

May 2, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 123rd Release)
(As of 12:00 May 2, 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 work to block the trench pit of Unit 2 was started. (From 13:35 May 1)
- Injection of fresh water (about 55t) into the Spent Fuel Pool of Unit 2 using the Fuel Pool Coolant Clean-up System was carried out. (From 10:05 till 11:40 May 2)
- Stagnant water in the basement of the turbine building of Unit 6 (about 120m³) was transferred to a temporary tank. (From 14:00 till 17:00 May 1)
- Transferring of stagnant water in the basement of the turbine building of Unit 6 to a temporary tank was started. (From 10:00 May 2)
- Full-scale implementation of spraying anti-scattering agent was carried out in the area of about 1,000m² on the south-side of the reactor building of Unit 4 using an unmanned crawler dump. (From 11:00 till 13:00 May 1)
- Full-scale implementation of spraying anti-scattering agent was carried out by workers in the area of about 4,400m² on the road in front of the Former Main Office Building, around the gymnasium, and on the west-side of the shallow draft quay. (From 10:30 till 14:00 May 1)
- Removal of rubble (amounts equivalent to 4 containers) using remote-control heavy machineries was carried out. (From 9:00 till

16:15 May 1)

< Possibility of Radiation Exposure > (2. Exposure of Workers, etc.)

May 1 – A new case was confirmed regarding one female who was subjected to an exposure dose exceeding the statutory dose limit (5mSv/ 3 months). The woman received an exposure dose of 7.49mSv.

<Directives Regarding Foods and Drinks> (Lifting of the Suspension of Shipment)

- Raw milk produced in Kawamata Town (excluding Yamakiya area) and Minamisoma City (excluding Haramachi-ku, Odaka-ku, and the areas of Karasuzaki, Ouchi, Kawago and Shiozaki within Kashima-ku), Fukushima Prefecture.

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

May 3, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 124th Release)
(As of 15:00 May 3, 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 install alarm systems to the pumps at Units 1 and 2, used for injecting water into the reactor cores, the injection of water to the reactor core was temporarily switched to fire engine pumps. (From 12:58 till 15:03 May 2)
- Due to the testing of Start-up Transformers (5SB) of Units 5 and 6 for power reception, the pump for the Residual Heat Removal (RHR) System was temporarily shut off. (May 2, From 13:30 till 15:03 for Unit 5 and from 11:03 till 14:53 for Unit 6)
- Full-scale implementation of spraying an anti-scattering agent was carried out in an area of about 4,000m² on the south-side and west-side of the reactor building of Unit 4 using an unmanned crawler dump. (From 09:00 till 16:00 May 2)
- Full-scale implementation of spraying an anti-scattering agent in order to prevent the spread of radioactive materials was carried out by workers in an area of about 5,500m² on the road in front of the Former Main Office Building, around the gymnasium (ground), and on the west-side of the shallow draft quay. (From 10:30 till 14:00 May 2)

< Possibility of Radiation Exposure > (2. Exposure of Workers, etc.)

On May 1, a new case was confirmed regarding one female who was subjected to an exposure dose exceeding the statutory dose limit (5mSv/ 3

months). The woman received an exposure dose of 7.49mSv. As a result of a medical examination, it was confirmed that there was no health impact.

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

May 4, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 125th Release)
(As of 12:00 May 4, 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 accumulated water (about 114m³) in the basement of the turbine building of Unit 6 to a temporary tank was carried out. (From 14:00 till 17:00 May 3)
- Full-scale implementation of spraying an anti-scattering agent in order to prevent the spread of radioactive materials was carried out by workers in an area of about 5,300m² on the road in front of the Former Main Office Building, on the sports grounds, and on the west-side of the shallow draft quay. (From 9:30 till 14:30 May 3)
- Full-scale implementation of spraying an anti-scattering agent in order to prevent the spread of radioactive materials was carried out in an area of about 4,000m² on the west-side of the reactor building of Unit 3 using an unmanned crawler dump. (From 11:00 till 13:30 May 3)
- Removal of rubber (an amount equivalent to 2 containers) using remote controlled machineries was carried out. (From 09:00 till 16:00 May 3)

2. Actions Taken by NISA

- April 30 - NISA instructed TEPCO, pursuant to the provisions of Article 67, paragraph 1 of the Nuclear Regulation Act, to submit a report on the impact on stable cooling of the reactor and the following safety

evaluation regarding the implementation of the measure to fill the Primary Containment Vessel (PCV) of Unit 1 of Fukushima Dai-ichi NPS with water up to the level above the reactor fuel.

