Information (17:00), June 26 , 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 until May

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 until the month of May at Fukushima Daiichi Nuclear Power Station (NPS).

1. Summary of decommissioning and contaminated water management

In May, 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/mp202005.pdf

2. Subdrain and Groundwater Drain Systems

Until May, 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 until the month of May 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

Until May, 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 until the month of May 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

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

Dismantling Facilities

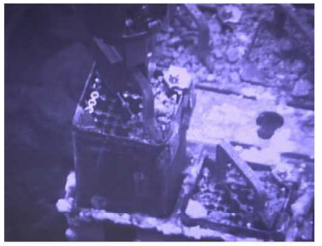
Scenario development & technology consideration → Design and manufacturing of devices / equipment → Dismantling

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

First unit	Start of fuel debris retrieval
Unit 2	Within 2021

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)
119/566
(As of May 28, 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]

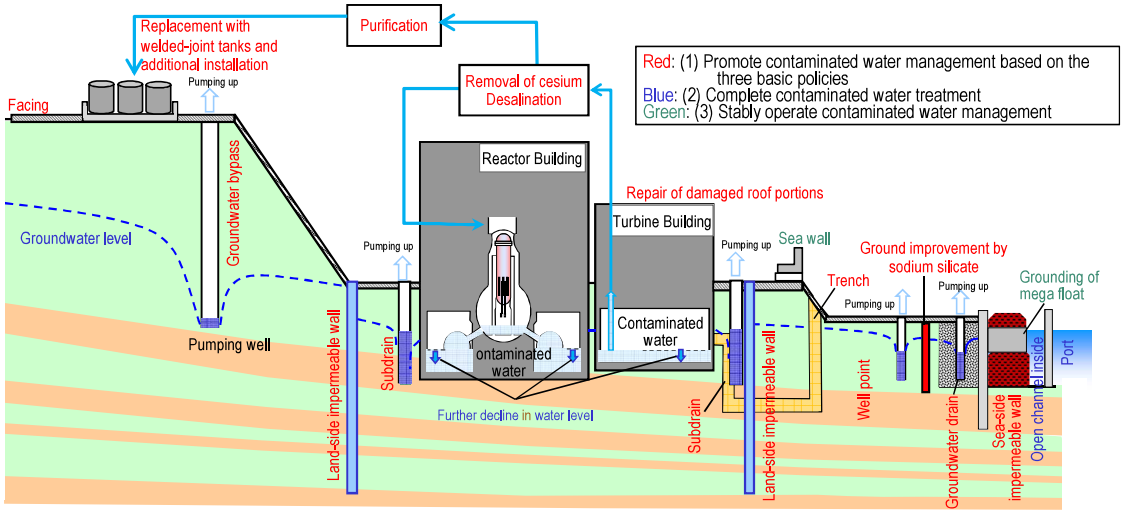
1. "Remove" the source of water contamination
2. "Redirect" fresh water from contaminated areas
3. "Retain" contaminated water from leakage

(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. 15-25°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.

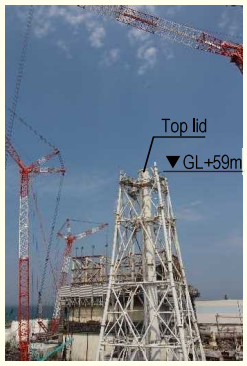
* 1 The values varied somewhat, depending on the unit and location of the thermometer.
* 2 In April 2020, the radiation exposure dose due to the release of radioactive materials from the Unit 1-4 Reactor Buildings was evaluated at less than 0.00013 mSv/year at the site boundary. The annual radiation dose from natural radiation is approx. 2.1 mSv/year (average in Japan).

Completion of dismantling for the Unit 1/2 exhaust stack

Regarding work to dismantle the Unit 1/2 exhaust stack, which started from August 1, 2019 and was entrusted to Able Co., Ltd., the scheduled dismantling from a height of 120m to 59m was completed by April 29. On May 1, a lid was subsequently installed on top of the stack to prevent rainwater infiltration and all processes of the work were completed.

This work improved the seismic tolerance of the exhaust stack and reduced risks.

