

Sequence of Developments related to Fukushima Daiichi NPS during March 17th to 24th

(Source: Prime Minister's Office and NISA)

March 17 (Thu)

- 9:48 At Unit 3 of Fukushima Daiichi, Self-Defense Force (SDF) helicopters began dropping water (4 times) (-10:00)
- 19:05 At Unit 3, a police water-cannon truck began injecting water (once) (-19:15)
- 19:35 At Unit 3, special SDF pumper trucks began injecting water (5 times) (-20:07)
Radiation levels before and after water injection (from 3,630 to 3,586 microSv/h)

March 18 (Fri)

- 10:00 At Fukushima Daiichi, the common spent fuel pool was confirmed to be filled with water (temperature: 55 degrees C)
No signs of abnormality were seen in visual observations at the buildings for dry casks (storage of spent fuel in dry storage casks)
- 12:25 MEXT decided to strengthen nationwide radiation monitoring
- 13:30 At Unit 5, holes were made in the roof of the reactor building
- around 14:00 SDF fire trucks began injecting water (7 times) (-14:38).
- 14:42 At Unit 3, TEPCO began injecting water using a high-pressure water-cannon truck provided by U.S. Forces (once) (-14:45)
- 17:00 At Unit 6, holes were made in the roof of the reactor building
- 17:50 The Nuclear and Industrial Safety Agency (NISA) announced provisional ratings of the accidents at Fukushima Daiichi and Daini on the International Nuclear Event Scale (INES) .
- Units 1, 2 & 3: Level 5 (accident with wider consequences) - Unit 4: C15Level 3 (serious incident)
Initial connection of power from an external transmission line to a temporary substation for backup power was completed

March 19 (Sat)

- 0:00 At Unit 3, fire engines from an emergency firefighting team (Tokyo Fire Department's Hyper-Rescue Team) began continuous water injection (-01:00).
- 5:00 At Unit 5, the pump for Residual Heat Removal (RHR) system resumed operating and cooling the spent fuel pool
- 7:42 At Unit 6, two emergency diesel generators became operational, ensuring power for Units 5 and 6
- 8:58 Radiation levels exceeded 500 microSv/h around the West Gate, and an incident pursuant to Article 15 of the Special Law on Emergency Preparedness for Nuclear Disasters ("the Law") was determined to have occurred
- 9:15 At Units 5 and 6, three holes total were made in the roof of each reactor building to prevent hydrogen gas from accumulating within the buildings.
- 14:10 At Unit 3, an emergency firefighting team (Tokyo Fire Department) began continuous water injection. (-03:40 on Mar. 20)
Radiation levels before and after water injection (from 3,417 to 2,758 microSv/h)
- 18:30 At Unit 5, the temperature of the spent fuel pool dropped.
from 68.8 degrees C (06:00 on Mar. 19) to 48.1 degrees C (18:00 on Mar. 19)
- 22:14 At Unit 6, the pump for RHR system resumed operating and cooling the spent fuel pool

March 20 (Sun)

- 3:00 At Unit 6, the temperature of the spent fuel pool dropped.
from 67.5 degrees C (23:00 on Mar. 19) to 52.0 degrees C (03:00 on Mar. 20)
- 6:20 A special vehicle (concrete-pumping truck with 50-meter-long arm) arrived at Onahama (Fukushima Prefecture)
- 8:00 At Unit 3, temperature inside the reactor rose beyond 300 degrees C and the pressure inside the reactor climbed (280-290 degrees C during normal operation).
- 8:21 At Unit 4, 10 SDF fire trucks began injecting water (approx. 81 tons) (-09:40)
- 14:30 Unit 5 achieved a state of cold shutdown (reactor water temperature less than the boiling point of 100 degrees C)
At Unit 3, the temperature inside the containment vessel remained high, requiring close monitoring.
- 15:05 At Unit 2, TEPCO fire trucks began injecting water to Spent Fuel Pool (about 40 tons) (-17:20).
- 15:46 At Unit 2, electricity was restored to the power center.
- around 18:30 At Unit 4, 10 SDF fire trucks began injecting water (approx. 81 tons) (-19:46)
- 19:27 Unit 6 achieved a state of cold shutdown (reactor water temperature less than the boiling point of 100 degrees C)
- 20:39 At Unit 3, fire trucks from an emergency firefighting team (Tokyo Fire Department) began continuous water injection (approx. 1,137 tons (-03:58 on Mar. 21).

March 21 (Mon)

- 6:37 At Unit 4, 12 SDF fire trucks and TEPCO using a high-pressure water-cannon truck provided by U.S. Forces began continuous water injection (13 times, approx. 91 tons total) (-08:41).
Radiation levels before and after water injection (from 2,319 to 2,126 microSv/h).
- 10:37 At Fukushima Daiichi, TEPCO fire trucks began water injection (approx. 130 tons) to the common spent fuel pool (-15:30)
- 11:36 At Unit 5, power was switched from emergency diesel generators to an external power source
- 14:30 Radioactive materials were detected in seawater sampled around the discharge canal (south) of Units 1 through 4
- around 15:00 At Unit 4, laying cable to Power Center was complete
- 15:55 At Unit 3, light gray smoke belched from the roof of the building and was died down at 17:55
- 16:49 The amount of smoke coming from Unit 3 remained the same, but the color of the smoke changed from gray to white
- 17:50 The government instructed the governors of Fukushima, Ibaraki, Tochigi and Gunma Prefectures to restrict shipments of some foods
- 18:02 The smoking at Unit 3 was confirmed to be lessening.
- 18:22 At Unit 2, white smoke emerged from the roof of the building and was almost invisible at 07:11 on March 23

March 22 (Tue)

- 10:35 At Unit 4, electricity was restored to the power center.
- 11:00 The Food Safety Commission within the Cabinet Office began deliberations on an index of radioactive materials
- 15:10 At Unit 3, fire trucks from an emergency firefighting team (Tokyo Fire Department) began continuous water injection (approx. 150 tons (-15:59).
- 16:07 At Unit 2, TEPCO fire trucks began water injection (approx. 18 tons) (-17:01).
Temperature of the spent fuel pool before and after water injection (from 53 degrees C to 51 degrees C)
- 17:17 At Unit 4, TEPCO using a special vehicle (concrete-pumping truck) began water injection (150 tons) (-20:32)
- 19:41 At Units 5 and 6, all power was switched to external sources.
- 22:43 At Unit 3, lighting was restored within the Central Control Room

March 23 (Wed)

- 2:33 At Unit 1, a "water feeding line" was added to the water-injection line to the reactor pressure vessel (water injection using the fire extinguishing line continues).
- 10:00 At Unit 4, TEPCO using a special vehicle (concrete-pumping truck) began injecting water (approx. 130 tons) (-13:02)
- 11:03 At Unit 3, TEPCO began injecting water to the spent fuel pool (approx. 35 tons) via the Cooling and Purification Line (-13:20)
- around 16:20 At Unit 3, black smoke was seen and confirmed to died down around 23:30 and 4:50 on Mar 24

March 24 (Thu)

- 5:35 At Unit 3, TEPCO began injecting water to the spent fuel pool (approx. 120 tons) via the Cooling and Purification Line. (-16:05)
- 11:30 At Unit 1, lighting was recovered at the Central Control Room.
- 14:36 At Unit 4, TEPCO using a special vehicle (concrete-pumping truck) began injecting water (approx. 150 tons) (-17:30).

