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

(Data summarized on June 13)

Place of Sampling	North of Unit 5-6 Discharge Daiichi N (Approx. 30m North of Unit 8	IPS	Around South Discharge C Daiichi N (Appox. 1.3km South of Unit	IPS	the Reactor Regulation (Bq/L)		
Time of Sampling	Jun 12, 2 7:25 A		Jun 12, 2 7:10 A	(The density limit in the water outside the surrounding monitored areas is provided in			
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	section 6 of Appendix 2.)		
I-131 (Approx. 8 days)	ND	-	ND	-	40		
Cs-134 (Approx. 2 years)	ND	-	ND	-	60		
Cs-137 (Approx. 30 years)	ND -		ND	-	90		

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

I-131: Approx. 1.2Bq/L, Cs-134: Approx. 1.2Bq/L, Cs-137: Approx. 1.7Bq/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.

^{*} 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.

 $[\]ensuremath{^{*}}$ "ND" indicates that the measurement result is below the detection limit.

Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station, Remeasurement 1/2>

Place of Sampling	North of Unit 5-6 Discharge Daiichi N (Approx. 30m North of Unit 5	IPS	Around South Discharge C Daiichi N (Appox. 1.3km South of Unit	IPS	the Reactor Regulation (Bq/L)
Time of Sampling	May 6, 2 6:50 A		May 6, 2 7:20 A	(The density limit in the water outside the surrounding monitored areas is provided in	
Detected Nuclides (Half-life)	①Density of Sample Scaling Factor (①/②)		①Density of Sample (Bq/L)	Scaling Factor (①/②)	section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.60 0.01		0.25 0.00		60
Cs-137 (Approx. 30 years)	1.2	0.01	0.45	0.01	90

^{*} 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.

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

^{*} Analyzed by: Tokyo Electric Power Environmental Engineering Co., Inc.

Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station, Remeasurement 2/2>

Place of Sampling	North of Unit 5-6 Discharge Daiichi N (Approx. 30m North of Unit 5	IPS	Around South Discharge C Daiichi N (Appox. 1.3km South of Unit	IPS	② Density Limit Specified by the Reactor Regulation (Bq/L)
Time of Sampling	May 13, 2 6:15 A		May 13, 2 7:15 A	(The density limit in the water outside the surrounding monitored areas is provided in	
Detected Nuclides (Half-life)	①Density of Sample Scaling Factor (①/②)		①Density of Sample (Bq/L)	Scaling Factor (①/②)	section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.28 0.00		0.33 0.01		60
Cs-137 (Approx. 30 years)	0.58	0.01	0.66	0.01	90

^{*} 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.

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

^{*} Analyzed by: Tokyo Electric Power Environmental Engineering Co., Inc.

Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daini Nuclear Power Station 1/2>

Place of Sampling	2F Around the North D (Around Unit 3-4 Disc (Approx. 10km	charge Channel)	Around the North Sid (Approx. 11km South of Chann (Approx. 23km	Unit 1 & 2 Discharge el)	② Density Limit Specified by the Reactor Regulation (Bq/L)	
Time of Sampling	May 7, 2 9:40 Al		May 7, 2 7:30 A	(The density limit in the water outside the surrounding monitored areas is provided in		
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)			Scaling Factor (①/②)	section 6 of Appendix 2.)	
Cs-134 (Approx. 2 years)	0.069	0.00	0.052	0.00	60	
Cs-137 (Approx. 30 years)	0.16 0.00		0.095	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.

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. Analyzed by Tokyo Electric Power Environmental Engineering Co., Inc.

Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daini Nuclear Power Station 2/2>

Place of Sampling	2F Around the North D (Around Unit 3-4 Disc (Approx. 10km	charge Channel)	Around the North Sid (Approx. 11km South of I Chann (Approx. 23km	Unit 1 & 2 Discharge el)	② Density Limit Specified by the Reactor Regulation (Bq/L)
Time of Sampling	May 14, 2 10:10 A		May 14, 2 7:20 A	(The density limit in the water outside the surrounding monitored areas is provided in	
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	,		Scaling Factor (①/②)	section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.10 0.00		0.044	0.00	60
Cs-137 (Approx. 30 years)	0.19 0.00		0.090	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.

