Major Events after the Earthquake

- 22:30: Started the operation for the injection of nitrogen to PCV.
- 11:50: 0.110MPa
- 14:10: Under operation, Automatic shutdown by the earthquake around 11:30.
- 14:46: Lighting in the main Control Room was recovered.
- 15:26: Started to transfer the accumulated water from the Water Temperature B.
- 04:10: Started using highly pure nitrogen generator in the injection of nitrogen to Water Temperature A.
- 17:56: External power supply was recovered.
- 10:17: 0.131MPa
- 11:35: Around 17:16: Loss of external power supply due to an earthquake occurred (at 11:30).
- 23:19: Restarted operation for injecting nitrogen to PCV.
- 01:31: Confirmed starting the injection of nitrogen to PCV.
- 10:57: 20:20: Started to inject seawater and borated water to the Reactor Core.
- 16:36: Occurrence of the Article 15 event (Inability of water injection of the existing Cooling Line).
- 15:42: Report based on the Article 10 (Total loss of A/C power).
- 08:32: Confirmed starting injection of nitrogen to PCV.
- 14:44: -3 Switched to the water injection to the Reactor Core using the temporary driven pump.
- 45.7˚C
- 45.5˚C
- 23:34: Confirmed starting injection of nitrogen to PCV.
- 03/25: 15:37: Started to inject fresh water.
- 14:44: -3 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- 00:49: Occurrence of the Article 15 event (Unusual rise of the pressure in PCV).
- 10:23: 15:37: Started to inject fresh water.
- 19:10: Suspended nitrogen injection due to reinforcement work of the power supply.
- 11:30: Started
- 09:30: Completed transferring the water from the Condenser to CST.
- 01:31: Confirmed starting the injection of nitrogen to PCV.
- 02:33: The amount of injected water into the Reactor Core was increased utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h → 18m³/h)
- 09:00: Switched to the Feedwater Line only. (18m³/h → 11m³/h)
- 17:38: Implemented reinforcement work of the power supply (connection of the power supplies between Units 1 and 2).
- 19:10: Suspended nitrogen injection due to reinforcement work of the power supply.
- 18:25: For reinforcement work of the power supply, the power supply to the temporary motor-driven pump was temporarily switched from the existing Cooling Line to the temporary power supply to the external power supply.
- 12:12: Stopped the water injection into the Reactor Core to replace the current hose with a new one.
- 13:24: 11m³/h
- 11:00: Switched to the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h → 18m³/h)

**Current Conditions:** Fresh water is being injected to the Spent Fuel Pool and the Reactor Core.

(As of 6:00 August 3, 2011)

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)
April 27 10:02 Started the operation of gradually changing the amount of water for injection to the Reactor Pressure Vessel, (RPV) from about 6 m³/h to the maximum of about 14 m³/h. After carrying out the injection at 10 m³/h, the injection rate was changed back to 6 m³/h. (April 29 10:14)

April 29 11:36-14:05 Confirmed the situation in the reactor building using an unmanned robot.

May 2 12:58 -15:03 The pump for the injection of water into the Reactor Core was temporarily replaced with the Fire Extinguishing Pump in order to install an alarm device in the pump.

May 5 16:36-May 8 20:02 Operated all ambient filtration systems (a total of 6 units) in order to improve the working environment in the reactor building.

May 6 10:01 Changed the rate of water injection into the Reactor Core from 6 m³/h to 8 m³/h.

May 8 20:08 Ventilation by cutting of the exhaust air duct

May 9 04:17 Opening the double-entry doors of the Reactor Building

May 9 05:10 Disassembly of positive pressure house

May 10 10:55(approx) Calibrated the reactor water level gauge

May 11 08:47-15:55 Due to the restoration of the Okuma No.2 transmission line, the power supply for the water injection pump into the reactor was temporarily switched to the temporary diesel generator.

May 11 08:50-11:14 Confirmed the reactor water level of RPV, calibrated reactor pressure gauge of primary containment vessel.

May 13 16:01 -17:39 Observed the situation in the Reactor Building using a remote-control robot

May 15 13:28 Changed the rate of water injection into the Reactor Core from 8 m³/h to 10 m³/h.

May 17 11:50 Changed the rate of water injection into the Reactor Core from 10 m³/h to 6 m³/h.

May 20 09:30 -12:15 Entered in the reactor building, confirmed reactor water level and radioactivity.

May 25 09:14 -09:18 Nitrogen injection to PCV were suspended for changing power supply.

May 25 15:16 -15:18 Nitrogen injection to PCV were suspended for changing power supply.

May 25 15:45 Confirmed that the compressor for nitrogen supplying was stopped. 19:44 Restart the nitrogen injection after changing to the reserve compressor.

May 27 10:30-around 12:00 and around 15:00 Entered in the reactor building, Installed the level gauge of reactor building accumulated water, Sampled basement accumulated water, and Installed hoses for SFP.

May 28 16:47 -17:00 Leak test in order to inject fresh water to SFP via FPC

May 31 20:30 Changed the rate of water injection into the Reactor Core from 5 m³/h to 5 m³/h.

June 3 10:38-12:21 Installed temporary pressure gauges for the reactor.

June 3 around 15:00- around 17:00 Confirmed the situation in the reactor building using an unmanned robot.

June 4 09:57-13:56 Suspended the injection of coolant water due to the work for changing the route of water supply line to the Reactor Core. (10:02-13:43 Injected water into the Reactor Core by the fire engine pump.)

June 8 14:57-17:54 Suspended the nitrogen injection due to the stop of the power center 2C.

June 13 14:58-17:43 Transfer the accumulated water from the Condenser to the basement of turbine building.

June 14 14:09 Replaced the pump for the injection of water into the Reactor Core with the Fire Extinguishing Pump.

June 14 15:35-15:50 Suspended water injection to replace the hose of water injection into the reactor.

June 15 10:06 The water injection rate into the reactor was changed from about 5 m³/h to about 4.5 m³/h.

June 15 10:53 -June 16 09:52 Transferred the accumulated water from the Condenser to the CST.
June 19 10:35-15:47 Due to preparation for the suspension works of the Okuma No.2 transmission line, the power supply for the water injection pump into the Reactor Core was temporarily switched to the diesel generator.

