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Japan Raises Possibility of Breach in Reactor Vessel

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TOKYO — Japan's effort to contain the crisis at the Fukushima Daiichi nuclear plant suffered a setback, an official said on Friday, citing evidence that the reactor vessel of the No. 3 unit may have been damaged.

The development, described at a news conference by Hidehiko Nishiyama, deputy director-general of the Japan Nuclear and Industrial Safety Agency, raises the possibility that radiation from the mox fuel in the reactor — a combination of uranium and plutonium — could be released.

One sign that a breach may have occurred in the reactor vessel, Mr. Nishiyama said, took place on Thursday when three workers who were trying to connect an electrical cable to a pump in a turbine building next to the reactor were injured when they stepped into water that was found to be significantly more radioactive than normal in a reactor. The No. 3 unit, the only one of the six reactors at the site that uses the mox fuel, was damaged by a hydrogen explosion on March 14. Workers have been seeking to keep it cool by spraying it with seawater along with a more recent effort to restart the reactor's cooling system.

The Japanese government has quietly begun encouraging people to leave the area from 12 to 19 miles outside the crippled plant, an indication that officials have little hope of a rapid resolution to the problem. People within a 12-mile radius of the plant were ordered to evacuate on March 15, while those in the outer ring were advised to remain indoors.

The United States has recommended that its citizens stay at least 50 miles away from the plant.

No one is being ordered to leave, and people may choose to remain, but many have already left of their own accord, tiring of the fear and tedium of remaining cooped up as the nuclear crisis simmers just a few miles away. Many are said to be virtual prisoners, with no access to shopping and immobilized by a lack of gasoline.

"What we've been finding is that in that area life has become quite difficult," Noriyuki Shikata, deputy cabinet secretary for Prime Minister [Naoto Kan](#), said in a telephone interview. "People don't want to go into the zone to make deliveries."

The chief cabinet secretary, Yukio Edano, said earlier on Friday in a televised news conference that the government would assist people who wished to leave the zone.

Mr. Shikata said the question of where those who chose to leave would go was still under consideration.

"There appear to be more than 10,000 people in the outer zone," NHK, the Japanese public broadcaster, quoted a Land Self Defense Force official as saying. "We're trying to quickly locate everyone who remains, so that we can rapidly help in case the nuclear plant situation worsens."

Officials continue to be dogged by suspicions that they are not telling the entire story about the radiation leaks. Shunichi Tanaka, former acting chairman of the country's Atomic Energy Commission, told The Japan Times in an interview published Friday that the government was being irresponsible in forcing people from their homes around the damaged plant without explaining the risks they were facing.

"The government has not yet said in concrete terms why evacuation is necessary to the people who have evacuated," he said.

The National Police Agency said Friday that the official death toll from the March 11 earthquake and tsunami had passed 10,000, with nearly 17,500 others listed as missing.

Levels of a radioactive isotope found in Tokyo's water supply fell by more than half on Thursday, testing below the country's stringent maximum for infants. The lower readings were made hours after Mr. Edano said the isotope, iodine 131, had been detected in the water supply of Kawaguchi City, just north of Tokyo, as well as in those of two of Tokyo's neighboring prefectures, Chiba and Saitama. On Wednesday, the authorities cautioned those in the affected areas not to give infants tap water.

The problem is not likely to end soon; nuclear workers will have to keep venting radioactive gases from the damaged reactors, adding to the plume of emissions carried by winds and dispersed by rain. The public has been warned not to consume food and milk from the area near the plant.

Mr. Edano said the three injured workers at Reactor No. 3 had sustained radiation burns to their legs while dragging an electrical cable through contaminated water in an effort to restore the crucial pump. The workers were burned as contaminated water poured over the tops of their boots, soaking their feet and ankles, the [Asahi Shimbun](#) newspaper reported, citing sources with the Tokyo Electric Power Company, the plant's operator.

Two workers were taken to Fukushima Medical University Hospital and were expected to be transferred to the [National Institute of Radiological Sciences](#) in Chiba City. Hiro Hasegawa, a Tokyo Electric spokesman, said the third worker had not been hospitalized.

Mr. Edano said the three were employed by a subcontractor of Tokyo Electric. Halting progress was reported in the efforts to restart cooling systems at the plant that were knocked out in the earthquake and tsunami.

A Tokyo Electric official said workers had managed to restore lighting in the central control room of Reactor No. 1, an important step toward restarting its cooling system. The temperature in the reactor pressure vessel has been showing a worrisome increase, and Mr. Edano said efforts were being focused on resolving the problem.

Takeshi Takizawa contributed reporting.