

Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station >

(Data summarized on June 20)

Place of Sampling	North of Unit 5-6 Discharge Channel at Fukushima Daiichi NPS (Approx. 30m North of Unit 5-6 Discharge Channel)		Around South Discharge Channel of Fukushima Daiichi NPS (Approx. 1.3km South of Unit 1-4 Discharge Channel)		② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
	Time of Sampling Jun 19, 2014 7:25 AM		Time of Sampling Jun 19, 2014 5:35 AM		
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	
I-131 (Approx. 8 days)	ND(0.72)	-	ND(0.57)	-	40
Cs-134 (Approx. 2 years)	ND(0.81)	-	ND(0.79)	-	60
Cs-137 (Approx. 30 years)	1.0	0.01	ND(0.52)	-	90

* The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

* Data of other nuclides is under evaluation.

* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

* "ND" indicates that the measurement result is below the detection limit, which is provided in parentheses.

Nuclides Analysis Result of Radioactive Materials in the Seawater <1/4>

(Data summarized on June 20)

Place of Sampling (Place No.)	North of Unit 5-6 Discharge Channel at Fukushima Daiichi NPS (Approx. 30m North of Unit 5-6 Discharge Channel) (T-1)		Around South Discharge Channel of Fukushima Daiichi NPS (Approx. 1.3km South of Unit 1-4 Discharge Channel) (T-2-1)		/		② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
	Date of Sampling	May 12, 2014		May 12, 2014		/	
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	
I-131 (Approx. 8 days)	ND(0.70)	—	ND(0.77)	—	/	/	40
Cs-134 (Approx. 2 years)	ND(0.77)	—	ND(0.53)	—	/	/	60
Cs-137 (Approx. 30 years)	0.97	0.01	ND(0.69)	—	/	/	90
H-3 (approx. 12yrs)	8.7	0.00	4.3	0.00	/	/	60,000
Gross α	ND(1.5)	—	ND(1.5)	—	/	/	—
Gross β	11	—	13	—	/	/	—
Sr-90 (Approx. 29 years)	1.2	0.04	0.018	0.00	/	/	30

* The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

* Nuclide analysis results of I-131, Cs-134, Cs-137 and Gross β were announced on May 13, 2014. Nuclide analysis results of H-3 were announced on May 16, 2014.

* When the measurement value is below the detection limit, "ND" is marked.

* Nuclides analysis of Sr-90 was done by Japan Chemical Analysis Center.

(Evaluation)

Although H-3, Gross β, and Sr-90 were detected supposedly as a result of this accident, they are less than the density limit in the water which is specified by the announcement.

Nuclides Analysis Result of Radioactive Materials in the Seawater <2/4>

(Data summarized on June 20)

Place of Sampling (Place No.)	Around North Discharge Channel of Fukushima Daini NPS (T-3) (Around Unit 3, 4 Discharge Channel) (Approx. 10km of Fukushima Daiichi NPS)		South Side of the Ukedo Port (T- 6) (Approx. 5.5km North of Unit 5, 6 Discharge Channel)		/		② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
	Date of Sampling	May 7, 2014		May 6, 2014		/	
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	
Cs-134 (Approx. 2 years)	0.022	0.00	0.039	0.00	/	/	60
Cs-137 (Approx. 30 years)	0.071	0.00	0.096	0.00	/	/	90
H-3 (approx. 12yrs)	ND	—	0.72	0.00	/	/	60,000
Gross β	ND	—	ND	—	/	/	—

* The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

* Nuclide analysis results of Cs-134 and Cs-137 were announced on June 11, 2014.

* When the measurement value is below the detection limit, "ND" is marked. The detection limits are as follows.

H-3: Approx. 0.27Bq/L, Gross β: Approx. 17Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

(Evaluation)

Although H-3 was detected supposedly as a result of this accident, it is less than the density limit in the water which is specified by the announcement.

