

Plant Status of Fukushima Daiichi Nuclear Power Station

December 13, 2011
Tokyo Electric Power Company

<Draining Water on Underground Floor of Turbine Building (T/B) >

◇Status of highly concentrated accumulated radioactive water treatment facility and storage tank facility

[Treatment Facility]

- 6/17 20:00 Full operation of radioactive material removal instruments started.
- 6/24 12:00 Start of desalination facilities operation
- 6/27 16:20 Circulating injection cooling started.
- 8/7 16:11 Evaporative Concentration Facility has started full operation.
- 8/19 19:33 We activated 2nd cesium adsorption facility (System B) and started the treatment of accumulated water by the parallel operation of cesium adsorption instrument and decontamination instrument. At 19:41, the flow rate achieved a steady state.
- 12/12 Approx.16:00 We confirmed that the water spilled from the bucket, which was used to collect drain water from sampling line of the evaporative condensation apparatus 3C. The paddle water was spread around 1 meter radius from the bucket (the capacity of the bucket: approx. 7 liters, spilled water: approx. 3 liters), which stayed inside the barrier.
 Approx. 19:30 After replacing the bucket to the new one, it was confirmed that there was no leakage from the valve of the sampling line.
 Approx. 20:30 When we checked the site later, we found out that the water had spilled out of the bucket. The paddle water was then spread around 1.5 meter radius (the capacity of the second bucket: approx. 12 liters, spilled water: 7 liters), which stayed inside the barrier. Around 20:50, the valve of the sampling line was tightly closed as it was found that the valve was not completely closed, and it was confirmed there was no water leakage.
 Approx.22:25 the inlet and outlet valve of the pump was closed for pre-caution. The same operation was conducted for 3A and 3B of the evaporative concentration apparatus.
- 12/13 12:25 Recirculating operation[※] for the water desalinations (reverse osmosis membrane) was started to contain the generation of treated concentrated water.
 ※Operation which retreats concentrated water generated from the treatment through reverse osmosis membrane.

[Storage Facility]

- 6/8~ Large tanks to store and keep treated or contaminated water have been transferred and installed sequentially.

◇Accumulated water in vertical shafts of trenches and at basement level of building

Unit	Draining water source→Place transferred	Status
Unit 2	• Unit 2T/B→Central Radioactive Waste Treatment Facility [Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)]	•18:03 on November 30 - Transferred
Unit 3	• Unit 3T/B→Central Radioactive Waste Treatment Facility [Process Main Building]	•9:25 on November 15 -12/5 10:31 - Transferred
Unit 6	•Unit 6T/B→Temporary tanks	• 10:00-16:00 on December 13 Transferred

Place transferred	Status of Water Level (As of December 13 at 7:00)
Process Main Building	Water level: O.P.+ 1,612 mm(Accumulated total increase:2,829 mm) 105mm decrease since 7:00 on December 12
Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)	Water level: O.P.+ 1,530 mm(Accumulated total increase:2,256 mm) 461mm increase since 7:00 on December 12

◇Water level of the vertical shaft of the trench, T/B and R/B(As of December 13 at 7:00)

	Vertical Shaft of Trench	T/B	R/B
Unit 1	O.P. <+ 850mm (No change since 7:00 on December 12)	O.P.+ 3,099 mm (6mm decrease since 7:00 on December 12)	O.P.+ 3,984 mm (49mm increase since 7:00 on December 12)
Unit 2	O.P.+ 2,789 mm (29mm decrease since 7:00 on December 12)	O.P.+ 2,810 mm (26mm decrease since 7:00 on December 12)	O.P.+ 2,938 mm (21mm decrease since 7:00 on December 12)
Unit 3	O.P.+ 3,320 mm (17mm increase since 7:00 on December 12)	O.P.+ 3,089 mm (17mm increase since 7:00 on December 12)	O.P.+ 3,319 mm (19mm increase since 7:00 on December 12)
Unit 4	—	O.P.+ 3,077 mm (17mm increase since 7:00 on December 12)	O.P.+ 3,068 mm (1mm decrease since 7:00 on December 12)

<Monitoring of Radioactive Materials>

Nuclide Analysis of Seawater (Reference)

