall, the wildlife fund and the National Oceanic and Atmospheric Administration have found refrigerators, freezers, buoys and even an intact fishing boat, all with Japanese text.

But most disturbing to Lamson are a couple of soft plastic bottles with bite marks. "Marine life in the ocean are mistaking plastic for their natural food," Lamson said.

Lamson may suspect it, but Lesley Jantz, a NOAA fishery biologist with the observer program, can confirm it. Jantz has been studying the impact of marine debris in fish.

In her lab, Jantz sliced open the stomach of a lancetfish for CNN. You may never have heard of the lancetfish, a sometimes 4- to 6-foot long fish with enormous teeth. But bigeye and yellow fin tuna eat lancetfish. Tuna ends up on our plates.

Jantz pulled out a 12 by 12 piece of indigestible black plastic. "It would be difficult to pass through the system," said Jantz. "I've found several fish with the same black plastic bag, just like this, even larger. If it gets to a certain size, the fish is going to feel like it's full."

Jantz conducted a study that included 64 fish of varying species. Twelve percent of them, she said, contained plastic. When she looked just at lancetfish, 45% had plastic. "One concern that we have and don't know is if any chemicals from the plastic are absorbed into the tissue of the fish, which is a problem if consumed by a fish that we consume. That's definitely the next step, what is the impact?"

Across the island in David Hyrenbach's lab, the impact of plastic debris is apparent among the animal species he studies: birds. Hyrenbach cut open the bellies of some albatross for CNN. Plastic pieces spilled out of the belly of a 2-month-old albatross. Eighty percent of the stomach was packed with plastic.

Hyrenbach, an assistant professor of oceanography at Hawaii Pacific University, pulled out a small bottle top. "Toothpaste top?" he said. "No, cap of a medicine tube." He reached into the stomach again. "Oh, it's a brush, you see?" There were the unmistakable bristles of a hairbrush.

"Morally, this is terrible. How is this possible? Majestic, far ranging, beautiful birds, in a pristine place of the pacific, the northwest Hawaiian islands, you open them up and this is what you find," said Hyrenbach.

He grabbed a box, packed with toy soldiers, lighters and brushes. He explained that he pulled all the items out of albatross from Hawaii. "Every bird I looked at had plastic. Some had a little bit. Some had a lot. Everybody we looked at had plastic."

NOAA said most of the debris affecting the island cannot be tracked to any particular country, even Japan, because the plastic is often so weathered and broken by the time it hits Hawaii. "We don't really know the full impact of this type of debris. It adds to an existing problem that we have across the world," said NOAA Pacific Islands Regional Coordinator Carey Morishige. "But it is quite eerie to see an item you think may have come from Japan, someone's home, to sit on a beach thousands of miles away. It brings home the fact beyond the marine debris issue this is first and foremost a human tragedy." It should serve as a reminder, Morishige said, that "the land and the oceans are incredibly connected."

Tsunami debris in America worse than expected

March 18, 2013

Tsunami debris set for N. America to rise

http://www.yomiuri.co.jp/dy/national/T130317003636.htm

Jiji Press

A total of 221,000 tons of debris from the tsunami that hit Japan on March 11, 2011, is expected to wash up on the western coast of North America by October, the Environment Ministry said.

The cumulative volume of such debris reaching the Pacific coast of North America is likely to reach 30,000 tons by April and increase gradually until October, the ministry said Friday.

The ministry's previous estimates suggested the volume would increase substantially from December, with 33,000 tons expected by June. (Mar. 18, 2013)

Disappearing rock shells

March 27, 2013

Rock shells disappearing on coast near Fukushima nuclear plant http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303270070

By TOMOYUKI YAMAMOTO/ Staff Writer

TSUKUBA, Ibaraki Prefecture--A type of mollusk has disappeared from an area that stretches 30 kilometers along Fukushima Prefecture and includes the site of the crippled nuclear power plant, researchers said.

But they could not confirm if radioactive substances from the nuclear disaster led to the absence of the usually ubiquitous rock shells, according to the survey led by the National Institute for Environmental Studies (NIES).

"It will be necessary to conduct culture experiments to study how radioactive materials affect the habitat of rock shells," said Toshihiro Horiguchi, a head researcher at NIES and a specialist in ecotoxicology.

Rock shells, a univalve with a 3-centimeter-long shell, live in reefs and are generally widely distributed along Japanese coasts as far north as southern Hokkaido.

