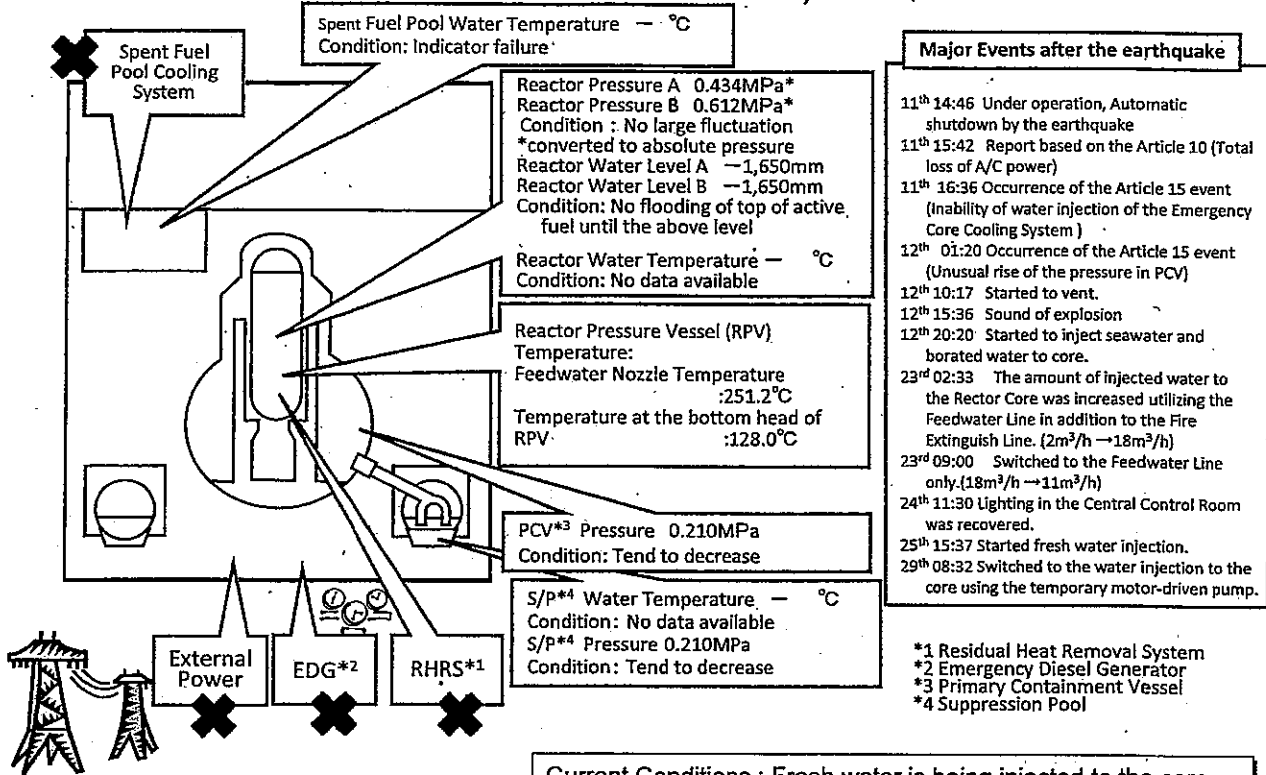


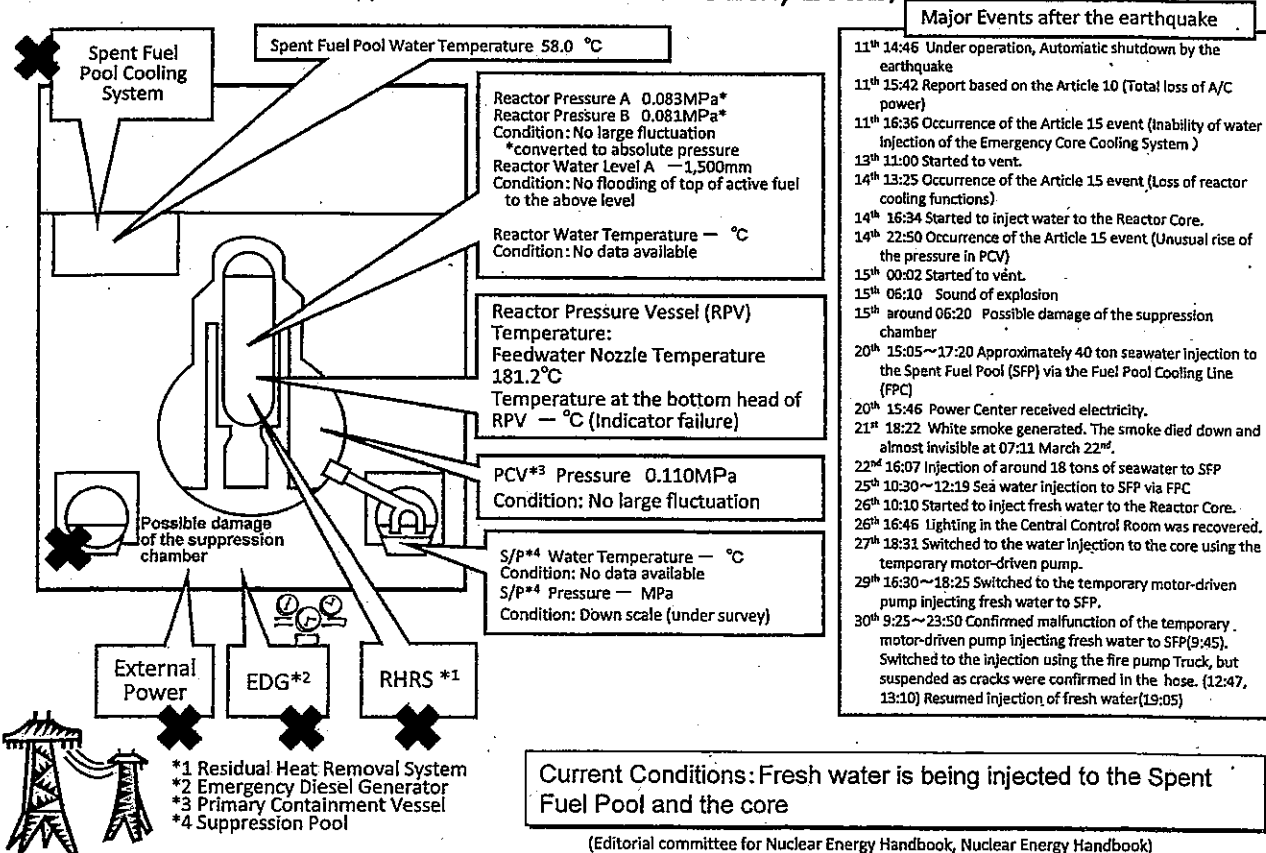
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 06:00 March 31th, 2011)



Current Conditions : Fresh water is being injected to the core

