ALPS Treated Water Discharge Status Update

January 30, 2025

TEPCO

Tokyo Electric Power Company Holdings, Inc.

Report contents

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1. Revisions to how sea area monitoring results are written

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- The following explains how revisions will be made to the way in which sea area monitoring results are written on this document.

	Current notation method	Notation method from this report
Recent sea area monitoring results this time	➢ **<u>Quick measurement results are shown in charts</u>**	(Refer to slide 4) ➢ As always, **<u>quick measurement results</u>** will be shown in a **<u>chart</u>** ➢ Protection values will be notated in thick black lines ➢ A note will guide viewers to the "(Reference) Measurement monitoring plan" for information on sampling locations
(Reference) Sea area monitoring results since the commencement of discharge	➢ **<u>Quick measurement and normal monitoring results are shown in charts (mixed together)</u>**	(Refer to slides 30-32) ➢ **<u>Quick measurement results will be shown as a graph</u>** ➢ "Sea area monitoring information on ALPS treated water discharge into the sea" materials in the Council meetings will be referenced for **<u>normal monitoring results</u>** ➢ A note will guide viewers to the "(Reference) Measurement monitoring plan" for information on sampling locations and indices

1-1. Sea area monitoring history

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◯ After the completion of the discharge of management number 24-6-10, measurement results of tritium concentrations measured in quick tritium measurements to quickly check the dispersion in water sampled at 10 locations in the vicinity of the discharge outlet (within 3km of the power station) and 4 locations outside of the vicinity of the discharge outlet (within a 10km square in front of the power station) are all below indices (discharge suspension level and investigation level).

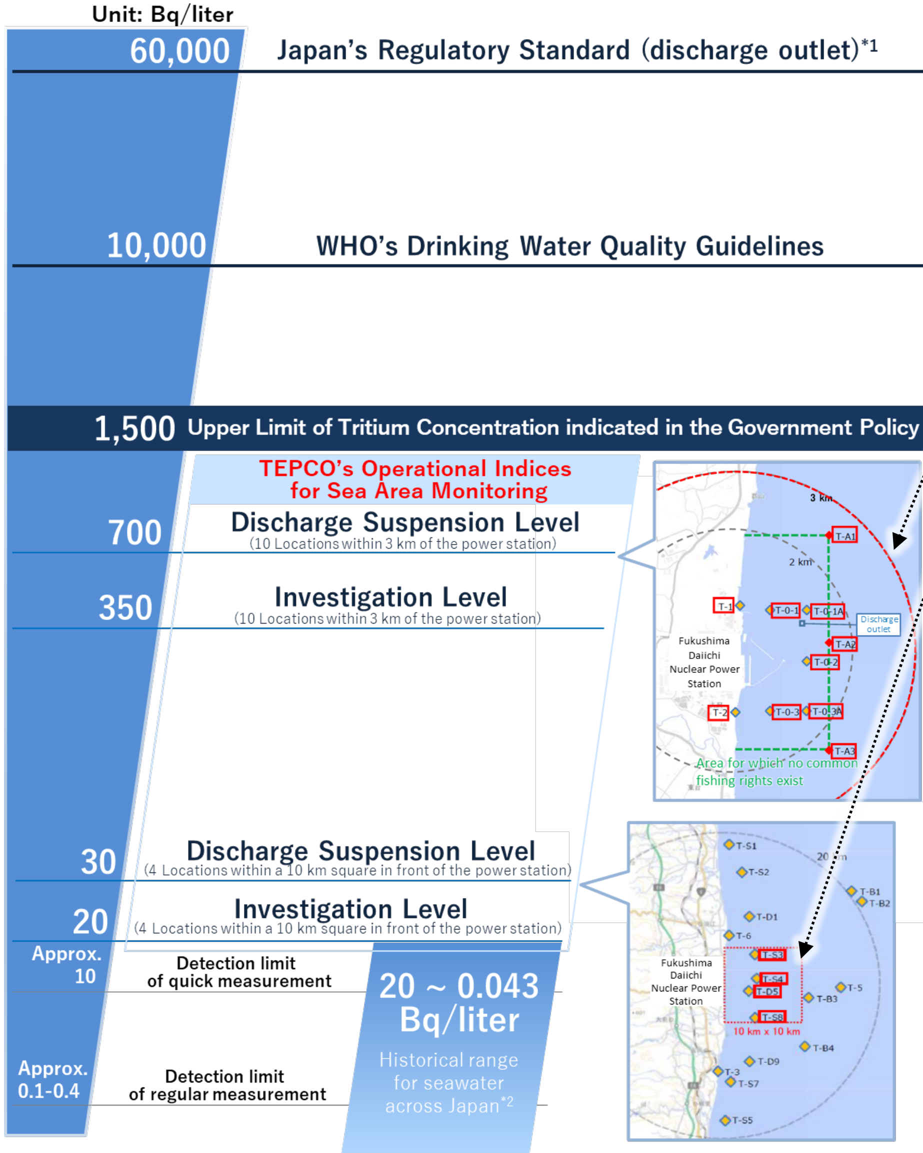
(Unit: Bq/liter)

	Sampling location	Frequency	December 2024		January 2025				
			23	30	6	8	13	15	20
In the vicinity of the discharge outlet	T-1	Twice a week*1	–	–	<7.7	–	–	–	–
	T-2	Twice a week*1	–	–	<7.6	–	–	–	–
	T-0-1	Once a day*2	<6.7	<7.5	<7.7	–	<6.3	–	<7.1
	T-0-1A	Once a day*2	<6.6	<7.5	<5.9	–	<7.4	–	<7.0
	T-0-2	Once a day*2	<6.7	<7.5	<5.9	–	<6.4	–	<7.1
	T-0-3A	Twice a week*1	–	–	<5.8	–	–	–	–
	T-0-3	Twice a week*1	–	–	<5.8	–	–	–	–
	T-A1	Twice a week*1	–	–	<7.6	–	–	–	–
	T-A2	Once a day*2	<8.9	<6.9	<7.6	–	<7.4	–	<7.4
	T-A3	Twice a week*1	–	–	<7.5	–	–	–	–
Outside the vicinity of the discharge outlet	T-D5	Once a week	<8.8	<6.9	<7.7	–	<6.3	–	<7.4
	T-S3	Once a month	–	–	–	<6.9	–	–	–
	T-S4	Once a month	–	–	–	<6.9	–	–	–
	T-S8	Once a month	–	–	–	–	–	<6.6	–

※: A "less than" symbol (<) indicates that the analysis result was less than the detection limit ▭ indicates that the detected value

*1: Conduct twice a week during the discharge period and for once a week following the completion of discharge. Conduct once a week outside the discharge period, excluding one week following the completion of discharge
*2: Conduct once a week during the discharge period and once a week following the completion of discharge. Conduct once a month outside the discharge period, excluding one week following the completion of discharge
*3: For sampling locations, refer to "[Reference] Measurement monitoring plan"

[Reference] Comparison of tritium concentration in seawater



*1: This standard has been stipulated based on the calculation that if a person were to drink approximately 2L of the water coming out of the discharge outlet of a nuclear facility every day for one year, his/her exposure would be 1mSv.
*2: Source: Environmental Radioactivity and Radiation in Japan (Period: April 2019 to March 2022)

- We have set a discharge suspension level and an investigation level as TEPCO's operational indices.

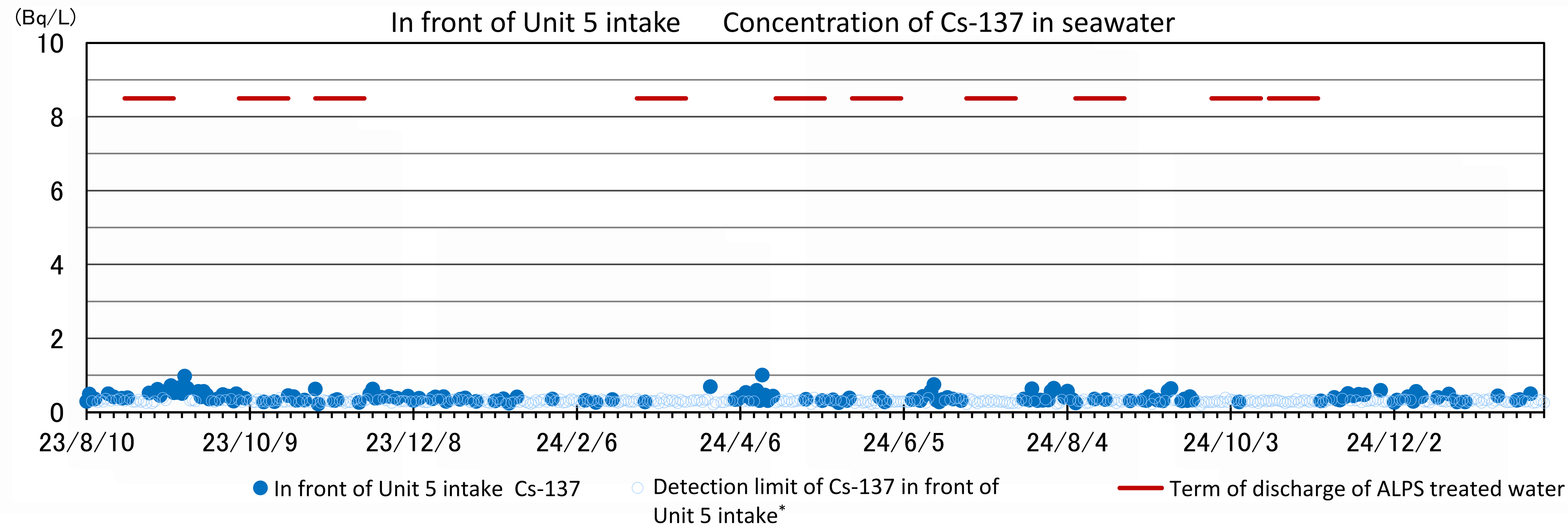
	Discharge suspension level	Investigation level
Within 3km of the power station	700 Bq/L	350 Bq/L
Within a 10km square in front of the power station	30 Bq/L	20 Bq/L

If the discharge suspension level is exceeded, the sea discharge will be immediately suspended.
If the investigation level is exceeded, facilities/operation status will be inspected and the frequency of monitoring will be increased as necessary.