Tsukuba-based NIES, the National Institute of Radiological Sciences and others studied the habitat of rock shells at 43 locations on the Pacific coast of Honshu ranging from Kuji, Iwate Prefecture, to Tateyama, Chiba Prefecture, between April and August 2012.

According to the study, rock shells could not be found in 16 locations, including eight straight sites over 30 km from Futaba town, just north of the stricken nuclear plant, to Hirono.

Horiguchi said rock shells were found off municipalities that were hit hard by the tsunami following the Great East Japan Earthquake on March 11, 2011, such as Soma and Minami-Soma in Fukushima Prefecture.

He said it was unlikely that the rock shells' disappearance was caused only by the tsunami.

The survey results were presented March 27 at the spring meeting of the Japanese Society of Fisheries Science in Tokyo.

Boosting coal to reduce energy bill

April 11, 2013 Tepco boosts coal capacity to cut need for costly oil

Bloomberg

http://www.japantimes.co.jp/news/2013/04/11/business/tepco-boosts-coal-capacity-to-cut-need-for-costly-oil/#.UWag9UpsFEs

Tokyo Electric Power Co. may cut its oil purchases by more than one-third as it boosts its reliance on coal plants to reduce an energy bill that's ballooned since the Fukushima nuclear crisis started.

Tepco will generate or buy as much as 54 percent more electricity from coal-fired plants starting this month compared with last year, according to calculations based on company statements. That may enable it to reduce its purchases of crude and fuel oil by as much as 3.95 million kiloliters, or 68,000 barrels a day, according to Osamu Fujisawa, an independent energy economist in Tokyo. Tepco bought 10.8 million kiloliters in the year that ended in March, the company said Wednesday in a report on its website.

Tepco's fuel costs surged after the March 11, 2011, earthquake, tsunami and nuclear disaster, since it's had to rely on oil, gas and coal to replace idled nuclear capacity. The utility will do "whatever it takes" to return to profitability and hopes to do so without raising rates for customers, Naomi Hirose, Tepco's president, said earlier this month.

"By establishing new coal-powered plants, thermal power generation costs can be reduced, first by cutting the use of oil-burning units," said Reiji Ogino, an analyst at Mitsubishi UFJ Morgan Stanley Securities Co. "Japanese government requests to power companies that they lower the rates they charge will encourage movement to coal-fired plants, since coal is a relatively cheap energy source." Tepco will add 2.6 gigawatts a year of coal-fired power from two new plants and electricity bought from two units owned by Tohoku Electric Power Co. that restarted after being damaged in the earthquake.

The No. 2 unit at Tepco's Hitachinaka plant, which can produce 1 gigawatt, began operating April 4, while the 600-megawatt No. 6 unit at its Hirono facility will start in the middle of this month, company spokesman Yusuke Kunikage said.

Tepco is also purchasing half of the power produced by the No. 1 and No. 2 units at Tohoku Electric's Haramachi plant, each of which can generate 1 gigawatt, said Hiroki Enami, a Tohoku Electric spokesman. Unit No. 2 began operating on Nov. 3, while No. 1 started Jan. 28, he said.

Tepco's coal-fired generating capacity, including power purchased from independent producers and other utilities, was 4.77 gigawatts in the year that ended in March 2012, the most recent year for which the company has released data. No additional coal capacity was added between then and November, when the power generated by Tohoku Electric's Haramachi plant became available, Kunikage said.

Tepco's electric power business had an operating loss of ¥323.7 billion during the fiscal year that ended in March 2012. This was because of a 13 percent increase in operating expenses from higher fuel prices and greater purchases stemming from the loss of its nuclear stations, according to its most recent annual report. The company is expected to announce results for the fiscal year that ended last month by mid-May.

Tepco bought 7.45 million kiloliters of fuel oil in the year that ended in March, up 29 percent from the previous year, while crude purchases rose 31 percent to 3.33 million kiloliters, the company said on its website. Liquefied natural gas imports rose 3.2 percent to 24.9 million metric tons and coal purchases rose 1.2 percent to 3.35 million tons.

In March alone, fuel oil purchases declined 18 percent to 546,000 kiloliters and crude purchases dropped 58 percent to 183,000 kiloliters. LNG imports fell 3.6 percent to 2.12 million tons, while coal purchases jumped 40 percent to 515,000 tons.

