

Japan's Fukushima plant leaking radioactive water

John Watanabe
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Water contaminated with radioactive substances has leaked from three of the seven underground storage reservoirs at the Fukushima Dai-ichi nuclear power plant, its operator Tokyo Electric Power Company (TEPCO) has admitted since last Friday.

A third leak was discovered as TEPCO transferred radioactive water to the No. 1 underground pool from the No. 2 tank, where a separate escape of water was found last week, Masayuki Ono, a senior official at TEPCO's nuclear power and plant siting division, told reporters in Tokyo on Tuesday.

The leaks have been found in the pools where TEPCO has stored some of the nearly 280,000 tonnes of highly radioactive water used to cool the crippled reactors at the plant since the March 2011 earthquake and tsunami.

Ono said TEPCO did not know how much water may have escaped, was still investigating the cause of leaks. Last Saturday, as much as 120 tonnes of contaminated water seeped from an underground tank, then a further leak was reported on Sunday. On Monday, the company said about 167 tonnes of radioactive water may have leaked from the No. 2 underground tank while about 3 litres of contaminated water may have leaked from the No. 3 tank. The cooling system for the plant has also failed twice over the past three weeks.

Ono admitted that the underground tanks were "not reliable," but justified TEPCO's continued use of them. "We must keep using some of them that are relatively in good shape while monitoring them closely," he said. "We just don't have enough tanks on the ground that can accommodate the water."

Even before the latest seepage was reported, TEPCO had conceded that the leaks released "the largest amount of radioactive substances" since December 2011, when the company declared a cold shutdown of

the facility.

What to do with all the radioactive water generated by the external cooling of the reactors and spent nuclear fuel has been a major problem for TEPCO right from the start. When a devastating earthquake, followed by a huge tsunami, struck northern Japan in March 2011, the plant lost power, leading to partial meltdowns in three reactors, units 1, 2 and 3. These reactors need to be kept cool constantly, to prevent the fuel inside from overheating and beginning a self-sustaining atomic reaction that could lead to meltdown.

Since the reactors' internal, self-contained cooling systems were no longer functioning, TEPCO was forced to inject water from the outside to maintain the temperatures needed. That created enormous volumes of toxic water. In April 2011, the company—with the government's approval—pumped around 11,500 tonnes of "low level" contaminated water into the ocean to clear space for the storage of more highly radioactive water.

According to *Jiji press*, TEPCO now has more than 350,000 tonnes of contaminated water to manage. Some 75,000 tons had been just left in the lower levels of reactor buildings 1 to 4. However, the bulk of it—around 260,000 tonnes—had been stored in surface tanks nearby. As the capacity of these tanks was coming to an end, late last year TEPCO revealed a new, and somewhat desperate strategy of digging seven pools, 56 metres long, 45 metres wide and 6 metres deep, to store all the waste water.

The viability of these storage pools, which only becoming operational in February, is now openly in question. Since all seven pools are built in the same fashion, the government's own industry regulator, the Nuclear Regulation Authority (NRA), has conceded that the leaks have "undermined the overall credibility

of measures for dealing with the contaminated water.”

TEPCO, the government and the regulator are, as always, trying to downplay the significance of the leakage. The company estimate of the amount of radioactivity was not based on the concentration level of radioactive substances contained in the water inside the pool. Rather it was calculated using a small specimen of water found trapped between the second and third layers of the protective waterproof sheet covering the inside of the pool, which is 50 times less radioactive.

Professor Hideo Yamazaki of Kinki University, who specialises in environmental analysis, said: “I cannot understand why TEPCO used a lower figure as the basis for this calculation. Such calculations should be conducted strictly from the viewpoint of ensuring safety.”

Professor Masanori Aritomi of the Tokyo Institute of Technology, a specialist in nuclear reactor engineering, said: “There's a common understanding that such calculations should be based on the initial concentration of radioactive substances. I'm afraid TEPCO is underestimating the seriousness of this incident.”

Further evidence has emerged that the government and its regulators are complicit in TEPCO's ongoing coverup of the water storage crisis. *Yomiuri Shimbun*, citing unnamed sources, reported that the storage pools were “exempted from the pre-operation checking required by the law on nuclear material and reactors” and that “their inspections were nothing more than a formality.”

According to the newspaper, the now-defunct Nuclear and Industrial Safety Agency (NISA) had accepted TEPCO's explanation that “leakage would be prevented by the three-layered waterproof sheet and a leakage detector.” The regulator's successor, the NRA “was busy dealing with the transfer of operations from the agency [NISA]” and “did not have time to assess the agency's evaluation of the pool's construction.”

Similarly, TEPCO's claims that contaminated water was “unlikely” to have reached the ocean, because it was some 800 metres away, are not credible. Even before the latest leaks, scientists such as marine chemist Ken Buesseler had drawn attention to the fact that the radioactivity in the waters near the plant was not dropping over time. The only explanation possible was that the plant was continuously seeping large amounts

of radioactive water to the ocean, both directly and through the workings of natural water cycle.

The Fukushima disaster is yet another example of incompatibility of capitalism with even the most basic human and environmental needs. Corporate profits are once again being placed before public health and safety. The Japanese people are being misled so as to make it easier for the government to keep restarting nuclear power plants and revive the nuclear industry, which generates vast revenues for the Japanese elite, both at home and as an export technology. And last, but not least, as tensions grow in the Asia-Pacific region, the Japanese ruling class wants to keep open the option of military use of nuclear power and nuclear weapons.



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