

June 9, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 164th Release)**  
(As of 15:30 June 9, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- A power outage of the lighting in the Main Control Room of Units 1 and 2 was confirmed. (14:20 June 8) After investigating the details, it was confirmed that the power supply from the Power Center (2C) was partially suspended. (14:35 of the same day.) The nitrogen injection into Unit 1 was temporarily suspended (14:57 of the same day) after confirming a pressure increase in the nitrogen injection equipment. However, due to the recovery of the power supply (17:32 of the same day), the nitrogen injection was resumed (17:54 of the same day).
- Due to the abovementioned suspension of power supply, data transmission from the Monitoring Posts 7 and 8 was temporarily suspended (14:49 of the same day). With the recovery of the said power supply (17:32 of the same day), the transmission from the Monitoring Posts was resumed (17:50 of the same day).
- Due to the abovementioned suspension of power supply, the transfer of the accumulated water from the trench of the turbine building of Unit 2 to the Radioactive Waste Treatment Facilities was temporarily suspended, but was resumed after the recovery of the power supply. (18:03 of the same day)
- The accumulated water in the turbine building of Unit 3 was transferred to the condenser. (From 18:26 June 5 till 10:44 June 9)
- Workers entered the reactor building of Unit 3 to conduct a measurement of the radiation dose. (From 11:47 till 12:14 June 9)

- Fresh water (about 55t) was injected into the Spent Fuel Pool of Unit 3 via the Fuel Pool Cooling and Clean-up Line. (From 13:42 till 15:31 June 9) (About 0.19m<sup>3</sup> of hydrazine was also injected from 13:45 till 14:40)
- Fresh water (about 120t) was sprayed over the Spent Fuel Pool of Unit 4 using a concrete pump truck (58m class). (From 16:12 till 19:14 June 8) (About 0.4m<sup>3</sup> of hydrazine was also injected from 16:16 till 18:05)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 14:00 June 2 till 18:00 June 8) (It was temporarily suspended between 14:00 and 14:45 June 5)
- The accumulated water (about 17m<sup>3</sup>) in the basement of the reactor building of Unit 6 was transferred to a building of the Radioactive Waste Treatment Facilities of the same Unit. (From 10:05 till 12:40 June 8)
- The transfer of the accumulated water from the basement of the turbine building of Unit 6 to a temporary tank was started. (09:00 June 9)
- Full scale implementation of spraying an anti-scattering agent was carried out by workers in an area of about 8,750m<sup>2</sup> around the Welfare Building, the Observation Deck, the north side of the Large Equipment Inspection Building, around the Main Gate and along the east side of the Cherry Blossom Road. (From 09:00 till 13:00 June 8)
- Full scale implementation of spraying an anti-scattering agent was carried out using a concrete pump truck (52m class) in an area of about 1,000m<sup>2</sup> on the roof and exterior wall of the reactor building of Unit 1. (From 15:00 till 15:40 June 8)
- Removal of rubble (an amount equivalent to 5 containers) was carried out using remote-controlled heavy machinery. (From 09:00 till 16:00 June 8)

## 2. Actions Taken by NISA

(June 8)

- On June 4, NISA received a report from TEPCO on their examination result about the second changes to the storage level of water with high

concentration of radioactive materials to be transferred to the Process Main Building of Fukushima Dai-ichi NPS.

- On June 8, NISA determined that the proposed change was valid, as a result of re-evaluating the items that would be affected (anti-leakage measures, anti-exposure measures), out of the items evaluated in the past, in connection with the change to the amount of water to be transferred (which would expand the storage area to the bottom of the penetrated area of the 1<sup>st</sup> basement level).

#### <Situation of Injuries, etc.>

- In the morning of June 9, a TEPCO employee who was on his way from J-Village to Fukushima Dai-ichi NPS became sick, got off the car at Fukushima Dai-ichi NPS and returned to J-Village. After receiving an examination at J-Village, he was transported to Iwaki Kyouritsu Hospital by ambulance and doctor's helicopter. (Arrived at 11:22)

#### <Temporary Access to Restricted Areas>

On June 9, residents were allowed temporary access into Tomioka Town, Futaba Town, Okuma Town and Naraha Town.

#### <Instructions Regarding Foods and Drinks>

- Lifting of the suspension of shipment
- Raw milk produced in Minamitoma City\*<sup>1</sup>\*<sup>2</sup>, Tamura City\*<sup>1</sup>\*<sup>3</sup> and Kawauchi Village\*<sup>1</sup> of Fukushima Prefecture
- Bamboo shoots produced in Iwaki City, Fukushima Prefecture
  - \*1: Excluding the area within the 20km radius of Fukushima Dai-ichi NPS
  - \*2: Excluding the Deliberate Evacuation Area. The areas in Kashima-ku excluding Karasuzaki, Ouchi, Kawago and Shiozaki have already been taken off the suspension on May 1.
  - \*3: The areas excluding former Miyakoji Village have already been taken off the suspension on April 16

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>

June 10, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 165th Release)**  
(As of 15:30 June 10, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 09:00 till 18:00 June 9)
- A water flow test was conducted for Circulating Seawater Decontamination System installed in the screen area of Units 2 and 3. (From around 10:30 till around 15:00 June 9)
- Full-scale implementation of spraying an anti-scattering agent to prevent the spread of radioactive materials was carried out by workers in an area of about 8,750m<sup>2</sup> around the Welfare Building, the Environmental Management Building, the Main Gate and the Cherry Blossom Road. (From 09:00 till 13:00 June 9)
- Full-scale implementation of spraying an anti-scattering agent to prevent the spread of radioactive materials was carried out using a concrete pump truck (58m class) in an area of about 6,400m<sup>2</sup> on the roof and the exterior wall of the reactor building of Unit 1 and on the roof and the exterior wall of the reactor building of Unit 3. (From 09:00 till 14:00 June 9)

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>

June 11, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 166th Release)**  
(As of 15:30 June 11, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- A test run was conducted for the ambient air filtration system of the reactor building of Unit 2 (from 11:45 till 12:19 June 11), and the double doors were opened. (12:39 of the same day). Full-fledged operation commenced. (12:42 of the same day)
- Workers entered the reactor building of Unit 4 and conducted a survey of the working environment, etc., for the construction work on the Spent Fuel Pool Circulating Cooling System. (For about 30 minutes from around 14:00 June 10)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 10:00 till 15:00 June 11)
- Full-scale implementation of spraying an anti-scattering agent to prevent the spread of radioactive materials was carried out by workers in an area of about 8,750m<sup>2</sup> around the Welfare Building, the Transformer Station for Construction Work and the Wild Birds' Forest. (From 9:00 till 13:00 June 10)
- Full-scale implementation of spraying an anti-scattering agent to prevent the spread of radioactive materials was carried out using a concrete pump truck (58m class) in an area of about 3,000m<sup>2</sup> on the roofs and exterior walls of the turbine buildings of Unit 1 and 2, and the roof and exterior wall of the reactor building of Unit 2. (From 11:00 till 16:00 June 10)

- Removal of rubble (an amount equivalent to 6 containers) was carried out using remote-controlled heavy machinery. (From 09:00 till 16:00 June 10)

## 2. Actions Taken by NISA (June 10)

NISA received a report from TEPCO that two workers were exposed to radiation above the dose limit (250mSv) for radiation workers engaging in emergency work at Fukushima Dai-ichi NPS. NISA strictly warned TEPCO that it was regrettable that the effective dose of the radiation workers were not managed but exceeded the dose limit (250mSv) stipulated in the Nuclear Regulation Act. NISA directed the company on the same day to investigate the cause, establish recurrence prevention measures and report back to NISA by June 17.

### <Possibility of Exposure > (2. Exposure of Employees)

On June 10, TEPCO announced the status of evaluation work on the exposure dose of two employees who were confirmed with high internal radioactivity (Iodine 131) in their thyroid glands on May 30. According to the announcement, the exposure dose of the two employees (not including the external exposure dose for the month of May) was 678mSv and 643mSv, and it was confirmed that the dose limit (250mSv) in case of emergency was exceeded for both employees. As a result of medical examinations, it was confirmed that there was no impact on the health of these employees. In addition, another case was confirmed where one male employee had an elevated level of internal radioactivity (Iodine 131) in his thyroid gland. A detailed evaluation of the internal exposure dose will be conducted for this employee going forward, in order to confirm his exposure dose.

