Information（16:00）, June 9, 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 February

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 February at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

   In August 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/mp202502.pdf

2. Sub-drain and Groundwater Drain Systems

In February 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 February 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 February, the pumped bypassing groundwater was discharged on the dates shown in Appendix 5. Prior to every discharge, an analysis on 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 February 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 on 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 is 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

February 27, 2025
Secretariat of the Team for Countermeasures for Decommissioning, Contaminated Water and Treated Water

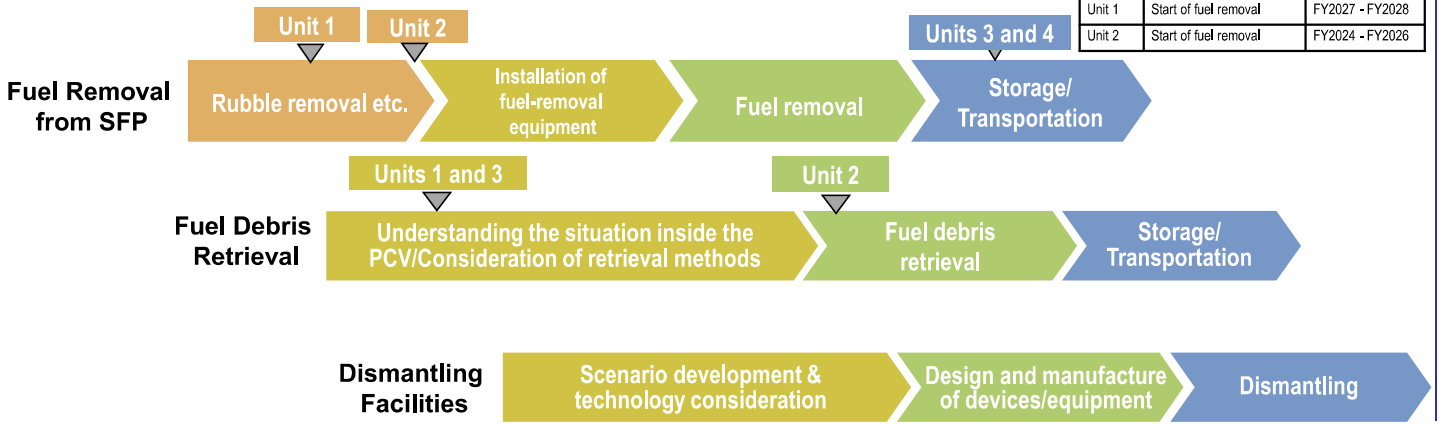
Main decommissioning work and steps

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



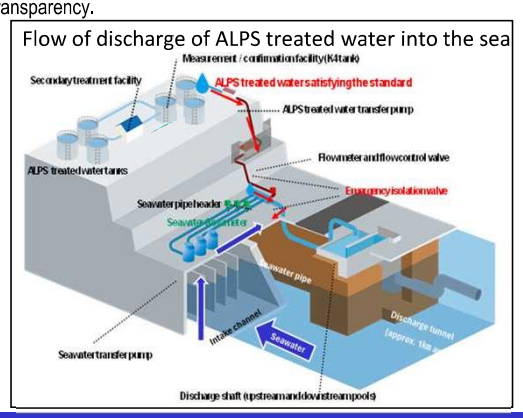
Measures for treated water

Appendix 1

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, efforts including enhanced monitoring, ensuring objectivity and transparency by engaging with third-party experts and having safety checked by the IAEA, will continue. 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