"The highest-priced fuel is oil," said economist Fujisawa, who worked for Saudi Arabian Oil Co. and Showa Shell Sekiyu K.K. "If you're trying to select which fuel to back out from, you will come to the conclusion that it should be fuel oil and crude."

It would require 6.5 million tons of coal to produce 2.6 gigawatts a year, Fujisawa said. That would cost ¥69.1 billion, based on the average price Japan paid for coal in 2012, according to Finance Ministry data.

Japanese debris arrive in California

First confirmed Japanese tsunami debris in California

http://ajw.asahi.com/article/0311disaster/quake_tsunami/AJ201304270054

April 27, 2013

THE ASSOCIATED PRESS

CRESCENT CITY, California--A barnacle-covered fishing boat that washed ashore this month in Crescent City, California, has been confirmed as the first debris from the 2011 tsunami in Japan to reach California's shores.

The National Oceanic Atmospheric Administration confirmed the boat's origin on April 25 with help from the Japanese Consulate in San Francisco, the Del Norte Triplicate reported.

In total, 27 items from among more than 1,600 reports of debris have now been firmly traced back to the tsunami, NOAA spokeswoman Keeley Belva said. The confirmed items include a small boat found in Hawaii waters, large docks that have washed ashore in Washington state and Oregon and a motorcycle that washed ashore off the coast of British Columbia.

The 20-foot (6.1-meter) vessel that landed in Crescent City on April 7 belongs to the marine sciences program at Takata High School in the city of Rikuzentakata.

Lori Dengler, a geologist with Humboldt State University, posted photos of the boat to Rikuzentakata's Facebook page after translating the vessel's handwritten characters with the help of a Humboldt State librarian, according to the Triplicate.

The boat was marked, "Takata High School," and also had characters for "Rikuzentakata." Dengler, who had travelled to Rikuzentakata immediately after the 2011 tsunami, said the city's global public relations officer, Amya Miller, tracked down the school and found a teacher who recognized the boat within hours of the photos being posted.

"Everything that was lost, we just never expected to find again," Miller told the Triplicate earlier this month. Hundreds of the city's residents died in the March 2011 earthquake and tsunami and only a handful of buildings were left standing. "That something made it across the Pacific and landed practically on your doorstep is one of those 'you can't make this up' moments. Right now everyone is in sort of a giddy state of shock."

A soccer ball found on an Alaska island with a student's name on it has also been traced to Rikuzentakata. But distinguishing everyday trash from tsunami debris has proven difficult in most other cases. The Japanese government estimated that 1.5 million tons of debris was floating in the ocean immediately after the disaster.

Items that are confirmed as having come from the tsunami, like the soccer ball and boat, tend to have unique markings.

What's next for the boat is not clear. Miller told the Triplicate earlier this month the high school would like to have it back.

"Having it back I know would be incredibly meaningful only because the school lost so much -- the city lost so much," she said.

Boar-pigs in increasing numbers

December 12, 2013

Boar-pig hybrids increasing in Fukushima towns

http://www3.nhk.or.jp/nhkworld/english/news/20131212_17.html



Animals believed to be hybrids of domestic pigs and wild boars are increasing in parts of Fukushima Prefecture affected by the 2011 nuclear accident.

NHK contacted 11 municipalities where residents are still unable to return to their homes due to the radioactive fallout from the Fukushima Daiichi nuclear plant.

Officials in 5 of them said the animals appear to be on the rise. Pigs that were left behind have gone wild.

The town of Tomioka has reported 17 cases where hybrids broke into houses and barns in search of food.

The Environment Ministry says the animals give birth to more calves than wild boars, which have around 10 offspring annually.

Ministry officials and local hunters are culling the animals as they could hamper residents from returning home.

EXISTENTIAL QUESTIONS FROM TIRED BLOGMASTER

I have been working (hard) to maintain this information blog for almost two years now.

And I still have no idea who my readers are.

I am not sure how much longer I can/should go.

Would anybody be good enough to take a couple of minutes of their time and tell me who they are and what they expect of my blog?

Impact of Olympics on recovery efforts

March 3, 2014

THREE YEARS AFTER: Post-disaster reconstruction hurt by 2020 Tokyo Olympics work http://ajw.asahi.com/article/economy/business/AJ201403030060



March 03, 2014

THE ASAHI SHIMBUN

About 60 percent of leaders of municipalities heavily damaged by the Great East Japan Earthquake and tsunami fear that preparations for the 2020 Tokyo Olympics will hamper post-disaster reconstruction efforts, an Asahi Shimbun survey showed.

