Information(12:00),July 8, 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 March

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 March at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In March the summary of monthly progress on decommissioning and 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/mp202503.pdf

2. Sub-drain and Groundwater Drain Systems

In March 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 March 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 were 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 March, 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 March 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 76). 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

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

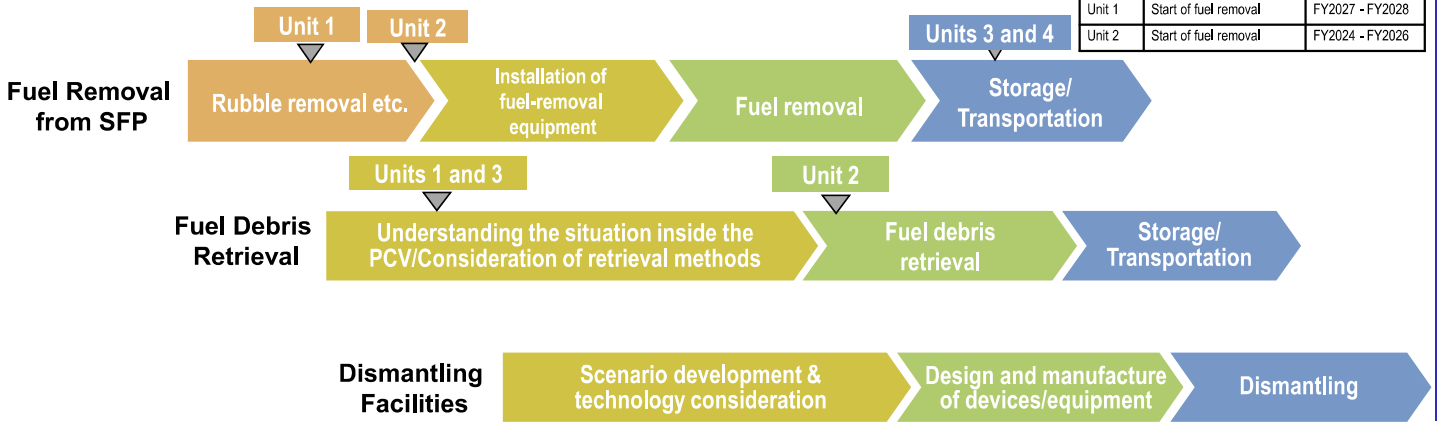
Main decommissioning work and steps

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

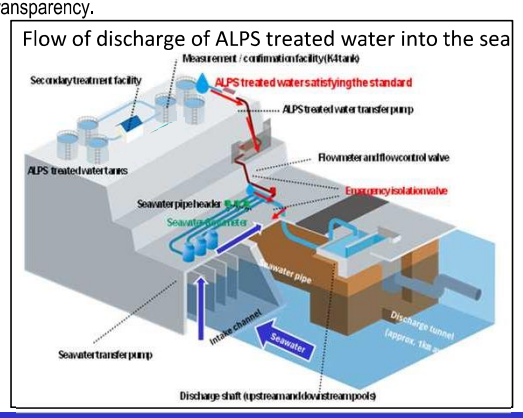


Measures for treated water Appendix 1

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

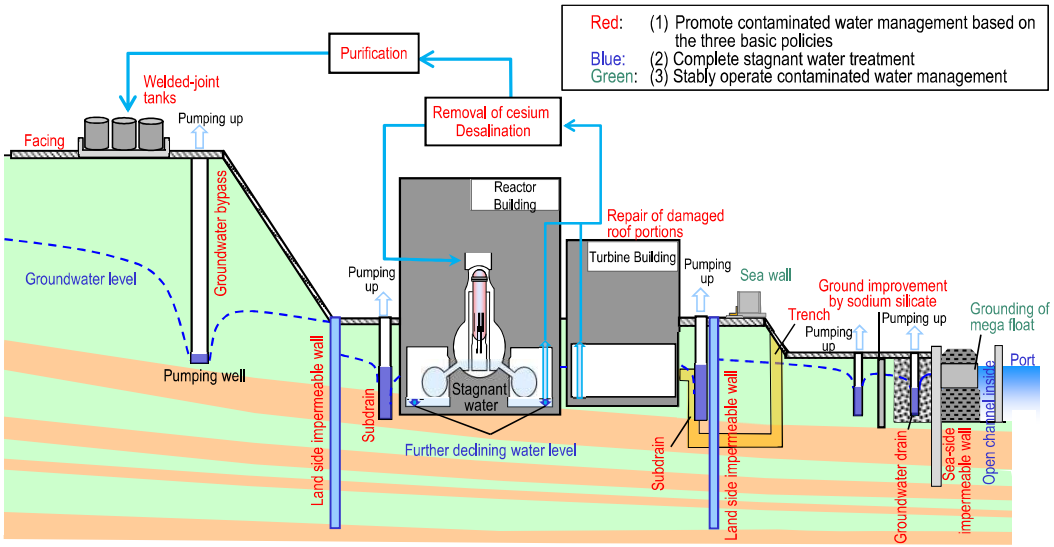
- Strontium-reduced water from other equipment is being re-treated in the Advanced Liquid Processing System (ALPS: multi-nuclide removal system) and stored in welded-joint tanks.
- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized 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.