Before dismantling (July 2019)



After dismantling (May 2020)

Installation start of inflow prevention fences at damaged parts of the roof as a part of measures to prevent rainwater infiltrating from the roof for the Unit 3 T/B

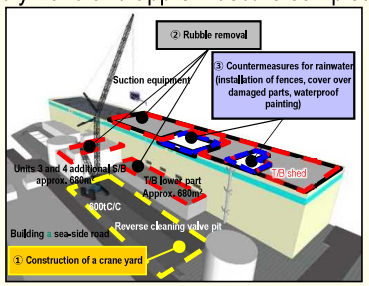
To suppress contaminated water generated, measures to prevent rainwater infiltrating from the roof, such as closing damaged parts of the building roof, are being implemented. Work has been underway to remove Rubble from the roof of the Unit 3 Turbine Building since July 2019 and approx. 98% is completed.

From May 18, work to install inflow prevention fences at damaged parts of the roof started as a countermeasure for rainwater.

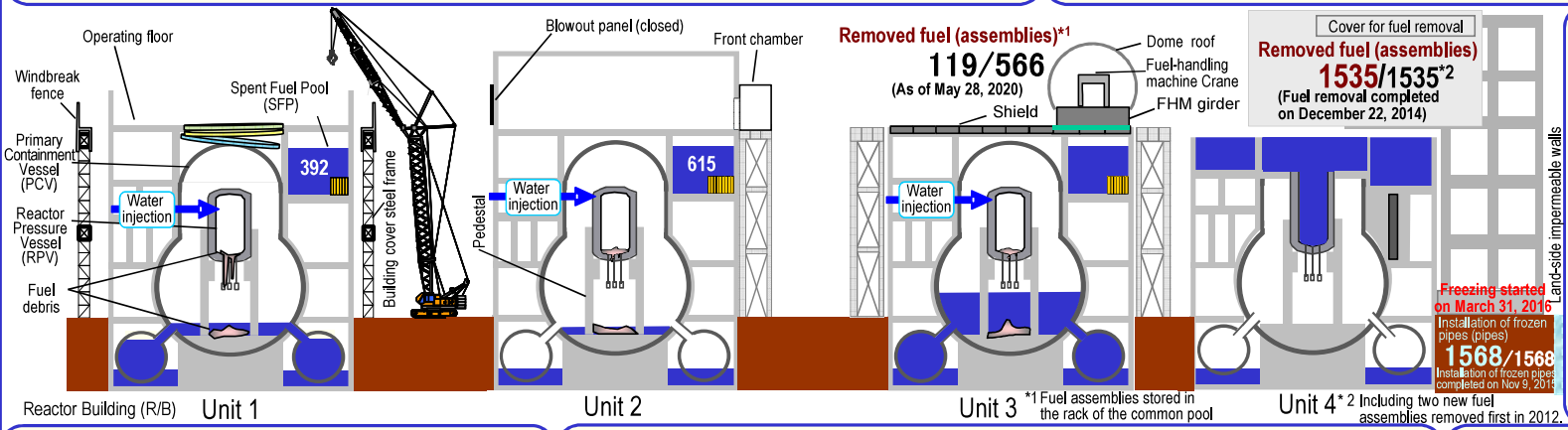
Following the fences, sheets will be installed over the damaged parts (approx. 1,000m^2) and waterproof painting applied. Work continues with safety first to complete the measures by around September 2020.


Crane yard construction on the east side of the Unit 3 T/B


Rubble removal at the Unit 3 T/B shed



Overview of measures for Unit 3 T/B roof

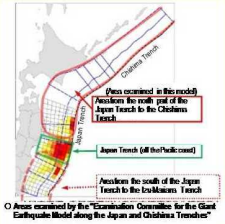


*1 Fuel assemblies stored in the rack of the common pool
*2 Including two new fuel assemblies removed first in 2012.

Influence being evaluated based on the "Giant Earthquake Model along the Japan and Chishima Trenches"

In response to the announcement of the "Giant Earthquake Model along the Japan and Chishima Trenches" by the Cabinet Office on April 21, the influence is being evaluated, including reevaluation of tsunami.

The reevaluation of tsunami will be conducted by around early FY2020, based on the results, additional measures will be implemented as necessary.



