Information(12:00), August 27, 2025

To All Missions (Embassies, Consular posts and International Organizations in Japan)

Report on the discharge record and the seawater monitoring results at Fukushima Daiichi Nuclear Power Station during May

The Ministry of Foreign Affairs wishes to provide all international Missions in Japan with a report on the discharge record and seawater monitoring results with regard to groundwater pumped from the sub-drain and groundwater drain systems, as well as bypassing groundwater pumped during the month of May at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In May the summary of monthly progress on decommissioning and contaminated water management of Fukushima Daiichi NPS was issued shown in Appendix 1. For more information, please see the following URL:
https://www.meti.go.jp/english/earthquake/nuclear/decommissioning/pdf/mp202505.pdf

2. Sub-drain and Groundwater Drain Systems

In May purified groundwater pumped from the sub-drain and groundwater drain systems was discharged on the dates shown in Appendix 2. Prior to every discharge, an analysis on the quality of the purified groundwater to be discharged was conducted by Tokyo Electric Power Company (TEPCO) and the results were announced.

All the test results during the month of May have confirmed that the radiation levels of sampled water were substantially below the operational targets set by TEPCO (these operational targets are well below the density limit specified by the Reactor Regulation). The results of these analyses were also confirmed by third-party organization (Tohoku Ryokka Kankyohozen Co.).

In addition, TEPCO and Japan Atomic Energy Agency (JAEA), at the request of the Government of Japan, regularly conduct more detailed analyses on the purified groundwater. The results of JAEA's latest analyses confirmed that TEPCO's analyses were accurate and verified that the radiation levels of sampled groundwater was substantially below the operational target (see Appendix 3).

Moreover, TEPCO publishes the results of analyses conducted on seawater sampled during the discharge operation at the nearest seawater sampling post from the discharge point (see Appendix 4). The results show that the radiation levels of seawater remain lower than the density limit specified by the Reactor Regulation and

significant change in the radioactivity has not been observed.

3. Groundwater Bypassing

In May, the pumped bypassing groundwater was discharged on the dates shown in Appendix 5. Prior to every discharge, an analysis of the quality of the groundwater to be discharged was conducted by TEPCO and the results were announced.

All the test results during the month of May have confirmed that the radiation levels of sampled water were substantially below the operational targets set by TEPCO (these operational targets are well below the density limit specified by the Reactor Regulation). The results of these analyses were also confirmed by Japan Chemical Analysis Center.

In addition, TEPCO and JAEA, at the request of the Government of Japan, regularly conduct more detailed analyses of the groundwater. The results of JAEA's latest analyses confirmed that TEPCO's analyses were accurate and verified that the radiation levels of the sampled groundwater were substantially below the operational target (see Appendix 6).

Moreover, TEPCO publishes analysis results on seawater sampled during the discharge operation at the nearest seawater sampling post from the discharge point (see Appendix 7). The result shows that the radiation levels in seawater remain lower than the density limit specified by the Reactor Regulation and significant change in the radioactivity has not been observed. The analysis had been conducted once a month until March 2017. Since April 2017, it has been conducted four times a year because there has been no significant fluctuation in the concentration of radioactive materials in the sea water, and no influence on the surrounding environment has been confirmed.

The sampling process for analyses conducted this month is the same as the one conducted in the information disseminated last month. Results of the analyses are shown in the attached appendices:

(For further information, please contact TEPCO at (Tel: 03-6373-1111) or refer to the TEPCO's website:
http://www.tepco.co.jp/en/nu/fukushima-np/handouts/index-e.html)

Contact: International Nuclear Energy Cooperation Division,
Ministry of Foreign Affairs, Tel 03-5501-8227

Outline of Decommissioning, Contaminated Water and Treated Water Management

May 29, 2025
Secretariat of the Team for Countermeasures for Decommissioning, Contaminated Water and Treated Water

