Information (17:00), November 25, 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 October

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 October at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In October, 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/mp202009.pdf

2. Subdrain and Groundwater Drain Systems

In October, 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 October 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 October, 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 October 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

October 29, 2020
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 etc, → Installing fuel removal machine
Unit 3: Fuel removal
Unit 4: Storage and handling of fuel

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
Unit 3	Completion of fuel removal	Within FY2020
Unit 4	Completion of fuel removal	2014

Fuel Debris Retrieval

Units 1 & 3: Ascertaining the status inside the PCV/ examining the fuel debris retrieval method, etc.
Unit 2: Fuel debris retrieval → Storage and handling of fuel debris

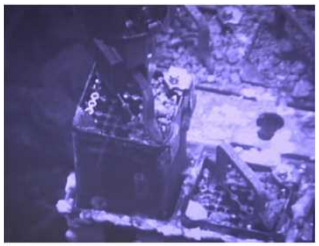
First unit	Start of fuel debris retrieval
Unit 2	Within 2021

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)
385/566
(As of October 29, 2020)

Contaminated water management - three efforts -

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

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

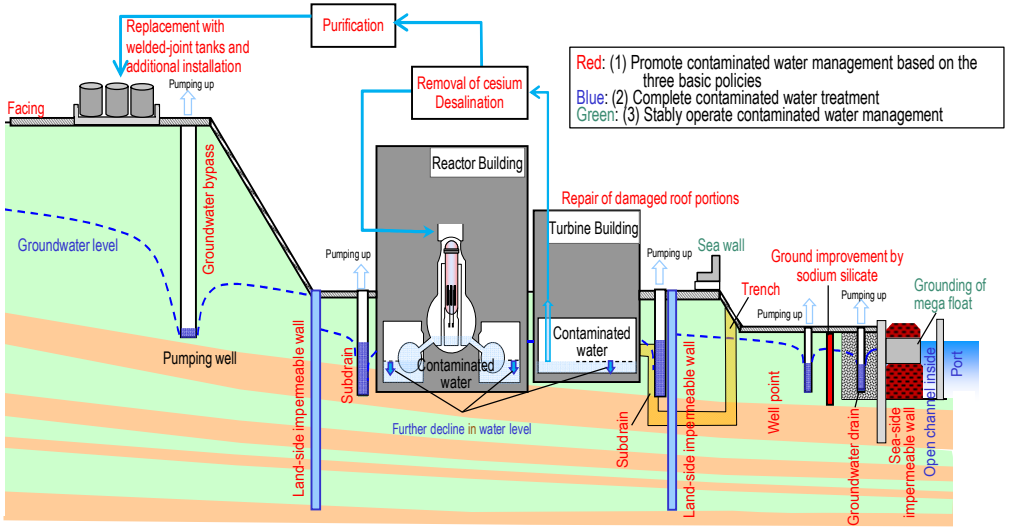
- Strontium reduced water from other equipment is being re-treated in the multi-nuclide removal equipment (ALPS) and stored in welded-joint tanks.
- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized the groundwater at a low level and the increased 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

- To lower the contaminated water levels in buildings as planned, work to install an additional contaminated water transfer equipment is underway. At present, the floor surface exposure condition can be maintained except for the Unit 1-3 Reactor Buildings, Process Main Building and the High Temperature Incinerator Building.
- 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 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. 25-35°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.

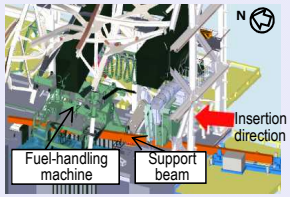
* 1 The values varied somewhat, depending on the unit and location of the thermometer.
* 2 In September 2020, the radiation exposure dose due to the release of radioactive materials from the Unit 1-4 Reactor Buildings was evaluated at less than 0.00007 mSv/year at the site boundary.
The annual radiation dose from natural radiation is approx. 2.1 mSv/year (average in Japan).