### <Situation of Injuries, etc.> (Other Injuries)

On June 6, one worker from a subcontractor slipped and hit his left chest and injured his left rib bone in the Incineration Workshop Building of the Radioactive Waste Treatment Facilities. On June 10, he was diagnosed with “injury to the spleen and fracture of the rib”.

<Temporary Access to Restricted Areas>

On June 11, residents were allowed temporary access into Namie Town, Futaba Town and Okuma Town.

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>

June 12, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 167th Release)**  
(As of 15:30 June 12, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- The transfer of the accumulated water from the basement of the turbine building of Unit 3 to a building of the Radioactive Waste Treatment Facilities was started. (15:30 June 11)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 10:00 till 15:00 June 12)
- The work to block 39 trench pits near the Inlet Bar Screen of each Unit was ended as a measure against leakage of accumulated water from trench pits. (June 10)
- Full-scale implementation of spraying an anti-scattering agent to prevent the spread of radioactive materials was carried out by workers in an area of about 4,375m<sup>2</sup> around the gymnasium. (From 9:00 till 13:00)

<Temporary Access to Restricted Areas>

On June 12, residents were allowed temporary access into Namie Town, Futaba Town and Okuma Town.

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>



June 13, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 168th Release)**  
(As of 15:30 June 13, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- The accumulated water in the basement of the turbine building of Unit 3 was transferred to the Radioactive Waste Treatment Facilities. (From 15:30 June 11 till 17:01 June 12)
- Fresh water was injected into the Spent Fuel Pool of Unit 3 via the Fuel Pool Cooling and Clean-up Line. (From 10:09 till 11:48 June 13) (About 0.26m<sup>3</sup> of hydrazine was also injected from 10:13 till 11:36)
- Removal of rubble was carried out using remote-controlled heavy machinery. (The rubble was not stored in containers.) (From 09:00 till 16:00 June 12)
- A water flow test was conducted for the Circulating Seawater Decontamination System installed in the Screen area of Unit 2 and 3. (From around 10:30 till around 15:00 June 9) Full-fledged operation commenced. (10:00 June 13)

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>

June 14, 2011

Nuclear and Industrial Safety Agency

**Seismic Damage Information (the 169th Release)**  
(As of 15:30 June 14, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

● Fukushima Dai-ichi NPS

- In order to prepare for the transfer of the accumulated water from the turbine building of Unit 2 to the Condenser of Unit 1, the water (about 75t) in the Condenser of Unit 1 was transferred to the basement of the turbine building of Unit 1. (From 14:58 till 17:43 June 13)
- Due to the replacement of a hose for water injection into the reactor of Unit 1, the water injection into the reactor began temporarily by a fire extinguishing pump. (14:09 June 14)
- Due to the replacement of a hose for water injection into the reactors of Units 2 and 3, the injection of cooling water was temporarily suspended. (From 12:14 till 12:37 June 14 for Unit 2, and from 13:02 till 13:31 June 14 for Unit 3)
- The transfer of accumulated water from the basement of the turbine building of Unit 3 to the Radioactive Waste Treatment Facilities was started. (10:05 June 14)
- Fresh water (about 150t) was sprayed over the Spent Fuel Pool of Unit 4 using a concrete pump truck (58m class). (From 16:36 till 21:00 June 13) (About 0.5m<sup>3</sup> of hydrazine was also injected from 16:38 till 19:15.)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 10:00 till 16:00 June 13)
- The transfer of the accumulated water from the basement of the turbine building of Unit 6 to the temporary tank was started. (10:00

June 14)

- Full scale implementation of spraying an anti-scattering agent was carried out by workers in an area of about 8,750m<sup>2</sup> around the Skill Training Center, the Main Gate, the Wild Birds' Forest, the Ultra High Voltage Switching Yard for Units 5 and 6, and around the parking lot of the Seismic Isolation Building. (From 09:00 till 13:00 June 13)
- Removal of rubble (an amount equivalent to 2 containers) was carried out using remote-controlled heavy machinery. (From 09:00 till 16:00 June 13)
- A trial run was conducted for the Cesium Absorption Unit of the Accumulated Water Treatment Facility using contaminated water with low radioactive concentration. (From 03:45 till 14:00 June 14)

## 2. Action Taken by NISA, etc.

(June 13)

The Ministry of Economy, Trade and Industry (METI) instructed TEPCO to submit a report on the installation of the Alternative Cooling and Clean-up System for the Spent Fuel Pool of Unit 3, Fukushima Dai-ichi NPS (hereinafter referred to as "Circulation Cooling System"), covering the details of the installation plan, its effectiveness on stably cooling the spent fuel in the Spent Fuel Pool, and results of safety evaluation on the following items, pursuant to Article 67, paragraph 1 of the Nuclear Regulation Act:

- (1) structural robustness and seismic safety of facilities that constitute the Circulation Cooling System,
- (2) cooling performance of the Circulation Cooling System,
- (3) measures to prevent leakage of cooling water from the Circulation Cooling System,
- (4) measures in case of function loss of the Circulation Cooling System,
- (5) measures for radiation protection through the installation and operation, etc. of the Circulation Cooling System,
- (6) operation and maintenance control of the Circulation Cooling System, and
- (7) other items required to evaluate the safety of installing the Circulation Cooling System.

<Possibility of Exposure (Exposure of Employees, etc.)>

- On June 13, TEPCO published the evaluation result of the external exposure dose of workers who were engaged in emergency works during last March, and the preliminary evaluation result of the internal exposure dose of workers among those mentioned above, who were measured by whole body counters by the end of May. According to the results, a total of eight workers including two already announced on June 10 have the risk of exceeding 250mSv.

<Temporary Access into Restricted Areas>

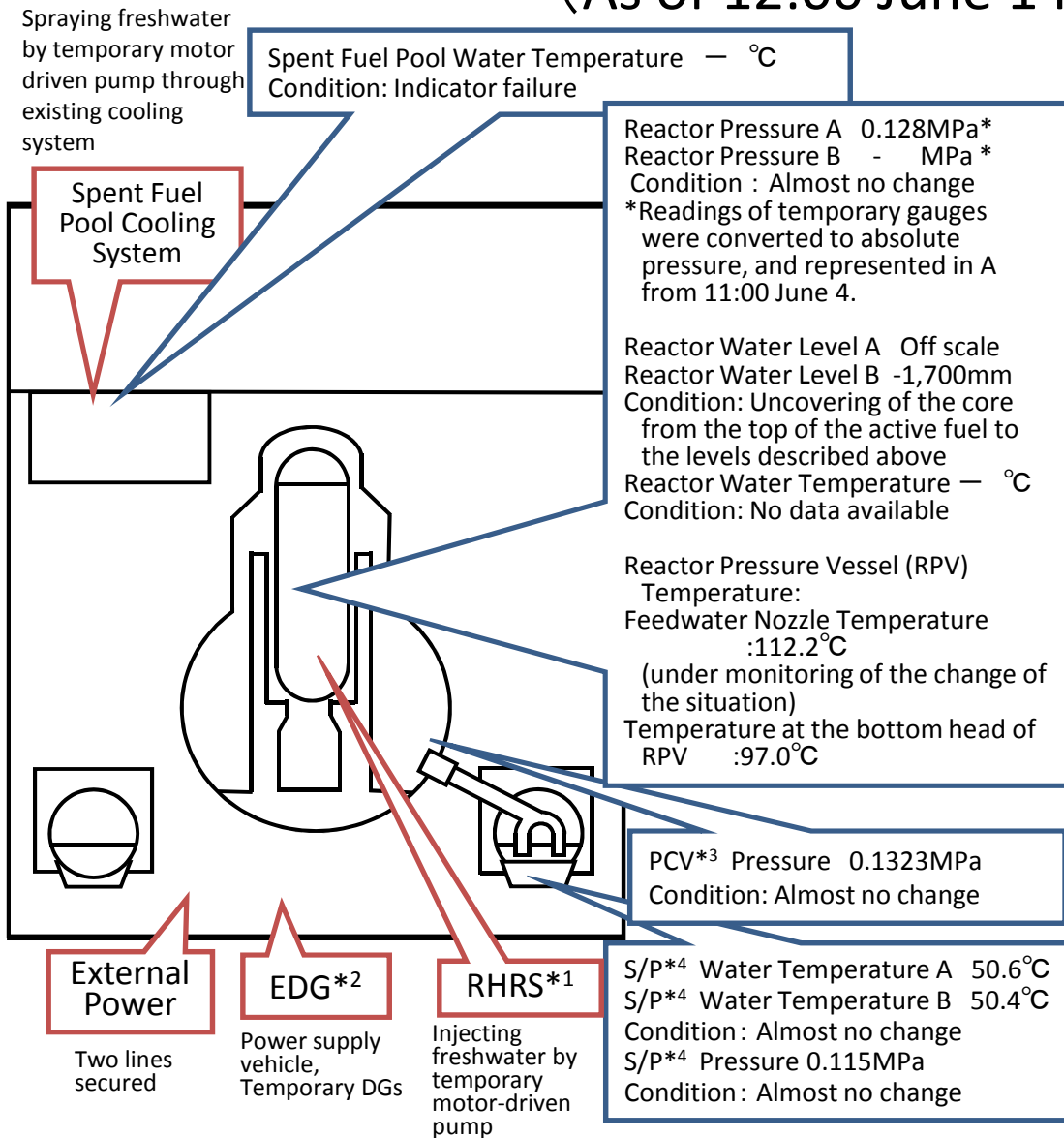
On June 14, residents were given temporary access into Minamisoma City, Tomioka Town and Naraha Town.