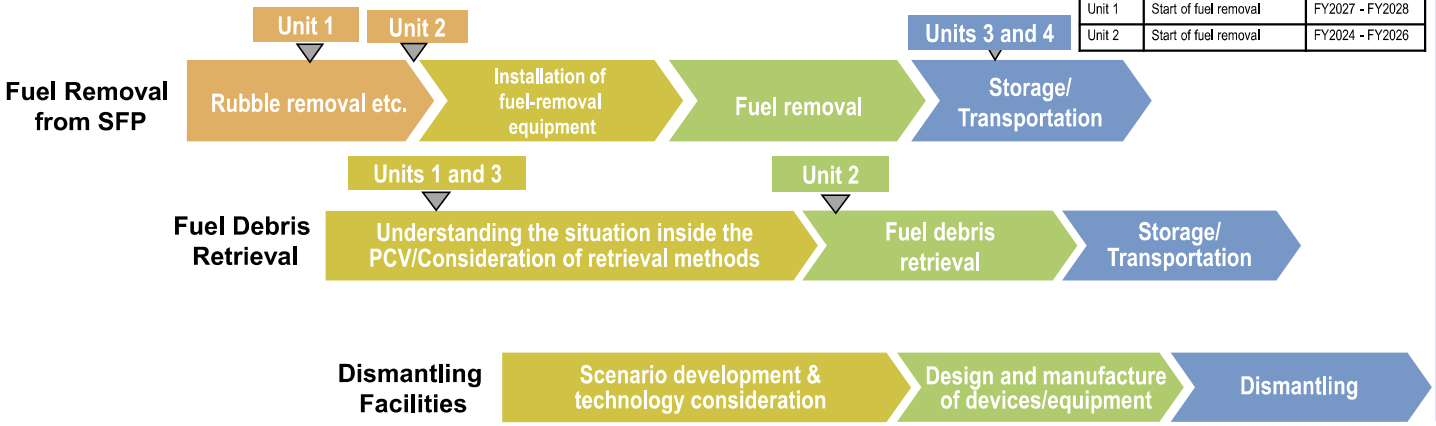
Main decommissioning work and steps

Fuel removal from the spent fuel pool was completed on December 22 2014 at Unit 4 and February 28 2021 at Unit 3.
Trial fuel debris retrieval at Unit 2 commenced from September 10 2024 and a milestone of the Mid-and-Long-Term Roadmap "Commencing fuel debris retrieval at the first Unit" was achieved.
Work continues sequentially toward the start of fuel removal from Units 1 and 2 and fuel debris (Note 1) retrieval from Units 1-3.

(Note 1) Fuel assemblies having melted through in the accident with nearby metal materials etc.

<Milestones in the Mid-and -Long-Term Roadmap>

Units 1-6	Completion of fuel removal	Within 2031
Unit 1	Start of fuel removal	FY2027 - FY2028
Unit 2	Start of fuel removal	FY2024 - FY2026

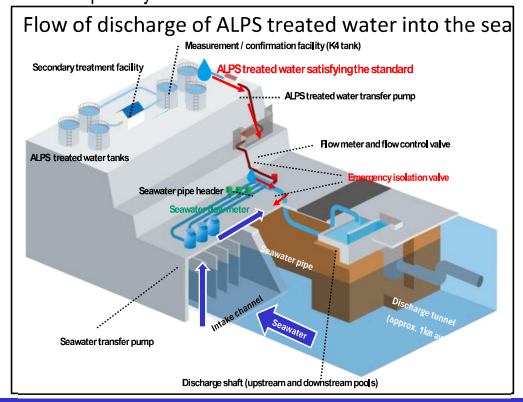


Measures for treated water Appendix1

Handling of ALPS treated water

Regarding the discharge of ALPS treated water into the sea, TEPCO must comply with regulatory and other safety standards to safeguard the public, the surrounding environment and agricultural, forestry and fishery products. To minimize adverse impacts on reputation, ongoing efforts will continue, including enhanced monitoring, ensuring objectivity and transparency by engaging with third-party experts and having safety checked by the IAEA. Moreover, accurate information will be disseminated with full transparency.

Flow of discharge of ALPS treated water into the sea



Contaminated water management - triple-pronged efforts -

(1) Efforts to promote contaminated water management based on the three basic policies

① "Removing" the contamination source ② "Redirecting" groundwater from the contamination source ③ "Preventing leakage" of contaminated water

