

April 7, 2011

Nuclear and Industrial Safety Agency

## Seismic Damage Information (the 79th Release)

(As of 15:30 April 7th, 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

- Fresh water injection (Around 36t) to the Spent Fuel Pool of Unit 2 via the Spent Fuel Pool Cooling Line was carried out. (From 13:39 till 14:34 April 7th)
- Fresh water spray (Around 70t) for Unit 3 using Concrete Pump Truck (50t/h) was carried out. (From 06:53 till 08:53 April 7th)

For more information:

NISA English Home Page

<http://www.nisa.meti.go.jp/english/index.html>

April 8, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 80th Release)  
(As of 08:00 April 8th, 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

- Water spray of around 38t of fresh water for Unit 4 using Concrete Pump Truck (50t/h) was carried out. (From 18:23 till 19:40 April 7th)

2. Other injuries

- On the afternoon of 7 April, a worker who was making sandbags at the soil disposal yard (spoil bank) on the north side of Fukushima Dai-ichi NPS got sick and was transported to J-Village for the body survey of contamination of radioactive materials. Being confirmed to be free from contamination, he was taken to the Iwaki City Kyouritsu Hospital by ambulance.

3. Action taken by NISA

- The Local Nuclear Emergency Response Headquarters issued the News Letter No.3 for the residents within the area from 20km to 30km radius. (April 7th)

For more information:

NISA English Home Page

<http://www.nisa.meti.go.jp/english/index.html>

## Regarding the Injection of Nitrogen to the Reactor Containment Vessel

April 6, 2011

Nuclear and Industrial Safety Agency

1. The Tokyo Electric Power Company, Inc. (TEPCO) plans to implement the injection of nitrogen to the Primary Containment Vessel (hereinafter "PCV") as an emergency measure pursuant to the Clause 1, Article 64 of the Act on the Regulation of Nuclear Source Materials, Nuclear Fuel Materials and Reactors (Act No. 166 of 1957) (hereinafter "Nuclear Regulation Act") for the reasons spelt out below:
  - As steam accompanying the removal of decay heat in the reactor core in the Reactor Pressure Vessel (hereinafter "RPV") of Unit 1 of Fukushima Dai-ichi Nuclear Power Station (NPS) currently is being supplied, which is likely to have created a steam atmosphere in PCV, the possibility of combustion of the hydrogen generated in RPV is considered to be small in PCV.
  - However, on condition that the integrity of RPV boundary is lost, there is a concern that continued cooling of the reactor core will cause condensation of the steam in PCV, and possibly reach the inflammability limit caused by ensuing rise in the concentration of hydrogen in PCV, which leaks from RPV.
  - Furthermore, in case the steam in PCV condenses as a result of the cooling of the reactor core, there is the possibility that the pressure in PCV will turn negative, inducing supply of oxygen from outside, and the subsequent rise in partial pressure will lead to the inflammability limit of hydrogen.
  - Therefore, nitrogen will be injected to PCV in order to reduce the possibility of hydrogen combustion in PCV.
  
2. The Nuclear and Industrial Safety Agency (hereinafter "NISA") had requested TEPCO to report on the necessity, method of implementation, safety evaluation, etc. of the nitrogen injection to PCV. The following

points have been confirmed.

- As the steam accompanying the removal of decay heat in the reactor core is being fed in Unit 1, the risk of combustion of the hydrogen generated in RPV is considered to be extremely small. However, the injection of nitrogen to PCV will make it possible to reduce the possibility of hydrogen combustion, which would be a matter of concern when cooling the reactor core.
- Under the conditions of hydrogen and oxygen concentrations in PCV assumed at present, the injection of 98% nitrogen to PCV will reduce the possibility of hydrogen combustion to below the inflammability limit even in the safety-side evaluation where the entire steam in PCV is condensed.
- The downward trend in the monitoring values at the site boundary of the NPS since March 26 is due to the attenuation of radioactive materials. As it seems that the effects of a decline in the pressure in PCV are not detected, it is deemed that there will be no significant increase in leakage of radioactive materials from PCV even if the pressure in PCV were to rise as a result of the nitrogen injection.
- Specific procedures have been established to enable reliable work that will not cause condensation of steam in the PCV. Relevant equipment and organizational setup have been prepared appropriately.
- Even if unexpected hydrogen combustion in the process of the nitrogen injection were assumed, a conservative estimate of its impact in terms of increase in exposure dose at a point 20km from the site would be 0.028mSv for external exposure and 1.3mSv for internal exposure. These values are sufficiently smaller than the value from 10 to 50 mSv for external exposure and from 100 to 500 mSv for internal exposure, which are the benchmarks for in-house evacuation. They, therefore, would not warrant an immediate modification of the current protection measures.