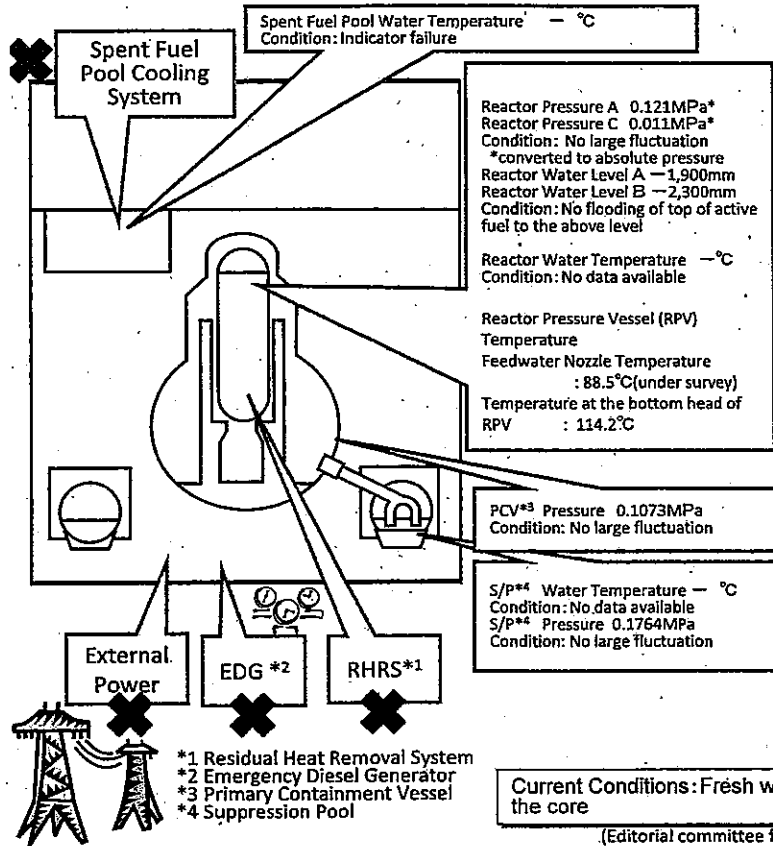
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2 (As of 06:00 March 31th, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

