ALPS Treated Water Discharge Status Update

October 26, 2023

TEPCO

Tokyo Electric Power Company Holdings, Inc.

1. Performance of the Second Discharge

2. Facility Inspection during and after the Second Discharge

3. Plan for the Third Discharge

4. Information on the water transfer to measurement/confirmation facility in preparation for the 4th discharge

Foreword

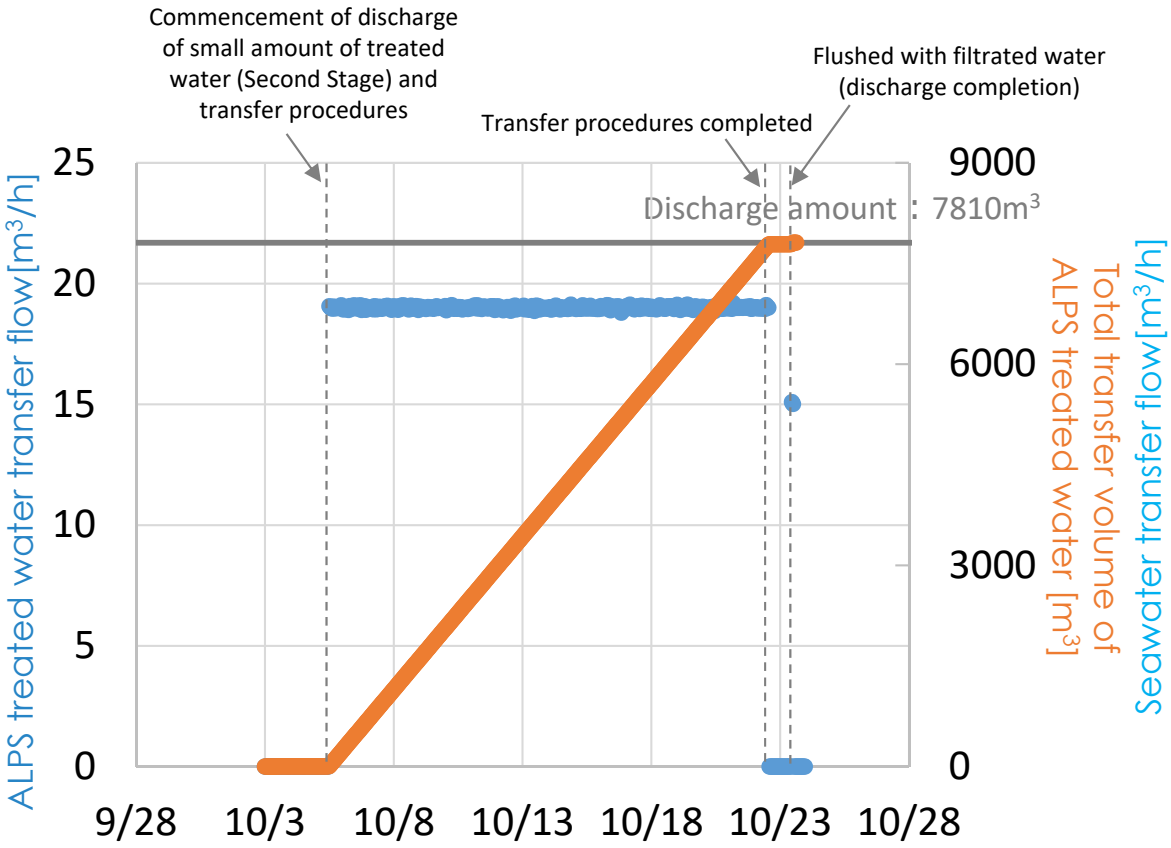
- In this update, we will show that there were no abnormalities with operating parameters or sea area monitoring results during the second discharge, and also provide the analysis results for the next tank group from which ALPS treated water will be discharged (Group A).

- We have implemented the following during the initial discharge of ALPS treated water into the sea:
  - ✓ During the First Stage of the second discharge of ALPS treated water, on October 3, a very small amount of ALPS treated water (approximately 1m³) was diluted with seawater (approximately 1,200m³) after which this water was held in the discharge vertical shaft (upper-stream storage) and sampled in order to verify that ALPS treated water is indeed being diluted as planned.
  - ✓ On October 5, we confirmed that the tritium concentration in the diluted ALPS treated water was less than 1,500Bq/liter and that the analysis value was within the range of uncertainty of calculated concentrations. So, on the same day (October 5), we commenced the discharge of ALPS treated water, and this second discharge was completed on October 23.

Discharged tank group	Tritium concentration	Commencement of discharge	Completion of discharge	Amount of discharge	Amount of tritium radioactivity
Group C	140,000 Bq/liter	October 5, 2023	October 23, 2023	7,810m³	1.1 trillion Bq

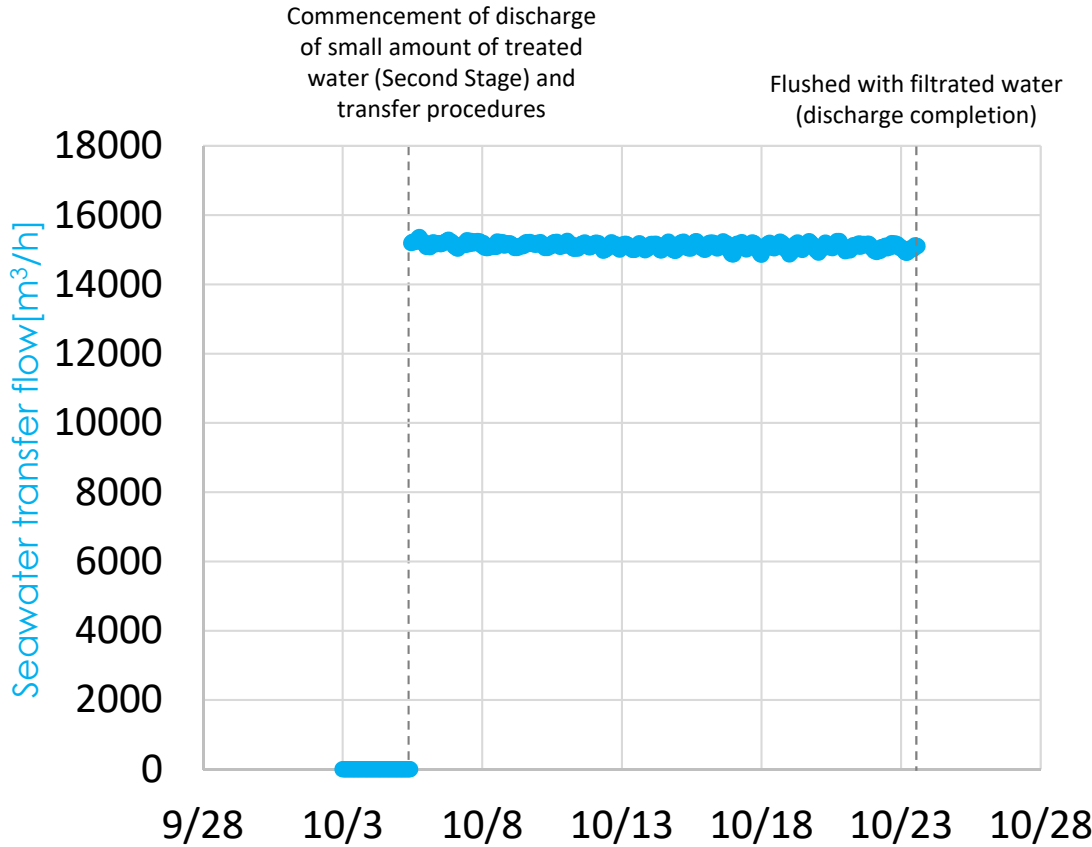
1-1. Operating parameter records during the discharge (1/3)

- We were able to operate ALPS treated water transfer systems and seawater systems without issue.



ALPS treated water transfer flow and total transfer volume of ALPS treated water

- ALPS treated water transfer flow*1
- Total transfer volume of ALPS treated water



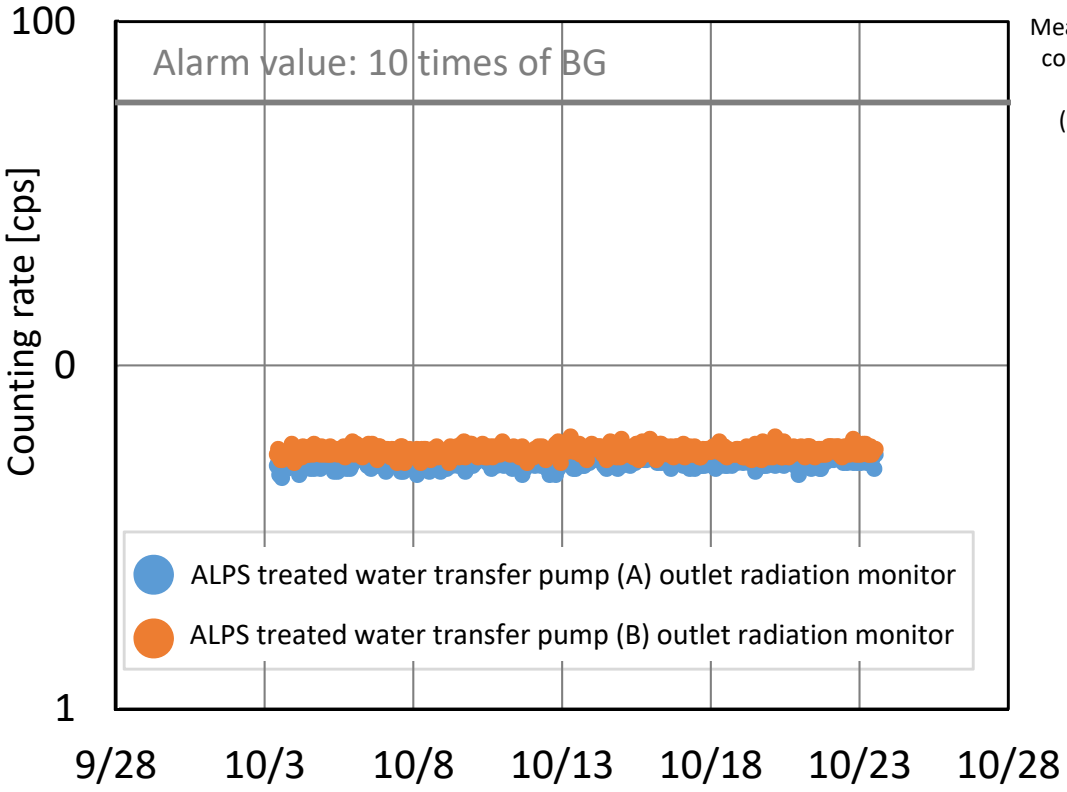
Seawater transfer flow

- Seawater transfer flow*2

※1： The flowmeters are reduplicate, so the higher of the figures from both meters was used.
※2： Total for systems A and B

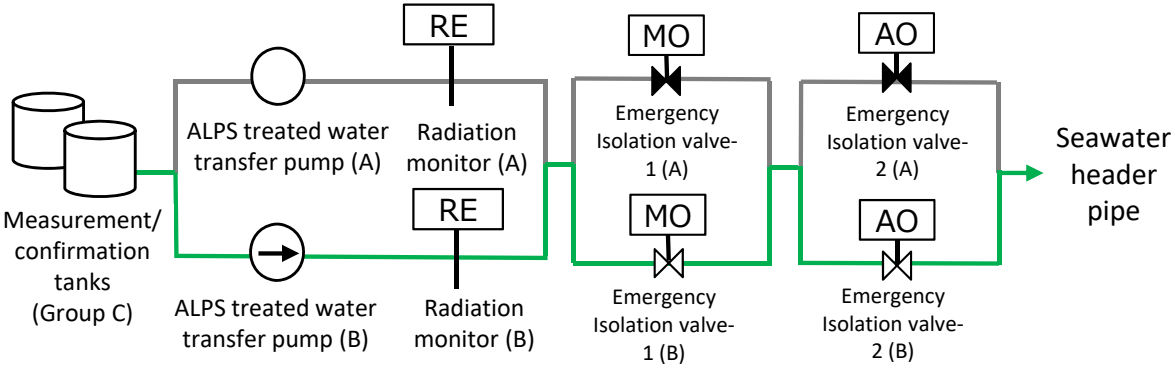
1-1. Operating parameter records during the discharge (2/3)

- No abnormalities were seen in the figures from the ALPS treated water transfer pump outlet radiation monitor.