On the basis of the above, NISA deemed that TEPCO's assessment is appropriate with regard to the implementation of nitrogen injection as

an emergency measure pursuant to the Clause 1, Article 64 of the Nuclear Regulation Act, and that the measure was necessary to avert an emergency.

3. NISA has decided to give the directions to TEPCO on the following points with regard to the implementation of nitrogen injection, and to ascertain that all necessary measures are taken in the presence of the Nuclear Safety Inspectors.
  - Properly control plant parameters and take measures appropriately to ensure safety in response to the changes in the parameters.
  - Establish and implement an organizational structure and so on that will ensure the safety of the workers who will engage in the operation.
  - As the possibility of leakage of the air in PCV to the outside due to the nitrogen injection cannot be ruled out, judiciously conduct the monitoring. Furthermore, survey and confirm the impact of the release and spreading of radioactive materials due to the nitrogen injection and strive to disclose information.

April 8, 2011

Nuclear and Industrial Safety Agency

Information of the Situation Caused by the Earthquake Off the Coast of  
Miyagi Prefecture (the 3rd Release)  
(As of 09:30 April 8<sup>th</sup>, 2011)

Around 23:32 (UTC 14:32) April 7<sup>th</sup>, 2011, Earthquake occurred off the coast of Miyagi Prefecture.

All units of Tomari Nuclear Power Station (NPS) (Hokkaido Electric Power Company Inc.) are in operation. All units of Higashidori NPS, Onagawa NPS (Tohoku Electric Power Company Inc.), Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS (Tokyo Electric Power Company Inc.) have been shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake occurred on March 11<sup>th</sup> 2011. As for the Rokkasho Reprocessing Plant (Japan Nuclear Fuel Limited) are under pre-service inspection or shutdown.

The current situation of each nuclear facility is as follows;

- Tomari NPS (According to Hokkaido Electric Power Company Inc.)

Units 1 and 2 was in operation with 90% output due to the captioned earthquake, but has recovered the operation at rated power.

- Higashidori NPS (According to Tohoku Electric Power Company Inc.)

Loss of external power supply happened once and electric power was supplied by using Emergency Diesel Generator (DG). There was no impact on the cooling function, etc. of the Spent Fuel Storage Pool. Thereafter, the external power supply was reported to be recovered at 03:30 April 8<sup>th</sup>. No abnormality has been detected in the readings of ventilation stack monitors and monitoring posts.

- Onagawa NPS (According to the Nuclear Safety Inspector at the site and Tohoku Electric Power Company Inc.)

There are five external power lines, among which one line was under repair. three lines out of the rest four lines shut off. Thereafter, one line that shut off and one line under repair were recovered, and

consequently, from the three lines out of five lines, external power is received. Furthermore, as a result of inspection by eyes, malfunction of an insulator was confirmed in one of the three lines. The line had shut off and currently external power is received from the two lines. There are no unusual data measured at monitoring posts. The Cooling System for the Spent Fuel Pool had shut down once, but everything recovered.

- Fukushima Dai-ichi NPS (According to Tokyo Electric Company Inc.)
  - There are no unusual data measured at monitoring posts.
  - The water injection to the Reactor Pressure Vessels was reported to be being carried out continuously.
- Fukushima Dai-ni NPS (According to Tokyo Electric Company Inc.)
  - There is no unusual data in plant parameters
- Tokai Dai-ni NPP (According to The Japan Atomic Power Company)
  - No unusual event has been confirmed.
- Rokkasho Reprocessing Plant:
  - Loss of external power supply,
  - Electric power is supplied by Emergency DG,
  - There is no impact on the cooling function of the Fuel Storage Pool, etc.
  - Thereafter the external power supply was received at 09:44 April 8<sup>th</sup>.

## 1. The status of operation at Nuclear Power Station

- Tomari NPS (Hokkaido Electric Power Company)

Unit 1: in operation

Unit 2: in operation

Unit 3: in operation

- Higashidori NPS (Tohoku Electric Power Company Inc.)

Unit 1: in outage

- Onagawa NPS (Tohoku Electric Power Company Inc.)