ALPS treated water discharge status update and FY2025 discharge plan

In preparation for the seventh discharge of ALPS treated water in FY2024, the measurement/confirmation facility tank group C was analyzed. After TEPCO and the external agency confirmed that the analysis results had met discharge criteria, the results were published on March 6.

From March10, ALPS treated water was diluted with seawater, which was temporarily held in the upper - stream storage and then sampled/measured to confirm the absence of any problem (First stage). Subsequently, the water was discharged from the measurement/confirmation facility tank group C into the sea (Second stage) since March 12.

TEPCO will continue confirming that it is being discharged safely as planned, while meeting the discharge requirement based on quick analyses.

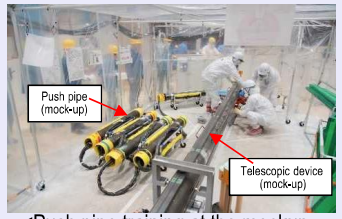
This time FY2025 discharge plan was formulated and published. There will be seven discharges during the year, each of which releasing approximately 7,800m³ for an annual discharge of approximately 54,600m³. The annual tritium discharge volume will be approximately 15 trillion Bq.

<Measurement status of the seventh discharge of ALPS treated water>
* Detailed information described on the right on Page 5

Measurement status	Compliance with requirement
[TEPCO] Attributes of the treated water of tank group C (Concentration of the 30 types of radionuclides within the measurement / evaluation scope and regulatory requirements) (Sampled on January 14)	○
[TEPCO] Discharge shaft (upstream pool) and upstream seawater pipe (Sampled on March 25)	○
[TEPCO] Results of sea area monitoring at 4 points within 3km of the Power Station (Sampled on March 25)	○
[TEPCO] Results of sea area monitoring at 1 point within 10km square from the Power Station (Sampled on March 24)	○
[Ministry of the Environment] Seawater at 3 points the coast of Fukushima Prefecture (Sampled on February 17)	○
[Fisheries Agency] Flounder and others (Sampled on March 25)	○
[Fukushima Prefecture] Seawater at 9 points off the coast of Fukushima Prefecture (Sampled on March 21)	○

Status of preparations for the second fuel debris trial retrieval from Unit 2

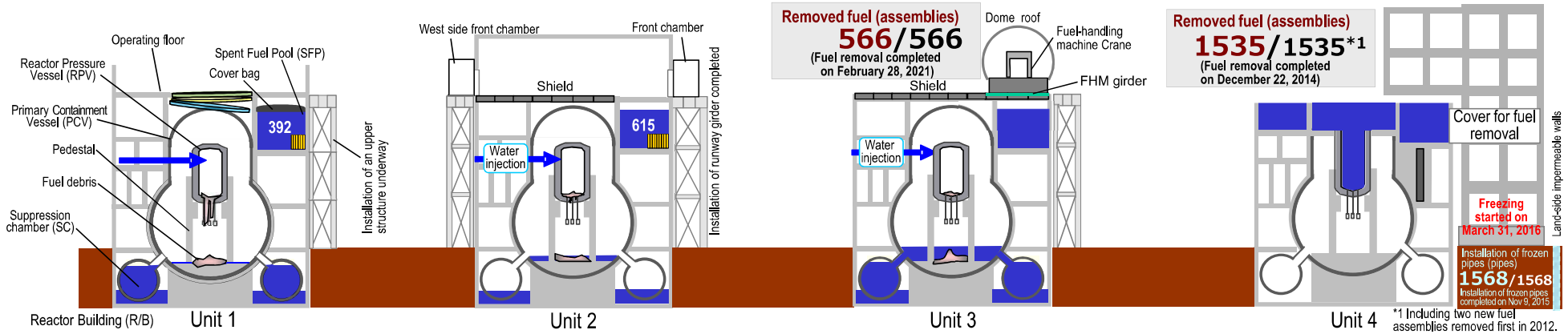
In preparation for the next fuel debris retrieval by the telescopic device, the end jig of the telescopic device has been improved and factory verification tests completed. Also, the end jig exchange training and the camera exchange training on the end of the arm were conducted in a simulated environment. Once the proficiency of the workers has been confirmed, cameras and improved end jig components will be replaced.