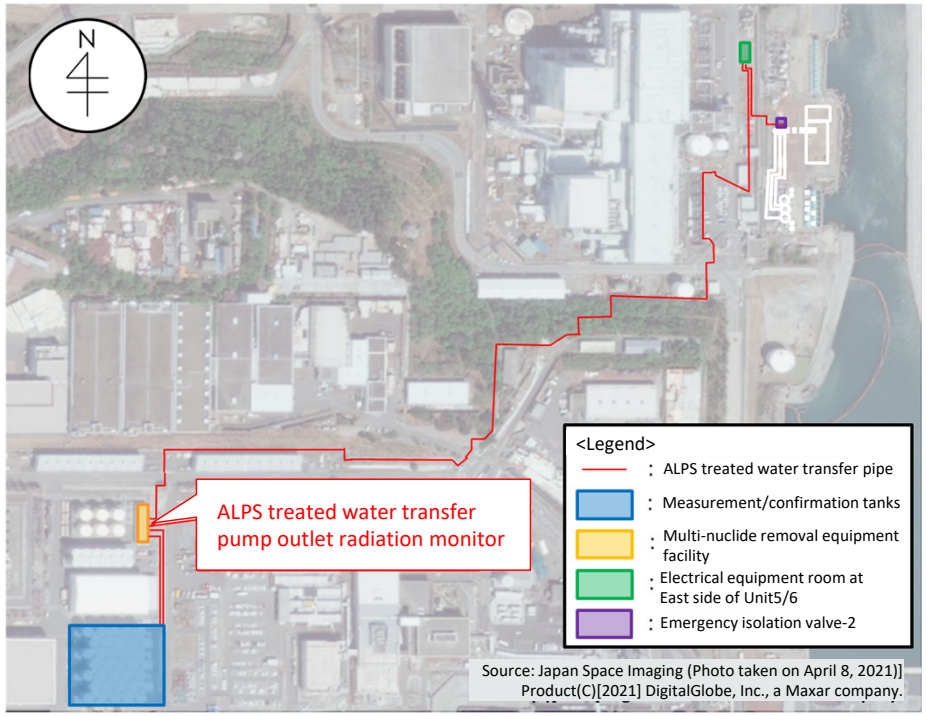


Figures of ALPS treated water transfer pump outlet radiation monitor※

※： As shown in the schematic on the upper right, during the second discharge, ALPS treated water was passed through System B. (System A was filled with filtrated water)



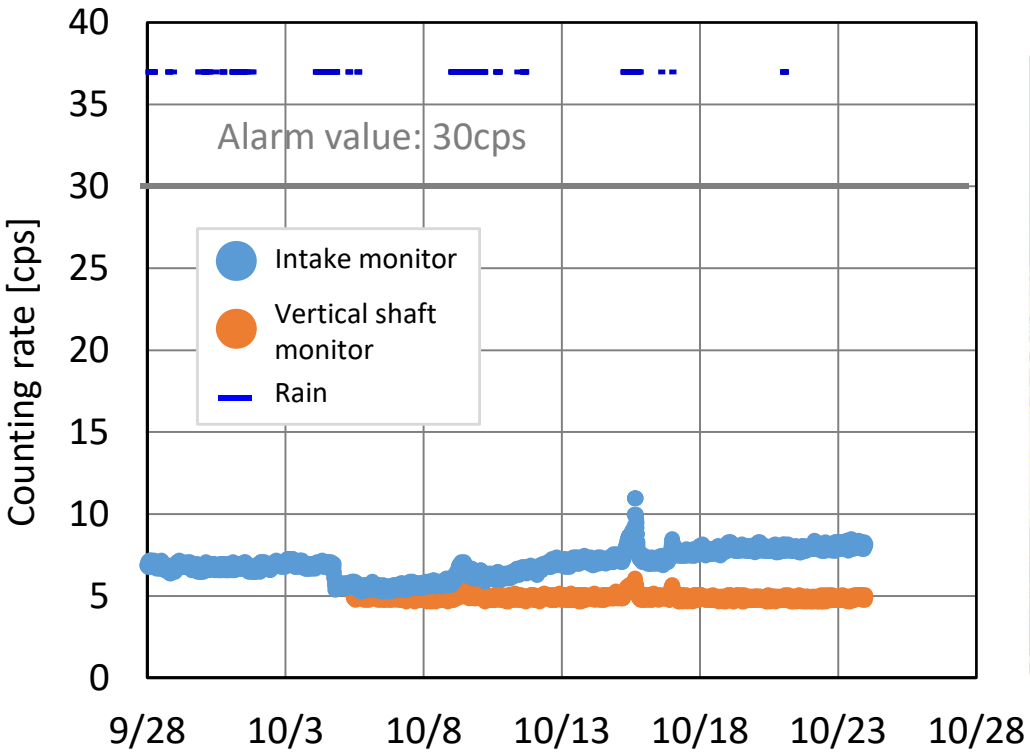
ALPS treated water transfer system schematic for the second discharge



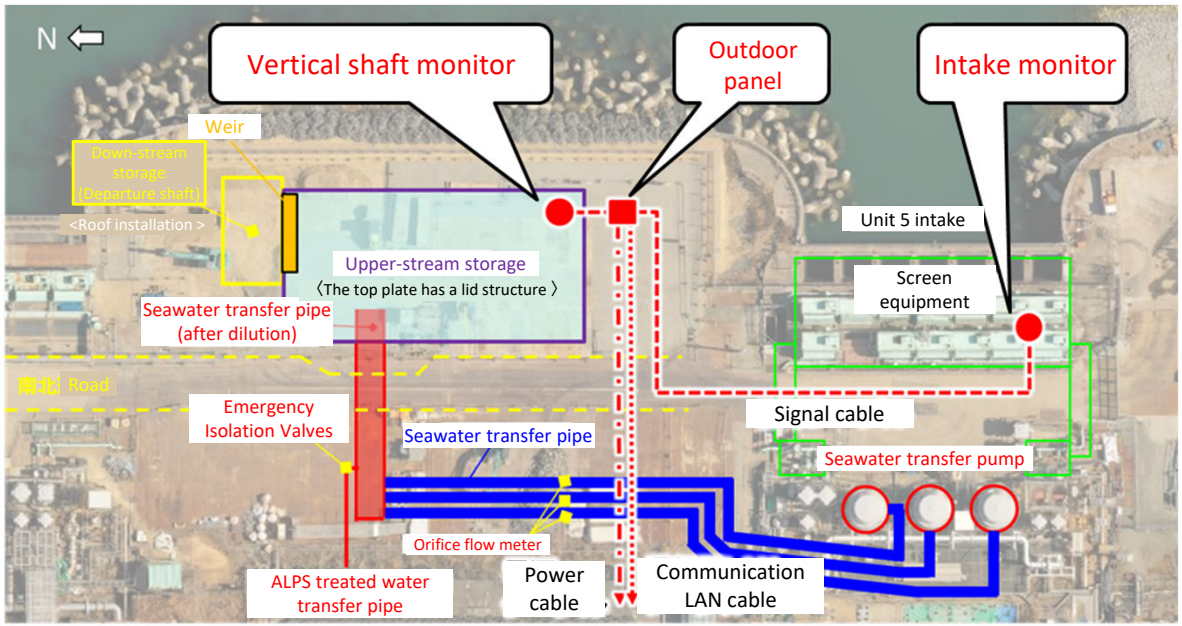
Overview of ALPS treated water dilution/discharge facility

1-1. Operating parameter records during the discharge (3/3)

- A temporary spike assumed to be caused by rainfall was seen in the figures from the intake monitor, but there were no abnormal fluctuations.



Figures of Intake/Vertical shaft monitor



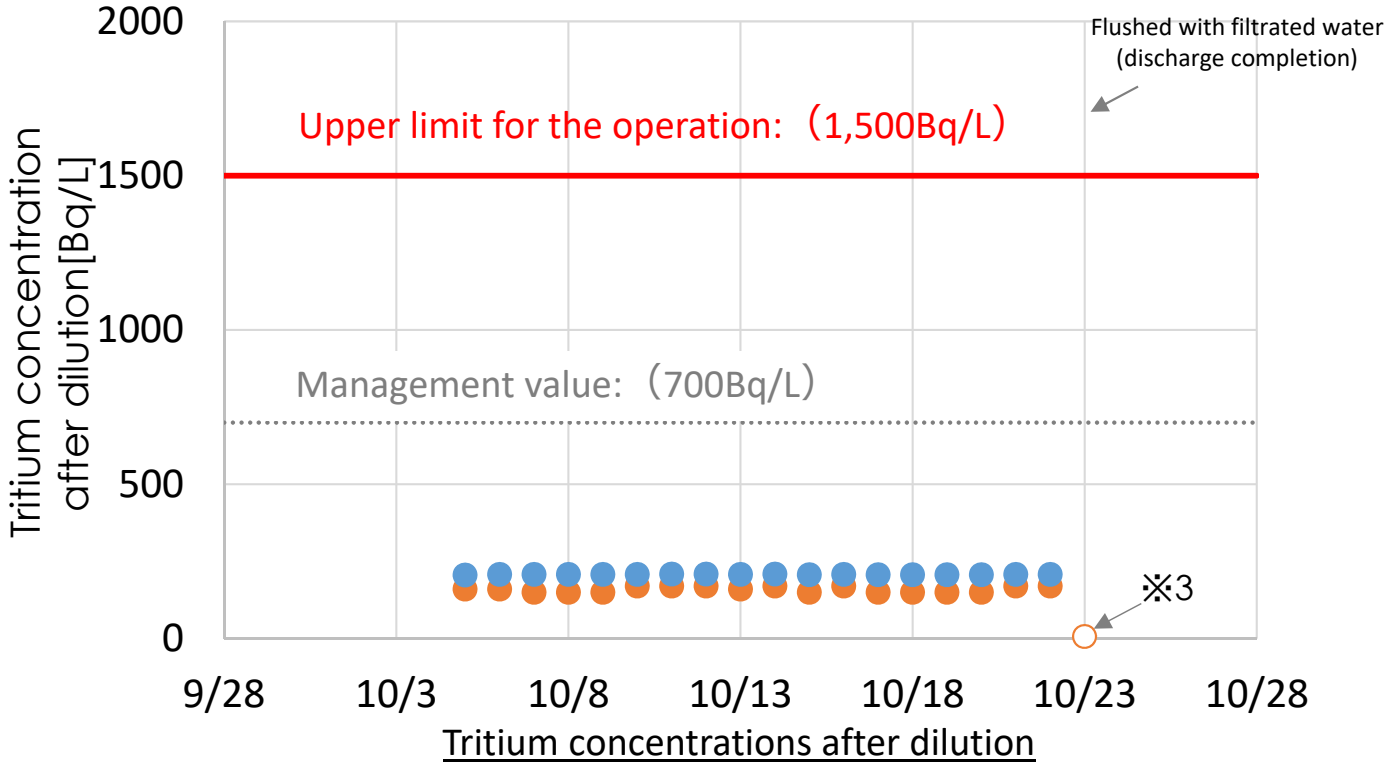
Overview of Intake/Vertical shaft monitor

※Compared with the vertical shaft monitor, the intake monitor is more easily affected by radiation from the surrounding environment (background radiation), so it is believed that the discrepancies are caused by the differences in installation locations.

