

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

1. Sub-drain and Groundwater Drain Systems

In September 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 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 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 September, 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 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 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
September 26 th , 2023 *Discharged on October 1 st	Cs-134	ND (0.73)	ND (0.62)
	Cs-137	ND (0.70)	ND (0.62)
	Gross β	ND (2.0)	0.42
	H-3	910	960
September 25 th , 2023 *Discharged on September 30 th	Cs-134	ND (0.65)	ND (0.62)
	Cs-137	ND (0.60)	ND (0.57)
	Gross β	ND (2.0)	ND (0.34)
	H-3	940	970
September 24 th , 2023 *Discharged on September 29 th	Cs-134	ND (0.65)	ND (0.62)
	Cs-137	ND (0.59)	ND (0.51)
	Gross β	ND (2.1)	ND (0.38)
	H-3	890	940
September 23 th , 2023 *Discharged on September 28 th	Cs-134	ND (0.55)	ND (0.67)
	Cs-137	ND (0.64)	ND (0.72)
	Gross β	ND (0.18)	ND (0.34)
	H-3	840	910
September 22 nd , 2023 *Discharged on September 27 th	Cs-134	ND (0.94)	ND (0.63)
	Cs-137	ND (0.52)	ND (0.58)
	Gross β	ND (0.67)	ND (0.35)
	H-3	820	870
September 21 st , 2023 *Discharged on September 26 th	Cs-134	ND (0.71)	ND (0.61)
	Cs-137	ND (0.77)	ND (0.50)
	Gross β	ND (1.8)	ND (0.33)
	H-3	790	860
September 20 th , 2023 *Discharged on September 25 th	Cs-134	ND (0.55)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.64)
	Gross β	ND (2.1)	ND (0.35)
	H-3	740	810
September 19 th , 2023 *Discharged on	Cs-134	ND (0.66)	ND (0.64)
	Cs-137	ND (0.67)	ND (0.62)

September 24 th	Gross β	ND (2.0)	0.36
	H-3	780	820
September 18 th , 2023 *Discharged on September 23 th	Cs-134	ND (0.64)	ND (0.63)
	Cs-137	ND (0.70)	ND (0.54)
	Gross β	ND (1.7)	ND (0.28)
	H-3	830	870
September 17 th , 2023 *Discharged on September 22 nd	Cs-134	ND (0.64)	ND (0.58)
	Cs-137	ND (0.74)	ND (0.59)
	Gross β	ND (1.9)	ND (0.34)
	H-3	780	830
September 16 th , 2023 *Discharged on September 21 st	Cs-134	ND (0.75)	ND (0.62)
	Cs-137	ND (0.61)	ND (0.57)
	Gross β	ND (2.0)	ND (0.33)
	H-3	760	820
September 15 th , 2023 *Discharged on September 20 th	Cs-134	ND (0.69)	ND (0.63)
	Cs-137	ND (0.78)	ND (0.54)
	Gross β	ND (0.67)	ND (0.33)
	H-3	630	640
September 14 th , 2023 *Discharged on September 19 th	Cs-134	ND (0.65)	ND (0.75)
	Cs-137	ND (0.88)	ND (0.64)
	Gross β	ND (1.8)	ND (0.33)
	H-3	500	530
September 13 th , 2023 *Discharged on September 18 th	Cs-134	ND (0.75)	ND (0.57)
	Cs-137	ND (0.69)	ND (0.54)
	Gross β	ND (1.9)	ND (0.32)
	H-3	540	580
September 12 th , 2023 *Discharged on September 17 th	Cs-134	ND (0.78)	ND (0.64)
	Cs-137	ND (0.69)	ND (0.51)
	Gross β	ND (1.7)	ND (0.31)
	H-3	560	590
September 11 th , 2023 *Discharged on September 16 th	Cs-134	ND (0.63)	ND (0.56)
	Cs-137	ND (0.63)	ND (0.57)
	Gross β	ND (1.8)	ND (0.29)
	H-3	560	590
September 10 th , 2023 *Discharged on September 15 th	Cs-134	ND (0.62)	ND (0.60)
	Cs-137	ND (0.57)	ND (0.64)
	Gross β	ND (1.8)	ND (0.33)
	H-3	590	640
September 9 th , 2023 *Discharged on September 14 th	Cs-134	ND (0.69)	ND (0.63)
	Cs-137	ND (0.65)	ND (0.58)
	Gross β	ND (2.0)	ND (0.33)