Unit 1 Installation of supports for the fuel-handling machine completed

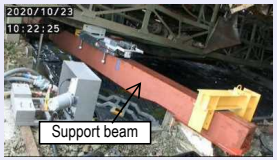
Among the measures to prevent and alleviate rubble falling, work to install supports to the Unit 1 fuel handling machine started from October 6 and was completed by October 23.

Before the installation, a mock-up of the work environment was set up and training using the actual machine was provided to fully prepare for the work.

Work continues to install the supports for the overhead crane and proceed steadily with safety first, toward installing the large cover at the end of FY2023.



<Image of insertion of support for the fuel-handling machine>



<Image of installation of support for the fuel-handling machine>

Unit 2 Investigation into deposits inside the PCV penetration

As a preparatory stage for the PCV inside investigation and the trial retrieval, a test to contact deposits in the penetration (X-6 penetration) was conducted on October 28.

It was confirmed that the shape of deposits had changed and no deposit was fixed in the penetration. Based on the information of deposit distribution to be obtained by the planned 3D scan investigation on October 30 and using the information collected in this investigation, procedures to remove deposits in the penetration will be examined.


<Mockup of the contact investigation unit>

<Deposit before and after contact>


<Work in front of the penetration>

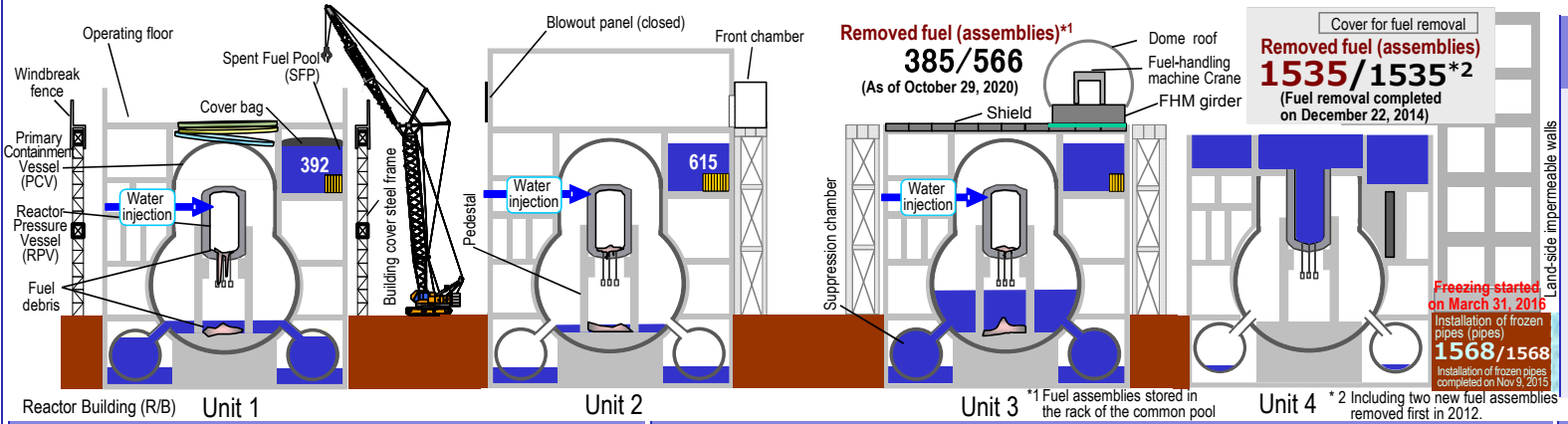
Unit 3 Resumption of fuel removal toward completion at the end of FY2020

Fuel removal, which had been suspended due to the damage to the fuel-handling machine mast cable (occurred on September 2), resumed from October 8.

On October 23, a lifting test was conducted for three assemblies with a deformed handle, which previous tests confirmed as impossible to lift. The result showed that one of them could be lifted several centimeters from the fuel rack.

For the remaining two assemblies that could not be lifted, after trying to remove rubble over the top using a rubble removal tool, another lifting test will be conducted.