For more information: NISA English Home Page  
<http://www.nisa.meti.go.jp/english/index.html>

# Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 1**

(As of 12:00 June 14, 2011)

## Major Events after the Earthquake 1/2



- March 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- March 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11<sup>th</sup> 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 12<sup>th</sup> 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 12<sup>th</sup> 10:17 Started to vent.
- March 12<sup>th</sup> 15:36 Sound of explosion
- March 12<sup>th</sup> 20:20 Started to inject seawater and borated water to the Reactor Core.
- March 23<sup>rd</sup> 02:33 The amount of injected water to the Reactor Core was increased utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m<sup>3</sup>/h →18m<sup>3</sup>/h)
- 09:00 Switched to the Feedwater Line only.(18m<sup>3</sup>/h →11m<sup>3</sup>/h)
- March 24<sup>th</sup> 11:30 Lighting in the main Control Room was recovered.
- March 25<sup>th</sup> 15:37 Started to inject fresh water.
- March 29<sup>th</sup> 08:32 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- March 31<sup>st</sup> 12:00 ~2<sup>nd</sup> 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- April 3<sup>rd</sup> 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3<sup>rd</sup> 13:55 Started to transfer the water from the Condenser to CST.
- April 6<sup>th</sup> 22:30 Started the operation for the injection of nitrogen to PCV.
- April 7<sup>th</sup> 01:31 Confirmed starting the injection of nitrogen to PCV.
- April 9<sup>th</sup> 04:10 Started using highly pure nitrogen generator in the injection of nitrogen to PCV.
- April 10<sup>th</sup> 09:30 Completed transferring the water from the Condenser to CST.
- April 11<sup>th</sup> around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core and nitrogen injection to PCV were suspended.
- April 11<sup>th</sup> 17:56 External power supply was recovered.
- April 11<sup>th</sup> 18:04 Resumed injecting water to the Reactor Core.
- April 11<sup>th</sup> 23:19 Restarted operation for injecting nitrogen to PCV.
- April 11<sup>th</sup> 23:34 Confirmed starting injection of nitrogen to PCV.
- April 17<sup>th</sup> 16:00~17:30 Confirmed the situation in the reactor building using an unmanned robot.
- April 18<sup>th</sup> 11:50~12:12 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 19<sup>th</sup> 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- April 25<sup>th</sup> 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<sup>th</sup> 14:10~19:10 Suspended nitrogen injection due to reinforcement work of the power supply.
- April 25<sup>th</sup> 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 26<sup>th</sup> 11:35~13:24(approx.) Confirmed the situation in the reactor building using an unmanned robot.

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

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

## Major Events after the Earthquake 2/2

April 27<sup>th</sup> 10:02 Started the operation of gradually changing the amount of water for injection to the Reactor Pressure Vessel, (RPV) from about 6m<sup>3</sup>/h to the maximum of about 14m<sup>3</sup>/h. After carrying out the injection at 10m<sup>3</sup>/h, the injection rate was changed back to 6m<sup>3</sup>/h. (April 29<sup>th</sup> 10:14)

April 29<sup>th</sup> 11:36~14:05 Confirmed the situation in the reactor building using an unmanned robot.

May 2<sup>nd</sup> 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<sup>th</sup> 16:36~May 8<sup>th</sup> 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<sup>th</sup> 10:01 Changed the rate of water injection into the Reactor Core from 6m<sup>3</sup>/h to 8m<sup>3</sup>/h.

May 8<sup>th</sup> 20:08 Ventilation by cutting of the exhaust air duct

May 9<sup>th</sup> 04:17 Opening the double-entry doors of the Reactor Building

May 9<sup>th</sup> 05:10 Disassembly of positive pressure house

May 10<sup>th</sup> 10:55(approx.) Calibrated the reactor water level gauge

May 11<sup>th</sup> 08:47~15:55 Due to the restoration of the Okuma No.2 transmission line, the power supply for the pump for injecting water into the reactor was temporarily switched to the temporary diesel generator.

May 11<sup>th</sup> 08:50~15:58 Due to the restoration of the Okuma No.2 transmission line, the nitrogen injection was temporarily suspended.

May 11<sup>th</sup> 08:50~11:14 Confirmed the reactor water level of RPV, calibrated reactor pressure gauge of primary containment vessel.

May 13<sup>th</sup> 16:01 ~17:39 Observed the situation in the Reactor Building using a remote-control robot

May 14<sup>th</sup> 15:07 ~15:18 Water spray over the Spent Fuel Pool by Concrete Pump Truck (stopped due to strong winds)

May 15<sup>th</sup> 13:28 Changed the rate of water injection into the Reactor Core from 8m<sup>3</sup>/h to 10m<sup>3</sup>/h.

May 17<sup>th</sup> 11:50 Changed the rate of water injection into the Reactor Core from 10m<sup>3</sup>/h to 6 m<sup>3</sup>/h.

May 20<sup>th</sup> 9:30 ~12:15 Entered in the reactor building, confirmed reactor water level and radioactivity.

May 25<sup>th</sup> 9:14 ~9:18 Nitrogen injection to PCV were suspended for changing power supply.

May 25<sup>th</sup> 15:16 ~15:18 Nitrogen injection to PCV were suspended for changing power supply.

May 25<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> 16:47 ~17:00 Leak test in order to inject fresh water to SFP via FPC

May 31<sup>th</sup> 20:30 Changed the rate of water injection into the Reactor Core from 6m<sup>3</sup>/h to 5m<sup>3</sup>/h.

June 3<sup>rd</sup> 10:38~12:21 Installed temporary pressure gauges for the reactor.

June 3<sup>rd</sup> around 15:00~ around 17:00 Confirmed the situation in the reactor building using an unmanned robot.

June 4<sup>th</sup> 9:57~13:56 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<sup>th</sup> 14:57 ~17:54 Suspended the nitrogen injection due to the stop of the power center 2C.

June 13<sup>th</sup> 14:58 ~17:43 Transfer the accumulated water from the Condenser to the basement of turbine building.