Place of sampling	Date of sampling	Time of sampling	Ratio of density limit (times)		
			I-131	Cs-134	Cs-137
Approx. 30m North of Discharge Channel of 5,6U, 1F	12/12	8:55	ND	0.08	0.06
Approx. 330m South of Discharge Channel of 1-4U, 1F	12/12	8:25	ND	0.06	0.04
Around Discharge Channel of 3,4U, 2F	12/12	8:40	ND	ND	0.01
Approx. 7km South of Discharge Channel of 1,2U, 2F	12/12	8:15	ND	ND	0.01

- Others, samples from 1 location at coast of Fukushima Daiichi Nuclear Power Station (sampled on December 11) , and 5 locations at offshore of Ibaraki(sampled on December 6 and 7), showed ND for all three major nuclides (Iodine-131, Cs-134,137).

<Cooling of Spent Fuel Pools >(As of December 13 at 11:00)

Unit	Cooling type	Status of cooling	Temperature of water in Pool
1Unit	Circulating Cooling System	Under operation	15.0 °C
2Unit	Circulating Cooling System	Under operation	20.7 °C
3Unit	Circulating Cooling System	Under operation	15.2 °C
4Unit	Circulating Cooling System	Under suspension	23 °C

【Unit 1】•12/11 22:20 We stopped the alternative cooling equipment for spent fuel pool, in order to conduct house power source changeover work.(The temperature of the pool at the time of suspension:14°C)

12/12 17:07 We restarted the alternative cooling system for the spent fuel pool.

【Unit 2】•12/12 15:53 The annunciator alerted for the Unit 2 SFP alternative cooling system, which showed the difference between inlet and outlet flow at the primary pump exceeded the limit. Any abnormalities like water leakage were not observed by patrolling at the site. Currently the automatic trip system by the annunciator is temporarily removed, and monitoring the level of the skimmer surge tank is enhanced as the alternative monitoring measure. The cooling system will be manually tripped if there are abnormalities on the skimmer surge tank level, which is confirmed there is no change on the level.

17:18 After vibrated the instrument piping, it was confirmed the annunciator was cleared. It is planned to enhance the monitoring after the inspection of flow meters and the flushing of detection lines. There is no problem on the SFP cooling as the alternative cooling system is continuously operated.

- 12/13 13:18~14:53 Hydrazine was injected to the spent fuel pool (Approx. 2m³).

【Unit 4】・11/29～ We started operation of the ion exchange equipment to remove salt from spent fuel pool.

- ・12/13 10:07～11:30 The spent fuel pool was suspended for the inspection of flow meter. There was no significant change in the water temperature caused by this suspension. (After suspension:23°C, After restarted cooling: 23°C)

< Water Injection to Pressure Containment Vessels >(As of December 13 at 11:00)

Unit	Status of injecting water	Feed-water nozzle Temp.	Reactor pressure vessel Bottom temp.	Pressure of primary containment vessel
1Unit	Injecting freshwater (Feed Water System: Approx.4.4m ³ /h,Core Spray System: Approx.1.8 m ³ /h)	38.7°C	39.5°C	110.4 kPaabs
2Unit	Injecting freshwater (Feed Water System: Approx.2.6m ³ /h,Core Spray System: Approx.6.1 m ³ /h)	66.0°C	70.8°C	110kPaabs
3Unit	Injecting freshwater (Feed Water System: Approx.2.7 m ³ /h,Core Spray System: Approx.6.1 m ³ /h)	57.7°C	64.6°C	101.6 kPaabs

【Unit 4】【Unit 5】【Unit 6】 No major change

<Others>

- ・10/7～ 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.
- ・12/13 Approx.11:30 We have confirmed that the 11:30 data was not collected from the transportable monitoring post installed at the west gate. We have found out that disconnection of the cables was the cause for this communication error. Therefore, we reconnected the cables.
- ・12/13 13:10 We restarted monitoring by the transportable monitoring post. As for the data on 12:00, 12:30 and 13:00, we actually went to the site to conduct the radiation measurement and confirmed the result to be equivalent to the data collected prior to the disconnection of the cables (approx. 11 μ Sv/h).

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