It is believed that during rainfall, the concentration of radioactive materials in seawater increases due to the fallout runoff from onshore areas.

1-2. Tritium concentrations after dilution during the discharge

- During the discharge period, water was sampled daily from the seawater pipe to analyze tritium concentrations.
  ⇒Confirmed to be less than the upper limit for the operation: 1,500Bq/liter
- Furthermore, on October 23, the ALPS treated water transfer pipe was flushed with an amount of filtrated water that exceeds the volume of the pipe and samples were taken afterwards. An analysis of these samples showed no detection (ND; concentrations of radioactive substances were below detection limit) thereby confirming that the water inside the ALPS treated water transfer pipe had been flushed with filtrated water.



Calculated values※1

Analysis values(Detected values)

Analysis values (below the detection limit)

※1：Calculated using the following formula
（Uncertainty has been considered for each parameter）

Tritium concentrations after dilution (Calculated values)

$$= \frac{\text{Tritium concentrations in ALPS treated water}^{※2} \times \text{ALPS treated water transfer flow}}{\text{Seawater transfer flow} + \text{ALPS treated water transfer flow}}$$

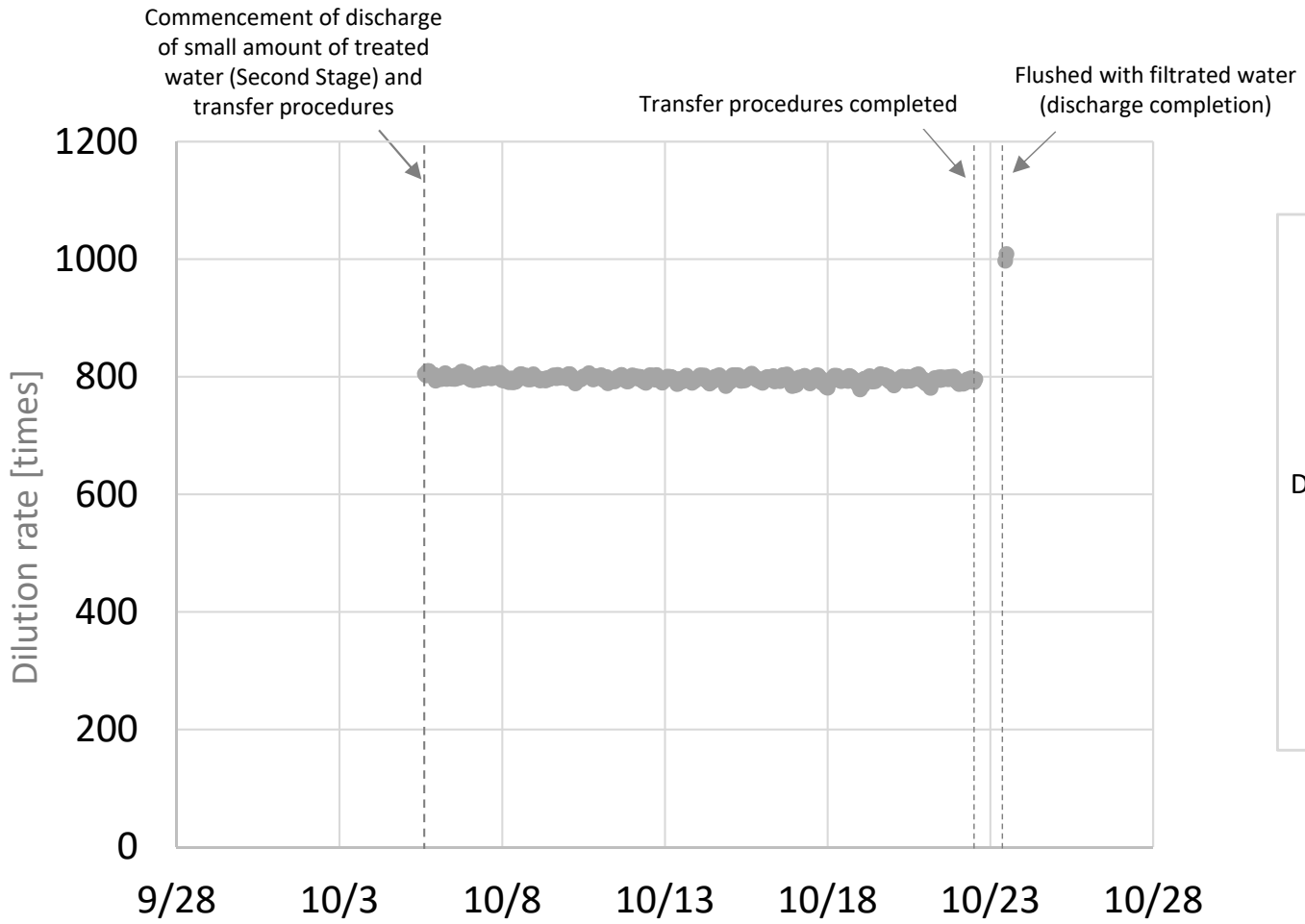
※2：Analysis values at measurement/confirmation tanks

※3：No calculated values since the pipes were flushed out with filtrated water.

	10/5	10/6～10/22	10/23
Calculated value: Time of data acquisition	14:00	7:00	–
Analysis value: Time of specimen sampling	14:13	7:00～10:00	11:54

[Reference] Dilution rate of ALPS treated water

- The dilution rate was always kept at over 100 times during the discharge.



Dilution rate of ALPS treated water

Dilution rate※1

※1：Calculated using the following formula

$$\text{Dilution rate} = \frac{\text{Seawater flow rate}^{※2} + \text{ALPS treated water flow rate}^{※3}}{\text{ALPS treated water flow rate}^{※3}}$$

※2： Total for systems A and B
※3： The flowmeters are reduplicate, so the higher of the figures from both meters was used for calculation

[Reference] Total radioactivity of nuclides to be measured and assessed (29 nuclides)

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- The following chart shows the total radioactivity (bq) for nuclides to be measured and assessed (29 nuclides) during the second discharge (Group C). (Calculated from analysis values※1 (Bq/liter) and discharge volume (7,810m³) for each nuclide)

  ※1: It was confirmed that the sum of the ratios of legally required concentrations of the nuclides targeted for measurement/assessment is 0.25 and less than 1.

- The total radioactivity from nuclides for which analysis values were below detection limit (ND) have not been included.

Nuclide	Analysis value [Bq/L]	Total radioactivity [Bq]	Nuclide	Analysis value [Bq/L]	Total radioactivity [Bq]	Nuclide	Analysis value [Bq/L]	Total radioactivity [Bq]
C-14	1.3E+01	1.0E+08	Sb-125	<8.8E-02	－	U-234※3	<3.0E-02	－
Mn-54	<2.3E-02	－	Te-125m※2	<3.1E-02	－	U-238※3	<3.0E-02	－
Fe-55	<1.4E+01	－	I-129	1.8E+00	1.4E+07	Np-237※3	<3.0E-02	－
Co-60	2.4E-01	1.9E+06	Cs-134	<3.0E-02	－	Pu-238※3	<3.0E-02	－
Ni-63	<8.9E+00	－	Cs-137	4.5E-01	3.5E+06	Pu-239※3	<3.0E-02	－
Se-79	<8.7E-01	－	Ce-144	<3.6E-01	－	Pu-240※3	<3.0E-02	－
Sr-90	<3.2E-02	－	Pm-147※2	<3.2E-01	－	Pu-241※2	<8.1E-01	－
Y-90※2	<3.2E-02	－	Sm-151※2	<1.2E-02	－	Am-241※3	<3.0E-02	－
Tc-99	<1.9E-01	－	Eu-154	<7.1E-02	－	Cm-244※3	<3.0E-02	－
Ru-106	<2.1E-01	－	Eu-155	<2.4E-01	－			

※2 Analysis values were assessed with radioactive equilibrium

※3 Gross Alpha measurements

1-3. Sea area monitoring history（1/7）

○ Measurement results of tritium concentrations in water sampled in the vicinity of the discharge outlet (within 3km of the power station) and outside of the vicinity of the discharge outlet (within a 10km square in front of the power station) since the commencement of the first discharge on August 24 were all below indices (discharge suspension level and investigation level).

○ For quick tritium measurements taken in the vicinity of the discharge outlet, we will initially increase the frequency from once a week to daily after the commencement of the discharge and promptly disclose the results.

（Unit：Bq/L）

	Sampling location	Frequency	August										
			24 *1	24 conventional *1,2	25	26	26 conventional *3	27	28	29	30	30 conventional *2,3	31	31 conventional *3
In the vicinity of the discharge outlet	T-1	Once a week*	<6.3	<0.34	<5.6	<6.6	0.97	<6.2	<7.3	<5.9	<6.4	1.0	<6.8	–
	T-2	Once a week*	<6.3	<0.33	<5.5	<6.5	1.1	<6.2	<7.3	<5.9	<6.3	1.3	<6.8	–
	T-0-1	Once a week*	<8.0	<0.34	<6.8	<6.1	0.66	<6.1	–*4	–*4	<6.8	<0.32	<8.2	–
	T-0-1A	Once a week*	<4.6	2.6	<7.6	<6.2	0.087	<6.1	–*4	–*4	<6.9	0.43	10	–
	T-0-2	Once a week*	<8.1	<0.35	<6.8	<6.1	0.92	<6.1	–*4	–*4	<6.8	1.4	<8.2	–
	T-0-3A	Once a week*	<4.7	<0.33	<7.6	<6.8	<0.068	<6.8	–*4	–*4	<7.6	<0.32	<5.1	–
	T-0-3	Once a week*	<8.0	<0.34	<6.9	<6.1	0.14	<6.1	–*4	–*4	<6.8	<0.31	<8.3	–
	T-A1	Once a week*	<6.6	<0.32	<7.6	<6.8	0.13	<6.8	–*4	–*4	<7.6	1.1	<5.1	–
	T-A2	Once a week*	<6.6	<0.32	<7.6	<6.8	0.065	<6.8	–*4	–*4	<7.7	1.5	<5.1	–
	T-A3	Once a week*	<6.6	<0.32	<6.9	<6.8	<0.072	<6.8	–*4	–*4	<7.6	1.1	<5.2	–
Outside the vicinity of the discharge outlet	T-D5	Once a week	–	–	–	–	–	–	–	–	–	–	<6.8	0.59
	T-S3	Once a month	–	–	–	–	–	–	–	–	<7.6	Being measured	–	–
	T-S4	Once a month	–	–	–	–	–	–	–	–	<7.7	Being measured	–	–
	T-S8	Once a month	–	–	–	–	–	–	–	–	<7.7	Being measured	–	–