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. Analyzed by Tokyo Electric Power Environmental Engineering Co., Inc.

Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore 1/2>

Place of Sampling (Place No.)	3km Off	shore of O	daka Ward (T-1	*1 14)	3km Off	3km Offshore of Ukedo River (T-D1) 3km Offshore of Ukedo River (T-D1)		*2 D1)	② Density Limit Specified by the Reactor Regulation					
	Upper La	iyer	Lower La	ayer	Upper La	iyer	Lower La	ayer	Upper La	ayer	Lower La	ayer	(Bq/L)	
Time of Sampling	May 2, 2 8:12 Al		May 2, 2 8:12 A		May 7, 2 9:46 A		May 7, 2 9:46 Al		,	May 14, 2013 May 14		y 14, 2013 May 14, 2013 ` wate		(The density limit in the water outside the surrounding monitored
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)	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)	areas is provided in section 6 of Appendix 2.)	
Cs-134 (Approx. 2 years)	0.019	0.00	0.017	0.00	0.017	0.00	0.021	0.00	0.061	0.00	0.025	0.00	60	
Cs-137 (Approx. 30 years)	0.039	0.00	0.033	0.00	0.039	0.00	0.037	0.00	0.13	0.00	0.055	0.00	90	

Place of Sampling (Place No.)	3km Olishore of Fukushima Dalichi NPS (1-D5)			_	*2 3km Offshore of Fukushima Daiichi NPS (T-D5)				*2 3km Offshore of Fukushima Daini NPS (T-D9)				② Density Limit Specified by the Reactor Regulation		
	Upper La	ayer	Lower La	ayer	Upper La	ayer	Lower La	ayer	Upper La	ayer	Lower La	ayer	(Bq/L)		
Time of Sampling	May 7, 2 10:21 A		May 7, 2 10:21 A		May 14, 2 10:35 A		May 14, 2 10:35 A		, ,	May 8, 2013 8:59 AM					(The density limit in the water outside the surrounding monitored
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)	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)	areas is provided in section 6 of Appendix 2.)		
Cs-134 (Approx. 2 years)	0.014	0.00	0.016	0.00	0.026	0.00	0.024	0.00	0.019	0.00	0.025	0.00	60		
Cs-137 (Approx. 30 years)	0.032	0.00	0.028	0.00	0.053	0.00	0.045	0.00	0.041	0.00	0.045	0.00	90		

 $^{^{\}star}$ The density specified by the Reactor Regulation is converted from Bq/cm $^{\!3}$ to Bq/L.

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

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (since May 14, 2012)

^{*} Analyzed by: *1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., *2 Tokyo Electric Power Environmental Engineering Co., Inc.

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

Place of Sampling (Place No.)	3km Offshore	*2 3km Offshore of Fukushima Daini NPS (T-D9)			*1 15km Offshore of Fukushima Daiichi NPS (T-5)				*1 3km Offshore of Iwasawa Shore (T-11)				② Density Limit Specified by the Reactor Regulation	
	Upper La	ayer	Lower La	ayer	Upper La	ayer	Lower La	ayer	Upper La	ayer	Lower La	ayer	(Bq/L)	
Time of Sampling	May 15, 2 8:44 A		May 15, 2 8:44 A				•				May 2, 2013 May 2, 2 9:09 AM 9:09 A			(The density limit in the water outside the surrounding monitored
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)	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)	areas is provided in section 6 of Appendix 2.)	
Cs-134 (Approx. 2 years)	0.037	0.00	0.025	0.00	0.0017	0.00	0.0019	0.00	0.0095	0.00	0.013	0.00	60	
Cs-137 (Approx. 30 years)	0.066	0.00	0.058	0.00	0.0065	0.00	0.0056	0.00	0.023	0.00	0.028	0.00	90	

Place of Sampling (Place No.)	Upper La	aver.	Lower La	nuor.	Upper La	avor.	Lower La	nuor.	Upper La	avor.	Lower La	nuor.	② Density Limit Specified by the Reactor Regulation
Time of Sampling	Оррег Са	ayer	Lower La	ayer	Оррег Са	iyei	Lower La	ayer —	Оррег Са	iyei	Lower La	ayer	(Bq/L) (The density limit in the water outside the surrounding monitored
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)										
Cs-134 (Approx. 2 years)													60
Cs-137 (Approx. 30 years)													90

^{*} 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.