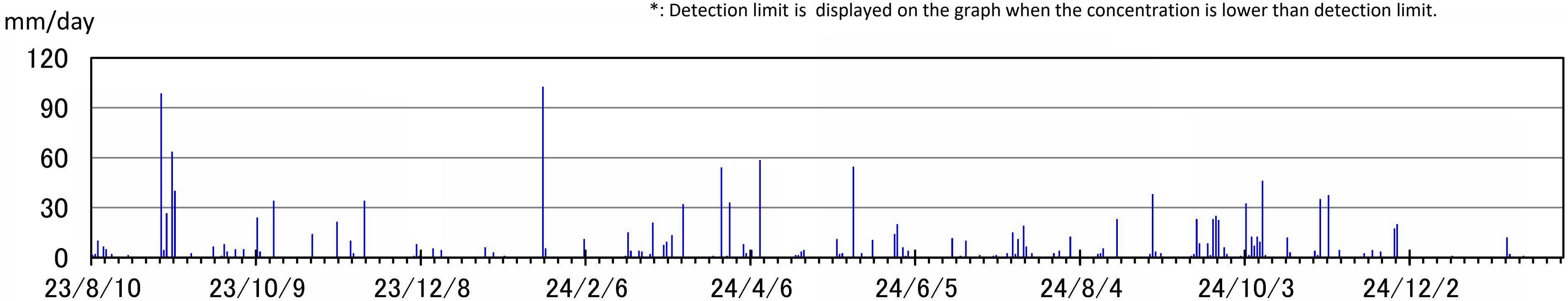
- Even if the tritium concentration exceeds indices (Discharge suspension level and Investigation level), the levels are well below the Japan's regulatory standard of 60,000 Bq/L and the WHO's drinking water quality guidelines of 10,000 Bq/L, and we assess that the surrounding sea areas are still safe.
- It is expected that the concentration of tritium in seawater will be affected depending on the concentration of tritium in the treated water to be released in the future, and higher values than before will be detected. Even in such cases, it is evaluated that the concentration will remain below the investigation level and other indices.

1-2. Unit 5 intake channel monitoring

■ Sea water monitoring results at near the intake for seawater to be used for dilution during the discharge of ALPS treated water have confirmed that values are similar to those outside of the term of the discharge.



*: Detection limit is displayed on the graph when the concentration is lower than detection limit.

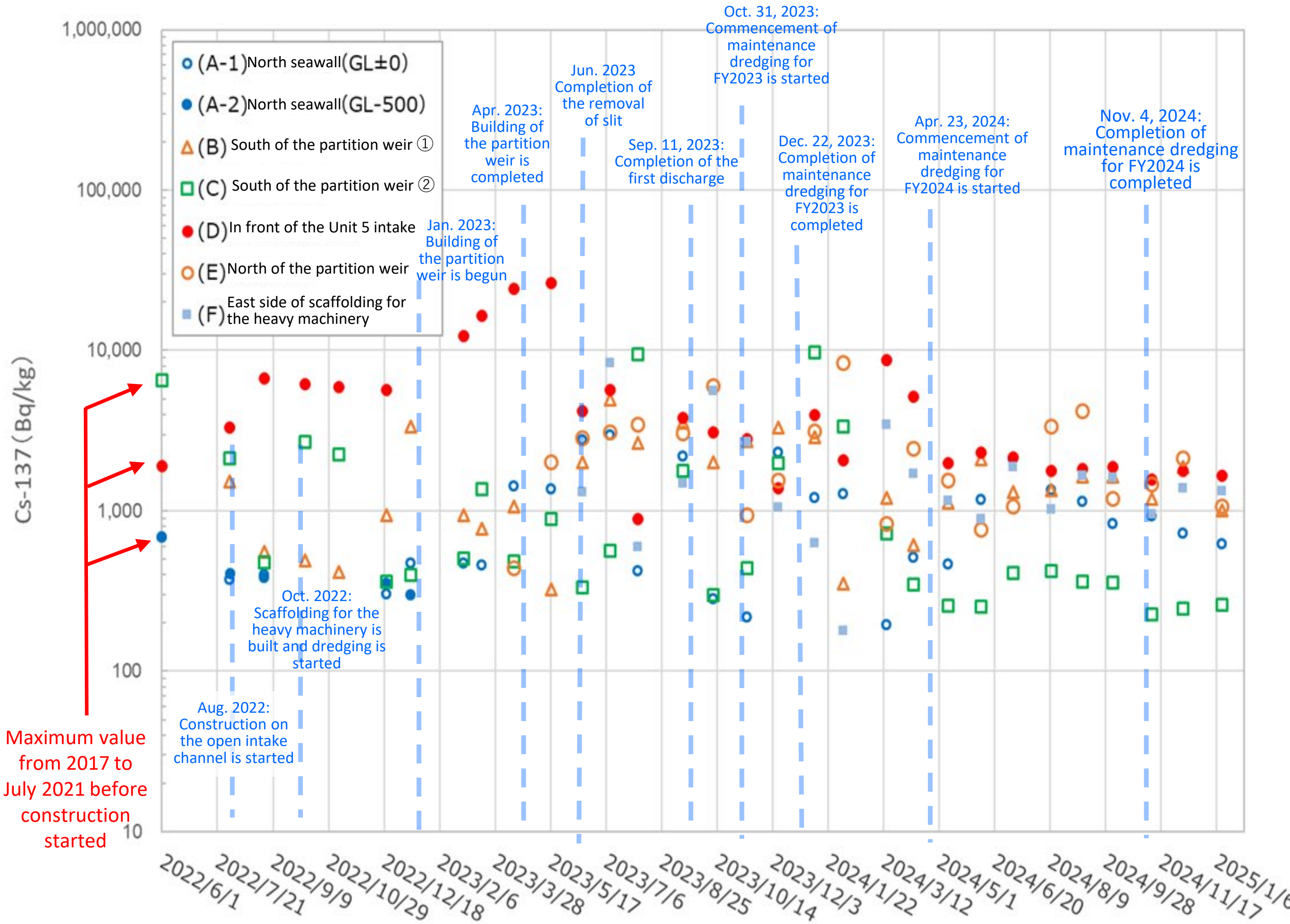


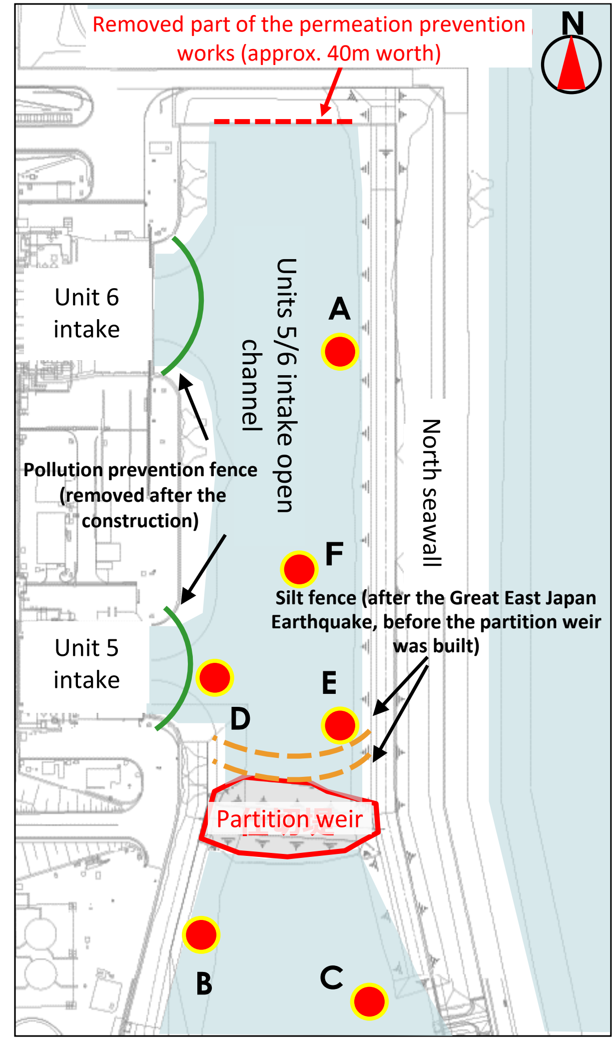
Amount of rain at the Fukushima Daiichi NPS

1-3. Monitoring results for seabed soil inside the Unit 5/6 intake open channel (1)

TEPCO

- Monitoring results for seabed soil in front of Unit 5 intake did not show significant fluctuations from the beginning of construction at the intake open channel until December 2022. While they showed higher readings after January 2023, we have confirmed that these readings decreased after the completion of silt removal.
- We will continue to monitor the seabed soil.



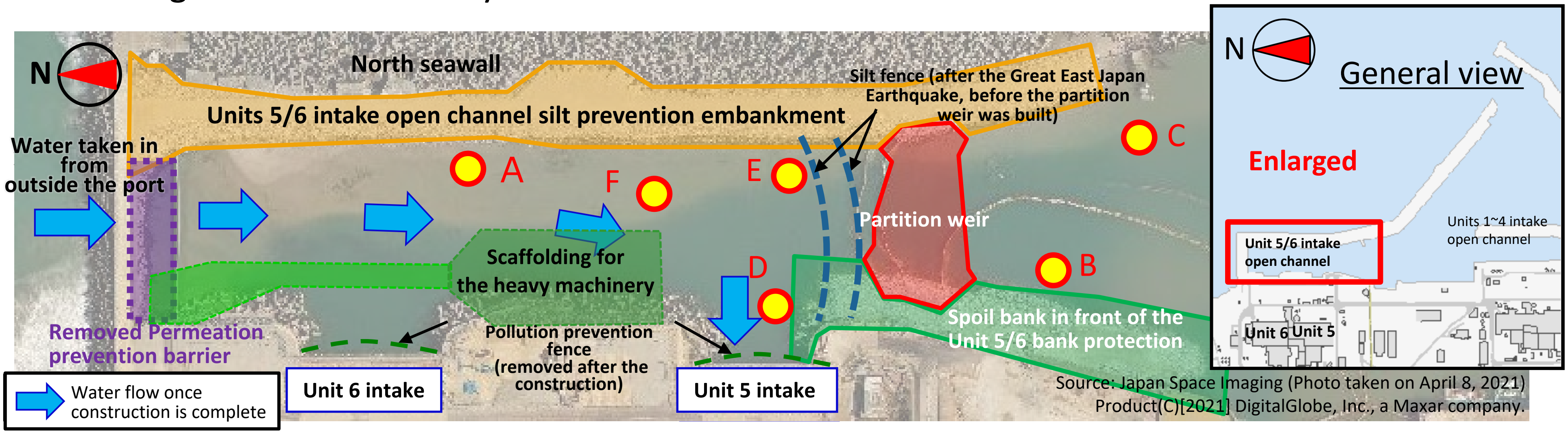


<Legend>
- Sampling location in construction
- Silt fence (before the partition weir was built)
- Pollution prevention fence

1-3. Monitoring results for seabed soil inside the Unit 5/6 intake open channel (2)

TEPCO

- The following shows monitoring results for seabed soil inside the unit 5/6 intake open channel from August 2022 to January 2025.