June 19 11:48-16:05 Due to preparation for the suspension works of the Okuma No.2 transmission line, the nitrogen injection was temporarily suspended.

June 21 10:02 The water injection rate into the reactor was changed from about 4.5m³/h to about 4.0m³/h.

June 21 11:55-18:03 The nitrogen injection was temporarily suspended due to the installation work of a temporary transformer.

June 22 10:02 The water injection rate into the reactor was changed from about 4.0m³/h to about 3.5m³/h.

June 23 18:27 Water injection into the Reactor Core of Units 1 and 2 was begun, using the water injection pump into the Reactor Core for Unit 1.

June 27 08:08-14:38 The nitrogen injection was temporarily suspended due to preparation for the restoration works of the Okuma No.2 transmission line to the diesel generator.

June 27 08:51-15:07 Due to preparation for the restoration works of the Okuma No.2 transmission line, the nitrogen injection was temporarily suspended.

June 27 16:20 Started use of water treated in the water treatment facilities for injection into the reactor, in addition to water injection from the filtered water tank. Suspended supply of treated water because of a leakage from the pipe (17:55). Started the treated water transfer pump (June 28 14:36). Resumed supply of treated water (June 28 15:55).

June 27 16:20-18:03 The nitrogen injection was temporarily suspended due to the installation work of a temporary transformer.

June 29 10:59-13:33 Regarding the Circulating Injection Cooling of the Reactor Cores, supply of treated water was temporarily suspended due to leakage from a pipe for injection cooling.

July 1 07:27-July 2 14:22 Temporarily suspended supply of treated water into the reactor due to works to install and connect a buffer tank. (July 2 14:22 - 18:00 Trial injected into the Reactor Core from a Buffer Tank due to leakage check. 18:00 - Full-fledged operated)

July 4 08:50 The water injection rate into the reactor was adjusted to 3.8 m³/h, due to decrease to 3.0 m³/h.

July 14 05:30 The water injection rate into the reactor was adjusted to 3.5 m³/h, due to decrease to 3.2 m³/h.

July 15 08:55 The water injection rate into the reactor was adjusted to 3.8 m³/h, due to decrease to 3.2 m³/h.

July 17 10:06 The water injection rate into the reactor was adjusted to 3.8 m³/h, due to decrease to 3.0 m³/h.

July 17 14:25 The water injection rate into the reactor was adjusted to 4.0 m³/h, after switching from the number 1 pump for injecting water into the reactor to the number 2 pump.

July 19 10:10 The water injection rate into the reactor was adjusted to 3.8 m³/h.

July 24 11:10 The water injection rate into the reactor was adjusted to 3.8 m³/h, due to decrease to 3.3 m³/h.

July 24 20:00 The nitrogen supply compressor was changed to the compressor for Unit 2 and 3.

July 27 18:10 The water injection rate into the reactor was adjusted to 3.8 m³/h by only a specific pump for injecting water into the reactor.

July 29 10:37-12:50 The work of sampling airborne radioactive materials was conducted regarding the air inside PCV.

July 30 11:57 The water injection rate into the reactor was adjusted to 3.6 m³/h, due to decrease to 3.4 m³/h.

July 31 05:01 The water injection rate into the reactor was adjusted to 3.6 m³/h, due to decrease to 3.5 m³/h

August 3 05:52-08:33 The nitrogen injection was temporarily suspended due to the replacement of nitrogen injection device with the reserved one.

Water spray over the Spent Fuel Pool by Concrete Pump Truck (Fresh water)>

March 31 13:03-16:04, May 20 15:06-16:15, May 22 15:33-17:09

<Water spray over the Spent Fuel Pool by Concrete Pump Truck (Fresh water)>

May 29 11:10-15:35, June 5 10:16-10:48, July 5 15:10-17:30
### Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

(As of 6:00 August 3, 2011)

<table>
<thead>
<tr>
<th>Current Conditions: Fresh water is being injected to the Spent Fuel Pool and the Reactor Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spent Fuel Pool Water Temperature 33.0°C</td>
</tr>
<tr>
<td>Reactor Pressure A 0.132MPa*</td>
</tr>
<tr>
<td>Reactor Pressure B —MPa*</td>
</tr>
</tbody>
</table>

*Readings of temporary gauges were converted to absolute pressure, and represented in A from 20:00 June 24.

**Condition:** Almost no change

*converted to absolute pressure

**Reactor Water Level A** -1.850mm (under monitoring of the change of the situation)

**Reactor Water Level B** -2.150mm (under monitoring of the change of the situation)

**Condition:** Uncovering of the core from the top of the active fuel to the levels described above

**Reactor Water Temperature:** -˚C

**Feedwater Nozzle Temperature:** 111.2˚C

**Temperature at the bottom head of RPV 123.7˚C**

**PCV**³ Pressure 0.133MPa (changed the monitor from 05:00 July 16)

**Inserting freshwater by temporary motor-driven pump**

**S/P**⁴ Water Temperature A 49.3˚C

**S/P**⁴ Water Temperature B 49.2˚C

**Condition:** Almost no change

**S/P**⁴ Pressure Off scale (indicator failure)

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### Major Events after the Earthquake 1/3