Nuclides Analysis Result of Radioactive Materials in the Seawater <3/4>

(Data summarized on June 20)

Place of Sampling (Place No.)	15km Offshore of Fukushima Daiichi NPS (T-5) Upper Layer		3km Offshore of Ukedo River (T- D1) Upper Layer		3km Offshore of Fukushima Daiichi NPS (T-D5) Upper Layer		② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Date of Sampling	May 8, 2014		May 7, 2014		May 7, 2014		
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	
Cs-134 (Approx. 2 years)	0.0013	0.00	0.0061	0.00	0.010	0.00	60
Cs-137 (Approx. 30 years)	0.0047	0.00	0.015	0.00	0.027	0.00	90
H-3 (approx. 12yrs)	ND	—	0.34	0.00	ND	—	60,000
Gross β	ND	—	ND	—	ND	—	—
Gross α	ND	—	ND	—	ND	—	—
Sr-90 (Approx. 29 years)	ND	—	ND	—	ND	—	30

* The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

* Radioactivity density "—" means "not applicable".

* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

* Nuclide analysis results of Cs-134, Cs-137 were announced on June 18, 2014.

H-3: Approx. 0.33Bq/L, Gross α: Approx. 1.5Bq/L, Gross β: Approx. 16Bq/L, Sr-90: Approx. 0.01Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

* Nuclides analysis of Sr-90 were done by Japan Chemical Analysis Center.

(Evaluation)

Although H-3 was detected supposedly as a result of this accident, it is less than the density limit in the water which is specified by the announcement.

Nuclides Analysis Result of Radioactive Materials in the Seawater <4/4>

(Data summarized on June 20)

Place of Sampling (Place No.)	3km Offshore of Fukushima Daini NPS (T-D9) Upper Layer						② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2.)
Date of Sampling	May 8, 2014						
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	
Cs-134 (Approx. 2 years)	0.010	0.00					60
Cs-137 (Approx. 30 years)	0.025	0.00					90
H-3 (approx. 12yrs)	ND	—					60,000
Gross β	ND	—					—
Gross α	ND	—					—
Sr-90 (Approx. 29 years)	ND	—					30

* The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

* Radioactivity density "—" means "not applicable".

* In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

* Nuclide analysis results of Cs-134, Cs-137 were announced on June 18, 2014.

* When the measurement value is below the detection limit, "ND" is marked. The detection limits are as follows.

H-3: Approx. 0.33Bq/L, Gross α: Approx. 1.5Bq/L, Gross β: Approx. 16Bq/L, Sr-90: Approx. 0.008Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

* Nuclides analysis of Sr-90 were done by Japan Chemical Analysis Center.

(Evaluation)

H-3, Gross α, Gross β, and Sr-90 were not detected in the sample collected this time.

Analysis Result of Pu in the Seawater

1. Measurement Result:

(Data summarized on June 20)

(Unit: Bq/L)

Place of Sampling	Date	Pu-238	Pu-239+Pu-240
15km Offshore of Fukushima Daiichi NPS, Upper Layer	Apr 2, 2014	N.D. [5.5×10^{-6}]	$(8.3 \pm 2.1) \times 10^{-6}$
Around 3km Offshore of Ukedo River, Upper Layer	Apr 1, 2014	N.D. [5.3×10^{-6}]	$(5.7 \pm 1.7) \times 10^{-6}$
3km Offshore of Fukushima Daiichi NPS, Upper Layer	Apr 1, 2014	N.D. [5.2×10^{-6}]	N.D. [4.5×10^{-6}]
3km Offshore of Fukushima Daini NPS, Upper Layer	Apr 2, 2014	N.D. [4.7×10^{-6}]	N.D. [4.5×10^{-6}]
The range of the past measurement results obtained in the ocean near Fukushima Daiichi and Daini Nuclear Power Stations (FY2001 - FY2010)*		—	$ND \sim 1.3 \times 10^{-5}$

[] shows below the detection limit.

*: Source "Report on the environmental radioactivity measurement around the Nuclear Power Plant (FY2011)", Committee on the safety technology of Nuclear Power Plants in Fukushima.