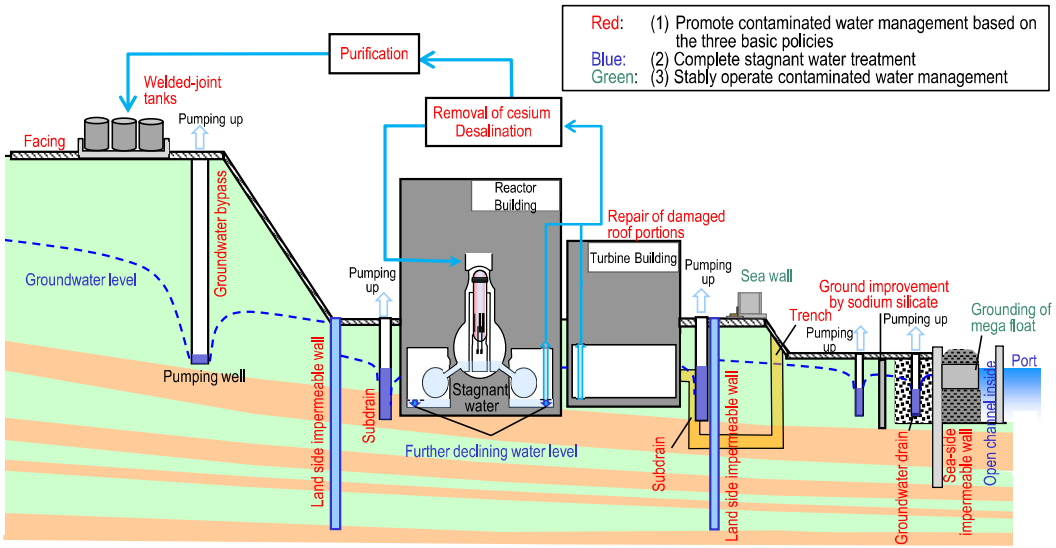
- Strontium-reduced water from other equipment is being re-treated in the Advanced Liquid Processing System (ALPS: multi-nuclide removal system) and stored in welded-joint tanks.
- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized the groundwater at a low level and the increased contaminated water generated during rainfall is being suppressed by repairing damaged portions of the building roofs facing onsite. Through these measures, the generation of contaminated water has being suppressed and reduced from approx. 540 m^3/day (in May 2014) before implementing measures to approx. 70 m^3/day (in FY2024). It was confirmed that the milestone of "suppressing the amount of contaminated water generated to 100 m^3/day or less during average rainfall within FY2025," which was achieved in FY2023, has been maintained in FY2024.
- Measures will proceed to further reduce and supress the amount of contaminated water generated to approx. 50-70 m^3/day by FY2028.

(2) Efforts to complete stagnant water treatment

- To reduce the stagnant water levels in buildings as planned, work to install additional stagnant water transfer equipment is underway.
- In 2020, treatment of stagnant water in buildings was completed, except for the Units 1-3 Reactor Buildings, Process Main Building and High-Temperature Incinerator Building.
- While assessing the dust impact, measures to reduce the stagnant water level were implemented. In March 2023, the target water level in each building was achieved. For the Units 1-3 Reactor Buildings, "reducing stagnant water in the Reactor Buildings to about half the amount at the end of 2020 during the period FY2022-2024" was achieved.
- For zeolite sandbags on the basement floors of the Process Main Building and High-Temperature Incinerator Building, measures to reduce the radiation dose are being examined with stabilization in mind.

(3) Efforts to stably operate contaminated water management

- As part of the tsunami countermeasures, openings in buildings were closed and work to install sea walls was completed. As countermeasures for heavy rain, sandbags are being installed to suppress direct inflow into buildings while work to enhance drainage channels and other measures is being implemented as planned.



Progress Status and Future Challenges of the Mid-and-Long-Term Roadmap toward Decommissioning of TEPCO Holdings Fukushima Daiichi Nuclear Power Station (Outline)

Progress status

◆ The temperatures of the Reactor and the Primary Containment Vessel of Units 1-3 have been maintained stable.
There was no significant change in the concentration of radioactive materials newly released from Reactor Buildings into the air. It was concluded that the comprehensive cold shutdown state had been maintained.

Status of discharge of ALPS treated water into the sea

Regarding the ALPS treated water discharge facility into the sea, after the inspection of the measurement/confirmation facility tank group C commenced last August, inspections proceeded sequentially. As the inspection of the measurement/confirmation facility tank group B which commenced last November was completed, all scheduled inspections were completed as planned. All inspection results confirmed no abnormalities affecting the discharge process.

Paint blistering and corrosion were detected inside the measurement/ confirmation facility tank group B, but it was evaluated that they would not affect the functions of the tank and repair painting was conducted.

In preparation for the second discharge of ALPS treated water into the sea scheduled in June to July FY2025, the circulating/stirring operation commenced from May 9 to homogenize the water quality in the tank group. On May 16, samples were taken from the measurement/ confirmation facility tank group C. These will be analyzed to confirm that the discharge criteria are satisfied before the dilution/discharge of ALPS treated water.

