

# **Information, September, 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 August**

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 August at Fukushima Daiichi Nuclear Power Station (NPS).

### **1. Sub-drain and Groundwater Drain Systems**

In August 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 August 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 August 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

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
August 27 <sup>th</sup> , 2023  *Discharged on September 1 <sup>st</sup>	Cs-134	ND (0.71)	ND (0.51)
	Cs-137	ND (0.65)	ND (0.57)
	Gross $\beta$	ND (1.9)	ND (0.35)
	H-3	910	980
August 25 <sup>th</sup> , 2023  *Discharged on August 30 <sup>th</sup>	Cs-134	ND (0.74)	ND (0.57)
	Cs-137	ND (0.72)	ND (0.75)
	Gross $\beta$	ND (1.7)	ND (0.32)
	H-3	840	900
August 23 <sup>th</sup> , 2023  *Discharged on August 28 <sup>th</sup>	Cs-134	ND (0.57)	ND (0.60)
	Cs-137	ND (0.67)	ND (0.64)
	Gross $\beta$	ND (0.58)	ND (0.37)
	H-3	920	1,000
August 22 <sup>nd</sup> , 2023  *Discharged on August 27 <sup>th</sup>	Cs-134	ND (0.77)	ND (0.79)
	Cs-137	ND (0.74)	ND (0.70)
	Gross $\beta$	ND (1.8)	ND (0.35)
	H-3	900	980
August 21 <sup>st</sup> , 2023  *Discharged on August 26 <sup>th</sup>	Cs-134	ND (0.55)	ND (0.53)
	Cs-137	ND (0.78)	ND (0.54)
	Gross $\beta$	ND (2.1)	ND (0.31)
	H-3	890	970
August 20 <sup>th</sup> , 2023  *Discharged on August 25 <sup>th</sup>	Cs-134	ND (0.85)	ND (0.49)
	Cs-137	ND (0.65)	ND (0.58)
	Gross $\beta$	ND (1.9)	ND (0.33)
	H-3	900	990
August 19 <sup>th</sup> , 2023  *Discharged on August 24 <sup>th</sup>	Cs-134	ND (0.80)	ND (0.54)
	Cs-137	ND (0.67)	ND (0.61)
	Gross $\beta$	ND (1.7)	ND (0.31)
	H-3	880	930
August 18 <sup>th</sup> , 2023  *Discharged on August 23 <sup>th</sup>	Cs-134	ND (0.80)	ND (0.60)
	Cs-137	ND (0.67)	ND (0.75)
	Gross $\beta$	ND (1.8)	ND (0.35)

	H-3	820	870
August 17 <sup>th</sup> , 2023  *Discharged on August 22 <sup>nd</sup>	Cs-134	ND (0.66)	ND (0.63)
	Cs-137	ND (0.67)	ND (0.50)
	Gross $\beta$	ND (1.9)	ND (0.32)
	H-3	810	820
August 16 <sup>th</sup> , 2023  *Discharged on August 21 <sup>st</sup>	Cs-134	ND (0.72)	ND (0.70)
	Cs-137	ND (0.59)	ND (0.61)
	Gross $\beta$	ND (0.65)	ND (0.38)
	H-3	790	830
August 14 <sup>th</sup> , 2023  *Discharged on August 19 <sup>th</sup>	Cs-134	ND (0.75)	ND (0.55)
	Cs-137	ND (0.61)	ND (0.57)
	Gross $\beta$	ND (1.9)	0.39
	H-3	780	820
August 13 <sup>th</sup> , 2023  *Discharged on August 18 <sup>th</sup>	Cs-134	ND (0.61)	ND (0.83)
	Cs-137	ND (0.77)	ND (0.67)
	Gross $\beta$	ND (1.8)	ND (0.36)
	H-3	770	800
August 12 <sup>th</sup> , 2023  *Discharged on August 17 <sup>th</sup>	Cs-134	ND (0.71)	ND (0.60)
	Cs-137	ND (0.74)	ND (0.67)
	Gross $\beta$	ND (1.8)	ND (0.30)
	H-3	860	870
August 11 <sup>th</sup> , 2023  *Discharged on August 16 <sup>th</sup>	Cs-134	ND (0.57)	ND (0.64)
	Cs-137	ND (0.76)	ND (0.54)
	Gross $\beta$	ND (2.0)	ND (0.36)
	H-3	830	880
August 10 <sup>th</sup> , 2023  *Discharged on August 15 <sup>th</sup>	Cs-134	ND (0.66)	ND (0.42)
	Cs-137	ND (0.62)	ND (0.54)
	Gross $\beta$	ND (1.8)	ND (0.36)
	H-3	850	900
August 9 <sup>th</sup> , 2023  *Discharged on August 14 <sup>th</sup>	Cs-134	ND (0.91)	ND (0.75)
	Cs-137	ND (0.67)	ND (0.64)
	Gross $\beta$	ND (0.59)	ND (0.36)
	H-3	780	830
August 8 <sup>th</sup> , 2023  *Discharged on August 13 <sup>th</sup>	Cs-134	ND (0.86)	ND (0.61)
	Cs-137	ND (0.62)	ND (0.57)
	Gross $\beta$	ND (1.9)	ND (0.37)
	H-3	840	880
August 7 <sup>th</sup> , 2023  *Discharged on August 12 <sup>th</sup>	Cs-134	ND (0.57)	ND (0.64)
	Cs-137	ND (0.55)	ND (0.51)
	Gross $\beta$	ND (2.0)	ND (0.36)
	H-3	830	910