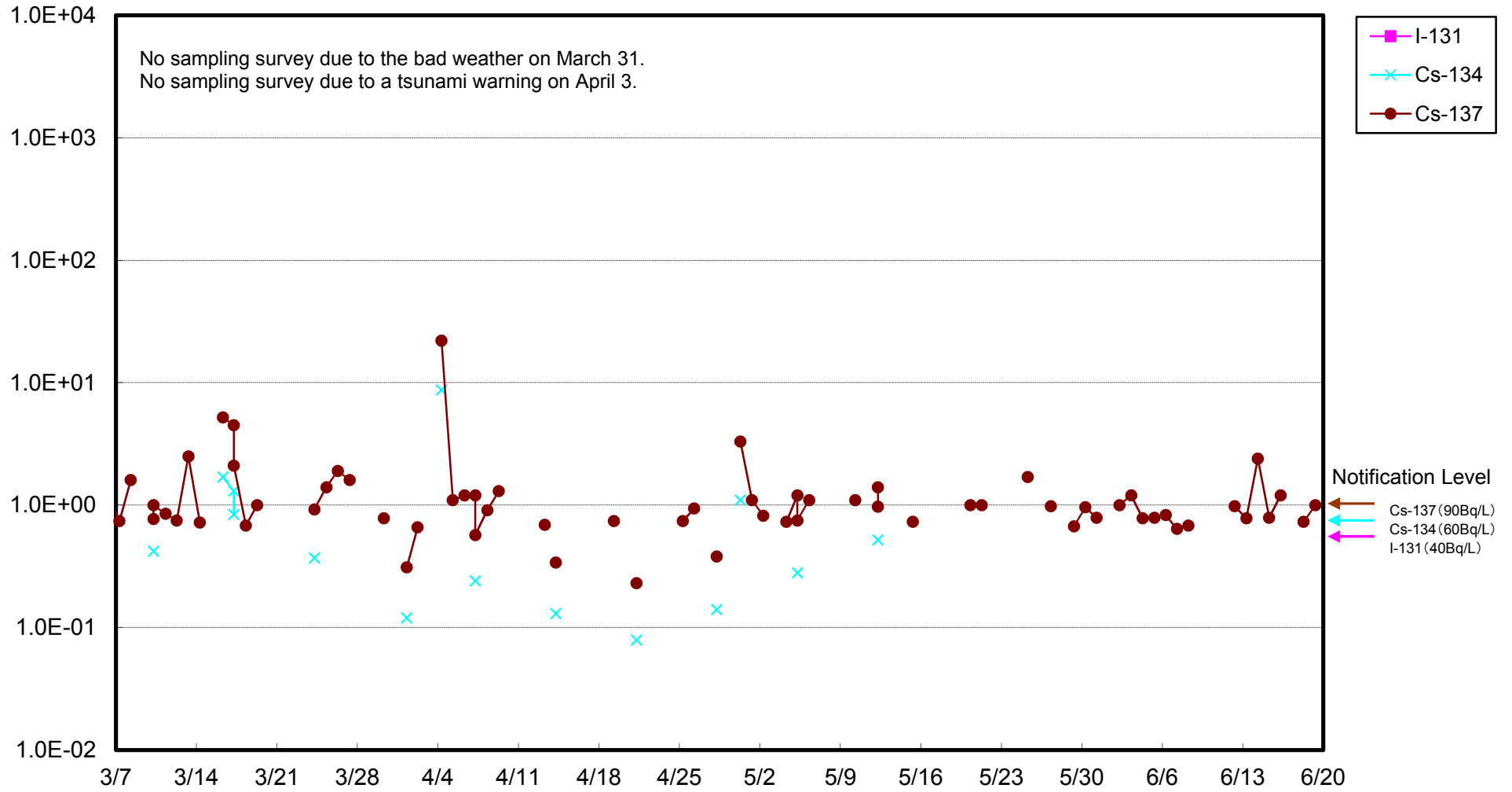
2. Analytical Institution: Japan Chemical Analysis Center

3. Evaluation:

The density level of Pu-239+Pu-240 detected around 3km offshore of Ukedo River and 15km offshore of Fukushima Daiichi NPS on April 1 and 2, 2014 is within the range of the past density measurements conducted along the seacoasts of Fukushima Daiichi and Daini NPS.

End

Radioactivity Density of the Seawater at 1F Units 5-6 North Discharge Channel (Bq/L)



Radioactivity Density of the Seawater at 1F South Discharge Channel (Bq/L)

