Information (18:45), November 2, 2015

To All Missions (Embassies, Consular posts and International Organizations in Japan)

Report on the discharge record and the sea water monitoring results at Fukushima Daiichi NPS during September and October

The Ministry of Foreign Affairs wishes to provide all Missions with a report on the discharge record and the sea water monitoring results with regard to the discharge of groundwater pumped up from the subdrain and groundwater drain systems during September and October as well as groundwater pumped up for bypassing in October at Fukushima Daiichi Nuclear Power Station (NPS).

1. Subdrain and Groundwater Drain Systems

Purified groundwater pumped up from the subdrain and groundwater drain systems was discharged on September 14th, 15th, 17th, 18th, 28th and on October 2nd, 3rd, 5th, 6th, 8th, 9th, 11th, 15th, 16th, 18th, 20th, 22nd, 23rd, 25th, 27th, 30th, and 31st (see Sheet 1,2 and 3). Each time in advance of the discharge, an analysis on the quality of the purified groundwater to be discharged is conducted by TEPCO and the result is announced.

All the results have confirmed that the radiation level of sampled water have been substantially below the operational targets set by TEPCO (these operational targets are set at very low level compared to the legal discharge limits).

The results of the analysis were also confirmed by Japan Atomic Energy Agency (JAEA) (see Sheet 4).

In addition, TEPCO and JAEA (on the request of the Government of Japan) regularly conduct a more detailed analysis on the purified groundwater. The results of JAEA's latest analysis confirmed that TEPCO's analysis was accurate and verified that the radiation level of sampled groundwater is substantially below the operational target (see Sheet 5).

Moreover, TEPCO publishes the result of analysis on seawater sampled during the operation around the port area (see Sheet 6). The result shows that the radiation level of seawater remains low enough compared to the density limit specified by the Reactor Regulation and no significant change in the radioactivity has been observed.

2. Groundwater Bypassing

Groundwater pumped up for by-passing was discharged on October 7th, 14th, 21st and 28th (see Sheet 8). Each time in advance of the discharge, an analysis on the quality of the groundwater to be discharged is conducted by TEPCO and the result is announced.

All the results have confirmed that the radiation level of sampled water have been substantially below the operational targets set by TEPCO (these operational targets are set at very low level compared to the legal discharge limits).

The results of the analysis were also confirmed by Japan Chemical Analysis Center.

In addition, TEPCO and JAEA (on the request of the Government of Japan) regularly conduct a more detailed analysis on the groundwater. The results of JAEA's latest analysis confirmed that TEPCO's analysis was accurate and verified that the radiation level of sampled groundwater is substantially below the operational target (see Sheet 9).

Moreover, TEPCO publishes its analysis on seawater sampled during the operation at the nearest seawater sampling post from the discharge point (see Sheet 10). The result shows that the radiation level in seawater remains low enough compared to the density limit specified by the Reactor Regulation and no significant change in the radioactivity has been observed.

This process is the same as the one announced in the Information last month. Results of the analysis are shown as follows:

(For further information, please contact TEPCO (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 analysis on the quality of the purified groundwater having been pumped up 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	Mitsubishi Nuclear Fuel Co., Ltd.
October 21st, 2015 *Discharged on October 31st	Cs-134	ND (0.67)	ND (0.50)
	Cs-137	ND (0.53)	ND (0.52)
	Gross β	ND (0.63)	ND (0.48)
	H-3	200	270
October 19th, 2015 *Discharged on October 30th	Cs-134	ND (0.68)	ND (0.50)
	Cs-137	ND (0.63)	ND (0.56)
	Gross β	ND (0.74)	ND (0.48)
	H-3	230	300
October 17th, 2015 *Discharged on October 27th	Cs-134	ND (0.81)	ND (0.55)
	Cs-137	ND (0.60)	ND (0.49)
	Gross β	ND (2.0)	ND (0.51)
	H-3	210	300
October 15th, 2015 *Discharged on October 25th	Cs-134	ND (0.67)	ND (0.40)
	Cs-137	ND (0.58)	ND (0.59)
	Gross β	ND (2.2)	ND (0.52)
	H-3	220	300
October 13th, 2015 *Discharged on October 23rd	Cs-134	ND (0.71)	ND (0.47)
	Cs-137	ND (0.50)	ND (0.56)
	Gross β	ND (0.85)	ND (0.51)
	H-3	230	290
October 12th, 2015 *Discharged on October 22nd	Cs-134	ND (0.68)	ND (0.48)
	Cs-137	ND (0.53)	ND (0.45)
	Gross β	ND (2.3)	ND (0.51)
	H-3	300	380
October 9th, 2015 *Discharged on October 20th	Cs-134	ND (0.81)	ND (0.39)
	Cs-137	ND (0.58)	ND (0.54)
	Gross β	ND (2.0)	ND (0.48)
	H-3	290	370