- The impacts on structural strength and seismic adequacy of the reactor building (RB) and the PCV with the rise of the water level of the PCV.
 - The impacts of rising pressure inside of the PCV due to the rise of the water level.
 - The impacts caused by the increase of water leakage from the turbine building.
 - Other required items in order to evaluate the safety involving the implementation of measures to fill the PCV with water to the level above the reactor fuel.
- May 2 – NISA instructed TEPCO, pursuant to the provisions of Article 67, paragraph 1 of the Nuclear Regulation Act, to submit a report on the necessity for implementing measures to reduce the concentration of nuclear materials inside the reactor building of Unit 1, Fukushima Dai-ichi NPS (including future prospects for work inside the reactor building), as well as on each reduction measure (installation and use of the ambient air filtration system, and opening of the double doors on the north side.) The report was received on May 3.

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

May 5, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 126th Release)
(As of 14:30 May 5, 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 work to install ambient air filtration systems was started in order to improve the working environment of the reactor building of Unit 1. (From May 2)
- The transfer of the accumulated water (about 600m³) in the basement of the turbine building of Unit 5 to the Condenser was carried out. (From March 27 till May 2)
- Full-scale implementation of spraying an anti-scattering agent in order to prevent the spread of radioactive materials was carried out by workers in an area of about 5,200m² on the road in front of the Former Main Office Building, on the sports ground, and on the west-side of the shallow draft quay. (From 10:30 till 14:00 May 4)
- Full-scale implementation of spraying an anti-scattering agent in order to prevent the spread of radioactive materials was carried out in an area of about 4,000m² on the west-side of the reactor building of Unit 3 using an unmanned crawler dump. (From 14:00 till 16:00 May 4)
- Removal of rubber (an amount equivalent to 5 containers) using remote-controlled heavy machinery was carried out. (From 09:00 till 16:00 May 4)

<Directives Regarding Foods and Drinks>

May 4 – The suspension of shipment and the restriction on consumption

regarding the following items and areas were lifted.

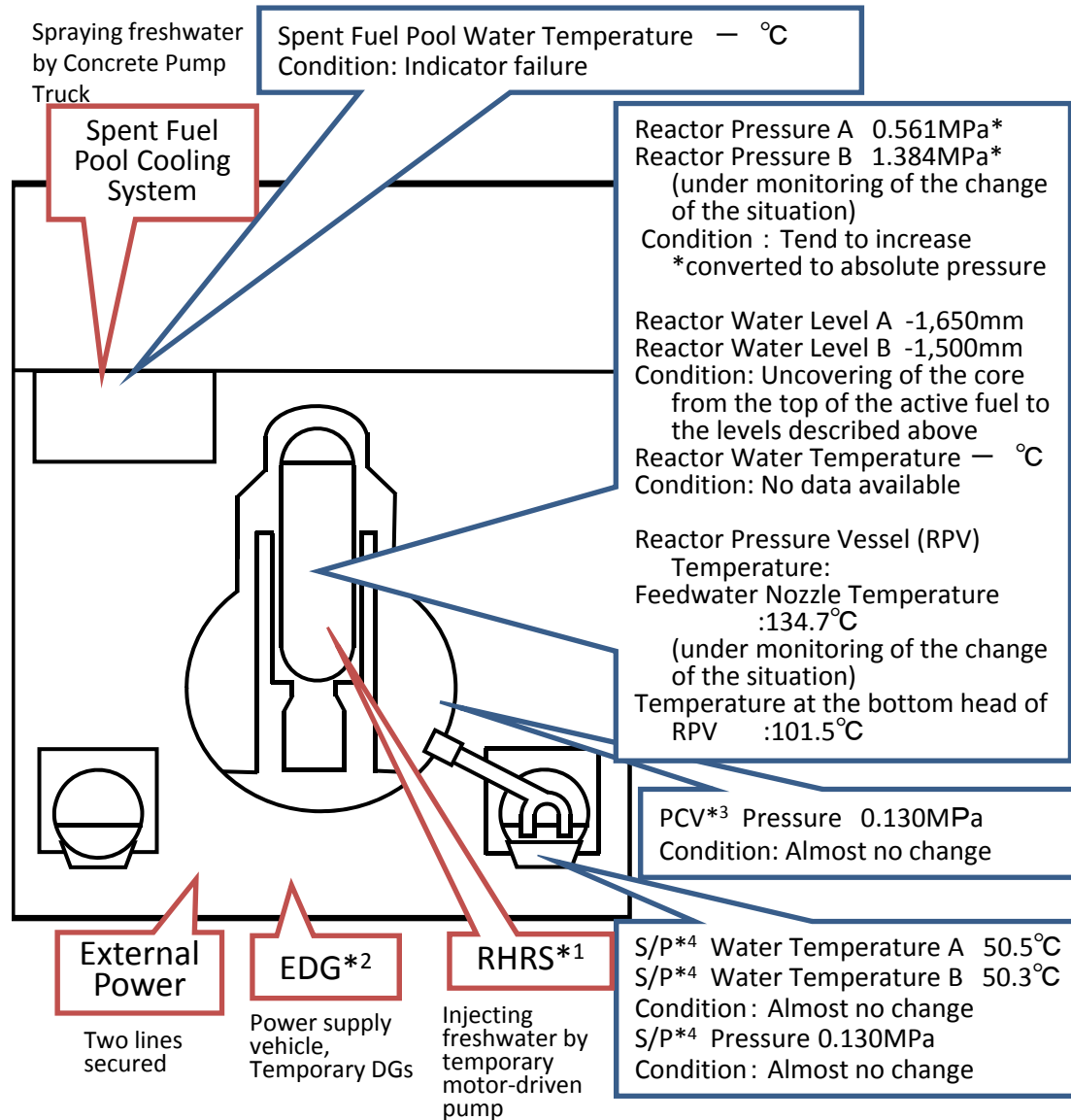
- Lifting of the suspension of shipment and restriction of consumption
 - Non-head type leafy vegetables produced in the Kennan area⁽¹⁾ and Iwaki City of Fukushima Prefecture.
 - Head type leafy vegetables produced in the Kenchu⁽²⁾ area and Iwaki City of Fukushima Prefecture.
 - Flowerhead brassicas produced in Iwaki City, Fukushima Prefecture

