Information (14:00), January 4, 2017

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 2016

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 December 2016 at Fukushima Daiichi Nuclear Power Station (NPS).

1. Subdrain and Groundwater Drain Systems

In last December, 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 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 (Mitsubishi Nuclear Fuel Co., Ltd, Kaken Co., Ltd and 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 is 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 are 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 sampling process for analyses conducted this month is the same as the one announced 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 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
December 23rd, 2016 *Discharged on December 28th	Cs-134	ND (0.60)	ND (0.63)
	Cs-137	ND (0.71)	ND (0.53)
	Gross β	ND (2.5)	ND (0.34)
	H-3	560	580
December 21st, 2016 *Discharged on December 26th	Cs-134	ND (0.54)	ND (0.80)
	Cs-137	ND (0.63)	ND (0.70)
	Gross β	ND (2.4)	ND (0.35)
	H-3	590	620
December 20th, 2016 *Discharged on December 25th	Cs-134	ND (0.58)	ND (0.84)
	Cs-137	ND (0.58)	ND (0.82)
	Gross β	ND (2.7)	ND (0.34)
	H-3	670	700
December 18th, 2016 *Discharged on December 23rd	Cs-134	ND (0.52)	ND (0.65)
	Cs-137	ND (0.68)	ND (0.63)
	Gross β	ND (0.72)	ND (0.36)
	H-3	580	620
December 17th, 2016 *Discharged on December 22nd	Cs-134	ND (0.60)	ND (0.98)
	Cs-137	ND (0.63)	ND (0.78)
	Gross β	ND (2.5)	ND (0.38)
	H-3	570	590
December 16th, 2016 *Discharged on December 21st	Cs-134	ND (0.74)	ND (0.60)
	Cs-137	ND (0.68)	ND (0.68)
	Gross β	ND (2.5)	ND (0.38)
	H-3	590	610
December 14th, 2016 *Discharged on December 19th	Cs-134	ND (0.52)	ND (0.70)
	Cs-137	ND (0.71)	ND (0.61)
	Gross β	ND (2.4)	ND (0.33)
	H-3	560	590
December 12th, 2016 *Discharged on December 17th	Cs-134	ND (0.74)	ND (0.48)
	Cs-137	ND (0.58)	ND (0.57)
	Gross β	ND (2.0)	ND (0.31)
	H-3	580	610

December 11th, 2016 *Discharged on December 16th	Cs-134	ND (0.76)	ND (0.78)
	Cs-137	ND (0.71)	ND (0.65)
	Gross β	ND (2.5)	ND (0.32)
	H-3	640	660
December 10th, 2016 *Discharged on December 15th	Cs-134	ND (0.76)	ND (0.57)
	Cs-137	ND (0.73)	ND (0.63)
	Gross β	ND (0.75)	ND (0.31)
	H-3	640	460
December 8th, 2016 *Discharged on December 14th	Cs-134	ND (0.71)	ND (0.82)
	Cs-137	ND (0.73)	ND (0.65)
	Gross β	ND (2.4)	ND (0.32)
	H-3	650	680
December 7th, 2016 *Discharged on December 12nd	Cs-134	ND (0.76)	ND (0.77)
	Cs-137	ND (0.73)	ND (0.86)
	Gross β	ND (2.4)	ND(0.33)
	H-3	640	680
December 5th, 2016 *Discharged on December 10th	Cs-134	ND (0.58)	ND (0.67)
	Cs-137	ND (0.71)	ND (0.78)
	Gross β	ND (2.3)	ND (0.31)
	H-3	640	680
December 4th, 2016 *Discharged on December 9th	Cs-134	ND (0.74)	ND (0.61)
	Cs-137	ND (0.46)	ND (0.65)
	Gross β	ND (2.4)	ND (0.31)
	H-3	600	630
December 1st, 2016 *Discharged on December 7th	Cs-134	ND (0.67)	ND (0.60)
	Cs-137	ND (0.63)	ND (0.71)
	Gross β	ND (0.75)	ND(0.33)
	H-3	640	680
November 29th, 2016 *Discharged on December 5th	Cs-134	ND (0.44)	ND (0.72)
	Cs-137	ND (0.58)	ND (0.46)
	Gross β	ND (2.5)	ND (0.30)
	H-3	660	680
November 29th, 2016 *Discharged on December 4th	Cs-134	ND (0.52)	ND (0.64)
	Cs-137	ND (0.68)	ND (0.61)
	Gross β	ND (2.5)	ND (0.31)
	H-3	640	700

- * 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 : Mitsubishi Nuclear Fuel Co., Ltd, Kaken Co., Ltd and 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 2nd,2016	Cs-134	ND (0.0027)	ND (0.0046)	ND (0.0056)
	Cs-137	0.0078	0.0080	0.0093
	Gross α	ND (0.55)	ND (2.6)	ND (2.7)
	Gross β	ND (0.46)	ND (0.75)	ND (0.55)
	H-3	530	500	510
	Sr-90	ND (0.0027)	ND (0.0011)	ND (0.0061)

* 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 7th, 2016 *During discharge	Cs-134	ND (0.61)
	Cs-137	ND (0.76)
	Gross β	16
	H-3	ND(1.7)

(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 14th, 2016 *Discharged on December 27th	Cs-134	ND (0.65)	ND (0.68)
	Cs-137	ND (0.58)	ND (0.68)
	Gross β	ND (0.75)	ND (0.69)
	H-3	130	140
December 7th, 2016 *Discharged on December 20th	Cs-134	ND (0.60)	ND (0.63)
	Cs-137	ND (0.56)	ND (0.73)
	Gross β	ND (0.72)	ND (0.54)
	H-3	120	140
November 30th, 2016 *Discharged on December 13th	Cs-134	ND (0.52)	ND (0.73)
	Cs-137	ND (0.68)	ND (0.48)
	Gross β	ND (0.64)	ND (0.59)
	H-3	130	140
November 24th, 2016 *Discharged on December 6th	Cs-134	ND (0.68)	ND (0.50)
	Cs-137	ND (0.63)	ND (0.76)
	Gross β	ND (0.75)	ND (0.51)
	H-3	130	130

* * 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 2nd, 2016	Cs-134	ND (0.0029)	ND (0.0040)	ND (0.0059)
	Cs-137	ND (0.0026)	ND (0.0041)	ND (0.0039)
	Gross α	ND (0.64)	ND (2.6)	ND (2.7)
	Gross β	ND (0.45)	ND (0.68)	ND (0.54)
	H-3	170	150	160
	Sr-90	ND(0.0014)	ND (0.0015)	ND (0.0076)

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

Appendix 6

Results of analyses on the seawater sampled near the discharge point (Around South Discharge Channel)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Sampling point (South discharge channel)
December 20th, 2016 *Discharged on December 23rd	Cs-134	ND (0.66)
	Cs-137	ND (0.58)
	Gross β	13
	H-3	ND (1.5)

(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.