Sampling points		Before construction	FY2022	2023									2024												2025
		2017 to July 2021	Aug. ~ Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.
A-1 North side of the Unit 5/6 open channel North side of the silt fence (GL±0m)	Cs-134	4.4~52.3	31.5~39.8	40.1	33.9	66.5	65.5	33.6	65.9	34.6	32.0	69.5	44.5	51.1	34.6	34.4	34.8	53.6	51.4	40.4	59.0	64.5	38.1	57.6	37.4
	Cs-137	163.6~678.6	303.2~468.1	1,414.0	1,360.0	2,752.0	2,957.0	422.3	2,195.0	281.8	216.7	2,322.0	1,210.0	1,270.0	195.2	510.4	461.7	1,169.0	2,107.0	1,337.0	1,135.0	826.2	922.9	725.1	615.9
A-2 North side of the Unit 5/6 open channel (North side of the silt fence (GL-0.5m)	Cs-134	14.4~58.5	32.5~38.3	※Only sampled from the surface (GL±0m) since sand was removed during dredging																					
	Cs-137	310.0~689.8	299.1~404.0																						
B South side of the partition weir ① (South side of the silt fence)	Cs-134	723.0	34.5~65.6	62.6	47.8	60.1	97.1	59.9	92.5	52.4	53.2	83.7	75.2	38.2	52.8	35.1	50.6	48.1	39.7	58.2	55.7	64.5	42.5	57.6	39.4
	Cs-137	6,475.0	412.8~3,331.0	1,061.0	323.8	2,008.0	4,943.0	2,649.0	3,528.0	2,004.0	2,732.0	3,287.0	2,868.0	353.9	1,205.0	613.8	1,125.0	2,086.0	1,308.0	1,342.0	1,638.0	1,622.0	1,190.0	1,863.0	1,006.0
C South side of the partition weir ② (South side of the silt fence)	Cs-134	183.0	30.9~68.7	44.6	61.6	59.5	47.7	234.8	59.3	37.1	39.6	44.0	153.3	115.8	42.4	26.5	36.9	39.2	29.5	41.4	38.1	48.6	31.0	29.8	33.8
	Cs-137	1,893.0	360.8~2,671.0	485.9	886.9	330.5	560.6	9,519.0	1,773.0	295.9	441.2	1,970.0	9,737.0	3,345.0	723.9	348.9	257.0	253.0	409.7	419.6	361.7	356.2	227.4	246.4	258.6
D Unit 5 intake	Cs-134	−	101.6~3,546.0	690.7	586.2	63.7	141.4	64.5	75.2	70.7	50.2	50.5	61.8	50.3	177.8	114.8	79.6	50.3	40.3	64.9	69.3	83.5	52.0	50.7	35.9
	Cs-137	−	3,301.0~144,000.0	24,760.7	26,400.0	4,189.0	5,699.0	951.7	3,876.2	3,085.0	2,810.0	1,387.0	3,981.0	2,069.0	8,661.0	5,140.0	1,970.0	2,305.0	2,166.0	1,763.0	1,834.0	1,866.0	1,563.0	1,773.0	1,656.0
E North side of the partition weir	Cs-134	−		42.8	59.8	86.8	98.7	96.8	56.9	147.0	35.6	45.5	64.4	161.2	46.4	40.4	38.3	37.0	41.6	55.0	50.1	55.7	33.1	42.7	38.4
	Cs-137	−		437.1	2,022.0	2,822.0	3,069.0	3,438.0	3,022.0	5,975.0	936.5	1,546.0	3,145.0	8,371.0	829.4	2,427.0	1,551.0	764.6	1,066.0	3,371.0	4,154.0	1,191.0	1,460.0	2,118.0	1,060.0
F East side of scaffolding for the heavy machinery	Cs-134	−				40.2	166.1	45.3	53.7	98.0	52.4	51.4	58.6	31.3	55.3	37.8	87.1	34.1	40.7	49.1	74.8	58.6	48.2	63.2	40.0
	Cs-137	−				1,312.0	8,303.0	592.4	1,481.0	5,569.0	2,676.0	1,049.0	630.9	178.7	3,446.0	1,694.0	1,148.0	891.0	1,884.0	1,020.0	1,654.0	1,606.0	955.9	1,392.0	1,332.0

※Unit: Bq/liter, Figures in gray were below the detection limit

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2. Facility inspection status

TEPCO

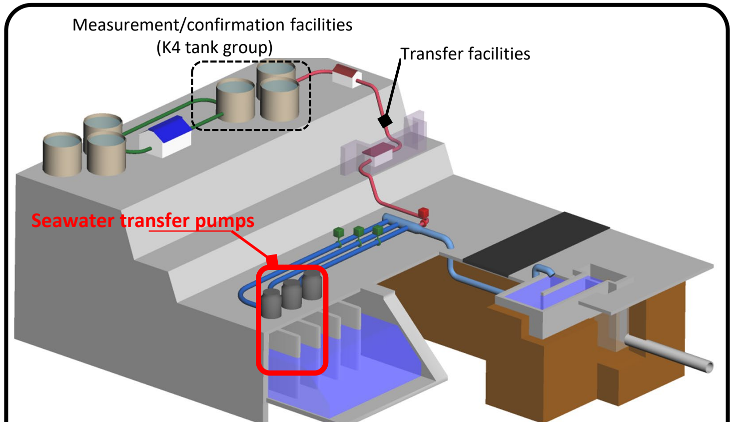
- ALPS treated water dilution and discharge facility and discharge/intake facility inspection status is as follows:
- At current time we have found no abnormalities that will impact the discharge schedule.

Facility	Primary inspection details	Inspection status
Measurement/ confirmation facilities	**Measurement/confirmation tank group C: internal inspection of the bottom of the tanks**	**Completed (no abnormalities (reported on November 28, 2024))**
	Measurement/confirmation tank group A: Internal inspection of the bottom of the tanks	**Completed (no abnormalities (reported on December 26, 2024))**
	Measurement/confirmation tank group B: Internal inspection of the tanks	Inspection underway
	Circulation pumps: Lubrication oil for bearings replacement	**Completed (no abnormalities)**
	Agitators: Insulation resistance measurements	Inspection underway
	Miscellaneous: Strainer cleaning, etc.	**Completed (no abnormalities)**
Transfer facilities	ALPS treated water transfer pumps: Lubrication oil for bearings replacement	Inspection underway
	Emergency isolation valve-1: Disassembly inspection	Inspection underway
	Emergency isolation valve-2: External inspection	Inspection underway
	Miscellaneous: Strainer cleaning, etc.	Inspection underway
Dilution facilities	Seawater transfer pump system C: Disassembly inspection	Inspection underway **(Inspection status reported on following pages)**
	Seawater transfer pump system A: Gland packing replacement	Inspection underway
	Seawater transfer pump system B: Gland packing replacement	Inspection underway
	Sea water transfer pipes/seawater pipe header: Internal inspection	Inspection underway
	Discharge vertical shaft (up-stream storage): Internal inspection	Inspection underway
Discharge facilities	Discharge vertical shaft (down-stream storage), discharge tunnel: Internal inspection	Inspection underway **(Inspection status reported on following pages)**
Seawater intake facilities	**Partitioning weirs: External inspection**	**Completed (no abnormalities)**
	Intake channel system B: Cleaning, external inspection	Inspection underway

Black letters: Completed
Faded letters: Not yet completed

2-1. Seawater transfer pump system C inspection status

- A disassembly inspection was conducted for seawater transfer pump system C and no abnormalities were found. The system will be reassembled, brought back online and subjected to test operation.



ALPS treated water dilution and discharge facilities general diagram


Impeller


Shafts


Suction Bell


Discharge bowl


Lifting pipes

Suction Bell Discharge bowl Lifting pipes


Seawater transfer pump system C (prior to disassembly)

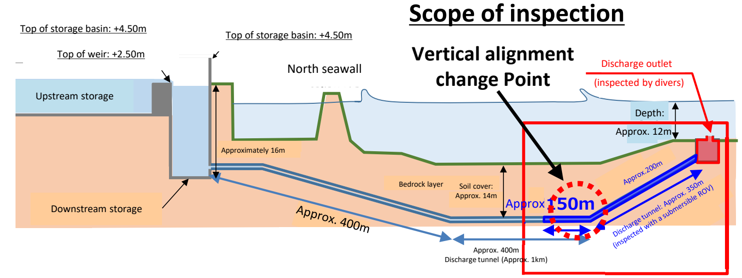
2-2. Discharge tunnel and the discharge outlet inspection status (1/2)

TEPCO

- **An internal inspection of the discharge tunnel and discharge outlet were conducted and no abnormalities were confirmed.**
  - Divers and submersible ROV's were used to check conditions inside the discharge outlet and inside the tunnel up to approximately 350m point from the discharge tunnel exit.