- Lifting of the suspension of shipment
 - Turnips produced in the Kenhoku⁽³⁾ and Kenchu areas, and Iwaki City of Fukushima Prefecture
 - (1) Shirakawa-City, Yabuki-Town, Tanagura-Town, Yamatsuri-Town, Hanawa-Town, Nishigo-Village, Izumizaki-Village, Nakajima-Village, Samegawa-Village
 - (2) Koriyama-City, Sukagawa-City, Tamura-City (excluding the area within 20 km radius from the Fukushima Dai-ichi NPS), Kagami-ishi-Town, Ishikawa-Town, Asakawa-Town, Furudono-Town, Miharu-Town, Ono-Town, Tenei-Village, Tamakawa-Village, Hirata-Village
 - (3) Fukushima-City, Nihonmatsu-City, Date-City, Motomiya-City, Koori-Town, Kunimi-Town, Kawamata Town (excluding Yamakiya area), Otama-Village

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 May 5, 2011)

Major Events after the Earthquake 1/2



- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 12th 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 12th 10:17 Started to vent.
- March 12th 15:36 Sound of explosion
- March 12th 20:20 Started to inject seawater and borated water to the Reactor Core.
- March 23rd 02:33 The amount of injected water to 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)
- March 24th 11:30 Lighting in the Central Control Room was recovered.
- March 25th 15:37 Started to inject fresh water.
- March 29th 08:32 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- March 31st 12:00 ~2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 31st 13:03~16:04 Water spray by Concrete Pump Truck (Fresh water)
- April 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:55 Started to transfer the water from the Condenser to CST.
- April 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- April 7th 01:31 Confirmed starting the injection of nitrogen to PCV.
- April 9th 04:10 Started using highly pure nitrogen generator in the injection of nitrogen to PCV.
- April 10th 09:30 Completed transferring the water from the Condenser to CST.
- April 11th 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 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.
- April 11th 23:19 Restarted operation for injecting nitrogen to PCV.
- April 11th 23:34 Confirmed starting injection of nitrogen to PCV.
- April 17th 16:00~17:30 Confirmed the situation in the reactor building using an unmanned robot.
- April 18th 11:50~12:12 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- April 25th 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 25th 14:10~19:10 Suspended nitrogen injection due to reinforcement work of the power supply.
- April 25th 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 25th 11:35~13:24(approx.) Observed the situation in the reactor building using unmanned robots.

*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 27th 10:02 Started the operation of gradually changing the amount of water for injection to the Reactor Pressure Vessel, from about 6m³/h to the maximum of about 14m³/h. After carrying out the injection at 10m³/h, the injection rate was changed back to 6m³/h.

