Information (17:00), August 21, 2020

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 July

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 subdrain and groundwater drain systems, as well as, bypassing groundwater pumped during the month of July at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In July, the summary of monthly progress on decommissioning and contaminated water management of TEPCO's 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/mp202007.pdf

2. Subdrain and Groundwater Drain Systems

In July, purified groundwater pumped from the subdrain 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 July 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 July, 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 July 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 Cooperation Division,
Ministry of Foreign Affairs, Tel 03-5501-8227

Outline of Decommissioning and Contaminated Water Management

Secretariat of the Team for Countermeasures for Decommissioning and Contaminated Water Treatment

Main decommissioning work and steps

Fuel removal from the spent fuel pool was completed in December 2014 at Unit 4 and started from April 15, 2019 at Unit 3. Dust concentration in the surrounding environment is being monitored and work is being implemented with safety first. Work continues sequentially toward the start of fuel removal from Units 1 and 2 and debris (Note 1) retrieval from Units 1-3.

(Note 1) Fuel assemblies having melted through in the accident.

Fuel Removal from SFP

Units 1 & 2: Rubble removal & dose reduction → Installing fuel removal machine
Unit 3: Fuel removal
Unit 4: Storage and handling

Units 1-6	Completion of fuel removal	With n 2031
Unit 1	Start of fuel removal	FY2027 - FY2028
Unit 2	Start of fuel removal	FY2024 - FY2026
Unit 3	Completion of fuel removal	With n FY2020
Unit 4	Completion of fuel removal	2014

Fuel Debris Retrieval

Unit 1-3 / Unit 2: Ascertaining the status inside the PCV/ examining the fuel debris retrieval method, etc. (Note 2) → Fuel debris retrieval → Storage and handling

First unit	Start of fuel debris retrieval
Unit 2	Within 2021

Dismantling Facilities

Scenario development & technology consideration → Design and manufacturing of devices / equipment → Dismantling

Fuel removal from the spent fuel pool

Fuel removal from the spent fuel pool started from April 15, 2019 at Unit 3. With the aim of completing fuel removal by the end of FY2020, rubble and fuel are being removed.

Fuel removal
(April 15, 2019)

Removed fuel (assemblies)
266/566
(As of July 30, 2020)

Contaminated water management proceeds with the following three efforts:

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

[Three basic policies]

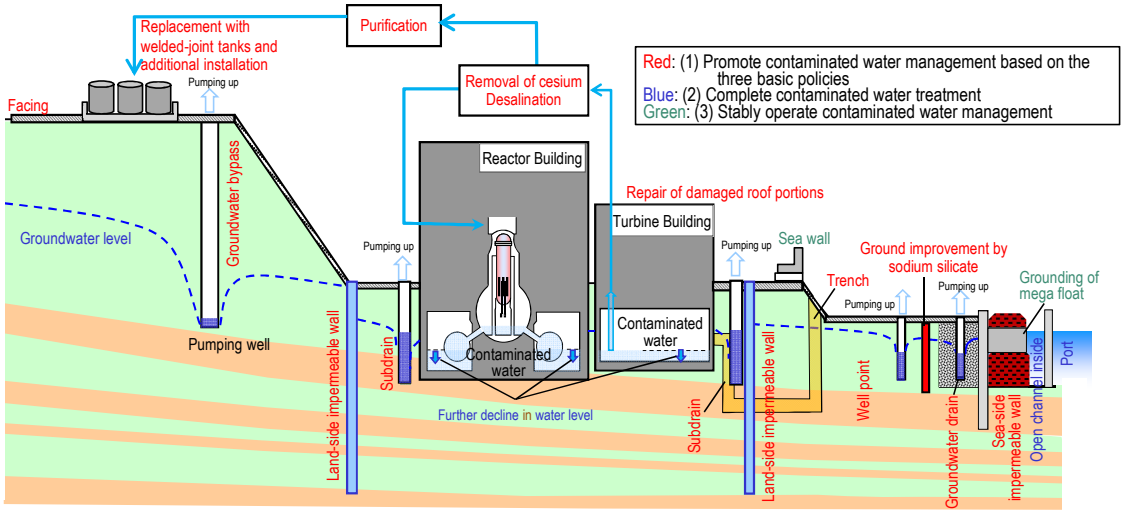
1. "Remove" the source of water contamination
2. "Redirect" fresh water from contaminated areas
3. "Retain" contaminated water from leakage