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 11</td>
<td>Transferred the water from the Condenser to CST.</td>
</tr>
<tr>
<td>April 16</td>
<td>The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.</td>
</tr>
<tr>
<td>April 12</td>
<td>Switched to the water injection to the core using the temporary motor-driven pump.</td>
</tr>
<tr>
<td>March 20</td>
<td>17:00 Resumed injecting water to the Reactor Core.</td>
</tr>
<tr>
<td>March 26</td>
<td>10:10 Started to inject fresh water to the Reactor Core.</td>
</tr>
<tr>
<td>March 26</td>
<td>16:46 Lighting in the Central Control Room was recovered.</td>
</tr>
<tr>
<td>March 27</td>
<td>18:31 Switched to the water injection to the core using the temporary motor-driven pump.</td>
</tr>
<tr>
<td>March 29</td>
<td>16:45- April 1 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)</td>
</tr>
<tr>
<td>April 2</td>
<td>around 09:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.</td>
</tr>
<tr>
<td>April 2</td>
<td>17:10 Started to transfer the water from the Condenser to the CST.</td>
</tr>
<tr>
<td>April 3</td>
<td>11:50 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.</td>
</tr>
<tr>
<td>April 3</td>
<td>13:47-14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.</td>
</tr>
<tr>
<td>April 4</td>
<td>07:08-7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.</td>
</tr>
<tr>
<td>April 5</td>
<td>14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea.</td>
</tr>
<tr>
<td>April 5</td>
<td>15:07 Started to inject coagulant.</td>
</tr>
<tr>
<td>April 6</td>
<td>around 05:38 The water outflow from the lateral surface of the pit was confirmed to be stopped.</td>
</tr>
<tr>
<td>April 9</td>
<td>13:10 Completed transferring the water from the Condenser to CST.</td>
</tr>
<tr>
<td>April 11</td>
<td>around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture). Water injection to the Reactor Core was suspended.</td>
</tr>
<tr>
<td>April 11</td>
<td>17:56 External power supply was recovered.</td>
</tr>
<tr>
<td>April 11</td>
<td>18:04 Resumed injecting water to the Reactor Core.</td>
</tr>
<tr>
<td>April 12</td>
<td>19:35- April 13 17:04 Transfer accumulated water from the trench of the turbine building to the Condenser.</td>
</tr>
<tr>
<td>April 13</td>
<td>11:00 Suspended the transfer for checking leaks, etc.</td>
</tr>
<tr>
<td>April 16</td>
<td>around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).</td>
</tr>
<tr>
<td>April 18</td>
<td>13:42-14:33 Confirmed the situation in the reactor building using an unmanned robot.</td>
</tr>
<tr>
<td>April 18</td>
<td>12:13-12:37 Stopped the water injection into the Reactor Core to replace the current hose with a new one.</td>
</tr>
<tr>
<td>April 18</td>
<td>09:30-17:40 Injected coagulant (soluble glass) into the power cable trench.</td>
</tr>
<tr>
<td>April 19</td>
<td>08:00-15:30 Injected coagulant (soluble glass) into the power cable trench.</td>
</tr>
<tr>
<td>April 19</td>
<td>10:08- Started to transfer the accumulated water from the trench of the turbine building to the Radioactive Waste Treatment Facilities.</td>
</tr>
<tr>
<td>April 19</td>
<td>10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.</td>
</tr>
</tbody>
</table>

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*1 Residual Heat Removal System  
*2 Emergency Diesel Generator  
*3 Primary Containment Vessel  
*4 Suppression Pool