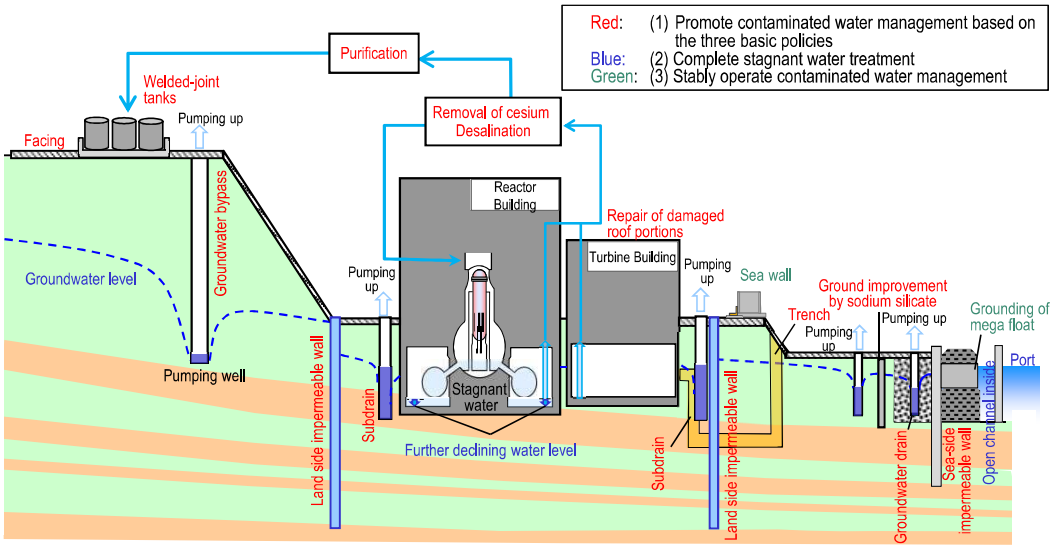
- Strontium-reduced water from other equipment is being re-treated in the Advanced Liquid Processing System (ALPS: multi-nuclide removal system) and stored in welded-joint tanks.
- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized 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 been suppressed and reduced, from approx. 540 m^3/day (in May 2014) before implementing measures to approx. 80 m^3/day (in FY2023), achieving the milestone of "suppressing the amount of contaminated water generated to 100 m^3/day or less during average rainfall within FY2025."
- Measures will proceed to further reduce the amount of contaminated water generated and suppress it 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 ALPS treated water discharge into the sea

Planned inspections of ALPS treated water dilution and discharge facility and discharge/intake facility are currently under way. Except for the measurement/confirmation tank group B (to be completed in around May 2025), no abnormalities that could affect the discharge schedule were found.

To confirm that the facility status has not changed since the initial discharges into the sea (1st~3rd discharges of FY2023), this confirmation shall be implemented once a year. The 7th discharge to be implemented in FY2024 will be discharged in two stages: before discharge, a small amount of ALPS treated water diluted with seawater will be stored in the upper - stream storage pool and the tritium concentration will be measured (1st Stage); and while the remaining ALPS treated water is diluted with seawater, continuous discharge will be implemented (2nd Stage).

In preparation for the 1st discharge in FY2025, circulation/agitation has commenced for tank group A since February 13 and sampling was conducted on February 21. Analysis is underway.

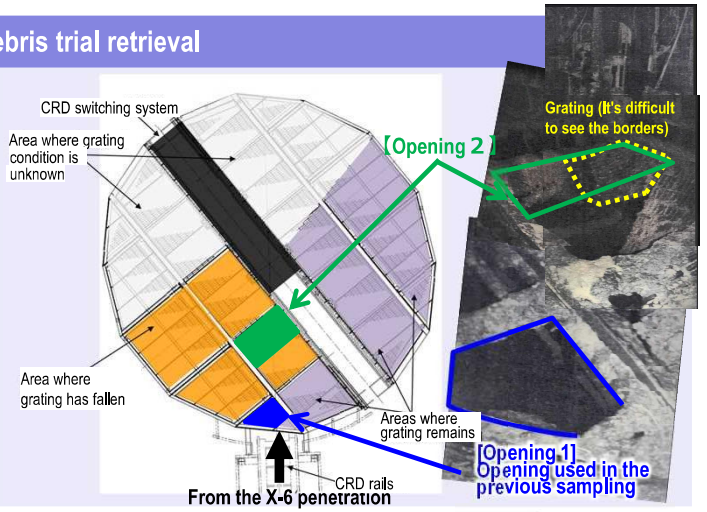
The J9 area tanks were taken out of service on February 13 and dismantling began on February 14. Dismantling of the first tank will be completed around the beginning of March 2025.

