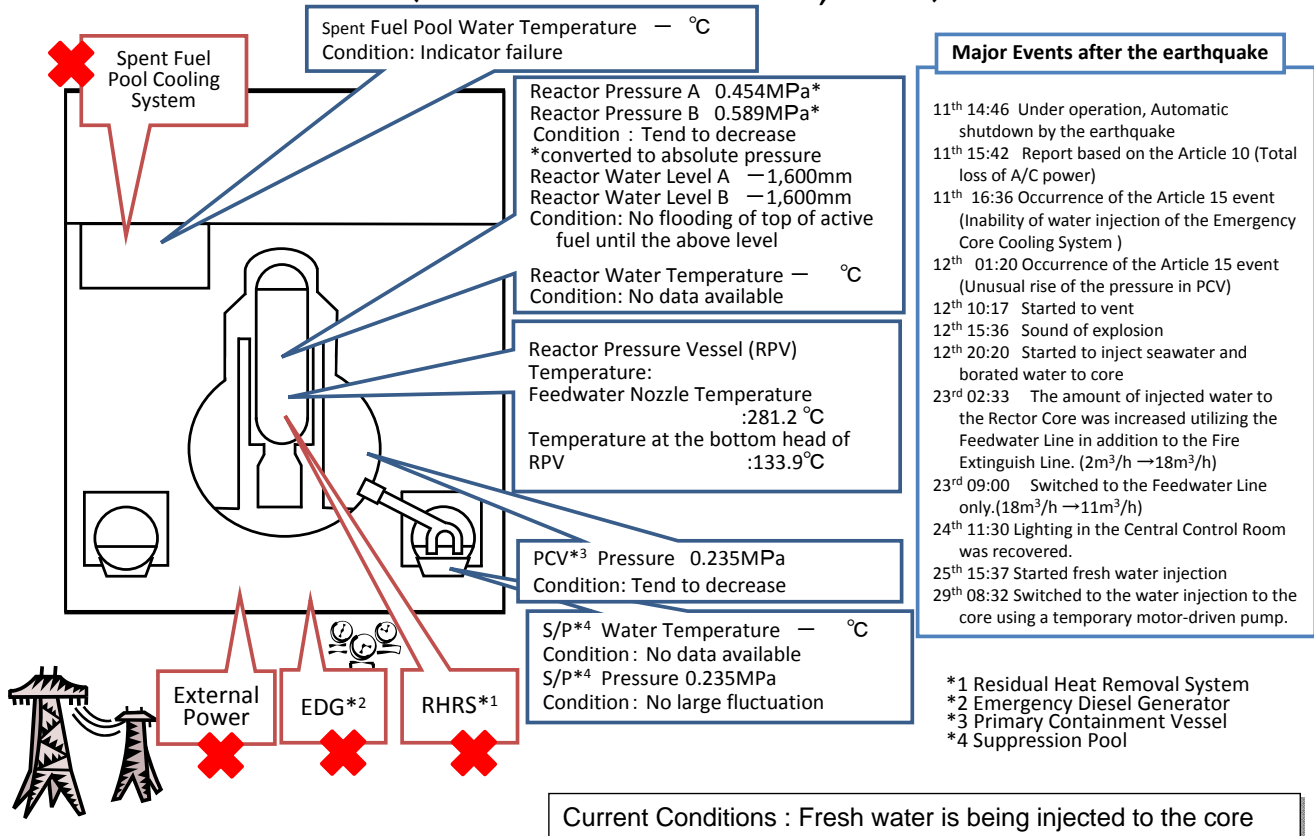


Conditions of Fukushima Dai-ichi Nuclear Power