Unit 1: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake

Unit 2: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake

Unit 3: Shutdown since the 2011 off the Pacific coast of Tohoku

## Earthquake

- Fukushima Dai-ichi NPS (Tokyo Electric Company Inc.)
  - Unit 1: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 2: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 3: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 4: in outage
  - Unit 5: in outage
  - Unit 6: in outage
- Fukushima Dai-ichi NPS (Tokyo Electric Company Inc.)
  - Unit 1: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 2: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 3: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
  - Unit 4: Shutdown since the 2011 off the Pacific coast of Tohoku Earthquake
- Tokai Dai-ni NPP (The Japan Atomic Power Company)
  - In outage

## 2. Japan Nuclear Fuel Limited (Rokkasho Village , Kamikita County, Aomori Prefecture)

- Rokkasho Reprocessing Plant
  - Reprocessing facility: in pre-service inspection
  - Uranium enrichment facility: in outage

(Reference)

Seismic Intensity in Japanese Scale of each area;

Max. 6+: Northern part of Miyagi Prefecture

Max. 5-: Hamadori in Fukushima Prefecture



(Contact Person)

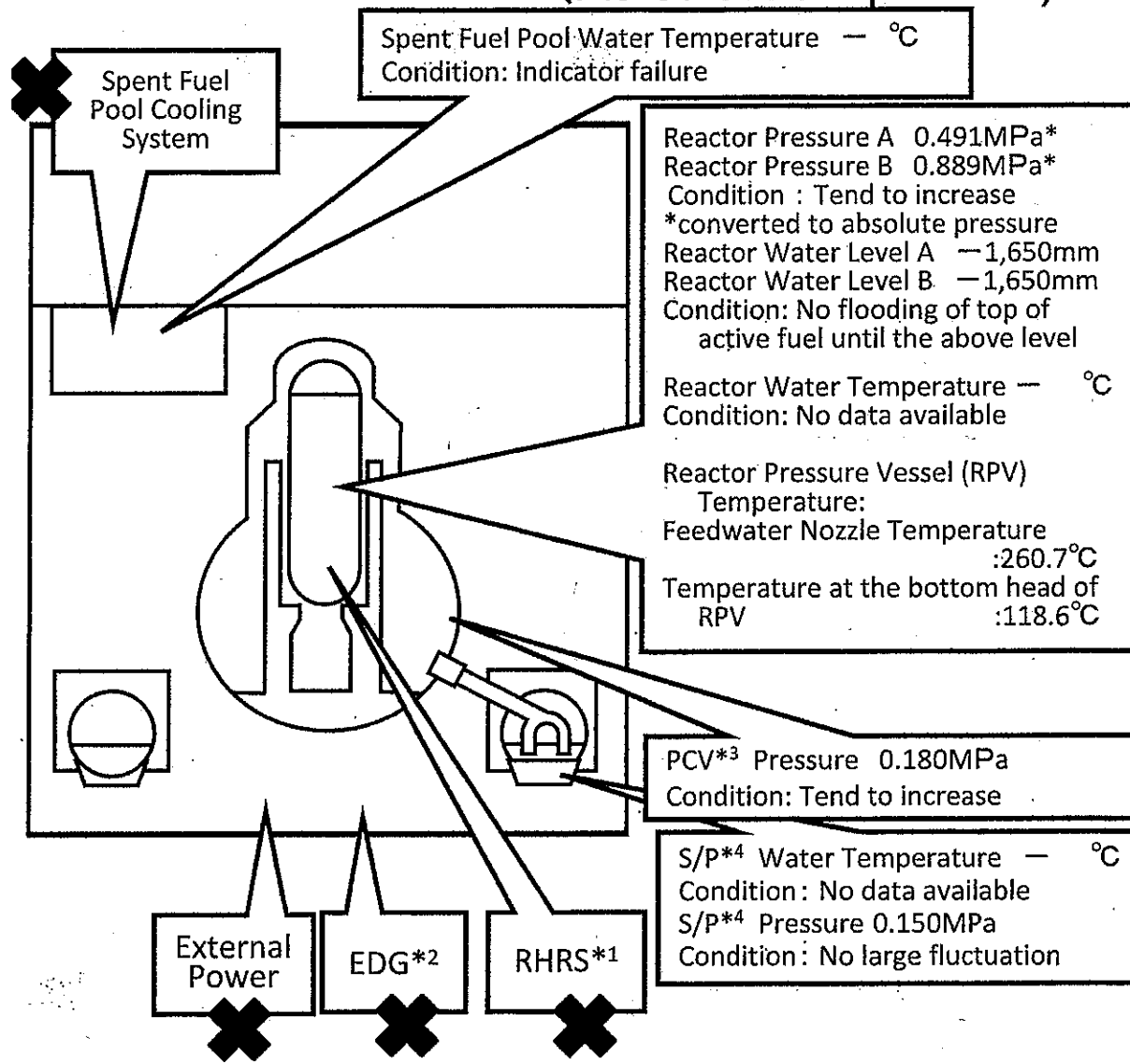
Mr. Toshihiro Bannai

Director, International Affairs Office

NISA/METI

Phone: +81-(0)3-3501-1087

# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 6:00 April 8th, 2011)