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)
April 25  10:57-18:25 For reinforcement work of the power supply, the power supply to the pump injecting water into the Reactor Core was temporarily switched from the external power supply to the temporary diesel generator.
April 25  14:44-17:38 Implemented reinforcement work of the power supply (connection of the power supplies between Units 1-2 and Units 5-6).
April 29  09:16 Suspended the transfer of accumulated water from the turbine building Trench of Unit 2 (accumulated water with high-level radioactivity) to the Radioactive Waste Treatment Facilities in order to carry out inspections, etc. of the transfer facilities. The transfer was resumed. (From 14:05 April 30th)
May 1  13:35- Started blocking the vertical shafts of Trench pit.
May 2  12:58-14:53 The pump for the injection of water into the Reactor Core was temporarily replaced with the Fire Extinguishing Pump in order to install an alarm device in the pump.
May 7  09:22 Suspended the transfer of accumulated water from the turbine building Trench of Unit 2 (accumulated water with high-level radioactivity) to the Radioactive Waste Treatment Facilities in order to carry out piping work of Reactor Feedwater System for Unit 3. The transfer was resumed. (From 16:02 May 7th)
May 10  09:01 -May 12  15:20 Suspended the transfer of accumulated water from the turbine building Trench of Unit 2 (accumulated water with high-level radioactivity) to the Radioactive Waste Treatment Facilities in order to lay the water transfer pipes from the turbine building of Unit 3 to the Radioactive Waste Treatment Facilities.
May 11  08:47-15:55 Due to the restoration of the Okuma No.2 transmission line, the power supply for the water injection pump into the reactor was temporarily switched to the temporary diesel generator. (After the restoration, the power supply is partially received from this line.)
May 18  09:24-09:38 Conducted preliminary survey in the Reactor Building.
May 25  09:05-15:30 Suspended the transfer of accumulated water from the turbine building Trench to the Radioactive Waste Treatment Facilities in order to change power supply.
May 26  14:45- May 27  14:30 Transferred the water from the Condenser to the basement of the turbine building in order to carry out piping work of Reactor Feedwater System.
May 26  16:01 Suspended the transfer of accumulated water from the turbine building Trench to the Radioactive Waste Treatment Facilities. (Because the water level of the concerned Facilities was close to the first basement level.)
May 29  11:33 Started to inject water to the Reactor Core via Feedwater line in addition to Fire Extinguish line
May 30  11:15 Conducted a leakage test on the secondary system of the alternative cooling system for the Spent Fuel Pool. A trial run of the secondary system was started at 15:02.
May 30  18:05 Stopped injecting water to the Reactor Core via Fire Extinguish line.
May 31  11:40 Conducted a leakage test on the primary system of the alternative cooling system for the Spent Fuel Pool.
May 31  17:21 Started full-fledged operation of the alternative cooling system for the Spent Fuel Pool.
June 3  13:49-14:09 Suspended the injection of coolant water due to the work for changing the route of water supply line to the Reactor Core.
June 3  18:39-June 4  12:28 Transferred the accumulated water from the trench of the turbine building to the condenser.
June 4  18:39-June 16  8:40 Transferred the water from the turbine building trench to the Radioactive Waste Treatment Facilities.
June 8  15:40-18:03 Suspended the transfer of accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities due to the stop of the power center 2C.
June 11  11:45-12:19 Conducted a test run of the ambient air filtration system of the reactor building.
June 11  12:42-Started full-scale operation of the ambient air filtration system of the reactor building.
June 14  12:14-12:37 Suspended water injection to replace the hose of water injection into the reactor.
June 17  14:20-14:59 Transferred accumulated water from the turbine building trench to the condenser of Unit 1 (suspended due to a malfunction of the pump).
June 19  10:49-15:35 Due to preparation for the suspension works of the Okuma No.2 transmission line, the power supply for the water injection pump into the Reactor Core was temporarily switched to the diesel generator.
June 19  11:03-16:00 Due to preparation for the suspension works of the Okuma No.2 transmission line, the alternative cooling system for the Spent Fuel Pool was temporarily suspended.
June 19  12:12-16:02 Due to preparation for the suspension works of the Okuma No.2 transmission line, the local exhauster was temporarily suspended.
June 19  20:51- The double door of the reactor building was slightly opened. June 20th The double door was fully opened from 05:00.
June 20  13:37- Started to transfer accumulated water from the turbine building trench to the condenser of Unit 1.
June 20  14:30  Opened the truck bay door of the reactor building.
June 21  10:04  The water injection rate into the reactor was changed from about 5.0m³/h to about 4.5m³/h.
June 21  13:15-13:25  Preliminary survey was conducted inside of the reactor building.
June 22  09:56  Started to transfer accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities.
June 22  10:04  The water injection rate into the reactor was changed from about 4.5m³/h to about 4.0m³/h.
June 23  10:36-12:36  Installation works of temporary pressure gauges for the reactor was conducted.
June 23  18:27  Water injection into the Reactor Core of Units 1 and 2 was begun, using the water injection pump into the Reactor Core for Unit 1.
June 24 around 6:58 An unmanned helicopter that was collecting dust coming out of the opening of the reactor building made an emergency landing on the rooftop of the building.
June 27  08:08-14:38  Due to preparation for the restoration works of the Okuma No.2 transmission line, the power supply for the water injection pump into the Reactor Core was temporarily switched to the diesel generator.
June 27  08:23-16:53  Due to preparation for the restoration works of the Okuma No.2 transmission line, the alternative cooling system for the Spent Fuel Pool was temporarily suspended.
June 27  09:02-17:07  Due to preparation for the restoration works of the Okuma No.2 transmission line, transfer of accumulated water in the turbine building trench to the Radioactive Waste Treatment Facilities was temporarily suspended.
June 27  16:20  Started use of water treated in the water treatment facilities for injection into the reactor, in addition to water injection from the filtered water tank. Suspended supply of treated water because of a leakage from the pipe (17:55). Started the treated water transfer pump (June 28 14:36). Resumed supply of treated water (June 28 15:55).
June 28  20:08  Started nitrogen injection into the PCV.
June 29  10:59-13:33  Regarding the Circulating Injection Cooling of the Reactor Cores, supply of treated water was temporarily suspended due to leakage from a pipe for injection cooling.
July  1  07:27-July 2 14:22  Temporarily suspended supply of treated water into the reactor due to works to install and connect a buffer tank. (July 2 14:22 - 18:00 Trial injected into the Reactor Core from a Buffer Tank due to leakage check. 18:00 - Full-fledged operated)
July  8  10:34-13:49  Sampling of airborne radioactive materials was conducted by a robot on the second and the third floors of the reactor building.
July  8  10:44-12:30  Flashing was carried out for the transfer line from the trench of the turbine building to the Radioactive Waste Treatment Facilities.
July 13  10:09  Restarted to transfer accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities.
July 15  08:22-11:47  Suspended the cooling tower of alternative cooling system for spent fuel pool.
July 16  10:56  Transferred accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities.
July 17  14:25  The water injection rate into the reactor was adjusted to 4.0 m³/h, after switching from the number 1 pump for injecting water into the reactor to the number 2 pump.
July 19  10:10  The water injection rate into the reactor was adjusted to 3.8 m³/h.
July 22  08:43  The water injection rate into the reactor was adjusted to 3.8m³/h due to the decrease to 3.4m³/h.
July  22  16:56  Transferred accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities.
July 23  09:35  The water injection rate into the reactor was adjusted to 3.8m³/h due to the decrease to 3.2m³/h.
July 27  18:10  The water injection rate into the reactor was adjusted to 3.5 m³/h by only a specific pump for injecting water into the reactor.
July 28  17:30  The water injection rate into the reactor was adjusted to 3.6 m³/h to the decrease to 3.2m³/h.
July 30  11:57  The water injection rate into the reactor was adjusted to 3.6m³/h due to the decrease to 3.3m³/h.
July 30  16:10  Transferred accumulated water from the turbine building trench to the Radioactive Waste Treatment Facilities.
July 31  05:01  The water injection rate into the reactor was adjusted to 3.7m³/h due to the decrease to 3.2m³/h.
August 03  05:52-08:29  The nitrogen injection was temporarily suspended due to the replacement of nitrogen injection device with the reserved one.

<Sea water injection to SFP via FPC (using the fire engine pump)>
March 20  15:05-17:20, March 22nd 16:07-17:01, March 25 10:30-12:19

<Fresh water injection to SFP via FPC (using the temporary motor-driven pump)>
March 29  16:30-18:25, March 30 09:25-23:50 *Including interruption by pump malfunction and damage to the hose, April 1 14:56-17:05, April 4 11:05-13:37, April 7 13:29-14:34, April 10 10:37-12:38, April 13 13:15-14:55, April 16 10:13-11:54, April 19 16:08-17:28, April 22 15:55-17:40, April 25 10:12-11:18, April 28 10:15-11:28, May 2 10:05-11:40, May 6 09:36-11:16, May 10 13:09-14:45(13:19-14:35 Hydrazine was also injected), May 14 13:00-14:37(13:08-14:02 Hydrazine was also injected), May 18 13:10-14:40(13:15-14:30 Hydrazine was also injected), May 22 13:02-14:40(13:04-14:03 Hydrazine was also injected), May 26 10:06-11:36(10:10-11:10 Hydrazine was also injected), May 30 12:06-13:52

<Fresh water with Hydrazine injection to SFP via the alternative cooling system for the Spent Fuel Pool>
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3
(As of 6:00 August 3, 2011)

Circulating freshwater by the Alternative Cooling System via the existing Cooling Line