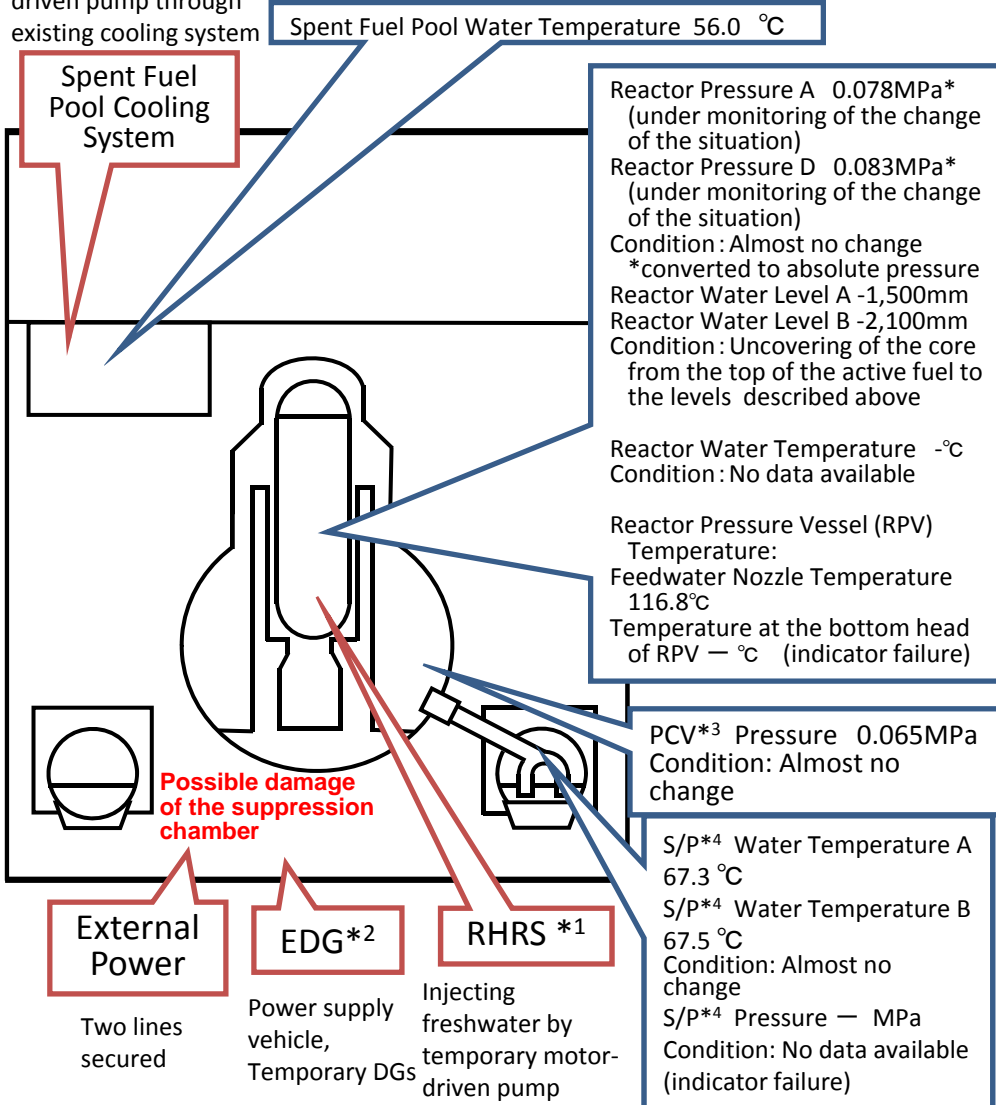
April 29th 11:36~14:05 Confirmed the situation in the reactor building using an unmanned robot.

May 2nd 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.

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

(As of 12:00 May 5, 2011)

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



Major Events after the Earthquake 1/2

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13th 11:00 Started to vent.
- March 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- March 14th 16:34 Started to inject seawater to the Reactor Core.
- March 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 15th 00:02 Started to vent.
- March 15th 06:10 Sound of explosion
- March 15th around 06:20 Possible damage of the suppression chamber
- March 20th 15:05~17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 20th 15:46 Power Center received electricity.
- March 21st 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22nd.
- March 22nd 16:07 Injection of around 18 tons of seawater to SFP
- March 25th 10:30~12:19 Sea water injection to SFP via FPC
- March 26th 10:10 Started to inject fresh water to the Reactor Core.
- March 26th 16:46 Lighting in the Central Control Room was recovered.
- March 27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- March 29th 16:30~18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
- March 29th 16:45~1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 30th 9:25~23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
- April 1st 14:56~17:05 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 2nd 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 2nd 17:10 Started to transfer the water from the Condenser to the CST.
- April 3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 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 4th 7:08~7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
- April 4th 11:05~13:37 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea. 15:07 Started to inject coagulant.
- April 6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- April 7th 13:29~14:34 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 9th 13:10 Completed transferring the water from the Condenser to CST.
- April 10th 10:37~12:38 Freshwater injection to SFP via FPC using the temporary motor-driven pump .
- April 11th 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 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.

*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 12th 19:35~April 13th 17:04 Transfer from the trench of the turbine building to the Condenser.

April 13th 11:00 Suspended the transfer for checking leaks, etc.