（We are deliberating increasing the distance back into the tunnel that the inspection is conducted, but since submersible ROV propulsion may be affected as the submersible ROV cable rubs against sediment and marine organism that has affixed itself to the inside of the tunnel, the distance from the exit will be gradually increased as we obtain knowledge.)

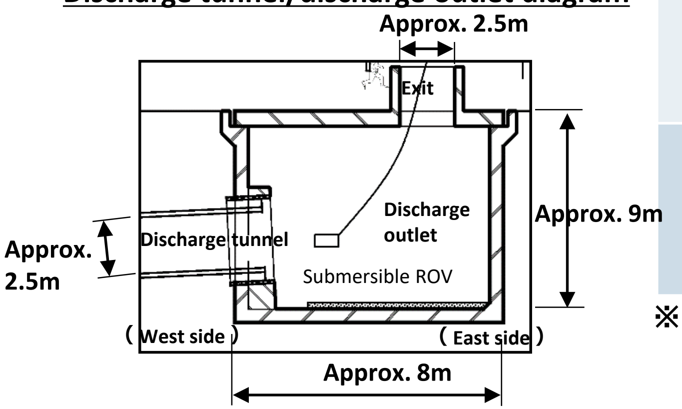
Scope of inspection



Submersible ROV

(Dimensions: 0.6m×1.2m, Mass: Approx. 56Kg)

Discharge tunnel/discharge outlet diagram



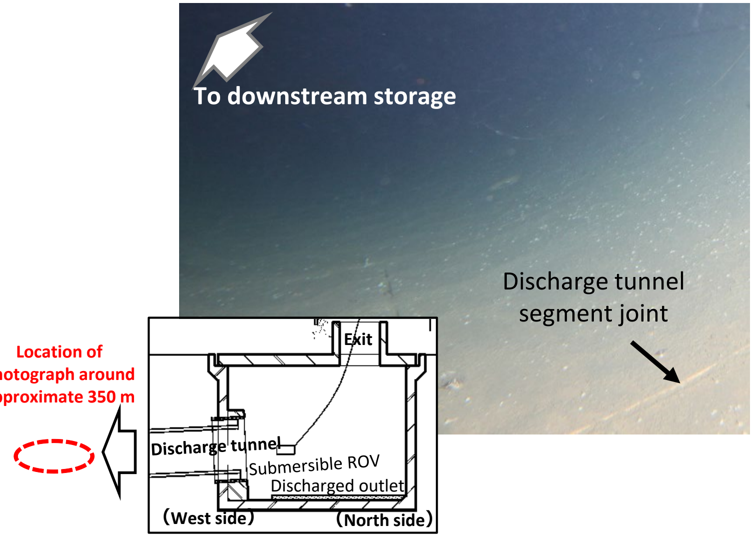
Inspection results Underlined portions indicate newly confirmed events

Inspection item	Results of this inspection (January 2025)	Results of previous inspection (June 2024)
Marine organism adhesion	Outside surface of the discharge outlet: Approximately 5cm of adhesion Inside surface of the discharge outlet: Approximately 5cm of adhesion centering around the top No seaweed on the seafloor around the discharge outlet Inside the discharge tunnel: some adhesion of marine organism (until approximately 20m into the tunnel) <u>marine organism adhesion gradually decreases as you get more than 20m inside the title with no adhesion at around the 350m mark</u>.	Outside surface of the discharge outlet: Approximately 5cm of adhesion Inside surface of the discharge outlet: approximately 5cm of adhesion centering around the top No seaweed on the seafloor around the discharge outlet Inside of the discharge tunnel※1: Some adhesion of marine life
Sediment conditions	Approximately 20cm on average on the bottom of the discharge outlet Sediments inside the discharge tunnel are sparse and <u>only several centimeters thick, there is sediment several centimeters thick at the vertical alignment change point.(no sediments more than 300 m from the exit</u>)	Approximately 20cm on average on the bottom of the discharge outlet Approximately several centimeters of sediment inside the discharge tunnel※1
Issues that may impact discharge, such as cross-sectional closure (foreign objects, etc.)	None	None

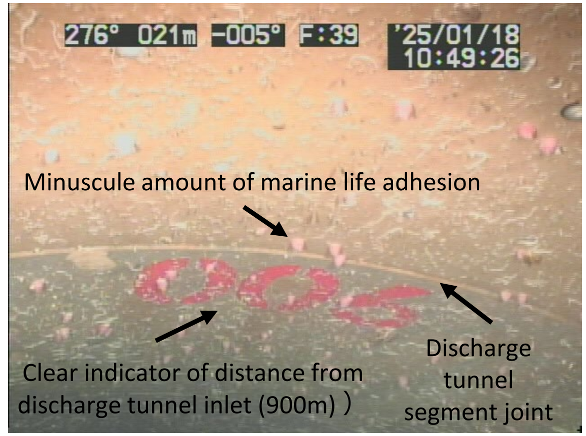
※1 The scope of the discharge tunnel inspection in June 2024 have conducted from the exit approximately 10m.

2-2. Discharge tunnel and the discharge outlet inspection status (2/2)

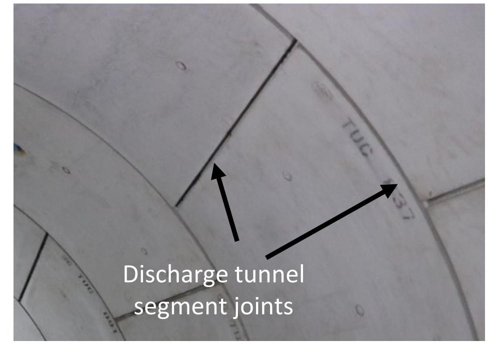
Discharge tunnel wall surface conditions
(Approx. 350m from the exit)



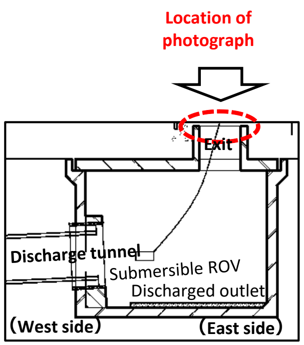
Discharge tunnel wall surface conditions
(Approx. 100m from the exit)

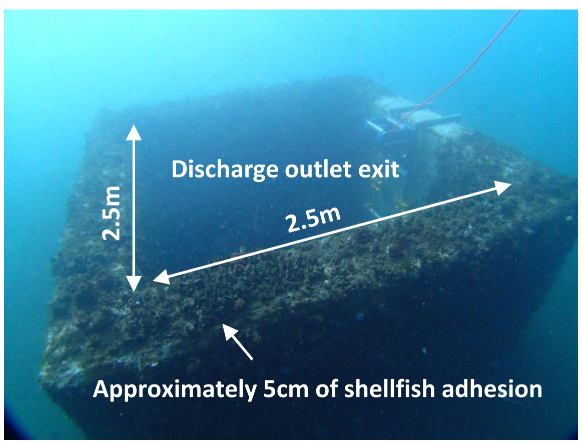


Discharge tunnel wall surface prior to being filled with water

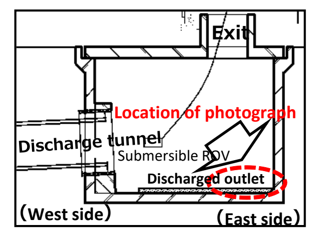


Discharge outlet exit





Bottom of discharge outlet (east side)



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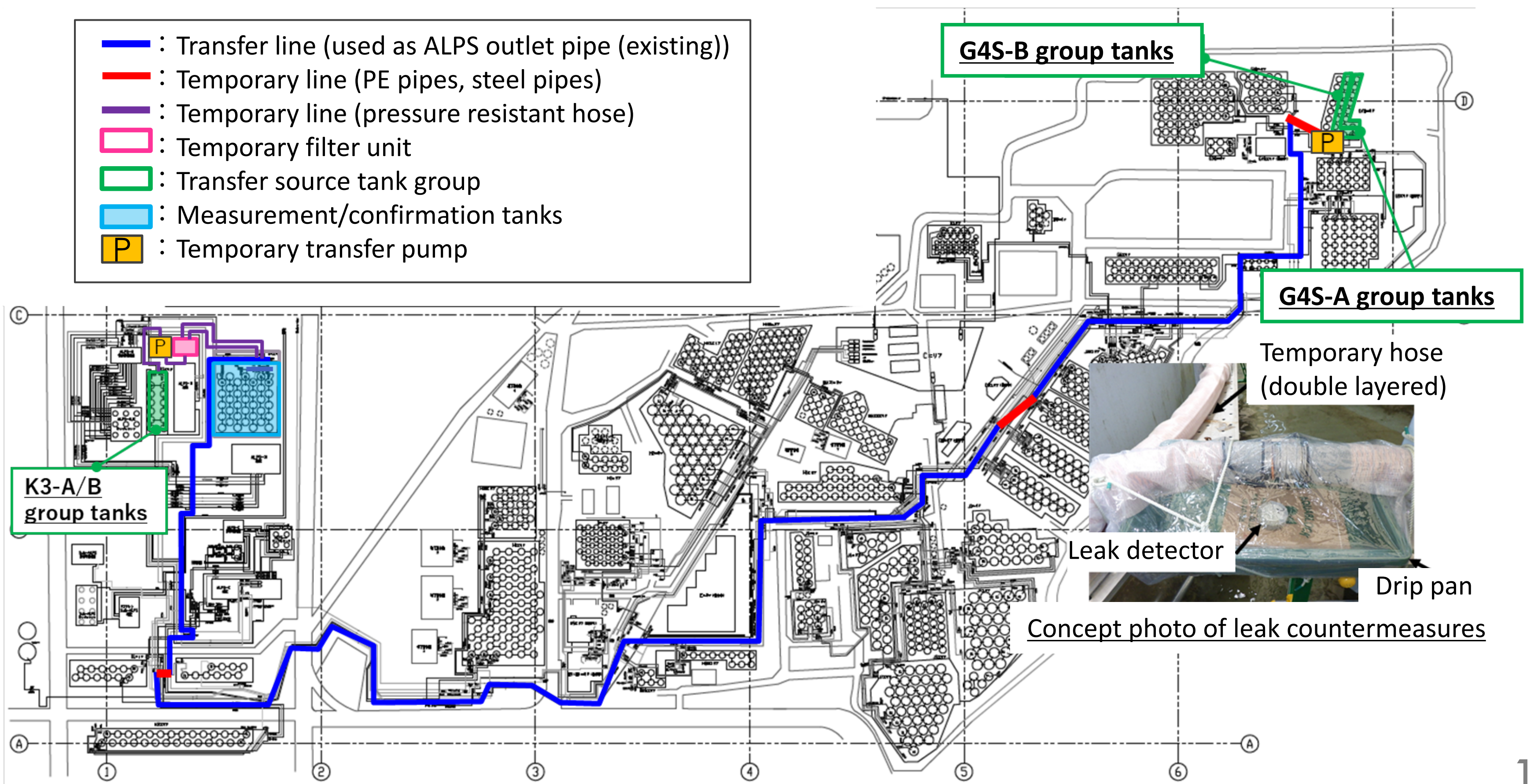
3. Transfer of ALPS treated water in preparation for the future discharges