Spent Fuel Pool Cooling System

Spent Fuel Pool Water Temperature 30.3°C

Reactor Pressure A -0.067MPa* (under monitoring of the change of the situation)
Reactor Pressure C -0.001MPa* (under monitoring of the change of the situation)
Condition: Almost no change
*converted to absolute pressure
Reactor Water Temperature A -1,900mm (under monitoring of the change of the situation)
Reactor Water Temperature B -2,250mm (under monitoring of the change of the situation)
Condition: Uncovering of the core from the top of the active fuel to the levels described above
Reactor Water Temperature °C Condition: No data available
Reactor Pressure Vessel (RPV) Temperature
Feedwater Nozzle Temperature 119.4°C (under monitoring of the change of the situation)
Temperature at the bottom head of RPV 106.5°C

PCV*3 Pressure 0.1016MPa (changed the monitor from 05:00 July 16)

S/P*4 Water Temperature A 45.6°C
S/P*4 Water Temperature B 45.8°C
Condition: Almost no change
S/P*4 Pressure 0.1841MPa Condition: Almost no change

Major Events after the Earthquake 1/3

March 11 14:46 Under operation, Automatic shutdown by the earthquake
March 11 15:42 Report based on the Article 10 (Total loss of A/C power)
March 13 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
March 13 08:41 Started to vent.
March 13 around 09:10 Unusual rise of the pressure in PCV
March 13 13:12 Started to inject seawater and borated water to the Reactor Core.
March 14 05:20 Started to vent.
March 14 11:01 Sound of explosion
March 16 around 08:30 White smoke generated.
March 17 09:48-10:01 Water discharge by the helicopters of Self-Defense Force
March 17 around 19:05-19:13 Water spray from the ground by High pressure water-cannon trucks of Police
March 17 19:35-20:09 Water spray from the ground by fire engines of Self-Defense Force
March 18 around 14:00-14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
March 18 14:42-14:45 Water spray from the ground by a fire engine of the US Military
March 19 00:30-01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 19 14:10 - 20:00 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 20 11:00 Pressure of PCV rose(320kPa).Afterward fell.
March 20 21:36 - 21:03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 21 around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
March 22 15:10-15:59 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
March 22 22:46 Lighting in the Central Control Room was recovered.
March 23 around 16:20 Black smoke generated and was confirmed to be died down at around 23:30 and 24:04:50.
March 24 05:35-16:05 Injection of around 120 ton of sea water to SFP via FPC
March 25 13:28-16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
March 25 18:02 Started fresh water injection to the core.
March 27 12:34-14:36 Water spray by Concrete Pump Truck
March 28 17:40-March 31 8:37 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
March 28 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
April 3 11:50 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
April 11 around 17:16 Loss of external power supply of Unit 1 and 2 due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core was suspended.
April 11 18:04 External power supply of Units 1 and 2 recovered (April 11th 17:56). Resumed injecting water to the Reactor Core.
April 17 11:30-14:00 Confirmed the situation in the reactor building using unmanned robot.
April 18 12:38-13:05 Stopped the water injection into the Reactor Core to replace the current hose with a new one
April 19 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
April 22 13:40-14:00 Tentatively Injected freshwater to SFP via the Fuel Pool Coolant Purification Line.
April 25 10:57-18:25 For reinforcement work of the power supply, the power supply to the pump injecting water into the Reactor Core was temporarily switched from the external power supply to the temporary diesel generator.
April 30 11:34 Completed reinforcement work of the power supply both Units 3, 4. (Increasing the voltage from 6.6kv to 66kv)
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2</td>
<td>12:58</td>
<td>The pump for the injection of water into the Reactor Core was temporarily replaced with the Fire Extinguishing Pump in order to install an alarm device in the pump.</td>
</tr>
<tr>
<td>May 8</td>
<td>16:18</td>
<td>Transferred the water in the Condenser to the underground of the turbine building in order to carry out piping work of Reactor Feedwater System.</td>
</tr>
<tr>
<td>May 11</td>
<td>08:47-15:55</td>
<td>Due to the restoration of the Okuma No.2 transmission line, the power supply for the water injection pump into the reactor was temporarily switched to the temporary diesel generator.</td>
</tr>
<tr>
<td>May 11</td>
<td>around 12:30</td>
<td>Confirmed the water flow into the pit around intake of sea water through conduit pipe of electric power cables → 16:05 Confirmed the water leakage from the pit to the sea → 18:45 Stopped the water leakage by casting concrete into the pit.</td>
</tr>
<tr>
<td>May 12</td>
<td>16:53</td>
<td>In addition to the plumbing pro-fire extinguishing, started core flooding from the plumbing pro-water supply.</td>
</tr>
<tr>
<td>May 15</td>
<td>14:33-17:00</td>
<td>Injected borated water to the Reactor Core.</td>
</tr>
<tr>
<td>May 17</td>
<td>18:04</td>
<td>Started transfer of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities</td>
</tr>
<tr>
<td>May 18</td>
<td>from around 16:30</td>
<td>Conducted preliminary survey in the Reactor Building for about 10 minutes.</td>
</tr>
<tr>
<td>May 25</td>
<td>09:10</td>
<td>Suspended transfer of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities in order to check the transfer line and in the turbine building.</td>
</tr>
<tr>
<td>May 28</td>
<td>20:54</td>
<td>Terminated to inject water to the Reactor Core via Fire Extinguishing line.</td>
</tr>
<tr>
<td>May 31</td>
<td>09:00-16:00</td>
<td>A preliminary survey using a remote-controlled robot was carried out inside the reactor building.</td>
</tr>
<tr>
<td>May 31</td>
<td>10:19</td>
<td>Changed the rate of water injection into the Reactor Core from 13.5m³/h to 12.5m³/h.</td>
</tr>
<tr>
<td>June 1</td>
<td>10:10</td>
<td>Changed the rate of water injection into the Reactor Core from 12.5m³/h to 11.5m³/h.</td>
</tr>
<tr>
<td>June 2</td>
<td>12:50</td>
<td>Transferred the accumulated water from the Condenser to the CST in order to prepare transferring of accumulated water in the basement of the turbine building.</td>
</tr>
<tr>
<td>June 3</td>
<td>13:16-13:32</td>
<td>Suspended the injection of coolant water due to the work for changing the route of water supply line to the Reactor Core.</td>
</tr>
<tr>
<td>June 5</td>
<td>18:26</td>
<td>Transferred the accumulated water from inside the turbine building to the Condenser.</td>
</tr>
<tr>
<td>June 9</td>
<td>11:47-12:14</td>
<td>Entered into the reactor building and monitored radiation dose etc.</td>
</tr>
<tr>
<td>June 11</td>
<td>15:30-June 12 17:01</td>
<td>Transferred the accumulated water from the basement of the turbine building to the Radioactive Waste Treatment Facilities.</td>
</tr>
<tr>
<td>June 14</td>
<td>10:05-June 16 08:46</td>
<td>Started transfer of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.</td>
</tr>
<tr>
<td>June 14</td>
<td>13:02-13:31</td>
<td>Suspended water injection to replace the hose of water injection into the reactor.</td>
</tr>
<tr>
<td>June 18</td>
<td>13:31-June 20 00:02</td>
<td>Transferred of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.</td>
</tr>
<tr>
<td>June 19</td>
<td>11:03-15:22</td>
<td>Due to preparation for the suspension works of the Okuma No.2 transmission line, the power supply for the water injection pump into the Reactor Core was temporarily switched to the diesel generator.</td>
</tr>
<tr>
<td>June 21</td>
<td>10:06</td>
<td>The water injection rate into the reactor was changed from about 11.0m³/h to about 10.0m³/h.</td>
</tr>
<tr>
<td>June 23</td>
<td>10:13</td>
<td>The water injection rate into the reactor was changed from about 10.0m³/h to about 9.5m³/h.</td>
</tr>
<tr>
<td>June 24</td>
<td>10:07</td>
<td>The water injection rate into the reactor was changed from about 9.5m³/h to about 9.0m³/h.</td>
</tr>
<tr>
<td>June 24</td>
<td>10:31-12:42</td>
<td>A radiation dose survey was carried out by a robot in the reactor building.</td>
</tr>
<tr>
<td>June 27</td>
<td>08:08-14:38</td>
<td>Due to preparation for the restoration works of the Okuma No.2 transmission line, the power supply for the water injection pump into the Reactor Core was temporarily switched to the diesel generator.</td>
</tr>
<tr>
<td>June 27</td>
<td>16:20</td>
<td>Started use of water treated in the water treatment facilities for injection into the reactor, in addition to water injection from the filtered water tank. Suspended supply of treated water because of a leakage from the pipe (17:55). Started the treated water transfer pump (June 28 14:36). Resumed of treated water (June 28 14:36).</td>
</tr>
<tr>
<td>June 27</td>
<td>17:00-June 28 09:58</td>
<td>Started to transfer of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.</td>
</tr>
</tbody>
</table>
June 29 10:59-13:33 Regarding the Circulating Injection Cooling of the Reactor Cores, supply of treated water was temporarily suspended due to leakage from a pipe for injection cooling.

