# Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 1/6 > (Data summarized on July 25)

Place of Sampling	Process Main Building Opening (East Side)		Incineration Workshop Building Opening (Southeast Side)		On-site Bunker Building Opening (Large Equipment Hatch)		Density Limit Specified by the	
Time of Sampling	Jul 22, 2012 10:50 AM - 11:50 AM		Jul 22, 2012 10:50 AM - 11:50 AM		Jul 22, 2012 10:40 AM - 11:40 AM		Reactor Regulation (Bq/cm³) (Density limit in the air which radiation workers breathe in is	
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/cm³)	Scaling Factor ( / )	specified in section 4 of Appendix 2)	
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03	
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	2E-03	
Cs-137 (Approx. 30 years)	ND	-	ND	-	ND	-	3E-03	

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

O.OE - O is the same as  $O.O \times 10^{-O}$ 

Data of other nuclides is under examination.

The detection limits are as follows.

Volatile: I-131: Approx. 5E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 1E-5Bq/cm<sup>3</sup>, Cs-137: Approx. 1E-5Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 3E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 7E-6Bq/cm<sup>3</sup>, Cs-137: Approx. 8E-6Bq/cm<sup>3</sup>

<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.

Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 2/6 > (Data summarized on July 25)

Place of Sampling	Miscellaneous Solid Waste Volume Reduction Treatment Building Opening (Northeast Side)		Unit 1 Waste Treatment Building (West Side Opening)		Unit 2 Waste Treatment Building (West Side Opening)		Density Limit Specified by the	
Time of Sampling	Jul 22, 20 10:40 AM - 11		Jul 22, 2012 9:00 AM - 10:00 AM		Jul 22, 2012 9:00 AM - 10:00 AM		Reactor Regulation (Bq/cm <sup>3</sup> ) (Density limit in the air which radiation workers breathe in is	
Detected Nuclides (Half-life)	Density of Sample (Bq/cm³)	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm³)	Scaling Factor ( / )	specified in section 4 of Appendix 2)	
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03	
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	2E-03	
Cs-137 (Approx. 30 years)	ND	-	ND	-	ND	-	3E-03	

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

O.OE - O is the same as  $\text{O.O} \times 10^{\text{-O}}$ 

Data of other nuclides is under examination.

The detection limits are as follows.

Volatile: I-131: Approx. 5E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 1E-5Bq/cm<sup>3</sup>, Cs-137: Approx. 1E-5Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 3E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 7E-6Bq/cm<sup>3</sup>, Cs-137: Approx. 8E-6Bq/cm<sup>3</sup>

<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.

Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 3/6 > (Data summarized on July 25)

Place of Sampling	Unit 4 Waste Treatment Building (Northwest Side Opening)		Unit 4 Reactor Building Opening (Large Equipment Hatch)		Unit 1 Reactor Building Opening (Large Equipment Hatch)		Density Limit Specified by the	
Time of Sampling	Jul 22, 2012 9:10 AM - 10:10 AM		Jul 22, 2012 9:10 AM - 10:10 AM		Jul 22, 2012 12:35 PM - 1:35 PM		Reactor Regulation (Bq/cm³) (Density limit in the air which radiation workers breathe in is	
Detected Nuclides (Half-life)	Density of Sample (Bq/cm³)	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	specified in section 4 of Appendix 2)	
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03	
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	2E-03	
Cs-137 (Approx. 30 years)	ND	-	ND	-	ND	-	3E-03	

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

O.OE - O is the same as  $O.O \times 10^{-O}$ 

Data of other nuclides is under examination.

The detection limits are as follows.

Volatile: I-131: Approx. 5E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 1E-5Bq/cm<sup>3</sup>, Cs-137: Approx. 1E-5Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 3E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 7E-6Bq/cm<sup>3</sup>, Cs-137: Approx. 8E-6Bq/cm<sup>3</sup>

<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.

Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 4/6 > (Data summarized on July 25)

Place of Sampling	Unit 2 Reactor Building Opening (Large Equipment Hatch)		Unit 3 Reactor Building Opening (Large Equipment Hatch)		Unit 4 Reactor Building Opening (Large Equipment Hatch)		Density Limit Specified by the	
Time of Sampling	Jul 22, 2012 12:35 PM - 1:35 PM		Jul 22, 2012 12:20 PM - 1:20 PM		Jul 22, 2012 12:20 PM - 1:20 PM		Reactor Regulation (Bq/cm <sup>3</sup> ) (Density limit in the air which radiation workers breathe in is	
Detected Nuclides (Half-life)	Density of Sample (Bq/cm³)	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	specified in section 4 of Appendix 2)	
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03	
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	2E-03	
Cs-137 (Approx. 30 years)	ND	-	ND	-	ND	-	3E-03	

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

O.OE - O is the same as  $O.O \times 10^{-O}$ 

Data of other nuclides is under examination.

The detection limits are as follows.

Volatile: I-131: Approx. 5E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 1E-5Bq/cm<sup>3</sup>, Cs-137: Approx. 1E-5Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 3E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 7E-6Bq/cm<sup>3</sup>, Cs-137: Approx. 8E-6Bq/cm<sup>3</sup>

<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.

Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 5/6 > (Data summarized on July 25)

Place of Sampling	Process Main Openin (Decontamination Room)	g Equipment	Exhaust Facility of Granular Solid Strage (Outlet)				Density Limit Specified by the		
Time of Sampling	Jul 22, 20 11:00 AM - 12		Jul 18, 2012 10:26 AM - 10:36 AM		·				Reactor Regulation (Bq/cm³) (Density limit in the air which radiation workers breathe in is
Detected Nuclides (Half-life)	Density of Sample (Bq/cm³)	Scaling Factor ( / )	Density of Sample (Bq/cm <sup>3</sup> )	Scaling Factor ( / )	Density of Scalin Sample Facto (Bq/cm³)		specified in section 4 of Appendix 2)		
I-131 (Approx. 8 days)	ND	-	ND	1			1E-03		
Cs-134 (Approx. 2 years)	4.5E-05	0.02	ND	•			2E-03		
Cs-137 (Approx. 30 years)	6.0E-05	0.02	ND	-			3E-03		

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

O.OE - O is the same as  $O.O \times 10^{-O}$ 

Data of other nuclides is under examination.

The detection limits are as follows.

Volatile: I-131: Approx. 5E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 1E-5Bq/cm<sup>3</sup>, Cs-137: Approx. 1E-5Bq/cm<sup>3</sup>

Particulate: I-131: Approx. 3E-6Bq/cm<sup>3</sup>, Cs-134: Approx. 4E-6Bq/cm<sup>3</sup>, Cs-137: Approx. 5E-6Bq/cm<sup>3</sup>

<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.

#### Correct

Reference

## Nuclides Analysis Result of the Radioactive Materials in the Air at the Opening of Buildings at Fukushima Daiichi NPS < 6/6 > (Data summarized on July 25)

Place of Sampling	3 <sup>rd</sup> Floor of Auxiliary Operation Shared Facility (Around the Machine Hatch)		3 <sup>rd</sup> Floor of Auxiliary C Facilit (In Fornt of So	ty .	3 <sup>rd</sup> Floor of Auxiliary ( Facilit (In Fornt of No	y	Density Limit Specified by the Reactor Regulation (Bg/cm³)
Time of Sampling	Jul 19, 2012 1:03 PM	Jul 20, 2012 1:19 PM	Jul 19, 2012 1:13 PM	Jul 20, 2012 1:28 PM	Jul 19, 2012 12:57 PM	Jul 20, 2012 1:08 PM	(Density limit in the air which radiation workers breathe in
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	is specified in section 4 of Appendix 2)
I-131 (Approx. 8 days)	ND	-	ND	-	ND	-	1E-03
Cs-134 (Approx. 2 years)	ND	-	ND	-	5.6E-07	0.00	2E-03
Cs-137 (Approx. 30 years)	ND	-	ND	-	8.1E-07	0.00	3E-03

<sup>\*</sup> This is the nuclides analysis result of the radioactive materials in the air during handling of fuel.