(Unit: Bq/L)

October 7th, 2015 *Discharged on October 18th	Cs-134	ND (0.65)	ND (0.54)
	Cs-137	ND (0.58)	ND (0.45)
	Gross β	ND (2.4)	ND (0.50)
	H-3	270	350
October 6th, 2015 *Discharged on October 16th	Cs-134	ND (0.56)	ND (0.46)
	Cs-137	ND (0.58)	ND (0.68)
	Gross β	ND (1.9)	ND (0.50)
	H-3	320	360
October 5th, 2015 *Discharged on October 15th	Cs-134	ND (0.54)	ND (0.54)
	Cs-137	ND (0.63)	ND (0.49)
	Gross β	ND (0.80)	ND (0.50)
	H-3	210	270
October 1st, 2015 *Discharged on October 11th	Cs-134	ND (0.69)	ND (0.47)
	Cs-137	ND (0.80)	ND (0.56)
	Gross β	ND (2.0)	ND (0.49)
	H-3	200	280
September 30th, 2015 *Discharged on October 9th	Cs-134	ND (0.81)	ND (0.62)
	Cs-137	ND (0.76)	ND (0.52)
	Gross β	ND (0.83)	ND (0.51)
	H-3	230	300
September 27th, 2015 *Discharged on October 8th	Cs-134	ND (0.85)	ND (0.54)
	Cs-137	ND (0.66)	ND (0.64)
	Gross β	ND (0.94)	ND (0.49)
	H-3	250	320
September 25th, 2015 *Discharged on October 6th	Cs-134	ND (0.77)	ND (0.43)
	Cs-137	ND (0.58)	ND (0.62)
	Gross β	ND (0.89)	ND (0.50)
	H-3	250	330
September 23rd, 2015 *Discharged on October 5th	Cs-134	ND (0.69)	ND (0.46)
	Cs-137	ND (0.66)	ND (0.47)
	Gross β	ND (0.85)	ND (0.51)
	H-3	320	380
September 21st, 2015 *Discharged on October 3rd	Cs-134	ND (0.79)	ND (0.46)
	Cs-137	ND (0.53)	ND (0.51)
	Gross β	ND (0.85)	ND (0.50)
	H-3	410	500
September 19th, 2015 *Discharged on October 2nd	Cs-134	ND (0.63)	ND (0.49)
	Cs-137	ND (0.53)	ND (0.49)
	Gross β	ND (0.80)	ND (0.49)
	H-3	470	570

(Unit: Bq/L)

September 11th, 2015 *Discharged on September 28th	Cs-134	ND (0.75)	ND (0.53)
	Cs-137	ND (0.67)	ND (0.59)
	Gross β	ND (0.94)	ND (0.50)
	H-3	420	510
August 20th, 2015 *Discharged on September 17th	Cs-134	ND (0.59)	ND (0.47)
	Cs-137	ND (0.58)	ND (0.59)
	Gross β	ND (0.85)	ND (0.49)
	H-3	400	480
August 20th, 2015 *Discharged on September 16th	Cs-134	ND (0.61)	ND (0.53)
	Cs-137	ND (0.76)	ND (0.57)
	Gross β	ND (0.94)	ND (0.50)
	H-3	550	600
August 19th, 2015 *Discharged on September 15th	Cs-134	ND (0.74)	ND (0.39)
	Cs-137	ND (0.78)	ND (0.57)
	Gross β	ND (0.83)	ND (0.49)
	H-3	110	390
August 19th, 2015 *Discharged on September 14th	Cs-134	ND (0.55)	ND (0.43)
	Cs-137	ND (0.58)	ND (0.62)
	Gross β	ND (0.85)	ND (0.47)
	H-3	460	430

* ND represents a value below the detection limit; values in ( ) represent the detection limit.
* In order to ensure the results, Mitsubishi Nuclear Fuel, a third-party organization, has also conducted an analysis and verified the radiation level of the sampled water.

