

Fukushima Daiichi Nuclear Power Station

Completion of the Fifth Discharge of ALPS Treated Water in FY2025

< Reference document >
November 17, 2025
Tokyo Electric Power Company Holdings, Inc.
Fukushima Daiichi Decontamination and
Decommissioning Engineering Company

- The Fifth discharge of ALPS treated water in FY2025 began at 11:22 AM on October 30.
- In order to ensure that the ALPS treated water (tritium) is properly diluted every day during the discharge period, we have analyzed the tritium concentration in the water after dilution with seawater and confirmed that the analysis values are approximately equal to calculated concentrations, and below 1,500Bq/liter.
- During the discharge period, seawater samples have also been taken from 10 locations within 3km radius and 4 locations within 10km square of the power station, and the detection limit has been raised to approximately 10Bq/liter in order to quickly obtain tritium concentration measurement results. As a result, we have confirmed that the analysis values are below both the discharge suspension level (700 Bq/liter^{*1} or 30 Bq/liter^{*2}) and the investigation level (350 Bq/liter^{*1} or 20 Bq/liter^{*2}).
- Furthermore, in FY2025 we will inspect the facility based on the long-term inspection plan (see slide 2).

*1 10 locations within 3 km of the power station

*2 4 locations within 10 km square in front of the power station

< Announced by November 16 >

- During the Fifth discharge of ALPS treated water in FY2025, the amount of the ALPS treated water being discharged remained constant at approximately 460m³/day, and daily quick analysis results of tritium concentrations in the seawater have confirmed that the ALPS treated water is being discharged safely as planned.
- We completed the discharge of the ALPS treated water from the measurement/confirmation facility tank group C at 2:39 PM on November 16. The flush out of the water remaining in the ALPS treated water transfer line (ALPS treated water) was completed at 12:03 PM on November 17, and the completion of this task marked the end of the Fifth discharge of ALPS treated water in FY2025. (Total amount of water discharged: approx. 7,838 m³, Total amount of tritium discharged: Approx. 2.0 trillion Bq)
- We will conduct full inspections (full internal inspections) of the measurement/confirmation facility tank group C from November 18, 2025.
- The discharge facility will undergo planned inspections to detect any abnormalities at an early stage. If any changes in sealant cracks, swelling, corrosion, or other issues are found during these inspections, appropriate repairs will be carried out as before to ensure the long-term integrity of the facilities.

[Reference] FY2025 Facility inspection overview



- The inspections listed below will be implemented in FY2025 as well.
- The Sixth discharge in FY2025 (Management number: 25-6-17) will be conducted in parallel with the inspection of the dilution/intake facilities. Inspection of intake channel system A will be conducted during the discharge, but the intake channel can isolate A and B systems, ensuring a waterway for two seawater transfer pumps required for dilution/discharge. Inspection of seawater transfer pump system A will also be conducted during the discharge, but since there is a total of three seawater transfer pumps, the two required for dilution/discharge can be secured, so there will be no impact on the discharge plan.

Facility	Primary inspection details	Inspection status
Measurement/ confirmation facilities	Measurement/confirmation tank group C: full inspections (full internal inspections)	From November 2025 to May 2026
	Circulation pumps: Disassembly inspection	From October 2025 to November 2025
	Agitators: Insulation resistance measurements	From October ^{※1} 2025 to May 2026
	Miscellaneous: Strainer cleaning, etc.	From August ^{※1} 2025 to May 2026
Transfer facilities	ALPS treated water transfer pumps: Lubrication oil for bearings replacement	From December 2025 to February 2026
	Emergency isolation valve-1: Disassembly inspection	From January 2026 to February 2026
	Emergency isolation valve-2: External inspection	From January 2026 to February 2026
	Miscellaneous: Strainer cleaning, etc.	From August ^{※1} 2025 to May 2026
Dilution facilities	Seawater transfer pump system A: Disassembly inspection	From November ^{※2} 2025 to February 2026
	Seawater transfer pump system B: Gland packing replacement	From December 2025 to February 2026
	Seawater transfer pump system C: Gland packing replacement	From December 2025 to February 2026
	Sea water transfer pipes/seawater pipe header: Internal inspection	From December 2025 to February 2026
	Discharge vertical shaft (up-stream storage): Internal inspection	From December 2025 to February 2026
Discharge facilities	Discharge vertical shaft (down-stream storage), discharge tunnel: Internal inspection	From December 2025 to February 2026
Seawater intake facilities	Partitioning weirs: External inspection	From December 2025 to February 2026
	Intake channel system A: Cleaning, Internal inspection, repair	From November ^{※2} 2025 to February 2026

※1 : Conducted during the outage period of each system

※2 : To be implemented out in parallel with the Sixth discharge in FY2025

[Reference] FY2025 ALPS treated water discharge plan (1/2)



- The FY2025 discharge plan is as follows. There will be seven discharges during the year with each discharge releasing approximately 7,800m³ for an annual discharge of approximately 54,600m³. The annual tritium discharge volume will be approximately 15 trillion Bq.