Station **Unit 1**

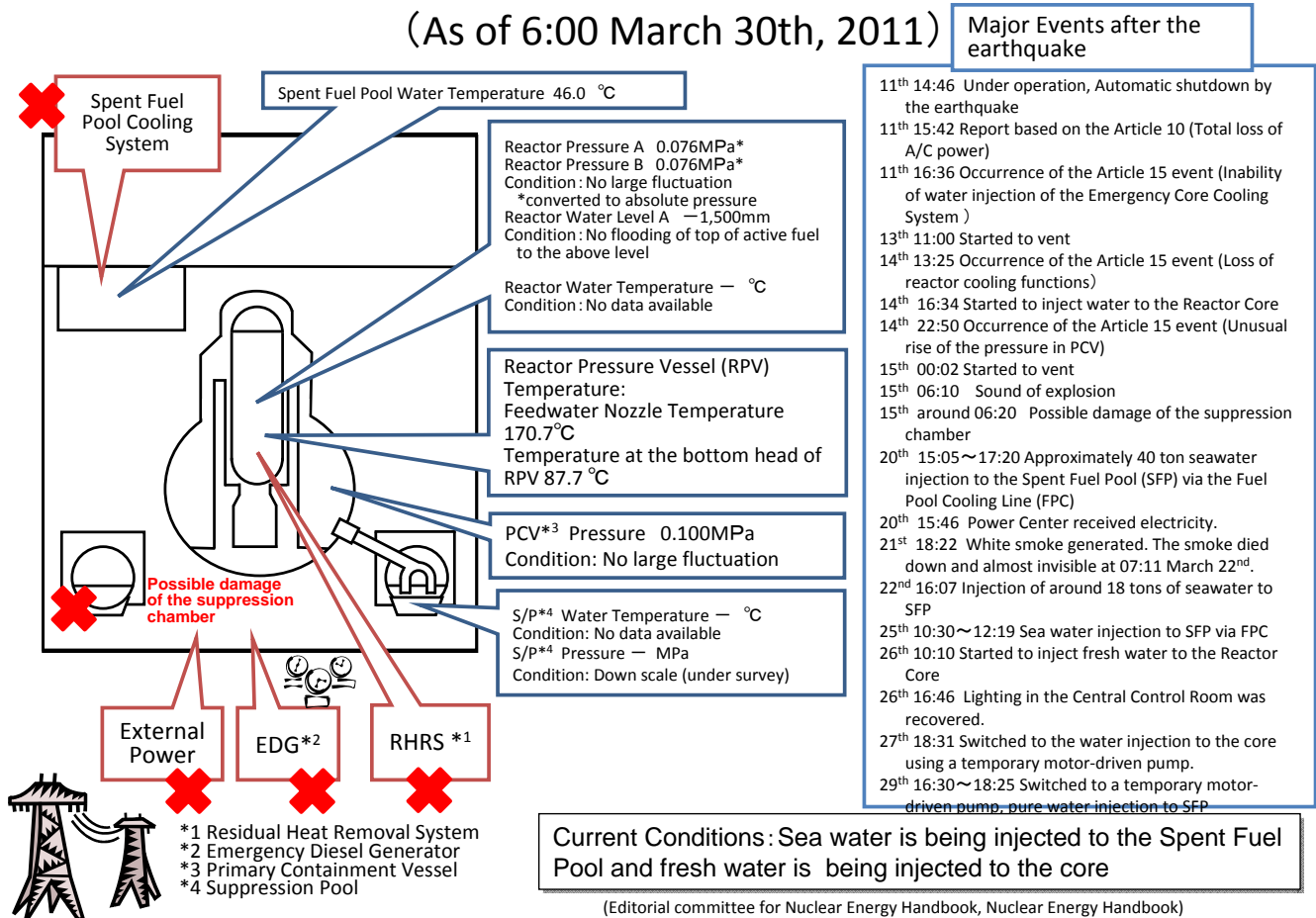
(As of 6:00 March 30th, 2011)