(2) Efforts to complete contaminated water treatment

4. Treatment of contaminated water in buildings
5. Measures to remove α–nuclide and reduce the concentration in contaminated water
6. Measures to alleviate the radiation dose of Zeolite sandbags in the Process Main Building and High-Temperature Incinerator Building and examine safe management methods

(3) Efforts to stably operate contaminated water management

7. Planning and implementing necessary measures to prepare for large-scale disasters such as tsunami and heavy rain
8. Periodically inspecting and updating facilities to maintain the effect of contaminated water management going forward
9. Examining additional measures as required, with efforts to gradually expand the scale of fuel debris retrieval in mind



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

- Strontium-treated water from other equipment is being re-treated in the multi-nuclide removal equipment (ALPS) 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 amount of contaminated water generated during rainfall is being suppressed by repairing damaged portions of building roofs, facing onsite, etc. Through these measures, the generation of contaminated water was reduced from approx. 540 m^3/day (in May FY2014) to approx. 180 m^3/day (in FY2019).
- Measures continue to further suppress the generation of contaminated water to approx. 150 m^3/day within FY2020 and 100 m^3/day or less within 2025.

(2) Efforts to complete contaminated water treatment

- Contaminated water levels in buildings declined as planned and connected parts between Units 1 and 2 and 3 and 4 were respectively separated. For α-nuclide detected as water levels declined progressively, characteristics are being determined and treatment methods examined.
- Treatment of contaminated water in buildings will be completed within 2020, excluding Unit 1-3 Reactor Buildings, Process Main Building and High-Temperature Incinerator Building. For Reactor Buildings, the amount of contaminated water there will be reduced from the level at the end of 2020 during the period FY2022 - 2024.
- 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

- To prepare for tsunamis, measures including closing building openings, installing sea walls and transferring and grounding the mega float are being implemented. For heavy rain, sandbags are being installed to suppress direct inflow into buildings while work to enhance drainage channels and other measures are 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 Pressure Vessel (RPV) and Primary Containment Vessel (PCV) of Units 1-3 have been maintained within the range of approx. 20-30°C*1 over the past month. There was no significant change in the concentration of radioactive materials newly released from Reactor Buildings into the air*2. It was concluded that the comprehensive cold shutdown condition had been maintained.

* 1 The values varied somewhat, depending on the unit and location of the thermometer.

* 2 In June 2020, the radiation exposure dose due to the release of radioactive materials from the Unit 1-4 Reactor Buildings was evaluated at less than 0.00005 mSv/year at the site boundary. The annual radiation dose from natural radiation is approx. 2.1 mSv/year (average in Japan).

Cutting of obstacles inside the PCV toward insertion of a robot for the Unit 1 inside investigation

As part of efforts to investigate inside the Unit 1 Primary Containment Vessel (PCV), work to cut obstacles inside the PCV on the route for the investigation equipment started from May 26.

On July 7, a defect was detected in the supply of abrasive material, which was used to improve the cutting performance, and the work was suspended. At present, measures are being implemented. After confirming that there is no abnormality, work to cut the grating will be resumed. During the work, the dust concentration will be checked appropriately by the dust monitor to avoid any influence on the surrounding environment and work will proceed with safety first.

Transportation of containers housing the remaining objects on the Unit 2 R/B operating floor starting from August

For the operating floor of the Unit 2 Reactor Building, before installing a fuel-handling facility, there are plans to transport remaining objects that may hinder the installation. After completing the training to practice work skills for transportation, preparatory work inside the operating floor started from July 20.