TEPCO

- Transfer of ALPS treated water from G4S area Group A/B to measurement/confirmation facility tank group C in preparation for the discharge of Management number: 24-7-11 was conducted (from November 27, 2024 to December 19, 2024). Circulation/agitation has been commenced since January 7, 2025 and a sample was taken on January 14, 2025. It is currently being analyzed.
- Transfer of ALPS treated water from G4S area Group B and K3 area Group A/B to measurement/confirmation facility tank group A in preparation for the discharge of Management number: 25-1-12 has been commenced since January 6, 2025 and will be completed in the middle of February 2025.



TEPCO

【Main points of the FY2025 ALPS treated water discharge plan (draft)】

- Number of annual discharges: 7 times
- Annual amount of water to be discharged: Approx. 54,600m^3
- Annual amount of tritium to be discharged: Approx. 15 trillion Bq

4. Basic thinking behind the discharge plan

TEPCO

- As a general rule, **<u>we will start by discharging water with a low concentration of tritium</u>**.
- Based on this general rule, **<u>we will create a discharge plan for the following fiscal year at the end of each fiscal year and announce it</u>**. In addition to tritium concentrations, space needed for facilities required for decommissioning, and the need to secure enough relay tanks used for holding ALPS treated water after secondary treatment are also considered during the drafting of the discharge plan.

※ Issues that will be considered when formulating the discharge plan

- Based on tritium concentration trends in the water generated daily, we will decide whether to prioritize the amount of water being generated daily or in storage when discharging water during the next fiscal year in order to reduce the annual amount of tritium to be discharged while ensuring that the concentration of radioactive substances, with the exception of tritium, meet regulatory standards (sum of the ratios of the concentration of each radionuclide to the regulatory concentration limit is less than 1).
- During the initial stage of discharge, we will discharge stored water that does not requires secondary treatment in order to keep the process smooth.
- The preparation of relay tanks and inspection/repairs required due to the deterioration over time of storage tanks on site is also considered.

4. Consideration when deliberating the FY2025 discharge plan

TEPCO

- As a general rule, water with low tritium concentration shall be discharged first as before. And when deliberating the ALPS treated water discharge plan, the following issues are taken into consideration.

  ① Estimates of the tritium concentrations in contaminated water (slide 19)

  ② The amount of contaminated water generated (slide 20)

  ③ Site usage (slide 21)

  ④ Other considerations (slide 23)

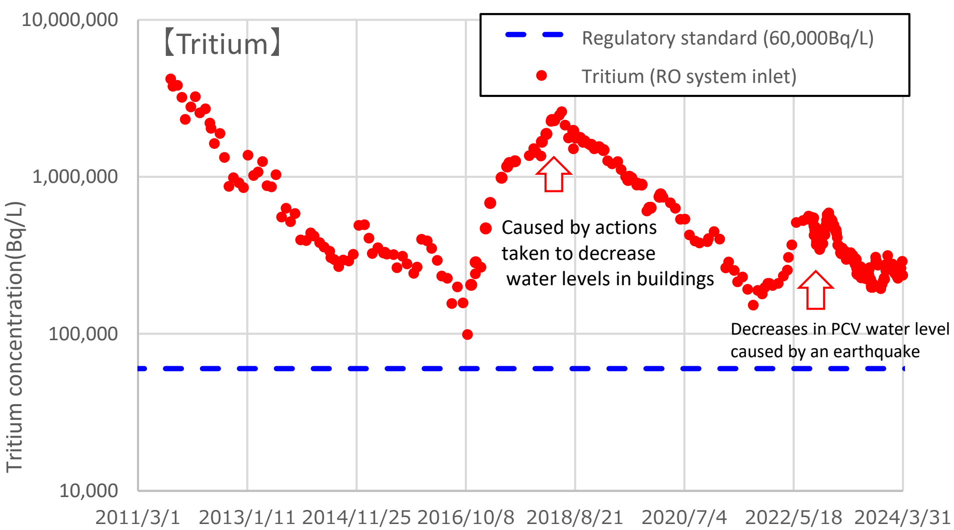
- Each condition is explained on the following pages

4-1. Estimates of the tritium concentrations in contaminated water

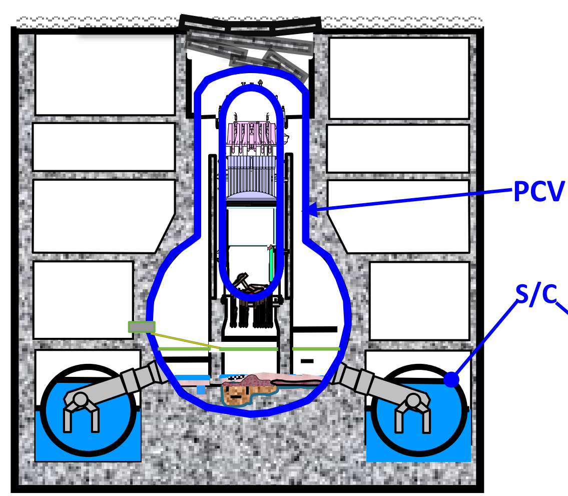
TEPCO

- There was no significant increase in the concentration of tritium in contaminated water.
- However, the Nuclear Regulation Authority has requested that the water levels in the primary containment vessels (PCV) and suppression chambers (S/C) be lowered as quickly as possible in consideration of seismic resistance/safety.
- Tritium concentrations inside the PCVs are high (Unit 1: Approx. 20 million Bq/L; Approx. 4,800m^3; Unit 3: Approx. 10 million Bq/L; Approxi. 6,600m^3), and water drained from them to reduce water levels will be treated as stagnant water from inside the building, so we expect※ to see fluctuations in the concentrations of tritium in the contaminated water generated during FY2025.
- Therefore, the FY2025 discharge plan calls for the ALPS treated water currently being stored that has relatively low concentrations of tritium and does not require secondary treatment to be discharged.

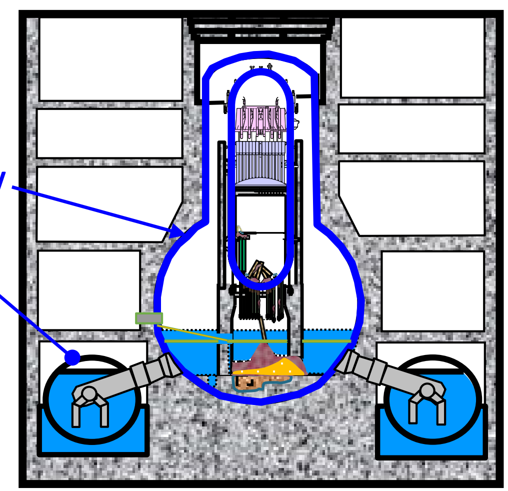
※ The same goes for draining from pipes and equipment in the future during the course of decommissioning



Tritium concentrations in contaminated water



Unit 1

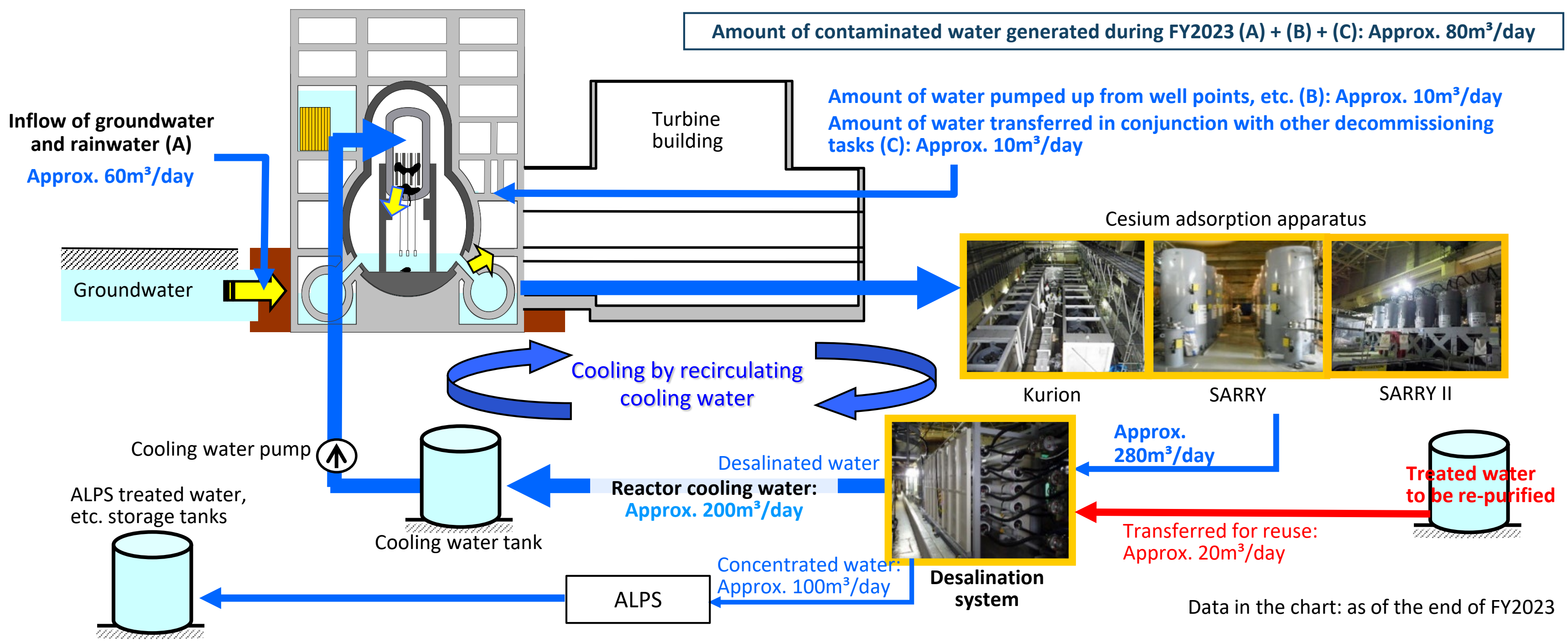


Unit 3

4-2. Amount of contaminated water generated (As of FY2023)