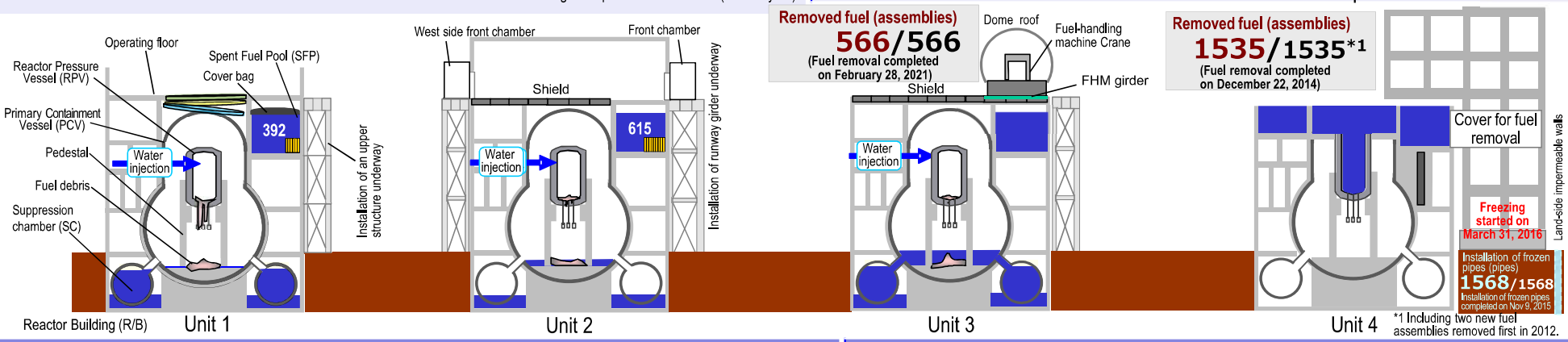
<Removing the top lid in J9 area tanks (February 14)>

Unit 2 Progress status of fuel debris trial retrieval

In preparation for the next fuel debris retrieval by the telescopic device, a work plan is being examined.

As an opening that provides access to the bottom of the pedestal, opening 2 on the far side from the previous investigation will be investigated. After determining whether access is possible, fuel debris will be retrieved through opening 2 if access is possible and through opening 1, as in the previous sampling, if access through opening 2 is not possible.



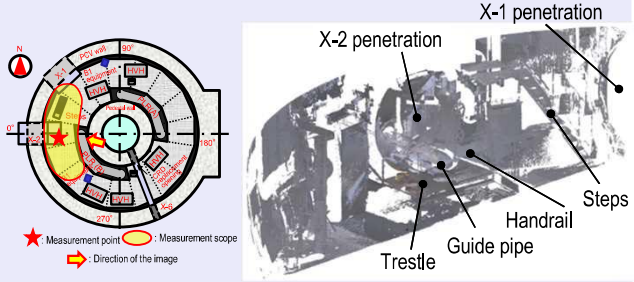


Unit 1 Environmental investigation inside the PCV

In Unit 1, work undertaken to reduce the PCV water level may result in deposits being exposed to the air and the level of airborne radiation dose and haze may change. A summer investigation was conducted from September to October in 2024 and a winter investigation was conducted as initially planned.

Based on the investigative results, a comparison of the haze state assumed no significant difference detected before and after the reduction in PCV water level, but more haze in winter than summer. Moreover, no significant difference was detected in the air dose rate before and after the PCV water level reduction.

Based on laser scan data acquired in this investigation, a mockup training facility resembling the site more closely will be manufactured to utilize in effective tests and training.



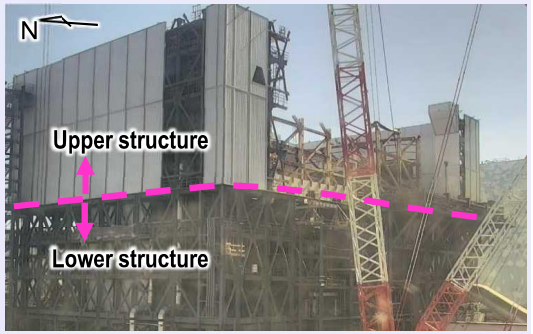
< Laser scan measurement results around X-2 penetration >

Unit 1 Progress of work in preparation for fuel removal

Before installing a large cover over the Reactor Building, ground assembly of steel frames in the off-site yard and installation on-site are underway.

In the off-site yard, ground assembly of the temporary gantry, upper and lower structures and box ring was completed. At present, ground assembly of three of eight blocks for the moving roof was completed. On-site, installation of nine of a total dozen blocks for the upper structure was completed.

To reduce the risk of coming into contact with the large cover and enhance seismic safety, a portion of the perimeter steel frames is being removed. No significant increase in dust concentration was detected during removal. Work to spray anti-scattering agents and monitoring will continue.