Extracted from the material announced by the Cabinet Office on April 21, 2020

Construction of the Unit 1 access route proceeding as planned

Toward investigating the inside of the Unit 1 Primary Containment Vessel (PCV), an access route is being constructed. As part of the construction work, cutting of obstacles inside the PCV started from May 26 including one of two handrails.

Obstacles to be cut are, in addition to handrails, gratings, steel materials under the gratings and conduits. These parts are washed before cutting to suppress dust generation during cutting. Work will proceed with safety first by these preparations to start an inside investigation in the second half of FY2020.

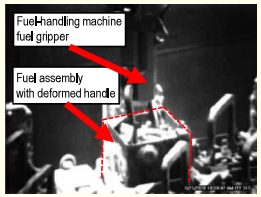
Resumption of Unit 3 fuel removal from May 26

The inspection of the fuel-handling machine and other equipment and the additional training for added workers, which had been conducted since March 30, were completed by May 23 smoothly, whereupon fuel removal was resumed from May 26.

For ten of 16 fuel assemblies with which deformed handles were detected(*1), the lifting test results showed that three fuel assemblies could not be lifted within the predefined weight(*2) range. After investigating the rubble and fixation conditions, a detailed response will be examined and a lifting test conducted for the remaining fuel assemblies.

Work continues with safety first to complete fuel removal by the end of FY2020.

*1: The lifting test was suspended for another fuel assembly with a deformed handle, because interference was confirmed before lifting.
*2: A weight range which, during an evaluation, was defined as having no influence in terms of additional lifting weight on fuel assemblies with significantly deformed handles, a value of approx. 700 kg indicated in the weight meter.



Lifting of simulant fuel assembly with deformed handle

Thorough COVID-19 countermeasures implemented to continue work

At the Fukushima Daiichi Nuclear Power Station, countermeasures are being implemented to prevent the COVID-19 infection spreading, such as requiring employees to take their temperature prior to coming to the office, wear masks at all times and avoid the "Three Cs" (Closed spaces, Crowded places, Close-contact settings) by shift-use of the rest house, etc. As of May 26, no TEPCO HD employees or cooperative firm laborers have contracted COVID-19.

Moreover, those who traveled outside Fukushima Prefecture after the Golden Week, which has been deemed a period of enhanced countermeasures, were also required to work from home for two weeks in principle.

No significant influence on work, such as a delay to the work processes, was identified. Following the lifting of the Emergency Declaration in the Metropolitan Area on May 25, future measures are being examined.

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
May 26th, 2020 *Discharged on May 31st	Cs-134	ND (0.71)	ND (0.59)
	Cs-137	ND (0.46)	ND (0.47)
	Gross β	ND (1.7)	ND (0.40)
	H-3	930	1,000
May 24th, 2020 *Discharged on May 29th	Cs-134	ND (0.40)	ND (0.75)
	Cs-137	ND (0.63)	ND (0.69)
	Gross β	ND (1.8)	ND (0.36)
	H-3	820	920
May 23rd, 2020 *Discharged on May 28th	Cs-134	ND (0.48)	ND (0.53)
	Cs-137	ND (0.53)	ND (0.58)
	Gross β	ND (1.8)	ND (0.54)
	H-3	830	940
May 21st, 2020 *Discharged on May 26th	Cs-134	ND (0.71)	ND (0.65)
	Cs-137	ND (0.53)	ND (0.51)
	Gross β	ND (1.6)	ND (0.36)
	H-3	920	1,000
May 20th, 2020 *Discharged on May 25th	Cs-134	ND (0.63)	ND (0.57)
	Cs-137	ND (0.58)	ND (0.66)
	Gross β	ND (0.65)	ND (0.42)
	H-3	880	930
May 18th, 2020 *Discharged on May 23rd	Cs-134	ND (0.67)	ND (0.52)
	Cs-137	ND (0.68)	ND (0.66)
	Gross β	ND (1.8)	ND (0.37)
	H-3	960	1,000
May 17th, 2020 *Discharged on May 22nd	Cs-134	ND (0.47)	ND (0.63)
	Cs-137	ND (0.68)	ND (0.54)
	Gross β	ND (2.1)	ND (0.33)
	H-3	1,000	1,100

