

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

(Data summarized on February 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		Time of Sampling		
	Feb 19, 2014 7:40 AM		Feb 19, 2014 5:45 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(0.66)	-	ND(0.82)	-	40
Cs-134 (Approx. 2 years)	ND(0.79)	-	ND(0.58)	-	60
Cs-137 (Approx. 30 years)	1.4	0.02	0.97	0.01	90

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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 <1/8>

(Data summarized on February 20)

Place of Sampling (Place No.)	Central Area of Sendai Bay (T-MG5) Upper Layer		3km Offshore of Oarai Shore (T-C) 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	Nov 6, 2013		Nov 13, 2013				
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)	0.0021	0.00	ND	—	/	/	60
Cs-137 (Approx. 30 years)	0.0084	0.00	ND	—	/	/	90
Sr-90 (Approx. 29 years)	ND	—	—	—	/	/	30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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, Cs-137 obtained at Central Area of Sendai Bay (T-MG5) were announced on December 20, 2013.

\* Nuclide analysis results of Cs-134, Cs-137 obtained at 3km Offshore of Oarai Shore (T-C) were announced on November 28, 2013.

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

Cs-134: Approx. 1.0 Bq/L, Cs-137: Approx. 1.1Bq/L, Sr-90: Approx. 0.009Bq/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 was done by Japan Chemical Analysis Center.

(Evaluation)

Sr-90 was not detected in the sample collected this time.

## Nuclides Analysis Result of Radioactive Materials in the Seawater <2/8>

(Data summarized on February 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	Dec 16, 2013		Dec 16, 2013		/	
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	—	ND	—	/	/	40
Cs-134 (Approx. 2 years)	ND	—	ND	—	/	/	60
Cs-137 (Approx. 30 years)	ND	—	1.8	0.02	/	/	90
H-3 (approx. 12yrs)	ND	—	ND	—	/	/	60,000
Gross α	ND	—	ND	—	/	/	—
Gross β	8.9	—	13	—	/	/	—
Sr-90 (Approx. 29 years)	0.036	0.00	0.16	0.01	/	/	30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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 December 17. Nuclide analysis results of H-3 were announced on December 18.

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

I-131: Approx. 0.71Bq/L, Cs-134: Approx. 1.1Bq/L, Cs-137: Approx. 0.53Bq/L, Gross α: Approx. 0.12Bq/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 was done by Japan Chemical Analysis Center.

(Evaluation)

Although Cs-137, Gross β and Sr-90 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 <3/8>

(Data summarized on February 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		Date of Sampling		Date of Sampling		
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	0.0094	0.00	0.01	0.00	60
Cs-137 (Approx. 30 years)	0.0028	0.00	0.020	0.00	0.021	0.00	90
H-3 (approx. 12yrs)	ND	—	ND	—	ND	—	60,000
Gross $\alpha$	ND	—	ND	—	ND	—	—
Gross $\beta$	ND	—	ND	—	ND	—	—
Sr-90 (Approx. 29 years)	ND	—	ND	—	ND	—	30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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, Cs-137 obtained at 15km Offshore of Fukushima Daiichi NPS (T-5) were announced on February 4, 2014..

\* Nuclide analysis results of Cs-134, Cs-137 obtained at 3km Offshore of Ukedo River (T-D1) and 3km Offshore of Fukushima Daiichi NPS (T-D5) were announced on February 29, 2014..

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

H-3: Approx. 0.36Bq/L, Gross  $\alpha$ : Approx. 1.6Bq/L, Gross  $\beta$ : Approx. 16Bq/L, Sr-90: Approx. 0.009Bq/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 was done by Japan Chemical Analysis Center.

(Evaluation)

H-3, Gross  $\alpha$ , Gross  $\beta$  and Sr-90 were not detected in the sample collected this time.

## Nuclides Analysis Result of Radioactive Materials in the Seawater <4/8>

(Data summarized on February 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	Dec 23, 2013						
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)	0.1400	0.00					60
Cs-137 (Approx. 30 years)	0.3	0.00					90
H-3 (approx. 12yrs)	ND	—					60,000
Gross α	ND	—					—
Gross β	ND	—					—
Sr-90 (Approx. 29 years)	0.007	0.00					30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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, Cs-137 were announced on February 4, 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. 1.6Bq/L, Gross β: Approx. 16Bq/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 Sr-90 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 <5/8>

(Data summarized on February 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)					
Date of Sampling	Dec 3, 2013		Dec 3, 2013				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.)
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)	0.062	0.00	0.038	0.00			
Cs-137 (Approx. 30 years)	0.12	0.00	0.095	0.00			90
H-3 (approx. 12yrs)	ND	—	ND	—			60,000
Gross β	ND	—	ND	—			—

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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 January 15, 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, All β: Approx. 16Bq/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)

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

## Nuclides Analysis Result of Radioactive Materials in the Seawater <6/8>

(Data summarized on February 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		Date of Sampling		Date of Sampling		
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)	*1 —	—	0.014	0.00	0.0064	0.00	60
Cs-137 (Approx. 30 years)	*1 —	—	0.033	0.00	0.018	0.00	90
H-3 (approx. 12yrs)	*1 —	—	ND	—	ND	—	60,000
Gross α	—	—	—	—	—	—	—
Gross β	*1 —	—	ND	—	ND	—	—
Sr-90 (Approx. 29 years)	—	—	—	—	—	—	30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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, Cs-137 were announced on January 29, 2014..