<Fuel lifting test>



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

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

Operation of the Unit 2 contaminated water transfer equipment started

Toward completing the treatment of contaminated water in buildings within 2020, work to install an additional contaminated water transfer equipment is underway. Operation of the transfer equipment (System A) started on October 8 for the Unit 2 Turbine Building and the Radioactive Waste Treatment Building, whereupon the floor surface exposure condition can be maintained except for the Unit 1-3 Reactor Buildings, Process Main Building and the High Temperature Incinerator Building.

Work continues to install the permanent pump on the System B side.

Reduction of radioactive materials concentration confirmed by the test to verify the secondary treatment performance of the ALPS-treated water

Among the tank areas where treatment was conducted from September 15, analysis of the main seven nuclides and Strontium 89 in water sampled before and after the secondary treatment was completed for the area of high concentration (J1-C area; the sum of the ratios of the concentrations required by law: 3,791). The results showed that the concentration of radioactive materials was reduced after the secondary treatment (sample tank) compared to that before the secondary treatment (ALPS equipment inlet).

(the sum of the concentration required by law of the main seven nuclides and Strontium 89:
[before] 2,188 → [after] 0.15)

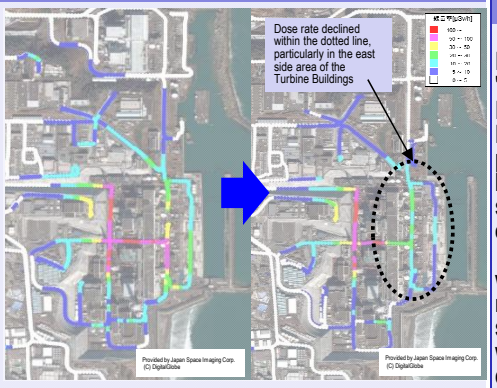
Work continues to conduct the same analysis and evaluation of the remaining nuclides that must be removed (54 nuclides), radiocarbon and tritium and for the tank area of low concentration (J1-G area; the sum of the ratios of the concentrations required by law: 153).

Radiation dose reduction confirmed onsite of the Fukushima Daiichi NPS

Measures to reduce the radiation dose are being implemented sequentially from areas with many workers by decontamination, shielding and other methods.

Improvement during the recent half year includes, by the progress of work such as facing and rubble removal, the average dose rate around Units 1-4 in the first half of FY2020 declined by about 40-50% and 15-30% from the previous measurement value (December 2019) in areas 2.5 and 8.5m above sea level respectively.

The labor environment and reduction in radiation risks to the surrounding environment will continue steadily.



<Measured in August 2018> <Measured in August 2020>

Publication of the Technical Strategic Plan 2020

The Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF) made and published the "Technical Strategic Plan 2020 for Decommissioning of the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company Holdings, Inc" on October 6, aiming to provide a firm technical basis for the government's "Mid- and-long-term Roadmap" and to serve as an aid for smooth and steady implementation of decommissioning and achievement of targets of the risk reduction map.

This plan defines the concept of how to ensure safety in which perspectives in terms of the safety and operator are reflected in the decommissioning, and describes about the setting of requirements (boundary conditions) in association with the further expanded fuel debris retrieval and an enhanced management system for R&D.

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
October 26th, 2020 *Discharged on October 31st	Cs-134	ND (0.56)	ND (0.70)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (2.0)	ND (0.39)
	H-3	1,000	1,100
October 25th, 2020 *Discharged on October 30th	Cs-134	ND (0.68)	ND (0.53)
	Cs-137	ND (0.60)	ND (0.61)
	Gross β	ND (2.1)	ND (0.36)
	H-3	1,000	1,100
October 24th, 2020 *Discharged on October 29th	Cs-134	ND (0.64)	ND (0.74)
	Cs-137	ND (0.69)	ND (0.54)
	Gross β	ND (1.8)	ND (0.36)
	H-3	950	1,000
October 23rd, 2020 *Discharged on October 28th	Cs-134	ND (0.91)	ND (0.67)
	Cs-137	ND (0.65)	ND (0.54)
	Gross β	ND (1.8)	ND (0.36)
	H-3	950	990
October 22nd, 2020 *Discharged on October 27th	Cs-134	ND (0.49)	ND (0.65)
	Cs-137	ND (0.60)	ND (0.66)
	Gross β	ND (1.6)	ND (0.35)
	H-3	850	900
October 21st, 2020 *Discharged on October 26th	Cs-134	ND (0.56)	ND (0.46)
	Cs-137	ND (0.6)	ND (0.58)
	Gross β	ND (1.9)	ND (0.34)
	H-3	860	920
October 20th, 2020 *Discharged on October 25th	Cs-134	ND (0.82)	ND (0.74)
	Cs-137	ND (0.69)	ND (0.51)
	Gross β	ND (1.7)	0.4
	H-3	830	880
October 19th, 2020 *Discharged on October 24th	Cs-134	ND (0.63)	ND (0.53)
	Cs-137	ND (0.68)	ND (0.71)
	Gross β	ND (0.54)	ND (0.34)
	H-3	780	840