## Major Events after the earthquake

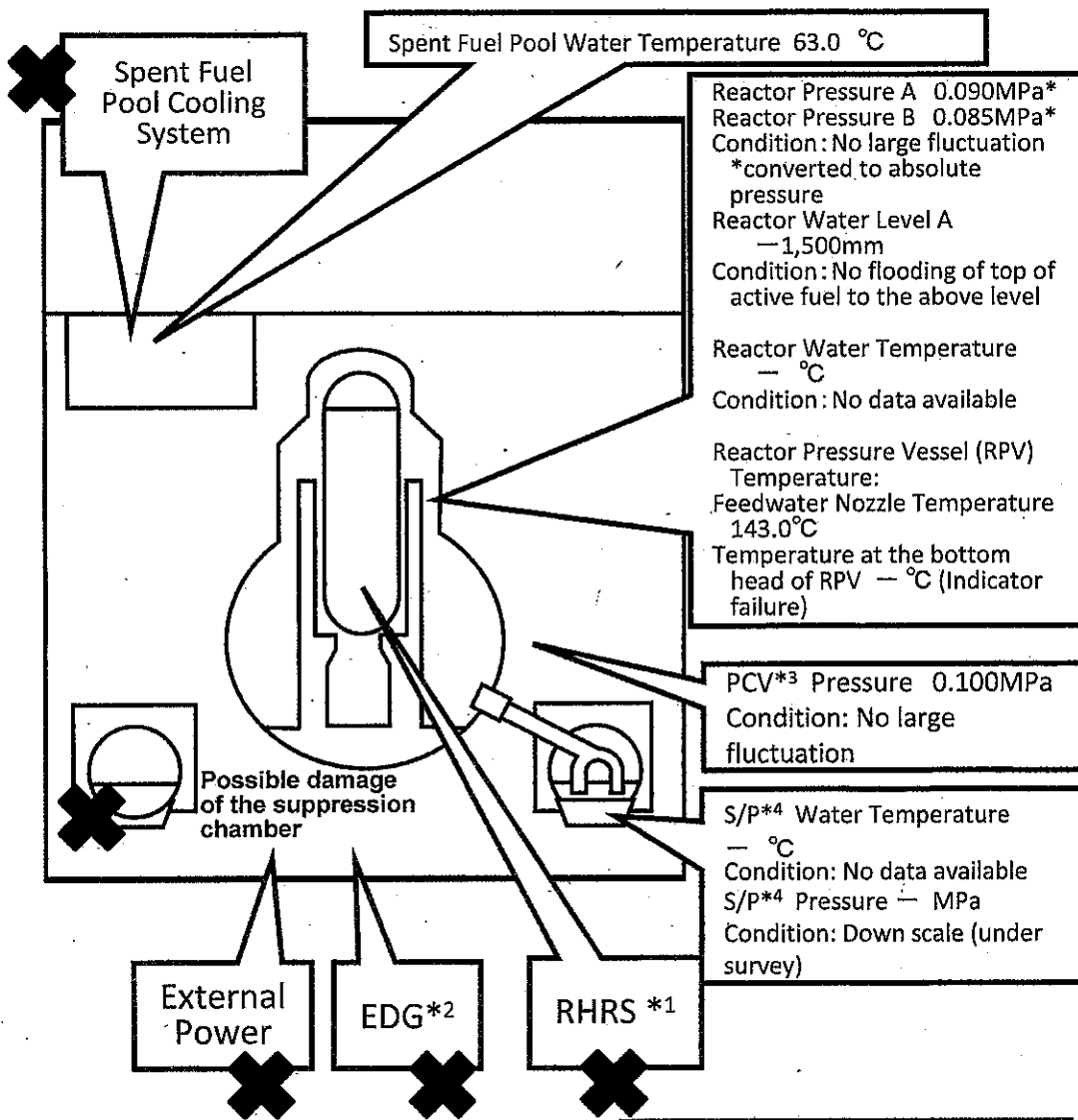
- 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11<sup>th</sup> 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System )
- 12<sup>th</sup> 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 12<sup>th</sup> 10:17 Started to vent.
- 12<sup>th</sup> 15:36 Sound of explosion
- 12<sup>th</sup> 20:20 Started to inject seawater and borated water to core.
- 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)
- 24<sup>th</sup> 11:30 Lighting in the Central Control Room was recovered.
- 25<sup>th</sup> 15:37 Started fresh water injection.
- 29<sup>th</sup> 08:32 Switched to the water injection to the core using the temporary motor-driven pump.
- 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)
- 31<sup>st</sup> 13:03~16:04 Water spray by Concrete Pump Truck (Fresh water)
- 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.
- 3<sup>rd</sup> 13:55 Started to transfer the water from the condenser to CST.
- 6<sup>th</sup> 22:30 Started the operation for the injection of nitrogen to PCV.
- 7<sup>th</sup> 01:31 Confirmed starting the injection of nitrogen to PCV.