Small containers housing the remaining objects will be housed in larger containers for transportation and storage and transported from the operating floor from early August to the solid waste storage facility.

Before removing remaining objects

After the removal

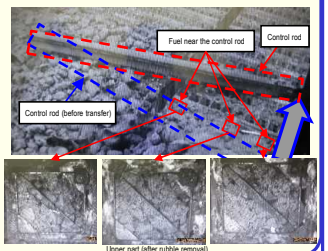
Housing small containers gathering on the operating floor of the Unit 2 R/B

Training to put a housing larger container in a transportation container

Ongoing Unit 3 fuel removal proceeding steadily

After work was resumed on May 26, fuel removal at Unit 3 has proceeded steadily and 266 of 566 fuel assemblies have been removed.

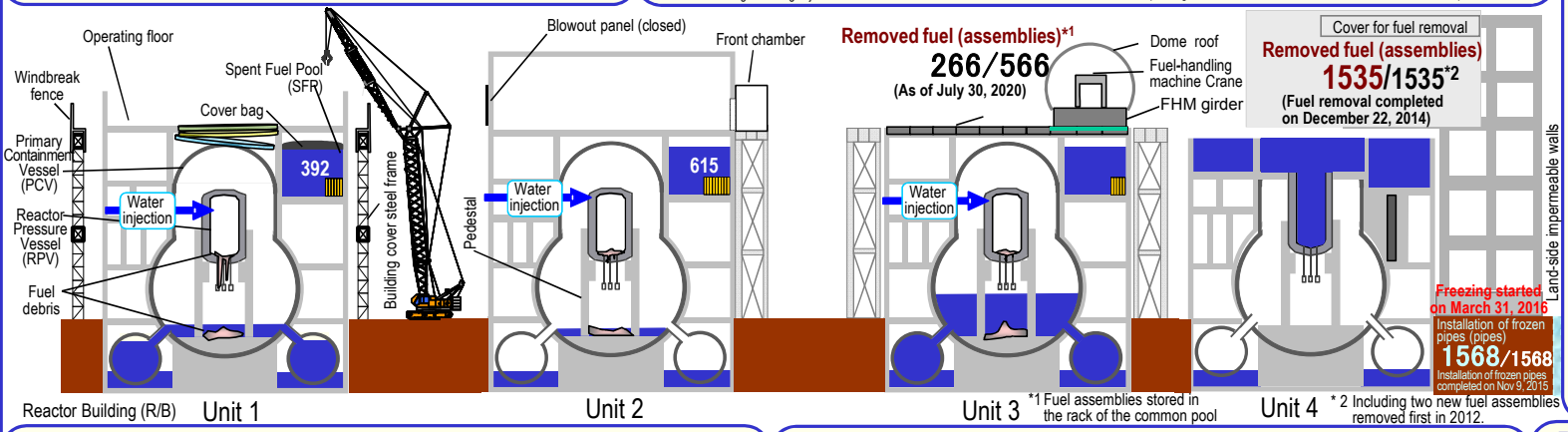
At the same time, rubble removal has also proceeded steadily and on July 25, removal of rubble under the control rods was completed.



Revision of the Solid Waste Storage Management Plan

The fourth revision of the "Solid Waste Storage Management Plan," which was formulated in March 2016, was issued on July 30. Specifically, the estimated amount of solid waste to be generated in the next decade or so was updated from approx. 770,000 to 780,000 m³ and the lack of any influence on the facility installation schedule was confirmed.

Based on this plan, for rubble and other solid waste temporarily stored in the outdoor storage area, combustibles will be incinerated, metals cut and concrete broken. After minimizing the amount, solid waste will be integrated in the indoor storage as part of work toward achieving the target milestone in the Mid-and-Long-Term Roadmap "eliminating the temporary outdoor storage area within FY2028."