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

H-3: Approx. 0.32Bq/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.

\*1 The sampling could not be performed due to the bad weather.

(Evaluation)

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

## Nuclides Analysis Result of Radioactive Materials in the Seawater <7/8>

(Data summarized on February 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	Dec 29, 2013						
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)	0.0170	0.00					60
Cs-137 (Approx. 30 years)	0.035	0.00					90
H-3 (approx. 12yrs)	ND	—					60,000
Gross α	—	—					—
Gross β	ND	—					—
Sr-90 (Approx. 29 years)	—	—					30

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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, Cs-137 were announced on February 4.

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

H-3: Approx. 0.35Bq/L, Gross β: Approx. 16Bq/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)

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



## Nuclides Analysis Result of Radioactive Materials in the Seawater <8/8>

(Data summarized on February 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	Dec 17, 2013		Dec 17, 2013		/	
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)	0.060	0.00	0.051	0.00	/	/	60
Cs-137 (Approx. 30 years)	0.13	0.00	0.13	0.00	/	/	90
H-3 (approx. 12yrs)	ND	—	ND	—	/	/	60,000
Gross β	ND	—	ND	—	/	/	—

\* The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> 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 January 24, 2014.

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

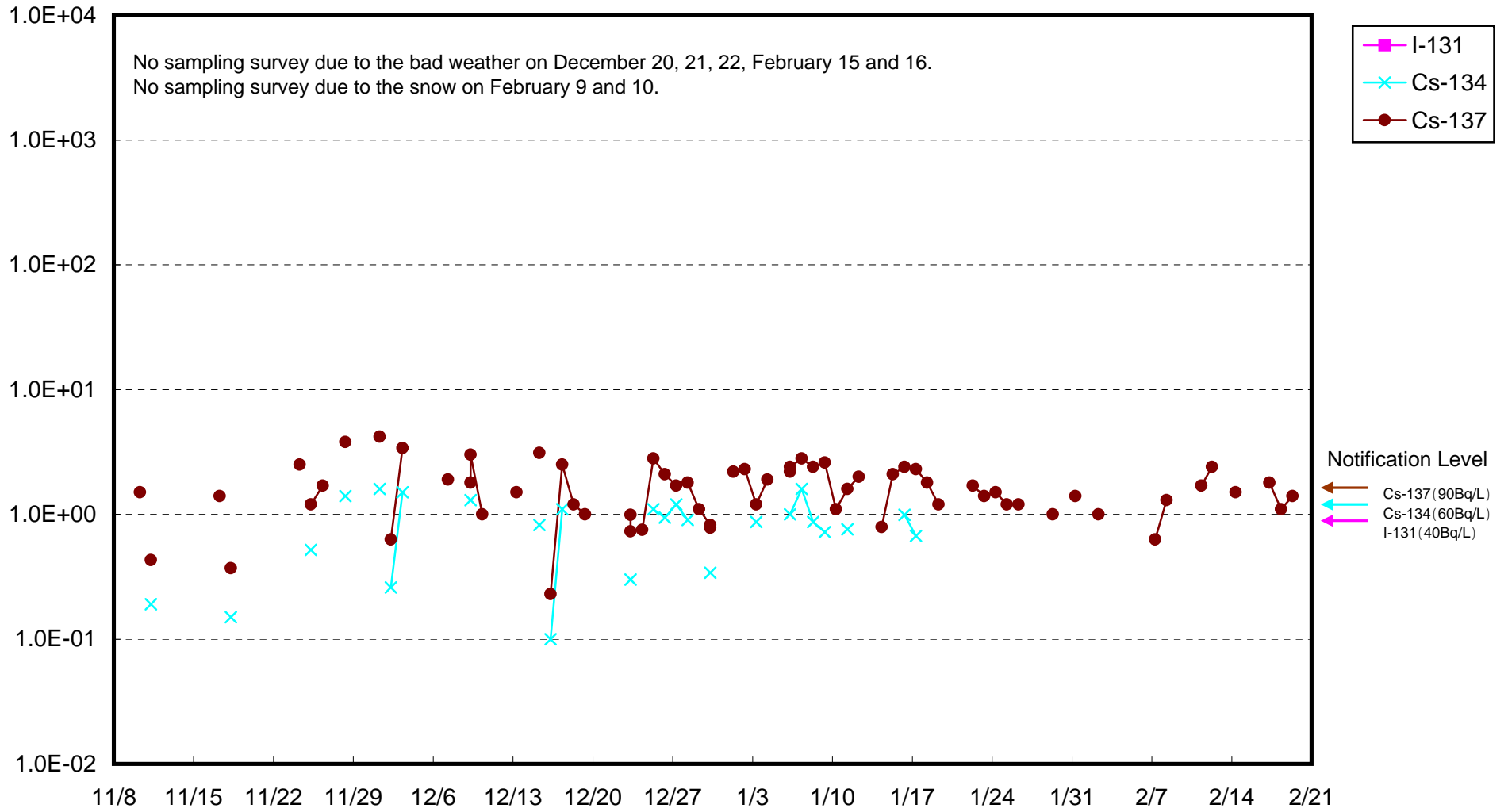
H-3: Approx. 0.35Bq/L, All β: Approx. 17Bq/L,

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)

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

福島第一 5,6号機放水口北側 海水放射能濃度 (Bq / L)



福島第一 南放水口付近 海水放射能濃度 (Bq / L)

