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Bid to 'Protect Assets' Slowed Reactor Fight

By [NORHIKO SHIROUZU](#), [PHRED DVORAK](#), [YUKA HAYASHI](#) and [ANDREW MORSE](#)



Yumiko Ono has the latest from Japan where officials are making modest progress in containing that country's nuclear crisis, including using firetrucks to spray water on the damaged reactors.

TOKYO—Crucial efforts to tame Japan's crippled nuclear plant were delayed by concerns over damaging valuable power assets and by initial passivity on the part of the government, people familiar with the situation said, offering new insight into the management of the crisis.

Meanwhile, a regulator who was inspecting the Fukushima Daiichi nuclear-power complex when the quake hit offered The Wall Street Journal one of the first eyewitness accounts of the havoc at the site, describing how the temblor

took down all communications in the area, greatly complicating the response.

The plant's operator—[Tokyo Electric Power Co.](#), or Tepco—considered using seawater from the nearby coast to cool one of its six reactors at least as early as last Saturday morning, the day after the quake struck. But it didn't do so until that evening, after the prime minister ordered it following an explosion at the facility. Tepco didn't begin using seawater at other reactors until Sunday.



Earthquake survivors are stuck in shelters with little food and no electricity, as aid workers are still unable to reach areas of devastation. Tokyo Deputy Bureau Chief

Tepco was reluctant to use seawater because it worried about hurting its long-term investment in the complex, say people involved with the efforts. Seawater, which can render a nuclear reactor permanently inoperable, now is at the center of efforts to keep the plant under control.

Tepco "hesitated because it tried to protect its assets," said Akira Omoto, a former Tepco executive and a member of the Japan Atomic Energy Commission, an official advisory body

Mariko Sanchanta and Yumiko Ono, managing editor of Japanese-language WSJ.com, discuss.

involved in the effort to tame the plant. Both Tepco and government officials had good reason not to use saltwater, Mr. Omoto added. Early on, nuclear fuel rods were still under cooling water and undamaged, he said, adding, "it's understandable because injecting seawater into the fuel vessel renders it unusable."

Tepco spokesman Hiro Hasegawa said the company, "taking the safety of the whole plant into consideration, was trying to judge the appropriate timing to use seawater."



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Kyodo News / Associated Press

Tepco managing director Akio Komori after a press conference Friday.

"This disaster is 60% man-made," said one government official. "They failed in their initial response. It's like Tepco dropped and lost a 100 yen coin while trying to pick up a 10 yen coin."

Government efforts also were plagued with delays. Japan's military, the Self-Defense Forces, didn't participate in cool-down efforts in a big way until Wednesday, after four of the six reactors had suffered damage and the remaining two showed signs of heating as well. A military spokesman said forces didn't move in because they weren't requested by Tepco. A Tepco spokesman declined to comment on the issue

specifically, saying in general the company is in contact with the government.

Even a swifter response would have faced grave challenges. The quake and the tsunami cut off the plant from nearly all communications in the crucial early hours, an eyewitness told the Journal.

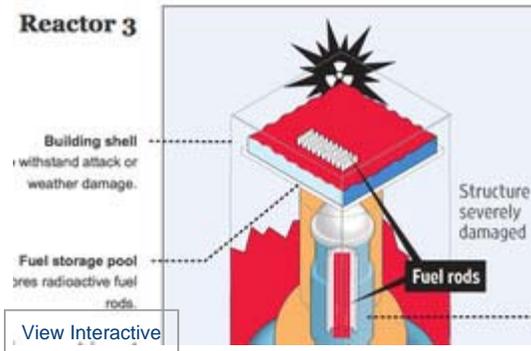
Kazuma Yokota, a safety inspector with Japan's Nuclear and Industrial Safety Agency, or NISA, was at the plant at the time. He ducked under a desk as the temblor struck with a force that cracked the walls, he recalled. He then moved to his monitoring office, a 15-minute drive away. "There was no power, no phone, no fax, no Internet," he said. He wasn't able to get a backup generator working until that night.

On Friday, NISA raised the severity ranking of the crisis to five on an international severity scale, from four, putting it at the same level as 1979's Three Mile Island incident in the U.S.

Government and Tepco officials reported only modest gains Friday in controlling the plant. They said they believed that fire trucks deployed on one troubled reactor managed to hit one pool of radioactive waste. It was unclear how effective the spraying was. National broadcaster NHK reported Saturday afternoon that the fire-truck spraying had resumed.

Reactor Monitor

The officials said they believed they could restore power to some troubled units over the weekend, which could help cool them. Radiation levels at the site were stable, but still elevated.



International observers say delays and chaos are inevitable because the situation is unprecedented. Yukiya Amano, chief of the International Atomic Energy Agency, who arrived in Japan on Friday, said Three Mile Island also took time to understand. Still, Mr. Amano cited a lack of information from Tepco.

The March 11 earthquake disconnected the plant from the power grid, and the tsunami wiped out its backup generators.

Survivors' Stories



Mr. Yokota, who heads the NISA office that monitors the plant, was conducting a quarterly safety inspection when the ground began rumbling, then shaking. File cabinets and computers toppled around him.

After the tsunami passed, he grabbed a taxi to the NISA office in neighboring Okuma, which doubled as an emergency-response center. The center was cut off from both NISA headquarters in Tokyo and the Fukushima Daiichi complex.

Japan Quake's Effects



Word of trouble at the No. 1 reactor, the oldest of the plant's six, wasn't widely known until early Saturday morning, when its fuel rods began to heat—even though it had automatically shut down. At a 6 a.m. media briefing, a Tepco spokesman said seawater was one cooling option.

The temperature kept rising, producing hydrogen gas that caused an explosion at 3:36 p.m. Prime Minister Naoto Kan ordered seawater to be injected, which happened at 8:20 p.m.

See a map of post-earthquake and tsunami events in Japan, Hawaii and the U.S. West Coast.

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Paula Bronstein/Getty Images

Momoko Onodera prayed Friday as she mourned her husband who was killed in the tsunami.

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By early Sunday, cooling functions at the No. 3 reactor were lost. Tepco tried to cool the reactor with fresh water, but it was forced to switch to seawater in the afternoon. It exploded Monday morning, likely damaging the containment structure and allowing radiation to leak.

Authorities apparently were unaware that water had stopped going into the cooling system of the No. 2 reactor. They began using seawater Monday evening, but the loss of its cooling system led to an explosion early Tuesday.

Mr. Yokota and other NISA staffers took doses of potassium iodide, which protects the thyroid gland from radiation. The emergency-response center had an alarm that sounded when radiation levels hit 100 microsieverts, prompting staffers to don face masks. By Wednesday, when the staff moved to a safer location farther away, the alarm was going off constantly, recalled Mr. Yokota.

Japan's Self-Defense forces showed up that day, though a spokesman said some of their personnel and equipment waited 15 miles away. "We have to wait for Tepco to come to us and request help," said Tetsuya Kono, a ministry of defense spokesman.

—Nathan Hodge contributed to this article.

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