

Fukushima: Spreading Radioactive Wastewater, Sludge, Soil

Continued from page 2

active cesium-rich micro-particles (CsMPs) in an abandoned school building close to the Fukushima -Daiichi site.

Plumes of the micro-particles penetrated the building during the meltdowns of March 2011. Phys. org online reports that the contamination poses “a threat to human health if inhaled. The study shows that indoor CsMPs should be considered in safety assessments and in building clean-up efforts.”

Long-term effects of dumping unknown, scientist warns

Japan hosted the 10th Pacific Island Leaders Meeting in Tokyo last July, which was attended by most leaders of the 18-member Pacific Islands Forum.

A hot topic was Japan’s dumping of tens of thousands of tons of contaminated Fukushima wastewater into the Pacific Ocean. The dumping was protested by Pacific rim countries and many, including China and Russia, have banned imports of seafood products from the region’s waters. Some 60,000 tonnes of the wastewater had been discharged by August 2024.

Prime Minister Fumio Kishida assured the island leaders’ gathering that the discharge of the wastewater was being done “in compliance with international safety standards and practices.” Yet the controversial dumping continues to be criticized by scientists.

At the meeting, director of the Kewalo Marine Laboratory at the Univ. of Hawaii, professor Robert Richmond, complained that questions remain regarding the effectiveness of the water filtration system, known as ALPS, and about the radioactive contents of the thousand-plus storage tanks of wastewater.

In October 2018, Tepco admitted that the ALPS had failed to remove dangerous elements and made a public apology. For years, Tepco and most media have insisted that the ALPS treatment removes everything but tritium, including strontium and 61 other radioactive elements, from the contaminated water. Tepco has promised to re-filter the wastewater, noting that 84% of the 890,000 tonnes then held in tanks (today there are 1.3 million tonnes) still had high concentrations of iodine-129, ruthenium-106, technetium-99, and carbon-14. Levels of strontium-90 (a severe human health hazard) were detected in some tanks at 20,000 times the drinking water limit.

“The long-term effects of this discharge on Pacific marine ecosystems and those who depend on them are still unknown. Even small doses of radiation can cause cancer or genetic damage,” Prof. Richmond said in a statement to BenarNews online after the gathering.

Richmond called Japan’s current radiation monitoring system inadequate and poorly designed, and said it’s failing to protect ocean and human health.

“The discharge, planned to continue for decades, is irreversible. Radionuclides bio-accumulate in marine organisms and can be passed up the food web, affecting marine life and humans who consume affected seafood,” Richmond said.

The professor also raised concerns about other severe hazards already harming the Pacific Ocean and marine life, such as pollution, overfishing, and climate change. He urged Japan to reconsider its approach. Enclosing the contaminated water in cement structures like sea walls is one alternative.

You can hear Prof. Richmond explain the risks of tritium contamination in an National Public Radio interview, here: <https://www.npr.org/2023/07/09/1186674909/what-to-know-about-japans-plan-to-dump-waste-water-into-the-ocean>

Water treatment leaves highly radioactive sludge in search of containment

Tons of highly radioactive chemicals collected in the ALPS filters as sludge are transferred to heavy plastic casks called “high integrity containers” or **Fall 2024**

HICs, and moved to temporary storage. The Japanese daily *Asahi Shimbun*, published a report on the wastewater dumping August 24, 2024 that clearly outlines some problems with the sludge. The end of the article reads as follows:

In addition to the release of treated water, there are many other issues to be tackled. The amount of highly radioactive sludge, or “slurry,” produced in the process of treating contaminated water continues to increase, but no effective treatment method has been decided upon.

The increasing amount of slurry is stored in tanks, but since there is still a risk of leakage when it is in liquid form, plans call for it to be dehydrated to reduce its volume and then process the substance into solid form.

In 2021, Tepco filed an application to build a device for this purpose. But the Nuclear Regulation Authority pointed out the risk of radiation exposure to



Japan’s plan to reuse Fukushima’s contaminated soil in infrastructure projects has been approved by the IAEA, despite concerns from environmental groups. Photo: Getty

workers, and Tepco was told to review the design.

As a result, the start of the dehydration process has been delayed from fiscal 2022 to fiscal 2026.

Furthermore, no concrete method has been decided on for solidifying the dehydrated slurry.

Tepco is aiming to determine the solidification method by the end of fiscal 2025 and start solidification around fiscal 2035.

Advocates demand stricter limits on radioactive poisons

The Fukushima Fallout Awareness Network (FFAN) in Tokyo is an alliance of parents, concerned citizens, and affiliated organizations. The group writes:

“The U.S. FDA has set a potentially hazardous level of ‘allowable’ radiation in food: 1,200 Becquerel per-kilogram (Bq/kg) of cesium-134 and cesium-137.”

“Becquerels-per-kilogram” is a reference to concentrations of radioactive cesium that has been found to contaminate food, soil, and water since the March 2011 disaster. Cesium-134 and -137 was spread in large quantities from the three burning reactor meltdowns and it Cs-137 persists in the environment for 300 years.

Alarmingly, the limit of 1,200 Bq/kg in food is merely a recommendation. It is both a non-binding and unenforceable. Such a high contamination threshold exposes a significant portion of the U.S. population, particularly children and women, to considerable health risks.

Standards limiting radiation in food in Japan are 12 times more protective for adults and 24 times more protective for children than U.S. standards. Food too radioactive to be sold to Japanese consumers is allowed to be sold to U.S. consumers and served to U.S. service members and their families on military bases overseas.

FFAN is urging the FDA to lower its permitted cesium limit to five Bq/kg for all food, nutritional supplements and pharmaceuticals, and that the U.S.

quickly institutes widespread, transparent testing to ensure this limit, particularly in the wake of Japan’s catastrophic and ongoing radiation releases from Fukushima-Daiichi’s triple reactor meltdowns. This aligns with a similar call by the International Physicians for the Prevention of Nuclear War in Germany, which promotes a European Union-wide standard of four to eight Bq/kg. To sign FFAN’s petition see:<https://nislappdc.org/fukushima-fallout/>

Kimberly Roberson, Project Director for the FFAN, commented on this scandal for *Food Safety News*, Sept. 4, 2024. Roberson wrote, “At 1,200 Becquerels per kilogram, FDA has among the highest [allowances] in the world.”

“To confront and mitigate the growing public health threat of radioactive contamination in food, Congress should pass the Federal Food Administration Act, establish the FFA to focus like a laser beam on food safety, and empanel independent scientists and experts who understand radiation’s environmental and health effects to advise it,” FFAN said.

The IAEA: International Allowances for Environmental Assaults?

The United Nations International Atomic Energy Agency, which ignored its own guidelines in approving the dumping of Fukushima wastewater into the Pacific, has granted approval to Japan’s plan to use some of the 14 million tonnes of cesium-contaminated soil and debris collected after the Fukushima meltdowns in construction work.

The Japanese government intends to get rid of roughly 75 percent of the radioactive soil — if it’s contaminated at or below 8,000 Bq/Kg — by using it in road embankments, railways, agricultural land, and land reclamation.

“We are extremely concerned. The IAEA has consistently stated in the past that radioactive waste should be stored centrally and we have supported that position,” said Hajime Matsukubo, the secretary general of the Nuclear Information Centre in Tokyo. He said the limit for soil contamination was previously set at just 100 Bq/kg, and has now been lifted to 8,000 Bq/kg. “But now they are going against their own recommendations,” he told the *South China Morning Post*. “My fear is that once they relax this rule, they can then go on and ease all sorts of other rules,” Matsukubo said.

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