April 13th 13:15~14:55 Freshwater injection to SFP via FPC using the temporary motor-driven pump.

April 16th 10:13~11:54 Freshwater injection to SFP via FPC using the temporary motor-driven pump. (The temporary motor-driven pump stopped at 11:39 due to an earthquake that occurred at around 11:19. SFP was confirmed to be filled to capacity through observing a rise of the water level in the Skimmer Tank.)

April 16th around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).

April 18th 13:42~ Confirmed the situation in the reactor building using an unmanned robot.

April 18th 12:13~12:37 Stopped the water injection into the reactor core to replace the current hose with a new one.

April 18th 09:30~17:40 Injected coagulant (soluble glass) into the power cable trench.

April 19th 08:00~15:30 Injected coagulant (soluble glass) into the power cable trench.

April 19th 10:08~ Started to transfer the stagnant water with high-level radioactivity from the trench of the turbine building to the buildings of radioactive waste treatment facilities.

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

April 19th 16:08~17:28 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 22nd 15:55~17:40 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 25th 10:12~11:18 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 25th 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 25th 10:12~11:18 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 25th 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 28th 10:15~11:28 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 29th 9:16 ~4/30 14:05 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.

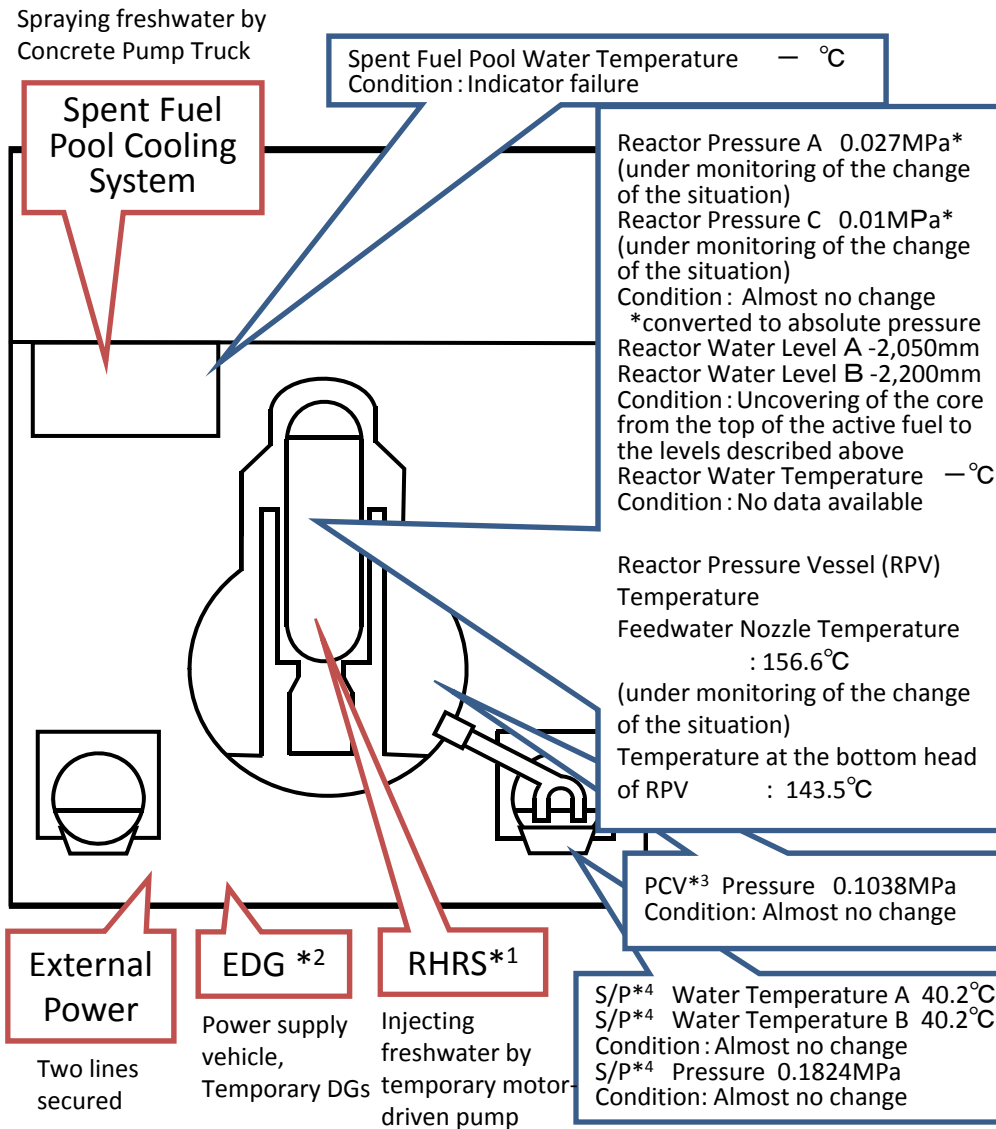
May 1st 13:35 ~ Started blocking the vertical shafts of Trench pit.