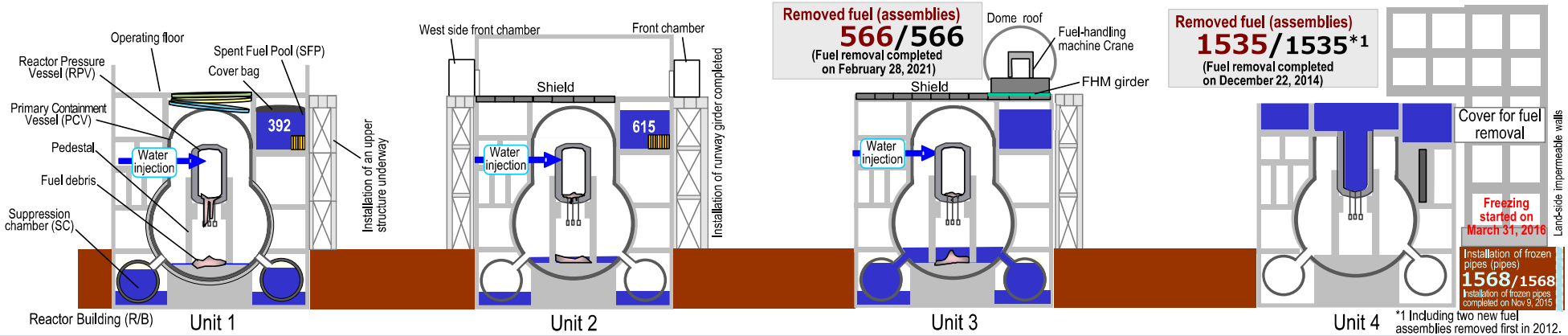
Non destructive analysis results of the second fuel debris sample (prompt report)

Samples taken during the second trial fuel debris retrieval were transported to the JAEA Oarai Nuclear Engineering Institute Irradiated Fuel Assembly Test Facility on April 25 and non-destructive analysis commenced on April 28.

The total mass of the samples was 0.187g, the largest was approx. 5mm x approx. 4mm and the dose rate measured inside the container was approx. 0.3 mSv/h. The received fuel debris sample was heterogeneous, overall, lighter in color than the first sample, brownish bronze with black areas and holes found on the surface.

The results of γ-ray spectrometry measurement detected Am-241, and the sample was considered to contain nuclear fuel components. Non-destructive analyses will continue and after compiling the results, a detailed analysis (solid and liquid) will be conducted.

Enlarged photos showing the external appearance of the fuel debris sample (taken from directly above)



Construction of the 10th Solid Waste Storage Facility and operation start of the 10-C Facility

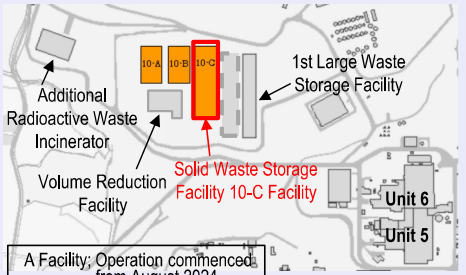
As a facility for the indoor storage of containers enclosing debris generated in decommissioning, the 10th Solid Waste Storage Facility comprising three Facilities (A, B and C) has been installed sequentially. Operation commenced from last August at Facility A and from October at Facility B.

For C Facility, installation work commenced from October 2023. An inspection prior-to-use certificate dated April 25, 2025 was granted and operation commenced, and the entire 10th Solid Waste Storage Facility was completed.

During the next phase, after installing base frames to station containers, indoor storage of containers will commence.

External appearance of the 10-C Facility
(February 17, 2025)

Inside the 10-C Facility
(April 7, 2025)



Layout of the 10th Solid Waste Storage Facility
(From left, A, B and C Facilities)

Appendix 2

Results of analyses on the quality of the purified groundwater pumped from the sub-drain and groundwater drain systems at Fukushima Daiichi NPS (made available by TEPCO prior to discharge)

(Unit: Bq/L)

