# Definite Results of Nuclides Analysis at Fukushima Daiichi Nuclear Power Station (Announced on June 1- 15, 2012)

< Legend > - : γ nuclides except for the major 3 nuclides (I-131, Cs-134, Cs-137) were not detected.

Please refer to the preliminary reports for the result of the major nuclides.

: γ nuclides other than the major 3 nuclides (I-131, Cs-134, Cs-137) were detected.

Please refer to the following pages.

/ : Not applicable or cancelled due to the bad weather

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Announcement Date of the Preliminary Report	June		•									•		•		
Sampling Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Nuclides Analysis Result of the Radioactive Materials in the Air at Fukushima Nuclear Power Stations	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	
Nuclides Analysis Result of the Radioactive Materials in the Air at the Sea Side of Fukushima Nuclear Power Stations	-							1							•	
Nuclides Analysis Result of Radioactive Materials in the Seawater < Coast >	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	
Nuclides Analysis Result of the Radioactive Materials in the Seawater < Offshore of Ibaraki Prefecture >																$\overline{}$
Nuclides Analysis Result of the Radioactive Materials in the Seawater of the Port	-	-	-	-	-	-	-	,	-	,	-	-	-			
Nuclides Analysis Result of the Sub-drain of Fukushima Daiichi NPS		-			-		-		-		$\overline{}$	-		-		
Nuclides Analysis Result of Marine Soil	-					-	-				/		-	-		
Nuclides Analysis Result of the Sub-drain Water in the Surroundings of the Central Radioactive Waste Treatment Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nuclides Analysis Result of the Radioactive Materials in the Seawater in Front of Unit 5-6 Intake					-		-									
Nuclide Analysis Results of Radioactive Materials in the Air above the Reactor Building at Fukushima Daiichi Power Station (Upper Part of Unit 1 Reactor Building)											-					
Nuclide Analysis Results of Radioactive Materials in the Air above the Reactor Building at Fukushima Daiichi Power Station (Upper Part of Unit 2 Reactor Building)								$\overline{/}$					$\overline{/}$			$\overline{/}$
Nuclide Analysis Results of Radioactive Materials in the Air above the Reactor Building at Fukushima Daiichi Power Station (Upper Part of Unit 3 Reactor Building)								$\overline{/}$								$\overline{/}$
Nuclides Analysis Results of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS								$\overline{/}$			-					$\overline{/}$

### [ Definite Report ] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 1/3 >

Place of Sampling		Shallow Draf	t Quay at 1F		Inside U	nit 1-4 Water Int	ake Canal (Nor	th) at 1F	Unit 1 Sc (Outside the	reen at 1F e Silt Fence)		reen at 1F Silt Fence)	Density Limit Specified by the Reactor Regulation
Time of Sampling	Jun 13 6:48	3, 2012 3 AM	N/A		Jun 13 6:55		N	/A	Jun 13 6:59			3, 2012 I AM	(Bq/L) (The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	40
Cs-134 (Approx. 2 years)	8.8	0.15	-	-	7.3	0.12	-	-	4.8	0.08	5.9	0.10	60
Cs-137 (Approx. 30 years)	13	0.14	-	-	17	0.19	-	-	7.0	0.08	7.4	0.08	90
Mn-54 (Approx. 310 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	1,000
Co-60 (Approx. 5 years)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	200
Tc-99m (Approx. 6 hrs)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	40,000
Te-129m (Approx. 34 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
Te-129 (Approx. 70 mins)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	10,000
Cs-136 (Approx. 13 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
Ba-140 (Approx. 13 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
La-140 (Approx. 40 hrs)	ND	-	-	- -	ND	-	-	-	ND	-	ND	-	400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

The detection limits of the major three nuclides not detected are as follows:

