

Information, November, 2023

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

1. Sub-drain and Groundwater Drain Systems

In October 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 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 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 October, 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 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 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>)

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
October 27 th , 2023 *Discharged on November 1 st	Cs-134	ND (0.72)	ND (0.75)
	Cs-137	ND (0.54)	ND (0.61)
	Gross β	ND (2.0)	ND (0.33)
	H-3	730	760
October 26 th , 2023 *Discharged on October 31 st	Cs-134	ND (0.72)	ND (0.61)
	Cs-137	ND (0.75)	ND (0.58)
	Gross β	ND (1.7)	0.41
	H-3	700	750
October 25 th , 2023 *Discharged on October 30 th	Cs-134	ND (0.55)	ND (0.63)
	Cs-137	ND (0.75)	ND (0.72)
	Gross β	ND (0.64)	ND (0.32)
	H-3	710	740
October 24 th , 2023 *Discharged on October 29 th	Cs-134	ND (0.66)	ND (0.65)
	Cs-137	ND (0.70)	ND (0.67)
	Gross β	ND (1.7)	ND (0.34)
	H-3	680	720
October 23 th , 2023 *Discharged on October 28 th	Cs-134	ND (0.63)	ND (0.68)
	Cs-137	ND (0.61)	ND (0.72)
	Gross β	ND (1.9)	ND (0.39)
	H-3	660	700
October 22 nd , 2023 *Discharged on October 27 th	Cs-134	ND (0.75)	ND (0.60)
	Cs-137	ND (0.68)	ND (0.48)
	Gross β	ND (1.8)	ND (0.33)
	H-3	640	680
October 21 th , 2023 *Discharged on October 26 th	Cs-134	ND (0.65)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.54)
	Gross β	ND (1.9)	ND (0.37)
	H-3	610	650
October 20 th , 2023 *Discharged on	Cs-134	ND (0.74)	ND (0.60)
	Cs-137	ND (0.76)	ND (0.64)

October 25 th	Gross β	ND (1.8)	0.37
	H-3	620	650
October 19 th , 2023 *Discharged on October 24 th	Cs-134	ND (0.64)	ND (0.60)
	Cs-137	ND (0.46)	ND (0.48)
	Gross β	ND (2.0)	ND (0.42)
	H-3	660	700
October 18 th , 2023 *Discharged on October 23 th	Cs-134	ND (0.89)	ND (0.70)
	Cs-137	ND (0.58)	ND (0.54)
	Gross β	ND (1.8)	ND (0.39)
	H-3	690	730
October 17 th , 2023 *Discharged on October 22 nd	Cs-134	ND (0.80)	ND (0.68)
	Cs-137	ND (0.72)	ND (0.62)
	Gross β	ND (0.76)	ND (0.33)
	H-3	690	720
October 16 th , 2023 *Discharged on October 21 th	Cs-134	ND (0.72)	ND (0.62)
	Cs-137	ND (0.54)	ND (0.57)
	Gross β	ND (1.9)	ND (0.33)
	H-3	690	740
October 15 th , 2023 *Discharged on October 20 th	Cs-134	ND (0.53)	ND (0.55)
	Cs-137	ND (0.65)	ND (0.57)
	Gross β	ND (1.8)	ND (0.35)
	H-3	710	730
October 14 th , 2023 *Discharged on October 19 th	Cs-134	ND (0.74)	ND (0.63)
	Cs-137	ND (0.70)	ND (0.50)
	Gross β	ND (2.0)	ND (0.33)
	H-3	680	720
October 13 th , 2023 *Discharged on October 18 th	Cs-134	ND (0.66)	ND (0.57)
	Cs-137	ND (0.74)	ND (0.58)
	Gross β	ND (2.0)	ND (0.34)
	H-3	660	690
October 12 th , 2023 *Discharged on October 17 th	Cs-134	ND (0.79)	ND (0.59)
	Cs-137	ND (0.59)	ND (0.48)
	Gross β	ND (1.7)	0.46
	H-3	570	600
October 11 th , 2023 *Discharged on October 16 ^h	Cs-134	ND (0.65)	ND (0.72)
	Cs-137	ND (0.60)	ND (0.57)
	Gross β	ND (1.9)	ND (0.36)
	H-3	670	710
October 10 th , 2023 *Discharged on October 15 ^h	Cs-134	ND (0.57)	ND (0.50)
	Cs-137	ND (0.67)	ND (0.51)
	Gross β	ND (1.9)	ND (0.34)