\*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 core

# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2 ( As of 6:00 April 8th, 2011 )

## Major Events after the earthquake



- 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11<sup>th</sup> 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System )
- 13<sup>th</sup> 11:00 Started to vent.
- 14<sup>th</sup> 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- 14<sup>th</sup> 16:34 Started to inject seawater to the Reactor Core.
- 14<sup>th</sup> 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 15<sup>th</sup> 00:02 Started to vent.
- 15<sup>th</sup> 06:10 Sound of explosion
- 15<sup>th</sup> around 06:20 Possible damage of the suppression chamber
- 20<sup>th</sup> 15:05~17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- 20<sup>th</sup> 15:46 Power Center received electricity.
- 21<sup>st</sup> 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22<sup>nd</sup>.
- 22<sup>nd</sup> 16:07 Injection of around 18 tons of seawater to SFP
- 25<sup>th</sup> 10:30~12:19 Sea water injection to SFP via FPC
- 26<sup>th</sup> 10:10 Started to inject fresh water to the Reactor Core.
- 26<sup>th</sup> 16:46 Lighting in the Central Control Room was recovered.
- 27<sup>th</sup> 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- 29<sup>th</sup> 16:30~18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
- 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)
- 30<sup>th</sup> 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)
- 1<sup>st</sup> 14:56~17:05 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
- 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.
- 2<sup>nd</sup> 17:10 Started to transfer the water from the condenser to the Condensate Storage Tank (CST).
- 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.
- 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.
- 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.
- 4<sup>th</sup> 11:05~13:37 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
- 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.
- 6<sup>th</sup> around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- 7<sup>th</sup> 13:29~14:34 Freshwater injection to SFP via FPC (Around 36 ton)