(As of 06:00 March 31st, 2011)



Major Events after the earthquake.

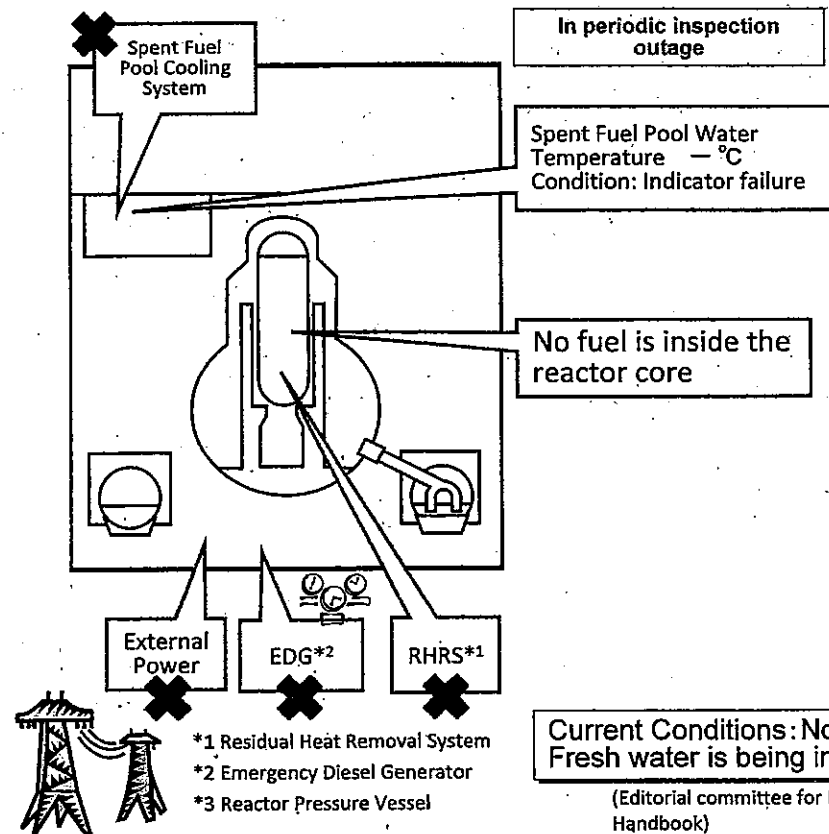
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13th 08:41 Started to vent.
- 13th 13:12 Started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

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

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4

(As of 06:00 March 31st, 2011)