May 2nd 10:05~11:40 Injected freshwater into SFP via FPC using the temporary motor-driven pump.

May 2nd 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.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 (As of 12:00 May 5, 2011)

Major Events after the Earthquake 1/2



- *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)

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

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

Major Events after the Earthquake 2/2

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

April 22nd 13:40~14:00 Tentatively Injected freshwater to SFP via the Fuel Pool Coolant Purification Line.

April 25th 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.

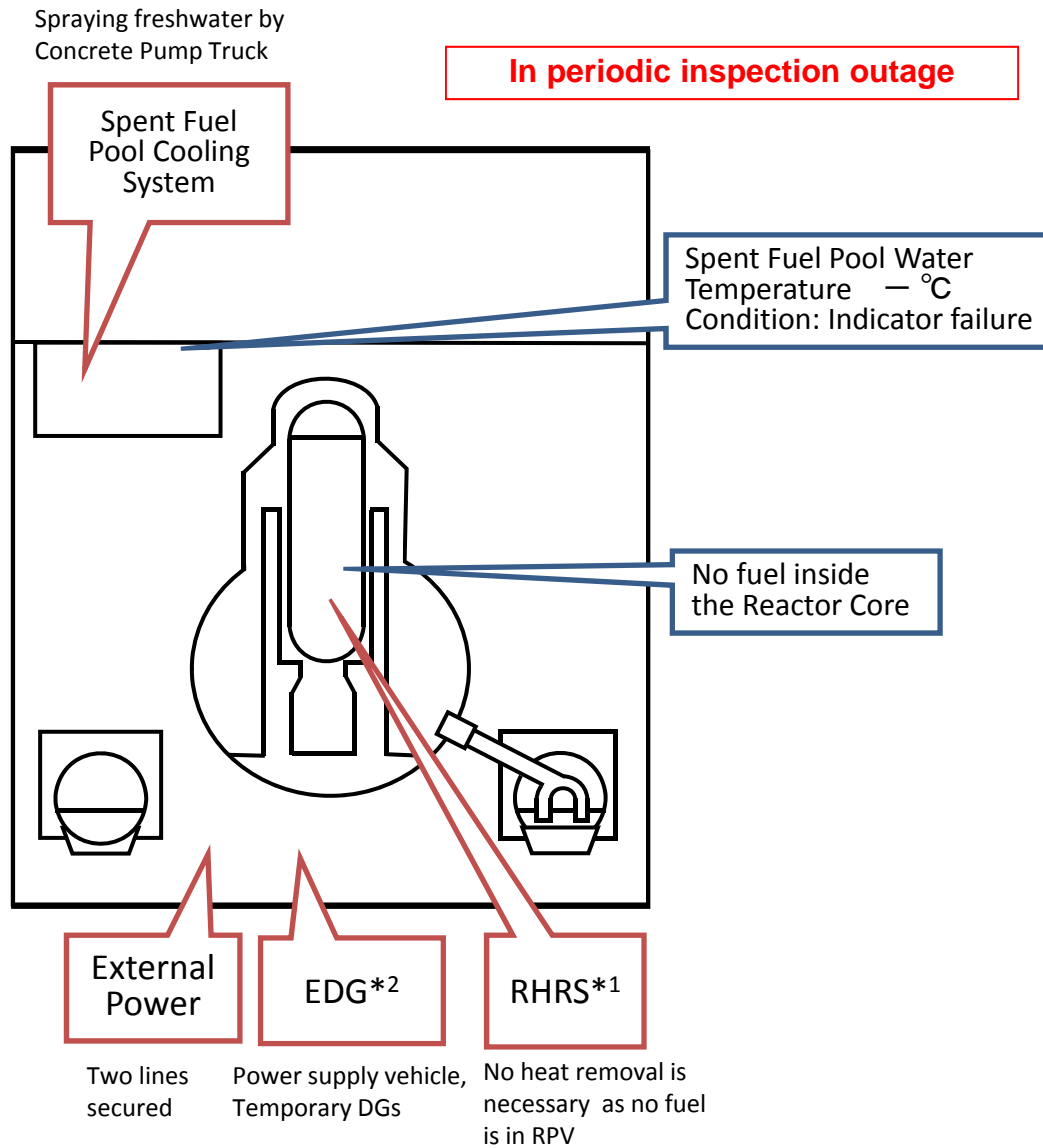
April 30th 11:34 Completed reinforcement work of the power supply both Units 3, 4). (Increasing the voltage from 6.6kv to 66kv)

May 2nd 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.