May 16th, 2020 *Discharged on May 21st	Cs-134	ND (0.77)	ND (0.81)
	Cs-137	ND (0.58)	ND (0.72)
	Gross β	ND (1.7)	ND (0.35)
	H-3	1,000	1,100
May 14th, 2020 *Discharged on May 19th	Cs-134	ND (0.74)	ND (0.64)
	Cs-137	ND (0.58)	ND (0.73)
	Gross β	ND (1.9)	0.42
	H-3	1,000	1,100
May 12th, 2020 *Discharged on May 17th	Cs-134	ND (0.65)	ND (0.60)
	Cs-137	ND (0.63)	ND (0.75)
	Gross β	ND (1.6)	ND (0.41)
	H-3	890	950
May 11th, 2020 *Discharged on May 16th	Cs-134	ND (0.56)	ND (0.70)
	Cs-137	ND (0.63)	ND (0.66)
	Gross β	ND (0.64)	ND (0.40)
	H-3	860	910
May 9th, 2020 *Discharged on May 14th	Cs-134	ND (0.77)	ND (0.63)
	Cs-137	ND (0.71)	ND (0.58)
	Gross β	ND (1.8)	ND (0.37)
	H-3	860	890
May 8th, 2020 *Discharged on May 13th	Cs-134	ND (0.68)	ND (0.47)
	Cs-137	ND (0.68)	ND (0.61)
	Gross β	ND (1.9)	ND (0.32)
	H-3	860	900
May 6th, 2020 *Discharged on May 11th	Cs-134	ND (0.67)	ND (0.69)
	Cs-137	ND (0.63)	ND (0.63)
	Gross β	ND (2.0)	ND (0.31)
	H-3	790	820
May 5th, 2020 *Discharged on May 10th	Cs-134	ND (0.74)	ND (0.65)
	Cs-137	ND (0.63)	ND (0.63)
	Gross β	ND (2.0)	ND (0.31)
	H-3	720	750
May 3rd, 2020 *Discharged on May 8th	Cs-134	ND (0.67)	ND (0.64)
	Cs-137	ND (0.68)	ND (0.69)
	Gross β	ND (2.0)	ND (0.30)
	H-3	660	690
May 2nd, 2020 *Discharged on May 7th	Cs-134	ND (0.74)	ND (0.59)
	Cs-137	ND (0.58)	ND (0.54)
	Gross β	ND (0.59)	ND (0.36)
	H-3	710	760

April 30th, 2020 *Discharged on May 5th	Cs-134	ND (0.49)	ND (0.57)
	Cs-137	ND (0.68)	ND (0.63)
	Gross β	ND (1.9)	ND (0.36)
	H-3	840	850
April 29th, 2020 *Discharged on May 4th	Cs-134	ND (0.52)	ND (0.63)
	Cs-137	ND (0.68)	ND (0.58)
	Gross β	ND (1.8)	ND (0.32)
	H-3	900	920
April 27th, 2020 *Discharged on May 2nd	Cs-134	ND (0.60)	ND (0.72)
	Cs-137	ND (0.63)	ND (0.57)
	Gross β	ND (0.61)	ND (0.31)
	H-3	620	650
April 26th, 2020 *Discharged on May 1st	Cs-134	ND (0.56)	ND (0.51)
	Cs-137	ND (0.68)	ND (0.54)
	Gross β	ND (1.6)	ND (0.33)
	H-3	370	390
April 24th, 2020 *Discharged on April 29th	Cs-134	ND (0.79)	ND (0.72)
	Cs-137	ND (0.53)	ND (0.55)
	Gross β	ND (2.0)	ND (0.37)
	H-3	350	370
April 23rd, 2020 *Discharged on April 28th	Cs-134	ND (0.76)	ND (0.70)
	Cs-137	ND (0.63)	ND (0.61)
	Gross β	ND (2.0)	ND (0.32)
	H-3	510	530
April 21st, 2020 *Discharged on April 26th	Cs-134	ND (0.52)	ND (0.72)
	Cs-137	ND (0.53)	ND (0.63)
	Gross β	ND (2.0)	ND (0.35)
	H-3	510	540
April 20th, 2020 *Discharged on April 25th	Cs-134	ND (0.74)	ND (0.65)
	Cs-137	ND (0.53)	ND (0.66)
	Gross β	ND (1.7)	ND (0.36)
	H-3	570	600
April 18th, 2020 *Discharged on April 23rd	Cs-134	ND (0.56)	ND (0.72)
	Cs-137	ND (0.68)	ND (0.72)
	Gross β	ND (2.0)	ND (0.35)
	H-3	550	590
April 17th, 2020 *Discharged on April 22nd	Cs-134	ND (0.74)	ND (0.57)
	Cs-137	ND (0.53)	ND (0.54)
	Gross β	ND (0.65)	ND (0.36)
	H-3	590	610