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.
*：Monitored daily for the time being after the commencement of discharge

*1：Sampled after the commencement of discharge at 3PM　*2：Detection limit 0.4 Bq/L
*3：Detection limit 0.1 Bq/L　*4：Sampling suspended due to rough seas

1-3. Sea area monitoring history（2/7）

(Unit：Bq/L)

	Sampling location	Frequency	September										
			1	2	3	4	4 conventional *1	5	6	6 conventional *1	7	8	9	10
In the vicinity of the discharge outlet	T-1	Once a week*	<7.2	<6.8	<5.8	<6.6	0.68	<7.1	<7.1	－	<6.1	<5.9	<6.0	<7.8
	T-2	Once a week*	<7.4	<6.8	<5.8	<6.6	0.90	<7.1	<7.1	－	<6.1	<5.9	<6.0	<7.8
	T-0-1	Once a week*	<7.3	<7.3	<6.8	<6.9	<0.34	<6.6	<6.6	－	<8.7	<6.9	<8.0	<7.0
	T-0-1A	Once a week*	<7.3	<8.2	<6.8	<6.9	<0.33	<7.0	<6.6	－	<8.7	<6.9	<8.0	<7.1
	T-0-2	Once a week*	<7.3	<7.3	<6.7	<7.0	0.74	<6.5	<6.6	－	<8.6	<6.8	<8.0	<7.0
	T-0-3A	Once a week*	<7.0	<7.8	<6.5	<5.9	<0.33	<7.6	<6.3	－	<5.3	<7.4	<6.5	<6.5
	T-0-3	Once a week*	<7.3	<8.2	<6.7	<6.8	<0.34	<7.8	<6.6	－	<8.7	<6.9	<8.0	<7.1
	T-A1	Once a week*	<7.1	<7.9	<6.5	<5.9	1.1	<7.6	<6.3	－	<5.3	<7.4	<6.4	<6.5
	T-A2	Once a week*	<7.1	<7.8	<6.5	<7.3	0.88	<7.6	<6.2	－	<5.3	<7.3	<6.6	<6.4
	T-A3	Once a week*	<7.1	<7.9	<6.5	<7.3	0.82	<7.6	<6.3	－	<5.3	<7.3	<6.5	<6.5
Outside the vicinity of the discharge outlet	T-D5	Once a week	－	－	－	－	－	－	<7.1	<0.34	－	－	－	－
	T-S3	Once a month	－	－	－	－	－	－	－	－	－	－	－	－
	T-S4	Once a month	－	－	－	－	－	－	－	－	－	－	－	－
	T-S8	Once a month	－	－	－	－	－	－	－	－	－	－	－	－

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.

*：Monitored daily for the time being after the commencement of discharge

*1：Detection limit 0.4 Bq/L

1-3. Sea area monitoring history（3/7）

（Unit：Bq/L）

	Sampling location	Frequency	September											
			11 *1	11 conventional *2	12	12 conventional *2	13	13 conventional *2	14	15	16	17	18	18 conventional *3
In the vicinity of the discharge outlet	T-1	Once a week*	<7.0	Being measured	<7.2	–	<7.2	–	<6.5	<7.3	<6.7	<7.0	<7.6	Being measured
	T-2	Once a week*	<7.0	Being measured	<7.2	–	<7.2	–	<6.5	<7.4	<6.8	<6.9	<7.6	Being measured
	T-0-1	Once a week*	<6.8	Being measured	<7.7	–	<6.6	–	<7.5	<7.8	<7.6	<7.8	<7.4	Being measured
	T-0-1A	Once a week*	<6.8	Being measured	<7.8	–	<6.5	–	<7.5	<7.7	<7.5	<7.7	<7.3	Being measured
	T-0-2	Once a week*	<6.8	Being measured	<7.7	–	<6.5	–	<7.5	<7.7	<7.6	<7.7	<7.3	Being measured
	T-0-3A	Once a week*	<6.2	Being measured	<7.0	–	<5.9	–	<6.6	<7.4	<6.8	<6.9	<7.6	Being measured
	T-0-3	Once a week*	<6.8	Being measured	<7.8	–	<6.5	–	<7.5	<7.7	<7.5	<7.8	<7.3	Being measured
	T-A1	Once a week*	<7.0	Being measured	<7.0	–	<5.9	–	<6.7	<5.5	<7.2	<5.5	<6.7	Being measured
	T-A2	Once a week*	<7.0	Being measured	<7.0	–	<5.9	–	<6.7	<5.5	<7.3	<5.4	<6.7	Being measured
	T-A3	Once a week*	<7.0	Being measured	<7.0	–	<5.9	–	<6.7	<5.5	<7.2	<5.5	<6.7	Being measured
Outside the vicinity of the discharge outlet	T-D5	Once a week	–	–	–	–	<7.2	Being measured	–	–	–	–	–	–
	T-S3	Once a month	–	–	<7.1	Being measured	–	–	–	–	–	–	–	–
	T-S4	Once a month	–	–	<7.1	Being measured	–	–	–	–	–	–	–	–
	T-S8	Once a month	<6.2	Being measured	–	–	–	–	–	–	–	–	–	–

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.
*：Monitored daily for the time being after the commencement of discharge

*1：Sampled before 9AM, prior to the completion of the discharge
*2：Detection limit 01 Bq/L　*3：Detection limit 0.4 Bq/L

1-3. Sea area monitoring history（4/7）

（Unit：Bq/L）

	Sampling location	Frequency	September											
			19	20	20 conventional *1	21	22	23	24	25	25 conventional *1	26	27	27 conventional *1
In the vicinity of the discharge outlet	T-1	Once a week*	<5.0	<6.9	–	<5.0	<5.3	<6.5	<6.7	<7.2	<0.31	<5.6	<6.2	–
	T-2	Once a week*	<5.0	<6.9	–	<5.0	<5.3	<6.5	<6.7	<7.2	<0.31	<5.6	<6.7	–
	T-0-1	Once a week*	<5.5	<7.9	–	<6.5	<6.3	<6.5	<7.6	<8.7	<0.35	<7.9	<6.2	–
	T-0-1A	Once a week*	<5.6	<8.2	–	<6.5	<6.3	<6.5	<7.5	<8.7	<0.35	<7.9	<6.2	–
	T-0-2	Once a week*	<5.6	<7.9	–	<6.5	<6.2	<6.5	<7.5	<8.7	<0.30	<7.9	<6.2	–
	T-0-3A	Once a week*	<5.0	<6.1	–	<5.0	<5.3	<6.5	<6.7	<7.2	<0.35	<5.6	<6.2	–
	T-0-3	Once a week*	<5.5	<7.9	–	<6.5	<6.3	<6.5	<7.5	<8.7	<0.35	<7.9	<6.2	–
	T-A1	Once a week*	<6.9	<5.9	–	<6.6	<7.0	<7.6	<5.1	<6.3	<0.30	<7.3	<6.6	–
	T-A2	Once a week*	<6.9	<5.9	–	<6.7	<7.0	<7.6	<5.1	<6.3	<0.30	<7.3	<6.7	–
	T-A3	Once a week*	<7.0	<6.3	–	<6.6	<7.0	<7.6	<5.1	<6.3	<0.29	<7.3	<6.6	–
Outside the vicinity of the discharge outlet	T-D5	Once a week	–	<6.1	Being measured	–	–	–	–	–	–	–	<6.3	Being measured
	T-S3	Once a month	–	–	–	–	–	–	–	–	–	–	–	–
	T-S4	Once a month	–	–	–	–	–	–	–	–	–	–	–	–
	T-S8	Once a month	–	–	–	–	–	–	–	–	–	–	–	–

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.
*：Monitored daily for the time being after the commencement of discharge

*1：Detection limit 0.4 Bq/L

1-3. Sea area monitoring history（5/7）

（Unit：Bq/L）

	Sampling location	Frequency	September			October								
			28	29	30	1	2	2 conventional *1	3	4	4 conventional *1	5 *2	5 conventional *1,2	6
In the vicinity of the discharge outlet	T-1	Once a week*	<6.7	<4.9	<7.3	<6.0	<5.8	Being measured	<6.7	<6.9	–	<5.8	<0.31	<5.8
	T-2	Once a week*	<6.7	<4.7	<7.3	<6.0	<5.7	Being measured	<6.6	<6.8	–	<5.7	<0.31	<5.7
	T-0-1	Once a week*	<6.8	<6.8	<7.9	<8.3	<7.0	Being measured	<6.5	<7.3	–	<7.8	<0.31	<7.0
	T-0-1A	Once a week*	<6.8	<6.8	<7.9	<8.0	<6.9	Being measured	<6.4	<7.3	–	<7.6	5.2	<7.4
	T-0-2	Once a week*	<6.8	<6.9	<8.0	<8.4	<7.0	Being measured	<6.4	<7.2	–	<7.6	<0.33	<7.0
	T-0-3A	Once a week*	<6.7	<4.7	<7.4	<6.2	<5.8	Being measured	<6.8	<6.9	–	<5.9	<0.32	<5.8
	T-0-3	Once a week*	<6.8	<7.0	<7.7	<8.0	<7.0	Being measured	<6.4	<7.2	–	<7.7	<0.32	<6.4
	T-A1	Once a week*	<9.3	<7.8	<8.1	<8.0	<5.6	<0.30	<7.3	<7.5	–	<7.7	<0.30	<7.0
	T-A2	Once a week*	<5.5	<7.8	<8.0	<8.0	<5.7	<0.30	<7.5	<7.5	–	<7.7	<0.30	<7.0
	T-A3	Once a week*	<7.2	<7.6	<8.0	<8.1	<5.6	<0.30	<7.4	<7.4	–	<7.6	<0.30	<7.1
Outside the vicinity of the discharge outlet	T-D5	Once a week	–	<	–	–	–	–	–	<6.8	Being measured		–	–
	T-S3	Once a month	–	–	–	–	–	–	–	–	–	–	–	–
	T-S4	Once a month	–	–	–	–	–	–	–	–	–	–	–	–
	T-S8	Once a month	–	–	–	–	–	–	–	–	–	–	–	–

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.
*：Monitored daily for the time being after the commencement of discharge

*1：Detection limit 0.4 Bq/L
*2：Sampled after the commencement of discharge at 2PM

