Information (17:00), October 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 September

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 September at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In September, 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 September, 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 September 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 September, 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 September 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: Ascertaining the status inside the PCV/ examining the fuel debris retrieval method, etc. (Note 2) → Fuel debris retrieval

Unit 2: 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)
336/566
(As of September 24, 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]

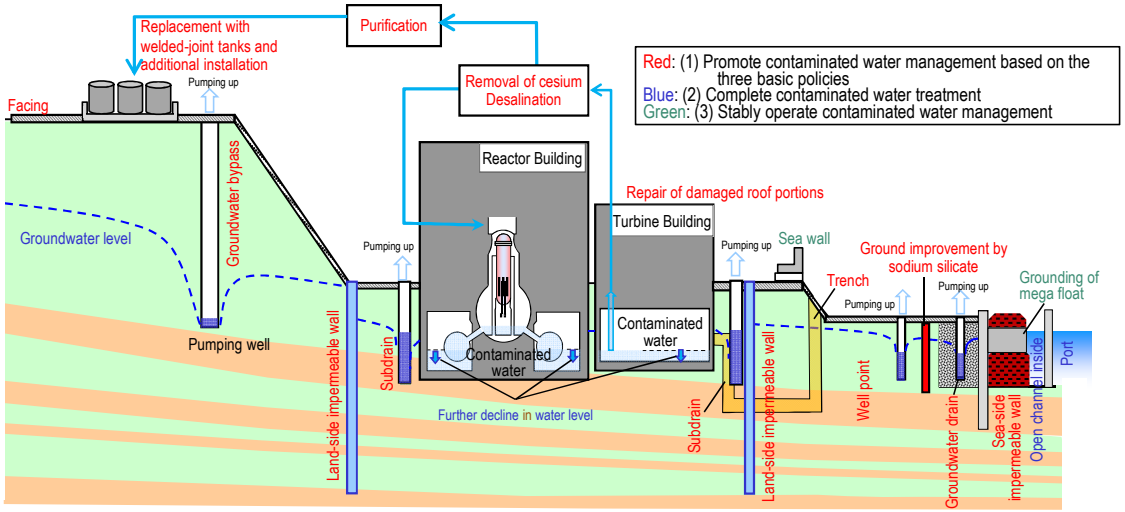
1. "Remove" the source of water contamination
2. "Redirect" fresh water from contaminated areas
3. "Retain" contaminated water from leakage

(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



(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 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 progressively declined, 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 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.

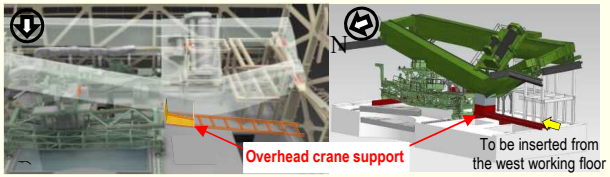
* 1 The values varied somewhat, depending on the unit and location of the thermometer.

* 2 In August 2020, the radiation exposure dose due to the release of radioactive materials from the Unit 1-4 Reactor Buildings was evaluated at less than 0.00004 mSv/year at the site boundary. The annual radiation dose from natural radiation is approx. 2.1 mSv/year (average in Japan).

Start of preparatory work toward installing support to the Unit 1 overhead crane

Before removing the fallen roof and other objects on the south side of the Unit 1 Reactor Building, to minimize the risk of the overhead crane shifting its position, becoming imbalanced and subsequently falling, materials to support the overhead crane from below will be installed.

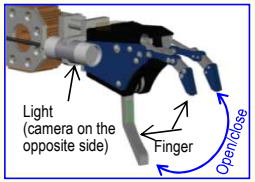
Preparatory work will start from October and installation of the support will be completed in November.