August 6 <sup>th</sup> , 2023  *Discharged on August 11 <sup>th</sup>	Cs-134	ND (0.86)	ND (0.68)
	Cs-137	ND (0.60)	ND (0.70)
	Gross $\beta$	ND (1.5)	ND (0.33)
	H-3	810	860
August 5 <sup>th</sup> , 2023  *Discharged on August 10 <sup>th</sup>	Cs-134	ND (0.62)	ND (0.60)
	Cs-137	ND (0.61)	ND (0.59)
	Gross $\beta$	ND (1.8)	ND (0.31)
	H-3	840	870
August 4 <sup>th</sup> , 2023  *Discharged on August 9 <sup>th</sup>	Cs-134	ND (0.71)	ND (0.65)
	Cs-137	ND (0.86)	ND (0.44)
	Gross $\beta$	ND (1.8)	0.49
	H-3	870	930
August 3 <sup>rd</sup> , 2023  *Discharged on August 8 <sup>th</sup>	Cs-134	ND (0.74)	ND (0.52)
	Cs-137	ND (0.55)	ND (0.72)
	Gross $\beta$	ND (1.8)	ND (0.33)
	H-3	830	870
August 2 <sup>nd</sup> , 2023  *Discharged on August 7 <sup>h</sup>	Cs-134	ND (0.75)	ND (0.81)
	Cs-137	ND (0.69)	ND (0.61)
	Gross $\beta$	ND (0.65)	ND (0.33)
	H-3	880	900
July 31 <sup>th</sup> , 2023  *Discharged on August 5 <sup>th</sup>	Cs-134	ND (0.74)	ND (0.47)
	Cs-137	ND (0.55)	ND (0.59)
	Gross $\beta$	ND (1.8)	ND (0.33)
	H-3	830	850
July 30 <sup>th</sup> , 2023  *Discharged on August 4 <sup>h</sup>	Cs-134	ND (0.96)	ND (0.53)
	Cs-137	ND (0.67)	ND (0.51)
	Gross $\beta$	ND (1.7)	ND (0.31)
	H-3	750	810
July 29 <sup>th</sup> , 2023  *Discharged on August 3 <sup>rd</sup>	Cs-134	ND (0.74)	ND (0.70)
	Cs-137	ND (0.67)	ND (0.54)
	Gross $\beta$	ND (1.9)	ND (0.36)
	H-3	740	790
July 28 <sup>th</sup> , 2023  *Discharged on August 2 <sup>nd</sup>	Cs-134	ND (0.74)	ND (0.68)
	Cs-137	ND (0.67)	ND (0.70)
	Gross $\beta$	ND (0.68)	ND (0.31)
	H-3	780	820

- \* \* 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
July 1 <sup>st</sup> ,2023	Cs-134	ND (0.0033)	ND (0.0051)	ND (0.0065)
	Cs-137	0.0035	0.0066	ND (0.0047)
	Gross $\alpha$	ND (0.28)	ND (2.2)	ND (2.1)
	Gross $\beta$	ND (0.45)	ND (0.65)	ND (0.59)
	H-3	860	820	870
	Sr-90	0.0035	0.0037	0.0078

\* 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 $\alpha$	—	—	—
Gross $\beta$	3 (1) ※	—	—
H-3	1,500	60,000	10,000
Sr-90	—	30	10

※ The operational target of Gross  $\beta$  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)
June 7 <sup>th</sup> , 2023  *Sampled before discharge of purified groundwater.	Cs-134	ND (0.84)
	Cs-137	ND (0.61)
	Gross $\beta$	14
	H-3	ND (0.34)

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
August 24 <sup>th</sup> , 2023  *Discharged on August 29 <sup>th</sup>	Cs-134	ND (0.73)	ND (0.55)
	Cs-137	ND (0.67)	ND (0.64)
	Gross $\beta$	ND (0.62)	ND (0.31)
	H-3	50	56
August 17 <sup>th</sup> , 2023  *Discharged on August 22 <sup>nd</sup>	Cs-134	ND (0.74)	ND (0.73)
	Cs-137	ND (0.72)	ND (0.64)
	Gross $\beta$	ND (0.59)	ND (0.33)
	H-3	56	58
August 10 <sup>th</sup> , 2023  *Discharged on August 15 <sup>th</sup>	Cs-134	ND (0.61)	ND (0.41)
	Cs-137	ND (0.74)	ND (0.61)
	Gross $\beta$	ND (0.66)	ND (0.33)
	H-3	54	55
August 3 <sup>rd</sup> , 2023  *Discharged on August 8 <sup>th</sup>	Cs-134	ND (0.74)	ND (0.60)
	Cs-137	ND (0.80)	ND (0.67)
	Gross $\beta$	ND (0.63)	ND (0.33)
	H-3	52	56

- \* \* 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
July 5 <sup>st</sup> , 2023	Cs-134	ND (0.0038)	ND (0.0053)	ND (0.0063)
	Cs-137	ND (0.0029)	ND (0.0040)	ND (0.0047)
	Gross $\alpha$	ND (0.37)	ND (2.2)	ND (2.1)
	Gross $\beta$	ND (0.38)	ND (0.65)	ND (0.57)
	H-3	47	48	48
	Sr-90	0.0011	ND (0.0013)	0.0066

\* 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 $\alpha$	—	—	—
Gross $\beta$	5 (1) ※	—	—
H-3	1,500	60,000	10,000
Sr-90	—	30	10

※ The operational target of Gross  $\beta$  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)
June 7 <sup>th</sup> , 2023	Cs-134	ND (0.83)
	Cs-137	ND (0.65)
	Gross $\beta$	9.5
	H-3	ND (0.31)