^{*} Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted.

^{*} Analyzed by: *1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., *2 Tokyo Electric Power Environmental Engineering Co., Inc.

Analysis Result of Pu in the Seawater

1. Measurement Result:

(単位:Bq/L)

Place of Sampling	Date	Pu-238	Pu-239+Pu-240
1F, North of Unit 5-6 Discharge Channel	May 14, 2013	N.D. [<5.3×10 ⁻⁶]	(8.1±2.0) ×10 ⁻⁶
1F, Around South Discharge Channel	May 14, 2013	N.D. [<6.0×10 ⁻⁶]	(8.9±2.3) ×10 ⁻⁶
15km Offshore of Fukushima Daiichi NPS, Upper Layer	May 2, 2013	N.D. [<5.9×10 ⁻⁶]	(8.4±2.2) ×10 ⁻⁶
Around 3km Offshore of Ukedo River, Upper Layer	May 7, 2013	N.D. [<6.9×10 ⁻⁶]	N.D. [<6.6×10 ⁻⁶]
3km Offshore of Fukushima Daiichi NPS, Upper Layer	May 2, 2013	N.D. [<5.4×10 ⁻⁶]	N.D. [<5.6×10 ⁻⁶]
3km Offshore of Fukushima Daini NPS, Upper Layer	May 8, 2013	N.D. [<5.5×10 ⁻⁶]	(5.9±1.8) ×10 ⁻⁶
The range of the past measuremen ocean near Fukushima Daiichi an Stations (FY2001 - FY2008)*		-	ND - 1.3×10 ⁻⁵

[] shows below the detection limit.

2. Analytical Institution: Japan Chemical Analysis Center

3. Evaluation:

Given that the density level of Pu-239+Pu-240 detected at 1F, North of Unit 5-6 Discharge Channel and 1F, Around South Discharge Channel on May 14, 15km Offshore of Fukushima Daiichi NPS, Upper Layer on May 2, 3km Offshore of Fukushima Daini NPS, Upper Layer on May 8 is within the range of the past density measurements conducted along the seacoasts of 1F and 2F, it cannot be

End

^{*:} Source "Report on the environmental radioactivity measurement around the Nuclear Power Plant (2008)", Committee on the safety technology of Nuclear Power Plants in Fukushima.

Nuclides Analysis Result of Radioactive Materials in the Seawater <1/3>

(Data summarized on June 13)

Place of Sampling (Place No.)	15km Offshore of Daiichi NPS (T-5) I May 2, 20	Jpper Layer	3km Offshore of Uko D1) Upper L May 7, 20	_ayer `	3km Offshore of F Daiichi NPS (T-D5) May 2, 20	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
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Scaling Sample Factor (Bq/L) (①/②)		section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.0017	0.00	0.017	0.00	0.017	0.00	60
Cs-137 (Approx. 30 years)	0.0065	0.00	0.039	0.00	0.029	0.00	90
H-3 (approx. 12yrs)	ND	_	ND	_	ND	_	60,000
All α	ND	_	ND	_	ND	_	_
ΑΙΙ β	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.

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, All α radiation, All β radiation and Sr-90 were not detected in the sample collected this time.

^{*} 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 6 and 13.