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

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

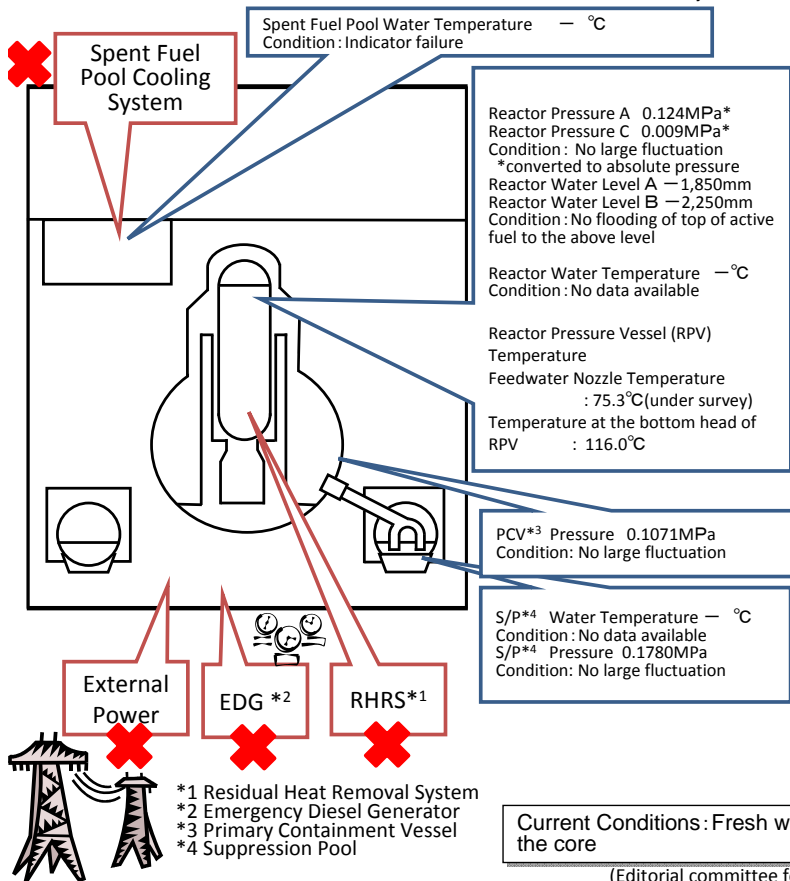
(As of 6:00 March 30th, 2011)



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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

(As of 6:00 March 30th, 2011)



Major Events after the earthquake

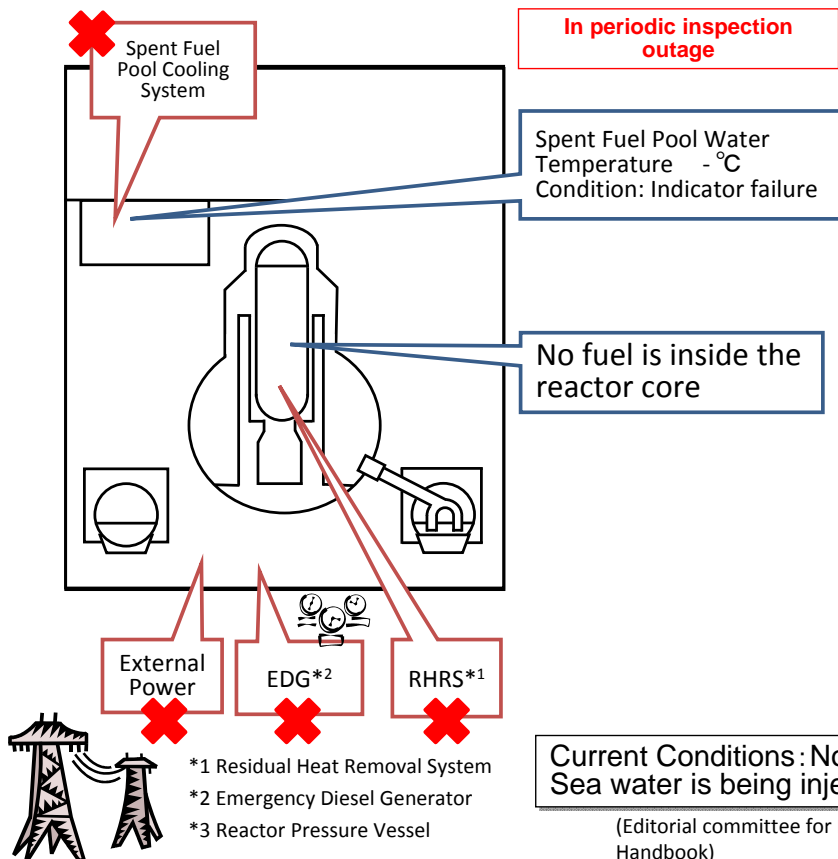
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13th 08:41 Started to vent
- 13th 13:12 Started 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 16:20 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 Freshwater 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 6:00 March 30th, 2011)