<Water spray over the Spent Fuel Pool by Concrete Pump Truck (Fresh water)>  
March 31<sup>st</sup> 13:03~16:04, May 20<sup>th</sup> 15:06~16:15, May 22<sup>nd</sup> 15:33~17:09

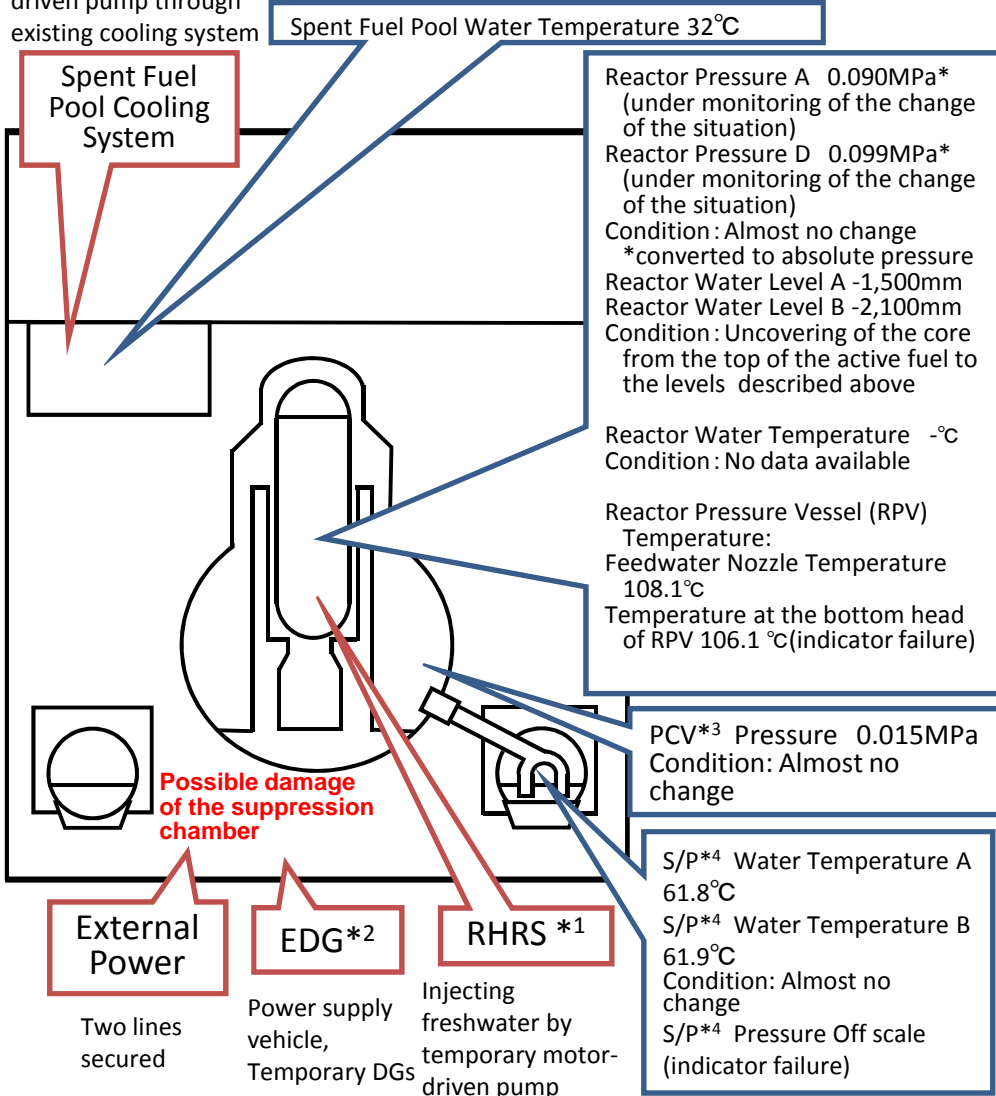
<Fresh water injection to SFP via FPC (using the temporary motor-driven pump) >  
May 29<sup>th</sup> 11:10~15:35, June 5<sup>th</sup> 10:16~10:48



# Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 2**

( As of 12:00 June 14, 2011 )

Spraying freshwater by temporary motor-driven pump through existing cooling system



Spent Fuel Pool Water Temperature 32°C

Reactor Pressure A 0.090MPa\*  
(under monitoring of the change of the situation)  
Reactor Pressure D 0.099MPa\*  
(under monitoring of the change of the situation)  
Condition : Almost no change  
\*converted to absolute pressure  
Reactor Water Level A -1,500mm  
Reactor Water Level B -2,100mm  
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 108.1°C  
Temperature at the bottom head of RPV 106.1 °C(indicator failure)

PCV\*3 Pressure 0.015MPa  
Condition: Almost no change

S/p\*4 Water Temperature A 61.8°C  
S/p\*4 Water Temperature B 61.9°C  
Condition: Almost no change  
S/p\*4 Pressure Off scale (indicator failure)

External Power  
Two lines secured

EDG\*2  
Power supply vehicle, Temporary DGs

RHRS \*1  
Injecting freshwater by temporary motor-driven pump

Possible damage of the suppression chamber

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

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

## Major Events after the Earthquake 1/2

- March 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- March 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11<sup>th</sup> 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System )
- March 13<sup>th</sup> 11:00 Started to vent.
- March 14<sup>th</sup> 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- March 14<sup>th</sup> 16:34 Started to inject seawater to the Reactor Core.
- March 14<sup>th</sup> 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 15<sup>th</sup> 00:02 Started to vent.
- March 15<sup>th</sup> 06:10 Sound of explosion
- March 15<sup>th</sup> around 06:20 Possible damage of the suppression chamber
- March 20<sup>th</sup> 15:46 Power Center received electricity.
- March 21<sup>st</sup> 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22<sup>nd</sup>.
- March 26<sup>th</sup> 10:10 Started to inject fresh water to the Reactor Core.
- March 26<sup>th</sup> 16:46 Lighting in the Central Control Room was recovered.
- March 27<sup>th</sup> 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- March 29<sup>th</sup> 16:45~1<sup>st</sup> 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- April 2<sup>nd</sup> around 9:30 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.
- April 2<sup>nd</sup> 17:10 Started to transfer the water from the Condenser to the CST.
- April 3<sup>rd</sup> 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3<sup>rd</sup> 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.
- April 4<sup>th</sup> 7:08~7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
- April 5<sup>th</sup> 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea.
- 15:07 Started to inject coagulant.
- April 6<sup>th</sup> around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- April 9<sup>th</sup> 13:10 Completed transferring the water from the Condenser to CST.
- April 11<sup>th</sup> 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.
- April 11<sup>th</sup> 17:56 External power supply was recovered.
- April 11<sup>th</sup> 18:04 Resumed injecting water to the Reactor Core.
- April 12<sup>th</sup> 19:35~April 13<sup>th</sup> 17:04 Transfer from the trench of the turbine building to the Condenser.
- April 13<sup>th</sup> 11:00 Suspended the transfer for checking leaks, etc.
- April 16<sup>th</sup> around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).
- April 18<sup>th</sup> 13:42~ Confirmed the situation in the reactor building using an unmanned robot.
- April 18<sup>th</sup> 12:13~12:37 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 18<sup>th</sup> 09:30~17:40 Injected coagulant (soluble glass) into the power cable trench.
- April 19<sup>th</sup> 08:00~15:30 Injected coagulant (soluble glass) into the power cable trench.
- April 19<sup>th</sup> 10:08~ Started to transfer the stagnant water with high-level radioactivity from the trench of the turbine building to the Radioactive Waste Treatment Facility.
- April 19<sup>th</sup> 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

## Major Events after the Earthquake 2/2

April 25<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> 9:16 Suspended the transfer of stagnant water from the turbine building Trench of Unit 2 (Stagnant water with high-level radioactivity) to the Radioactive Waste Treatment Facility in order to carry out inspections, etc. of the transfer facilities. The transfer was resumed. (From 14:05 April 30<sup>th</sup>)

May 1<sup>st</sup> 13:35~ Started blocking the vertical shafts of Trench pit.

May 2<sup>nd</sup> 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 7<sup>th</sup> 9:22 Suspended the transfer of stagnant water from the turbine building Trench of Unit 2 (Stagnant water with high-level radioactivity) to the Radioactive Waste Treatment Facility in order to carry out piping work of Reactor Feedwater System for Unit3. The transfer was resumed. (From 16:02 May 7<sup>th</sup>)

May 10<sup>th</sup> 9:01 ~ May 12<sup>th</sup> 15:20 Suspended the transfer of stagnant water from the turbine building Trench of Unit 2 (Stagnant water with high-level radioactivity) to the Radioactive Waste Treatment Facility in order to lay the water transfer pipes from the turbine building of Unit 3 to the Radioactive Waste Treatment Facility.

May 11<sup>th</sup> 8:47~15:55 Due to the restoration of the Okuma No.2 transmission line, the power supply for the pump for injecting water 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<sup>th</sup> 9:24~9:38 Conducted preliminary survey in the Reactor Building.