I-131: Approx. 1Bq/L

# [Definite Report] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 2/3 >

Place of Sampling	Unit 2 Sci (Outside the			Unit 2 Screen at 1F (Inside the Silt Fence)		reen at 1F e Silt Fence)		reen at 1F Silt Fence)	Unit 4 Sci (Outside the		Unit 4 Sc (Inside the	reen at 1F Silt Fence)	Density Limit Specified by the Reactor Regulation
Time of Sampling	Jun 13 7:06		Jun 13 7:08			3, 2012 I AM		3, 2012 3 AM	Jun 13 7:15		Jun 13 7:17	3, 2012 7 AM	(Bq/L) (The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	40
Cs-134 (Approx. 2 years)	4.6	0.08	25	0.42	8.6	0.14	27	0.45	24	0.40	26	0.43	60
Cs-137 (Approx. 30 years)	5.7	0.06	38	0.42	17	0.19	26	0.29	31	0.34	57	0.63	90
Mn-54 (Approx. 310 days)	ND	-	1.0	0.00	ND	-	ND	-	ND	-	ND	-	1,000
Co-60 (Approx. 5 years)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	200
Tc-99m (Approx. 6 hrs)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	40,000
Te-129m (Approx. 34 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
Te-129 (Approx. 70 mins)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	10,000
Cs-136 (Approx. 13 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
Ba-140 (Approx. 13 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
La-140 (Approx. 40 hrs)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

The detection limits of the major three nuclides not detected are as follows:

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 16Bq/L

# [Definite Report] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 3/3 >

Place of Sampling Time of Sampling	Canal (So Jun 13 7:21	4 Water Intake buth) at 1F 3, 2012	Daiich N	of Fukushima ni NPS /A		at 1F							Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	-	-	ND	-							40
Cs-134 (Approx. 2 years)	9.2	0.15	-	-	ND	-							60
Cs-137 (Approx. 30 years)	14	0.16	-	-	ND	-							90
Mn-54 (Approx. 310 days)	ND	-	-	-	ND	-							1,000
Co-60 (Approx. 5 years)	ND	-	-	-	ND	-							200
Tc-99m (Approx. 6 hrs)	ND	-	-	-	ND	-							40,000
Te-129m (Approx. 34 days)	ND	-	-	-	ND	-							300
Te-129 (Approx. 70 mins)	ND	-	-	-	ND	-							10,000
Cs-136 (Approx. 13 days)	ND	-	-	-	ND	-							300
Ba-140 (Approx. 13 days)	ND	-	-	-	ND	-							300
La-140 (Approx. 40 hrs)	ND		-	-	ND	-							400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

The detection limits of the major three nuclides not detected are as follows:

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 1Bq/L, Cs-134: Approx.2Bq/L, Cs-137: Approx.2Bq/L

### [Definite Report] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 1/3 >

Place of Sampling		Shallow Draf	t Quay at 1F		Inside U	nit 1-4 Water Int	ake Canal (Nor	th) at 1F	Unit 1 Sc (Outside the			reen at 1F Silt Fence)	Density Limit Specified by the Reactor Regulation
Time of Sampling	Jun 14 6:30	I, 2012 ) AM	N	/A	Jun 14 6:35	I, 2012 5 AM	N	/A	Jun 14 6:40			1, 2012 2 AM	(Bq/L) (The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	1	-	ND	-	-	-	ND	-	ND	-	40
Cs-134 (Approx. 2 years)	ND	-	-	-	4.4	0.07	-	-	5.1	0.09	13	0.22	60
Cs-137 (Approx. 30 years)	5.1	0.06	-	-	6.9	0.08	-	-	7.0	0.08	20	0.22	90
Mn-54 (Approx. 310 days)	ND	-	1	-	ND	-	-	-	ND	-	ND	-	1,000
Co-60 (Approx. 5 years)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	200
Tc-99m (Approx. 6 hrs)	ND	-	ı	-	ND	-	-	-	ND	-	ND	-	40,000
Te-129m (Approx. 34 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
Te-129 (Approx. 70 mins)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	10,000
Cs-136 (Approx. 13 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
Ba-140 (Approx. 13 days)	ND	-	-	-	ND	-	-	-	ND	-	ND	-	300
La-140 (Approx. 40 hrs)	ND	-	-	- 3: 5:	ND	-	-	-	ND	-	ND	-	400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

The detection limits of the major three nuclides not detected are as follows:

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 1Bq/L, Cs-134: Approx.3Bq/L