TEPCO

- During FY2023, contaminated water was generated at a rate of approximately 80m³/day with approximately 60m³ of that water flowing into buildings on a daily basis. Approximately 10m³/day of contaminated groundwater from 2.5m above sea level (well points) was pumped up and approximately 10m³/day of contaminated water was transferred in conjunction with other decommissioning tasks.
  The data for FY2024 is currently being compiled and is expected to show a decline in these numbers, but just to be safe we've assumed that the numbers will be the same as FY2023.
- In conjunction with the decrease in the amount of contaminated water being generated, the amount of fresh water injected as reactor coolant is showing a downward trend, so the required amount of desalinated water will be secured by replenishing the desalination system with treated water to be re-purified that is currently being stored in tanks (approximately 20m³/day).
  This will not result in an increase in the amount of ALPS treated water, etc., and will have no impact on the amount of water being stored in tanks in the long run.



Data in the chart: as of the end of FY2023

4-3. Site usage

- In addition to the E area (currently being used for flanged tank dismantling), which will be the construction site for facilities needed for the retrieval of fuel debris from Unit 2, the J8 and J9 areas in the vicinity of the E area will also be the construction site for facilities needed for the retrieval of fuel debris from Unit 3.

- The J8※1 and J9 areas tank dismantling will begin with the J9 tanks that will be drained first in conjunction with the discharge into the sea.

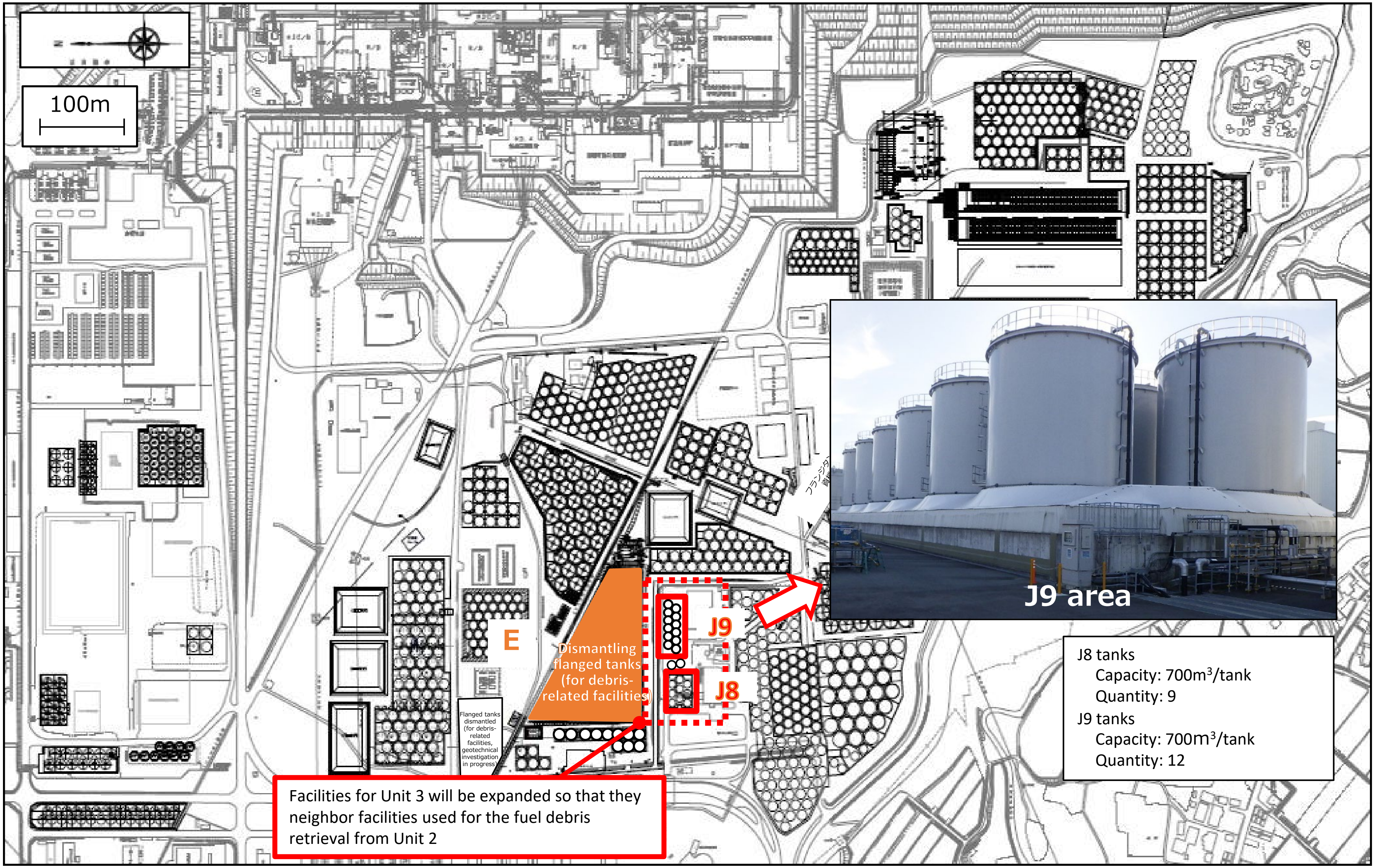
- The J8 and J9 area tank dismantling implementation plan was submitted on August 1, 2024. Tank dismantling will begin after it has been authorized (Dismantling period: Second half of FY2024~end of FY2025※2).

- Prior to dismantling, the remaining water inside the J9 tanks will be treated and preparations, such as removing obstructions from the vicinity that do not interfere with tank storage functions, etc., will be made.

※1 Since the J8 area tanks are being used to store treated water to be re-purified, dismantling will begin after the water inside them has been transferred to other tanks that have been emptied.

※2 The J8 and J9 area tank dismantling will be the first time that welded tanks have been dismantled, so we will prioritize safety and move forward while checking procedures and accumulating knowledge.

【Reference】 Areas of dismantled tank groups



J8 tanks
Capacity: 700m^3/tank
Quantity: 9
J9 tanks
Capacity: 700m^3/tank
Quantity: 12

Facilities for Unit 3 will be expanded so that they neighbor facilities used for the fuel debris retrieval from Unit 2

4-4. Other considerations

TEPCO

Full inspection of measurement/confirmation tanks and cleaning of the bottoms

- Full inspections of the tanks (including cleaning of the bottoms) have been planned for the maintenance/management of ALPS treated water discharge facilities, and the time required to do so has been allotted.

  FY2024: Cleaning of the bottom of tank groups A~C and full inspection of tank Group B

  FY2025: Full inspection of Group C

  FY2026: Full inspection of tank Group A planned

Other storage tanks

- Tank areas that are prioritized for inspections and have fulfilled discharge requirements have been reflected in the plan and will be "drained to perform a visual inspection of the inside of the tanks" in succession.
- Tanks that have recently been difficult to drain have been subjected to an internal inspection using a submersible ROV※ and will be subject to observe trend.

  ※ The video footage from the submersible ROV is clear and confirm the condition of paint and the extent of corrosion visible. If significant corrosion is discovered thickness measurements will be taken from the outside using ultrasonic thickness testing.
- Furthermore, as always all tanks will be subjected to visual inspection once a year and thickness measurements will be taken from the outside once a year for tanks subject to this inspection in accordance with the period of time they have been in service.
- Tanks in poor condition will be drained and sealant reapplied in order to ensure integrity.

4-5. FY2025 ALPS treated water discharge plan (draft)（1/2）

TEPCO

- As of January 2025, the FY2025 discharge plan (draft) 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		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 ：Approx. 8,000m³ ：Approx. 1,000m³	Secondary treatment: No Tritium concentration: 220,000~370,000Bq/L ※3 Total amount of tritium : 2.8 trillion Bq	April
25-2-13	K3 area Groups A/B ※5（Transferred to Measurement/Confirmation facility Group C） J1 area Group E（Transferred to Measurement/Confirmation facility Group C）	：Approx.6,900m³ ：Approx. 900m³	Secondary treatment: No Tritium concentration: 220,000~380,000Bq/L ※3 Total amount of tritium : 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）	：Approx. 7,200m³ ：Approx. 600m³	Secondary treatment: No Tritium concentration: 200,000~380,000Bq/L ※3 Total amount of tritium : 2.8 trillion Bq	July~August
25-4-15	G5 area Groups E/C/B（Transferred to Measurement/Confirmation facility Group B）	※5 ：Approx. 9,000m³	Secondary treatment: No Tritium concentration: 200,000~220,000Bq/L ※3 Total amount of tritium : 1.6 trillion Bq	September

Continues on next slide

※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 Average value of the tank group that was assessed taking into account the radioactive decay until April 1, 2025

※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.