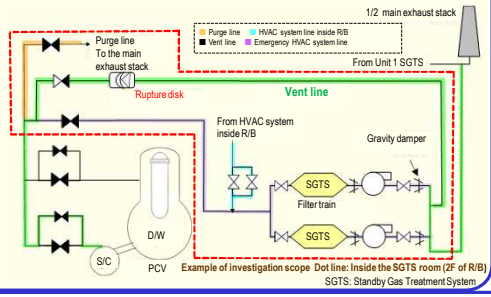


*1 Fuel assemblies stored in the rack of the common pool

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

Plan to investigate Unit 1-4 SGTS rooms toward clarifying the accident progress

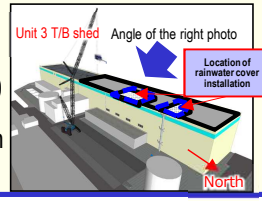
To clarify the emission behavior of radioactive materials by the PCV vent, there is a plan to investigate the inside of the Standby Gas Treatment System (SGTS) rooms of Unit 1-4, which have remained unchanged since the time of the accident occurred and do not impede the ongoing decommissioning work. Specifically, detailed information about the radiation dose and contamination, mainly of filter trains and vent lines, will be collected from around September.



Upcoming completion of measures to prevent rainwater infiltrating for the Unit 3 Turbine Building

For the Unit 3 Turbine Building, the installation of fences and other related facilities to prevent rainwater infiltration was completed, following which the installation of a rainwater cover to shield the damaged roof parts on the south side started on July 20.

After completing the installation of a rainwater cover on the north side by early August, waterproof painting on the rooftop will be completed by September. Efforts will continue toward achieving the target milestone within 2020 "suppressing contaminated water generated to about 150 m³/day" as stipulated in the Mid-and-Long-Term Roadmap.



Installation of rainwater cover (July 20)

Planned of tests to suspend water injection into reactors

A test involving temporarily suspending water injection to the reactor was conducted at Units 1-3 in FY2019 and it was confirmed that the increase in temperature due to suspension of water injection was almost within the assumed range.

Based on these results, tests to suspend water injection to the reactor are planned for five, three and seven days for Unit 1, 2 and 3, respectively.

For Units 1 and 3, the range of water-level decline inside the PCV and other parameters will be checked and for Unit 2, it will be checked that the increase in the RPV bottom temperature is precisely reproduced by the temperature evaluation model to enhance insights when examining how best to inject water in future.

Appendix 2

Results of analyses on the quality of the purified groundwater pumped from the subdrain 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
July 26th, 2020 *Discharged on July 31st	Cs-134	ND (0.63)	ND (0.69)
	Cs-137	ND (0.60)	ND (0.51)
	Gross β	ND (1.7)	0.48
	H-3	960	1,000
July 25th, 2020 *Discharged on July 30th	Cs-134	ND (0.56)	ND (0.65)
	Cs-137	ND (0.60)	ND (0.67)
	Gross β	ND (1.8)	ND (0.38)
	H-3	1,000	1,100
July 24th, 2020 *Discharged on July 29th	Cs-134	ND (0.56)	ND (0.76)
	Cs-137	ND (0.84)	ND (0.62)
	Gross β	ND (1.9)	ND (0.38)
	H-3	1,000	1,100
July 23rd, 2020 *Discharged on July 28th	Cs-134	ND (0.59)	ND (0.62)
	Cs-137	ND (0.54)	ND (0.77)
	Gross β	ND (1.8)	ND (0.38)
	H-3	980	1,000
July 22nd, 2020 *Discharged on July 27th	Cs-134	ND (0.69)	ND (0.81)
	Cs-137	ND (0.69)	ND (0.58)
	Gross β	ND (2.0)	ND (0.34)
	H-3	930	980
July 21st, 2020 *Discharged on July 26th	Cs-134	ND (0.76)	ND (0.57)
	Cs-137	ND (0.65)	ND (0.71)
	Gross β	ND (2.0)	ND (0.35)
	H-3	820	880
July 20th, 2020 *Discharged on July 25th	Cs-134	ND (0.64)	ND (0.63)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (0.67)	ND (0.36)
	H-3	810	860
July 19th, 2020 *Discharged on July 24th	Cs-134	ND (0.82)	ND (0.61)
	Cs-137	ND (0.47)	ND (0.61)
	Gross β	ND (1.7)	0.36
	H-3	840	900

