

Fukushima: TEPCO 'solution' caused problems of its own

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This is the fourth installment in a series focusing on delays in implementing emergency steps by the government and Tokyo Electric Power Co. to deal with the unprecedented nuclear crisis at the Fukushima No. 1 nuclear power plant.

Pumping water into nuclear reactors and storage pools for spent fuel rods at the Fukushima No. 1 power plant was an indispensable move. If the reactors were not kept cool and the pools full, an even worse disaster could have occurred at the stricken nuclear facility. But the action was not without consequences.

Since March 12—the day after the plant was damaged by a massive earthquake and tsunami—about 30,000 tons of water have been sprayed into the reactors by Self-Defense Forces, police and other workers.

The disaster damaged some reactors' pressure and containment vessels, causing leaks of radioactive water that were detected in turbine building basements and maintenance tunnels outside the area restricted due to radiation. The contaminated water posed a major hindrance to efforts to restore electricity to the reactors.

Ironically, the water that was so essential to cool the reactors turned out to be the biggest obstacle to repairing them, a development no one in the government anticipated.

Workers exposed

When three workers descended into the basement of the turbine building for the No. 3 reactor at 10:30 a.m. on March 24, they found a 15-centimeter-deep puddle that had not been there the night before. Just beyond the puddle were water-supply pumps plant operator Tokyo Electric Power Co. desperately wanted to get running. The workers were there to connect the pumps to outside power cables.

The three workers set about their urgent task, sometimes standing ankle-deep in the puddle. Two of them had their legs exposed to radiation, which measured as high as 400 millisieverts per hour on the water's surface.

Other pools of contaminated water were found in the Nos. 1, 2 and 4 reactors. The most problematic was water in the No. 2 reactor building that measured more than 1,000 millisieverts per hour. "I can barely stand to look at that figure," Hidehiko Nishiyama, spokesman of the Nuclear and Industrial Safety Agency, said at a news conference.

When water pouring operations were in full swing on March 15, two section chiefs from TEPCO's nuclear facilities administration department held a press conference.

When Teruaki Kobayashi was asked what would happen to the water being sprayed by fire engines and helicopters. He said it would "stay in the reactor building because it's designed to prevent

leaks.” His colleague Hikaru Kuroda told reporters, “The water being poured into the reactors will evaporate in due course.”

TEPCO officials thought they could end the water pouring operations if the cooling system could be repaired. The most important thing, they felt, was cooling the reactor cores. Pouring water on the reactors was therefore only a stopgap measure and they never considered what would happen if the water used became highly radioactive and leaked to other parts of the plant.

A dire turn of events

Things got much worse on the morning of April 2 when a TEPCO employee who was installing a camera to monitor contaminated water near the No. 2 reactor’s water intake saw liquid gushing out from a crack in the side of a concrete shaft into the sea. The worker attempted to measure the radiation level of the water but his dosimeter maxed out. It was over 1,000 millisieverts per hour.

It was estimated that 60,000 tons of contaminated water had accumulated in the reactors, an amount that was considered too huge to be dealt with by simply moving it to storage.

The government and TEPCO were eventually forced to release water contaminated with low-level radiation into the sea from the plant’s waste disposal facilities. The discharge began on the night of April 4. In an action that is believed to have never been taken before on Earth, radioactive water was released from a tank into the sea to make space available to store water contaminated with higher levels of radioactivity.

The previous day, a Democratic Party of Japan lawmaker close to Prime Minister Naoto Kan reportedly told TEPCO officials to “deal with the crises in order of priority.” The lawmaker asked the utility to consider releasing the mildly radioactive water into the sea.

During an April 6 session of the House of Representatives Committee on Economy, Trade and Industry, former and current executives of the Nuclear Safety Commission testified that the loss of power at the plant caused nuclear fuel rods to be damaged.

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P.S.

* The Yomiuri Shimbun, Apr. 15, 2011:

<http://www.yomiuri.co.jp/dy/national/T110414006040.htm>