

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

1. Subdrain and Groundwater Drain Systems

In September, purified groundwater pumped from the subdrain 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>)

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 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 |
| September 25 th , 2020 *Discharged on September 30 th | Cs-134 | ND (0.72) | ND (0.72) |
| | Cs-137 | ND (0.54) | ND (0.54) |
| | Gross β | ND (1.8) | ND (0.32) |
| | H-3 | 850 | 910 |
| September 24 th , 2020 *Discharged on August 29 th | Cs-134 | ND (0.79) | ND (0.70) |
| | Cs-137 | ND (0.69) | ND (0.78) |
| | Gross β | ND (1.8) | ND (0.32) |
| | H-3 | 900 | 970 |
| September 23 rd , 2020 *Discharged on September 28 th | Cs-134 | ND (0.68) | ND (0.59) |
| | Cs-137 | ND (0.73) | ND (0.61) |
| | Gross β | ND (1.8) | ND (0.34) |
| | H-3 | 970 | 1,000 |
| September 22 nd , 2020 *Discharged on September 27 th | Cs-134 | ND (0.56) | ND (0.69) |
| | Cs-137 | ND (0.65) | ND (0.51) |
| | Gross β | ND (2.0) | ND (0.35) |
| | H-3 | 990 | 1,000 |
| September 21 st , 2020 *Discharged on September 26 th | Cs-134 | ND (0.70) | ND (0.50) |
| | Cs-137 | ND (0.73) | ND (0.54) |
| | Gross β | ND (1.8) | ND (0.33) |
| | H-3 | 940 | 1,000 |
| September 20 th , 2020 *Discharged on September 25 th | Cs-134 | ND (0.45) | ND (0.76) |
| | Cs-137 | ND (0.80) | ND (0.67) |
| | Gross β | ND (1.7) | ND (0.35) |
| | H-3 | 800 | 860 |
| September 19 th , 2020 *Discharged on September 24 th | Cs-134 | ND (0.63) | ND (0.79) |
| | Cs-137 | ND (0.69) | ND (0.77) |
| | Gross β | ND (1.8) | ND (0.33) |
| | H-3 | 730 | 780 |

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|---|---------------|-----------|-----------|
| September 18 th , 2020 *Discharged on September 23 rd | Cs-134 | ND (0.45) | ND (0.87) |
| | Cs-137 | ND (0.54) | ND (0.89) |
| | Gross β | ND (0.63) | ND (0.32) |
| | H-3 | 640 | 680 |
| September 17 th , 2020 *Discharged on September 22 nd | Cs-134 | ND (0.70) | ND (0.61) |
| | Cs-137 | ND (0.65) | ND (0.63) |
| | Gross β | ND (1.9) | ND (0.31) |
| | H-3 | 610 | 660 |
| September 16 th , 2020 *Discharged on September 21 st | Cs-134 | ND (0.72) | ND (0.69) |
| | Cs-137 | ND (0.65) | ND (0.54) |
| | Gross β | ND (1.8) | ND (0.35) |
| | H-3 | 630 | 660 |
| September 15 th , 2020 *Discharged on September 20 th | Cs-134 | ND (0.69) | ND (0.64) |
| | Cs-137 | ND (0.47) | ND (0.54) |
| | Gross β | ND (1.8) | ND (0.29) |
| | H-3 | 620 | 670 |
| September 14 th , 2020 *Discharged on September 19 th | Cs-134 | ND (0.73) | ND (0.59) |
| | Cs-137 | ND (0.74) | ND (0.63) |
| | Gross β | ND (1.8) | ND (0.32) |
| | H-3 | 830 | 880 |
| September 13 th , 2020 *Discharged on September 18 th | Cs-134 | ND (0.67) | ND (0.63) |
| | Cs-137 | ND (0.60) | ND (0.63) |
| | Gross β | ND (1.9) | ND (0.35) |
| | H-3 | 880 | 970 |
| September 12 th , 2020 *Discharged on September 17 th | Cs-134 | ND (0.64) | ND (0.69) |
| | Cs-137 | ND (0.60) | ND (0.63) |
| | Gross β | ND (1.9) | ND (0.37) |
| | H-3 | 920 | 970 |
| September 11 th , 2020 *Discharged on September 16 th | Cs-134 | ND (0.61) | ND (0.55) |
| | Cs-137 | ND (0.54) | ND (0.66) |
| | Gross β | ND (0.57) | ND (0.35) |
| | H-3 | 1,000 | 1,100 |
| September 10 th , 2020 *Discharged on September 15 th | Cs-134 | ND (0.49) | ND (0.53) |
| | Cs-137 | ND (0.77) | ND (0.63) |
| | Gross β | ND (1.3) | ND (0.32) |
| | H-3 | 930 | 1,000 |
| September 9 th , 2020 *Discharged on September 14 th | Cs-134 | ND (0.79) | ND (0.62) |
| | Cs-137 | ND (0.65) | ND (0.69) |
| | Gross β | ND (2.0) | ND (0.39) |
| | H-3 | 880 | 920 |
| September 8 th , 2020 | Cs-134 | ND (0.85) | ND (0.58) |