1-3. Sea area monitoring history（6/7）

（Unit：Bq/L）

	Sampling location	Frequency	October											
			7	8	9	9 conventional *1	10	11	12	12 conventional *1	13	14	15	16
In the vicinity of the discharge outlet	T-1	Once a week*	<5.8	<6.1	<7.2	Being measured	<6.9	<6.5	<6.3	–	<6.5	<6.1	<5.5	<6.0
	T-2	Once a week*	<5.8	<6.1	<7.1	Being measured	<6.9	<6.6	<6.3	–	<6.5	<6.2	<5.5	<6.0
	T-0-1	Once a week*	<6.7	<8.2	<7.9	Being measured	–*2	<7.3	<7.3	–	<7.3	<8.7	<7.3	<7.8
	T-0-1A	Once a week*	9.4	<8.2	11	Being measured	–*2	<7.3	14	–	11	<8.7	14	16
	T-0-2	Once a week*	<6.8	<8.1	<7.9	Being measured	–*2	<7.3	<7.3	–	<7.3	<8.7	<7.3	<7.8
	T-0-3A	Once a week*	<5.8	<6.1	<7.2	Being measured	–*2	<6.8	<6.3	–	<6.5	<6.1	<5.6	<6.0
	T-0-3	Once a week*	<6.7	<8.2	<7.8	Being measured	–*2	<7.3	<7.2	–	<7.2	<8.6	<7.3	<7.8
	T-A1	Once a week*	<6.4	<5.5	<6.7	Being measured	–*2	<6.8	<8.7	–	<8.6	<6.2	<7.2	<6.2
	T-A2	Once a week*	<5.9	<5.5	<6.7	Being measured	–*2	<6.8	<8.6	–	<8.6	<5.6	<7.2	<7.2
	T-A3	Once a week*	<5.8	<5.5	<6.8	Being measured	–*2	<6.8	<8.6	–	<8.6	<5.7	<7.2	<7.2
Outside the vicinity of the discharge outlet	T-D5	Once a week	–	–	–	–	–	–	<6.4	Being measured	–	–	–	–
	T-S3	Once a month	–	–	–	–	–	–	<6.4	Being measured	–	–	–	–
	T-S4	Once a month	–	–	–	–	–	–	<6.4	Being measured	–	–	–	–
	T-S8	Once a month	–	–	–	–	–	–	<6.5	Being measured	–	–	–	–

※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.
*：Monitored daily for the time being after the commencement of discharge

1：Detection limit 0.1 Bq/L　2：Sampling suspended due to bad weather condition

1-3. Sea area monitoring history（7/7）

（Unit：Bq/L）

	Sampling location	Frequency	10月									
			16 conventional *1	17	18	19	19 conventional *1	20	21	22	23 *2	23 conventional *1,2
In the vicinity of the discharge outlet	T-1	Once a week*	Being measured	<6.5	<7.1	<7.2	–	<5.5	<5.6	<5.3	<6.5	Being measured
	T-2	Once a week*	Being measured	<6.5	<7.1	<7.1	–	<5.5	<5.6	<5.2	<6.5	Being measured
	T-0-1	Once a week*	Being measured	<6.7	<5.9	<8.3	–	<7.0	<6.8	<7.3	<6.7	Being measured
	T-0-1A	Once a week*	Being measured	<6.7	<5.8	<8.5	–	<7.0	22	16	<6.7	Being measured
	T-0-2	Once a week*	Being measured	<6.7	8.9	<8.4	–	<7.0	<6.8	<7.3	<6.7	Being measured
	T-0-3A	Once a week*	Being measured	<6.5	<7.1	<7.1	–	<5.5	<5.6	<5.3	<6.5	Being measured
	T-0-3	Once a week*	Being measured	<6.7	<6.7	<8.4	–	<7.0	<6.8	<7.3	<6.7	Being measured
	T-A1	Once a week*	Being measured	<8.3	<7.2	<7.5	–	<7.5	<8.5	<5.7	<6.8	Being measured
	T-A2	Once a week*	Being measured	<8.3	<7.2	<7.5	–	<7.5	<8.4	<5.7	<6.9	Being measured
	T-A3	Once a week*	Being measured	<8.3	<7.2	<7.5	–	<7.5	<8.5	<5.7	<6.8	Being measured
Outside the vicinity of the discharge outlet	T-D5	Once a week	Being measured	–	–	<7.5	Being measured	–	–	–	<6.9	Being measured
	T-S3	Once a month	–	–	–	–	–	–	–	–	–	–
	T-S4	Once a month	–	–	–	–	–	–	–	–	–	–
	T-S8	Once a month	–	–	–	–	–	–	–	–	–	–

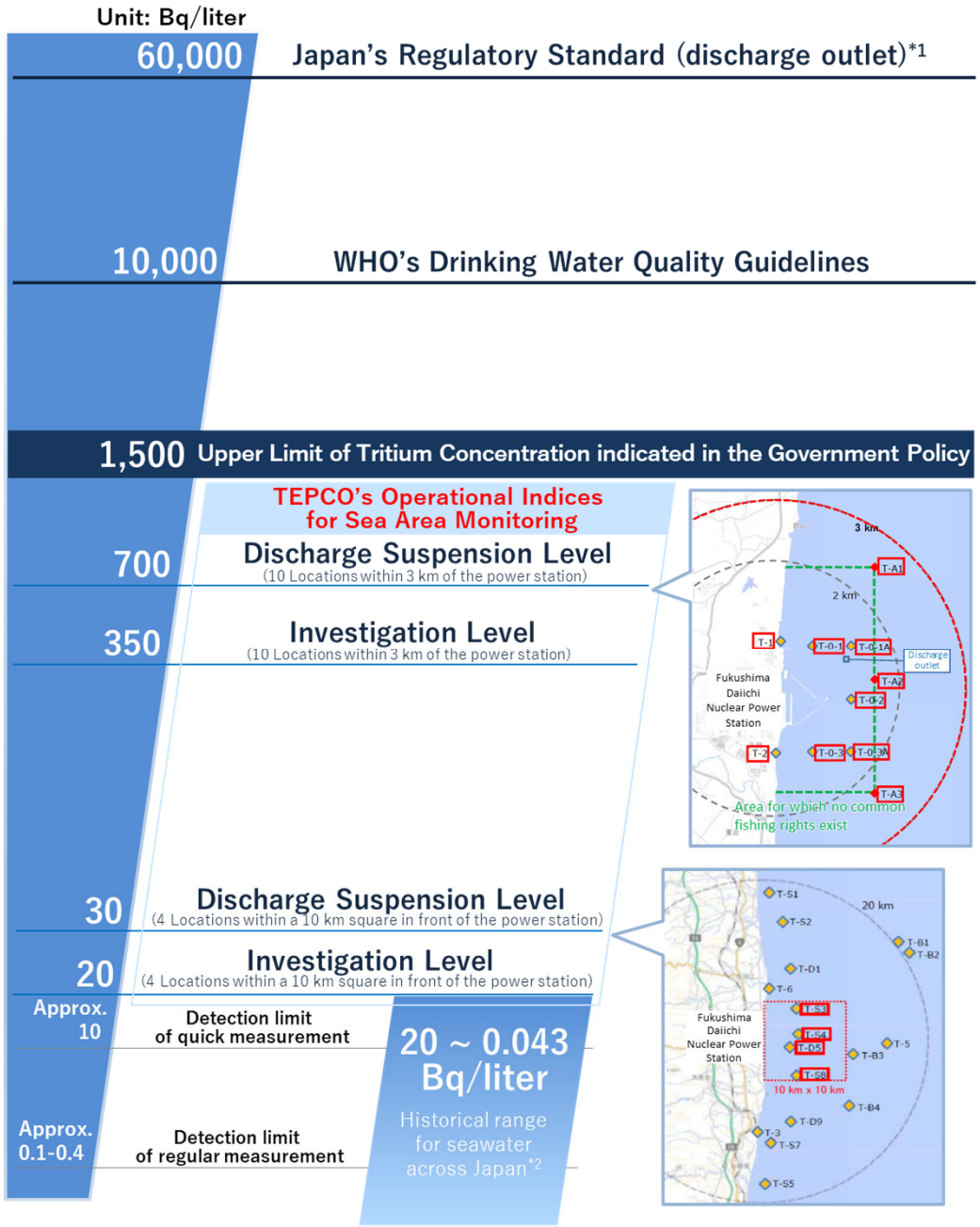
※：A “less than” symbol (<) indicates that the analysis result was less than the detection limit.

*：Monitored daily for the time being after the commencement of discharge

*1： Detection limit 0.4 Bq/L

*2： Sampled before 9AM, prior to the completion of the discharge

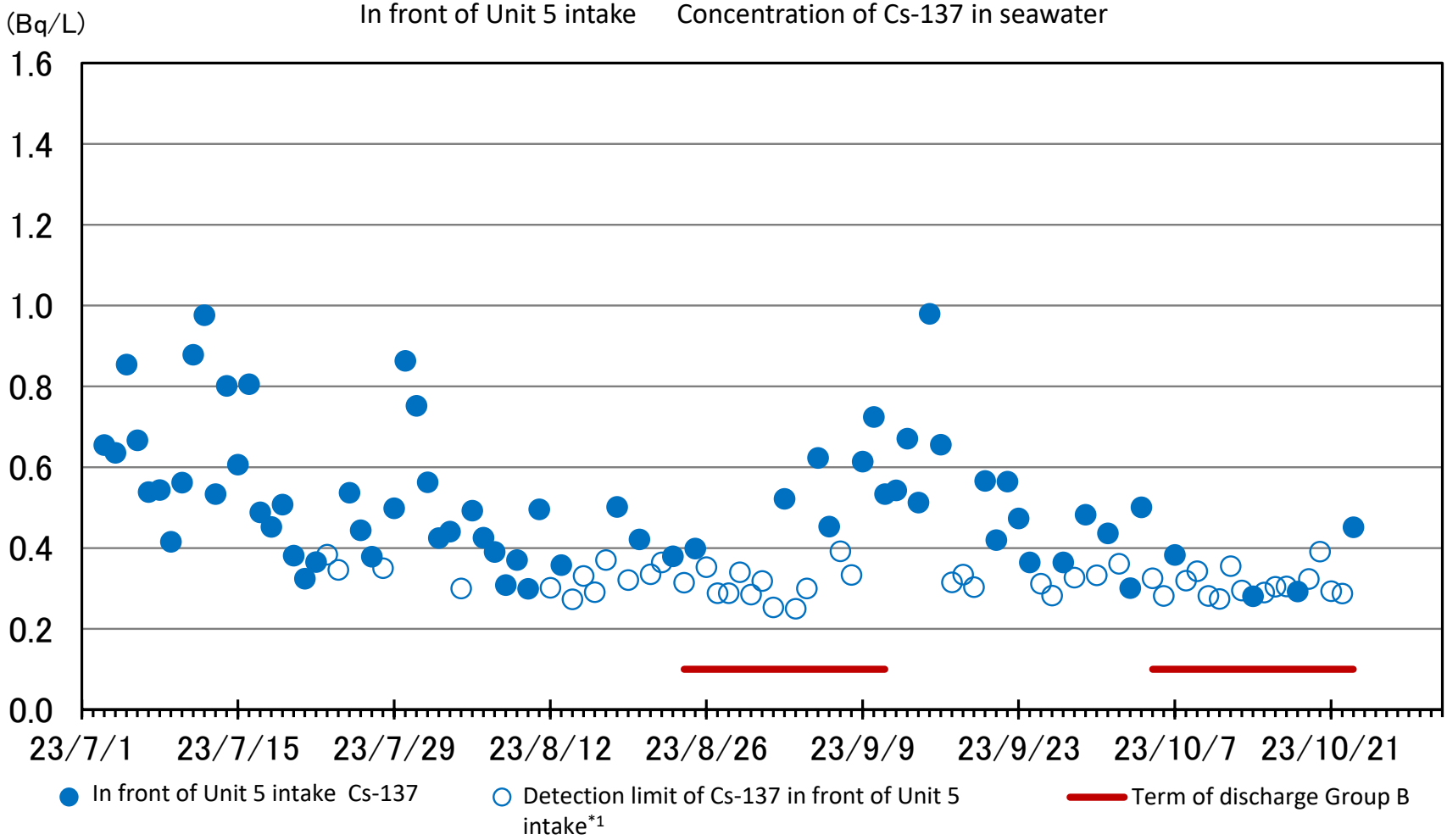
[Reference] Comparison of concentration of tritium in seawater



*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)

1-4. Unit 5 intake channel monitoring

- Monitoring results during the discharge of treated water have confirmed that values are similar to those prior to discharge and there were no fluctuations.