May 25<sup>th</sup> 9:05~15:30 Suspended the transfer of stagnant water with high-level radioactivity from the turbine building Trench to the Radioactive Waste Treatment Facility in order to change power supply.

May 26<sup>th</sup> 14:45~ May 27<sup>th</sup> 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<sup>th</sup> 15:19~15:32 Conducted preliminary survey in the Reactor Building.

May 26<sup>th</sup> 16:01 Suspended the transfer of stagnant water with high-level radioactivity from the turbine building Trench to the Radioactive Waste Treatment Facility. (Because the water level of the concerned facility was close to the first basement level.)

May 29<sup>th</sup> 11:33 Started to inject water to the Reactor Core via Feedwater line in addition to Fire Extinguish line

May 30<sup>th</sup> 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<sup>th</sup> 18:05 Stopped injecting water to the Reactor Core via Fire Extinguish line.

May 31<sup>st</sup> 11:40 Conducted a leakage test on the primary system of the alternative cooling system for the Spent Fuel Pool.

May 31<sup>st</sup> 17:21 Started full-fledged operation of the alternative cooling system for the Spent Fuel Pool.

June 3<sup>rd</sup> 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<sup>rd</sup> 18:39~June 4<sup>th</sup> 12:28 Transferred the accumulated water, from which high radiation dose was measured above the surface, from the trench of the turbine building to the condenser hotwell.

June 4<sup>th</sup> 18:39 Started the transfer of accumulated water with high radiation from the turbine building trench to the Radioactive Waste Treatment Facility.

June 8<sup>th</sup> 15:40 ~18:03 Suspended the transfer of accumulated water with high radiation dose from the turbine building trench to the Radioactive Waste Treatment Facility due to the stop of the power center 2C.

June 11<sup>th</sup> 11:45 ~12:19 Conducted a test run of the ambient air filtration system of the reactor building.

June 11<sup>th</sup> 12:42~Started full-scale operation of the ambient air filtration system of the reactor building.

<Sea water injection to SFP via FPC (using the fire engine pump)>

March 20<sup>th</sup> around 15:05~ around 17:20, March 22<sup>nd</sup> 16:07~17:01, March 25<sup>th</sup> 10:30~12:19 Started injection

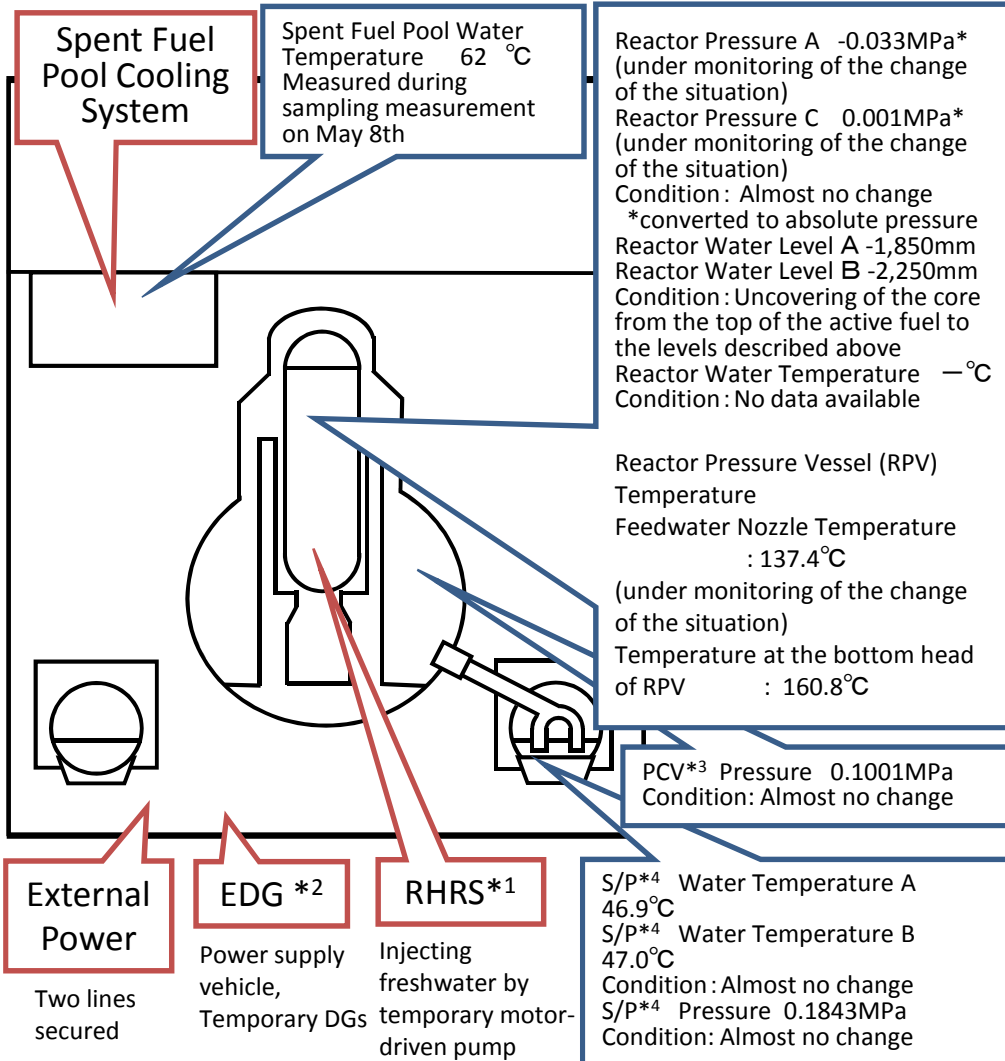
<Fresh water injection to SFP via FPC (using the temporary motor-driven pump) >

March 29<sup>th</sup> 16:30~18:25, March 30<sup>th</sup> 09:25~23:50 \*Including interruption by pump malfunction and damage to the hose, April 1<sup>st</sup> 14:56~17:05, April 4<sup>th</sup> 11:05~13:37, April 7<sup>th</sup> 13:29 ~14:34, April 10<sup>th</sup> 10:37~12:38, April 13<sup>th</sup> 13:15~14:55, April 16<sup>th</sup> 10:13~11:54, April 19<sup>th</sup> 16:08~17:28, April 22<sup>nd</sup> 15:55~17:40, April 25<sup>th</sup> 10:12~11:18, April 28<sup>th</sup> 10:15~11:28, May 2<sup>nd</sup> 10:05~11:40, May 6<sup>th</sup> 09:36~11:16, May 10<sup>th</sup> 13:09~14:45(13:19 ~14:35 Hydrazine was also injected), May 14<sup>th</sup> 13:00~14:37(13:08 ~14:02 Hydrazine was also injected), May 18<sup>th</sup> 13:10~14:40(13:15 ~14:30 Hydrazine was also injected), May 22<sup>nd</sup> 13:02~14:40(13:04~14:03 Hydrazine was also injected), May 26<sup>nd</sup> 10:06~11:36(10:10~11:10 Hydrazine was also injected), May 30<sup>th</sup> 12:06~13:52



# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 ( As of 12:00 June 14, 2011 )

Spraying freshwater by temporary motor driven pump through existing cooling system