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|--|---------------|-----------|-----------|
| *Discharged on September 13 th | Cs-137 | ND (0.65) | ND (0.66) |
| | Gross β | ND (1.9) | ND (0.36) |
| | H-3 | 860 | 910 |
| September 7 th , 2020 *Discharged on September 12 th | Cs-134 | ND (0.76) | ND (0.59) |
| | Cs-137 | ND (0.65) | ND (0.61) |
| | Gross β | ND (2.0) | ND (0.38) |
| | H-3 | 750 | 790 |
| September 6 th , 2020 *Discharged on September 11 th | Cs-134 | ND (0.58) | ND (0.61) |
| | Cs-137 | ND (0.54) | ND (0.69) |
| | Gross β | ND (2.0) | ND (0.36) |
| | H-3 | 750 | 790 |
| September 5 th , 2020 *Discharged on September 10 th | Cs-134 | ND (0.71) | ND (0.83) |
| | Cs-137 | ND (0.65) | ND (0.61) |
| | Gross β | ND (1.9) | ND (0.34) |
| | H-3 | 780 | 810 |
| September 4 th , 2020 *Discharged on September 9 th | Cs-134 | ND (0.56) | ND (0.61) |
| | Cs-137 | ND (0.65) | ND (0.61) |
| | Gross β | ND (1.7) | ND (0.35) |
| | H-3 | 890 | 970 |
| September 3 rd , 2020 *Discharged on September 8 th | Cs-134 | ND (0.73) | ND (0.67) |
| | Cs-137 | ND (0.54) | ND (0.63) |
| | Gross β | ND (2.1) | ND (0.36) |
| | H-3 | 850 | 910 |
| September 2 nd , 2020 *Discharged on September 7 th | Cs-134 | ND (0.64) | ND (0.60) |
| | Cs-137 | ND (0.69) | ND (0.63) |
| | Gross β | ND (2.1) | ND (0.35) |
| | H-3 | 860 | 910 |
| September 1 st , 2020 *Discharged on September 6 th | Cs-134 | ND (0.64) | ND (0.57) |
| | Cs-137 | ND (0.65) | ND (0.73) |
| | Gross β | ND (0.64) | ND (0.36) |
| | H-3 | 870 | 920 |
| August 31 st , 2020 *Discharged on September 5 th | Cs-134 | ND (0.85) | ND (0.47) |
| | Cs-137 | ND (0.47) | ND (0.58) |
| | Gross β | ND (2.1) | ND (0.36) |
| | H-3 | 880 | 920 |
| August 30 th , 2020 *Discharged on September 4 th | Cs-134 | ND (0.61) | ND (0.55) |
| | Cs-137 | ND (0.84) | ND (0.63) |
| | Gross β | ND (1.9) | 0.39 |
| | H-3 | 900 | 940 |
| August 29 th , 2020 *Discharged on September 3 rd | Cs-134 | ND (0.50) | ND (0.87) |
| | Cs-137 | ND (0.69) | ND (0.67) |
| | Gross β | ND (1.9) | 0.39 |

| | | | |
|---|---------------|-----------|-----------|
| | H-3 | 870 | 940 |
| August 28 th , 2020 *Discharged on September 2 nd | Cs-134 | ND (0.72) | ND (0.81) |
| | Cs-137 | ND (0.65) | ND (0.77) |
| | Gross β | ND (2.0) | ND (0.41) |
| | H-3 | 920 | 970 |
| August 27 th , 2020 *Discharged on September 1 st | Cs-134 | ND (0.45) | ND (0.53) |
| | Cs-137 | ND (0.54) | ND (0.57) |
| | Gross β | ND (0.69) | ND (0.33) |
| | H-3 | 910 | 970 |

- * * 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 |
| August 1 st ,2020 | Cs-134 | ND (0.0028) | ND (0.0046) | ND (0.0065) |
| | Cs-137 | 0.023 | 0.025 | 0.0023 |
| | Gross α | ND (0.61) | ND (3.4) | ND (1.9) |
| | Gross β | ND (0.47) | ND (0.64) | ND (0.52) |
| | H-3 | 1,100 | 1,000 | 1,100 |
| | Sr-90 | 0.0077 | 0.0088 | 0.013 |

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

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 3 rd , 2020 *Sampled before discharge of purified groundwater. | Cs-134 | ND (0.73) |
| | Cs-137 | ND (0.50) |
| | Gross β | 10 |
| | H-3 | ND (0.82) |

(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.

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 |
| September 16 th , 2020 *Discharged on September 24 th | Cs-134 | ND (0.56) | ND (0.77) |
| | Cs-137 | ND (0.73) | ND (0.66) |
| | Gross β | ND (0.68) | ND (0.35) |
| | H-3 | 86 | 92 |
| September 9 th , 2020 *Discharged on September 17 th | Cs-134 | ND (0.82) | ND (0.53) |
| | Cs-137 | ND (0.69) | ND (0.53) |
| | Gross β | ND (0.65) | ND (0.49) |
| | H-3 | 89 | 93 |
| September 2 nd , 2020 *Discharged on September 10 th | Cs-134 | ND (0.41) | ND (0.53) |
| | Cs-137 | ND (0.65) | ND (0.45) |
| | Gross β | ND (0.67) | ND (0.54) |
| | H-3 | 100 | 110 |
| August 26 th , 2020 *Discharged on September 3 rd | Cs-134 | ND (0.57) | ND (0.48) |
| | Cs-137 | ND (0.65) | ND (0.39) |
| | Gross β | ND (0.74) | ND (0.53) |
| | H-3 | 110 | 100 |

- * * 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.

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 5 th , 2020 | Cs-134 | ND (0.0024) | ND (0.0046) | ND (0.0064) |
| | Cs-137 | ND (0.0021) | ND (0.0043) | ND (0.0043) |
| | Gross α | ND (0.51) | ND (3.2) | ND (1.9) |
| | Gross β | ND (0.48) | ND (0.66) | ND (0.51) |
| | H-3 | 120 | 110 | 120 |
| | Sr-90 | ND (0.0012) | ND (0.0014) | ND (0.0054) |

* 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) |
|--|-------------------|---|
| September 3 rd , 2020 | Cs-134 | ND (0.85) |
| | Cs-137 | ND (0.65) |
| | Gross β | 13 |
| | H-3 | ND (0.82) |

(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.