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Fukushima: Towards the Formation of a Radioactive Graveyard in the Pacific Ocean?

Japanese Officials & Experts Late Decision to Expand Testing Around Fukushima Daiichi

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No one wants to think about the massive aqueous deposit of radioactive materials into the Pacific Ocean, that much is now clear.

> By September estimates of released contamination had risen to over 3,500 terabecquerels of cesium-137 released into the sea directly from the plant between March 11 and the end of May. Another 10,000 terabecquerels of cesium fell into the ocean after escaping from the reactors in the form of steam.
>
> Initially reports had quieted concerns by stating that the materials would be diluted so vastly that the radioactivity would not be able to accumulate, and would not affect the environment. The experts claimed they would track the deposition and floating radioactive debris field making its way on a trans-Pacific trip to the United States.

Apparently, the experts in Japan didn't get the message. The Japanese regularly tested the seawater only for 'popular' Iodine and Cesium isotopes instead of all known fission-produced radioactive materials, for the first 3 months after the disaster. By March 31st, radioactive contamination concentration was 4,385 times the legal limit, up from 3,355 times on Tuesday, according to Kyodo.

In response, the government had pledged to increase radiation monitoring on land and by sea and to consider increasing the evacuation zone — however time has shown little action would follow these vows.

Experts Don't Fear A Radiation Graveyard

Water was constantly required for the workers to be able to get any cooling into Reactors 1-4, when water went in, steam came out. The ocean quickly became the radiation dumping ground, as untold tonnes of contaminated water has been confirmed to have directly flowed into the ocean, and TEPCO continually assured Japanese citizens that the majority of dispersal would occur over the Pacific.

TEPCO intentionally dumped radioactive materials into the ocean, as they had no additional room for storage, the levels showed no signs of decreasing, and all desalination hopes were

falling woefully short. It would also be found that many leaks around, and inside of the reactors were also finding their way into the Pacific, but the public was told that there would not be any risk to them, or the living creatures in the sea.

After 7 months however, impact can be found all over the island nation, and spreading throughout the ocean, despite the expectations it would merely be diluted exponentially.

In September, scientists from the government's Meteorological Research Institute and the Central Research Institute of the Electric Power Industry announced their findings at a meeting of the Geochemical Society of Japan, adding that some of the cesium will also flow into the Indian Ocean and, eventually, reach the Atlantic.

Floating Radioactive Debris Reaching Hawaii Sooner Than Expected

The researchers believed that the cesium had initially dispersed into the Pacific from the coast of Fukushima Prefecture but would be taken to the southwest by the prevailing currents at a depth of around 1,300 feet.

Researchers thought it would take years to reach the islands. But now, according to a University of Hawaii researchers, the debris will arrive sooner than expected.

> ....Since the March 11th earthquake and tsunami, researchers have been predicting it would take about two years for the debris from Japan to hit Hawaii's west-facing beaches.
>
> "We have a rough estimate of 5 to 20 million tons of debris coming from Japan," said UH computer programming researcher Jan Hafner.
>
> ...Their path back to Russia crossed exactly across the projected field of the debris. Soon after passing the Midway Islands on Sept. 22, they hit the edge of the tsunami debris. "They saw some pieces of furniture, some appliances, anything that can float, and they picked up a fishing boat," said Hafner. It was a 20-foot fishing boat with the word "Fukushima" on it. "That's actually our first confirmed report of tsunami debris," said Hafner... Source: kitv.com

The Public Concern Was Never Really An 'Official' concern

In the first few days after the March 11 earthquake and tsunami that damaged the Fukushima Daiichi power plant, government authorities and the company were criticized for not providing information in a timely fashion. A Kyodo News survey released Sunday found that 58% of respondents did not approve of the government's handling of the crisis at the nuclear plant.

More than two weeks later, updates provided via news conferences, press releases, data charts and Twitter feeds have become very frequent and very technical. To a lay person, the onslaught of numbers and unfamiliar terms can feel indecipherable.

"The question is, what is a reasonable interval to give people information?" said Dr. Robert Peter Gale, an American physician and expert on radiation who consulted on the 1986 nuclear disaster in Chernobyl and is now advising Japan's government. "Instead of just releasing each data point you get, sometimes it's better to base things on an average of readings over a period of time."

Source: LA Times

This ruse would only work, if the officials could hold off on monitoring and tracking the deposition as long as possible, until the plume had finally moved away from the coastline.

TEPCO had intentionally dumped over 11 tons of water in the first few weeks, all of which contained high concentrations of radioactive materials. There would be further reports that would be difficult to quantify, including unknown amount of contaminated water leaked into the ocean from a damaged reservoir, and a plethora of uncharted and un-monitored leaks from the reactors.

After dealing with the spring, the tsunami season arrived and even more contamination entered the sea through fallout from the air, and through precipitation runoff.

By March 26th, the news broke that levels near the reactor were 1,250 times the legal limits, as the levels of I-131 reported just a few hundred meters offshore boomed to ten times the already increased levels in a matter of days. Tepco also reported levels of caesium-137 – which has a longer half life of about 30 years – almost 80 times the legal maximum.

Findings throughout the summer challenged experts and officials however, as radiation levels found contamination in some parts had risen over 3,000 times the normal levels.

“This is a relatively high level,” nuclear safety agency official Hidehiko Nishiyama said in a televised news conference.

Drinking 500ml of fresh water with the same concentration would expose a person to their annual safe dose, Mr Nishiyama said, but he ruled out an immediate threat to aquatic life and seafood safety.

“Generally speaking, radioactive material released into the sea will spread due to tides, so you need much more for seaweed and sea life to absorb it,” Mr Nishiyama said.

Pledges to Monitor and Track Contamination Left Unattended

Japanese officials said they would check the seawater about 20 miles (30km) off the coast for radiation back in March, yet even though finding contamination, resumed testing withing 20 km, and downplayed the effects by stating they expected it to show there is no need to be concerned about any possible effect to fish.

> “By the time that current reaches the Central Pacific, there are branches heading more towards Alaska and the South—that gets harder to predict,” said Ken Buesseler, a senior scientist with the Woods Hole Oceanographic Institute told Jeff McMahon, a reporter for Forbes.
>
> “But that’s one of the things that several people hope to do by measuring these isotopes even at levels when they’re not harmful. We could actually track those ocean currents and better understand the circulation pattern in the Pacific.”

Japanese Science and Fisheries Agencies Late Decision to Expand Testing On Marine Products to Weekly Testing 20-30 km Around Fukushima Daiichi

> The science ministry and the Fisheries Agency will strengthen testing on marine products and widen the survey for seawater for radiation contamination from the damaged Fukushima No.1 nuclear power plant.

The tests on marine products will be conducted once a week, in principle, depending on the size of the fish hauls, in Fukushima, Miyagi and Ibaraki prefectures.

The government eased restrictions on land use outside the 20-kilometer no-entry zone around the plant in September. It will now test waters 20-30 km from the plant for radiation, and eventually survey seawater beyond 280 km from the coast using more accurate instruments, officials said.

Sources:

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- Forbes.com
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