< On-site status (northwest side) (February 25) >

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
February 23rd, 2025 *Discharged on February 28th,2025	Cs-134	ND (0.88)	ND (0.52)
	Cs-137	ND (0.57)	ND (0.73)
	Gross β	ND (1.8)	ND (0.33)
	H-3	840	930
February 21st, 2025 *Discharged on February 26th,2025	Cs-134	ND (0.82)	ND (0.67)
	Cs-137	ND (0.90)	ND (0.70)
	Gross β	ND (0.58)	ND (0.34)
	H-3	890	910
February 19th, 2025 *Discharged on February 24th,2025	Cs-134	ND (0.75)	ND (0.56)
	Cs-137	ND (0.82)	ND (0.47)
	Gross β	ND (1.7)	ND (0.35)
	H-3	820	870
February 17th, 2025 *Discharged on February 22nd,2025	Cs-134	ND (0.56)	ND (0.60)
	Cs-137	ND (0.71)	ND (0.61)
	Gross β	ND (1.9)	ND (0.28)
	H-3	850	890
February 14th, 2025 *Discharged on February 19th,2025	Cs-134	ND (0.77)	ND (0.65)
	Cs-137	ND (0.90)	ND (0.56)
	Gross β	ND (0.68)	ND (0.28)
	H-3	790	880
February 12th, 2025 *Discharged on February 17th,2025	Cs-134	ND (0.58)	ND (0.55)
	Cs-137	ND (0.83)	ND (0.58)
	Gross β	ND (1.8)	ND (0.31)
	H-3	870	880
February 9th, 2025 *Discharged on February 14th,2025	Cs-134	ND (0.87)	ND (0.59)
	Cs-137	ND (0.73)	ND (0.58)
	Gross β	ND (2.0)	0.41
	H-3	810	880
February 6th, 2025 *Discharged on February 11th,2025	Cs-134	ND (0.69)	ND (0.72)
	Cs-137	ND (0.74)	ND (0.63)
	Gross β	ND (0.73)	ND (0.32)

	H-3	790	810
February 3rd,2025 *Discharged on February 8th,2025	Cs-134	ND (0.75)	ND (0.65)
	Cs-137	ND (0.78)	ND (0.60)
	Gross β	ND (2.0)	ND (0.30)
	H-3	620	650
February 1st, 2025 *Discharged on February 6th,2025	Cs-134	ND (0.82)	ND (0.60)
	Cs-137	ND (0.74)	ND (0.58)
	Gross β	ND (0.63)	ND (0.30)
	H-3	720	770
January 30th, 2025 *Discharged on February 4th,2025	Cs-134	ND (0.75)	ND (0.60)
	Cs-137	ND (0.82)	ND (0.66)
	Gross β	ND (1.7)	ND (0.33)
	H-3	850	900

- * 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
January 1st,2025	Cs-134	ND (0.0033)	ND (0.0054)	ND (0.0069)
	Cs-137	ND (0.0020)	ND (0.0038)	ND (0.0041)
	Gross α	ND (0.60)	ND (2.0)	ND (2.0)
	Gross β	ND (0.39)	ND (0.57)	ND (0.60)
	H-3	910 ±1.7	900	890
	Sr-90	ND (0.0013)	ND (0.0013)	ND (0.0058)

* 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)
December 5th, 2024 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.86)
	Cs-137	ND (0.62)
	Gross β	12
	H-3	ND (0.32)

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	Detected nuclides	Analytical body

*Date of discharge		TEPCO	Third-party organization
February 21st, 2025 *Discharged on February 28th,2025	Cs-134	ND (0.75)	ND (0.57)
	Cs-137	ND (0.63)	ND (0.85)
	Gross β	ND (0.55)	ND (0.33)
	H-3	51	53
February 14th, 2025 *Discharged on February 20th,2025	Cs-134	ND (0.84)	ND (0.73)
	Cs-137	ND (0.67)	ND (0.70)
	Gross β	ND (0.57)	ND (0.32)
	H-3	54	55
February 7th, 2025 *Discharged on February 13th,2025	Cs-134	ND (0.68)	ND (0.69)
	Cs-137	ND (0.79)	ND (0.66)
	Gross β	ND (0.55)	ND (0.26)
	H-3	56	56
January 31st, 2025 *Discharged on February 7th,2025	Cs-134	ND (0.98)	ND (0.64)
	Cs-137	ND (0.78)	ND (0.78)
	Gross β	ND (0.69)	ND (0.34)
	H-3	57	67

- * 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 6

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
January 3rd, 2025	Cs-134	ND (0.0029)	ND (0.0076)	ND (0.0061)
	Cs-137	ND (0.0021)	ND (0.0049)	ND (0.0047)
	Gross α	ND (0.60)	ND (2.0)	ND (2.0)
	Gross β	ND (0.39)	ND (0.60)	ND (0.64)
	H-3	51 ±0.47	51	51

	Sr-90	ND (0.0012)	ND (0.0013)	ND (0.0058)

* 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)
December 5th, 2024	Cs-134	ND (0.91)
	Cs-137	ND (0.69)
	Gross β	12
	H-3	ND (0.33)