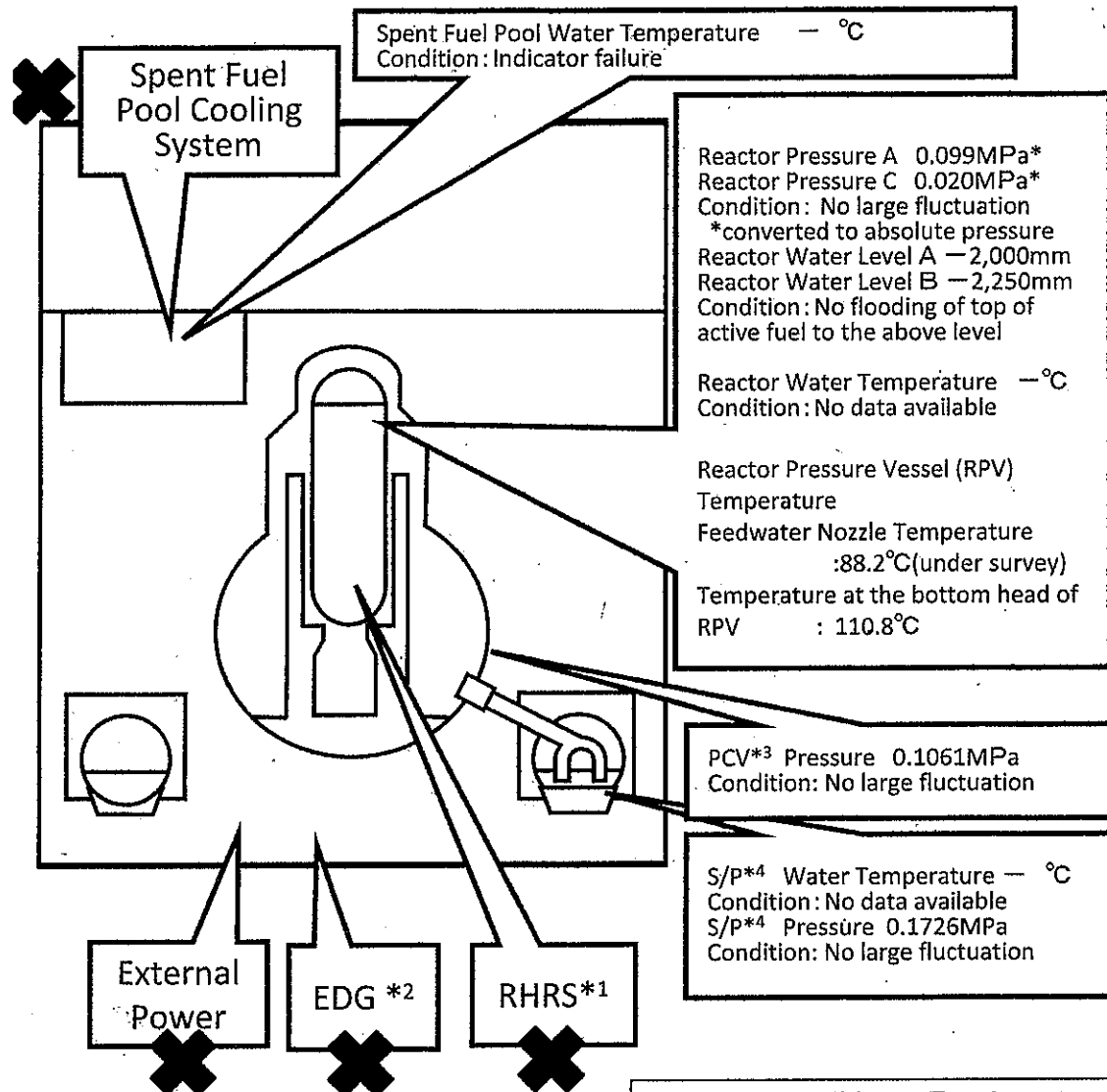
Current Conditions: Fresh water is being injected to the Spent Fuel Pool and the core

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

# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

( As of 6:00 April 8th, 2011 )