### [Definite Report] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 2/3 >

Place of Sampling	Unit 2 Scr (Outside the	reen at 1F e Silt Fence)	Unit 2 Screen at 1F (Inside the Silt Fence)		Unit 3 Sci (Outside the			reen at 1F Silt Fence)	Unit 4 Sc (Outside the	reen at 1F e Silt Fence)		reen at 1F Silt Fence)	Density Limit Specified by the Reactor Regulation
Time of Sampling	Jun 14 6:46			I, 2012 B AM	Jun 14 6:52	I, 2012 2 AM		1, 2012 1 AM	Jun 14 6:56			4, 2012 3 AM	(Bq/L) (The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	40
Cs-134 (Approx. 2 years)	8.3	0.14	27	0.45	5.5	0.09	21	0.35	ND	-	51	0.85	60
Cs-137 (Approx. 30 years)	16	0.18	40	0.44	11	0.12	ND	-	26	0.29	78	0.87	90
Mn-54 (Approx. 310 days)	ND	-	0.85	0.00	ND	-	ND	-	ND	-	ND	-	1,000
Co-60 (Approx. 5 years)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	200
Tc-99m (Approx. 6 hrs)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	40,000
Te-129m (Approx. 34 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
Te-129 (Approx. 70 mins)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	10,000
Cs-136 (Approx. 13 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
Ba-140 (Approx. 13 days)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	300
La-140 (Approx. 40 hrs)	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

The detection limits of the major three nuclides not detected are as follows:

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 11Bq/L, Cs-134: Approx.18Bq/L, Cs-137: Approx.22Bq/L

# [Definite Report] Radioactivity Density of the Seawater in the Port of Fukushima Daiichi NPS < 3/3 >

Place of Sampling	Canal (So	4 Water Intake buth) at 1F	Daiich	ni NPS	In Front of Unit Canal	at 1F							Density Limit Specified by the Reactor Regulation (Bq/L)
Time of Sampling		1, 2012 2 AM	N	/A	Jun 14 9:05								(The density limit in the water outside the surrounding
Detected Nuclides (Half-life)	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	Density of Sample (Bq/L)	Scaling Factor	monitored areas is provided in section 6 of Appendix 2.)
I-131 (Approx. 8 days)	ND	-	-	-	ND	-							40
Cs-134 (Approx. 2 years)	48	0.80	-	-	ND	-							60
Cs-137 (Approx. 30 years)	73	0.81	-	-	ND	-							90
Mn-54 (Approx. 310 days)	ND	-	-	-	ND	-							1,000
Co-60 (Approx. 5 years)	ND	-	-	-	ND	-							200
Tc-99m (Approx. 6 hrs)	ND	-	-	-	ND	-							40,000
Te-129m (Approx. 34 days)	ND	-	-	-	ND	-							300
Te-129 (Approx. 70 mins)	ND	-	-	-	ND	-							10,000
Cs-136 (Approx. 13 days)	ND	-	-	-	ND	-							300
Ba-140 (Approx. 13 days)	ND	-	-	-	ND	-							300
La-140 (Approx. 40 hrs)	ND	-	-	- 3: 5:	ND	-							400

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

The detection limits of the major three nuclides not detected are as follows:

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

I-131: Approx. 2Bq/L, Cs-134: Approx.2Bq/L, Cs-137: Approx.2Bq/L

[ Definite Report ] Nuclides Analysis Result of the Radioactive Materials in the Air at the Upper Part of Unit 2 Reactor Building < 1/2 >