Major events after the earthquake

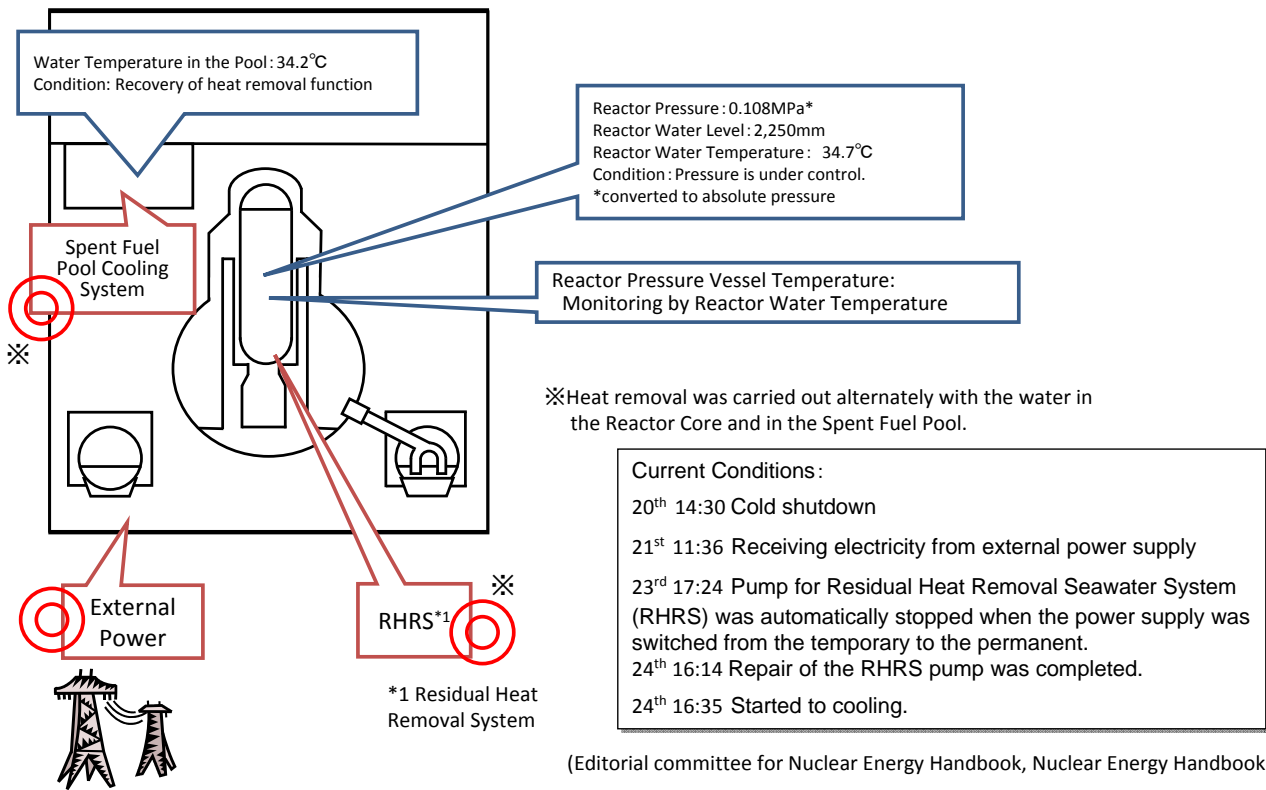
- In periodic inspection outage when the earthquake occurred.
- 14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C
- 15th 06:14 Partial damage of wall in the 4th floor confirmed
- 15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
- 16th 05:45 Fire occurred. TEPCO couldn't confirm 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.