4-5. FY2025 ALPS treated water discharge plan (draft)（2/2）

TEPCO

Continued from previous slide

Management number ※1	Transfer source tank ※2	Amount of water to be transferred		Discharge commencement period
25-5-16	G5 area Groups B/a （Transferred to Measurement/Confirmation facility Group C）	：Approx. 7,800m³	Secondary treatment: No Tritium concentration: 220,000~260,000Bq/L※3 Total amount of tritium : 1.9 trillion Bq	October~ November
25-6-17	G5 area Groups A/D （Transferred to Measurement/Confirmation facility Group A） G4 north area Groups A/B （Transferred to Measurement/Confirmation facility Group A）	：Approx. 3,900m³ ：Approx. 3,900m³	Secondary treatment: No Tritium concentration: 260,000~300,000Bq/L※3 Total amount of tritium : 2.2 trillion Bq	November~ December
Inspection suspension (including full inspections of measurement/confirmation facility Group C)				
25-7-18	G4 north area Groups A/B （Transferred to Measurement/Confirmation facility Group A） H2 area Group J （Transferred to Measurement/Confirmation facility Group A）	：Approx. 3,600m³ ：Approx. 4,200m³	Secondary treatment: No Tritium concentration: 260,000~270,000Bq/L※3 Total amount of tritium : 2.0 trillion Bq	March

➡ Total amount of tritium to be discharged during FY2024 : Approx.15 trillion 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 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 Average value of the tank group that was assessed taking into account the radioactive decay until April 1, 2025

4-6. FY2025 order of discharge

TEPCO

- G4 south area Group B
  - Water will be transferred/discharged as planned in accordance with the FY2024 discharge plan.

- K3 area Groups A/B
  - The tanks in the vicinity of Multi-nuclide removal equipment (ALPS) will be discharged as planned so that the space can be effectively utilized in the long period.
  - Of these tanks in the vicinity, water in the tanks in the K3 tank area shall be transferred/discharged and inspections will be conducted to ensure that it can be used for a long period.

- J1 area Group E
  - As a horizontal development of the K4-E side plate corrosion, we plan to conduct sequential internal inspections of the storage tanks. Internal inspections will be implemented in the form of visual inspections of drained tanks, however if the tank cannot be drained due to a lack of empty tanks to transfer the water, a submersible ROV will be used to perform the inspection.
  - The J1 area tanks are old and the internal inspection priority is relatively high, however with the exception of tank J1-E, secondary treatment is necessary.

    Therefore, the water in J1-E will be transferred/discharged as soon as possible to perform an inspection. After that, inspections will be conducted by transferring stored water from other tanks in the J1 area in turn, starting from this tank.

- G5 area Groups A~E, G4 north area Groups A/B, H2 area Group J
  - Transfer/discharge will be starting with the tank areas with the lowest tritium concentrations.

【Reference】 Inspections of welded tanks used to store ALPS treated water, etc.

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- Welded tanks are designed to have a service life of 20 years as a result of wall thickness specifications that consider sealant specifications/corrosion, but efforts are made to detect abnormalities early by regularly implementing external and internal inspections before the end of this 20 year service period (refer to the chart below), and repairs suitably implemented to maintain integrity over the long-term.

※ Some tanks have been manufactured with a service life of five years (G3, H8, and J1 areas put into service early in 2013) by regular inspections/repairs/sealant reapplication have been implemented to confirm that there is no problem with continued use.

<table>
<tr><th colspan="2">Inspection Type</th><th>Liquid in tanks</th><th colspan="2">Target</th><th>Frequency</th><th>Inspection details</th></tr>
<tr><td rowspan="2">Annual inspection</td><td>①Visual inspection</td><td rowspan="2">Implemented regardless of whether or not there is liquid in the tanks</td><td colspan="2">All tanks</td><td>Once a year</td><td>Outer surface: Checked for deformation, cracks, paint peeling, corrosion, and leaks
<u>Target areas</u>
Sidewalls, nozzles, bolts/nuts, caulking to prevent rain from seeping into the bottom plate, ancillary facilities (vertical ladders, etc.)</td></tr>
<tr><td>②Sidewall thickness measurements taken from the outside (ultrasonic flaw detection)</td><td colspan="2">・Membrane thickness: Less than 100µm
・Thickness allowance: Less than 1mm
・Service life: More than 10 years</td><td>Once a year</td><td>Sidewalls: Checked to confirm that there is no abnormal thinning</td></tr>
<tr><td rowspan="2">Full inspection</td><td>③Internal inspection (after draining water) (ultrasonic flaw detection)</td><td>No</td><td rowspan="2">All tanks</td><td>Tanks that have been emptied through the discharge of ALPS treated water, etc.</td><td rowspan="2">Once every 10 years</td><td>Sidewalls: Paint blistering, peeling, base material thinning
Bottom plate: Same as above
(Internal paint membrane thickness measurements, wall thickness measurements)</td></tr>
<tr><td>④Underwater internal inspection (submersible ROV)</td><td>Yes</td><td>Tanks that cannot be drained</td><td>Sidewalls: Paint blistering, peeling, base material corrosion
Bottom plate: Same as above</td></tr>
</table>

【Reference】 Future tank inspection plans

＊ These current plans may be revised in the future. If revisions are made, they will be announced when the finalized discharge plan is announced.

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- Approx. 1,000 welded tanks will be drained and subjected to internal inspections or submersible ROV inspections if required.

		FY2024		FY2025		FY2026		FY2027 and onward
		1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	
① External inspections (visual inspections)		All tanks		All tanks		All tanks		All tanks/year
② Sidewall thickness measurements taken from the outside (ultrasonic flaw detection)		Approx. 540 tanks		Approx. 710 tanks		Approx. 820 tanks		Implemented for all tanks that have been in service for more than 10 years
③ Internal inspection (after draining water) (ultrasonic flaw detection)	Measurement/ confirmation tanks		K4-B 10 tanks		K4-C 10 tanks			
	J4-L	3 tanks						
	H1-G		8 tanks					
	G4 south-A/B/C	G4 south-C 8 tanks			G4 south-A/B 18 tanks			
	K3-A/B			12 tanks				
	J1-E			8 tanks				
④Underwater internal inspection (submersible ROV)			5 tanks	Approx. 100 tanks		Approx. 100 tanks		Approx. 100 tanks/year

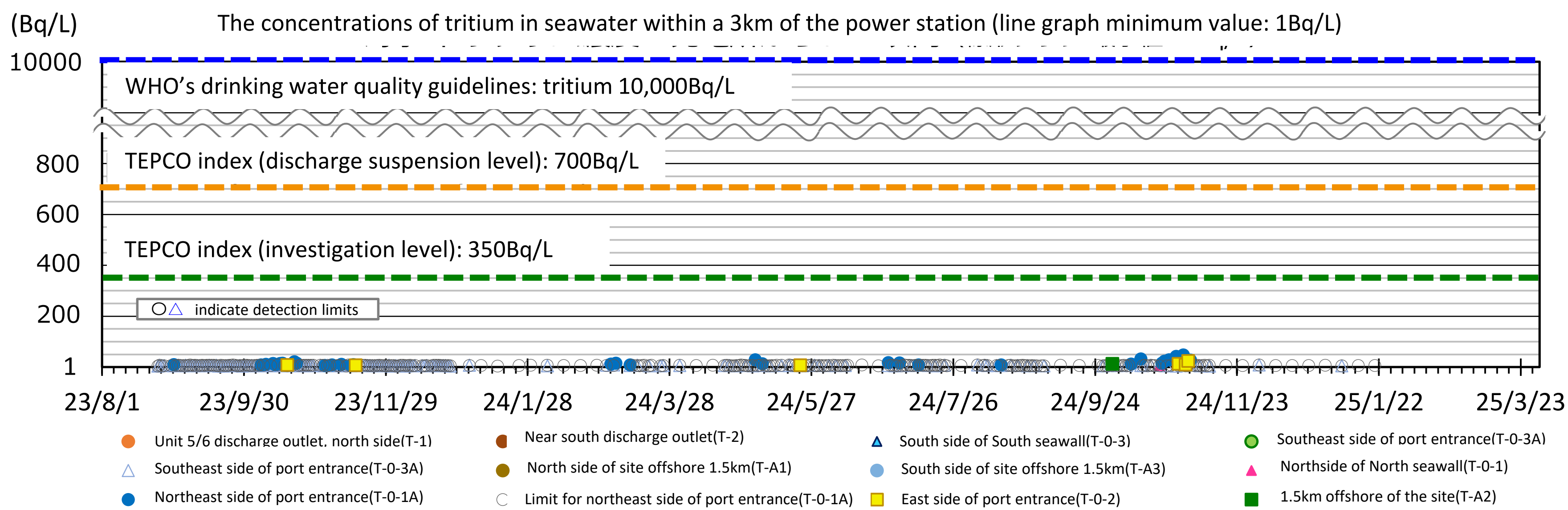
In addition to these plans, the tank areas that will be emptied during the FY2025 discharge (G5, G4 North) and in accordance with the discharge plans for FY2026 and onward will be successively subjected to internal inspections