Prior to the first series of discharge of the groundwater pumped up from subdrain and groundwater drain systems, the Government of Japan requested JAEA to conduct an analysis on the purified groundwater to be discharged. The following result of analysis shows that analysis conducted by TEPCO is accurate.

(Unit: Bq/L)

Date of sampling *Date of discharge	Detected nuclides	Analytical body
		JAEA
August 20th, 2015 * Discharged on September 17th	Cs-134	ND (0.85)
	Cs-137	ND (0.71)
	Gross β	ND (0.78)
	H-3	420
August 20th, 2015 * Discharged on September 16th	Cs-134	ND (0.78)
	Cs-137	ND (0.71)
	Gross β	ND (0.77)
	H-3	520
August 19th, 2015 * Discharged on September 15th	Cs-134	ND (0.85)
	Cs-137	ND (0.89)
	Gross β	ND (0.78)
	H-3	350
August 19th, 2015 * Discharged on September 14th	Cs-134	ND (0.91)
	Cs-137	ND (0.93)
	Gross β	ND (0.78)
	H-3	500

Result of detailed analysis conducted by TEPCO, JAEA and Japan Chemical Analysis Center (In order to confirm the validity of analysis, the Government of Japan also requests JAEA to conduct the analysis, while TEPCO requests Japan Chemical Analysis Center by itself.)

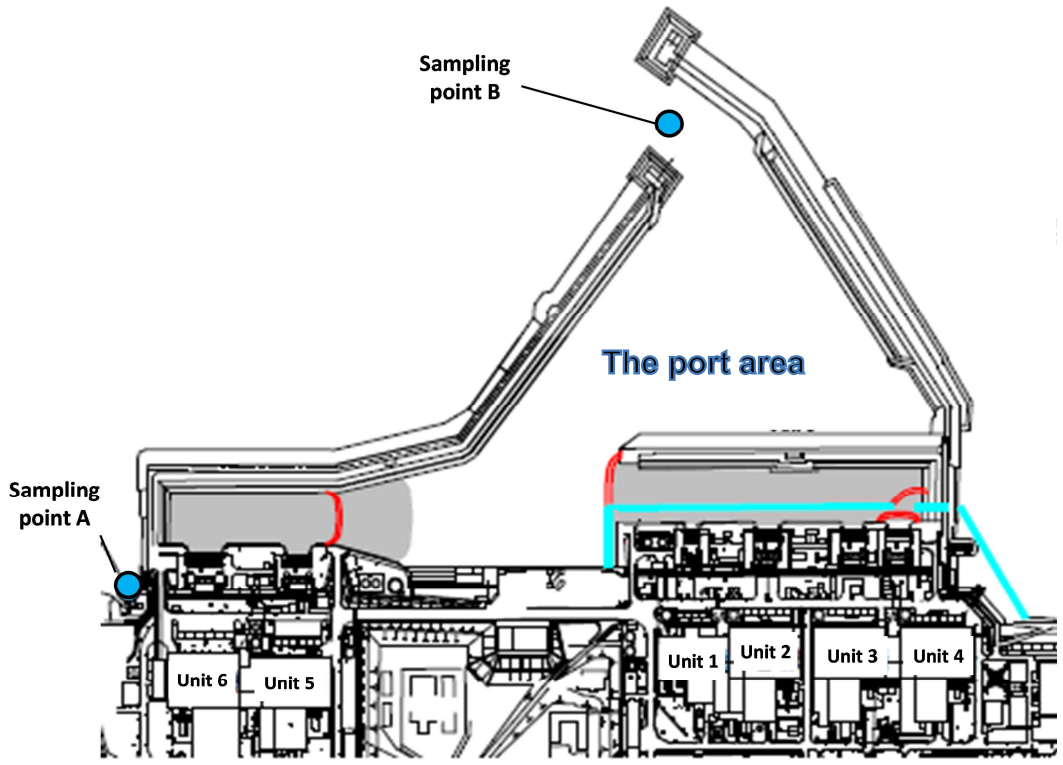
(Unit: Bq/L)