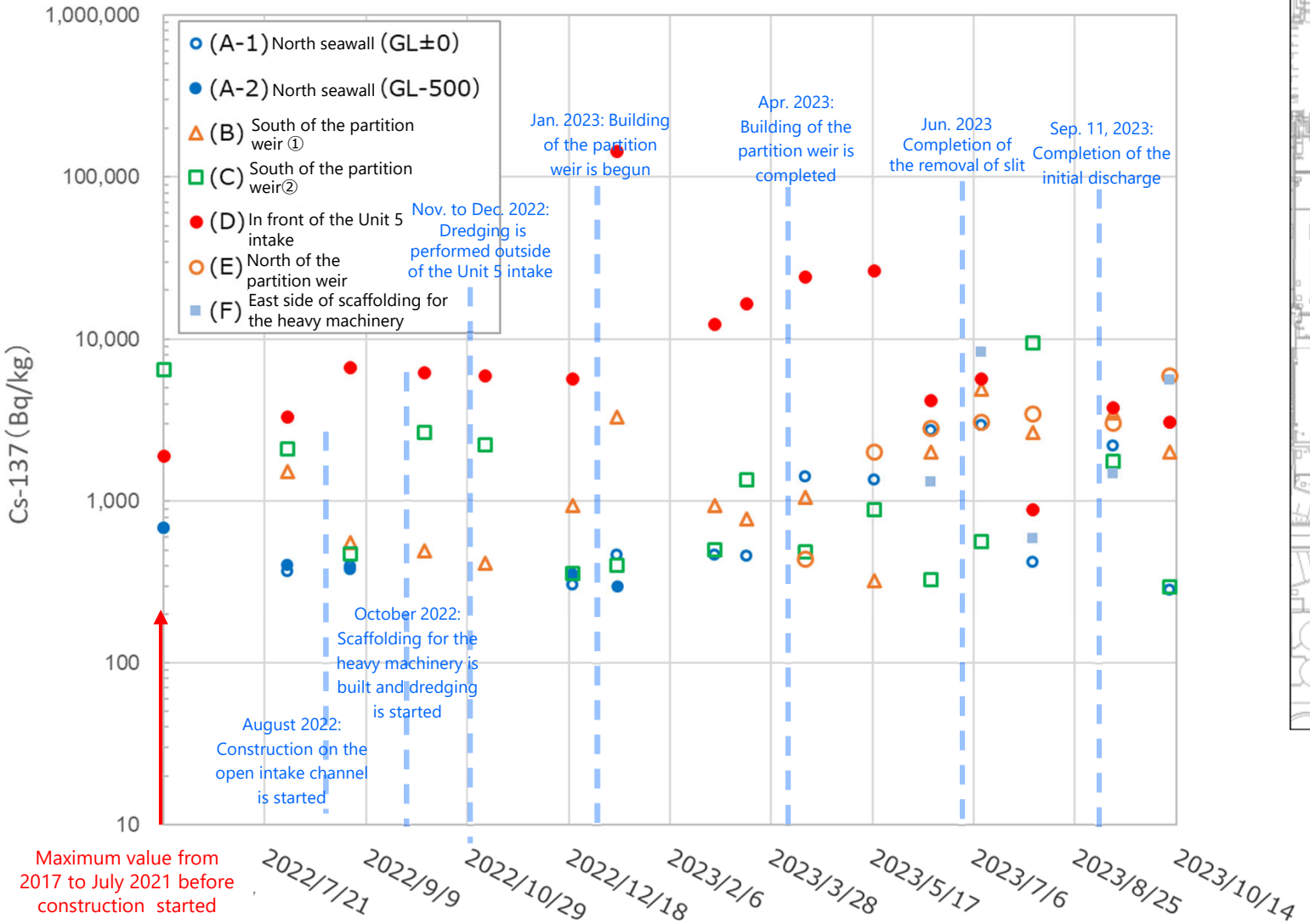


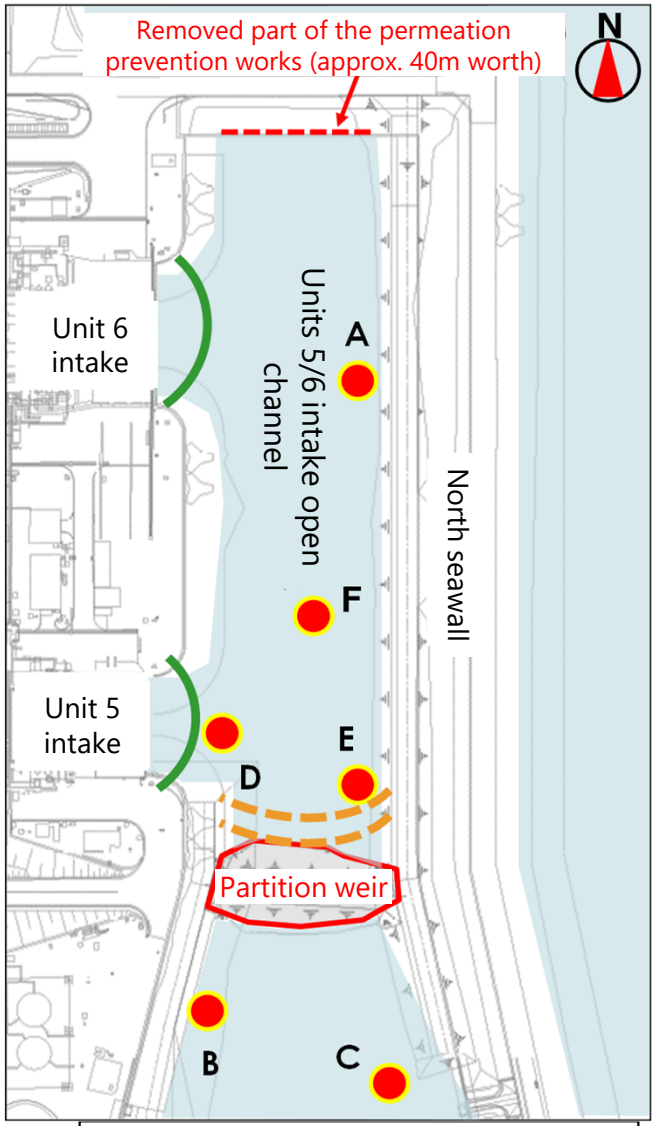
*1: Detection limit is displayed on the graph when the concentration is lower than detection limit.

※The location of seawater monitoring inside the Unit 5/6 intake open channel has been changed to the sampling location near the intake for seawater to be used for dilution (changed from “in front of the Unit 6 intake” to “in front of the Unit 5 intake”).

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

- Monitoring results for seabed soil in front of Unit 5 intake did not show significant fluctuations from the beginning of construction 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.





2. Facility inspections

- We have performed daily patrol inspections since the commencement of discharge and have confirmed that there are no abnormalities with facilities. Furthermore, after the completion of discharge from tank group C, we will perform inspections as follows:

Facility name	Patrol inspection details	results	Inspection after the completion of the discharge from tank group C
Measurement/ confirmation facility	**External inspection (measurement/confirmation tanks)** - Visual check for any abnormalities	No abnormalities	**Inspections implemented in accordance with the long-term inspection plan (agitators)** -Insulation resistance measurement **Others** -Measures to reduce clogging of ALPS treated water transfer pump inlet strainer by circulating/agitating water in tank group A
Transfer facility	**External inspection (ALPS treated water transfer pump/transfer pipes)** - Visual check for abnormalities - Check for abnormal sounds using tool	No abnormalities	**External inspection (ALPS treated water transfer pump/transfer pipes)** - Visual check for abnormalities **Others** Strainer cleaning, check for leakage through MO valve seat
Dilution facility	**External inspection (seawater transfer pipes/seawater pipe header, etc.)** - Visual check for abnormalities - Check for abnormal sounds using tool **External inspection (discharge vertical shaft (upper-stream storage))** - Visual check for abnormalities	No abnormalities	**External inspection (seawater transfer pipes/seawater pipe header, etc.)** - Visual check for abnormalities **External inspection (discharge vertical shaft (upper-stream storage))** -Periodic observation of condition inside the storage
Discharge facility	**External inspection (discharge vertical shaft (down-stream storage))** - Visual check for abnormalities *Submerged areas, such as the discharge tunnel, etc., have been omitted from these inspections	No abnormalities	**External inspection (discharge vertical shaft (down-stream storage))** - Visual check for abnormalities *Underwater areas such as discharge tunnel, etc. are excluded
Seawater intake facility	**External inspection (partitioning weirs)** - Visual check for abnormalities	No abnormalities	**External inspection (partitioning weirs)** - Visual check for abnormalities

3-1. FY2023 Discharge Plan

- Currently, we are performing facility inspection after the second discharge (tank group C). If no abnormalities are found in the inspection, we will transfer ALPS treated water to transfer pipe on October 30 and will commence the 1st Stage of the third discharge on October 31. The 2nd Stage, which marks the beginning of the third discharge(tank group A) of ALPS treated water into the sea, will start on November 2.

1st discharge	Measurement/confirmation facility (K4 area) Group B:	Approx. 7,800m^3	Secondary treatment: No Tritium concentration: 140,000Bq/liter Total amount of tritium: 1.1 trillion Bq	Completed
2nd discharge	Measurement/confirmation facility (K4 area) Group C:	Approx. 7,800m^3	Secondary treatment: No Tritium concentration: 140,000Bq/liter Total amount of tritium: 1.1 trillion Bq	Completed
3rd discharge	Measurement/confirmation facility (K4 area) Group A:	Approx. 7,800m^3	Secondary treatment: No Tritium concentration: 130,000Bq/liter ※1 Total amount of tritium: 1.0 trillion Bq ※1	Details on the next page
4th discharge	K4 area Group E (Transferred to Measurement/confirmation facility group B ※2):	Approx. 4,500m^3	Secondary treatment: No Tritium concentration: 170,000～210,000Bq/liter ※1 Total amount of tritium: 1.4 trillion Bq ※1	
	K3 area Group A (Transferred to Measurement/confirmation facility group B ※2):	Approx. 3,300m^3		

➥ Total amount of tritium discharged during FY2023: Approx. 5 trillion Bq

※1 Average value of the tank group that was assessed taking into account the radioactive decay until July 1, 2023

※2 To be transferred to K4 area tank group B that will be empty after the 1st discharge is completed

3-2. Outline of third discharge for Group K4-A

Outline of discharge for group K4-A			
Attributes of the treated water	Concentration of the 29 types of radionuclides (excluding tritium) in scope of measurement/evaluation	Within regulatory requirements (sum of the ratios of legally required concentrations of radioactive substances is less than 1) (sum of the ratios of concentration: 0.25*) (details on p1 of the link)	*
	Tritium concentration	130,000Bq/liter (details on p2 of the link)	
	Concentration of the 39 significant types of radionuclides measured voluntarily	No significant radionuclides identified (details on p3 of the link)	
	Status of water quality assessment	Within government and prefectural requirements (details on p4 of the link)	
	Water temperature	Same as outdoor temperature. After diluted to 740 times, same as sea water temperature (not the same as plant's thermal discharge)	
Expected volume of treated water discharge		Approximately 7,800m^3	
Treated water flow rate		Approximately 460m^3/day (set not to exceed designed maximum on 500m^3/day)	
Dilution sea water flow rate		Approximately 340,000m^3/day (same speed as walking in the tunnel [approximated 1m/second])	
Concentration of tritium after dilution		Approximated 180Bq/liter	
Term of discharge		Approximately 17 days	

*QR code is revised on October 30, 2023.

