Information, January, 2021

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 December

The Ministry of Foreign Affairs wishes to provide all international Missions in Japan with a report on the discharge record and seawater monitoring results with regard to groundwater pumped from the sub-drain and groundwater drain systems, as well as, bypassing groundwater pumped during the month of November at Fukushima Daiichi Nuclear Power Station (NPS).

1. Sub-drain and Groundwater Drain Systems

In December, purified groundwater pumped from the sub-drain and groundwater drain systems was discharged on the dates shown in Appendix 1. 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 December 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 2).

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 3). 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.

2. Groundwater Bypassing

In December, the pumped bypassing groundwater was discharged on the dates shown in Appendix 4. 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 December 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 5).

Moreover, TEPCO publishes analysis results on seawater sampled during the discharge operation at the nearest seawater sampling post from the discharge point (see Appendix 6). The result shows that the radiation levels in seawater remain lower than the density limit specified by the Reactor Regulation and significant change in the radioactivity has not been observed. The analysis had been conducted once a month until March 2017. Since April 2017, it is conducted four times a year because there has been no significant fluctuation in the concentration of radioactive materials in the sea water, and no influence on the surrounding environment has been confirmed.

The sampling process for analyses conducted this month is the same as the one conducted in the information disseminated last month. Results of the analyses are shown in the attached appendices:

(For further information, please contact TEPCO at (Tel: 03-6373-1111) or refer to the TEPCO's website:
http://www.tepco.co.jp/en/nu/fukushima-np/handouts/index-e.html)

Contact: International Nuclear Energy Cooperation Division,
Ministry of Foreign Affairs, Tel 03-5501-8227

Appendix 1

Results of analyses on the quality of the purified groundwater pumped from the sub-drain and groundwater drain systems at Fukushima Daiichi NPS (made available by TEPCO prior to discharge)

(Unit: Bq/L)

Date of sampling *Date of discharge	Detected nuclides	Analytical body	
		TEPCO	Third-party organization
December 25th, 2020 *Discharged on December 30th	Cs-134	ND (0.70)	ND (0.52)
	Cs-137	ND (0.47)	ND (0.63)
	Gross β	ND (0.70)	ND (0.34)
	H-3	1,100	1,100
December 23rd, 2020 *Discharged on December 28th	Cs-134	ND (0.72)	ND (0.69)
	Cs-137	ND (0.65)	ND (0.58)
	Gross β	ND (1.7)	ND (0.39)
	H-3	1,100	1,100
December 5th, 2020 *Discharged on December 27th	Cs-134	ND (0.76)	ND (0.69)
	Cs-137	ND (0.80)	ND (0.51)
	Gross β	ND (1.9)	ND (0.57)
	H-3	880	940
December 21st, 2020 *Discharged on December 26th	Cs-134	ND (0.72)	ND (0.61)
	Cs-137	ND (0.69)	ND (0.69)
	Gross β	ND (1.6)	0.39
	H-3	990	1,100
December 13th, 2020 *Discharged on December 25th	Cs-134	ND (0.74)	ND (0.78)
	Cs-137	ND (0.69)	ND (0.63)
	Gross β	ND (2.0)	ND (0.42)
	H-3	900	950
December 19th, 2020 *Discharged on December 24th	Cs-134	ND (0.70)	ND (0.84)
	Cs-137	ND (0.69)	ND (0.55)
	Gross β	ND (1.7)	ND (0.36)
	H-3	970	1,000
December 11th, 2020 *Discharged on December 23rd	Cs-134	ND (0.59)	ND (0.67)
	Cs-137	ND (0.60)	ND (0.61)
	Gross β	ND (1.8)	ND (0.33)
	H-3	870	940

