

<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.
- 12/20 8:58 We stopped the Cesium adsorption apparatus in order to adjust the water level of each turbine building and the Centralized Radiation Waste Treatment Facility (Miscellaneous Solid Waste compressing building [high temperature incinerator building] and Process Main Building). The water injection will not be affected since water will be injected to the reactor from the buffer tank which consists of desalinated water.

[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 [Process Main Building and Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)]	· 10:12 on December 17 – 9:58 on December 18, Transferred
Unit 3	· Unit 3T/B Central Radioactive Waste Treatment Facility [Process Main Building]	· 14:22 on December 15 – 10:04 on December 17, Transferred
Unit 6	·Unit 6T/B Temporary tanks	·On December 20, no scheduled

Place transferred	Status of Water Level (As of 12/20 at 7:00)
Process Main Building	Water level: O.P.+ 1,547 mmn(Accumulated total increase:2,764 mm) 110mm decrease since 7:00 on December 19
Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)	Water level: O.P.+ 1,705 mm(Accumulated total increase:2,431 mm) 4mm increase since 7:00 on December 19

Water level of the vertical shaft of the trench, T/B and R/B (As of December 20 at 7:00)

	Vertical Shaft of Trench	T/B	R/B
Unit 1	O.P. <+ 850 mm (No change since 7:00 on December 19)	O.P.+ 3,306 mm (26mm increase since 7:00 on December 19)	O.P.+ 4,263 mm (12mm increase since 7:00 on December 19)
Unit 2	O.P.+ 3,059 mm (63mm increase since 7:00 on December 19)	O.P.+ 3,051 mm (56mm increase since 7:00 on December 19)	O.P.+ 3,174 mm (55mm increase since 7:00 on December 19)
Unit 3	O.P.+ 3,160 mm (18mm increase since 7:00 on December 19)	O.P.+ 3,130 mm (18mm increase since 7:00 on December 19)	O.P.+ 3,371 mm (21mm increase since 7:00 on December 19)
Unit 4	-	O.P.+ 3,111 mm (2mm increase since 7:00 on December 19)	O.P.+ 3,123 mm (32mm increase since 7:00 on December 19)

<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	12/19	8:35	ND	0.05	0.03
Approx. 330m South of Discharge Channel of 1-4U, 1F	12/19	8:15	ND	0.02	0.02
Around Discharge Channel of 3,4U, 2F	12/19	8:20	ND	0.02	0.01

·Others: samples from 1 location at the coast of Fukushima Daiichi Nuclear Power Plant (sampled on December 19) and from 5 locations offshore of Ibaraki Prefecture (sampled on December 13 and 14) showed ND for all three major nuclides (Iodine-131,Cs-134,137).

<Cooling of Spent Fuel Pools >(As of December 20 at 11:00)

Unit	Cooling type	Status of cooling	Temperature of water in Pool
Unit 1	Circulating Cooling System	Under operation	12.0
Unit 2	Circulating Cooling System	Under operation	15.5
Unit 3	Circulating Cooling System	Under operation	13.3
Unit 4	Circulating Cooling System	Under operation	20

[Unit 4] · 11/29 ~ We started operation of the ion exchange equipment to remove salt from spent fuel pool.

[Unit 2] · 12/19 3:06、12/20 5:04 The alarm went off which showed that the flow rates at the inlet and the outlet of the primary system pump of the Fuel Pool Cooling and Filtering System was substantially different. We confirmed the site and recognized no leak of water. Later we implemented a vibration experiment on the instrumentation piping and confirmed that the alarm had stopped. The Fuel Pool Cooling and Filtering System has been in normal operation and there is no problem in cooling.

· 12/20 15:03 The same system stopped due to inspection of flow monitor of the Fuel Pool Cooling and Filtering System. The temperature of the spent fuel pool was 15.4 at the time of the stop. The stop is planned to last until around 2:00pm on Dec. 23. Since the estimated increase of the temperature of the spent pool is approx. 21 for that period, there is no problem on that increase.

<Water Injection to Pressure Containment Vessels >(As of December 20 at 11:00)

Unit	Status of water injection	Feed-water nozzle Temp.	Reactor pressure vessel Bottom temp.	Pressure of primary containment vessel
Unit 1	Injecting freshwater (Feed Water System: Approx.4.5 m ³ /h,Core Spray System: Approx.2.0 m ³ /h)	30.8	31.4	110.1 kPaabs
Unit 2	Injecting freshwater (Feed Water System: Approx.2.8 m ³ /h,Core Spray System: Approx.6.0 m ³ /h)	59.8	62.8	111 kPaabs
Unit 3	Injecting freshwater (Feed Water System: Approx.2.8 m ³ /h,Core Spray System: Approx.5.9 m ³ /h)	54.6	61.5	101.6 kPaabs

[Unit 3] · 12/20 10:47 Water injection from feed water system was adjusted from approx. 3.9 m³/h to 3.0 m³/h.
Water injection from core spray system was adjusted from approx. 5.0 m³/h to 6.0 m³/h.

[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.
- 12/19 18:00 Since the monitoring results of the decontamination of radioactivity material and hydrogen density at the Primary Containment Vessel (PCV) gas controlling system which was in a test run was stable, we started regular operation of this system.
- 12/19 An employee of TEPCO who had engaged in repair works at Fukushima Daiichi Stabilizing centre was diagnosed as infected by Noro virus. Other than the two workers that have been diagnosed as infected by Noro virus so far, another TEPCO employee who had engaged in works at the Fukushima Daiichi Power Plant was diagnosed as Gastroenteritis caused by a virus. We disinfected the working office of the two TEPCO employees. We plan to inform persons/parties concerned of fundamental matters such as strict enforcement of washing hands and gargling, re-enforcement of disinfecting ways in case of onset, a medical team responding system etc.
- 12/20 According to the operational record thus far, we changed the volume of nitrogen included into PCV and that of gas emitted from PCV gas control system. At 11:00 am on the same day, we decreased the reactor nitrogen amount from 28Nm³/h to 18Nm³/h, and at 11:30 am, we increased the gas emission amount from 15Nm³/h to 30Nm³/h.
- 12/20 At 9:55 am on December 20, as a restoration work for Unit 5 residual heat removal seawater system pump (B) was completed, we started a test operation, and at 11:22 am, a full-scale operation started after we confirmed its soundness. As a result, there came two (2) pumps, or (B) and (D). Although we stopped cooling down the reactor of Unit 5 by pausing the pump (B) from 9:39 am to 10:11 am, the reactor water temperature increase was 0.1 and we made sure there was no security issues.

End