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Japan Releases Low-Level Radioactive Water Into Ocean



Tokyo Electric Power Company, via Reuters

In an image provided by Tokyo Electric Power Company, contaminated water from the crippled No. 2 reactor is seen leaking through a crack and draining into the ocean at the Fukushima Daiichi Nuclear Power Station in northern Japan on Saturday.

By HIROKO TABUCHI and KEN BELSON
Published: April 4, 2011

TOKYO — Tokyo Electric Power Company began dumping more than 11,000 tons of radioactive water into the Pacific Ocean from the Fukushima Daiichi nuclear plant on Monday, mostly to make room in storage containers for increasing amounts of far more contaminated runoff.

The water, most of it to be released over two days, contains about 100 times the legal limit of radiation,

Tokyo Electric said. The more contaminated water has about 10,000 times the legal limit.

The effort would help workers clearing radioactive water

it less dangerous to reach some of the most crucial controls

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Shiho Fukada for The New York Times

On Monday, people in Otsuchi, Japan, in Iwate Prefecture, searched for belongings in homes damaged by the March 11 tsunami.

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leaks whose source is unclear — from the reactor containment units themselves, or pipes, valves or other connected units — have flooded areas of the plant, bringing new complications in the effort to stave off full meltdowns of the fuel.

Workers have been pumping the runoff into storage tanks, most urgently the highly radioactive water flooding the turbine building of Reactor No. 2. But the storage system is now full and adding capacity will take time. Tokyo Electric is rushing tanks to the plant, though they may not arrive until mid-April, a company spokesman said. The company also plans to moor a giant artificial island off the coast to store contaminated water, though getting the island in place will take at least a week, he said.

Tokyo Electric said it would dump about 4,800 tons of water a day for two days. An additional 1,500 tons will also be released from the No. 5 and No. 6 reactors, after runoff was found flooding parts of their turbine buildings.

The concern there is that the water could damage the backup diesel generators for the reactors' cooling systems, said Yukio Edano, the chief cabinet secretary. That water will be released 300 tons at a time over five days.

"Unfortunately, the water contains a certain amount of radiation," Mr. Edano said. "This is an unavoidable measure to prevent even higher amounts of radiation from reaching the sea."

Mr. Edano said he had ordered the company to monitor the effects of radioactive materials in the water on sea life. Consuming seafood caught in the area every day for a year would result in the intake of about 0.6 millisieverts of radiation, or about a quarter of the average annual exposure to radiation in Japan, a company spokesman said at a news conference.

But the Japanese government has said it could take months to stem the release of radioactive material from the plant, and marine biologists expressed concern.

"We're seeing the levels of radioactive materials in the water increase, which means this problem is going to continue to get worse and worse," said Kenya Mizuguchi, professor emeritus of Maritime Science and Technology at Tokyo University.

Elements like cesium-137, which has a half-life of 30 years, collect in larger fish as they consume smaller fish, which means the problem may grow over time. Iodine-131 and other elements that have far shorter half-lives are not as dangerous because it can take weeks for fish to make it to supermarkets and restaurants, according to Hiroki Otani, who teaches in

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Seafood businesses are being hurt. The price for some fish like inada, or young yellowtail, has fallen by half or more in recent days, according to Seizaburo Tsuruoka, deputy chief of the Isumi-East Fisheries Cooperatives in Chiba Prefecture, south of Fukushima.

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Mr. Tsuruoka said his fishermen test their fish and have not found that they are radioactive. He added that the ocean current is traveling from south to north this season. He worries, though, what will happen when the tide reverses in autumn.

"While the government says, 'Don't worry,' the company says it will release water from the plant," he said. "I'm sure the general public feels very uncomfortable, and we get hurt."

To try to prevent radioactive silt from drifting deeper into the ocean, Tokyo Electric intends to drape a curtain in the waters off the plant, Reuters reported, quoting Hidehiko Nishiyama, deputy director general of Japan's Nuclear and Industrial Safety Agency.

In Vienna on Monday, Japan's nuclear crisis was a major focus as the I.A.E.A. began a 10-day gathering of representatives of dozens of countries on nuclear safety.

Ken Ijichi, Yasuko Kamiizumi, Moshe Komata and Andrew Pollack contributed reporting.

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