December 17th, 2020 *Discharged on December 22nd	Cs-134	ND (0.76)	ND (0.59)
	Cs-137	ND (0.60)	ND (0.69)
	Gross β	ND (0.57)	ND (0.33)
	H-3	910	960
December 15th, 2020 *Discharged on December 20th	Cs-134	ND (0.68)	ND (0.63)
	Cs-137	ND (0.54)	ND (0.66)
	Gross β	ND (1.8)	ND (0.38)
	H-3	900	960
December 9th, 2020 *Discharged on December 14th	Cs-134	ND (0.67)	ND (0.64)
	Cs-137	ND (0.83)	ND (0.60)
	Gross β	ND (0.65)	ND (0.39)
	H-3	810	850
December 7th, 2020 *Discharged on December 12th	Cs-134	ND (0.70)	ND (0.72)
	Cs-137	ND (0.73)	ND (0.73)
	Gross β	ND (1.6)	ND (0.33)
	H-3	760	800
December 3rd, 2020 *Discharged on December 8th	Cs-134	ND (0.61)	ND (0.47)
	Cs-137	ND (0.62)	ND (0.47)
	Gross β	ND (2.1)	ND (0.48)
	H-3	960	1,000
December 2nd, 2020 *Discharged on December 7th	Cs-134	ND (0.78)	ND (0.57)
	Cs-137	ND (0.54)	ND (0.61)
	Gross β	ND (1.7)	ND (0.67)
	H-3	920	980
December 1st, 2020 *Discharged on December 6th	Cs-134	ND (0.65)	ND (0.69)
	Cs-137	ND (0.65)	ND (0.66)
	Gross β	ND (0.65)	ND (0.50)
	H-3	910	960
November 30th, 2020 *Discharged on December 5th	Cs-134	ND (0.63)	ND (0.52)
	Cs-137	ND (0.73)	ND (0.66)
	Gross β	ND (1.9)	ND (0.60)
	H-3	940	990
November 29th, 2020 *Discharged on December 4th	Cs-134	ND (0.55)	ND (0.63)
	Cs-137	ND (0.65)	ND (0.69)
	Gross β	ND (2.0)	ND (0.40)
	H-3	880	940
November 28th, 2020 *Discharged on December 3rd	Cs-134	ND (0.82)	ND (0.59)
	Cs-137	ND (0.65)	ND (0.47)
	Gross β	ND (2.1)	0.57
	H-3	880	950
November 26th, 2020 *Discharged on	Cs-134	ND (0.55)	ND (0.59)
	Cs-137	ND (0.73)	ND (0.61)

December 1st	Gross β	ND (0.65)	ND (0.39)
	H-3	890	920

* * 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 2

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
November 1st,2020	Cs-134	ND (0.0030)	ND (0.0046)	ND (0.0054)
	Cs-137	0.0085	0.00086	0.0069
	Gross α	ND (0.65)	ND (3.6)	ND (2.0)
	Gross β	ND (0.49)	ND (0.65)	ND (0.63)
	H-3	1,100	1,100	1,100
	Sr-90	0.0012	0.0016	ND (0.0063)

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

Appendix 3

Results of analysis on the seawater sampled near the discharge point (North side of Units 5 and 6 discharge channel)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Sampling point (South discharge channel)
December 3rd, 2020 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.44)
	Cs-137	ND (0.78)
	Gross β	11
	H-3	ND (1.9)

(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 4

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
December 19th, 2020 *Discharged on December 27th	Cs-134	ND (0.78)	ND (0.56)
	Cs-137	ND (0.54)	ND (0.59)
	Gross β	ND (0.63)	ND (0.55)
	H-3	110	100
December 11th, 2020 *Discharged on December 19th	Cs-134	ND (0.65)	ND (0.45)
	Cs-137	ND (0.65)	ND (0.54)
	Gross β	ND (0.61)	ND (0.58)
	H-3	97	94
December 3rd, 2020 *Discharged on December 11th	Cs-134	ND (0.45)	ND (0.56)
	Cs-137	ND (0.76)	ND (0.43)
	Gross β	ND (0.67)	ND (0.57)
	H-3	95	98
November 25th, 2020 *Discharged on December 3rd	Cs-134	ND (0.63)	ND (0.53)
	Cs-137	ND (0.65)	ND (0.45)
	Gross β	ND (0.63)	ND (0.54)
	H-3	100	110

- * 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 5

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
November 4th, 2020	Cs-134	ND (0.0024)	ND (0.0041)	ND (0.0066)
	Cs-137	ND (0.0022)	0.0039	ND (0.0048)
	Gross α	ND (0.39)	ND (3.0)	ND (2.0)
	Gross β	ND (0.48)	ND (0.75)	ND (0.56)
	H-3	140	130	140
	Sr-90	0.0011	ND (0.0014)	ND (0.0063)

* 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)
December 3rd, 2020	Cs-134	ND (0.72)
	Cs-137	ND (0.72)
	Gross β	11
	H-3	ND (1.9)

(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.