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

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

## Major Events after the Earthquake 1/2

- March 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- March 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 13<sup>th</sup> 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13<sup>th</sup> 08:41 Started to vent.
- March 13<sup>th</sup> 13:12 Started to inject seawater and borated water to the Reactor Core.
- March 14<sup>th</sup> 05:20 Started to vent.
- March 14<sup>th</sup> 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 14<sup>th</sup> 11:01 Sound of explosion
- March 16<sup>th</sup> around 08:30 White smoke generated.
- March 17<sup>th</sup> 09:48 ~ 10:01 Water discharge by the helicopters of Self-Defense Force
- March 17<sup>th</sup> 19:05 ~ 19:15 Water spray from the ground by High pressure water-cannon trucks of Police
- March 17<sup>th</sup> 19:35 ~ 20:09 Water spray from the ground by fire engines of Self-Defense Force
- March 18<sup>th</sup> before 14:00 ~ 14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
- March 18<sup>th</sup> ~ 14:45 Water spray from the ground by a fire engine of the US Military
- March 19<sup>th</sup> 00:30 ~ 01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 19<sup>th</sup> 14:10 ~ 20<sup>th</sup> 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 20<sup>th</sup> 11:00 Pressure of PCV rose(320kPa).Afterward fell.
- March 20<sup>th</sup> 21:36 ~ 21<sup>st</sup> 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 21<sup>st</sup> around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
- March 22<sup>nd</sup> 15:10 ~ 16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
- March 22<sup>nd</sup> 22:46 Lighting in the Central Control Room was recovered.
- March 23<sup>rd</sup> 11:03 ~ 13:20 Injection of about 35 ton of sea water to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 23<sup>rd</sup> around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24<sup>th</sup> 04:50.
- March 24<sup>th</sup> 05:35 ~ 16:05 Injection of around 120 ton of sea water to SFP via FPC
- March 25<sup>th</sup> 13:28 ~ 16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
- March 25<sup>th</sup> 18:02 Started fresh water injection to the core.
- March 27<sup>th</sup> 12:34 ~ 14:36 Water spray by Concrete Pump Truck
- March 28<sup>th</sup> 17:40 ~ 31<sup>st</sup> around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 28<sup>th</sup> 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
- April 3<sup>rd</sup> 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 11<sup>th</sup> 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<sup>th</sup> 18:04 External power supply of Units 1 and 2 recovered (April 11<sup>th</sup> 17:56). Resumed injecting water to the Reactor Core.
- April 17<sup>th</sup> 11:30 ~ 14:00 Confirmed the situation in the reactor building using unmanned robot.
- April 18<sup>th</sup> 12:38 ~ 13:05 Stopped the water injection into the reactor core to replace the current hose with a new one
- April 19<sup>th</sup> 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- April 22<sup>nd</sup> 13:40 ~ 14:00 Tentatively Injected freshwater to SFP via the Fuel Pool Coolant Purification Line.
- April 25<sup>th</sup> 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<sup>th</sup> 11:34 Completed reinforcement work of the power supply both Units 3, 4). (Increasing the voltage from 6.6kv to 66kv)

## Major Events after the Earthquake 2/2

May 2<sup>nd</sup> 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 8<sup>th</sup> 16:18 ~ May 10<sup>th</sup> 5:41 Transferred the water in the Condenser to the underground of the turbine building in order to carry out piping work of Reactor Feedwater System.

May 11<sup>th</sup> 8:47~15:55 Due to the restoration of the Okuma No.2 transmission line, the power supply for the pump for injecting water into the reactor was temporarily switched to the temporary diesel generator.

May 11<sup>th</sup> around 12:30 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.

May 12<sup>th</sup> 16:53 In addition to the plumbing pro-fire extinguishing, started core flooding from the plumbing pro-water supply.

May 15<sup>th</sup> 14:33~17:00 Injected borated water to the Reactor Core.

May 17<sup>th</sup> 18:04~ Started transfer of stagnant water in the basement of the turbine building to the Radioactive Waste Treatment Facilities

May 18<sup>th</sup> from around 16:30 Conducted preliminary survey in the Reactor Building for about 10 minutes.

May 25<sup>th</sup> 9:10 Suspended transfer of stagnant 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.

May 28<sup>th</sup> 20:54 Terminated to inject water to the Reactor Core via Fire Extinguishing line.

May 31<sup>th</sup> 9:00 ~16:00 A preliminary survey using a remote-controlled robot was carried out inside the reactor building.

May 31<sup>th</sup> 10:19 Changed the rate of water injection into the Reactor Core from 13.5m<sup>3</sup>/h to 12.5m<sup>3</sup>/h.

June 1<sup>st</sup> 10:10 Changed the rate of water injection into the Reactor Core from 12.5m<sup>3</sup>/h to 11.5m<sup>3</sup>/h.

June 2<sup>nd</sup> 12:50 ~ June 4<sup>th</sup> 21:56 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.

June 3<sup>rd</sup> 13:16 ~13:32 Suspended the injection of coolant water due to the work for changing the route of water supply line to the reactor core.

June 5<sup>th</sup> 18:26 ~ June 9<sup>th</sup> 10:44 Transferred the accumulated water from inside the turbine building to the Condenser.

June 9<sup>th</sup> 11:47 ~12:14 Entered into the reactor building and monitored radiation dose etc.

June 11<sup>th</sup> 15:30~June 12<sup>th</sup> 17:01 Transferred the accumulated water from the basement of the turbine building to the Radioactive Waste Treatment Facilities.

June 14<sup>th</sup> 10:05~ Started transfer of accumulated water in the basement of the turbine building to the Radioactive Waste Treatment Facilities.

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

March 29<sup>th</sup> 14:17~18:18, March 31<sup>st</sup> 16:30~19:33, April 2<sup>nd</sup> 09:52~12:54, April 4<sup>th</sup> 17:03~19:19, April 7<sup>th</sup> 06:53 ~08:53, April 8<sup>th</sup> 17:06~20:00, April 10<sup>th</sup> 17:15~19:15, April 12<sup>th</sup> 16:26~17:16, April 14<sup>th</sup> 15:56~16:32, April 18<sup>th</sup> 14:17~15:02, April 22<sup>nd</sup> 14:19~15:40, April 26<sup>th</sup> 12:25~14:02

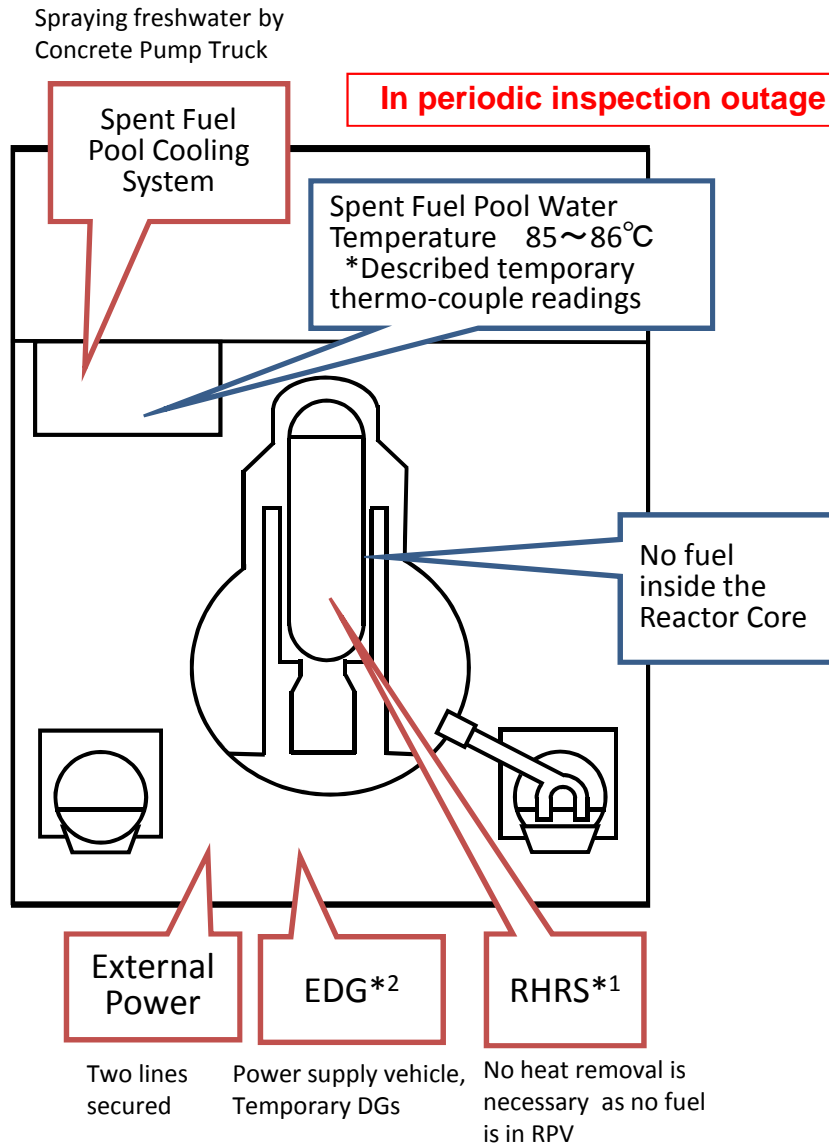
<Fresh water injection to SFP via FPC (using the temporary motor-driven pump)>