## Major Events after the earthquake



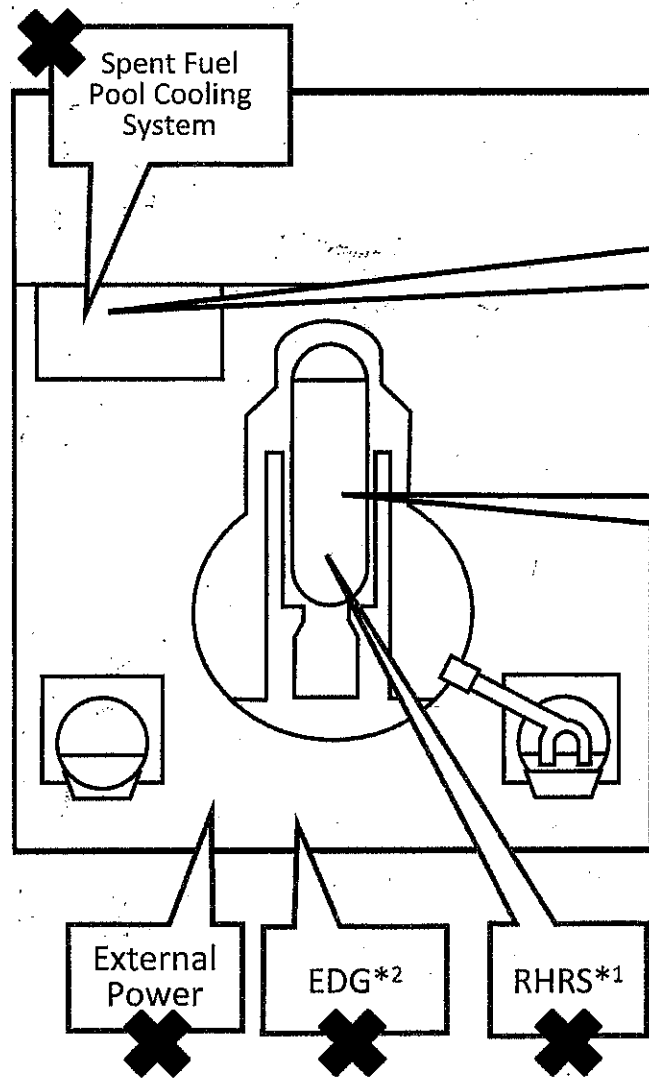
- 11<sup>th</sup> 14:46 Under operation, Automatic shutdown by the earthquake
- 11<sup>th</sup> 15:42 Report based on the Article 10 (Total loss of A/C power)
- 13<sup>th</sup> 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13<sup>th</sup> 08:41 Started to vent.
- 13<sup>th</sup> 13:12 Started to inject seawater and borated water to core.
- 14<sup>th</sup> 05:20 Started to vent.
- 14<sup>th</sup> 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 14<sup>th</sup> 11:01 Sound of explosion
- 16<sup>th</sup> around 08:30 White smoke generated.
- 17<sup>th</sup> 09:48~10:01 Water discharge by the helicopters of Self-Defense Force
- 17<sup>th</sup> 19:05~19:15 Water spray from the ground by High pressure water-cannon trucks of Police
- 17<sup>th</sup> 19:35~20:09 Water spray from the ground by fire engines of Self-Defense Force
- 18<sup>th</sup> before 14:00~14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
- 18<sup>th</sup> ~14:45 Water spray from the ground by a fire engine of the US Military
- 19<sup>th</sup> 00:30 ~01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- 19<sup>th</sup> 14:10 ~ 20<sup>th</sup> 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- 20<sup>th</sup> 11:00 Pressure of PCV rose(320kPa).Afterward fell.
- 20<sup>th</sup> 21:36 ~ 21<sup>st</sup> 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- 21<sup>st</sup> around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
- 22<sup>nd</sup> 15:10 ~16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
- 22<sup>nd</sup> 22:46 Lighting in the Central Control Room was recovered.
- 23<sup>rd</sup> 11:03 ~13:20 Injection of about 35ton of sea water to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- 23<sup>rd</sup> around 16:20 Black smoke generated and was confirmed to be died down at around 23:30 and 24<sup>th</sup> 04:50.
- 24<sup>th</sup> 05:35~16:05 Approximately 120 ton sea water injection to SFP via FPC
- 25<sup>th</sup> 13:28~16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
- 25<sup>th</sup> 18:02 Started fresh water injection to the core.
- 27<sup>th</sup> 12:34~14:36 Water spray by Concrete Pump Truck
- 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)
- 28<sup>th</sup> 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
- 29<sup>th</sup> 14:17~18:18, 31<sup>st</sup> 16:30~19:33, 2<sup>nd</sup> 09:52~12:54, 4<sup>th</sup> 17:03~19:19 Water spray by Concrete Pump Truck (Fresh water)
- 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.
- 7<sup>th</sup> 06:53 ~08:53 Water spray by Concrete Pump Truck (Fresh water) (Around 70 ton)

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

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

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

( As of 6:00 April 8th, 2011 )