October 18th, 2020 *Discharged on October 23rd	Cs-134	ND (0.55)	ND (0.57)
	Cs-137	ND (0.73)	ND (0.58)
	Gross β	ND (2.0)	ND (0.32)
	H-3	780	830
October 17th, 2020 *Discharged on October 22nd	Cs-134	ND (0.53)	ND (0.69)
	Cs-137	ND (0.73)	ND (0.61)
	Gross β	ND (1.6)	ND (0.38)
	H-3	740	790
October 16th, 2020 *Discharged on October 21st	Cs-134	ND (0.76)	ND (0.69)
	Cs-137	ND (0.65)	ND (0.72)
	Gross β	ND (1.9)	ND (0.38)
	H-3	770	820
October 15th, 2020 *Discharged on October 20th	Cs-134	ND (0.79)	ND (0.56)
	Cs-137	ND (0.69)	ND (0.81)
	Gross β	ND (2.0)	ND (0.39)
	H-3	810	860
October 14th, 2020 *Discharged on October 19th	Cs-134	ND (0.73)	ND (0.65)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (1.9)	ND (0.41)
	H-3	760	810
October 13th, 2020 *Discharged on October 18th	Cs-134	ND (0.82)	ND (0.59)
	Cs-137	ND (0.69)	ND (0.66)
	Gross β	ND (1.7)	ND (0.37)
	H-3	810	820
October 12th, 2020 *Discharged on October 17th	Cs-134	ND (0.68)	ND (0.57)
	Cs-137	ND (0.73)	ND (0.61)
	Gross β	ND (1.8)	ND (0.39)
	H-3	770	820
October 11th, 2020 *Discharged on October 16th	Cs-134	ND (0.64)	ND (0.65)
	Cs-137	ND (0.65)	ND (0.69)
	Gross β	ND (1.7)	ND (0.35)
	H-3	800	870
October 10th, 2020 *Discharged on October 15th	Cs-134	ND (0.82)	ND (0.46)
	Cs-137	ND (0.60)	ND (0.54)
	Gross β	ND (1.8)	ND (0.37)
	H-3	860	920
October 9th, 2020 *Discharged on October 14th	Cs-134	ND (0.76)	ND (0.72)
	Cs-137	ND (0.47)	ND (0.61)
	Gross β	ND (0.65)	ND (0.39)
	H-3	860	920
October 8th, 2020 *Discharged on October 13th	Cs-134	ND (0.76)	ND (0.50)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (2.0)	ND (0.48)