June 30 08:56 - Started transfer of the accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

June 30 08:56 - Started transfer of the accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

June 30 10:43 Implemented leakage test for primary line of the alternative cooling system for the Spent Fuel Pool. Trial operation was started. (18:33)

July 1 07:27 - Temporarily suspended supply of treated water into the reactor due to works to install and connect a buffer tank.

July 1 11:00 Started full-fledged operation of the alternative cooling system for the Spent Fuel Pool.

July 1 11:43 - 16:36 Carried out cleaning work in the reactor with a robot.


July 3 08:30 -16:00 Installed 51 steel plates near the large object delivery entrance of the reactor building.

July 8 13:35 - 13:44 Workers entered the reactor building, and implemented a preliminary survey of the point for nitrogen injection.

July 9 15:22 Flushing was carried for the transfer line of the accumulated water from the basement of the turbine building to the Radioactive Waste Treatment Facilities.

July 10 07:27 -11:00 Started full-fledged operation of the alternative cooling system for the Spent Fuel Pool.

July 10 11:43 -16:36 Carried out cleaning work in the reactor with a robot.

July 14 20:01 Nitrogen injection started.

July 16 10:50- Resumed transfer of the accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

July 18 08:30-14:40 July 19 08:30 -15:00 Carried out installation work of temporary roof over the openings at the rooftop of the turbine building.

July 22 16:53- Transferred the accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

July 23 03:24-11:45 The Alternative Cooling System for the Spent Fuel Pool of Unit 3 was temporarily suspended due to the restoration work of Yonomori line for duplication of line.

July 26 11:15-13:00 A radiation dose survey was carried out by a robot in the reactor building.

July 27 12:00-12:40 Entered into the reactor building and confirmed the situation and monitored radiation dose.

July 27 18:10 The water injection rate into the reactor was adjusted to 9.0 m³/h by only a specific pump for injecting water into the reactor.

July 30 16:13- Transferred the accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

August 3 05:52-08:29 The nitrogen injection was temporarily suspended due to the replacement of nitrogen injection device with the reserved one.

<Water spray over the Spent Fuel Pool by Concrete Pump Truck (Fresh water)>


<Fresh water injection to SFP via FPC (using the temporary motor-driven pump)>

May 8 12:10 -14:10, May 9 12:14 -15:00 (12:39 -14:36 Hydrazine was also injected), May 16 15:00-18:32 (15:10 -17:30 Hydrazine was also injected), May 24 10:15-13:35 (10:20 -12:36 Hydrazine was also injected), May 28 13:28-15:08 (13:42 -14:40 Hydrazine was also injected), June 1 14:34-15:54 (14:41 -15:26 Hydrazine was also injected), June 5 13:08-15:14 (13:14-14:16 Hydrazine was also injected), June 9 13:42-15:31 (13:45-14:40 Hydrazine was also injected), June 13 10:09-11:48 (10:13-11:36 Hydrazine was also injected), June 17 10:19-11:57 (10:23-11:31 Hydrazine was also injected), June 26 09:56-11:23 (Borated water was injected), June 27 15:00-17:18 (Borated water was injected), June 29 14:45-15:53

<Cooling by the alternative cooling system for the Spent Fuel Pool>

July 1 11:00-July 8 08:20, July 8 14:24-July 21 8:02, July 21 14:52-July 22 07:10, July22 11:50-July 23 03:24, July 23 11:45-

