**Fukushima, Three Mile Island, Chernobyl: Putting It All In Perspective**

by NPR Staff

The situation at Japan's Fukushima Daiichi facility is prompting many comparisons to the two prior crises that have become cultural touchstones for what can go wrong at a nuclear power plant: Three Mile Island and Chernobyl.

See how the disasters compare.

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| **Disaster** | **Problem** | **What Happened To The Core** | **Exposure** |
| **Three Mile Island** **Date:** March 28, 1979 **Place:** Near Harrisburg, Pa. | A failure involving the water pumps allowed pressure to build up inside the reactor core; in response, a relief valve automatically opened. But it failed to close again — and cooling water escaped the reactor. Meanwhile, operators at the plant didn't get the signal that the valve was still open.  | The nuclear fuel rods inside the reactor experienced a partial meltdown — meaning some of them overheated and melted. However, the radioactive material never escaped the containment vessel. | Experts say the resulting radiation exposure was never enough to cause a detectable health effect in the general population. |
| **Chernobyl** **Date:** April 26, 1986 **Place:** About 80 miles north of Kiev, UkraineAP | Operators were performing a test to see how the reactor would fare in case of electrical failure, when a design flaw in the reactor caused a dramatic power surge. | The core hadn’t been shut down prior to the test. The power surge triggered events that sent the nuclear reaction out of control — causing two explosions. The reactor was not surrounded by a containment structure, so the explosions and the subsequent fire sent a giant plume of radioactive material into the atmosphere and was spread out by the winds. |  At least 5 percent of the radioactive reactor core was released into the atmosphere. Two Chernobyl plant workers died on the night of the accident, and 28 more people died within a few weeks from radiation poisoning. Long term, several thousand more people were put at risk for cancer. |
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| **Fukushima Daiichi** **Date:** March 11 **Place:** Fukushima prefecture, about 150 miles north of Tokyo on Japan's northeastern coastAP | Emergency cooling systems at the plant started to fail after a massive quake and tsunami knocked out electricity at the facility. Workers have experienced numerous problems maintaining water levels in the three reactors that were in operation when the quake struck. Water is needed to keep the nuclear fuel rods inside the core from overheating. Officials suspect rods have melted in multiple reactors. | So far, four of the six nuclear reactors are in trouble. In Unit Nos. 1 and 3, explosions occurred from a buildup of hydrogen gas. These were not nuclear blasts. Experts suspect the nuclear rods inside these two reactors have started to melt but have not breached the containment vessel, which is designed to keep radioactive material from escaping.Unit No. 2 poses a bigger threat: An explosion may have caused a breach in the containment vessel, which may allow radioactive steam or water to escapeUnit No. 4, which had been closed down for maintenance before the quake hit, caught on fire. The fire occurred near a pond where spent fuel rods were left to cool off. Officials believe the fire caused a radiation leak near the pool. The challenge is keeping the rods — which are still hot — covered in water so that they don’t overheat and release more radioactive material. | Not yet known |