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

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

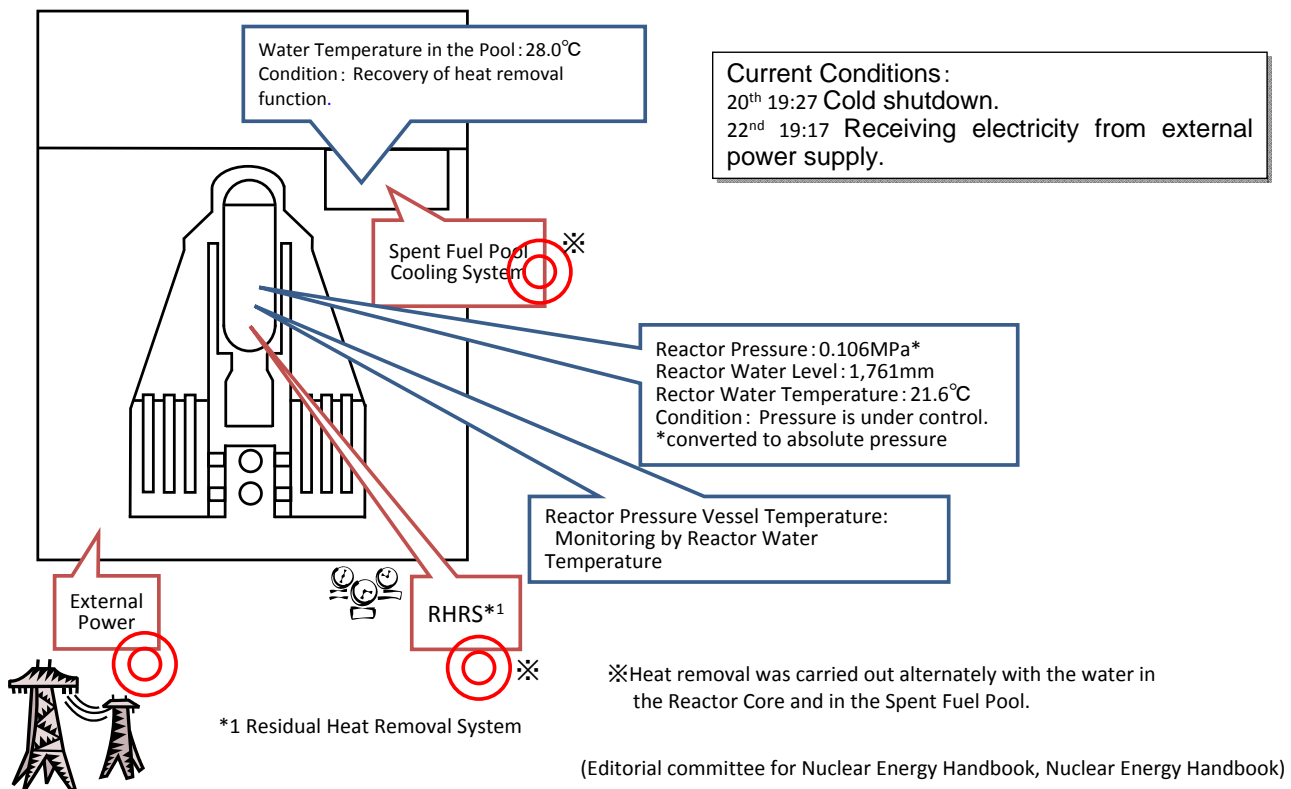
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 6:00 March 30th, 2011)

In periodic inspection outage



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 6:00 March 30th, 2011)

In periodic inspection outage



March 30, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 62nd Release)