Plan to investigate deposits inside the Unit 2 PCV penetration toward Unit 2 PCV inside investigation and trial retrieval

In the investigation inside the Unit 2 Primary Containment Vessel (PCV) and the trial retrieval of fuel debris, an arm-type device will be inserted from the PCV penetration (X-6 penetration) into the PCV. Before this investigation, deposits which may interfere with the work inside the X-6 penetration will be removed. To help examine the procedures of this removal work, an investigation into distribution of deposits and others inside the X-6 penetration will be implemented using a survey unit from around mid-October onward.

Toward starting the trial retrieval of Unit 2 fuel debris scheduled in 2021, work will continue while ensuring safety measures such as suppressing dust scattering are implemented.



Survey unit

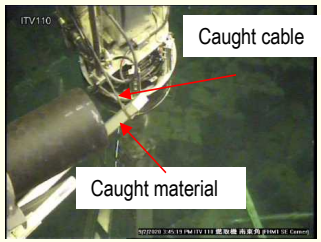
Inside the X-6 penetration (January 2017)

Examination of defect countermeasures toward resuming Unit 3 fuel removal

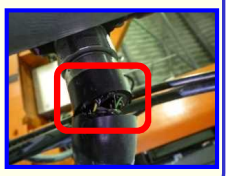
Since the resumption from May 26, Unit 3 fuel removal has continued. As of September 24, 336 of 566 fuel assemblies have been removed.

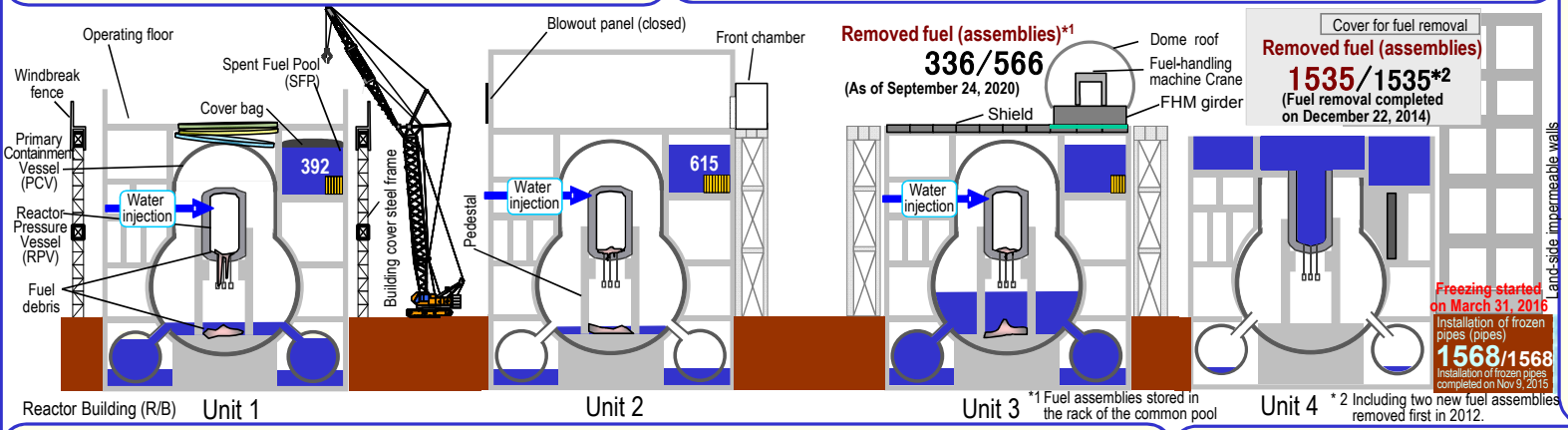
The work had been implemented steadily. On September 2, however, a cable* of the fuel-handling machine was damaged when caught by material near the wall on the south side of the pool while fuel assemblies within the pool were being transferred. The damaged cable was replaced with a spare but a subsequent operation check conducted on September 18 detected an abnormality in the signals, indicating the seating condition of the gripper or others. Repair the gripper is being examined. While fuel removal was suspended, damage to the crane hydraulic hose* was also detected, which will be replaced with a spare.