May 8<sup>th</sup> 12:10 ~14:10, May 9<sup>th</sup> 12:14 ~15:00 (12:39 ~14:36 Hydrazine was also injected), May 16<sup>th</sup> 15:00~18:32 (15:10 ~17:30 Hydrazine was also injected), May 24<sup>th</sup> 10:15~13:35 (10:20 ~12:56 Hydrazine was also injected), May 28<sup>th</sup> 13:28~15:08(13:42 ~14:40 Hydrazine was also injected), June 1<sup>st</sup> 14:34~15:54(14:41 ~15:26 Hydrazine was also injected), June 5<sup>th</sup> 13:08~15:14(13:14~14:16 Hydrazine was also injected), June 9<sup>th</sup> 13:42~15:31 (13:45~14:40 Hydrazine was also injected), June 13<sup>th</sup> 10:09~11:48 (10:13~11:36 Hydrazine was also injected)

# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4

( As of 12:00 June 14, 2011 )

Major Events after the Earthquake



In periodic inspection outage when the earthquake occurred

March 14<sup>th</sup> 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C

March 15<sup>th</sup> 06:14 Confirmed the partial damage of wall in the 4<sup>th</sup> floor.

March 15<sup>th</sup> 09:38 Fire occurred in the 3<sup>rd</sup> floor. (12:25 extinguished)

March 16<sup>th</sup> 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)

March 20<sup>th</sup> 08:21~09:40 Water spray over SFP by Self-Defense Force

March 20<sup>th</sup> around 18:30~19:46 Water spray over SFP by Self-Defense Force

March 21<sup>st</sup> 06:37~08:41 Water spray over SFP by Self-Defense Force

March 21<sup>st</sup> around 15:00 Work for laying cable to Power Center was completed.

March 22<sup>nd</sup> 10:35 Power Center received electricity.

March 25<sup>th</sup> 06:05~10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)

March 29<sup>th</sup> 11:50 Lighting in the Central Control Room was recovered.

April 11<sup>th</sup> around 17:16 An earthquake occurred (at Hamadori in Fukushima Prefecture).

April 12<sup>th</sup> 12:00~13:04 Sampled the water in SFP.

April 19<sup>th</sup> 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

April 22<sup>nd</sup> Measured the water level of SFP by a gauge hung on Concrete Pump Truck (62m class).

April 30<sup>th</sup> 11:34 Completed reinforcement work of the power supply both Units 3, 4. (Increasing the voltage from 6.6kv to 66kv)

May 9<sup>th</sup> Started installation work of the supporting structure for the floor of SFP

June 10<sup>th</sup> 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.

<Water spray by Concrete Pump Truck (Seawater)>

March 22<sup>nd</sup> 17:17~20:32, March 23<sup>rd</sup> 10:00~13:02, March 24<sup>th</sup> 14:36~17:30, March 25<sup>th</sup> 19:05~22:07, March 27<sup>th</sup> 16:55~19:25

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

March 30<sup>th</sup> 14:04-18:33, April 1<sup>st</sup> 08:28-14:14, April 3<sup>rd</sup> 17:14-22:16, April 5<sup>th</sup> 17:35-18:22, April 7<sup>th</sup> 18:23-19:40, April 9<sup>th</sup> 17:07-19:24, April 13<sup>th</sup> 0:30-6:57, April 15<sup>th</sup> 14:30-18:29, April 17<sup>th</sup> 17:39-21:22, April 19<sup>th</sup> 10:17-11:35, April 20<sup>th</sup> 17:08-20:31, April 21<sup>st</sup> 17:14-21:20, April 22<sup>nd</sup> 17:52-23:53, April 23<sup>rd</sup> 12:30-16:44, April 24<sup>th</sup> 12:25-17:07, April 25<sup>th</sup> 18:15-April 26<sup>th</sup> 0:26, April 26<sup>th</sup> 16:50-20:35, April 27<sup>th</sup> 12:18-15:15, May 5<sup>th</sup> 12:29-20:46, May 6<sup>th</sup> 12:38-17:51, May 7<sup>th</sup> 14:05-17:30, May 9<sup>th</sup> 16:05-19:05 (16:11-18:38 Hydrazine was also injected), May 11<sup>th</sup> 16:07-19:38 (16:14 -19:36 Hydrazine was also injected), May 13<sup>th</sup> 16:04~19:04 (16:20 -18:41 Hydrazine was also injected), May 15<sup>th</sup> 16:25-20:25 (16:26-18:30 Hydrazine was also injected), May 17<sup>th</sup> 16:14-20:06 (16:40-18:35 Hydrazine was also injected), May 19<sup>th</sup> 16:30-19:30, May 21<sup>st</sup> 16:00-19:56 (16:23 -19:00 Hydrazine was also injected), May 23<sup>rd</sup> 16:00-19:09 (16:08 -18:30 Hydrazine was also injected), May 25<sup>th</sup> 16:36-20:04 (16:42-18:49 Hydrazine was also injected), May 27<sup>th</sup> 17:05-20:00 (17:24 -18:53 Hydrazine was also injected), May 28<sup>th</sup> 17:56-19:45(18:02-19:45 Hydrazine was also injected), June 3<sup>rd</sup> 14:35-21:15 (14:44-18:58 Hydrazine was also injected), June 4<sup>th</sup> 14:23-19:45(14:51-18:41 Hydrazine was also injected), June 6<sup>th</sup> 15:56-18:35(16:15-17:45 Hydrazine was also injected), June 8<sup>th</sup> 16:12-19:41(16:16-18:05 Hydrazine was also injected), June 13<sup>th</sup> 16:36-21:00(16:38-19:15 Hydrazine was also injected)

