



April, 2011 Update

Tucson Office of Emergency Management and Homeland Security
A REPRINT TO HELP EASE YOUR CONCERNS ABOUT JAPAN

Japan vs. Chernobyl: Comparing disasters

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Japan raised the assessment of its nuclear crisis to the most severe rating Tuesday, on the same level as the Chernobyl disaster, the world's worst to date. Some answers to questions about the assessment and health and safety concerns:

Question: Has the situation at the Japanese nuclear power plant worsened?

Answer: No. The heaviest radiation leaks at the Fukushima Dai-ichi nuclear complex occurred in the first days after the March 11 earthquake-triggered tsunami crippled the plant's cooling systems. Workers are trying to lower temperatures in the overheated nuclear reactors, but still don't have full control. Problems persist, like the leak into the ocean plugged last week, but authorities say the radiation leaks are declining.

Q: If the situation's not getting worse, why did Japan raise its assessment of the crisis?

A: The decision was based on new assessments of radiation leaks since the crisis began, rather than on deteriorating conditions. The new data showed emissions exceeding the threshold for a "major accident," level 7 on a 1-to-7 scale set by the International Atomic Energy Agency. Only one accident has previously rated 7, the 1986 meltdown at the Chernobyl nuclear power plant.

Q: So is Japan's crisis as bad as Chernobyl's?

A: Not yet. Chernobyl was a fast-moving crisis. A routine shutdown went awry, causing a reactor to overheat, explode and burn. For 10 days, the reactor spewed high levels of radiation into the air and only cooled after helicopters dropped sand, clay, lead and other materials on it. By contrast, the Fukushima crisis has been a slow cascade of problems over a month. Explosions occurred at three of Fukushima's reactors and one may be leaking. But the two plants' reactor designs are different. Unlike Chernobyl's reactors, Fukushima's have pressure vessels of steel 6 inches thick that may have helped contain the damage.

Q: Then why the same severity level rating?

A: The IAEA defines a level-7 accident as one in which a large amount of radiation is released into the atmosphere, likely harming human health and damaging the environment over the long-term. That threshold is set at several tens of thousands of terabecquerels - a unit of radiation - of iodine-131, a radioactive element commonly released in nuclear accidents. Leaks at both plants have exceeded that limit, but the Japanese government says Fukushima's are still one-tenth of those released by Chernobyl. The possibility Fukushima's emissions could surpass Chernobyl's is considered small, but still a risk until Fukushima's cooling systems are restored.

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