※ Comparison of concentrations before/after sea water dilution

	Before dilution		After dilution (740 times)	
29 types	0.25	➡	0.00034	0.0032 (1/310 of government requirements)
Tritium	2.17	➡	0.0029	

3-3. Analysis results for the next tank group from which the ALPS treated water will be discharged (Group A)

TEPCO

- Pre-discharge analysis results for the samples taken from the measurement/confirmation tank (Group A) on July 10, 2023, were obtained. It was confirmed that the water satisfies discharge requirements (Table 1. Disclosed on October 19, 2023).
  - Item 1: For 29 nuclides to be measured and assessed, the sum of the ratios of the concentration of each radionuclide to the regulatory concentration is 0.25, and it is confirmed to be less than 1.
  - Item 2: Analysis results of tritium concentration is 13 x 10^4 Bq/liter, and it is confirmed to be less than 1 million Bq/liter.
  - Item 1/2: The external agency consigned by TEPCO (Kaken) and the third-party consigned by the Japanese Government (JAEA)*1 obtained the same results from their analyses.
  - Item 3/4: It was confirmed that operational targets have been satisfied.

*1 ALPS treated water third-party analysis (https://fukushima.jaea.go.jp/okuma/alps/index_e.html)

Table 1． Pre-discharge analysis results of water in the measurement/confirmation tank (Group A)

	Items	Requirement basis	Operational Target	Analysis Results
①	Nuclide to be measured and assessed (29 nuclides)	Implementation plan	The sum of the ratios of the concentration of each radionuclide to the regulatory concentration, except for tritium, is less than 1	**0.25 (< 1)**
②	Tritium		Tritium concentration is less than 1 million Bq/liter	**130,000Bq/liter (less than 1 million Bq/liter)**
③	Nuclides voluntarily checked to ensure that they are not significantly present (39 nuclides)	Voluntary	No significant concentrations were found of any of the nuclides	**None of the nuclides are present in significant consternation**
④	General water quality: 44 criteria		Pre-check of water quality standards*2	**All criteria satisfied**

*2 Water sampled from the discharge vertical shaft (upper-stream storage) once a year to confirm that legal requirements are being satisfied

[Reference] Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (Group A) (1/4)

TEPCO

- For 29 nuclides to be measured and assessed, **the sum of the ratios of the concentration of each radionuclide to the regulatory concentration is 0.25**, and it is confirmed to be less than 1.

Nuclides to be measured and assessed (29 nuclides)

Analysis results of radioactivity (Bq/L)

Ratios to Regulatory Concentration Limit

Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (1/4)

Sample Name	ALPS Treated Water in the Measurement/Confirmation Tanks	Group A
Date and Time of Sampling	July 10, 2023	9:24
Storage Volume (m^3)	8936	

Summary	Nuclides to be measured and assessed (29 nuclides) : The sum of the ratios of the concentration of each radionuclide to the regulatory concentration	0.25 (Confirmed to be less than 1)

Radioactivity Analysis: Nuclides to be measured and assessed (29 nuclides)

No.	Nuclide	Analysis Results						Ratios to Regulatory Concentration Limit		Regulatory Concentration Limit *2 (Bq/L)	Analysis Method *4
		TEPCO			KAKEN Co.,Ltd.			TEPCO	KAKEN Co.,Ltd.		
		Analysis Value (Bq/L)	Uncertainty *1 (Bq/L)	Detection Limit (Bq/L)	Analysis Value (Bq/L)	Uncertainty *1 (Bq/L)	Detection Limit (Bq/L)				
1	C-14	1.4E+01	± 2.6E+00	2.4E+00	1.2E+01	± 8.7E-01	8.6E-01	6.8E-03	6.1E-03	2000	Measurement
2	Mn-54	ND	-	2.5E-02	ND	-	2.7E-02	less than 2.5E-05	less than 2.7E-05	1000	Measurement
3	Fe-55	ND	-	1.6E+01	ND	-	1.2E+01	less than 8.1E-03	less than 6.0E-03	2000	Measurement
4	Co-60	3.3E-01	± 6.2E-02	2.3E-02	2.8E-01	± 3.4E-02	2.6E-02	1.6E-03	1.4E-03	200	Measurement
5	Ni-63	ND	-	9.0E+00	ND	-	4.0E+00	less than 1.5E-03	less than 6.6E-04	6000	Measurement
6	Se-79	ND	-	8.9E-01	ND	-	1.9E+00	less than 4.5E-03	less than 9.4E-03	200	Measurement
7	Sr-90	4.1E-02	± 1.5E-02	3.8E-02	4.7E-02	± 1.3E-02	3.0E-02	1.4E-03	1.6E-03	30	Measurement
8	Y-90	4.1E-02	-	3.8E-02	4.7E-02	-	3.0E-02	1.4E-04	1.6E-04	300	Sr-90/Y-90 Radioactive Equilibrium Assessment
9	Tc-99	ND	-	2.0E-01	ND	-	1.3E-01	less than 2.0E-04	less than 1.3E-04	1000	Measurement
10	Ru-106	ND	-	2.3E-01	ND	-	2.4E-01	less than 2.3E-03	less than 2.4E-03	100	Measurement
11	Sb-125	ND	-	9.4E-02	ND	-	1.2E-01	less than 1.2E-04	less than 1.5E-04	800	Measurement
12	Te-125m	ND	-	3.3E-02	ND	-	4.2E-02	less than 3.7E-05	less than 4.6E-05	900	Sb-125/Te-125m Radioactive Equilibrium Assessment
13	I-129	1.9E+00	± 1.9E-01	3.7E-02	2.4E+00	± 3.6E-01	1.3E-01	2.1E-01	2.7E-01	9	Measurement
14	Cs-134	ND	-	2.9E-02	ND	-	4.8E-02	less than 4.9E-04	less than 7.9E-04	60	Measurement
15	Cs-137	3.8E-01	± 7.0E-02	3.3E-02	4.0E-01	± 4.0E-02	4.2E-02	4.2E-03	4.5E-03	90	Measurement
16	Ce-144	ND	-	4.0E-01	ND	-	2.5E-01	less than 2.0E-03	less than 1.3E-03	200	Measurement
17	Pm-147	ND	-	3.4E-01	ND	-	3.3E-01	less than 1.1E-04	less than 1.1E-04	3000	Eu-154 Relative Ratio Assessment
18	Sm-151	ND	-	1.3E-02	ND	-	1.3E-02	less than 1.6E-06	less than 1.6E-06	8000	Eu-154 Relative Ratio Assessment
19	Eu-154	ND	-	7.7E-02	ND	-	7.4E-02	less than 1.9E-04	less than 1.9E-04	400	Measurement
20	Eu-155	ND	-	2.6E-01	ND	-	1.6E-01	less than 8.8E-05	less than 5.3E-05	3000	Measurement
21	U-234									20	Gross Alpha
22	U-238									20	Gross Alpha
23	Np-237									9	Gross Alpha
24	Pu-238	ND	-	2.4E-02	ND	-	2.6E-02	less than 5.9E-03 *3	less than 6.6E-03 *3	4	Gross Alpha
25	Pu-239									4	Gross Alpha
26	Pu-240									4	Gross Alpha
27	Am-241									5	Gross Alpha
28	Cm-244									7	Gross Alpha
29	Pu-241	ND	-	6.5E-01	ND	-	7.2E-01	less than 3.2E-03	less than 3.6E-03	200	Pu-238 Relative Ratio Assessment
The sum of the ratios of the concentration of each radionuclide to the regulatory concentration (sum of the ratios to regulatory concentration limit)								less than 2.5E-01	less than 3.1E-01		

・ND indicates that analysis result is less than the detection limit.
・Values are expressed in exponential notation.
For example, "3.1E+01" means "3.1×10^{1}" and equals 31. Similarly, "3.1E+00" means "3.1×10^{0}" and equals 3.1, and "3.1E-01" means "3.1×10^{-1}" and equals 0.31.
*1 "Uncertainty" refers to the accuracy of analysis data.
"Uncertainty" is calculated using "Expanded Uncertainty: Coverage Factor k=2".
*2 Regulatory concentration limits stipulated in the Regulations of the Safety and Physical Protection of Specific Nuclear Fuel Material at Fukushima Daiichi Nuclear Power Station of the Tokyo Electric Power Company, Incorporated.
(Attached Chart 1, Row 6: Concentration limits in the water outside of the environmental monitoring area [in this chart Bq/cm^3 has been converted into Bq/L])
*3 The ratio to regulatory concentration limit for alpha-radionuclides has been assessed using the lowest regulatory concentration limit for all the target nuclides.
*4 Analysis methods are as follows:
Measurement - The concentrations of each radionuclide have been calculated by directly measuring/analyzing radioactivity intensity and the quantity of the element.
Gross Alpha - The total amount of alpha-radionuclides in the specimen are calculated by directly measuring alpha rays.
Radioactive Equilibrium Assessment - Calculated using a physical phenomenon in which the amount of radioactivity of one radionuclide and another radionuclide produced by the decay of that radionuclide exist in a certain ratio.
Relative Ratio Assessment - Calculated based on the assessment values of radionuclides that existed inside the reactor while considering radionuclide decay and migration into ALPS treated water.

※Excerpt from Treated Water Portal Site

[Reference] Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (Group A) (2/4)

TEPCO

- Analysis results of **tritium concentration is 13 x 10^4 Bq/liter**, and it is confirmed to be less than 1 million Bq/liter.

Tritium Concentration (Bq/liter)

Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (2/4)

Summary	13 (x10^4Bq/L)	(confirmed to be less than 1 million Bq/L)

Radioactivity Analysis: Tritium

No.	Nuclide	Analysis Results						Analysis Objective	Analysis Method *3
		TEPCO			KAKEN Co.,Ltd.				
		Analysis Value (Bq/L)	Uncertainty *1 (Bq/L)	Detection Limit (Bq/L)	Analysis Value (Bq/L)	Uncertainty *1 (Bq/L)	Detection Limit (Bq/L)		
1	H-3	1.3E+05	± 8.1E+03	1.9E+01	1.3E+05	± 7.4E+03	1.4E+02	*2	Measurement

・Values are expressed in exponential notation.
For example, "3.1E+01" means "3.1×10^{1}" and equals 31. Similarly, "3.1E+00" means "3.1×10^{0}" and equals 3.1, and "3.1E-01" means "3.1×10^{-1}" and equals 0.31.
*1 "Uncertainty" refers to the accuracy of analysis data.
"Uncertainty" is calculated using "Expanded Uncertainty: Coverage Factor k=2".
*2 To confirm that tritium concentration is less than 1E+06Bq/L (Less than 1 million Bq/L).
*3 Analysis method is as follows:
Measurement - The concentration of radionuclide has been calculated by directly measuring/analyzing radioactivity intensity and the quantity of the element.