<Hydrazine injection to SPF via the alternative cooling system for the Spent Fuel Pool>

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4
(As of 6:00 August 3, 2011)

In periodic inspection outage when the earthquake occurred
March 14 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C
March 15 06:00-around 06:10 Confirmed the partial damage of wall in the 4th floor.
March 15 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
March 16 05:45 Fire occurred. TEPCO couldn’t confirm any fire on the ground. (06:15)
March 20 08:21-09:40 Water spray over SFP by Self-Defense Force
March 20 18:30-19:46 Water spray over SFP by Self-Defense Force
March 21 06:37-08:41 Water spray over SFP by Self-Defense Force
March 21 around 15:00 Work for laying cable to Power Center was completed.
March 22 10:35 Power Center received electricity.
March 25 06:05-10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)
March 29 11:50 Lighting in the Central Control Room was recovered.
April 11 around 17:16 An earthquake occurred (at Hamadori in Fukushima Prefecture).
April 12 12:00-13:04 Sampled the water in SFP.
April 19 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
April 22 Measured the water level of SFP by a gauge hung on Concrete Pump Truck (62m class).
April 30 11:34 Completed reinforcement work of the power supply both Units 3, 4. (Increasing the voltage from 6.6kv to 66kv)
May 9 Started installation work of the supporting structure for the floor of SFP
June 10 around 14:00-(about 30 minutes) Workers entered the RB and conducted a survey of working environment for the construction work on the SFP circulating cooling system.
June 29 13:28-14:21 Workers entered the RB and conducted a survey of working environment for the construction work on the SFP circulating cooling system.
July 6 10:20-10:30 Carried out preparation for installation work of the alternative cooling system for the Spent Fuel Pool.
July 8 10:00 - 11:30 Regarding the installation works of the alternative cooling system for the Spent Fuel Pool, the examination of the integrity of the pipes was conducted.
July 27 10:20 - 13:00 Regarding the primary system of alternative cooling equipment, the leakage test was performed.
July 27 10:50 - 11:37 Regarding the secondary system of alternative cooling equipment, the performance test was done.
July 28 10:09 - 10:57 Regarding the primary system of alternative cooling equipment, the pressure inspection was performed.
July 28 10:55 - 11:53 Regarding the secondary system of alternative cooling equipment, the performance test was done.
July 31 12:44- Full-fledged operation of the Alternative Cooling System for SFP was started.

Major Events after the Earthquake 1/2

Circulating freshwater by the Alternative Cooling System via the existing Cooling Line

Spent Fuel Pool Cooling System

Spent Fuel Pool Water Temperature 42°C
*Described temporary thermo-couple readings (As of 17:00, August 2)

In periodic inspection outage

No fuel inside the Reactor Core

External Power
EDG*2
RHRS*1

Two lines secured
Power supply vehicle, Temporary DGs
No heat removal is necessary as no fuel is in RPV

Current Conditions: No fuel is in RPV*3. Fresh water is being injected to the Spent Fuel Pool.

*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Reactor Pressure Vessel
<Water spray by Concrete Pump Truck (Seawater)>

< Water spray by Concrete Pump Truck (Fresh water)>

< Water spray by temporary water spraying equipment (Fresh water)>

< Water filling to the reactor well and temporary storage pool (DSP)>
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5
(As of 6:00 August 3, 2011)

Reactor Pressure Vessel Temperature: Monitoring by Reactor Water Temperature

Water Temperature in the Pool: 28.9°C
Condition: Recovery of heat removal function

Spent Fuel Pool Cooling System
Removing heat through existing cooling system.

External Power
Two lines secured
Share two EDGs of Unit 6
Two EDGs of Unit 5 standby mode

EDG*2
Removing heat through Residual Heat Removal System.

RHRS*1

Reactor Pressure: 0.113MPa*
Reactor Water Level: 1,880mm
Reactor Water Temperature 25.4°C
Condition: Pressure is under control.
*converted to absolute pressure

Major Events after the Earthquake 1/2

March 20 14:30 Cold shutdown
March 21 11:36 Receiving electricity from external power supply
March 23 17:24 Pump for Residual Heat Removal Seawater System (RHRS) was automatically stopped when the power supply was switched from the temporary to the permanent.
March 24 16:14 Repair of the RHRS pump was completed.
March 24 16:35 Started to cooling.
April 5 17:25-April 8 12:14 Discharged the groundwater with low-level radioactivity in the Sub Drain Pit to the sea (around 950 ton).
April 25 12:22 -16:43 For reinforcement work of the power supply, the pump for Residual Heat Removal (RHR) was temporarily stopped.
April 25 14:44-17:38 Implemented reinforcement work of the power supply (connection of the power supplies between Units 1-2 and Units 5-6).
May 2 12:00 -15:03 The pump for RHR was temporarily shut off in order to test the Start-up Transformer for power reception.
May 28 around 21:14 Confirmed shutdown of the RHRS pump
May 29 08:12 Started to replace with the temporary RHRS Spare Pump
May 29 12:31 Started the RHRS Pump
May 29 12:49 Started to cool the Reactor Core by RHR
June 8 08:46-12:35 RHRS pump etc were temporary stopped due to the installation of one more pump for RHR.
June 24 16:35 Cooling of the Spent Fuel Pool was started using the Fuel Pool Cooling and Clean-up System.
June 27 18:03 EDG(5A) recovery to standby mode.
June 28 12:32 EDG(5B) recovery to standby mode.
June 30 10:02 -11:48 Temporarily suspended RHR pump operation due to switching power supply of the ancillary equipment.
July 3 10:00 -13:36 Temporarily suspended RHR pump due to the work for exchanging the outlet (10:20 - 13:22, the temporary pump of RHRS (B) was temporarily suspended)
July 3 10:15 -13:40 The pump of RHRS was temporarily suspended
July 11 Due to restoration work of Yonomori line for duplication of line, D/G5A started up (03:03) and shut off (09:07). DG5B started up (03:37) and shut off (14:44).
July 11 5:01-13:44 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was suspended.
July 13 6:30-10:58 Temporarily suspended RHR pump operation due to the work for exchanging RHRS pump horse

( toppanel)

*1 Residual Heat Removal System
*2 Emergency Diesel Generator

(Revised by editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)
Major Events after the Earthquake 2/2