<Push pipe training at the mockup environment>

Moreover, using a mock-up push pipe, training was conducted on pipe installation and removal in a simulated environment.

From March 25, on-site verification is being conducted at the Fukushima Daiichi Nuclear Power Station using the actual telescopic device. TEPCO is targeting the commencement of the next fuel debris trial retrieval using the telescopic device in April.



*1 Including two new fuel assemblies removed first in 2012.

Progress status of work to collect zeolite sandbags toward treatment of stagnant water in buildings

For the Process Main Building (PMB) and the High-Temperature Incinerator Building (HTI), treatment of stagnant water is planned toward exposure of floors, before which zeolite and activated carbon sandbags will be collected.

From March 26, accumulation by remote-control using an underwater ROV* (Step 1) commenced at HTI Building. Following trial work and an underwater investigation into the implementation condition, the process will transition to continuous work. The work period until enclosure in containers will be about one year .

For enclosure in containers (Step 2), a mockup test in a larger size is underway in Tomioka Town. Improvement of issues, including visibility in muddy water, is added.

*ROV: Remotely Operated Vehicle

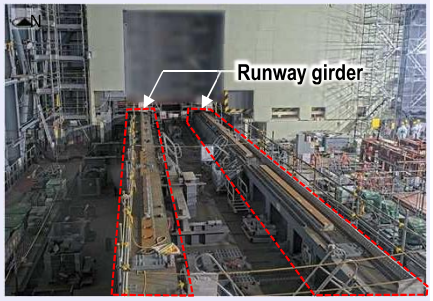

<ROV for accumulation on HTI 1st floor>
(March 5)

Unit 2 Progress of work toward fuel removal

On March 14, work to install runway girders, which support rails to be used when the fuel removal system moves between the Reactor Building and the front chamber, was completed. During the next phase, work for ancillary equipment will be conducted toward installing the fuel removal system.

To secure visibility during fuel removal, a purification system will be installed in the spent fuel pool in April.

Toward work for the fuel removal system set to come into operation by FY2026, progress currently remains steady and work prioritizing safety will proceed.



<Installation of the runway girders>
(March 19)

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
March 26th, 2025 *Discharged on March 31st,2025	Cs-134	ND (0.58)	ND (0.60)
	Cs-137	ND (0.63)	ND (0.58)
	Gross β	ND (0.66)	ND (0.43)
	H-3	810	860
March 25th, 2025 *Discharged on March 30th ,2025	Cs-134	ND (0.98)	ND (0.71)
	Cs-137	ND (0.63)	ND (0.60)
	Gross β	ND (2.1)	ND (0.30)
	H-3	840	870
March 24th, 2025 *Discharged on March 29th,2025	Cs-134	ND (0.92)	ND (0.57)
	Cs-137	ND (0.61)	ND (0.69)
	Gross β	ND (1.9)	ND (0.31)
	H-3	790	820
March 23rd, 2025 *Discharged on March 28th,2025	Cs-134	ND (0.67)	ND (0.79)
	Cs-137	ND (0.71)	ND (0.60)
	Gross β	ND (2.1)	0.37
	H-3	790	840
March 21st, 2025 *Discharged on March 26th,2025	Cs-134	ND (0.75)	ND (0.86)
	Cs-137	ND (0.74)	ND (0.70)
	Gross β	ND (0.67)	ND (0.35)
	H-3	730	810
March 20th, 2025 *Discharged on March 25th,2025	Cs-134	ND (0.84)	ND (0.79)
	Cs-137	ND (0.93)	ND (0.66)
	Gross β	ND (2.1)	ND (0.33)
	H-3	720	730
March 16th, 2025 *Discharged on March 21st,2025	Cs-134	ND (0.68)	ND (0.57)
	Cs-137	ND (0.90)	ND (0.54)
	Gross β	ND (1.9)	ND (0.33)
	H-3	660	720
March 14th, 2025 *Discharged on March 19th,2025	Cs-134	ND (0.82)	ND (0.58)
	Cs-137	ND (0.90)	ND (0.63)
	Gross β	ND (0.58)	ND (0.28)