Place of Sampling	Buildi	anel, Center,	Buildi (Brow-out Pa	Unit 2 Reactor ing anel, Center, ward)	Buildi (Brow-out Pa	Unit 2 Reactor ng anel, Center, ward)	Density Limit in the Air for Workers
Time of Sampling		2012 10:55 AM		, 2012 10:55 AM	Jun 5 11:12 AM	2012 - 1:12 PM	to Engage in Radiation Related
Detected Nuclides (Half-life)	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Tasks (Bq/cm <sup>3</sup> )*
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03
Cs-134 (Approx. 2 years)	1.7E-05	0.01	ND	-	6.4E-06	0.00	2E-03
Cs-137 (Approx. 30 years)	2.2E-05	0.01	ND	-	7.2E-06	0.00	3E-03
Nb-95 (Approx. 35 days)	ND	-	ND	-	ND	-	2E-02
Tc-99m (Approx. 6 hrs)	ND	-	ND	-	ND	-	7E-01
Ru-106 (Approx. 370 days)	ND	-	ND	-	ND	1	6E-04
Ag-110m (Approx. 250 days)	2.2E-06	0.00	ND	-	ND	-	3E-03
Sb-125 (Approx. 3 yrs)	ND	-	ND	-	ND	-	6E-03
Te-129 (Approx. 70 mins)	ND	-	ND	-	ND	-	4E-01
Te-129m (Approx. 34 days)	ND	-	ND	-	ND	-	4E-03
I-132 (Approx. 2 hrs)	ND	-	ND	-	ND	1	7E-02
Te-132 ( Approx. 78 hrs )	ND	-	ND	-	ND	-	4E-03
I-133 (Approx. 21 hrs)	ND	-	ND	-	ND	-	5E-03
Cs-136 (Approx. 13 days)	ND	-	ND	-	ND	-	1E-02
Ba-140 (Approx. 13 days)	ND	-	ND	-	ND	-	1E-02
La-140 (Approx. 40 hrs)	ND	-	ND	-	ND	-	1E-02

<sup>\*</sup> The radioactivity density is the sum of the volatile nuclides density and the particulate nuclides density.

The detection limits of the major three nuclides not detected are as follows:

Volatile: I-131: Approx. 2E-6Bq/cm<sup>3</sup>, Cs-134: Approx.6E-6Bq/cm<sup>3</sup>, Cs-137: Approx.7E-6Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 2E-6Bq/cm<sup>3</sup>, Cs-134: Approx.3E-6Bq/cm<sup>3</sup>, Cs-137: Approx.4E-6Bq/cm<sup>3</sup>

As the detection limit may vary depending on the detectors and sample properties,

there are cases where nuclides below the detection limit are detected.

 $<sup>^{*}</sup>$  O.OE - O is the same as O.O x 10 $^{-0}$ 

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

[ Definite Report ] Nuclides Analysis Result of the Radioactive Materials in the Air at the Upper Part of Unit 2 Reactor Building < 2/2 >

Place of Sampling	Upper Part of Buildi (Brow-out Pa North	ng anel, Center,					Density Limit in the Air for Workers
Time of Sampling	Jun 5, 11:12 AM						to Engage in Radiation Related
Detected Nuclides (Half-life)	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Tasks (Bq/cm <sup>3</sup> )*
I-131 (Approx. 8 days)	ND	1					1E-03
Cs-134 (Approx. 2 years)	2.1E-05	0.01					2E-03
Cs-137 (Approx. 30 years)	3.0E-05	0.01					3E-03
Nb-95 (Approx. 35 days)	ND	-					2E-02
Tc-99m (Approx. 6 hrs)	ND	-					7E-01
Ru-106 (Approx. 370 days)	ND	-					6E-04
Ag-110m (Approx. 250 days)	5.0E-06	0.00					3E-03
Sb-125 (Approx. 3 yrs)	ND	-					6E-03
Te-129 (Approx. 70 mins)	ND	-					4E-01
Te-129m (Approx. 34 days)	ND	-					4E-03
I-132 (Approx. 2 hrs)	ND	-					7E-02
Te-132 ( Approx. 78 hrs )	ND	-					4E-03
I-133 (Approx. 21 hrs)	ND	-					5E-03
Cs-136 (Approx. 13 days)	ND	-					1E-02
Ba-140 (Approx. 13 days)	ND	-					1E-02
La-140 (Approx. 40 hrs)	ND	-					1E-02

<sup>\*</sup> The radioactivity density is the sum of the volatile nuclides density and the particulate nuclides density.

The detection limits of the major three nuclides not detected are as follows:

Volatile: I-131: Approx. 2E-6Bq/cm<sup>3</sup>, Cs-134: Approx.6E-6Bq/cm<sup>3</sup>, Cs-137: Approx.7E-6Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 2E-6Bq/cm<sup>3</sup>

 $<sup>^{*}</sup>$  O.OE - O is the same as O.O x 10 $^{-0}$ 

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

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.