Date of sampling *Date of discharge	Detected nuclides	Analytical body	
		TEPCO	Third-party organization
May 26th, 2025 *Discharged on May 31st,2025	Cs-134	ND (0.55)	ND (0.56)
	Cs-137	ND (0.55)	ND (0.62)
	Gross β	ND (1.9)	0.55
	H-3	710	750
May 24th, 2025 *Discharged on May 29th,2025	Cs-134	ND (0.55)	ND (0.42)
	Cs-137	ND (0.55)	ND (0.78)
	Gross β	ND (0.56)	ND (0.41)
	H-3	660	700
May 22nd, 2025 *Discharged on May 27th,2025	Cs-134	ND (0.93)	ND (0.60)
	Cs-137	ND (0.79)	ND (0.60)
	Gross β	ND (1.9)	ND (0.44)
	H-3	690	710
May 20th, 2025 *Discharged on May 25th,2025	Cs-134	ND (0.57)	ND (0.64)
	Cs-137	ND (0.68)	ND (0.60)
	Gross β	ND (1.8)	ND (0.40)
	H-3	700	740
May 19th, 2025 *Discharged on May 24th,2025	Cs-134	ND (0.68)	ND (0.57)
	Cs-137	ND (0.98)	ND (0.60)
	Gross β	ND (1.9)	ND (0.39)
	H-3	740	770
May 18th, 2025 *Discharged on May 23rd,2025	Cs-134	ND (0.67)	ND (0.59)
	Cs-137	ND (0.61)	ND (0.62)
	Gross β	ND (1.8)	ND (0.44)
	H-3	640	700
May 16th, 2025 *Discharged on May 21st,2025	Cs-134	ND (0.81)	ND (0.62)
	Cs-137	ND (0.63)	ND (0.65)
	Gross β	ND (0.61)	ND (0.41)
	H-3	620	660
May 14th, 2025 *Discharged on May 19th,2025	Cs-134	ND (0.82)	ND (0.57)
	Cs-137	ND (0.78)	ND (0.51)
	Gross β	ND (1.7)	0.47
	H-3	520	540

May 5th,2025 *Discharged on May 18th,2025	Cs-134	ND (0.84)	ND (0.67)
	Cs-137	ND (0.93)	ND (0.64)
	Gross β	ND (2.1)	ND (0.32)
	H-3	680	730
May 12th, 2025 *Discharged on May 17th,2025	Cs-134	ND (0.66)	ND (0.64)
	Cs-137	ND (0.79)	ND (0.51)
	Gross β	ND (1.8)	ND (0.44)
	H-3	560	570
May 10th, 2025 *Discharged on May 15th,2025	Cs-134	ND (0.81)	ND (0.51)
	Cs-137	ND (0.68)	ND (0.48)
	Gross β	ND (1.8)	ND (0.47)
	H-3	530	570
May 8th, 2025 *Discharged on May 13th,2025	Cs-134	ND (0.81)	ND (0.61)
	Cs-137	ND (0.82)	ND (0.67)
	Gross β	ND (0.67)	ND (0.44)
	H-3	540	540
May 6th, 2025 *Discharged on May 11th,2025	Cs-134	ND (0.75)	ND (0.66)
	Cs-137	ND (0.85)	ND (0.54)
	Gross β	ND (1.9)	ND (0.38)
	H-3	610	660
May 4th, 2025 *Discharged on May 9th,2025	Cs-134	ND (0.81)	ND (0.54)
	Cs-137	ND (0.75)	ND (0.54)
	Gross β	ND (1.8)	ND (0.38)
	H-3	660	730
May 1st, 2025 *Discharged on May 6th,2025	Cs-134	ND (0.84)	ND (0.55)
	Cs-137	ND (0.69)	ND (0.52)
	Gross β	ND (0.59)	ND (0.36)
	H-3	640	680
April 29th, 2025 *Discharged on May 4th,2025	Cs-134	ND (0.67)	ND (0.47)
	Cs-137	ND (0.66)	ND (0.45)
	Gross β	ND (1.8)	ND (0.38)
	H-3	740	770
April 27th, 2025 *Discharged on May 2nd,2025	Cs-134	ND (0.72)	ND (0.57)
	Cs-137	ND (0.79)	ND (0.57)
	Gross β	ND (1.8)	ND (0.37)
	H-3	670	730

- * ND: represents a value below the detection limit; values in ( ) represent the detection limit.
- In order to ensure the results, third-party organizations have also conducted an analysis and verified the radiation level of the sampled water.
- Third-party organization : Tohoku Ryokka Kankyohozen Co., Ltd

Appendix 3

Result of detailed analyses conducted by TEPCO, JAEA, and Japan Chemical Analysis Center (In order to confirm the validity of analysis, the Government of Japan also requests JAEA; and TEPCO requests Japan Chemical Analysis Center to conduct independent analyses)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Analytical body		
		JAEA	TEPCO	Japan Chemical Analysis Center
April 2nd,2025	Cs-134	ND (0.0029)	ND (0.0048)	ND (0.0062)
	Cs-137	ND (0.0020)	ND (0.0036)	ND (0.0048)
	Gross α	ND (0.66)	ND (2.3)	ND (1.9)
	Gross β	ND (0.42)	ND (0.60)	ND (0.63)
	H-3	940 ±1.8	940	940
	Sr-90	ND (0.0013)	ND (0.0012)	ND (0.0062)

* ND: represents a value below the detection limit; values in ( ) represent the detection limit.