The latest survey revealed widespread concern among local municipalities that the Games may lead to shortages of workers and construction materials and slow reconstruction work in affected regions, a negative impact already being seen in some areas.

"We are fearing we will have fewer technical experts to manage reconstruction projects," said Norio Kato, mayor of Shinchi, Fukushima Prefecture.

In winning the bid, Tokyo leaders had stressed that hosting the world's largest sporting event will encourage recovery efforts in quake-hit areas.

The Asahi Shimbun sent out questionnaires to 42 local government heads in Iwate, Miyagi and Fukushima prefectures, all in the disaster-stricken Tohoku region, to see if they shared this view. All the surveyed municipalities are located in the prefectures' coastal areas struck by the tsunami or are home to evacuation zones in Fukushima Prefecture designated after the March 2011 earthquake and tsunami triggered an accident at the Fukushima No. 1 nuclear power plant.

Twenty-three municipal leaders--the largest number--said the Tokyo Olympics will exert a relatively negative impact, while two said the event will have an extremely negative effect on recovery work. The respondents were also asked to choose reasons for their views from among options. Multiple answers were allowed.

All the 25 leaders said the Olympics "will further exacerbate the shortages of materials and labor." Meanwhile, only two leaders said the Games will offer a big boost for disaster recovery, while 11 said it will have a relatively favorable impact. But the 13 leaders who have a positive outlook account for little more than 30 percent of the respondents.

"The number of visitors will rise," said Takeo Ohashi, mayor of Matsushima, Miyagi Prefecture, who believes the Olympics will have a relatively positive impact.

Shiro Izawa, mayor of Futaba, Fukushima Prefecture, who gave the same response as Ohashi, said, "I expect the central government to place more priority on recovery of nuclear disaster-affected areas ahead of the opening of the Games."

SHORTAGES IN LABOR AND CONSTRUCTION MATERIALS

As general contractors enjoy increasing demand in Tokyo to prepare the capital for hosting the Games, disaster-affected areas are facing severe shortages of labor and building materials, as local officials feared in the survey.

"The two employees (who have been working with you to advance decontamination work around the Fukushima plant) will have to return (to Tokyo) because there is special work for them relevant to the Olympics," an official of a major general contractor told the cooperative association of building firms in Minami-Soma, Fukushima Prefecture, in December.

Although a company public relations official said, "it is just part of regular personnel relocation, and will not result in a decline in the total number of our employees in disaster-hit areas," a senior official of the association said the latest personnel transfer has hurt the morale of local workers.

Far away from quake-affected regions, in Tokyo, construction of facilities to be used in the 2020 Games, estimated at a cost of nearly 500 billion yen (\$4.93 billion), has started.

The construction of the Musashino no Mori Sogo Sports Shisetsu (Musashino forest comprehensive facility for sports), the planned site for the modern pentathlon, began in February. Installation work of the new national athletic stadium as well as six other facilities, including the Ariake Arena, to be used for the volleyball competition, is scheduled to start in fiscal 2015 and fiscal 2016, respectively, as well.

The government also plans to invest 4 trillion yen and 2 trillion yen, respectively, in improving the Metropolitan Expressway and three loop highways.

To respond to the increased demand for public works projects related to the Olympics, major contractors have been taking various personnel measures.

Shimizu Corp. has set up a task force headed by its vice president.

"We estimate that we will be able to win Olympic-related contracts totaling 120 billion yen in the coming five years," said a company business planning official. "The peak of our receiving orders will come in fiscal 2016."

Takenaka Corp. also established a special team for the Olympics, while Taisei Corp. has appointed a special sales representative to enhance its sales promotions.

In contrast, Aizu-Wakamatsu in Fukushima Prefecture has faced a chronic shortage of contractors. The prefectural government plans to provide housing for 2,000 nuclear disaster evacuees from Okuma, who currently live in the city. But it was not until late February that a company was selected to construct the housing.

Fukushima Prefecture in December received estimates from eight firms, but all exceeded the predetermined maximum bid set by the local government. In January, the prefecture raised the maximum, but bidding again failed.

The main factor behind the failed bidding was hikes in prices of raw materials and labor. The market price of fresh concrete in local areas, for example, has risen to 12,000 yen per cubic meter. The official standard value for the material, on which the maximum price for the project was based, was lifted by 1,700 yen in February, but the revised figure is equivalent to only 10,000 yen per cubic meter.