July 15 Implemented trial run of the pump of RHRS (D) (10:16). The pump of RHR (C) shut off (14:25). The pump of RHR (D) started up (14:45).
July 16 Due to restoration work of Yonomori line for duplication of line, D/G5B started up (04:01) and shut off (13:05).
July 16 05:28-12:05 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was temporarily suspended.
July 17 Due to restoration work of Yonomori line for duplication of line, D/G5B started up. (03:08)
July 17 04:24-13:20 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was temporarily suspended.
Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 6**  
( As of 6:00 August 3, 2011 )

**In periodic inspection outage**

**Water Temperature in the Pool**: 33.0°C  
*Condition*: Recovery of heat removal function.

**Spent Fuel Pool Cooling System**

**Reactor Pressure**  
**Vessel Temperature**: Monitoring by Reactor Water Temperature

**Reactor Pressure**  
**Water Temperature in the Pool**: 33.0°C  
*Condition*: Recovery of heat removal function.

**Removal of heat alternately from the water in the reactor and in the spent fuel pool.**

**External Power**  
**EDG** *2  
**RHRS** *1

Two lines secured  
*1 Residual Heat Removal System  
*2 Emergency Diesel Generator

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**Major Events after the Earthquake 1/2**

**March 20**  
19:27 Cold shutdown

**March 22**  
19:17 Receiving electricity from external power supply

**April 4**  
21:00-April 9 18:52 Discharged the groundwater with low-level radioactivity in the Sub Drain Pit to the sea (around 373 ton).

**April 19**  
11:00-15:00 Transferred accumulated water under the base of the turbine building to the condenser.

**April 20**  
09:51-15:56 The pump for Residual Heat Removal (RHR) was temporarily stopped in order to change the position of the hose of the temporary RHR Seawater System.

**April 25**  
14:44-17:38 Implemented reinforcement work of the power supply (connection of the power supplies between Units 1-2 and Units 5-6).

**May 2**  
11:03-15:03 The pump for RHR was temporarily shut off in order to test the Start-up Transformer for power reception.

**June 28**  
Around 12:00 Confirm a leakage of water in a low radioactive concentration from the temporarily tank which stored accumulated water from the basement of the turbine building.

**July 11**  
Due to restoration work of Yonomori line for duplication of line, D/G6A started up (04:17) and shut off (15:42). DG6B started up (04:31) and shut off (16:36).

**July 11**  
05:01-13:44 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was temporarily suspended.

**July 15**  
Due to restoration work of Yonomori line for duplication of line, D/G6B started up (04:21) and shut off (13:51).

**July 16**  
05:28-12:05 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was temporarily suspended.

**July 17**  
Due to restoration work of Yonomori line for duplication of line, D/G6B started up (03:28).

**July 17**  
04:24-13:20 Due to restoration work of Yonomori line for duplication of line, the power supply from the Yonomori line was temporarily suspended.

**July 19**  
08:03-09:08 RHRS pumps (A) and (B) were temporarily stopped due to replacement of backing rubber of suspension wire around the pumps.

(Transferred accumulated water in the basement of the turbine building to the temporary tank).

**May 1**  
14:00-17:00, May 2 10:00 - 16:00, May 3 14:00 - 17:00,  
May 6 14:00-17:00, May 7 10:00 - 15:00, May 9 14:00 - 17:00,  
May 10 10:00 - 16:00, May 11 10:00 - 16:00, May 12 10:00 - 16:00,  
May 13 10:00 - 15:00, May 14 10:00 - 15:00, May 15 10:00 - 15:00,  
May 16 10:00 - 14:00, May 17 10:00 - 14:00, May 18 10:00 - 14:00,  
May 21 14:00 - 18:00, May 24 09:00 - 19:00, May 25 09:00 - 19:00,  
May 26 09:00 - 19:00, May 27 09:00 - 19:00, May 28 09:00-19:00,
Major Events after the Earthquake 2/2

May 29 09:00-19:00, May 30 10:00-17:30, June 2 14:00-(June 5 14:00 -14:45 temporarily suspended)-June 8 18:00, June 9 09:00-18:00, June 11 10:00-15:00, June 12 10:00-15:00, June 13 10:00-16:00, June 14 10:00-16:00, June 15 10:00-16:00, June 16 10:00-16:00, June 17 10:00-16:00, June 18 10:00-16:00, June 19 10:00-16:00, June 20 10:00-16:00, June 21 10:00-16:00, June 22 10:00-16:00, July 1 10:00-July 3 16:00, July 4 10:00-16:00, July 5 10:30-16:30, July 6 10:00-17:00, July 7 10:30 -16:30, July 8 10:30 -16:30, July 9 10:30 -16:30, July 10 10:30 -16:30, July 21 11:00-July 22 18:00, July 23 11:00 -18:00, July 24 11:00-16:00, July 26 11:00 -J July 27 16:00, July 28 11:00～16:00, July 29 10:00-17:00, July 30 11:00-16:00, July 31 11:00-16:00, August 2 11:00-16:00

〈Transferred accumulated water in the basement of the reactor building to the Radioactive Waste Treatment Building〉
May 10 11:00-12:30, May 11 11:00-12:30, May 12 10:30-12:30,
May 13 11:30-12:15, May 18 10:30-2:30, May 28 10:20-12:10
June 8 10:05-12:40, June 15 11:55-14:00, June 21 11:05-13:30, June 28 11:00-13:20, July 6 08:45-10:50, July 13 8:40-10:50, July 18 9:00-10:30, July 26 11:00-12:00

〈Transferred accumulated water from the temporary tank to the Mega-Float〉
June 30 13:00-19:00, July 1 10:00-July 3 16:00, July 4 13:30-17:00,
July 5 10:00-17:00, July 7 10:09-17:00, July 8 10:00-17:00, July 9 10:00-17:00, July 11 10:00-17:00, July 12 11:00-16:00, July 13 10:00-17:00, July 14 10:00-17:00, July 15 10:00-17:00, July 16 10:00-15:00, July 27 10:00-10:45, 7/28 10:00-17:00, 7/30 10:00-17:00, 7/31 10:00-17:00, 8/2 10:00-17:00