April 15th, 2020 *Discharged on April 20th	Cs-134	ND (0.77)	ND (0.63)
	Cs-137	ND (0.46)	ND (0.63)
	Gross β	ND (2.0)	ND (0.35)
	H-3	600	620
April 14th, 2020 *Discharged on April 19th	Cs-134	ND (0.64)	ND (0.70)
	Cs-137	ND (0.58)	ND (0.58)
	Gross β	ND (1.7)	ND (0.34)
	H-3	630	660
April 12th, 2020 *Discharged on April 17th	Cs-134	ND (0.52)	ND (0.78)
	Cs-137	ND (0.71)	ND (0.75)
	Gross β	ND (1.8)	ND (0.34)
	H-3	670	690
April 11th, 2020 *Discharged on April 16th	Cs-134	ND (0.44)	ND (0.63)
	Cs-137	ND (0.58)	ND (0.61)
	Gross β	ND (1.6)	ND (0.34)
	H-3	700	730
April 9th, 2020 *Discharged on April 14th	Cs-134	ND (0.60)	ND (0.61)
	Cs-137	ND (0.68)	ND (0.71)
	Gross β	ND (0.69)	ND (0.36)
	H-3	710	750
April 8th, 2020 *Discharged on April 13th	Cs-134	ND (0.52)	ND (0.67)
	Cs-137	ND (0.58)	ND (0.54)
	Gross β	ND (1.7)	ND (0.32)
	H-3	730	770
April 6th, 2020 *Discharged on April 11th	Cs-134	ND (0.71)	ND (0.63)
	Cs-137	ND (0.68)	ND (0.69)
	Gross β	ND (2.0)	ND (0.31)
	H-3	750	800
April 5th, 2020 *Discharged on April 10th	Cs-134	ND (0.52)	ND (0.52)
	Cs-137	ND (0.58)	ND (0.69)
	Gross β	ND (1.9)	ND (0.30)
	H-3	780	830
April 3rd, 2020 *Discharged on April 8th	Cs-134	ND (0.64)	ND (0.57)
	Cs-137	ND (0.63)	ND (0.54)
	Gross β	ND (1.9)	ND (0.34)
	H-3	800	850
April 2nd, 2020 *Discharged on April 7th	Cs-134	ND (0.51)	ND (0.63)
	Cs-137	ND (0.58)	ND (0.61)
	Gross β	ND (1.4)	ND (0.33)
	H-3	790	820

April 1st, 2020 *Discharged on April 6th	Cs-134	ND (0.81)	ND (0.51)
	Cs-137	ND (0.58)	ND (0.56)
	Gross β	ND (0.65)	ND (0.32)
	H-3	740	780
March 30th, 2020 *Discharged on April 4th	Cs-134	ND (0.52)	ND (0.57)
	Cs-137	ND (0.66)	ND (0.53)
	Gross β	ND (1.8)	ND (0.31)
	H-3	770	830
March 29th, 2020 *Discharged on April 3rd	Cs-134	ND (0.74)	ND (0.49)
	Cs-137	ND (0.68)	ND (0.56)
	Gross β	ND (1.9)	ND (0.33)
	H-3	820	890
March 27th, 2020 *Discharged on April 1st	Cs-134	ND (0.77)	ND (0.71)
	Cs-137	ND (0.53)	ND (0.56)
	Gross β	ND (2.0)	ND (0.35)
	H-3	790	860