"Predetermined prices fail to keep up with surges in market prices," said a local source involved in the construction industry. "As the Tokyo Olympics approaches, the difference may widen further." The evacuee housing building contract was finally awarded at a bid 6 percent higher than the predetermined price set by the prefecture. The houses are currently scheduled to be completed in March next year, two months later than planned.

The central government's construction investment for fiscal 2013 is expected to reach about 50 trillion yen, primarily due to expanding costs for reconstruction work. In addition, a total of an additional 20 trillion yen is expected to be spent by fiscal 2020 for public works projects related to upgrading infrastructure and the Tokyo Olympics.

Amid a succession of such failed bidding, currently being seen across Japan, the land ministry is taking action to address the issue.

"The cause (of the failed bids) is the predetermined price," said land minister Akihiro Ota. As part of such efforts, the ministry has raised the standard workers' wages in Iwate, Miyagi and Fukushima prefectures, by 30 percent on average compared with fiscal 2012.

But there remain many problems to solve.

It takes time to train skilled workers, and fresh concrete produced at temporary facilities costs too much. Although the construction industry welcomes the increasing work, general contractors may maintain a cautious stance toward investing in expanding employment and adding new facilities, because the demand will likely plummet following the Olympics. "It is difficult for the industry that has shrunk (due to long-continuing deflation) to keep up with the rapidly expanding demand," a senior construction firm official explained. "The Olympics will inevitably exert a negative impact on reconstruction work."

(Yoshinobu Motegi contributed to this article.)

Ukraine-Japan

March 5, 2014 Japanese NPO aid for Chernobyl affected http://www3.nhk.or.jp/nhkworld/english/news/20140305_32.html

Officials from a Japanese civic group that supports people affected by the 1986 nuclear accident at Chernobyl, Ukraine, say the current situation in the country is hampering their humanitarian activities.

The non-profit organization in Nagoya, central Japan, has been sending medical equipment and funds to its counterpart in Ukraine for 24 years. The aid is used to help workers who deal with the crippled power plant and to treat children suffering from radiation exposure.

It has also helped the Ukrainian civic group to grow rape, a crop whose roots are said to absorb radioactive substances in soil, and to produce bio-fuel from its seeds.

But late last month, the Ukrainian civic group asked the Nagoya NPO to stop making money transfers because of the turmoil in the country. It also said the group's members were unable to work because its office had been seized.

It also said that the provincial governor who had encouraged the growing of rape has resigned amid the current crisis.

Masaharu Kawata, a board member of the Nagoya NPO, says he is worried that they cannot continue to provide assistance to those who need it. He adds that he hopes the situation in Ukraine will calm down soon.

Mar. 5, 2014 - Updated 09:54 UTC

Disabled collateral victims of 3/11

April 20, 2014

Disabled lose local support due to Fukushima nuclear disaster

http://mainichi.jp/english/english/newsselect/news/20140420p2a00m0na005000c.html

FUKUSHIMA -- Thirteen out of 28 support centers for the disabled in 10 municipalities in Fukushima Prefecture's Soso district -- within 30 kilometers from the crippled Fukushima No. 1 nuclear plant -- have either suspended service or closed down, the Mainichi Shimbun has learned.

The decrease in the number of these welfare service providers has imposed a burden on people with disabilities and their families, who have found themselves suddenly without local support systems.

The Mainichi Shimbun recently asked 19 disability employment service providers and nine daycare service providers for children with disabilities in the district about their operations. Of those, seven employment service centers said they have continued operating in the same place, five have moved elsewhere and seven have either suspended their operations or closed down. Meanwhile, two of the daycare facilities for children remain in the same place, one has moved and six have either suspended their operations or closed down.

A 56-year-old woman with a psychiatric disorder in the Fukushima Prefecture town of Namie, who used to frequent the local "Coffee Time" employment support service center before the disaster, suffered from auditory hallucinations for the entire month she lived as an evacuee in a school gym following the March 2011 disaster. She was able to recover after talking to some Coffee Time staff she had known well. Coffee Time reopened in October 2011 in the city of Nihonmatsu, some 65 kilometers west of Namie. The woman, after moving seven times, has settled in an apartment in the city and now works at a cafe operated by the center.