(As of 08:00 March 30th, 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 seawater injection by The Fire Pump Truck to the Spent Fuel Pool of Unit 2 was switched to freshwater injection by temporary motor-driven pump. (From 16:30 till 18:25 March 29th)

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 30th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting freshwater via the Water Supply Line. Flow rate of injected water : 133 ℓ/min (As of 8:32, March 29th) temporary measuring instrument	Injecting freshwater via the Fire Extinguish Line. Flow rate of injected water :117 ℓ/min (As of 0:12, March 28th) temporary measuring instrument	Injecting freshwater 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 : -1,600mm Fuel range B : -1,600mm (As of 4:00, March 30th)	Fuel range A : -1,500mm (As of 4:00, March 30th)	Fuel range A:-1,850mm Fuel range B:-2,250mm (As of 3:50, March 30th)	#2	Shutdown range measurement 2,250mm (As of 6:00, March 30th)	Shutdown range measurement 1,761mm (As of 6:00, March 30th)
Reactor pressure	0.353MPa g(A) 0.488MPa g(B) (As of 4:00, March 30th)	-0.025MPa g (A) -0.025MPa g (B) (As of 4:00, March 30th)	0.023MPa g (A) -0.092MPa g (C) (As of 3:50, March 30th)	#2	0.007MPa g (As of 6:00, March 30th)	0.005MPa g (As of 6:00, March 30th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	34.7°C (As of 6:00, March 30th)	21.6°C (As of 6:00, March 30th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 281.2°C Temperature at the bottom head of RPV: 133.9°C (As of 4:00, March 30th)	Feedwater nozzle temperature: 170.7°C Temperature at the bottom head of RPV: 87.7°C (As of 4:00, March 30th)	Feedwater nozzle temperature: 75.3°C (under survey) Temperature at the bottom head of RPV: 116.0°C (As of 3:50, March 30th)	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: 0.235MPa abs S/C: 0.235MPa abs (As of 4:00, March 30th)	D/W: 0.100MPa abs S/C:Down scale (under survey) (As of 4:00, March 30th)	D/W: 0.1071MPa abs S/C: 0.1780MPa abs (As of 3:50, March 30th)	#2		
CAMS*3	D/W: 3.32×10^1 Sv/h S/C: 1.91×10^1 Sv/h (As of 4:00, March 30th)	D/W: 4.00×10^1 Sv/h S/C: 1.28×10^0 Sv/h (As of 4:00, March 30th)	D/W: 2.76×10^1 Sv/h S/C: 1.11×10^0 Sv/h (As of 3:50, March 30th)	#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	46.0°C (As of 4:00, March 30th)	#1	#1	34.2°C (As of 6:00, March 30th)	28.0°C (As of 6:00, March 30th)
FPC skimmer level	4,500mm (As of 4:00, March 30th)	5,700mm (As of 4:00, March 30th)	#1	5,250mm (As of 3:50, March 30th)	#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 8:30, March 29th)	Unit5:SHC*5 mode (From 22:01 March 29th)	Unit6:SHC*5 mode (From 10:16 March 29th)
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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

March 30, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 63rd Release)
(As of 15:00 March 30th, 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 Condenser of Unit 1 was confirmed to be almost filled with water, pumping out of the water was stopped. (07:30 March 29th)
- As the temporary motor-driven pump injecting to the Spent Fuel Pool of Unit 2 was confirmed to be in a bad condition, the injection pump was switched to Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was currently being suspended.
- Freshwater injection to the Spent Fuel Pool of Unit 4 using Concrete Pump Truck was started. (14:04 March 30th)

2. Action taken by NISA

- Directions as to implement the emergency safety measures for the other power stations considering the accident of Fukushima Dai-ichi and Dai-ni NPSs in 2011 was issued and handed to each electric companies and the relevant organization.
- In order to strengthen the system to assist the nuclear accident sufferers, the "Team to Assist the Lives of the Nuclear Accident Sufferer" headed by Minister of Economy, Trade and Industry was established.

For more information:

NISA English Home Page

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