	H-3	570	600
March 12th,2025 *Discharged on March 18th,2025	Cs-134	ND (0.88)	ND (0.49)
	Cs-137	ND (0.82)	ND (0.60)
	Gross β	ND (1.8)	ND (0.29)
	H-3	580	600
March 9th, 2025 *Discharged on March 14th,2025	Cs-134	ND (0.82)	ND (0.77)
	Cs-137	ND (0.69)	ND (0.60)
	Gross β	ND (2.0)	ND (0.30)
	H-3	610	680
March 8th, 2025 *Discharged on March 13th,2025	Cs-134	ND (0.68)	ND (0.48)
	Cs-137	ND (0.57)	ND (0.69)
	Gross β	ND (1.9)	ND (0.30)
	H-3	690	740
March 7th, 2025 *Discharged on March 12th,2025	Cs-134	ND (0.82)	ND (0.58)
	Cs-137	ND (0.74)	ND (0.69)
	Gross β	ND (0.65)	ND (0.33)
	H-3	720	760
March 5th, 2025 *Discharged on March 10th,2025	Cs-134	ND (0.82)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.66)
	Gross β	ND (1.8)	ND (0.32)
	H-3	820	840
March 3rd, 2025 *Discharged on March 8th,2025	Cs-134	ND (0.75)	ND (0.69)
	Cs-137	ND (0.57)	ND (0.63)
	Gross β	ND (1.9)	ND (0.28)
	H-3	820	850
March 1st, 2025 *Discharged on March 6th,2025	Cs-134	ND (0.82)	ND (0.54)
	Cs-137	ND (0.74)	ND (0.73)
	Gross β	ND (0.73)	ND (0.32)
	H-3	820	900
February 26h, 2025 *Discharged on March 3rd,2025	Cs-134	ND (0.75)	ND (0.67)
	Cs-137	ND (0.57)	ND (0.54)
	Gross β	ND (1.9)	ND (0.32)
	H-3	810	870

- * 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
February 1st,2025	Cs-134	ND (0.002433)	ND (0.0055)	ND (0.0067)
	Cs-137	ND (0.0021)	ND (0.0038)	ND (0.0047)
	Gross α	ND (0.75)	ND (2.3)	ND (2.1)
	Gross β	ND (0.39)	ND (0.63)	ND (0.66)
	H-3	750 ±1.6	710	750
	Sr-90	ND (0.0012)	ND (0.0013)	ND (0.0049)

* 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 target 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 *Date of discharge	Detected nuclides	Analytical body	
		TEPCO	Third-party organization
March 21st, 2025 *Discharged on March 27th,2025	Cs-134	ND (0.67)	ND (0.81)
	Cs-137	ND (0.64)	ND (0.60)
	Gross β	ND (0.63)	ND (0.35)
	H-3	45	51
March 14th, 2025 *Discharged on March 20th,2025	Cs-134	ND (0.75)	ND (0.60)
	Cs-137	ND (0.78)	ND (0.61)
	Gross β	ND (0.67)	ND (0.32)
	H-3	54	51
March 7th, 2025 *Discharged on March 13th,2025	Cs-134	ND (0.68)	ND (0.62)
	Cs-137	ND (0.74)	ND (0.58)
	Gross β	ND (0.63)	ND (0.35)
	H-3	46	53
March 1st, 2025 *Discharged on March 7th,2025	Cs-134	ND (0.68)	ND (0.69)
	Cs-137	ND (0.82)	ND (0.73)
	Gross β	ND (0.67)	ND (0.31)
	H-3	44	52

- * 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
February 7th, 2025	Cs-134	ND (0.0028)	ND (0.0059)	ND (0.0067)
	Cs-137	ND (0.0020)	ND (0.0037)	ND (0.0046)
	Gross α	ND (0.73)	ND (2.3)	ND (2.1)
	Gross β	ND (0.38)	ND (0.55)	ND (0.66)
	H-3	53 ±0.46	53	53
	Sr-90	ND (0.0015)	ND (0.0014)	ND (0.0049)

* 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 target 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)