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

H-3: Approx. 3.2Bq/L, All α: Approx. 2.7Bq/L, All β: Approx. 22Bq/L, Sr-90: Approx. 0.02Bq/L

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

Nuclides Analysis Result of Radioactive Materials in the Seawater <2/3>

(Data summarized on June 13)

t	_						(Data summanzed on sune 13)		
Place of Sampling (Place No.)	3km Offshore of Fuk NPS (T-D9) Upp						② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water		
Date of Sampling	May 8, 2013		May 8, 2013						outside the surrounding monitored areas is provided in
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)	section 6 of Appendix 2.)		
Cs-134 (Approx. 2 years)	0.019	0.00					60		
Cs-137 (Approx. 30 years)	0.041	0.00					90		
H-3 (approx. 12yrs)	ND	_					60,000		
All α	ND	_					_		
ΑΙΙ β	ND	_					-		
Sr-90 (Approx. 29 years)	0.013	0.00	3				30		

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

^{*} 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 13.

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

H-3: Approx. 3.2Bq/L, All α: Approx. 2.7Bq/L, All β: Approx. 22Bq/L

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

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

(Data summarized on June 13)

							(Data sulfillialized oil sulle 13)
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 (Appox. 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
Date of Sampling	May 13, 2013		May 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)	section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	_	ND	_			40
Cs-134 (Approx. 2 years)	ND	_	ND	_			60
Cs-137 (Approx. 30 years)	ND	ı	ND	_			90
H-3 (approx. 12yrs)	ND	ı	ND	_			60,000
All α	ND	-	ND	-			_
ΑΙΙ β	ND	_	ND	_			_
Sr-90 (Approx. 29 years)	0.26	0.01	0.22	0.01			30

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

^{*} 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 I-131, Cs-134, Cs-137 and All β obtained at "Around South Discharge Channel of Fukushima Daiichi NPS" were announced on May

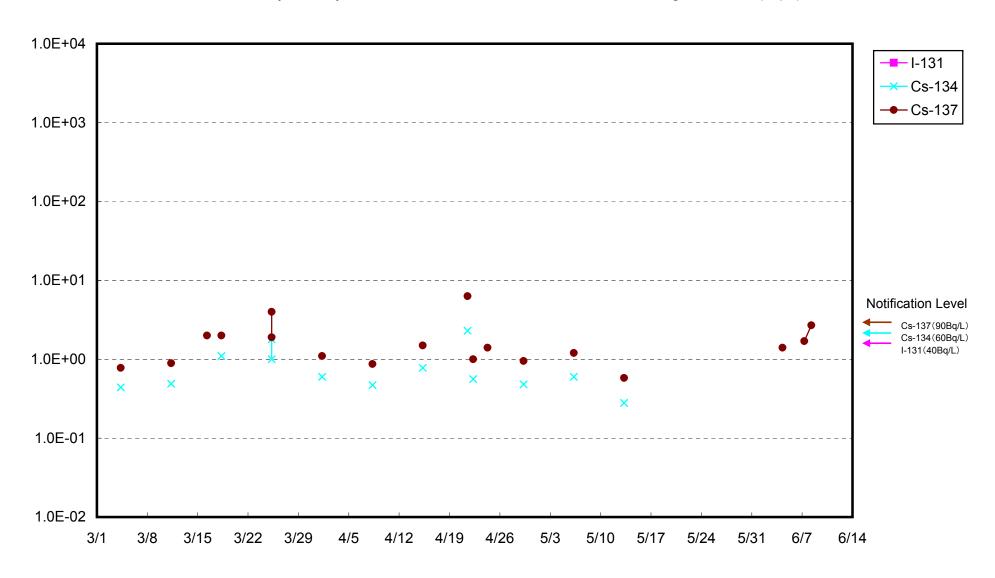
^{*} When the measurement value is below the detection limit, "ND" is marked. The detection limits are as follows.

