

Japan nuclear meltdown 'maybe worse than thought'

December 1 2011



Black smoke rises from reactor number three at the Fukushima nuclear power plant, March 21, 2011. Molten nuclear fuel at Japan's Fukushima plant might have eaten two thirds of the way through a concrete containment base, its operator said, citing a new simulation of the extent of the March disaster.

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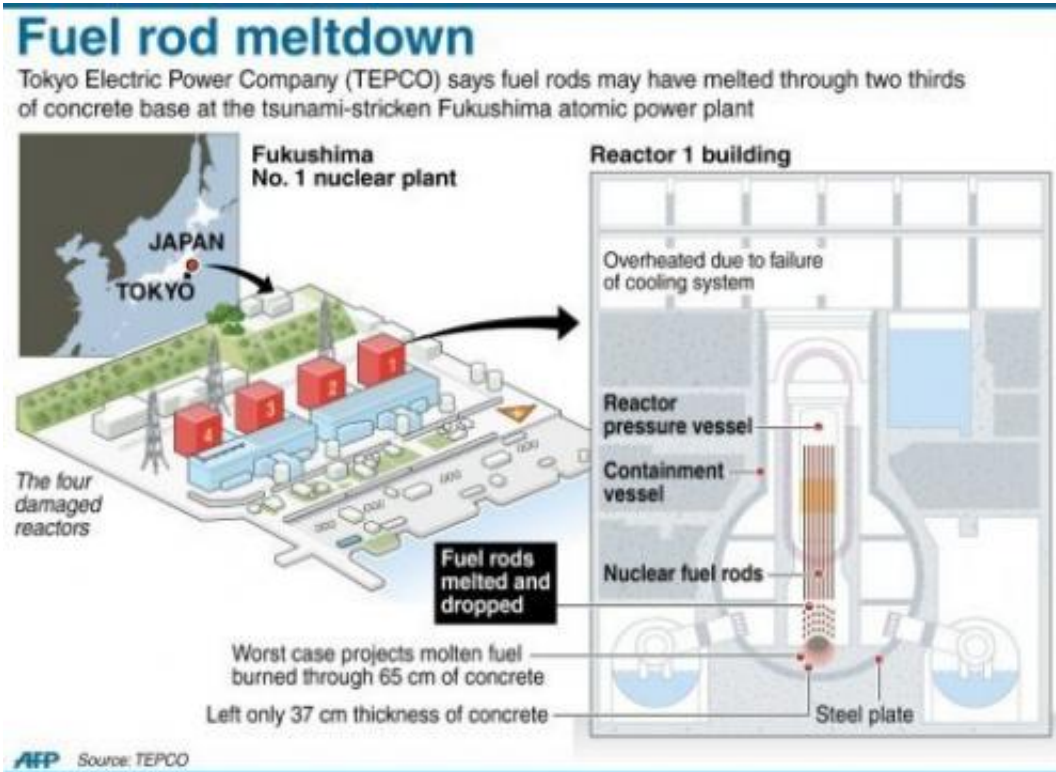
Tokyo Electric Power (TEPCO) said their latest calculations showed the fuel inside the No. 1 [reactor](#) at the tsunami-hit plant could have melted entirely, dropping through its inner casing and eroding a concrete base.

In the worst-case scenario, the molten fuel could have reached as far as 65 centimetres (2 feet) through the concrete, leaving it only 37 centimetres short of the outer steel casing, the report, released Wednesday, said.

Until now, TEPCO had said some fuel melted through the inner pressure vessel and dropped to the containment vessel, without saying how much and what it did to the concrete, citing a lack of data.

"Almost no fuel remains at its original position," TEPCO said in the report.

Two other reactors at the [Fukushima](#) Daiichi plant also went into [meltdown](#) when the tsunami knocked out [cooling systems](#) at the plant.



Graphic showing how molten fuel rods may have burned two thirds of the way through a concrete containment base, according to new information released by Tokyo Electric Power company.

However, only about 60 percent of their fuel dropped through to the concrete floor and caused less damage, the report projected.

The molten fuel in the three reactors is believed to have stayed cool and stable because water has been injected into the vessels, the utility said.

TEPCO added, however, that it has yet to closely study many areas of the damaged reactors due to high level of [radiation](#) and stressed its findings were based on modelling.

The exact position of the fuel believed to have eaten its way through the

concrete and to what extent it is being exposed to the cooling water is not known.

"Uncertainty involved in the analysis is significant due to the uncertain nature of the original conditions and data used," the report said.

"Using (realistically assumed) conditions for the evaluation, the concrete could have been penetrated, but (the fuel) stayed inside the casing," it said.

Fukushima Daiichi has spewed radioactive materials across eastern Japan since it was inundated by the huge waves of March 11.

The world's worst nuclear disaster since Chernobyl in 1986 has not directly claimed any lives, but has left tens of thousands of people displaced and rendered tracts of land uninhabitable, possibly for decades.

TEPCO and the Japanese government have pledged to bring all the plant's reactors to a state of cold shutdown by the end of 2011.

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