	H-3	700	740
October 9 th , 2023 *Discharged on October 14 th	Cs-134	ND (0.79)	ND (0.60)
	Cs-137	ND (0.74)	ND (0.40)
	Gross β	ND (0.61)	ND (0.33)
	H-3	700	720
October 8 th , 2023 *Discharged on October 13 th	Cs-134	ND (0.71)	ND (0.52)
	Cs-137	ND (0.66)	ND (0.54)
	Gross β	ND (1.9)	ND (0.35)
	H-3	680	700
October 6 th , 2023 *Discharged on October 11 th	Cs-134	ND (0.66)	ND (0.53)
	Cs-137	ND (0.65)	ND (0.62)
	Gross β	ND (1.8)	ND (0.36)
	H-3	590	620
October 4 th , 2023 *Discharged on October 9 th	Cs-134	ND (0.55)	ND (0.65)
	Cs-137	ND (0.65)	ND (0.62)
	Gross β	ND (1.8)	ND (0.36)
	H-3	620	640
October 3 rd , 2023 *Discharged on October 8 th	Cs-134	ND (0.89)	ND (0.66)
	Cs-137	ND (0.59)	ND (0.64)
	Gross β	ND (2.0)	ND (0.35)
	H-3	610	630
October 2 nd , 2023 *Discharged on October 7 th	Cs-134	ND (0.55)	ND (0.50)
	Cs-137	ND (0.77)	ND (0.44)
	Gross β	ND (1.7)	ND (0.33)
	H-3	600	650
October 1 st , 2023 *Discharged on October 6 th	Cs-134	ND (0.53)	ND (0.62)
	Cs-137	ND (0.75)	ND (0.59)
	Gross β	ND (0.64)	ND (0.32)
	H-3	670	710
September 30 th , 2023 *Discharged on October 5 th	Cs-134	ND (0.75)	ND (0.50)
	Cs-137	ND (0.79)	ND (0.70)
	Gross β	ND (1.9)	ND (0.31)
	H-3	620	650
September 29 th , 2023 *Discharged on October 4 th	Cs-134	ND (0.91)	ND (0.68)
	Cs-137	ND (0.65)	ND (0.58)
	Gross β	ND (1.6)	ND (0.35)
	H-3	640	680
September 28 th , 2023 *Discharged on October 3 rd	Cs-134	ND (0.66)	ND (0.57)
	Cs-137	ND (0.73)	ND (0.79)
	Gross β	ND (1.8)	ND (0.33)
	H-3	730	780

September 27 th , 2023 *Discharged on October 2 ^{sd}	Cs-134	ND (0.55)	ND (0.62)
	Cs-137	ND (0.70)	ND (0.62)
	Gross β	ND (1.7)	ND (0.29)
	H-3	870	940

- * * 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
August 2 nd , 2023	Cs-134	ND (0.0027)	ND (0.0053)	ND (0.0065)
	Cs-137	ND (0.0020)	ND (0.0039)	ND (0.0056)
	Gross α	ND (0.38)	ND (2.0)	ND (2.3)
	Gross β	ND (0.46)	ND (0.65)	ND (0.56)
	H-3	850	890	870
	Sr-90	0.0033	ND (0.0023)	ND (0.0054)

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

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

(Reference)

(Unit: Bq/L)

- ※ The operational target of Gross β is 1 Bq/L in the survey which is conducted once every ten days.
- ※ The reference table shows the values of operational targets before discharge.
Since the values after discharge contain natural radioactive materials in seawater, there will be differences between the values and the operational targets values.

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)
September 12 th , 2023 *Sampled before discharge of purified groundwater.	Cs-134	ND (0.71)
	Cs-137	ND (0.72)
	Gross β	9.4
	H-3	ND (0.33)

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	Third-party organization
October 26 th , 2023 *Discharged on November 1 st	Cs-134	ND (0.69)	ND (0.60)
	Cs-137	ND (0.76)	ND (0.61)
	Gross β	ND (0.66)	ND (0.33)
	H-3	49	52
October 19 th , 2023 *Discharged on October 24 th	Cs-134	ND (0.94)	ND (0.48)
	Cs-137	ND (0.66)	ND (0.59)
	Gross β	ND (0.66)	ND (0.38)
	H-3	49	51
October 12 th , 2023	Cs-134	ND (0.84)	ND (0.55)

*Discharged on October 17 th	Cs-137	ND (0.54)	ND (0.59)
	Gross β	ND (0.62)	ND (0.36)
	H-3	45	49
October 5 th , 2023 *Discharged on October 10 th	Cs-134	ND (0.61)	ND (0.53)
	Cs-137	ND (0.70)	ND (0.51)
	Gross β	ND (0.66)	ND (0.32)
	H-3	52	52
September 28 th , 2023 *Discharged on October 4 th	Cs-134	ND (0.53)	ND (0.66)
	Cs-137	ND (0.79)	ND (0.51)
	Gross β	ND (0.68)	ND (0.32)
	H-3	49	54

- * * 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 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
August 3 rd , 2023	Cs-134	ND (0.0028)	ND (0.0045)	ND (0.0068)
	Cs-137	ND (0.0019)	ND (0.0038)	ND (0.0039)
	Gross α	ND (0.38)	ND (2.0)	ND (2.3)
	Gross β	ND (0.38)	ND (0.63)	ND (0.58)
	H-3	52	55	54
	Sr-90	ND (0.0012)	ND (0.0011)	ND (0.0054)

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

(Reference)

(Unit: Bq/L)

Radionuclides	Operational Targets	Density Limit specified by the	World Health Organization (WHO) Guidelines
---------------	---------------------	--------------------------------	--

		Reactor Regulation	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.

※ The reference table shows the values of operational targets before discharge. Since the values after discharge contain natural radioactive materials in seawater, there will be differences between the values and the operational targets values.

Appendix 6

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 12 th , 2023	Cs-134	ND (0.85)
	Cs-137	ND (0.68)
	Gross β	12
	H-3	ND (0.33)