* Cable: A cable for signals indicating the opening/closure and seating conditions of the gripper
* Hydraulic hose: A hydraulic hose used to tighten the cask lid and install the flange protector



Damage of FHM cable


Damaged cable



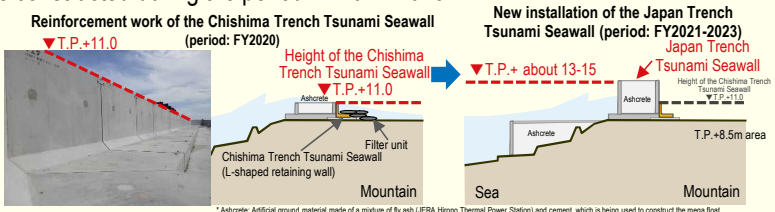
*1 Fuel assemblies stored in the rack of the common pool

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

Plan to newly install the Japan Trench Tsunami Seawall

In response to the new evaluation by the "Investigative Commission for the Giant Earthquake Model along the Japan and Chishima Trenches" of the Cabinet Office in April 2020 that rated the Japan Trench tsunami as an imminent emergency, the influence was reevaluated. The result showed that when the Japan Trench tsunami comes, the area around Unit 1-4 will be subject to flooding of about 0.3m (Unit 1 and 4 Reactor Buildings) - 1.4m (Unit 1 Turbine Building). To suppress this flooding by the imminent Japan Trench tsunami, prevent any increase in contaminated water due to inflow into buildings and alleviate damage to important facilities for decommissioning, the "Japan Trench Tsunami Seawall" will be constructed during the period FY2021-2023.

The construction of the Chishima Trench Tsunami Seawall, which started from the 1st half of FY2019, will be completed on September 25, 2020. However, based on the evaluation result of the Japan Trench Tsunami, reinforcement work will continue within FY2020.



<Chishima Trench Tsunami Seawall>

* Ashcrete: Artificial ground material made of a mixture of fly ash (JERA Hirono Thermal Power Station) and cement, which is being used to construct the mega float
* Filter Unit: Civil engineering structure comprising net bags, including 50-200mm stones particles, which has been used throughout the 1F site since the earthquake

Start of performance verification for the secondary treatment of ALPS-treated water

The performance test of the secondary treatment started from September 15 to verify that the sum of the ratios of the concentrations required by law* except for tritium is reduced to less than one after secondary treatment by ALPS and check the procedures and process of the nuclide analysis.

For the test, from tank areas whose sum of ratios of concentrations required by law is 100 or more, J1-C area (the sum of major seven nuclides: 3,791 (J1-C1)) and J1-G area (153 (J1-G1)) were selected as the specimen.

The performance test will be conducted until mid-October (planned) using the "Additional ALPS." Treated water will be analyzed and evaluated (for several months (planned)) concerning nuclides that must be removed (62 nuclides), radiocarbon (C-14) and tritium (H-3).


<Additional ALPS>

* The sum of concentration ratios calculated to the concentration limits required by law as specified for each radioactive material

