



UPDATED May 1, 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 has partially melted, releasing radioactive materials. Updated as of April 29, 4 p.m. EDT. All reactor status updates are listed in Japan time.

- Reactor 1**
- APRIL 29, 11:36 AM A remote-controlled robot goes into the reactor building and finds no significant water leakage from the primary containment vessel.
  - APRIL 29, 10:14 AM The water injection rate in the reactor is reduced to about 1,600 gallons an hour from 2,600 gallons.
  - APRIL 28, 9:00 AM The water injection rate in the reactor is set at about 2,600 gallons an hour.
  - APRIL 27, 10:02 AM In an effort to determine the proper water injection rate into the reactor to cool it, operators gradually increase the rate to about 3,700 gallons an hour from about 1,600 gallons an hour.
  - APRIL 26, 11:35 AM Radiation readings taken by a remote-control robot inside the reactor building are substantially the same as several days earlier and still too high for workers. The robot finds that there is no significant water leakage from the primary containment vessel.
  - APRIL 17, 4:00 PM A remote-control robot finds radiation levels inside the reactor building are as high as 49 millisieverts per hour, which is too high to allow people to work inside it. (The limit for American workers is 50 per year.)

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There was a partial meltdown of the reactor's fuel assemblies (about 55 percent of the fuel was damaged, according to latest estimates) and radioactive materials have leaked into the environment, in large but unknown quantities. The steel reactor core may have been breached by molten fuel.



- Reactor 2**
- APRIL 28, 10:15 AM Water is injected into the spent fuel pool until 11:28 AM.
  - APRIL 25, 10:12 AM Fresh water is injected in the spent fuel pool for just over an hour.
  - APRIL 21 Workers finish putting grout in a crack in a pit where cables are stored. Highly radioactive water had poured from the crack for several days earlier in the month. Though the leak had been plugged, the crack had continued to be a concern. The pit continues to be filled with highly radioactive water.
  - APRIL 19, 4:08 PM Water is sprayed on the spent fuel pool for 80 minutes.
  - APRIL 19 About 1,850 gallons of liquid glass are injected into the power cable trench that leaked radioactive water earlier in the month.
  - APRIL 19, 10:08 AM Workers begin to pump 10,000 tons of highly contaminated wastewater water from the turbine building to a radiation treatment facility in another part of the plant.

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There was a partial meltdown of the reactor's fuel assemblies (about 35 percent was damaged, according to the latest estimates) and molten fuel may have breached the reactor's steel core. An explosion has damaged part of the primary containment vessel around the core, allowing large amounts of highly radioactive water used to cool the reactor to leak out.



MARCH 11

Reuters



MARCH 16

Digital Globe

### Reactor 3

APRIL 27 To prevent the spread of radioactive material, dust inhibitor is sprayed over almost 81,000 square feet of ground near the sea.

APRIL 26, 12:25 PM Water is sprayed on the spent fuel pool. The spraying ends at 2:02 PM

APRIL 22, 2:19 PM Water is sprayed on the spent fuel pool. The spraying ends at 3:40 PM

APRIL 22, 1:40 PM Fresh water is injected into the spent fuel pool for 20 minutes.

APRIL 18, 2:17 PM Water is sprayed on the spent fuel pool for 45 minutes.

APRIL 17, 11:30 AM A remote-control robot finds radiation levels inside the reactor building are as high as 57 millisieverts per hour, which is too high to allow people to work inside it. (The limit for American workers is 50 per year.)

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The reactor used uranium and plutonium, which produces more toxic radioactivity. There was a partial meltdown of the reactor's fuel assemblies (about 30 percent was damaged, according to the latest estimates) and the reactor containment vessel may have been damaged. The spent fuel pool may also have become uncovered.



MARCH 11

Reuters



MARCH 16

TEPCO

### Reactor 4

APRIL 27, 12:18 PM Water is sprayed on the spent fuel pool until 3:15 PM.

APRIL 26, 4:50 PM Water is sprayed on the spent fuel pool until 8:35 PM.

APRIL 25, 6:15 PM Water is sprayed on the spent fuel pool for more than six hours.

APRIL 24, 12:25 PM Water is sprayed on the spent fuel pool. The spraying ends at 5:07 PM.

APRIL 23, 12:30 PM Water is sprayed on the spent fuel pool. The spraying ends at 4:44 PM.

APRIL 21, 5:14 PM Water is sprayed on the spent fuel pool. The spraying ends at 9:20 PM.

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The reactor was empty at the time of the earthquake, but the fuel was in a spent fuel pool that may have been uncovered, causing a partial meltdown and the release of radioactive materials. An explosion and fire have damaged the building.



BEFORE QUAKE

Reuters



MARCH 23

TEPCO

### Reactor 5

APRIL 28 To prevent the spread of radioactive material, dust inhibitor is sprayed over almost 49,000 square feet of ground near the reactor.

APRIL 25, 10:30 AM Dust inhibitor is sprayed on the ground, around the administration building and near other buildings to prevent diffusion of radioactive materials. In total, about 41,000 square feet is covered.

APRIL 24, 11:30 AM Dust inhibitor is sprayed on the ground over more than 9,200 square feet to prevent diffusion of radioactive materials.

APRIL 9, 6:52 PM After five days, the discharge of slightly radioactive water from the sub-drain pits of Reactors 5 and 6 is completed. The discharge is 1,320 tons, instead of 1,500 tons, as the original estimate said it would be.

APRIL 4, 9:00 PM In order to prevent equipment from being damaged, the plant's operator begins releasing into the ocean 1,500 tons of water contaminated with low levels of radioactive waste that has accumulated in the sub-drain pits of Reactors 5 and 6.

APRIL 2, 2:00 PM Temperature in the spent fuel pool is 99 degrees Fahrenheit (normal is 77 degrees).

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The reactor is shut down and the building is not damaged. As power has been restored, concern about that this part of the facility has abated.



Associated Press



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**Reactor 6**

APRIL 19, 11:00 AM Wastewater that has accumulated in the basement of the turbine building is pumped to a condenser. The operation takes four hours.

APRIL 9, 6:52 PM After five days, the discharge of slightly radioactive water from the sub-drain pits of Reactors 5 and 6 is completed. The discharge is 1,320 tons, instead of 1,500 tons, as the original estimate said it would be.

APRIL 4, 9:00 PM In order to prevent equipment from being damaged, the plant's operator begins releasing into the ocean 1,500 tons of water contaminated with low levels of radioactive waste that has accumulated in the sub-drain pits of Reactors 5 and 6.

APRIL 2, 2:00 PM Temperature in the spent fuel pool is 78 degrees Fahrenheit (normal is 77 degrees).

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.

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The reactor is shut down and the building is not damaged. As power has been restored, concern about that this part of the facility has abated.



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**Overview of the Power Plant**



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