I-131: Approx. 0.40Bq/L, Cs-134: Approx. 0.89Bq/L, Cs-137: Approx. 1.3Bq/L,

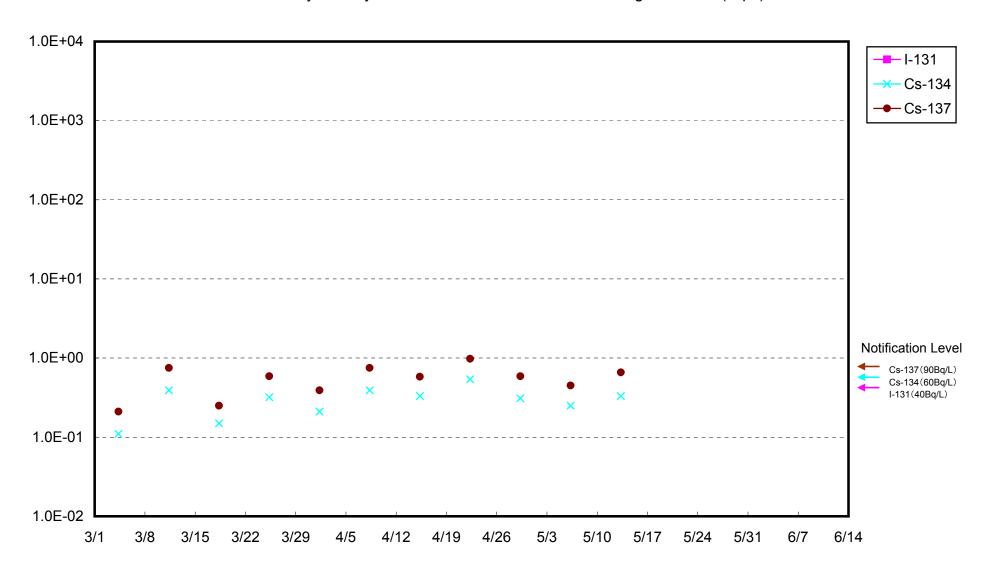
H-3: Approx. 3.1Bq/L, All α: Approx. 0.13Bq/L, All β: Approx. 24Bq/L,

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

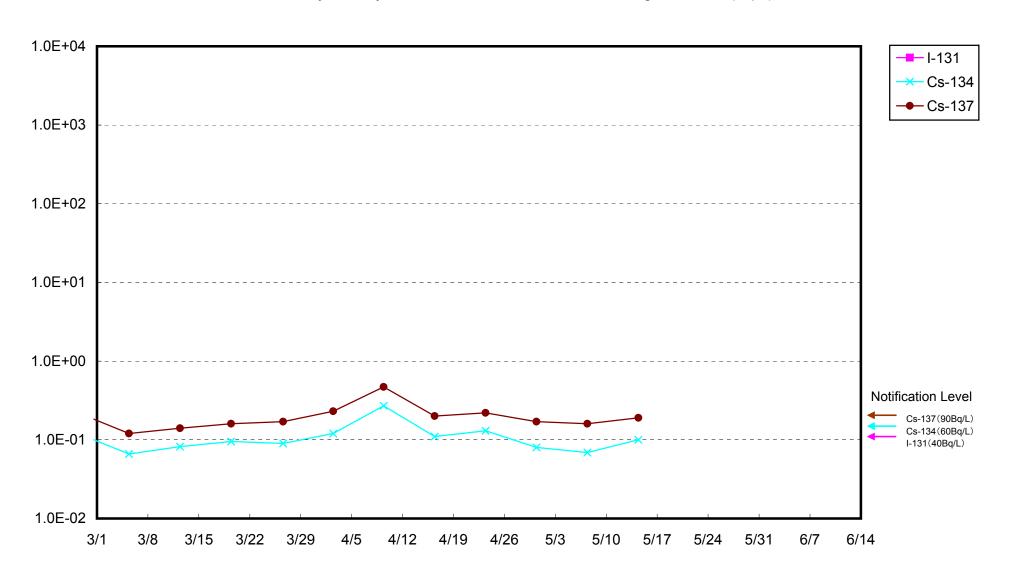
Radioactivity Density of the Seawater at 1F Units 5-6 North Discharge Channel (Bq/L)



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



Radioactivity Density of the Seawater at 2F North Discharge Channel (Bq/L)



Radioactivity Density of the Seawater Around the South Side of Kitasakogawa (Bq/L)