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
September 25th, 2020 *Discharged on September 30th	Cs-134	ND (0.72)	ND (0.72)
	Cs-137	ND (0.54)	ND (0.54)
	Gross β	ND (1.8)	ND (0.32)
	H-3	850	910
September 24th, 2020 *Discharged on August 29th	Cs-134	ND (0.79)	ND (0.70)
	Cs-137	ND (0.69)	ND (0.78)
	Gross β	ND (1.8)	ND (0.32)
	H-3	900	970
September 23rd, 2020 *Discharged on September 28th	Cs-134	ND (0.68)	ND (0.59)
	Cs-137	ND (0.73)	ND (0.61)
	Gross β	ND (1.8)	ND (0.34)
	H-3	970	1,000
September 22nd, 2020 *Discharged on September 27th	Cs-134	ND (0.56)	ND (0.69)
	Cs-137	ND (0.65)	ND (0.51)
	Gross β	ND (2.0)	ND (0.35)
	H-3	990	1,000
September 21st, 2020 *Discharged on September 26th	Cs-134	ND (0.70)	ND (0.50)
	Cs-137	ND (0.73)	ND (0.54)
	Gross β	ND (1.8)	ND (0.33)
	H-3	940	1,000
September 20th, 2020 *Discharged on September 25th	Cs-134	ND (0.45)	ND (0.76)
	Cs-137	ND (0.80)	ND (0.67)
	Gross β	ND (1.7)	ND (0.35)
	H-3	800	860
September 19th, 2020 *Discharged on September 24th	Cs-134	ND (0.63)	ND (0.79)
	Cs-137	ND (0.69)	ND (0.77)
	Gross β	ND (1.8)	ND (0.33)
	H-3	730	780
September 18th, 2020 *Discharged on September 23rd	Cs-134	ND (0.45)	ND (0.87)
	Cs-137	ND (0.54)	ND (0.89)
	Gross β	ND (0.63)	ND (0.32)
	H-3	640	680

September 17th, 2020 *Discharged on September 22nd	Cs-134	ND (0.70)	ND (0.61)
	Cs-137	ND (0.65)	ND (0.63)
	Gross β	ND (1.9)	ND (0.31)
	H-3	610	660
September 16th, 2020 *Discharged on September 21st	Cs-134	ND (0.72)	ND (0.69)
	Cs-137	ND (0.65)	ND (0.54)
	Gross β	ND (1.8)	ND (0.35)
	H-3	630	660
September 15th, 2020 *Discharged on September 20th	Cs-134	ND (0.69)	ND (0.64)
	Cs-137	ND (0.47)	ND (0.54)
	Gross β	ND (1.8)	ND (0.29)
	H-3	620	670
September 14th, 2020 *Discharged on September 19th	Cs-134	ND (0.73)	ND (0.59)
	Cs-137	ND (0.74)	ND (0.63)
	Gross β	ND (1.8)	ND (0.32)
	H-3	830	880
September 13th, 2020 *Discharged on September 18th	Cs-134	ND (0.67)	ND (0.63)
	Cs-137	ND (0.60)	ND (0.63)
	Gross β	ND (1.9)	ND (0.35)
	H-3	880	970
September 12th, 2020 *Discharged on September 17th	Cs-134	ND (0.64)	ND (0.69)
	Cs-137	ND (0.60)	ND (0.63)
	Gross β	ND (1.9)	ND (0.37)
	H-3	920	970
September 11th, 2020 *Discharged on September 16th	Cs-134	ND (0.61)	ND (0.55)
	Cs-137	ND (0.54)	ND (0.66)
	Gross β	ND (0.57)	ND (0.35)
	H-3	1,000	1,100
September 10th, 2020 *Discharged on September 15th	Cs-134	ND (0.49)	ND (0.53)
	Cs-137	ND (0.77)	ND (0.63)
	Gross β	ND (1.3)	ND (0.32)
	H-3	930	1,000
September 9th, 2020 *Discharged on September 14th	Cs-134	ND (0.79)	ND (0.62)
	Cs-137	ND (0.65)	ND (0.69)
	Gross β	ND (2.0)	ND (0.39)
	H-3	880	920
September 8th, 2020 *Discharged on September 13th	Cs-134	ND (0.85)	ND (0.58)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (1.9)	ND (0.36)
	H-3	860	910