(Reference) (Unit: Bq/L)

Radionuclides	Operational Targets	Density Limit specified by the Reactor Regulation	World Health Organization (WHO) Guidelines for Drinking Water Quality
Cs-134	1	60	10
Cs-137	1	90	10
Gross α	—	—	—
Gross β	3 (1) ※	—	—
H-3	1,500	60,000	10,000
Sr-90	—	30	10

※ The operational target of Gross β is 1 Bq/L in the survey which is conducted once every ten days.

※ The reference table shows the values of operational targets before discharge. Since the values after discharge contain natural radioactive materials in seawater, there will be differences between the values and the operational targets values.

Appendix 4

Results of analysis on the seawater sampled near the discharge point (North side of Units 5 and 6 discharge channel)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Sampling point (South discharge channel)
March 31st, 2025 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.78)
	Cs-137	ND (0.60)
	Gross β	12
	H-3	0.39

Appendix 5

Results of analyses on the water quality of the groundwater pumped up for bypassing at Fukushima Daiichi NPS (made available by TEPCO prior to discharge)

(Unit: Bq/L)

Date of sampling *Date of discharge	Detected nuclides	Analytical body	
		TEPCO	Third-party organization
May 9th, 2025 *Discharged on May 14th,2025	Cs-134	ND (0.81)	ND (0.57)
	Cs-137	ND (0.68)	ND (0.51)
	Gross β	ND (0.57)	ND (0.41)
	H-3	56	53
May 2nd, 2025 *Discharged on May 8th,2025	Cs-134	ND (0.92)	ND (0.59)
	Cs-137	ND (0.85)	ND (0.51)
	Gross β	ND (0.68)	ND (0.33)
	H-3	52	51

- * ND: represents a value below the detection limit; values in ( ) represent the detection limit
- In order to ensure the results, third-party organizations have also conducted an analysis and verified the radiation level of the sampled water.
- Third-party organization: Tohoku Ryokka Kankyohozen Co., Ltd

Result of detailed analyses conducted by TEPCO, JAEA, and Japan Chemical Analysis Center (In order to confirm the validity of analysis, the Government of Japan also requests JAEA; and TEPCO requests Japan Chemical Analysis Center to conduct independent analyses)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Analytical body		
		JAEA	TEPCO	Japan Chemical Analysis Center
April 4th, 2025	Cs-134	ND (0.0027)	ND (0.0052)	ND (0.0055)
	Cs-137	ND (0.0020)	ND (0.0039)	ND (0.0053)
	Gross α	ND (0.56)	ND (2.3)	ND (1.9)
	Gross β	ND (0.42)	ND (0.60)	ND (0.60)
	H-3	49 ±0.45	51	50
	Sr-90	ND (0.0011)	ND (0.0013)	ND (0.0063)

* ND: represents a value below the detection limit; values in ( ) represent the detection limit.

(Reference) (Unit: Bq/L)

Radionuclides	Operational Targets	Density Limit specified by the Reactor Regulation	World Health Organization (WHO) Guidelines for Drinking Water Quality
Cs-134	1	60	10
Cs-137	1	90	10
Gross α	—	—	—
Gross β	5 (1) ※	—	—
H-3	1,500	60,000	10,000
Sr-90	—	30	10

※ The operational target of Gross β is 1 Bq/L in the survey which is conducted once every ten days.

※ The reference table shows the values of operational targets before discharge. Since the values after discharge contain natural radioactive materials in seawater, there will be differences between the values and the operational targets values.

Appendix 7

Results of analyses on the seawater sampled near the discharge point (Around South Discharge Channel)

(Unit: Bq/L)

Date of sampling ※conducted four times a year	Detected nuclides	Sampling point (South discharge channel)
March 13th, 2025	Cs-134	ND (0.82)
	Cs-137	ND (0.90)
	Gross β	12
	H-3	ND (0.26)