

<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 steady state.
- 12/4 11:33 Workers found that there was puddle water inside the barrier around the evaporative condensation apparatus (the estimated volume of water was approx.45 m³). At 11:52, we stopped the apparatus.
12:14 Workers made visual inspection of the apparatus and thought that the leakage stopped. At 14:30, we found crack in the barrier made of concrete, water was leaking to the gutter and that the leaked water was seen between the barrier and base concrete (surface dose rate of leaked water: beta ray 110mSv/h, gamma ray 1.8mSv/h).
15:30 We confirmed that the leakage had stopped by piling up sandbags between the barrier and base concrete, and in the gutter. From 18:20 to 22: 20 we sent the leaked water remaining in the barrier to the waste water RO supply tank with a water pump. Since the gutter led to the generally used channel of the power plant, we have taken sea water from the channel around the water desalinations (evaporative concentration apparatus) and the south drain (drain for the generally used channel) and have conducted a nuclide analysis. We concluded that the figures of the results of the analysis were as the same or slightly higher than the usual results we are announcing daily. We are considering emergency response to stop leakage of water to the outside of the barrier. In the meantime, water desalination apparatus is continuing operation. As we have sufficient volume of desalinated water, there is no impact on the Reactor water injection.
- 12/5 We sampled the water of the channel near the water desalination (evaporative concentration apparatus) and the south drain (exit of the channel) and conducted a nuclide analysis, and the results of the south drain showed the same level as the results we are announcing daily.
- 12/6 11:00 leakage at a pin hole on the transfer hose from a buffer tank to a desalination facility (leakage was a drop per second). It was confirmed that leakage stopped after the temporary repair with the water proof tape. The impact on the environment is minimal as the leaked water is desalinated after the treatment by the radioactive material removal facility and the leaked amount is little.

[Storage Facility]

- 6/8~ Big 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 11/30 - Transferring
Unit 3	•Unit 3T/B→Central Radioactive Waste Treatment Facility [Process Main Building]	•From 9:25 on 11/15 to 10:31 on 12/05
Unit 6	•Unit 6T/B→Temporary tanks	•From 10:00 on 12/5 to 16:00 on 12/6

Place transferred	Status of Water Level (As of December 6 at 7:00)
Process Main Building	Water level: O.P.+ 2,364 mm(Accumulated total increase:3,581 mm) 93mm decrease since 7:00 on December 5

Miscellaneous Solid Waste Volume Reduction Treatment Building (High Temperature Incinerator Building)	Water level: O.P.+ 1,403 mm(Accumulated total increase:2,129 mm) 68mm decrease since 7:00 on December 5
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[Unit 3] -12/6 10:00- Transfer of accumulated water in the condensate storage tank to the basement of the turbine building started.

◇Water level of the vertical shaft of the trench, T/B and R/B(As of December 6 at 7:00)

	Vertical Shaft of Trench	T/B	R/B
Unit 1	O.P.< + 850mm (No change since 7:00 on December 5)	O.P.+ 3,567mm (37mm increase since 7:00 on December 5)	O.P.+ 4,095mm (11mm decrease since 7:00 on December 5)
Unit 2	O.P.+ 2,883mm (23mm decrease since 7:00 on December 5)	O.P.+ 2,901mm (18mm decrease since 7:00 on December 5)	O.P.+ 3,026mm (19mm decrease since 7:00 on December 5)
Unit 3	O.P.+ 3,186mm (13mm increase since 7:00 on December 5)	O.P.+ 2,947mm (34mm increase since 7:00 on December 5)	O.P.+ 3,163mm (32mm increase since 7:00 on December 5)
Unit 4	—	O.P.+ 2,942mm (5mm decrease since 7:00 on December 5)	O.P.+ 2,948mm (18mm decrease since 7:00 on December 5)

<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	12/5	7:15	ND	0.06	0.05
Approx. 330m South of Discharge Channel of 1-4U, 1F	12/5	6:45	ND	0.09	0.06
Discharge Channel of 3,4U, 2F	12/5	8:30	ND	0.02	ND
Approx. 7km South of Discharge Channel of 1,2U, 2F	12/5	7:55	ND	ND	0.02

•Others, samples from 6 locations offshore of Miyagi Prefecture (sampled on November 28) showed ND for all three major nuclides (Iodine-131, Cs-134,137).

<Cooling of Spent Fuel Pools> (As at 11:00 on December 6)

Unit	Cooling type	Status of cooling	Temperature of water in Pool
<u>Unit 1</u>	Circulating Cooling System	Under operation(11:22 on August 10 -)	15.5 °C
<u>Unit 2</u>	Circulating Cooling System	Under operation(17:21 on May 31 -)	19.6 °C
<u>Unit 3</u>	Circulating Cooling System	Under operation(18:33 on June 30 -)	16.8 °C
<u>Unit 4</u>	Circulating Cooling System	Under operation(10:08 on July 31 -)	24 °C

[Unit 2]•11/6 We started operation of radioactive material decontamination instrument of spent fuel pool.

•12/5 As radio activity density at the spent fuel pool was expected to down at the level of 10^2 , we stopped operating radio activity removal system and finished the radio activity removal process. After that the result of the sampling water of spent fuel pool, we confirmed that the radio activity density dropped at around 10^5 to 10^6 which is same value before the system started operation.

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

<Water Injection to Pressure Containment Vessels> (As of December 5 at 11:00)

Unit	Status of injecting water	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)	43.8°C	45.0°C	119.7 kPaabs
Unit 2	Injecting freshwater (Feed Water System: Approx. 3.0m ³ /h,Core Spray System: Approx. 4.1 m ³ /h)	71.3°C	71.2°C	113 kPaabs
Unit 3	Injecting freshwater (Feed Water System: Approx. 2.1 m ³ /h,Core Spray System: Approx. 6.0 m ³ /h)	60.4°C	67.5°C	101.6 kPaabs

【Unit 1】12/5 17:47 Since it has been confirmed that amount of water injection decreased, we adjusted the amount of injecting water of feeding line from approx. 4.0m³/h to 4.5m³/h.

【Unit 3】12/5 17:47 Since it has been confirmed that amount of water injection decreased, we adjusted the amount of injecting water of feeding line from approx. 2.0m³/h to 2.2m³/h (water injection through reactor spray system continues at 6.0m³/h)

【Unit 4】【Unit 5】【Unit 6】no remarkable 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.
- 11/28~12/6 In order to prevent from dropping performance of pump by inducing deposited sand on the floor of pump room of intake channel of Unit5, we conducted cleaning.
- 12/3 at 5:48 pm, the display malfunction of the No.8 monitoring post measuring the radiation dose in the site was observed. As we could not identify the cause and thus not make repair, alternative measurement was conducted by the dosimeter located near the No.7 and 8 monitoring post, which was installed to reinforce the surveillance along with the nitrogen injection operation into the Reactor Pressure Vessel.
- 12/6 at 15:00 pm, the display function of No. 8 monitoring post was retrieved when its board was reinserted. Thereafter, we have restarted the measurement with No. 8 monitoring post as no sign of reoccurrence was confirmed.
- 12/6 at 12:20 pm, it was confirmed that the measurement data for 0:00 pm in the monitoring post set at the main gate was missing. The data for 1:00 pm, 1:30 pm, and 2:00 pm were manually measured at the location and the measured data was in the same level as the data before 0:00 pm. Thereafter, we have removed the water accumulated in the cable connector portion of the monitoring post and restarted the measurement by the monitoring post at 2:30 pm.
- 12/6 8:25~10:25 pm, dust sampling at opening part (blow out panel) of Reactor Building in Unit 2 was conducted.

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