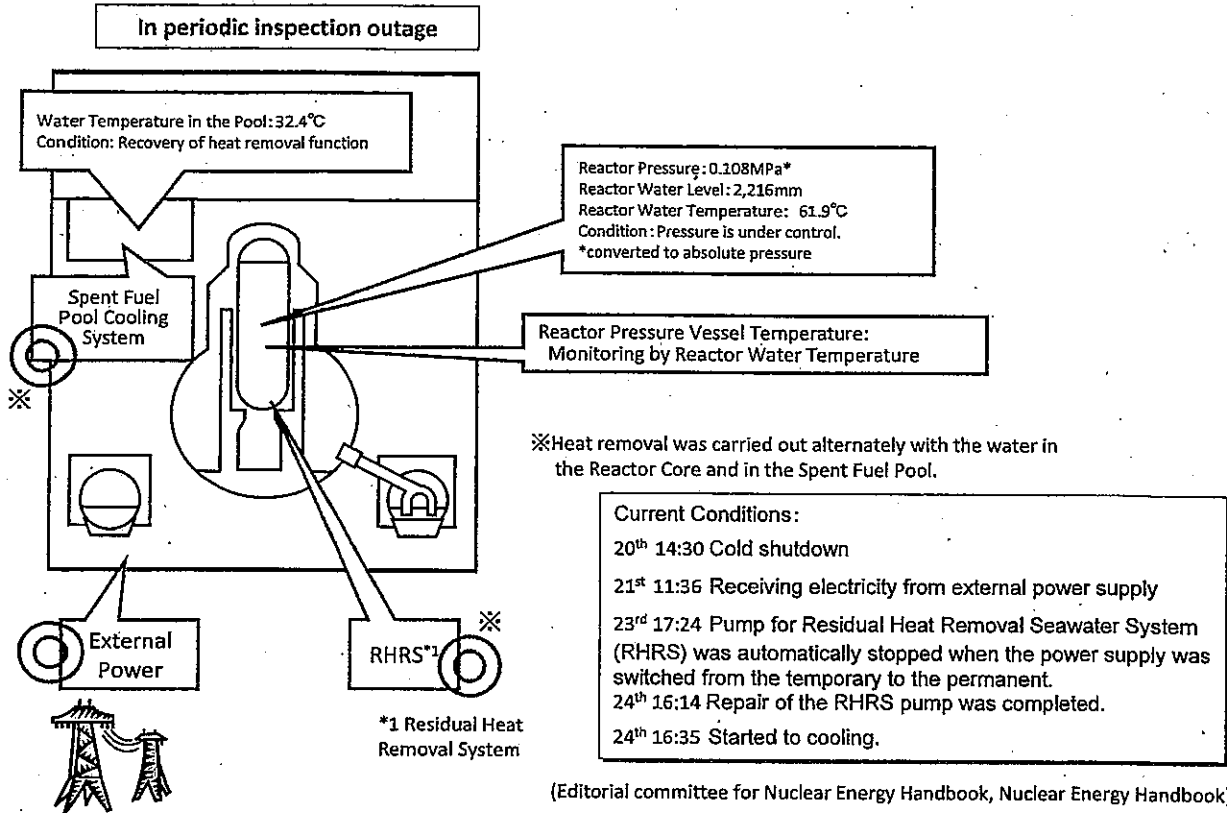
Major events after the earthquake

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

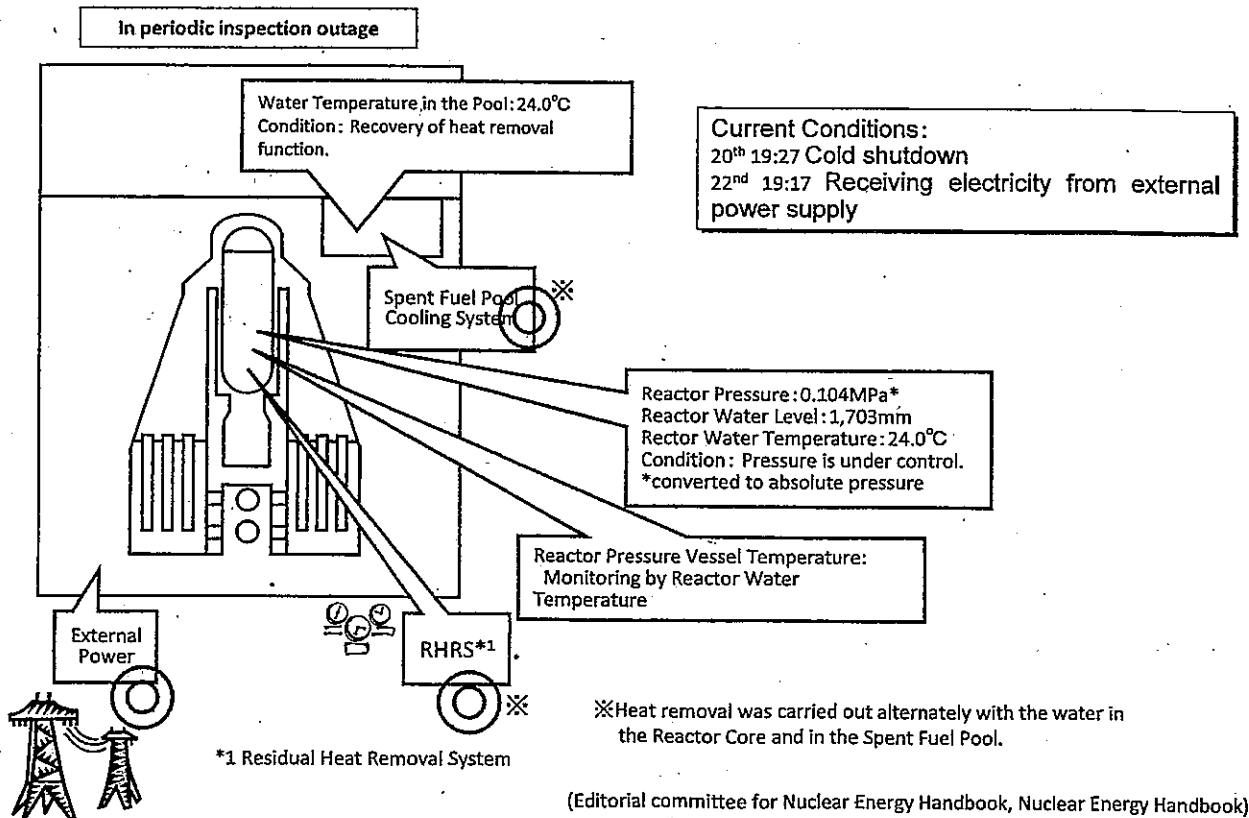
Current Conditions: No fuel is in RPV#3. Fresh water is being injected to the Spent Fuel Pool.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 06:00 March 31th, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 06:00 March 31th, 2011)