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

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

Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 4** (As of 12:00 May 5, 2011)



Major Events after the Earthquake

In periodic inspection outage when the earthquake occurred

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

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

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

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

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

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

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

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

March 22nd 10:35 Power Center received electricity.

<Water spray by Concrete Pump Truck (Seawater)>

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

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

March 29th 11:50 Lighting in the Central Control Room was recovered.

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

April 12th 12:00~13:04 Sampled the water in SFP.

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

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

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

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

March 30th 14:04~18:33, April 1st 08:28~14:14, April 3rd 17:14~22:16, April 5th 17:35~18:22, April 7th 18:23~19:40, April 9th 17:07~19:24, April 13th 0:30~6:57, April 15th 14:30~18:29, April 17th 17:39~21:22, April 19th 10:17~11:35, April 20th 17:08~20:31, April 21st 17:14~21:20, April 22nd 17:52~23:53, April 23rd 12:30~16:44, April 24th 12:25~17:07, April 25th 18:15~April 26th 0:26, April 26th 16:50~20:35, April 27th 12:18~15:15

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

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

*1 Residual Heat Removal System

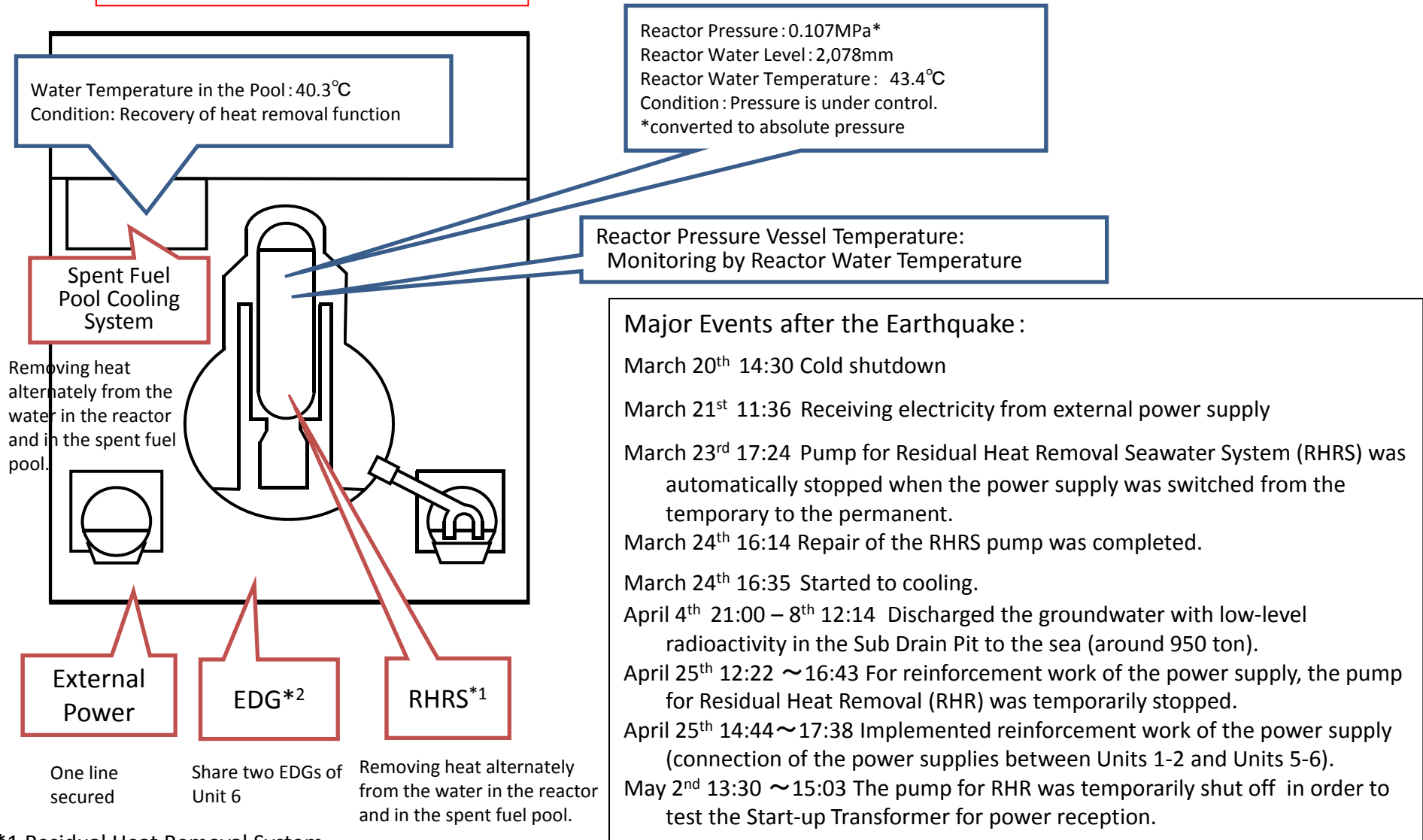
*2 Emergency Diesel Generator

*3 Reactor Pressure Vessel

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

(As of 12:00 May 5, 2011)