Management number ^{※1}	Transfer source tank ^{※2}	Amount of water to be transferred ^{※3}	Discharge commencement period
25-1-12	G4 south area Group B (Transferred to Measurement/Confirmation facility group A) K3 area Group A/B ^{※5} (Transferred to Measurement/Confirmation facility group A)	^{※4} : <u>Approx. 8,080m³</u> : <u>Approx. 910m³</u>	Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.45 - 0.55 ^{※6} Tritium concentration: 220,000~370,000Bq/liter ^{※7} Total tritium volume: Approx. 2.8 trillion Bq April
25-2-13	K3 area Group A/B ^{※5} (Transferred to Measurement/Confirmation facility group C) J1 area Group E (Transferred to Measurement/Confirmation facility group C)	: <u>Approx. 6,970m³</u> : <u>Approx. 820m³</u>	Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.45 - 0.62 ^{※6} Tritium concentration: 220,000~380,000Bq/liter ^{※7} Total tritium volume: Approx. 1.9 trillion Bq June - July
25-3-14	J1 area Group E (Transferred to Measurement/Confirmation facility group A) G5 area Group E (Transferred to Measurement/Confirmation facility group A)	: <u>Approx. 7,300m³</u> : <u>Approx. 480m³</u>	Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.47 - 0.62 ^{※6} Tritium concentration: 200,000~380,000Bq/liter ^{※7} Total tritium volume: Approx. 2.9 trillion Bq July - August
25-4-15	G5 area Group E/C/B (Transferred to Measurement/Confirmation facility group B)	^{※4} : <u>Approx. 8,970m³</u>	Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.47 - 0.62 ^{※6} Tritium concentration: 200,000~220,000Bq/liter ^{※7} Total tritium volume: Approx. 1.6 trillion Bq September

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※1 The management number is made up of the fiscal year, followed by the discharge number for that fiscal year, and the total number of discharges to date.

For example, "25-1-12" indicates that the data is for the first discharge of FY2025, which is the twelfth discharge to date.

※2 The tank order from which water will be transferred will not be impacted by increases/decreases in the transfer volume (factual measurements). But order of discharge may be moved forward or backward.

※3 Underlined parts are updated as actual values according to the progress of the work.

※4 Since there will be no water remaining in the receiving tanks (Measurement/Confirmation tank groups A/B) after the tank inspections, the amount of water to be transferred will total approximately 9,000m³ (discharge volume is approximately 7,800m³).

※5 K3 area Group A/B tanks emptied as a result of transfer/discharge during FY2023 and FY2024 will be reused to receive ALPS treated water.

※6 Conservative values calculated from the analytical values of the seven major nuclides (Cs-134, Cs-137, Sr-90, I-129, Co-60, Sb-125, Ru-106) measured after ALPS treatment and storage in tanks, plus the maximum value of C-14 (0.11) and an estimate of the total of other nuclides at 0.3.

※7 Tank group average, estimated taking into consideration decay as of April 1, 2025.

[Reference] FY2025 ALPS treated water discharge plan (2/2)



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Management number ^{※1}	Transfer source tank ^{※2}	Amount of water to be transferred	Discharge commencement period
25-5-16	G5 area Group A/B (Transferred to measurement/confirmation facility group C)	: Approx. 7,780m ³	October - November
		Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.47 - 0.59 ^{※3} Tritium concentration: 220,000~260,000Bq/liter ^{※4} Total tritium volume: Approx. 1.9 trillion Bq	
25-6-17	G5 area Group A/D (Transferred to measurement/confirmation facility group A) G4 north area Group A (Transferred to measurement/confirmation facility group A)	: Approx. 4,050m ³ : Approx. 3,710 m ³	November - December
		Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.46 - 0.76 ^{※3} Tritium concentration: 260,000~300,000Bq/liter ^{※4} Total tritium volume: Approx. 2.2 trillion Bq	
Inspection suspension (including full inspections of measurement/confirmation facility Group C tanks)			
25-7-18	G4 north area Group B (Transferred to measurement/confirmation facility group B) H2 area Group J (Transferred to measurement/confirmation facility group B)	: Approx. 3,760m ³ : Approx. 4,040 m ³	March
		Secondary treatment: None Sum of the ratios to regulatory concentrations: 0.58 - 0.78 ^{※3} Tritium concentration: 260,000~270,000Bq/liter ^{※4} Total tritium volume: Approx. 2.0 trillion Bq	

➡ FY2025 total tritium discharge volume: **Approx. 15trillion Bq**

※1 The management number is made up of the fiscal year, followed by the discharge number for that fiscal year, and the total number of discharges to date. For example, "25-1-12" indicates that the data is for the first discharge of 2025, which is the twelfth discharge to date.