July 18th, 2020 *Discharged on July 23rd	Cs-134	ND (0.53)	ND (0.65)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (1.9)	ND (0.31)
	H-3	910	950
July 17th, 2020 *Discharged on July 22nd	Cs-134	ND (0.80)	ND (0.74)
	Cs-137	ND (0.65)	ND (0.69)
	Gross β	ND (1.9)	ND (0.30)
	H-3	920	980
July 16th, 2020 *Discharged on July 21st	Cs-134	ND (0.55)	ND (0.72)
	Cs-137	ND (0.77)	ND (0.66)
	Gross β	ND (1.8)	ND (0.34)
	H-3	880	940
July 15th, 2020 *Discharged on July 20th	Cs-134	ND (0.57)	ND (0.72)
	Cs-137	ND (0.65)	ND (0.63)
	Gross β	ND (1.8)	ND (0.31)
	H-3	860	930
July 14th, 2020 *Discharged on July 19th	Cs-134	ND (0.70)	ND (0.72)
	Cs-137	ND (0.69)	ND (0.73)
	Gross β	ND (2.0)	ND (0.33)
	H-3	800	840
July 13th, 2020 *Discharged on July 18th	Cs-134	ND (0.63)	ND (0.57)
	Cs-137	ND (0.69)	ND (0.76)
	Gross β	ND (1.9)	ND (0.29)
	H-3	730	770
July 12th, 2020 *Discharged on July 17th	Cs-134	ND (0.78)	ND (0.63)
	Cs-137	ND (0.60)	ND (0.54)
	Gross β	ND (1.7)	ND (0.33)
	H-3	720	760
July 11th, 2020 *Discharged on July 16th	Cs-134	ND (0.72)	ND (0.65)
	Cs-137	ND (0.65)	ND (0.47)
	Gross β	ND (1.9)	ND (0.33)
	H-3	710	790
July 10th, 2020 *Discharged on July 15th	Cs-134	ND (0.41)	ND (0.61)
	Cs-137	ND (0.65)	ND (0.51)
	Gross β	ND (0.67)	ND (0.34)
	H-3	790	860
July 9th, 2020 *Discharged on July 14th	Cs-134	ND (0.67)	ND (0.44)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (1.9)	ND (0.32)
	H-3	770	840

July 8th, 2020 *Discharged on July 13th	Cs-134	ND (0.56)	ND (0.78)
	Cs-137	ND (0.65)	ND (0.73)
	Gross β	ND (2.1)	ND (0.29)
	H-3	790	850
July 7th, 2020 *Discharged on July 12th	Cs-134	ND (0.70)	ND (0.59)
	Cs-137	ND (0.65)	ND (0.54)
	Gross β	ND (1.9)	ND (0.34)
	H-3	850	930
July 6th, 2020 *Discharged on July 11th	Cs-134	ND (0.69)	ND (0.67)
	Cs-137	ND (0.54)	ND (0.51)
	Gross β	ND (1.8)	ND (0.33)
	H-3	880	960
July 5th, 2020 *Discharged on July 10th	Cs-134	ND (0.69)	ND (0.69)
	Cs-137	ND (0.47)	ND (0.51)
	Gross β	ND (1.8)	ND (0.30)
	H-3	930	1,000
July 4th, 2020 *Discharged on July 9th	Cs-134	ND (0.64)	ND (0.79)
	Cs-137	ND (0.60)	ND (0.77)
	Gross β	ND (1.7)	ND (0.35)
	H-3	980	1,100
July 3rd, 2020 *Discharged on July 8th	Cs-134	ND (0.41)	ND (0.62)
	Cs-137	ND (0.73)	ND (0.62)
	Gross β	ND (1.8)	ND (0.33)
	H-3	960	1,100
July 2nd, 2020 *Discharged on July 7th	Cs-134	ND (0.64)	ND (0.67)
	Cs-137	ND (0.47)	ND (0.67)
	Gross β	ND (2.0)	ND (0.32)
	H-3	980	1,000
July 1st, 2020 *Discharged on July 6th	Cs-134	ND (0.65)	ND (0.74)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (0.59)	ND (0.36)
	H-3	950	1,100
June 30th, 2020 *Discharged on July 5th	Cs-134	ND (0.47)	ND (0.61)
	Cs-137	ND (0.58)	ND (0.69)
	Gross β	ND (2.0)	ND (0.37)
	H-3	950	1,000
June 29th, 2020 *Discharged on July 4th	Cs-134	ND (0.60)	ND (0.69)
	Cs-137	ND (0.63)	ND (0.73)
	Gross β	ND (0.54)	ND (0.35)
	H-3	970	1,100