	H-3	850	910
October 7th, 2020 *Discharged on October 12th	Cs-134	ND (0.72)	ND (0.74)
	Cs-137	ND (0.54)	ND (0.71)
	Gross β	ND (1.8)	ND (0.37)
	H-3	860	910
October 6th, 2020 *Discharged on October 11th	Cs-134	ND (0.53)	ND (0.66)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (1.9)	ND (0.35)
	H-3	810	860
October 5th, 2020 *Discharged on October 10th	Cs-134	ND (0.88)	ND (0.61)
	Cs-137	ND (0.60)	ND (0.63)
	Gross β	ND (1.8)	ND (0.34)
	H-3	900	960
October 4th, 2020 *Discharged on October 9th	Cs-134	ND (0.53)	ND (0.66)
	Cs-137	ND (0.69)	ND (0.63)
	Gross β	ND (1.8)	ND (0.38)
	H-3	950	1,000
October 3rd, 2020 *Discharged on October 8th	Cs-134	ND (0.72)	ND (0.70)
	Cs-137	ND (0.47)	ND (0.61)
	Gross β	ND (1.9)	ND (0.39)
	H-3	950	1,000
October 2nd, 2020 *Discharged on October 7th	Cs-134	ND (0.57)	ND (0.57)
	Cs-137	ND (0.54)	ND (0.71)
	Gross β	ND (1.6)	ND (0.36)
	H-3	970	1,000
October 1st, 2020 *Discharged on October 6th	Cs-134	ND (0.64)	ND (0.50)
	Cs-137	ND (0.73)	ND (0.61)
	Gross β	ND (0.64)	ND (0.39)
	H-3	760	780
September 30th, 2020 *Discharged on October 5th	Cs-134	ND (0.67)	ND (0.63)
	Cs-137	ND (0.60)	ND (0.42)
	Gross β	ND (1.9)	ND (0.29)
	H-3	680	720
September 29th, 2020 *Discharged on October 4th	Cs-134	ND (0.70)	ND (0.61)
	Cs-137	ND (0.77)	ND (0.58)
	Gross β	ND (1.9)	0.32
	H-3	720	770
September 28th, 2020 *Discharged on October 3rd	Cs-134	ND (0.75)	ND (0.55)
	Cs-137	ND (0.60)	ND (0.61)
	Gross β	ND (0.65)	0.32
	H-3	910	960
September 27th, 2020 *Discharged on	Cs-134	ND (0.61)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.54)

October 2nd	Gross β	ND (1.7)	ND (0.31)
	H-3	960	1,000
September 26th, 2020 *Discharged on October 1st	Cs-134	ND (0.57)	ND (0.57)
	Cs-137	ND (0.54)	ND (0.66)
	Gross β	ND (2.1)	ND (0.35)
	H-3	860	960

* * 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
September 1st,2020	Cs-134	ND (0.0027)	ND (0.0045)	ND (0.0061)
	Cs-137	0.016	0.015	0.019
	Gross α	ND (0.62)	ND (3.0)	ND (1.9)
	Gross β	ND (0.47)	ND (0.64)	ND (0.56)
	H-3	990	870	900
	Sr-90	0.0039	0.0054	0.0097

* 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)
September 3rd, 2020 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.73)
	Cs-137	ND (0.50)
	Gross β	10
	H-3	ND (0.82)

(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
October 23rd, 2020 *Discharged on October 31st	Cs-134	ND (0.56)	ND (0.45)
	Cs-137	ND (0.73)	ND (0.43)
	Gross β	ND (0.69)	ND (0.64)
	H-3	130	140
October 7th, 2020 *Discharged on October 15th	Cs-134	ND (0.63)	ND (0.45)
	Cs-137	ND (0.73)	ND (0.45)
	Gross β	ND (0.76)	ND (0.57)
	H-3	140	140
September 28th, 2020 *Discharged on October 6th	Cs-134	ND (0.64)	ND (0.53)
	Cs-137	ND (0.60)	ND (0.43)
	Gross β	ND (0.55)	ND (0.63)
	H-3	90	88
September 23rd, 2020 *Discharged on October 1st	Cs-134	ND (0.66)	ND (0.46)
	Cs-137	ND (0.54)	ND (0.57)
	Gross β	ND (0.63)	ND (0.58)
	H-3	86	85

∗ * 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
September 2nd, 2020	Cs-134	ND (0.0024)	ND (0.0044)	ND (0.0059)
	Cs-137	ND (0.0020)	ND (0.0040)	ND (0.0048)
	Gross α	ND (0.54)	ND (3.0)	ND (1.9)
	Gross β	ND (0.48)	ND (0.67)	ND (0.60)
	H-3	110	100	110
	Sr-90	0.0011	ND (0.0014)	ND (0.0050)

* 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)
September 3rd, 2020	Cs-134	ND (0.85)
	Cs-137	ND (0.65)
	Gross β	13
	H-3	ND (0.82)

(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.