\*1 Residual Heat Removal System

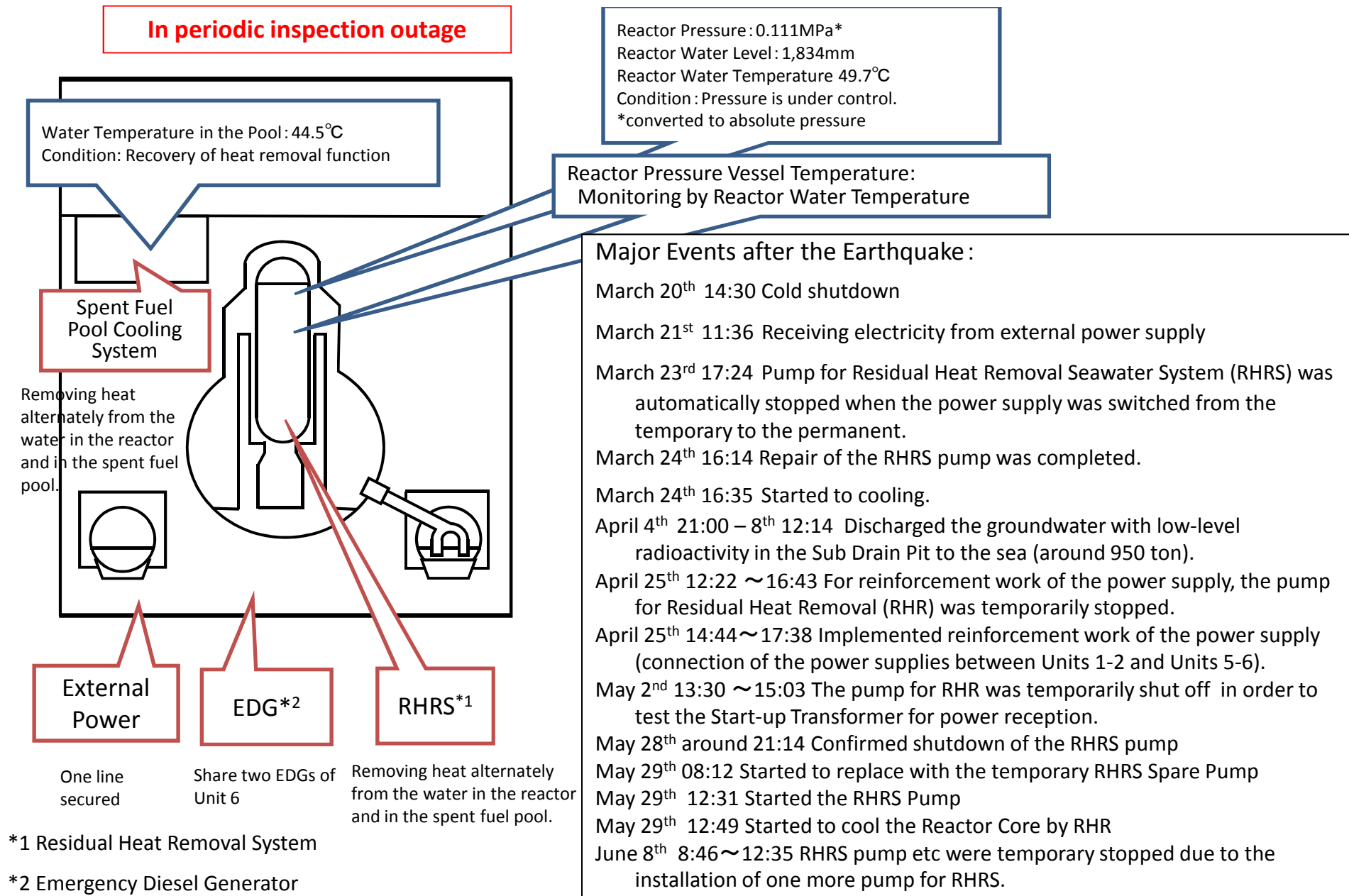
\*2 Emergency Diesel Generator

\*3 Reactor Pressure Vessel

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

# Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 5**

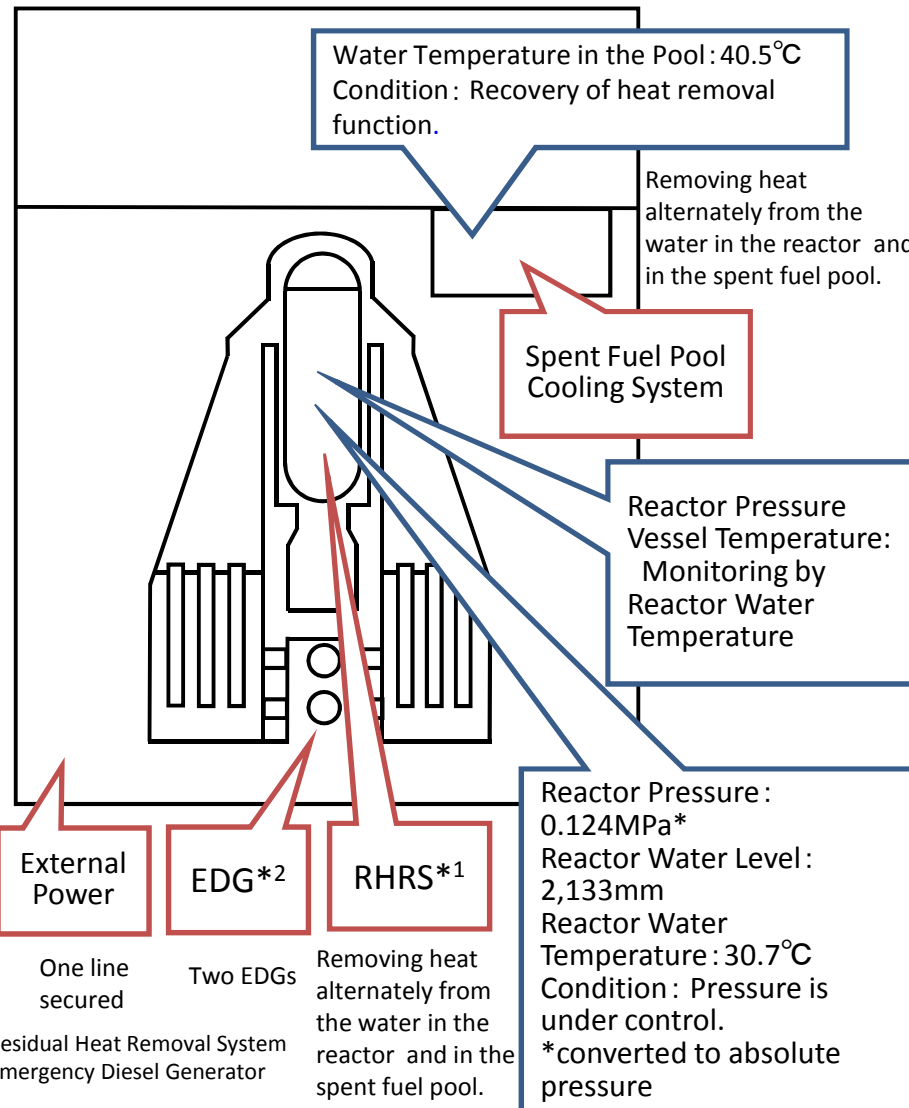
## ( As of 12:00 June 14, 2011 )



# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 ( As of 12:00 June 14, 2011 )

In periodic inspection outage

Major Events after the Earthquake



- March 20<sup>th</sup> 19:27 Cold shutdown
- March 22<sup>nd</sup> 19:17 Receiving electricity from external power supply
- April 4<sup>th</sup> 21:00 – 9<sup>th</sup> 18:52 Discharged the groundwater with low-level radioactivity in the Sub Drain Pit to the sea (around 373 ton).
- April 19<sup>th</sup> 11:00~15:00 Transferred stagnant water under the base of the turbine building to the condenser for measuring the amount of it.
- April 20<sup>th</sup> 9:51~15:56 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<sup>th</sup> 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<sup>nd</sup> 11:03 ~14:53 The pump for RHR was temporarily shut off in order to test the Start-up Transformer for power reception.

〈Transferred stagnant water on the basement floor of the turbine building to the temporary tank〉.

- May 1<sup>st</sup> 14:00 ~17:00 , May 2<sup>nd</sup> 10:00 ~ 16:00 , May 3<sup>rd</sup> 14:00 ~17:00 ,
- May 6<sup>th</sup> 14:00 ~ 17:00 , May 7<sup>th</sup> 10:00 ~ 15:00 , May 9<sup>th</sup> 14:00 ~ 17:00 ,
- May 10<sup>th</sup> 10:00 ~ 16:00 , May 11<sup>th</sup> 10:00 ~ 16:00 , May 12<sup>th</sup> 10:00 ~16:00 ,
- May 13<sup>th</sup> 10:00 ~ 15:00 , May 14<sup>th</sup> 10:00 ~ 15:00 , May 15<sup>th</sup> 10:00 ~15:00 ,
- May 16<sup>th</sup> 10:00 ~ 14:00 , May 17<sup>th</sup> 10:00 ~ 14:00 , May 18<sup>th</sup> 10:00 ~14:00 ,
- May 21<sup>st</sup> 14:00 ~ 18:00 , May 24<sup>th</sup> 9:00 ~ 19:00 , May 25<sup>th</sup> 9:00 ~ 19:00 ,
- May 26<sup>th</sup> 9:00 ~ 19:00 , May 27<sup>th</sup> 9:00 ~ 19:00 , May 28<sup>th</sup> 9:00~19:00
- May 29<sup>th</sup> 9:00~19:00 , May 30<sup>th</sup> 10:00~17:30 , June 2<sup>nd</sup> 14:00~(June 5<sup>th</sup> 14:00 ~14:45 temporarily suspended)~June 8<sup>th</sup> 18:00 , June 9<sup>th</sup> 9:00~18:00 , June 11<sup>th</sup> 10:00~15:00 , June 12<sup>th</sup> 10:00~15:00 , June 13<sup>th</sup> 10:00~16:00 , June 14<sup>th</sup> 10:00~

〈Transferred stagnant water on the basement floor of the reactor building to the Radioactive Waste Treatment Building〉

- May 10<sup>th</sup> 11:00 ~ 12:30 , May 11<sup>th</sup> 11:00 ~ 12:30 , May 12<sup>th</sup> 10:30~12:30 ,
- May 13<sup>th</sup> 11:30 ~12:15 , May 18<sup>th</sup> 10:30 ~12:30 , May 28<sup>th</sup> 10:20~12:10
- June 8<sup>th</sup> 10:05 ~12:40