	H-3	690	730
September 8 th , 2023 *Discharged on September 13 th	Cs-134	ND (0.89)	ND (0.57)
	Cs-137	ND (0.58)	ND (0.61)
	Gross β	ND (0.56)	ND (0.32)
	H-3	640	690
September 7 th , 2023 *Discharged on September 12 th	Cs-134	ND (0.69)	ND (0.73)
	Cs-137	ND (0.59)	ND (0.72)
	Gross β	ND (2.0)	ND (0.32)
	H-3	660	720
September 6 th , 2023 *Discharged on September 11 th	Cs-134	ND (0.79)	ND (0.68)
	Cs-137	ND (0.77)	ND (0.64)
	Gross β	ND (2.1)	ND (0.31)
	H-3	740	800
September 5 th , 2023 *Discharged on September 10 th	Cs-134	ND (0.67)	ND (0.47)
	Cs-137	ND (0.84)	ND (0.51)
	Gross β	ND (2.1)	ND (0.35)
	H-3	880	890
September 4 th , 2023 *Discharged on September 9 th	Cs-134	ND (0.72)	ND (0.60)
	Cs-137	ND (0.69)	ND (0.54)
	Gross β	ND (1.8)	ND (0.28)
	H-3	860	940
September 3 rd , 2023 *Discharged on September 8 th	Cs-134	ND (0.69)	ND (0.72)
	Cs-137	ND (0.61)	ND (0.54)
	Gross β	ND (2.2)	ND (0.33)
	H-3	800	880
September 2 nd , 2023 *Discharged on September 7 ^h	Cs-134	ND (0.80)	ND (0.68)
	Cs-137	ND (0.76)	ND (0.59)
	Gross β	ND (1.8)	ND (0.34)
	H-3	830	880
September 1 st , 2023 *Discharged on September 6 ^h	Cs-134	ND (0.75)	ND (0.58)
	Cs-137	ND (0.56)	ND (0.48)
	Gross β	ND (0.72)	ND (0.36)
	H-3	850	900
August 31 st , 2023 *Discharged on September 5 th	Cs-134	ND (0.61)	ND (0.60)
	Cs-137	ND (0.79)	ND (0.58)
	Gross β	ND (2.0)	ND (0.32)
	H-3	910	960
August 30 th , 2023 *Discharged on September 4 ^h	Cs-134	ND (0.71)	ND (0.71)
	Cs-137	ND (0.54)	ND (0.67)
	Gross β	ND (1.5)	ND (0.33)
	H-3	880	940

August 29 th , 2023 *Discharged on September 3 rd	Cs-134	ND (0.66)	ND (0.55)
	Cs-137	ND (0.67)	ND (0.59)
	Gross β	ND (2.0)	ND (0.33)
	H-3	830	910
August 28 th , 2023 *Discharged on September 2 nd	Cs-134	ND (0.80)	ND (0.48)
	Cs-137	ND (0.67)	ND (0.64)
	Gross β	ND (1.9)	ND (0.36)
	H-3	910	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
Aug 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
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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.

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)

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
September 21 st , 2023 *Discharged on September 26 th	Cs-134	ND (0.69)	ND (0.65)
	Cs-137	ND (0.55)	ND (0.61)
	Gross β	ND (0.59)	ND (0.34)
	H-3	47	51
September 14 th , 2023 *Discharged on September 21 st	Cs-134	ND (0.66)	ND (0.67)
	Cs-137	ND (0.72)	ND (0.51)
	Gross β	ND (0.62)	ND (0.34)
	H-3	47	54
September 7 th , 2023 *Discharged on September 12 th	Cs-134	ND (0.98)	ND (0.58)
	Cs-137	ND (0.72)	ND (0.59)
	Gross β	ND (0.70)	ND (0.32)
	H-3	53	54
August 31 st , 2023 *Discharged on September 5 th	Cs-134	ND (0.65)	ND (0.70)
	Cs-137	ND (0.64)	ND (0.72)
	Gross β	ND (0.65)	ND (0.31)
	H-3	56	55

- * * 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
Aug 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 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.

※ 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.

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)