

## Radioactivity in sea up 7.5 million times

### Marine life contamination well beyond Japan feared

By KANAKO TAKAHARA

Staff writer

Radioactive iodine-131 readings taken from seawater near the water intake of the Fukushima No. 1 nuclear plant's No. 2 reactor reached 7.5 million times the legal limit, Tokyo Electric Power Co. admitted Tuesday.

The sample that yielded the high reading was taken Saturday, before Tepco announced Monday it would start releasing radioactive water into the sea, and experts fear the contamination may spread well beyond Japan's shores to affect seafood overseas.

The unstoppable radioactive discharge into the Pacific has prompted experts to sound the alarm, as cesium, which has a much longer half-life than iodine, is expected to concentrate in the upper food chain.

According to Tepco, some 300,000 becquerels per sq. centimeter of radioactive iodine-131 was detected Saturday, while the amount of cesium-134 was 2 million times the maximum amount permitted and cesium-137 was 1.3 million times the amount allowable.

The amount of iodine-131 dropped to 79,000 becquerels per sq. centimeter Sunday but shot up again Monday to 200,000 becquerels, 5 million times the permissible amount.

The level of radioactive iodine in the polluted water inside reactor 2's cracked storage pit had an even higher concentration. A water sample Saturday had 5.2 million becquerels of iodine per sq. centimeter, or 130 million times the maximum amount allowable, and water leaking from the

crack had a reading of 5.4 million becquerels, Tepco said.

"It is a considerably high amount," said Hidehiko Nishiyama, spokesman for the Nuclear and Industrial Safety Agency.

Masayoshi Yamamoto, a professor of radiology at Kanazawa University, said the high level of cesium is the more worrisome find.

"By the time radioactive iodine is taken in by plankton, which is eaten by smaller fish and then by bigger fish, it will be diluted by the sea and the amount will decrease because of its eight-day half-life," Yamamoto said. "But cesium is a bigger problem."

The half-life of cesium-137 is 30 years, while that for cesium-134 is two years. The longer half-life means it will probably concentrate in the upper food chain.

Yamamoto said such radioactive materials are likely to be detected in fish and other marine products in Japan and other nations in the short and long run, posing a serious threat to the seafood industry in other nations as well.

"All of Japan's sea products will probably be labeled unsafe and other nations will blame Japan if radiation is detected in their marine products," Yamamoto said.

Tepco on Monday began the release into the sea of 11,500 tons of low-level radioactive water to make room to store high-level radiation-polluted water in the No. 2 turbine building. The discharge continued Tuesday.

"It is important to transfer the water in the No. 2 turbine building and store it in a place where there is no leak," Nishiyama of the NISA said. "We want to keep the contamination of the sea to a minimum."

Chief Cabinet Secretary Yukio Edano apologized for the release of radioactive water into the sea but said it was unavoidable to prevent the spread of higher-level radiation.

Fisheries minister Michihiko Kano said the ministry plans to

increase its inspections of fish and other marine products for radiation.

On Monday, 4,080 becquerels per kilogram of radioactive iodine was detected in lance fish caught off Ibaraki Prefecture. Fishermen voluntarily suspended its shipment. The health ministry plans to compile radiation criteria for banning marine products.

Three days after Tepco discovered the crack in the reactor 2 storage pit it still hadn't found the source of the high radiation leak seeping into the Pacific.

Tepco initially believed the leak was somewhere in the cable trench that connects the No. 2 turbine building and the pit. But after using milky white bath salt to trace the flow, which appeared to prove that was not the case, the utility began to think it may be seeping through a layer of small stones below the cable trench.

Information from Kyodo added

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