# Plant Status of Fukushima Daiichi Nuclear Power Station

April 12, 2012
Tokyo Electric Power Company

## <1. Status of the Nuclear Reactor and the Primary Containment Vessel> (As of April 12 at 11:00 am)

| Unit | Status of water injection | | Reactor pressure vessel bottom temp. | Pressure of primary containment vessel*1 | Hydrogen density of primary containment vessel |
|---|---|---|---|---|---|
| Unit 1 | Injecting Fresh water | Core Spray System: Approx.1.7 $m^3$/h<br>Feed Water System: Approx.4.7 $m^3$/h | 25.6 ˚C | 105.5 kPa abs | A system:0.09 vol%<br>B system:0.09 vol% |
| Unit 2 | Injecting Fresh water | Core Spray System: Approx.6.0 $m^3$/h<br>Feed Water System: Approx.2.9 $m^3$/h | 51.1 ˚C | 29.38 kPa g | A system:0.20 vol%<br>B system:0.19 vol% |
| Unit 3 | Injecting Fresh water | Core Spray System: Approx.5.2 $m^3$/h<br>Feed Water System: Approx.1.8 $m^3$/h | 55.1 ˚C | 0.29 kPa g | A system:0.19 vol%<br>B system:0.17 vol% |

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

【Unit 1-3】・5:00 pm on April 7…When verifying the plant data, the flow volume of the nitrogen injection line to PCV and RPV was confirmed to be 0 $m^3$/h. By conducting on-site verification, it was confirmed that nitrogen supply facility (nitrogen gas separator A) was halt due to compressor failure alert. Subsequently, at 5:43 pm, backup nitrogen supply facility (nitrogen gas separator B) was activated and at 5:56 pm, injection of nitrogen to PCV and RVP was recommenced. No significant changes have been confirmed in regard to parameters in connection with PCV of Unit 1-3, density of Hydrogen and monitoring post data.

【Unit 1】・April 11・・・Xenon 135 which was confirmed by the noble gas monitor of the PCV gas control system was 1.4～3.1×$10^{-3}$Bq/$cm^3$, thus it is confirmed that not exceeded 1Bq/$cm^3$ which is the standard for judgment of recriticality.

【Unit 2】・April 11・・・We conducted gas sampling of PCV gas control system. As the result of the analysis, Xenon 135 was below the detection limit (9.1×$10^{-2}$Bq/$cm^3$) at the inlet of the system, thus it is confirmed that not exceeded 1Bq/$cm^3$ which is the standard for judgment of recriticality. Also Xenon 135 which was confirmed by the noble gas monitor of PCV gas control system was below detection limit (2.3～2.4×$10^{-1}$Bq/$cm^3$), thus it is confirmed that not exceeded 1Bq/$cm^3$ which is the standard for judgment of recriticality.

【Unit 3】・April 11・・・Xenon 135 which was confirmed by the noble gas monitor of the PCV gas control system was below detection limit (3.5×$10^{-1}$Bq/$cm^3$), thus it is confirmed that not exceeded 1Bq/$cm^3$ which is the standard for judgment of recriticality.

## <2. Status of the Spent Fuel Pool > (As of April 12 at 11:00 am)

| Unit | Cooling type | Status of cooling | Temperature of water in Spent Fuel Pool |
|---|---|---|---|
| Unit 1 | Circulating Cooling System | Under operation | 17.0 ˚C |
| Unit 2 | Circulating Cooling System | Under operation | 18.3 ˚C |
| Unit 3 | Circulating Cooling System | Under operation | 17.7 ˚C |
| Unit 4 | Circulating Cooling System | Under operation | 28˚C |

【Unit 2】・10:06 am on April 12・・・From January 19 to April 2, we had reduced salinity by the desalting facility using reverse osmosis membrane. In order to further reduction of salinity, we newly installed ion exchange membrane device. As the preparation was completed we started operation the device.

【Uniti 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 will investigate 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.

① 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).

② 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. 20 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.

## <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 – 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 |
| Unit 6 | Unit 6 T/B → | Temporary Tank | 4/12 10:00 – 16:00 Transferred |

## <4. Status of the Treatment Facility and the Storage Facility > (As of April 12 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 1.0 m. At around 12:40 pm on the same day, we informed Tomioka fire station. Afterwards, Futaba wide-area fire-defense headquarters and Tomioka fire sation 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.

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