June 27th, 2020 *Discharged on July 3rd	Cs-134	ND (0.67)	ND (0.53)
	Cs-137	ND (0.78)	ND (0.58)
	Gross β	ND (1.8)	ND (0.35)
	H-3	970	1,000
June 26th, 2020 *Discharged on July 1st	Cs-134	ND (0.54)	ND (0.72)
	Cs-137	ND (0.74)	ND (0.63)
	Gross β	ND (1.8)	ND (0.38)
	H-3	1,000	1,100

* * 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
June 1st,2020	Cs-134	ND (0.0027)	ND (0.0046)	ND (0.0066)
	Cs-137	0.015	0.014	0.017
	Gross α	ND (0.54)	ND (3.6)	ND (1.8)
	Gross β	ND (0.48)	ND (0.63)	ND (0.62)
	H-3	1,200	1,000	1,000
	Sr-90	0.0065	ND (0.0025)	ND (0.0061)

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

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)
June 11th, 2020 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.69)
	Cs-137	ND (0.56)
	Gross β	13
	H-3	1.7

(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.

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	Japan Chemical Analysis Center
July 22nd, 2020 *Discharged on July 30th	Cs-134	ND (0.46)	ND (0.59)
	Cs-137	ND (0.69)	ND (0.61)
	Gross β	ND (0.62)	ND (0.39)
	H-3	120	120
July 15th, 2020 *Discharged on July 23rd	Cs-134	ND (0.48)	ND (0.56)
	Cs-137	ND (0.80)	ND (0.54)
	Gross β	ND (0.64)	ND (0.56)
	H-3	120	120
July 8th, 2020 *Discharged on July 16th	Cs-134	ND (0.56)	ND (0.60)
	Cs-137	ND (0.60)	ND (0.43)
	Gross β	ND (0.58)	ND (0.55)
	H-3	120	130
July 1st, 2020 *Discharged on July 9th	Cs-134	ND (0.53)	ND (0.53)
	Cs-137	ND (0.60)	ND (0.49)
	Gross β	ND (0.67)	ND (0.49)
	H-3	110	120
June 24th, 2020 *Discharged on July 2nd	Cs-134	ND (0.74)	ND (0.51)
	Cs-137	ND (0.68)	ND (0.51)
	Gross β	ND (0.66)	ND (0.64)
	H-3	110	120

- * ND: represents a value below the detection limit; values in ( ) represent the detection limit
- In order to ensure the results, Japan Chemical Analysis Center, a third-party organization, has also conducted an analysis and verified the radiation level of the sampled water.

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
June 3rd, 2020	Cs-134	ND (0.0026)	ND (0.0041)	ND (0.0067)
	Cs-137	ND (0.0021)	ND (0.0040)	ND (0.0048)
	Gross α	ND (0.67)	ND (3.4)	ND (1.8)
	Gross β	ND (0.47)	ND (0.64)	ND (0.59)
	H-3	130	110	120
	Sr-90	0.0010	ND (0.0015)	ND (0.0061)

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

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)
June 11th, 2020	Cs-134	ND (0.67)
	Cs-137	ND (0.64)
	Gross β	10
	H-3	ND (1.6)

(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.