Date of sampling	Detected nuclides	Analytical body		
		JAEA	TEPCO	Japan Chemical Analysis Center
September 11th,2015	Cs-134	0.041	0.012	0.041
	Cs-137	0.18	0.16	0.20
	Gross α	ND (0.77)	ND (2.7)	ND (2.8)
	Gross β	ND (0.45)	ND (0.94)	ND (0.54)
	H-3	450	420	440
	Sr-90	0.0026	ND (0.0012)	ND (0.0052)

Results of analysis on the seawater sampled around the port area

(Unit: Bq/L)

Date of sampling	Detected nuclides	Sampling point A (North side of Unit 5,6 discharge channel)		Sampling point B (Port entrance)	
		Before discharge	During discharge	Before discharge	During discharge
October 2nd, 2015	Cs-134	—	ND (0.82)	—	—
	Cs-137	—	ND (0.56)	—	—
	Gross β	—	12	—	—
	H-3	—	2.0	—	—
September 28th, 2015	Cs-134	—	ND (0.75)	—	—
	Cs-137	—	ND (0.53)	—	—
	Gross β	—	15	—	—
	H-3	—	ND (1.6)	—	—
September 18th, 2015	Cs-134	The seawater sampling canceled due to tsunami advisory.			
	Cs-137				
	Gross β				
	H-3				
September 17th, 2015	Cs-134	ND (0.78)	1.8	ND (0.59)	ND (0.60)
	Cs-137	ND (0.59)	7.8	ND (0.50)	ND (0.43)
	Gross β	13	15	ND (16)	ND (16)
	H-3	ND (1.6)	ND (1.6)	ND (1.6)	2.5
September 15th, 2015	Cs-134	ND (0.72)	ND (0.67)	ND (1.3)	ND (0.62)
	Cs-137	ND (0.82)	ND (0.68)	ND (0.92)	ND (0.71)
	Gross β	11	11	ND (18)	ND (15)
	H-3	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)
September 14th, 2015	Cs-134	ND (0.70)	ND (0.46)	ND (0.66)	ND (0.60)
	Cs-137	ND (0.72)	0.75	ND (0.78)	ND (0.58)
	Gross β	14	7.6	18	ND (17)
	H-3	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.8)



(Reference)

(Unit: Bq/L)

Radionuclides	Operational targets	Legal discharge limit (Density limit by the Reactor Regulation)	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 analysis on the water quality of the groundwater having been pumped up for by-passing 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
October 15th, 2015 *Discharged on October 28th	Cs-134	ND (0.77)	ND (0.65)
	Cs-137	ND (0.53)	ND (0.50)
	Gross β	ND (0.80)	ND (0.54)
	H-3	170	170
October 8th, 2015 *Discharged on October 21st	Cs-134	ND (0.69)	ND (0.80)
	Cs-137	ND (0.56)	ND (0.62)
	Gross β	ND (0.80)	ND (0.58)
	H-3	170	180
October 1st, 2015 *Discharged on October 14th	Cs-134	ND (0.69)	ND (0.73)
	Cs-137	ND (0.72)	ND (0.77)
	Gross β	ND (0.89)	ND (0.61)
	H-3	190	180
September 24th, 2015 *Discharged on October 7th	Cs-134	ND (0.67)	ND (0.73)
	Cs-137	ND (0.58)	ND (0.55)
	Gross β	ND (0.90)	ND (0.59)
	H-3	170	190

∗ 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 analysis conducted by TEPCO, JAEA and Japan Chemical Analysis Center (In order to confirm the validity of analysis, the Government of Japan also requests JAEA to conduct the analysis, while TEPCO requests Japan Chemical Analysis Center by itself.)

(Unit: Bq/L)

Date of sampling	Detected nuclides	Analytical body		
		JAEA	TEPCO	Japan Chemical Analysis Center
September 2nd, 2015	Cs-134	ND (0.0047)	ND (0.0046)	ND (0.0064)
	Cs-137	0.0046	ND (0.0042)	0.0044
	Gross α	ND (0.59)	ND (2.7)	ND (3.6)
	Gross β	ND (0.45)	ND (0.78)	ND (0.57)
	H-3	140	130	140
	Sr-90	0.0042	ND (0.0012)	ND (0.0049)

Results of analysis 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)
October 7th, 2015 *During discharge	Cs-134	ND (0.68)
	Cs-137	ND (0.40)
	Gross β	12
	H-3	ND (1.7)

(Reference) (Unit: Bq/L)

Radionuclides	Operational targets	Legal discharge limit (Density limit by the Reactor Regulation)	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.