* * 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
April 1st,2020	Cs-134	ND (0.0029)	ND (0.0048)	ND (0.0066)
	Cs-137	0.0049	0.0057	0.0062
	Gross α	ND (0.58)	ND (3.6)	ND (2.1)
	Gross β	ND (0.47)	ND (0.65)	ND (0.59)
	H-3	890	740	810
	Sr-90	0.0026	ND (0.0011)	ND (0.0060)
March 2nd,2020	Cs-134	ND (0.0024)	ND (0.0042)	ND (0.0065)
	Cs-137	0.0038	0.0050	0.0050
	Gross α	ND (0.71)	ND (3.6)	ND (2.2)
	Gross β	ND (0.47)	ND (0.72)	ND (0.62)
	H-3	750	640	680
	Sr-90	ND (0.0012)	ND (0.0015)	ND (0.0068)

* 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)
March 12th, 2020 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.55)
	Cs-137	ND (0.65)
	Gross β	12
	H-3	ND (1.5)

(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
May 20th, 2020 *Discharged on May 28th	Cs-134	ND (0.77)	ND (0.53)
	Cs-137	ND (0.78)	ND (0.56)
	Gross β	ND (0.65)	ND (0.62)
	H-3	110	120
May 13h, 2020 *Discharged on May 21st	Cs-134	ND (0.60)	ND (0.51)
	Cs-137	ND (0.75)	ND (0.43)
	Gross β	ND (0.59)	ND (0.60)
	H-3	120	120
May 6th, 2020 *Discharged on May 14th	Cs-134	ND (0.74)	ND (0.58)
	Cs-137	ND (0.63)	ND (0.47)
	Gross β	ND (0.64)	ND (0.54)
	H-3	110	120
April 29th, 2020 *Discharged on May 8th	Cs-134	ND (0.58)	ND (0.72)
	Cs-137	ND (0.68)	ND (0.72)
	Gross β	ND (0.63)	ND (0.30)
	H-3	120	120
April 24th, 2020 *Discharged on May 2nd	Cs-134	ND (0.71)	ND (0.78)
	Cs-137	ND (0.58)	ND (0.62)
	Gross β	ND (0.75)	ND (0.33)
	H-3	120	130
April 15th, 2020 *Discharged on April 23rd	Cs-134	ND (0.40)	ND (0.58)
	Cs-137	ND (0.53)	ND (0.43)
	Gross β	ND (0.61)	ND (0.49)
	H-3	120	120
April 8th, 2020 *Discharged on April 16th	Cs-134	ND (0.52)	ND (0.51)
	Cs-137	ND (0.63)	ND (0.51)
	Gross β	ND (0.66)	ND (0.64)
	H-3	120	120
April 2nd, 2020 *Discharged on April 10th	Cs-134	ND (0.86)	ND (0.53)
	Cs-137	ND (0.68)	ND (0.47)
	Gross β	ND (0.65)	ND (0.64)
	H-3	120	140

March 27th, 2020 *Discharged on April 5th	Cs-134	ND (0.74)	ND (0.52)
	Cs-137	ND (0.75)	ND (0.54)
	Gross β	ND (0.57)	ND (0.52)
	H-3	130	140

* * 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
April 2nd, 2020	Cs-134	ND (0.0029)	ND (0.0040)	ND (0.0060)
	Cs-137	0.0022	ND (0.0039)	ND (0.0054)
	Gross α	ND (0.54)	ND (3.4)	ND (2.1)
	Gross β	ND (0.48)	ND (0.65)	ND (0.60)
	H-3	140	120	130
	Sr-90	0.0012	ND (0.0013)	ND (0.0058)
March 4th, 2020	Cs-134	ND (0.0027)	ND (0.0044)	ND (0.0064)
	Cs-137	ND (0.0020)	ND (0.0034)	ND (0.0048)
	Gross α	ND (0.54)	ND (3.4)	ND (2.2)
	Gross β	ND (0.47)	ND (0.65)	ND (0.59)
	H-3	150	140	140
	Sr-90	ND (0.0013)	ND (0.0015)	ND (0.0066)

* 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)
March 12th, 2020	Cs-134	ND (0.79)
	Cs-137	ND (0.67)
	Gross β	12
	H-3	ND (1.5)

(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.