In periodic inspection outage

Spent Fuel Pool Water Temperature — °C  
Condition: Indicator failure

No fuel is inside the reactor core

External Power

EDG\*2

RHRS\*1

\*1 Residual Heat Removal System

\*2 Emergency Diesel Generator

\*3 Reactor Pressure Vessel

## Major events after the earthquake

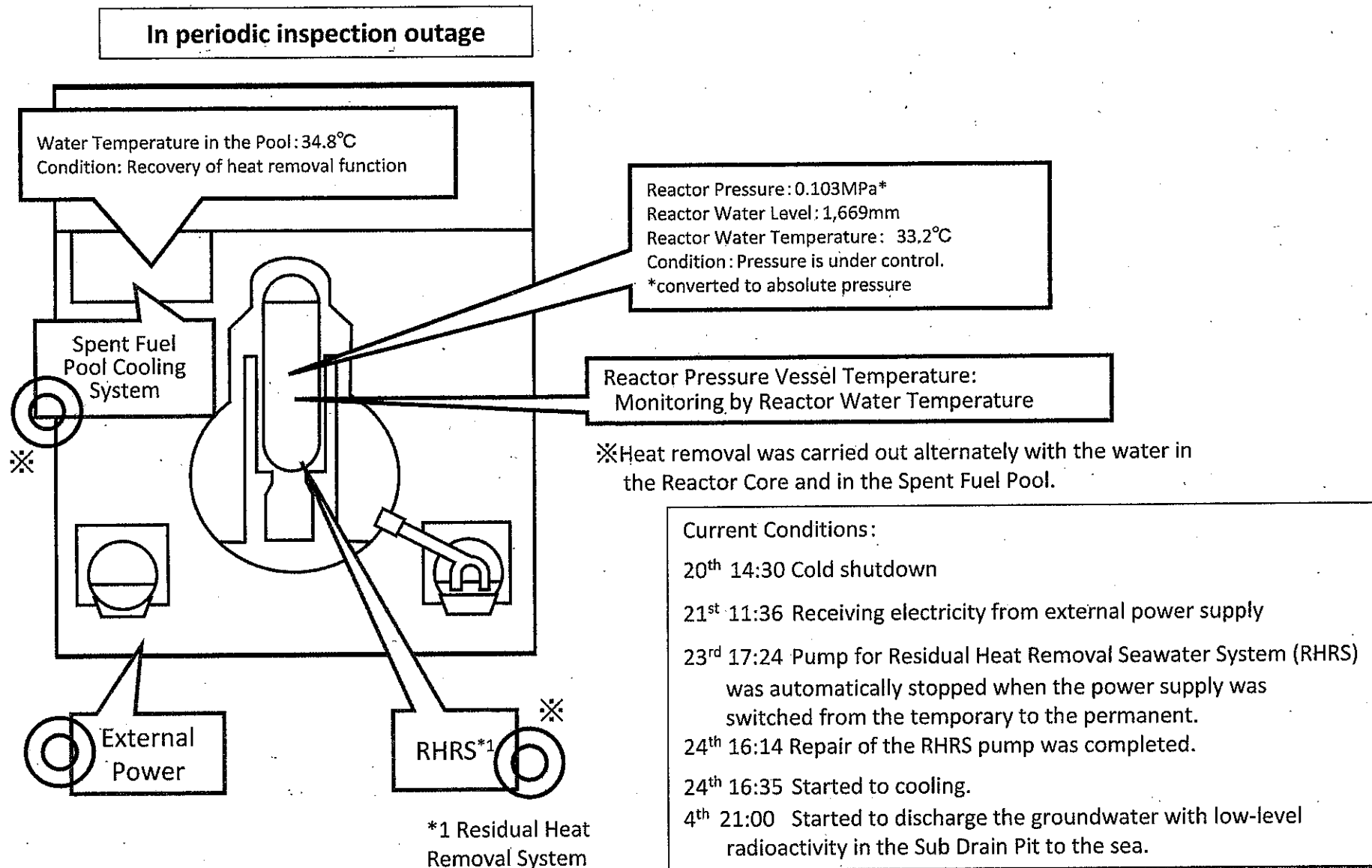
In periodic inspection outage when the earthquake occurred

- 14<sup>th</sup> 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C
- 15<sup>th</sup> 06:14 Confirmed the partial damage of wall in the 4<sup>th</sup> floor.
- 15<sup>th</sup> 09:38 Fire occurred in the 3<sup>rd</sup> floor. (12:25 extinguished)
- 16<sup>th</sup> 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)
- 20<sup>th</sup> 08:21 ~ 09:40 Water spray over SFP by Self-Defense Force
- 20<sup>th</sup> around 18:30 ~ 19:46 Water spray over SFP by Self-Defense Force
- 21<sup>st</sup> 06:37 ~ 08:41 Water spray over SFP by Self-Defense Force
- 21<sup>st</sup> around 15:00 Work for laying cable to Power Center was completed.
- 22<sup>nd</sup> 10:35 Power Center received electricity.
- 22<sup>nd</sup> 17:17 ~ 20:32, 23<sup>rd</sup> 10:00 ~ 13:02, 24<sup>th</sup> 14:36 ~ 17:30, 25<sup>th</sup> 19:05 ~ 22:07, 27<sup>th</sup> 16:55 ~ 19:25 Water spray by Concrete Pump Truck
- 25<sup>th</sup> 06:05 ~ 10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)
- 29<sup>th</sup> 11:50 Lighting in the Central Control Room was recovered.
- 30<sup>th</sup> 14:04 ~ 18:33, 1<sup>st</sup> 8:28 ~ 14:14, 3<sup>rd</sup> 17:14 ~ 22:16, 5<sup>th</sup> 17:35 ~ 18:22, 7<sup>th</sup> 18:23 ~ 19:40 Water spray by Concrete Pump Truck (Fresh water)

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)

# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 ( As of 6:00 April 8th, 2011 )



# Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 ( As of 6:00 April 8th, 2011 )