In periodic inspection outage



*1 Residual Heat Removal System

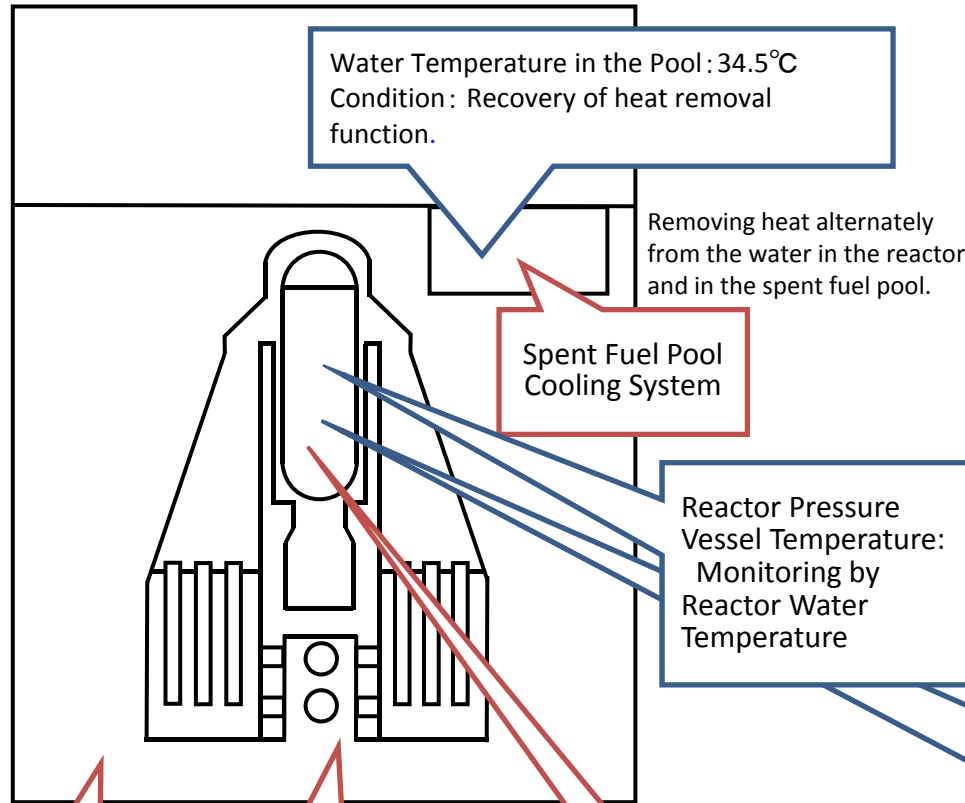
*2 Emergency Diesel Generator

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 6**

(As of 12:00 May 5, 2011)

In periodic inspection outage



Water Temperature in the Pool : 34.5°C
Condition : Recovery of heat removal function.

Removing heat alternately from the water in the reactor and in the spent fuel pool.

Spent Fuel Pool Cooling System

Reactor Pressure Vessel Temperature:
Monitoring by Reactor Water Temperature

External Power

One line secured

EDG*2

Two EDGs

RHRS*1

Removing heat alternately from the water in the reactor and in the spent fuel pool.

Major Events after the Earthquake:

March 20th 19:27 Cold shutdown

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

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

April 19th 11:00~15:00 Transferred stagnant water under the base of the turbine building to the condenser for measuring the amount of it.

April 20th 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 25th 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 1st 14:00 ~17:00 Transferred stagnant water on the basement floor of the turbine building to the temporary tank.

May 2nd 10:00 ~16:00 Transferred stagnant water on the basement floor of the turbine building to the temporary tank.

May 2nd 11:03 ~14:53 The pump for RHR was temporarily shut off in order to test the Start-up Transformer for power reception.

May 3rd 14:00 ~17:00 Transferred accumulated water on the basement floor of the turbine building to the temporary tank.

Reactor Pressure : 0.117MPa*
Reactor Water Level : 2,258mm
Reactor Water Temperature : 26.0°C
Condition : Pressure is under control.
*converted to absolute pressure

*1 Residual Heat Removal System

*2 Emergency Diesel Generator

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)