

# Plant Status of Fukushima Daiichi Nuclear Power Station

April 13, 2012

Tokyo Electric Power Company

## <1. Status of the Nuclear Reactor and the Primary Containment Vessel> (As of April 13 at 11:00 am)

Unit	Status of water injection		Reactor pressure vessel bottom temp.	Pressure of primary containment vessel <sup>*1</sup>	Hydrogen density of primary containment vessel
Unit 1	Injecting Fresh water	Core Spray System: Approx.1.7 m <sup>3</sup> /h	25.9 °C	106.0 kPa abs	A system:0.11 vol% B system:0.13 vol%
		Feed Water System: Approx.4.7 m <sup>3</sup> /h			
Unit 2	Injecting Fresh water	Core Spray System: Approx.6.0 m <sup>3</sup> /h	53.5 °C	28.99 kPa g	A system:0.20 vol% B system:0.19 vol%
		Feed Water System: Approx.2.9 m <sup>3</sup> /h			
Unit 3	Injecting Fresh water	Core Spray System: Approx.5.2 m <sup>3</sup> /h	55.4 °C	0.30 kPa g	A system:0.19 vol% B system:0.17 vol%
		Feed Water System: Approx.1.8 m <sup>3</sup> /h			

\*1: absolute pressure (kPa abs) = gauge pressure (kPa g) + atmosphere pressure (normal atmosphere pressure 101.3 kPa).

1:00 am on April 13

A TEPCO employee found the measurement flow volume of the nitrogen injection line to PCV of Unit 1-3 and RPV decreased. At 1:30 am, we found the nitrogen supply system (nitrogen/gas separator B) was stopped due to failure alert of compressor. At 3:10 am, we started a stand-by nitrogen gas separator and we restarted the nitrogen supply to PCV of Unit 1-3 and RPV at 3:46 am. As for stopped nitrogen/gas separator B, we started to operate at 4:04 am. At 4:20, we started nitrogen injection from nitrogen/gas separator B. At 9:25, we stopped the operation of a stand-by nitrogen gas separator since no problem was found as a result of trial operation with regard to separator and compressor. We continue nitrogen injection with nitrogen supply system B.No significant changes of pressure of PCV of Unit 1-3 and density of hydrogen are confirmed

## <2. Status of the Spent Fuel Pool > (As of April 13 at 11:00 am)

Unit	Cooling type	Status of cooling	Temperature of water in Spent Fuel Pool
Unit 1	Circulating Cooling System	Under operation	17.5 °C
Unit 2	Circulating Cooling System	Under operation	18.0 °C
Unit 3	Circulating Cooling System	Under operation	17.8 °C
Unit 4	Circulating Cooling System	Shutdown	28 °C *

\* The latest data was shown because of lack of data due to suspension of spent fuel pool. (as of 11:00, April 12)

[Unit 4] 2:44 pm on April 12, 2012... An alarm "excessive leaking flow amount from heat exchange unit" went off and the pumps of the system automatically stopped. As a result of site investigation on leakage from the system, the following events were confirmed. We are investigating their relevance with the automatic stop of cooling system of the spent fuel pool. The water temperature of the spent fuel pool was 28 and the temperature rising rate was estimated at approx. 0.5 /h.

During checking leakage from the system, at around 3:04 pm on the same day, we confirmed that hydrazine was leaking at a rate of one drop per 7 seconds from a check-valve installed in the hydrazine injection pipes of the cooling system. We closed the check-valve and the leakage stopped. (We injected hydrazine from 1:35 pm to 2:56 on the same day.) The amount of leaked hydrazine below the check-valve was approx. 20 cc (approx. 10cm x 20 cm 1 mm).

At 3:10 pm on the same day, at the east side of the 1 floor of Unit 4 Waste Treatment Building, we found water leaking at a rate of 1 drop per 2 seconds from the pipe flange of alternative cooling line for the spent fuel pool. Afterwards, at around 3:55 pm on the same day, we retorqued the flange and confirmed that the leakage stopped. We confirmed that the leakage was approx. 40 liters (approx. 1m x 2m x 1-2 cm) around the funnel near the flange. The leaked hydrazine and water were only in the Waste Treatment Building and we confirmed no other leakage than these two places after the investigation.

April 13 Afterwards, we estimated that the pressured system after continuous injection of hydrazine caused the leakage when alternative cooling system of spent fuel pool stopped. Flange packing of the primary system which the leakage happened in was replaced. The cause of suspension of the alternative cooling system of spent fuel pool was investigated, but no other significant matter was found excepting air-contamination in the pipelines of flowmeter. Considering the result of investigation, we started the system to confirm operating condition at 16:04. Water temperature when started was 35 .

**<3. Status of Water Transfer from the Basement Floor of the Turbine Building etc.>**

Unit	Draining water source	Place transferred	Status
Unit 2	Unit 2 T/B	Central Radioactive Waste Treatment Facility [Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)]	4/11 9:26 – 4/13 10:04 Transferred
	Unit 2 T/B	Central Radioactive Waste Treatment Facility (Process Main Building)]	4/13 10:29 - Being transferred
Unit 3	Unit 3 T/B	Central Radioactive Waste Treatment Facility [Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)]	4/10 13:31- Being transferred*

\*From 11:04 to 13:47 on April 13, the transferring was suspended since there was other operation around transferring line.

**<4. Status of the Treatment Facility and the Storage Facility > (As of April 13 at 7:00 am)**

Facility	Cesium adsorption apparatus	Secondary Cesium adsorption apparatus (SARRY)	Decontamination instruments	Water desalinations (reverse osmosis membrane)	Water desalinations (evaporative concentration)
Operating status	Operation	Operation *	Shutdown	Operating intermittently according to the water balance	Operating intermittently according to the water balance

\* Cleaning of filter is in progress.

- From June 8, 2011: Large tanks to store contaminated and decontaminated water are transported and installed.

**<5. Others>**

- October 7, 2011~: Continuously implementing water spray using water after purifying accumulated water of Unit 5 and Unit 6 to prevent spontaneous fire of trimmed trees and diffusion of dust.
- February 23, 2012~: Test of drawing water in the Unit 6 sub drain to the temporary tank through the temporarily storage tank was implemented.
- March 6, 2012~: Test of drawing water in the Unit 5 sub drain to the temporary tank through the temporarily storage tank was implemented.
- March 14, 2012~: In order to prevent the diffusion of ocean soil, we started the full-scale covering work of seafloor by solidification soil (covering material).
- At around 12:20 pm on April 12, 2012, at the road between Unit2 and Unit3 reactor buildings, we found a leakage of fuel (diesel oil) of heavy machinery (grab bucket) which has been used for removing rubbles of upper part of Unit 3 reactor building on the iron plate under the vehicle in the area of approx. 1.5 m x 1.0m. At around 12:40 pm on the same day, we informed Tomioka fire station. Afterwards, Futaba wide-area fire-defense headquarters and Tomioka fire station checked the site and confirmed that this oil leakage came under the leakage from dangerous facilities stipulated in the Fire Services Act. This oil leakage was stopped when it was found, and there will be no radiation effects to the outside by this event. Regarding the cause, we estimated that fuel was dripping due to the damage of the fuel filter in the fuel supply line for heavy equipments. By way of caution, an oil absorbent mat and a receiving can was set at the leaking point.
- April 13, 2012: we conducted the dust sampling at the open part of Unit 2 Reactor Building (Blowout panel).
- April 13, 2012: We took samples at the charcoal filter and particulate filter of Unit 2 RCV gas control system.

END