Coffee Time manager Yuriko Hashimoto said, "There is a rising demand for setting up places where people with disabilities can feel they belong, especially as circumstances have worsened for many of them still living as evacuees."

A social welfare corporation that operates many disability support centers in the district saw its staff decline from 230 to 130 in just four months after the disaster. Currently, it has 186 staff members. Even when the operator tries to recruit new employees, it does not receive many applications as people in their 20s and 30s have fled the area, hindering the reopening of all its centers.

"Support Center Pia," an NPO in Minamisoma that provides care services for people with severe disabilities, reopened in April 2011. However, it had just three of its original 20 or more staff left to help not just the center's regulars, but people who usually went to other, suddenly shuttered facilities as well. Pia recruited new employees, but manager Nobuko Koori said the center's experienced staff are gone and she is worried about Pia's future.

Iwaki resident Takayuki Furuichi, 37, a certified provider of consultation and support for people with disabilities, points out that the families of the disabled have lost their local support systems. Some parents of children with disabilities end up needing psychiatric counseling after becoming isolated in temporary housing units, with no access to after-school daycare services that have closed down or moved away. They also struggle to find people they can talk to about their children's academic paths.

Former Takasaki University of Health and Welfare specially appointed professor Yoichi Aizawa points out that government agencies need to work on establishing systems where they can collaborate with local social welfare centers to support people with disabilities and their families.

Wild boars in Fukushima

May 6, 2014

Culling of wild boars near Fukushima nuclear plant

http://www3.nhk.or.jp/nhkworld/english/news/20140506_10.html

Areas around the crippled Fukushima Daiichi nuclear plant are still designated as evacuation zones 3 years after the March 2011 earthquake and tsunami.

But the areas have become home to an increasing number of wild boars and their offspring with domestic pigs, and the animals have been causing damage to empty houses and farms.

The Environment Ministry plans to expand its culling of the animals to prevent further property damage.

The ministry culled more than 200 wild boars and their offspring with abandoned pigs between November and February in the 4 towns closest to the Daiichi plant.

But it says the animals continue to cause damage.

The ministry plans to add 3 neighboring municipalities to its culling program, and launch a new operation this month.

All areas of 6 of the municipalities and some parts of the other have been evacuated due to the fallout from the nuclear accident.

But ministry officials say they will continue culling the animals to help prepare for the eventual return of residents.

May 6, 2014 - Updated 02:31 UTC

Tsunami debris may have impact on American ecosystems

May 5, 2014

Japan to study life attached to tsunami debris

http://www3.nhk.or.jp/nhkworld/english/news/20140505_17.html

Japan's Environment Ministry will launch a study to find out the possible impact of living organisms attached to 2011 tsunami debris on ecosystems on North America's west coast.

Ministry officials estimate that about 400-thousand tons of the 1.5-million tons of debris adrift in the Pacific Ocean could reach the US and Canada by October.

People there have already found shellfish and algae native to Japan on debris that has already washed ashore. They are concerned about the creatures' possible impact on ecosystems.

The ministry will conduct the research over 3 years starting next month.

Officials say they will work with experts from both Japan and North America to see whether the debris carries living organisms from Japan.

They will also look into whether the organisms are spreading in the new environment. May 5, 2014 - Updated 05:52 UTC

Japanese fish and boat off Oregon

April 13, 2015

Fish from 3/11 found alive in Japanese boat spotted off Oregon

http://www.japantimes.co.jp/news/2015/04/13/national/fish-311-found-alive-japanese-boat-spotted-oregon/#.VSvO3pPwlLM



JIJI

LOS ANGELES – Fish have been found alive in the wreck of damaged Japanese fishing boat off Oregon that was apparently washed away by the March 2011 tsunami that wrecked the Pacific coast of Tohoku. After drifting about 8,000 km (about 5,000 miles) in the four years since the Great East Japan Earthquake spawned the deadly tsunami, the heavily damaged fishing boat was spotted last Thursday off the U.S. West Coast.

Inside, some 20 yellowtail amberjacks and one striped beakfish, both normally found in waters off Japan, were found alive in a holding tank installed in the boat, according to the Oregon Parks and Recreation Department.

The drifting wreck, which measured about 9 meters (29 feet) long, appears to be part of a 15-meter fishing boat, the department said.

While the debris will be disposed of, a local aquarium will provide a home for the fish, the department said.