September 7th, 2020 *Discharged on September 12th	Cs-134	ND (0.76)	ND (0.59)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (2.0)	ND (0.38)
	H-3	750	790
September 6th, 2020 *Discharged on September 11th	Cs-134	ND (0.58)	ND (0.61)
	Cs-137	ND (0.54)	ND (0.69)
	Gross β	ND (2.0)	ND (0.36)
	H-3	750	790
September 5th, 2020 *Discharged on September 10th	Cs-134	ND (0.71)	ND (0.83)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (1.9)	ND (0.34)
	H-3	780	810
September 4th, 2020 *Discharged on September 9th	Cs-134	ND (0.56)	ND (0.61)
	Cs-137	ND (0.65)	ND (0.61)
	Gross β	ND (1.7)	ND (0.35)
	H-3	890	970
September 3rd, 2020 *Discharged on September 8th	Cs-134	ND (0.73)	ND (0.67)
	Cs-137	ND (0.54)	ND (0.63)
	Gross β	ND (2.1)	ND (0.36)
	H-3	850	910
September 2nd, 2020 *Discharged on September 7th	Cs-134	ND (0.64)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.63)
	Gross β	ND (2.1)	ND (0.35)
	H-3	860	910
September 1st, 2020 *Discharged on September 6th	Cs-134	ND (0.64)	ND (0.57)
	Cs-137	ND (0.65)	ND (0.73)
	Gross β	ND (0.64)	ND (0.36)
	H-3	870	920
August 31st, 2020 *Discharged on September 5th	Cs-134	ND (0.85)	ND (0.47)
	Cs-137	ND (0.47)	ND (0.58)
	Gross β	ND (2.1)	ND (0.36)
	H-3	880	920
August 30th, 2020 *Discharged on September 4th	Cs-134	ND (0.61)	ND (0.55)
	Cs-137	ND (0.84)	ND (0.63)
	Gross β	ND (1.9)	0.39
	H-3	900	940
August 29th, 2020 *Discharged on September 3rd	Cs-134	ND (0.50)	ND (0.87)
	Cs-137	ND (0.69)	ND (0.67)
	Gross β	ND (1.9)	0.39
	H-3	870	940

August 28th, 2020 *Discharged on September 2nd	Cs-134	ND (0.72)	ND (0.81)
	Cs-137	ND (0.65)	ND (0.77)
	Gross β	ND (2.0)	ND (0.41)
	H-3	920	970
August 27th, 2020 *Discharged on September 1st	Cs-134	ND (0.45)	ND (0.53)
	Cs-137	ND (0.54)	ND (0.57)
	Gross β	ND (0.69)	ND (0.33)
	H-3	910	970

* * 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
August 1st,2020	Cs-134	ND (0.0028)	ND (0.0046)	ND (0.0065)
	Cs-137	0.023	0.025	0.0023
	Gross α	ND (0.61)	ND (3.4)	ND (1.9)
	Gross β	ND (0.47)	ND (0.64)	ND (0.52)
	H-3	1,100	1,000	1,100
	Sr-90	0.0077	0.0088	0.013

* 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
September 16th, 2020 *Discharged on September 24th	Cs-134	ND (0.56)	ND (0.77)
	Cs-137	ND (0.73)	ND (0.66)
	Gross β	ND (0.68)	ND (0.35)
	H-3	86	92
September 9th, 2020 *Discharged on September 17th	Cs-134	ND (0.82)	ND (0.53)
	Cs-137	ND (0.69)	ND (0.53)
	Gross β	ND (0.65)	ND (0.49)
	H-3	89	93
September 2nd, 2020 *Discharged on September 10th	Cs-134	ND (0.41)	ND (0.53)
	Cs-137	ND (0.65)	ND (0.45)
	Gross β	ND (0.67)	ND (0.54)
	H-3	100	110
August 26th, 2020 *Discharged on September 3rd	Cs-134	ND (0.57)	ND (0.48)
	Cs-137	ND (0.65)	ND (0.39)
	Gross β	ND (0.74)	ND (0.53)
	H-3	110	100

∗ * 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
August 5th, 2020	Cs-134	ND (0.0024)	ND (0.0046)	ND (0.0064)
	Cs-137	ND (0.0021)	ND (0.0043)	ND (0.0043)
	Gross α	ND (0.51)	ND (3.2)	ND (1.9)
	Gross β	ND (0.48)	ND (0.66)	ND (0.51)
	H-3	120	110	120
	Sr-90	ND (0.0012)	ND (0.0014)	ND (0.0054)

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

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)
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.