March 31, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 64th Release)
(As of 08:30 March 31st, 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

- As the malfunction of the temporary motor-driven pump, which had been injecting to the Spent Fuel Pool of Unit 2 since 09:25 March 30th, was confirmed at 09:45 March 30th, the injection pump was switched to the Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was suspended. The injection of fresh water resumed at 19:05 March 30th. (Till 23:50 March 30th)
- In order to prepare for transfer the stagnant water on the basement floor of turbine building of Unit 2 to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water. (From 16:45 March 29th)
- In order to prepare for transfer the stagnant water on the basement floor of turbine building of Unit 3 to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water. (From 17:40 March 30th)
- Spray of fresh water (Around 140t) to the Spent Fuel Pool of Unit 4 using Concrete Pump Truck was carried out. (From 14:04 till 18:33 March 30th)
- On March 28th, the stagnant water was confirmed in the Main Building of Radioactive Waste Treatment Facilities. As the results of the radioactive nuclide analysis, the radioactivity of total amount of 1.2×10^1

Bq/cm³ in the controlled area and that of 2.2×10^1 Bq/cm³ in the non-controlled area were detected in March 29th.

- Fukushima Dai-ni NPS

- Around 17:56 March 30th, a smoke was rising from the power distribution panel on the first floor of the turbine building of Unit 1. However, when the power supply was turned off, the smoke stopped to generate. It was judged by the fire station at 19:15 that this event was caused by the malfunction of the power distribution panel and was not a fire.
- The Residual Heat Removal System (B) to cool the reactor of Unit 1 became to be able to receive power from the emergency power supply as well as the external power supply. This resulted in securing the backup power supplies (emergency power supplies) of Residual Heat Removal System (B) for all Units. (14:30 March 30th)

2. Action taken by NISA

(March 29th)

- The "Team to Assist the Lives of the Nuclear Accident Sufferers" established to strengthen the system to assist the nuclear accident sufferers carried out visits etc. to relevant cities, towns and villages.