※Excerpt from Treated Water Portal Site

[Reference] Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (Group A) (3/4)

TEPCO

- For nuclides voluntarily checked to ensure that they are not significantly present (39 nuclides), **it is confirmed that no significant concentrations founds of any of the nuclides.**

Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (3/4)

Summary	No significant concentrations found of any of the nuclides

Radioactivity Analysis: Nuclides voluntarily checked to ensure that they are not significantly present (39 nuclides)

No.	Nuclide	TEPCO		KAKEN Co.,Ltd.		Confirmation Method *2
		Assessment *1	Detection Limit (Bq/L)	Assessment *1	Detection Limit (Bq/L)	
1	Fe-59	○	4.3E-02	○	5.5E-02	Measurement
2	Co-58	○	2.3E-02	○	3.0E-02	
3	Zn-65	○	5.1E-02	○	5.0E-02	
4	Rb-86	○	2.9E-01	○	4.0E-01	
5	Sr-89	○	4.5E-02	○	4.0E-02	
6	Y-91	○	2.8E+00	○	2.3E+00	
7	Nb-95	○	3.2E-02	○	3.8E-02	
8	Ru-103	○	3.2E-02	○	5.4E-02	
9	Ag-110m	○	2.5E-02	○	3.7E-02	
10	Cd-113m	○	9.3E-02	○	5.3E-02	
11	Cd-115m	○	1.3E+00	○	2.0E+00	
12	Sn-123	○	1.5E+00	○	1.1E+00	
13	Sn-126	○	1.7E-01	○	1.0E-01	
14	Sb-124	○	5.8E-02	○	5.8E-02	
15	Te-123m	○	5.1E-02	○	3.0E-02	
16	Te-127	○	2.8E+00	○	2.6E+00	
17	Te-129m	○	1.1E+00	○	1.0E+00	
18	Te-129	○	4.0E-01	○	6.3E-01	
19	Cs-136	○	2.4E-02	○	3.5E-02	
20	Ba-140	○	1.1E-01	○	1.4E-01	
21	Ce-141	○	1.1E-01	○	1.2E-01	
22	Pm-146	○	4.2E-02	○	3.8E-02	
23	Pm-148m	○	2.6E-02	○	2.8E-02	
24	Pm-148	○	2.9E-01	○	5.3E-01	
25	Eu-152	○	1.3E-01	○	1.3E-01	
26	Gd-153	○	2.5E-01	○	1.3E-01	
27	Tb-160	○	7.5E-02	○	9.0E-02	
28	Am-243	○	2.4E-02	○	2.6E-02	Measurement (substituted with gross alpha)
29	Cm-242	○	2.4E-02	○	2.6E-02	
30	Cm-243	○	2.4E-02	○	2.6E-02	
31	Rh-103m	○	3.2E-02	○	5.4E-02	Ru-103/Rh-103m Radioactive Equilibrium Assessment
32	Rh-106	○	2.3E-01	○	2.4E-01	Ru-106/Rh-106 Radioactive Equilibrium Assessment
33	Sn-119m	○	6.4E-03	○	3.9E-03	Sn-126 Relative Ratio Assessment
34	Te-127m	○	2.8E+00	○	2.6E+00	Te-127 Relative Ratio Assessment
35	Cs-135	○	2.2E-07	○	2.8E-07	Cs-137 Relative Ratio Assessment
36	Ba-137m	○	3.2E-02	○	4.0E-02	Cs-137/Ba-137m Radioactive Equilibrium Assessment
37	Pr-144m	○	6.1E-03	○	3.8E-03	Ce-144/Pr-144m Radioactive Equilibrium Assessment
38	Pr-144	○	4.0E-01	○	2.5E-01	Ce-144/Pr-144 Radioactive Equilibrium Assessment
39	Am-242m	○	1.6E-04	○	1.8E-04	Am-241 Relative Ratio Assessment

*1 "○" indicates that the absence of significant concentrations was confirmed by the following, and "×" indicates that significant concentrations of nuclide was confirmed.
- Concentration of nuclide measured was below detection limit
- For nuclide that has been assessed using radioactive equilibrium, etc., if its target nuclide is detected and the assessment value of the target nuclide is extremely small compared to the regulatory concentration limit, or in other words, if it is less than 1/100 of the regulatory concentration limit which is the value set as the detection limit, then it shall be deemed to be below the detection limit.

Nuclide	Assessment Values (Bq/L)		Regulatory Concentration Limit *3
	TEPCO	KAKEN Co.,Ltd.	
Rh-103m	–	–	2.0E+05
Rh-106	–	–	3.0E+05
Sn-119m	–	–	2.0E+03
Te-127m	–	–	3.0E+02
Cs-135	2.5E-06	2.7E-06	6.0E+02
Ba-137m	3.6E-01	3.8E-01	8.0E+05
Pr-144m	–	–	4.0E+04
Pr-144	–	–	2.0E+04
Am-242m	–	–	5.0E+00

・A hyphen "–" indicates that the concentration of the target nuclide was below the detection limit.
・Values are expressed in exponential notation.
For example, "3.1E+01" means "3.1×10^{1}" and equals 31. Similarly, "3.1E+00" means "3.1×10^{0}" and equals 3.1, and "3.1E-01" means "3.1×10^{-1}" and equals 0.31.

*2 Analysis Methods are as follows:
Measurement - The concentrations of each radionuclide have been calculated by directly measuring/analyzing radioactivity intensity and the quantity of the element.
Measurement (substituted with gross alpha) - The total amount of alpha-radionuclides in the specimen are calculated by directly measuring alpha rays.
Radioactive Equilibrium Assessment - Calculated using a physical phenomenon in which the amount of radioactivity of one radionuclide and another radionuclide produced by the decay of that radionuclide exist in a certain ratio.
Relative Ratio Assessment - Calculated based on the assessment values of radionuclides that existed inside the reactor while considering radionuclide decay and migration into ALPS treated water.

*3 Regulatory concentration limits stipulated in the Regulations of the Safety and Physical Protection of Specific Nuclear Fuel Material at Fukushima Daiichi Nuclear Power Station of the Tokyo Electric Power Company, Incorporated.

※Excerpt from Treated Water Portal Site

Nuclides voluntarily checked to ensure that they are not significantly present (39 nuclides)

Assessment results
○ : absence of significant concentration was confirmed
× : significant concentration was confirmed

[Reference] Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (Group A) (4/4)

TEPCO

- For 44 general water quality measurement items (voluntary check to confirm that there are no unusual water quality), **it is confirmed that all criteria※1 satisfied**.

※1 In accordance with Fukushima Prefecture's "Ordinance on Discharge Standards Based on the Air Pollution Control Act and Wastewater Standard based on the Water Pollution Prevention Act (attached Chart 2)", and "the Ordinance Enforcement Regulations Pertaining to the Preservation of the Living Environment in Fukushima (attached Chart 5)".

General water quality measurement items (44 criteria)

Analysis results

Pre-discharge Analysis Results of ALPS Treated Water in the Measurement/Confirmation Tanks (4/4)

Summary	Criteria satisfied

General Water Quality Analysis (Voluntary check to confirm that there are no unusual water quality (44 criteria)

No.	Measurement Items	Unit	Analysis Result	Criteria *1
1	Hydrogen Ions (pH)	–	8.4	Sea Area 5.0~9.0
2	Suspended Solids (SS)	mg/L	<1	Maximum: 70 or less Average: 50 or less
3	Chemical Oxygen Demand (COD)	mg/L	1.0	Maximum: 40 or less Average: 30 or less
4	Boron	mg/L	0.4	Sea Area 230 or less
5	Soluble Iron	mg/L	<1	10 or less
6	Copper	mg/L	<0.1	2 or less
7	Nickel	mg/L	<0.1	2 or less
8	Chrome	mg/L	<0.1	2 or less
9	Zinc	mg/L	<0.1	2 or less
10	Biochemical Oxygen Demand (BOD)	mg/L	<1	Maximum: 40 or less Average: 30 or less
11	Coliform Count	pcs/cm^3	5	3000 or less
12	Cadmium	mg/L	<0.01	0.03 or less
13	Cyanide	mg/L	<0.05	0.5 or less
14	Organic Phosphorus	mg/L	<0.1	1 or less
15	Lead	mg/L	<0.01	0.1 or less
16	Hexavalent Chromium	mg/L	<0.05	0.2 or less
17	Arsenic	mg/L	<0.01	0.1 or less
18	Mercury	mg/L	<0.0005	0.005 or less
19	Alkyl Mercury	mg/L	<0.0005	Not Detected
20	Polychlorinated Biphenyl	mg/L	<0.0005	0.003 or less
21	Trichlorethylene	mg/L	<0.03	0.1 or less
22	Tetrachloroethylene	mg/L	<0.01	0.1 or less
23	Dichloromethane	mg/L	<0.02	0.2 or less
24	Carbon Tetrachloride	mg/L	<0.002	0.02 or less
25	1,2-Dichloroethane	mg/L	<0.004	0.04 or less
26	1,1-Dichloroethylene	mg/L	<0.1	1 or less
27	Cis-1,2-Dichloroethylene	mg/L	<0.04	0.4 or less
28	1,1,1-Trichloroethane	mg/L	<0.3	3 or less
29	1,1,2-Trichloroethane	mg/L	<0.006	0.06 or less
30	1,3-Dichloropropene	mg/L	<0.002	0.02 or less
31	Thiuram	mg/L	<0.006	0.06 or less
32	Simazine	mg/L	<0.003	0.03 or less
33	Thiobencarb	mg/L	<0.02	0.2 or less
34	Benzene	mg/L	<0.01	0.1 or less
35	Selenium	mg/L	<0.01	0.1 or less
36	Fenitrothion	mg/L	<0.003	0.03 or less
37	Phenols	mg/L	<0.1	1 or less
38	Fluorine	mg/L	<0.5	Sea Area 10 or less
39	Soluble Manganese	mg/L	<1	10 or less
40	Ammonia, Ammonium Compounds	mg/L	<1	100 or less
41	Nitrite Compounds and Nitrate Compounds	mg/L	20	
42	1,4-Dioxane	mg/L	<0.05	0.5 or less
43	n-Hexane Extractables (Mineral Oils)	mg/L	<0.5	1 or less
44	n-Hexane Extractables (Animal and Vegetable Oils and Fats)	mg/L	<1	10 or less

・A "less than" symbol (<) indicates that the quantity is below quantitation limit.

*1 In accordance with Fukushima Prefecture's "Ordinance on Discharge Standards Based on the Air Pollution Control Act and Wastewater Standard based on the Water Pollution Prevention Act (attached Chart 2)", and "the Ordinance Enforcement Regulations Pertaining to the Preservation of the Living Environment in Fukushima (attached Chart 5)".

※Excerpt from Treated Water Portal Site

4. Information on the water transfer to measurement/confirmation facility in preparation for the 4th discharge

- In preparation for the 4th discharge of ALPS treated water into the sea, ALPS treated water will be transferred from tank group E in K4 area and tank group A in K3 area to measurement/confirmation tank group B.
- To transfer the water, temporary equipment including hoses, pumps and filters will be installed as shown in the following diagram. This water transfer will be conducted upon implementing leak countermeasures, such as using dual-layered hoses, etc.

  (Water from tank group E in K4 area will be transferred first followed by the water in group A in K3 area. The transfer will take place over the two month period between November and December)