Worst over, but dangers persist at Japan plant

April 11 2011, by Harumi Ozawa

This handout picture, taken by Tokyo Electric Power Co (TEPCO) on April 10, shows an aerial view of the first reactor building of TEPCO's No.1 Fukushima nuclear power plant at Okuma town. A month after a deadly quake-tsunami hit the plant, the risk of a huge radiation leak has fallen but the danger is far from over, experts say -- a risk brought sharply into focus by a powerful tremor Monday.

A month after a deadly quake-tsunami hit a Japanese nuclear plant, the risk of a huge radiation leak has fallen but the danger is far from over,

experts say -- a risk brought sharply into focus by a powerful tremor Monday.

The 6.6-magnitude aftershock forced evacuation of workers from the Fukushima Daiichi power plant and briefly cut power to three stricken reactors, straining nerves again in a country still battling the impact of the March 11 disasters.

"I would say it will take months just to decide how to improve the current condition," said Tetsunari Iida, director of Japan's Institute for Sustainable Energy Power.

"Workers are trying to resume power to the plant's cooling systems, as they had planned originally. But new problems keep coming up."

A month ago the 9.0 earthquake and tsunami ravaged swathes of Japan's northeast and cut power to the atomic plant, crippling cooling systems and causing partial meltdowns in the worst nuclear crisis since Chernobyl.

The quake triggered an automatic shutdown, but the fuel rods continued to emit residual heat, which must be cooled with a constant flow of water to prevent overheating.

On Monday, the government said the probability of a massive leak of radioactive materials from the plant, 250 kilometres (155 miles) north of Tokyo, was reducing.

"The possibility that the situation at the nuclear plant will deteriorate and lead to new leakage of massive radioactive materials is becoming significantly smaller," said chief government spokesman Yukio Edano.

But while the danger of a catastrophe on the scale of Chernobyl appears

to have been averted, experts say the plant's operator Tokyo Electric Power Company (TEPCO) cannot yet claim to have the situation under control.

Iida said that keeping the spent fuel rods cool was the biggest challenge. Emergency crews are having to pump in large amounts of water, which must then be stored safely because of its high radiation content.

"The biggest difficulty at Fukushima is that workers have to keep injecting water without any real indication of when that process can stop," he said.

"In the meantime, they are creating large amounts of contaminated water and are being exposed to radiation."

The workers, whose ranks have swelled since the initial "Fukushima 50" and who have been hailed as heroes in Japan, have risked permanent health damage to fix disabled cooling systems and restore power to the plant.

Another expert with close knowledge of the emergency, who asked not to be named, said it would be "weeks or months" before the situation at the plant could be brought properly under control.

"Right now, we are waiting for the closed cooling systems, which allow water to flow in a loop so that it does not have to be treated externally, to be brought back online," he said.

"That will be the first sign things are stabilising."

Experts also warn of the possible impact of aftershocks on the plant's quake-damaged structure.

"There is still thought to be radioactive gas seeping out as well as the odd small leak, but we are not seeing the kind of spikes in radioactivity we had in the early days," said a second expert with knowledge of the plant, who wished to remain anonymous.

"Nonetheless, there is still a risk of a hydrogen explosion, and we sadly cannot discount the effects of aftershocks on the damaged structure," he added.

Emergency workers last week began injecting inert nitrogen gas into reactor No. 1 in a bid to head off a possible explosion from a build-up of hydrogen reacting with oxygen from the air.

They have also dumped 11,500 tonnes of low-level radioactive water from the plant into the sea to free up urgently needed storage space for more highly toxic liquid.

The International Atomic Energy Agency (IAEA) says the situation at the plant, 250 kilometres (155 miles) northeast of Tokyo, "remains very serious" but points to "early signs of recovery in some functions" including power supply.

Given the extent of the challenge, many believe international assistance should have been accepted earlier.

"The Japanese were overtaken by events," said one expert. "No one could have foreseen such a disastrous sequence of events."

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Citation: Worst over, but dangers persist at Japan plant (2011, April 11) retrieved 24 April 2024 from https://phys.org/news/2011-04-worst-dangers-persist-japan.html

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