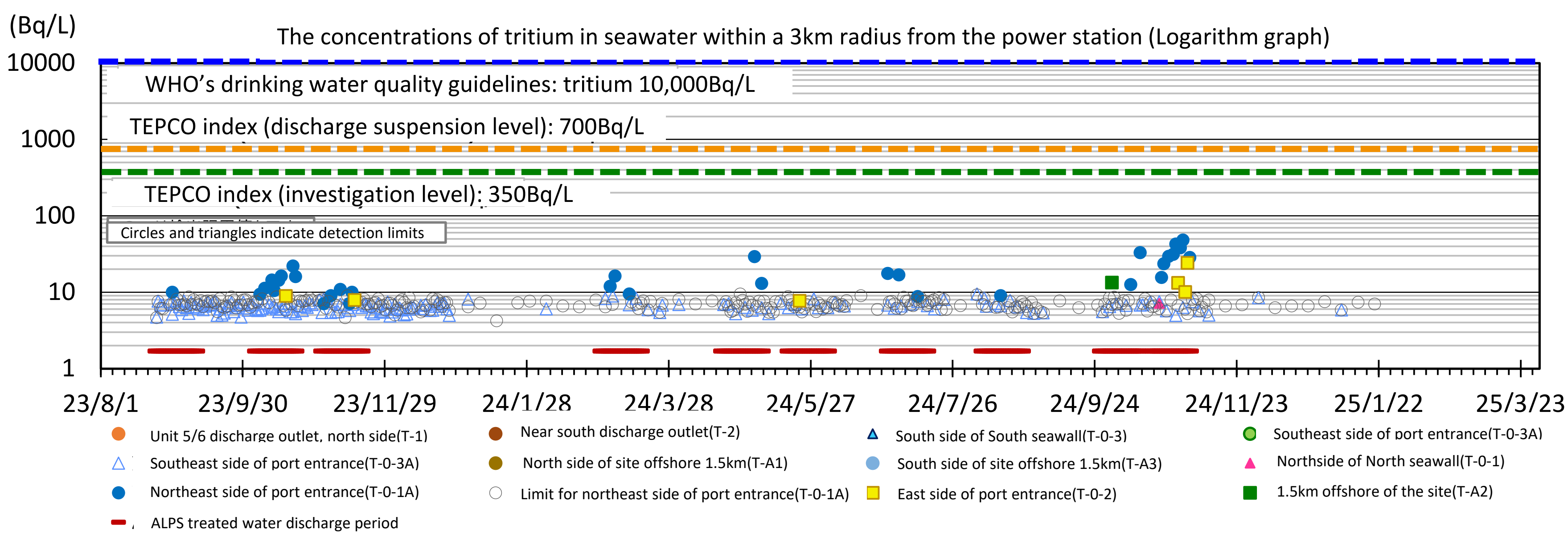
Report contents

(Reference) Sea area monitoring results (2/2)　　quick monitoring

TEPCO

within 3km of the power station





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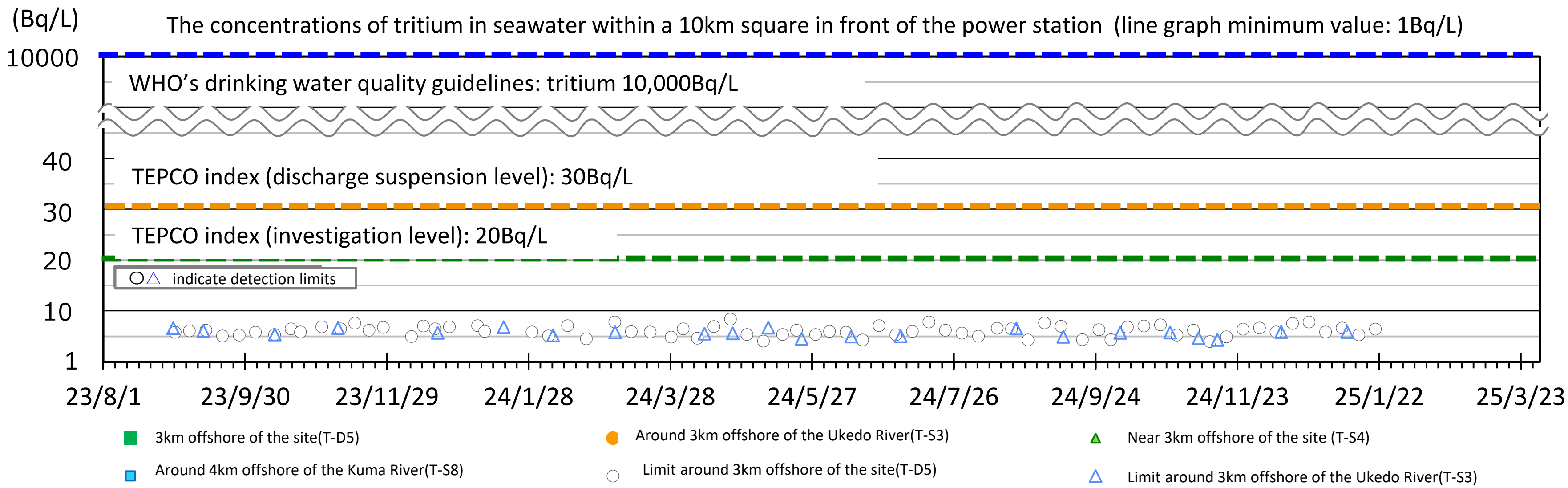
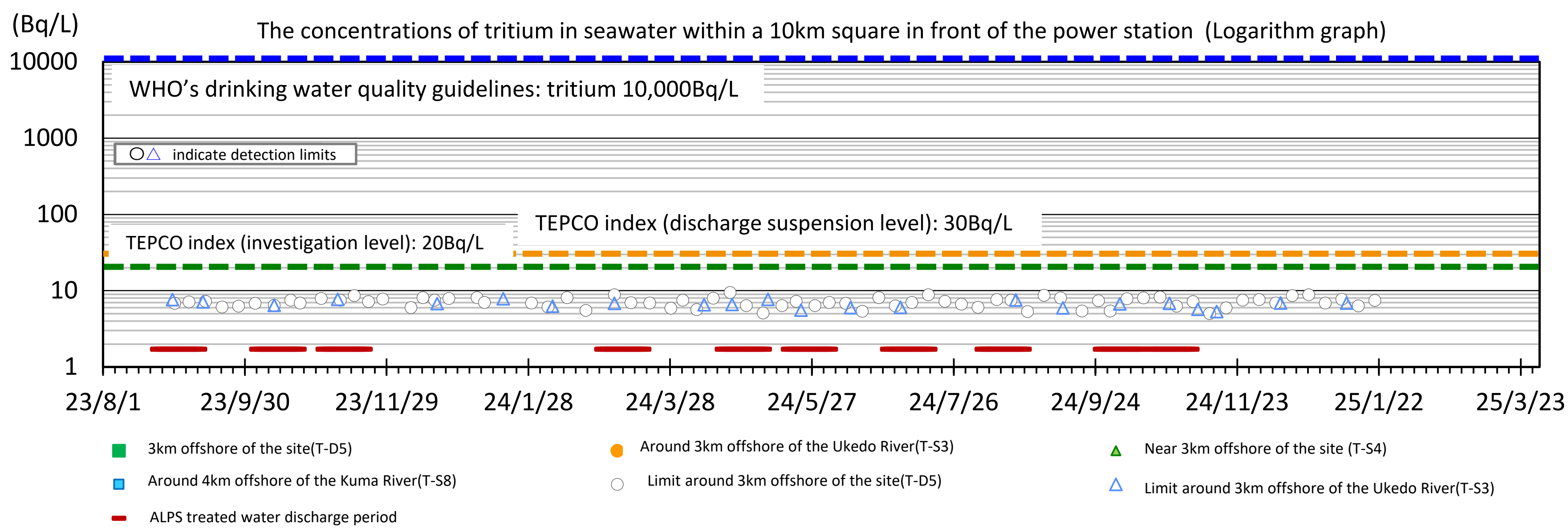
within a 10km square in front of the power station





[Reference] Sea area monitoring plan

for obtaining quick measurements of the concentration of tritium in seawater

- We have engaged in monitoring to obtain quick measurements of the concentration of tritium in seawater with targeting the upper detection limit for 10Bq/liter, and index to determine discharge suspension (the discharge suspension level) was set.

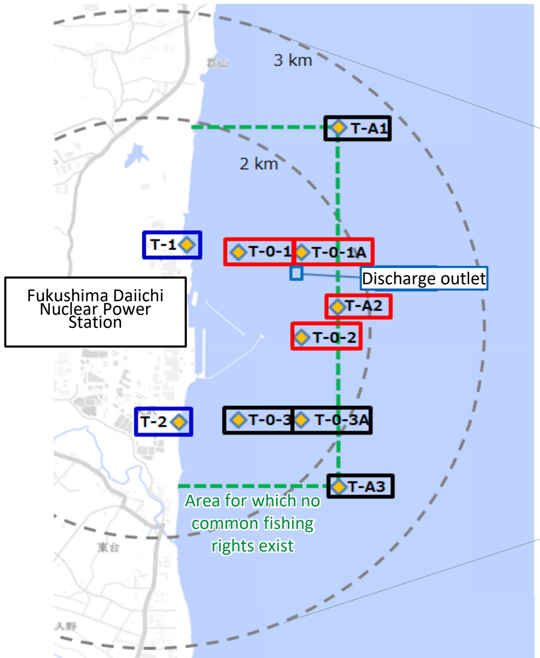


Figure 1: Specimen sampling locations within 3km of the power station (near the discharge outlet)

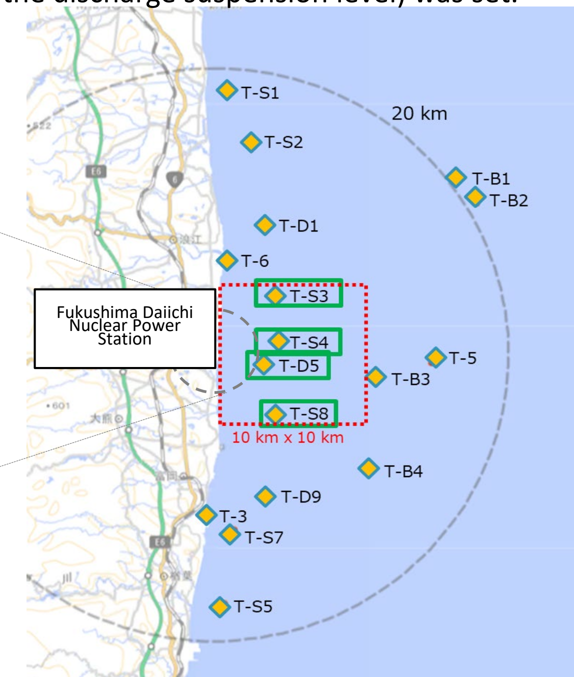


Figure 2: Specimen sampling locations within a 10km square in front of the power station

(red, blue, black boxes) : Monitoring points used to obtain quick results (10 locations)

Index (Discharge suspension level) 700Bq/L

Index (investigation level) 350Bq/L

(green box) : Monitoring points used to obtain quick results (4 locations)

Index (Discharge suspension level) 30Bq/L

Index (investigation level) 20Bq/L

	【Fig.1】 Within 3km of the power station (near the discharge outlet)		【Fig. 2】 Four locations within a 10km square in front of the power station (green box)
	Four locations in the vicinity of the discharge outlet (red box)	Other six locations (blue box, black box)	
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 (blue box).

※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)