※2 Whereas the order of the tanks from which water will be transferred will not change due to increases or decreases in the amount of water transferred (actual measurements), the discharge number may be moved up or back.

※3 Underlined parts are updated as actual values according to the progress of the work.

※4 Conservative values calculated from the analytical values of the seven major nuclides (Cs-134, Cs-137, Sr-90, I-129, Co-60, Sb-125, Ru-106) measured after ALPS treatment and storage in tanks, plus the maximum value of C-14 (0.11) and an estimate of the total of other nuclides at 0.3.

※5 Tank group average, estimated taking into consideration decay as of April 1, 2025

[Reference] Measurement monitoring plan for obtaining quick results TEPCO

- Since the commencement of ALPS-treated water discharge into the sea in August 2023, TEPCO has engaged in monitoring to obtain quick measurements of the concentration of tritium in seawater at 14 locations shown in the diagrams below (Upper detection limit: Approximately 10Bq/liter). The discharge is immediately suspended if any of the values exceed the discharge suspension level (noted in the diagrams)

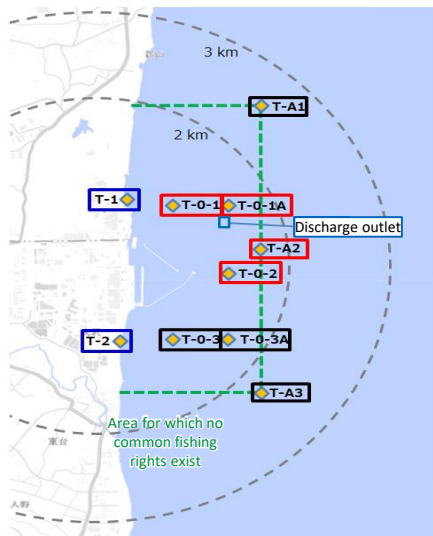


Figure 1: Specimen sampling locations within 3km of the power station (near the discharge outlet)

 : Monitoring points used to obtain quick results (10 locations)
Indicator (Discharge suspension level) 700Bq/liter

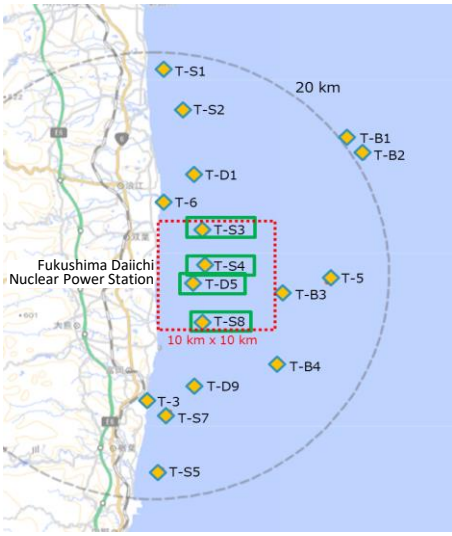


Figure 2: Specimen sampling locations within a 10km square in front of the power station

 : Monitoring points used to obtain quick results (4 locations)
Indicator (Discharge suspension level) 30Bq/liter

	【Fig. 1】 Within a 3km of the power station (near the discharge outlet)		【Fig. 2】 Four locations within a 10km square in front of the power station
	Four locations in the vicinity of the discharge outlet 	Other six locations 	
During the discharge period and for one week after the completion of discharge	Daily※1	Twice a week※2	T-D5: Once a week T-S3,T-S4,T-S8: Once a month
During the discharge suspension period (Excluding the week following the completion of discharge)	Once a week※2	Once a month※2	

※1 If bad weather during the discharge period prevents measurements for being taken for two consecutive days, on the following day (third day) if it is again expected that measurements cannot be taken, measured results will be quickly obtained from T-1 and T-2.

※2 We have engaged in monitoring daily since the commencement of discharge in August 2023, but the monitoring plan was changed on December 26, 2023 in light of actual measurements taken during discharge ([Announced on December 25, 2023](#))