(Radioactive) wild boars flourishing in Fukushima

April 11, 2016

https://www.washingtonpost.com/news/morning-mix/wp/2016/04/11/thousands-of-radioactive-boars-are-overrunning-farmland-in-fukushima/

Thousands of radioactive boars are overrunning farmland in Fukushima

Nuclear catastrophe is always an unmitigated disaster. The only beneficiaries, albeit in a perverse fashion, are animals, which tend to flourish in areas humans evacuate. This has certainly been the case for wild boars around Fukushima, which have multiplied so rapidly, they've become a problem for neighboring towns.

On Friday, March 11, 2011, a 9.0 magnitude earthquake struck offshore near Tokyo and caused a 30-foot high tsunami that crashed into Japan's coast, killing 18,000 people, according to The Washington Post. Water poured into the Tokyo Electric Power Company's Fukushima Daichi nuclear power plant, flooding the generators designed to keep the plant's reactors cool. Later that day, an explosion rocked the plant, and more than 200,000 residents living within 12 miles were evacuated as radioactive material began leaking into the surrounding land. In the ensuing days, two more explosions shook the plant, and several fires broke out.

It was a true nuclear meltdown.

Since 2011, no humans have been able to live on the poisoned land. Wild boars, meanwhile, have thrived heartily. No evidence suggests that the radioactive contamination harms the beasts, and the lack of people there to hunt them has allowed them to breed with abandon.

Boars aren't the only animal to flourish in the wake of nuclear disaster, as Sarah Kaplan reported in the Post in October. Following the Chernobyl catastrophe, elks, wolves, bears and lynx flourished without humans around to hunt them. Ten years after the meltdown, "every animal population in the exclusion zone had at least doubled."

"That wildlife started increasing when humans abandoned the area in 1986 is not earth-shattering news," Tom Hinton, a radio-ecology expert who has studied the aftermath of Chernobyl told *The Washington Post.* "What's surprising here was the life was able to increase even in an area that is among the most radioactively contaminated in the world."

It's increasingly problematic for the residents, particularly farmers, living nearby.

Since the meltdown, the damage wild boars have caused to agriculture by eating crops in the Fukushima area has doubled, reaching ¥98 million or just more than \$900,000, according to Yomiuri. That price tag will only rise as the boar population, lacking natural predators, continues to increase–during the past two years, the number of boars that have been hunted has increased more than 300 percent, from 3,000 to 13,000.

Normally, boar meat is highly desired in Japan–in fact, *The Japan Times* called pork "the nation's most popular meat"–but these animals have been eating contaminated plants and small animals in the power plant's "exclusion zone." *The Sunday Times* reports recent tests have found high levels of caesium-137 in the area, which has a half-life of 30 years.

These animals are unfit for human consumption, which presents another problem: hunters can attempt to reduce the population, but they have to do something with the carcasses. According to Texas A&M wildlife and fisheries professor Billy Higginbotham, the average size of a male hog is around 200 pounds. Considering this average, if 13,000 are killed, hunters have around 2,600,000 pounds of potentially dangerous flesh requiring disposal.

There are few solutions.

The city of Nihonmatsu, 35 miles from the plant, contains three mass graves. Each one can hold around 600 boars, but they're nearly full, and the city's run out of space to dig new graves.

Morning Mix newsletter

Stories that will be the talk of the morning.

"Sooner or later, we're going to have to ask local people to give us their land to use," Tsuneo Saito, a local boar hunter, told *The Sunday Times*. "The city doesn't own land which isn't occupied by houses." Some hunters have attempted to bury these bodies in their own yards, only to have them dug back up by dogs.

The best solution would be incinerating the bodies, which requires a special facility that can filter out radioactive materials to prevent the resulting smoke from blanketing nearby areas and contaminating them. One such facility exists in the city of Soma, but the \$1.4 million crematorium's capacity is severely limited. It can only handle three boars a day (or 21 a week, which is only 1,092 each year; not quite 13,000).

This isn't the first time the world has battled with radioactive boars. In 2014, *The Telegraph* reported that one in three boars (297 of 752 tested animals) found near the German state of Saxony contained levels of radiation so high, they were unfit for human consumption. This was believed to be a result of the Chernobyl disaster, which occurred 28 years prior and 700 miles from Saxony.

The battle between animals and humans has long raged, but for farmers living near the exclusion zone of Fukushima, it's become a matter of economic survival.

Livres numériques édités

en téléchargement à cette adresse : <u>https://editionsdefukushima.fr/</u>

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