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UPDATED March 31, 2011

Status of the Nuclear Reactors at the Fukushima Daiichi Power Plant

None of the six reactors at the plant have operated since the earthquake. But explosions have damaged four of the buildings, and fuel in the reactors and spent fuel stored in the buildings is in danger of melting and releasing radioactive materials. Last updated on March 31, 3.30 p.m. EDT. All reactor status updates are listed in Japan time.

- Reactor 1**
- MARCH 31, 1:03 PM Begin injecting water into the reactor using a concrete pumping vehicle.
 - MARCH 31, 12:00 PM Water is pumped from the condenser's storage tanks to storage tanks connected to the suppression pool in order to create more space to drain water from the turbine building.
 - MARCH 31, 9:20 AM Water accumulated in the vertical shaft of the reactor is transferred to a reservoir in the centralized environmental facility of the power plant. The transfer take two hours.
 - MARCH 30, 2:00 PM Temperature at a nozzle feeding water to the reactor has dropped to 518 degrees Fahrenheit, which remains higher than the normal operating temperature of the reactor.
 - MARCH 29 Traces of niobium, tellurium, ruthenium, iodine and cesium — all products of fission — are found in the water trench under the reactor.
 - MARCH 29, 12:00 PM Temperature at a nozzle feeding water to the reactor is 589 degrees Fahrenheit.

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Outer building is damaged and it is presumed that there was a partial meltdown. Small amounts of radioactivity have been vented and some may have leaked. Operators have had trouble cooling down the reactor. The reactor has 400 fuel assemblies and the spent fuel pool has 292.



- Reactor 2**
- MARCH 31, 11:50 PM Injection of freshwater in the reactor ends after more than a day.
 - MARCH 30, 7:05 PM After suspending spraying of water into the spent fuel pool for six hours because of a tear in a hose, spraying resumes.
 - MARCH 30, 9:25 AM Operators begin injecting freshwater into the spent fuel pool with a motor-driven pump, but it malfunctions and they switch to a fire fighting pump after 20 minutes.
 - MARCH 30, 2:00 PM Temperature at a nozzle feeding water to the reactor, which has slowly been creeping up, is 346 degrees Fahrenheit, which is within normal parameters if the reactor were operating, but is much warmer than if the reactor were shut down properly.
 - MARCH 30, 4:00 AM Temperature in the spent fuel pool is 115 degrees Fahrenheit (normal is 77 degrees).
 - MARCH 29, 4:45 PM Operators begin pumping water from the condenser storage tank into a another type of storage tank so that more contaminated water in the turbine building can be pumped through the condenser.

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The International Atomic Energy Agency says that the fuel and the reactor core were severely damaged. The primary containment vessel may have been damaged in an explosion and highly radioactive water has been found near the reactor's turbines. The reactor has 548 fuel assemblies and the spent fuel pool has 587.



Reuters



Digital Globe

Reactor 3

MARCH 31, 8:40 AM Operators finish pumping water from the condenser storage tanks to storage tanks used with the suppression pool.

MARCH 30, 5:40 PM Operators begin pumping water from the condenser into a storage tank so that contaminated water in the turbine building can be pumped through the condenser.

MARCH 29, 4:45 PM Operators begin pumping water from the condenser storage tank into another type of storage tank so that more contaminated water in the turbine building can be pumped through the condenser.

MARCH 29, 2:17 PM Plant operators switch to injecting fresh water instead of seawater into the reactor. The operation continues for four hours.

MARCH 28, 8:30 PM More power is restored and the plant operators switch from using a fire hose pump to a temporary electrical pump to inject water into the reactor.

MARCH 28 Radioactive materials are found in puddles in the turbine building.

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The reactor used uranium and plutonium, which may produce more toxic radioactivity. The reactor containment vessel may have been damaged and the spent fuel pool may have become uncovered. The reactor has 548 fuel assemblies and the spent fuel pool has 514.



Reuters



TEPCO

Reactor 4

MARCH 30, 2:04 PM Operators begin spraying water into the spent fuel pool.

MARCH 29, 11:50 AM Power is restored to main control room and lights are turned on.

MARCH 28 Radioactive materials are found in puddles in the turbine building.

MARCH 27, 4:34 PM Water is sprayed on the spent fuel pool for almost three hours.

MARCH 26, 8:00 AM White smoke being emitted continuously from the building.

MARCH 25, 7:05 PM Trucks spray water on the building.

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Spent fuel rods in a water pool may have become exposed to air, emitting radioactive gases. An explosion and fire have damaged the building. There are no fuel assemblies in the reactor; 548 were removed for maintenance and are part of 1,331 in spent fuel pools.



Reuters



TEPCO

Reactor 5

MARCH 24, 4:14 PM A replacement pump for the cooling system is started and at 4:35 PM, cooling of the reactor resumes.

MARCH 23, 5:24 PM The cooling system is broken. Officials say they will repair the pump in the morning.

MARCH 21, 11:36 AM Power, which had been supplied from an emergency diesel generator, is now coming from an external source.

MARCH 20, 2:30 PM Reactor is "cold shut down," meaning temperatures and pressures in the core have returned to normal.

MARCH 20, 2:00 PM Temperature in the spent fuel pool is 95 degrees Fahrenheit (normal is 77 degrees).

MARCH 19, 6:00 PM Temperature in the spent fuel pool is 119 degrees Fahrenheit.

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The reactor is shut down and the building is not damaged. But the concern had been about spent fuel in the building becoming exposed to air. With power restored to the building, that concern has abated. The reactor has 548 fuel assemblies and the spent fuel pool has 946.



Associated Press



Digital Globe

Reactor 6

MARCH 25, 3:40 PM Power for the unit's cooling system is switched from temporary to permanent.

MARCH 22, 7:17 PM Power, which had been supplied from an emergency diesel generator, is now coming from an external source.

MARCH 20, 7:27 PM Reactor is "cold shut down," meaning temperatures and pressures in the core have returned to normal.

MARCH 20, 2:00 PM Temperature in the spent fuel pool is 86 degrees Fahrenheit (normal is 77 degrees).

MARCH 19, 10:14 PM A second pump system begins operating to cool the spent fuel pool.

MARCH 19, 6:00 PM Temperature in the spent fuel pool is 153 degrees Fahrenheit.

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The reactor is shut down and the building is not damaged. But the concern had been about spent fuel in the building becoming exposed to air. With power restored to the building, that concern has abated. The reactor has 764 fuel assemblies and there are 876 in spent fuel pools.

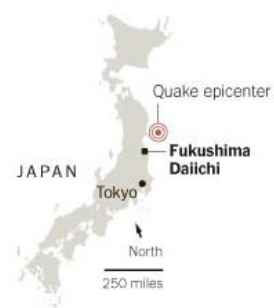


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Overview of the Power Plant



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