For more information:

NISA English Home Page

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

March 31, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 65th Release)
(As of 15:00 March 31st, 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 transfer the stagnant water on the basement floor of turbine building of Unit 1 to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water. (From 12:00 March 31st)
- Spray of fresh water over to the Spent Fuel Pool of Unit 1 using Concrete Pump Truck was carried out. (13:03 March 31st)
- The transfer of the water in the Condensate Storage Tank of Unit 3 to the Surge Tank of Suppression Pool Water was completed. (From 17:40 March 28th till 08:37 March 31st)
- The collected water in the vertical parts of the trenches outside of the turbine building of Unit 1 was transferred to the storage tank in the Main Building of Radioactive Waste Treatment Facilities by the temporary pump. Thereafter the water level from the top went down from approximately -0.14m to approximately -1.14m. (From 09:20 till 11:25 March 31st)

< Possibility on radiation exposure >

1. Exposure of residents

In Fukushima Prefecture, up until March 29th, the screening was done to 106,095 people. Among them, 102 people were at the level above the

100,000cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000cpm and below, and there was no case which affects health.

2. Exposure of workers

As for the workers conducting operations in Fukushima Dai-ichi NPS, the total number of people who were at the level of exposure more than 100mSv becomes 20.

For more information:

NISA English Home Page

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

Fukushima Di-ichi Nuclear Power Station Major Parameters of the Plant (As of 6:00, March 31th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 133 ℓ/min (As of 8:32, March 29th) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water :150 ℓ/min (As of 14:00, March 30th) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 116 ℓ/min (As of 14:39, March 29th) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 4:00, March 31th)	Fuel range A : -1,500mm (As of 4:00, March 31th)	Fuel range A:-1,900mm Fuel range B:-2,300mm (As of 4:40, March 31th)	#2	Shutdown range measurement 2,216mm (As of 6:00, March 31th)	Shutdown range measurement 1,703mm (As of 6:00, March 31th)
Reactor pressure	0.333MPa g(A) 0.511MPa g(B) (As of 4:00, March 31th)	-0.018MPa g (A) -0.020MPa g (B) (As of 4:00, March 31th)	0.020MPa g (A) -0.090MPa g (C) (As of 4:40, March 31th)	#2	0.007MPa g (As of 6:00, March 31th)	0.003MPa g (As of 6:00, March 31th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	61.9°C (As of 6:00, March 31th)	24.0°C (As of 6:00, March 31th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 251.2°C Temperature at the bottom head of RPV: 128.0°C (As of 4:00, March 31th)	Feedwater nozzle temperature: 181.2°C Temperature at the bottom head of RPV: #1 (As of 4:00, March 31th)	Feedwater nozzle temperature: 88.5°C (under survey) Temperature at the bottom head of RPV: 114.2°C (As of 4:40, March 31th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.210MPa abs S/C: 0.210MPa abs (As of 4:00, March 31th)	D/W: 0.110MPa abs S/C:Down scale (under survey) (As of 4:00, March 31th)	D/W: 0.1073MPa abs S/C: 0.1764MPa abs (As of 4:40, March 31th)	#2		
CAMS*3	D/W: 4.17×10^1 Sv/h S/C: 1.82×10^1 Sv/h (As of 4:00, March 31th)	D/W: 3.87×10^1 Sv/h S/C: 1.19×10^0 Sv/h (As of 4:00, March 31th)	D/W: 2.57×10^1 Sv/h S/C: 1.05×10^0 Sv/h (As of 4:40, March 31th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	#2		
Spent Fuel Pool water	#1	58.0°C (As of 4:00, March 31th)	#1	#1	32.4°C (As of 6:00, March 31th)	24.0°C (As of 6:00, March 31th)
FPC skimmer level	4,500mm (As of 4:00, March 31th)	5,600mm (As of 4:00, March 31th)	#1	5,200mm (As of 4:40, March 31th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)			Receiving external power supply (P/C4D)		Receiving external power supply

Other information	Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition	Common pool: about 32 °C (As of 8:20, March 30th)	Unit5:SHC*5 mode (From 22:01 March 29th)	Unit6:Non thermal mode (From 9:58 March 30th)
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Pressure conversion	$\text{Gauge pressure (MPa g)} = \text{Absolute pressure (MPa abs)} - \text{Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)}$ $\text{Absolute pressure (MPa abs)} = \text{Gauge pressure (MPa g)} + \text{Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)}$
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- *1 D/W : Dry Well
- *2 S/C : Suppression Chamber
- *3 CAMS : Containment Atmospheric Monitoring System
- *4 P/C : Power Center
- *5 SHC : Shutdown Cooling

- #1 : Measuring instrument malfunction
- #2 : Except from data collection