

Japanese nuclear company confirms meltdowns in three reactors

Mike Head
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The Tokyo Electric Power Company (TEPCO) admitted yesterday that there had been meltdowns of fuel rods inside three reactors at its Fukushima Daiichi nuclear power plant soon after the March 11 earthquake and tsunami that crippled the plant.

Earlier this month, TEPCO revealed a meltdown in the No. 1 reactor, while saying that the fuel rods had probably melted in reactors No. 2 and 3 as well. Yesterday, the company said a review of data since early May had confirmed that meltdowns had occurred in all three reactors, and within four days of the disaster.

TEPCO said a “major part” of the fuel rods in reactor No. 2 may have melted and fallen to the bottom of the reactor’s pressure vessel 101 hours after the earthquake and tsunami. A similar meltdown had happened within the first 60 hours at reactor No. 3. In both cases, the fuel was believed to be sitting at the bottom of pressure vessels, which are likely also to be damaged.

TEPCO emphasised that temperature levels in the reactors had cooled. Company spokesman Takeo Iwamoto said: “It is unlikely that the meltdowns could worsen the crisis because melted fuels are covered in water.” However, the state of the highly radioactive fuel is unknown and underscores the difficulties in bringing the nuclear emergency under control.

As the company continues to pour water into the reactors to cool the fuel, the damaged steel pressure vessels and their surrounding concrete containment vessels are believed to be leaking, causing the seepage of thousands of tonnes of contaminated water.

TEPCO also revealed that temporary containers holding radioactive water pumped from the reactors were almost full, raising concerns they could overflow. The company said water could fill the tanks within three days and a system to reprocess the water—now measuring more than 72,574 tonnes—for reuse in the reactors was not yet finished. TEPCO had initially said the storage area could

last until mid-June.

In an interview with the London-based *Financial Times*, Prime Minister Naoto Kan expressed regret for what he called TEPCO’s underestimation of the extent of the fuel meltdown. Amid rising public distrust of the information provided by TEPCO and the government, there was immediate speculation in the media about the timing of the announcement.

An *Asahi Shimbun* editorial commented: “Few days pass without news that makes us wonder if the government is telling the truth about the disastrous nuclear accident triggered by the Great East Japan Earthquake.” Koichi Nakano, a political science professor at Tokyo’s Sophia University told Reuters that TEPCO’s delay in confirming the meltdowns suggested that the company had feared setting off a panic by disclosing the severity of the accident earlier.

On Monday, Kan had referred in parliament to the popular criticism of his government’s failure to provide accurate information. “I am sorry that the public is mistrustful of the various disclosures made by the government on the accident,” he said. TEPCO’s confirmation also came as International Atomic Energy Agency investigators began a two-week visit to Japan to prepare a report on the situation, and as the government appointed its own committee of inquiry.

About 400 outraged parents, many from the Fukushima region, protested outside the education ministry in Tokyo on Monday, condemning the government’s decision to lower nuclear radiation safety levels in schools. Under new guidelines, children will be permitted to be exposed to up to 20 millisieverts a year—20 times more radiation than was previously allowed.

Protest organisers said the radiation limit for school playgrounds would be about six times the 0.6 microsievert-per-hour legal maximum under which under-18s are permitted to work. Because of the greater vulnerability of

children to radiation effects, the Nobel-prize winning group Physicians for Social Responsibility estimated that the new limits would expose children to a one-in-200 risk of contracting cancer, compared with a one-in-500 risk for adults.

The government maintains that it had no choice but to raise the exposure limit, saying about three-quarters of the schools in Fukushima had radiation levels above the old safety level. An education ministry official enraged the protesters further by telling them: “The current radiation levels for schools in Fukushima pose no health risks to kids at all.”

Ruiko Muto, who had travelled from Miharu town, about 45 kilometres from the Daiichi plant, told journalists: “This is enough. I’m really furious to see the government has no intention of protecting its people.”

The parents’ protest is another sign, together with low opinion poll ratings, of mounting discontent with the Kan government’s handling of the March 11 disaster and its fallout. This week, the prime minister faced his first direct challenge in the parliament to the government’s response to the nuclear emergency.

Speaking in the Diet on Monday, Kan was forced to deny claims that he had instructed TEPCO to stop pouring seawater into the No. 1 reactor at Fukushima on March 12. The use of seawater was halted for almost an hour that evening, just an hour after the operation had commenced. Seawater had to be used to urgently cool the reactor because supplies of fresh water had been knocked out by the earthquake and tsunami, but the resort to seawater meant that the reactor would be permanently damaged by corrosion.

Answering a question from Liberal Democratic Party opposition leader Sadakazu Tanigaki, who accused the prime minister of making a “terrible mistake” that worsened the nuclear crisis, Kan stated: [T]hose of us at the Prime Minister’s Office, including me, did nothing whatsoever to stop the injection.”

TEPCO started pouring seawater into the reactor at 7.04 p.m. on March 12, more than 24 hours after the disaster, then halted it at 7.25 p.m. after a TEPCO official working in the prime minister’s office notified TEPCO’s head office that government officials were still discussing the risk of re-criticality. After receiving further reports, Kan ordered a resumption at 7.55 p.m., but the operation did not re-commence until 8.20 p.m.

Kan’s statement in the Diet contradicted an earlier angry denial by Haruki Madarame, chairman of the Cabinet Office’s Nuclear Safety Commission, that he had

advised the government-TEPCO emergency response office, chaired by Kan, to halt the seawater operation because it could trigger a dangerous re-criticality event—self-sustaining nuclear fission. Madarame told the *Yomiuri Shimbun*: “I never said there was a risk [of seawater triggering re-criticality]. It’s impossible for switching from fresh water to seawater to cause re-criticality. This is elementary knowledge about nuclear power.”

The magnitude of the financial and political crisis confronting not just the Kan government but the entire Japanese ruling elite was underscored last Friday when TEPCO announced a net loss of 1.247 trillion yen (\$15.28 billion) for the fiscal year ended in March—the biggest annual loss in Japanese corporate history outside the financial sector. TEPCO warned that because of the costs of the Fukushima accident, there was a “significant deterioration” in its financial position that “raises substantial doubt about its ability to continue as a going concern.”

As had been expected, TEPCO president Masataka Shimizu stepped down in a show of taking responsibility for the loss and the company’s widely-criticised handling of the disaster. But the government has proposed a massive financial rescue plan to provide funds to TEPCO—Japan’s largest utility company—to cover its compensation payments to people and businesses affected by the nuclear crisis.

Initially, the liability was said to potentially reach 4 trillion yen. After TEPCO announced its loss, Bank of America Merrill Lynch estimated that the company could face compensation claims of up to 11 trillion yen if the problems at the Fukushima plant were not resolved within two years.

The author recommends:

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