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## Japan sets new radiation safety level for seafood

BY YURI KAGEYAMA AND RYAN NAKASHIMA, ASSOCIATED PRESS  
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**TOKYO** — The government set its first radiation safety standards for fish Tuesday after Japan's tsunami-ravaged nuclear plant reported radioactive contamination in nearby seawater measuring at several million times the legal limit.

The plant operator insisted that the radiation will rapidly disperse and that it poses no immediate danger, but an expert said exposure to the highly concentrated levels near the Fukushima Dai-ichi plant could cause immediate injury and that the leaks could result in residual contamination of the sea in the area.

The new levels coupled with reports that radiation was building up in fish led the government to create an acceptable radiation standard for fish for the first time, and officials said it could change depending on circumstances. Some fish caught Friday off Japan's coastal waters would have exceeded the new limit.

"Even if the government says the fish is safe, people won't want to buy seafood from Fukushima," said Ichiro Yamagata, a fisherman who used to live within sight of the nuclear plant and has since fled to a shelter in Tokyo.

"We probably can't fish there for several years," he said.

The coastal areas hit by by the March 11 tsunami make up about a fifth of Japan's huge industry, but radiation fears could taint all of the country's catch through guilt by association. Japan imports far more than it exports, but it still sent the world \$2.3 billion worth of seafood last year. And in the home of sushi, the worries over contamination could deal a blow to its brand.

Radiation has been leaking into Pacific near the plant on the northeastern Japanese coast since a 9.0-magnitude earthquake spawned a massive tsunami that inundated the



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Prefectural government's employees monitor amount of radiation on the ground of an elementary school in Fukushima, northern Japan Tuesday, April 5, 2011. (AP Photo/Kyodo News) JAPAN OUT, MANDATORY CREDIT, NO LICENSING IN CHINA, HONG KONG, JAPAN, SOUTH KOREA AND FRANCE



complex. Over the weekend, workers there discovered a crack where highly contaminated water was spilling directly into the ocean. They said Tuesday that they had finally found the source of the leak and were injecting coagulant that seemed to be slowing it.

The tsunami pulverized about 250 miles (400 kilometers) of the northeastern coast, flattening whole towns and cities and killing up to 25,000 people. Tens of thousands more lost their homes in the crush of water, and several thousand were forced from the area near the plant because of radiation concerns.

Many of those "radiation refugees" have grown frustrated with the mandatory 12-mile (20-kilometer) no-go zone, and plant operator Tokyo Electric Power Co. - whose stock value has plunged to the lowest level in its 60-year history - said Tuesday it would give affected towns 20 million yen (\$240,000) each. That would be on top of any legally required compensation.

Also Tuesday, TEPCO announced that samples taken from seawater near one of the reactors contained 7.5 million times the legal limit for radioactive iodine on April 2. Two days later, that figure dropped to 5 million.

The company said in a statement that even those large amounts would have "no immediate impact" on the environment but added that it was working to stop the leak as soon as possible.

The readings released Tuesday were taken closer to the plant than before - apparently because new measuring points were added after the crack was discovered - and did not necessarily reflect a worsening of the contamination. Other measurements several hundred yards (meters) away from the plant have declined to levels about 1,000 times the legal limit - down from more than four times that last week.

Experts agree that radiation dissipates quickly in the vast Pacific, but direct exposure to the most contaminated water measured would lead to "immediate injury," said Yoichi Enokida, a professor of materials science at Nagoya University's graduate school of engineering.

He added that seawater may be diluting the iodine, which decays quickly, but the leak also contains long-lasting cesium-137, which can build up in fish over time. Both can build up in fish, though iodine's short half-life means it does not stay there for very long. The long-term effects of



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Director General of the International Atomic Energy Agency, IAEA, Yukiya Amano from Japan speaks during a news conference of the IAEA's Parties to Nuclear Safety Convention Hold Review at the International Center in Vienna, Austria, on Monday, April 4, 2011. Amano said the Japanese nuclear crisis presents a major challenge and has enormous implications for nuclear power. (AP Photo/Ronald Zak)



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Metropolitan Police Department personnel search for victims in the debris at an area devastated by the March 11 earthquake and tsunami in Rikuzentakata, Iwate Prefecture, Japan, Monday, April 4, 2011. (AP Photo/Lee Jin-man)

cesium, however, will need to be studied, he said.

"It is extremely important to implement a plan to reduce the outflow of contaminated water as soon as possible," he said.

Fukushima is not a major fishing region and no fishing is allowed in the immediate vicinity of the plant, but fishermen in the prefecture fret that demand will collapse for catches elsewhere - whether or not they are contaminated.

"Our prefecture's fishermen have lost their lives, fishing boats, piers and buildings" in the earthquake and tsunami and now must suffer the added effects of radioactive runoff from the plant, local fishermen's federation head Tetsu Nozaki said in a letter faxed to the company.

Some government assurances of safety have done little to quell panic. In Tokyo, for instance, there were runs on bottled water after officials said radiation in tap water there was above the level considered safe for infants, though insisted it was still OK for adults.

On Tuesday, officials decided to apply the maximum allowable radiation limit for vegetables to fish, according to Edano.

"We will conduct strict monitoring and move forward after we understand the complete situation," he said.

The move came after the health ministry reported that fish caught off Ibaraki prefecture - at a spot about 50 miles (80 kilometers) from the plant - contained levels of radioactive iodine that would have exceeded the new provisional limit. Cesium also was found, at just below the limit. The fish were caught Friday, before the new provisional safety limits were announced.

Such limits are usually very conservative. After spinach and milk tested at levels far exceeding the safety standard, health experts said you would have to eat enormous quantities of tainted produce or dairy before getting even the amount of radiation contained in a CT scan.

Radioactivity is pouring into the ocean, in part, because workers at the plant have been forced to use a makeshift method of bringing down temperatures and pressure by pumping water into the reactors and allowing it to gush out wherever it can. It is a messy process, but it is preventing a full meltdown of the fuel rods that would release even more radioactivity into the environment.

The government on Monday gave the go-ahead to pump more than 3 million gallons of less-contaminated water into the sea - in addition to what is leaking - to make room at a plant storage facility to contain more highly radioactive water.

TEPCO's reputation has taken a serious hit in the crisis. On Tuesday, its stock dropped 80 yen - the maximum daily limit, or 18 percent - to just 362 yen (\$4.3), falling below its previous all-time closing low of 393 yen from December 1951.

Since the quake, TEPCO's share price has nose-dived a staggering 80 percent.

In what could be an effort to counter the bad publicity, Takashi Fujimoto, TEPCO's vice president, said it was offering 20 million yen (\$240,000) to each town or city affected by a mandatory evacuation zone. He called the cash "apology money" and noted that one town had refused it because it disagreed with the approach. He did not give further details.

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Associated Press writers Malcolm Foster, Ryan Nakashima and Noriko Kitano in Tokyo contributed to this report.

*The Associated Press*

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