Data of other nuclides is under examination.

Volatile: I-131: Approx. 5E-8Bq/cm³, Cs-134: Approx. 1E-7Bq/cm³, Cs-137: Approx. 1E-7Bq/cm³ Particulate: I-131: Approx. 4E-8Bq/cm³, Cs-134: Approx. 7E-8Bq/cm³, Cs-137: Approx. 8E-8Bq/cm³ As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

- \* We announced Time of Sampling in 3rd Floor of Auxiliary Operation Shared Facility (Around the Machine
- In Fornt of South Stairs) released on July 25 by mistake. We correct it, and please accept our apologies for this mistake.
- <Original (Place of Sampling / Time of Sampling )>
- 3rd Floor of Auxiliary Operation Shared Facility (Around the Machine Hatch) / From 1:03 PM on July 19 to 1:28 PM on July 20
- 3rd Floor of Auxiliary Operation Shared Facility (In Fornt of South Stairs)
- / From 1:13 PM on July 19 to 1:19 PM on July 20
- <Correction (Place of Sampling / Time of Sampling )>
- 3rd Floor of Auxiliary Operation Shared Facility (Around the Machine Hatch) / From 1:03 PM on July 19 to 1:19 PM on July 20
- 3rd Floor of Auxiliary Operation Shared Facility (In Fornt of South Stairs)
   / From 1:13 PM on July 19 to 1:28 PM on July 20
- \* The analysis result which was conducted when the fuel was not handled before or after this analysis are as follows.
- Around the machine hatch:

From 1:07 PM on July 17, 2012 to 1:28 PM on July 18: I-131:ND, Cs-134: 1.5E-7Bq/cm<sup>3</sup>, Cs-137: 2.3E-7Bq/cm<sup>3</sup>.

From 1:33 PM on July 18, 2012 to 12:59 PM on July 19: I-131:ND, Cs-134: 6.6E-8Bq/cm<sup>3</sup>, Cs-137: 1.4E-7Bq/cm<sup>3</sup>.

From 1:27 PM on July 20, 2012 to 1:41 PM on July 21: I-131:ND, Cs-134: 2.2E-7Bg/cm<sup>3</sup>, Cs-137: 4.3E-7Bg/cm<sup>3</sup>.

- In fornt of south stairs:
  - From 1:12 PM on July 17, 2012 to 1:35 PM on July 18: I-131:ND, Cs-134: 1.5E-7Bq/cm<sup>3</sup>, Cs-137: 2.3E-7Bq/cm<sup>3</sup>.

From 1:40 PM on July 18, 2012 to 1:08 PM on July 19: I-131:ND, Cs-134: 6.7E-8Bq/cm<sup>3</sup>, Cs-137: 7.3E-8Bq/cm<sup>3</sup>.

From 1:33 PM on July 20, 2012 to 1:37 PM on July 21: I-131:ND, Cs-134: 1.3E-7Bg/cm<sup>3</sup>, Cs-137: 1.9E-7Bg/cm<sup>3</sup>.

- In front of north stairs:

From 1:01 PM on July 17, 2012 to 1:20 PM on July 18: I-131:ND, Cs-134: 4.7E-7Bq/cm<sup>3</sup>, Cs-137: 7.5E-7Bq/cm<sup>3</sup>.

From 1:26 PM on July 18, 2012 to 12:52 PM on July 19: I-131:ND, Cs-134: 1.3E-7Bq/cm<sup>3</sup>, Cs-137: 2.1E-7Bq/cm<sup>3</sup>.

From 1:15 PM on July 20, 2012 to 1:32 PM on July 21: I-131:ND, Cs-134: 3.8E-7Bq/cm<sup>3</sup>, Cs-137: 6.0E-7Bq/cm<sup>3</sup>. The detection limits of I-131 are as follows.

Volatile: Approx 5F-8Bg/cm<sup>3</sup>

Particulate: Approx 4F-8Rg/cm<sup>3</sup>

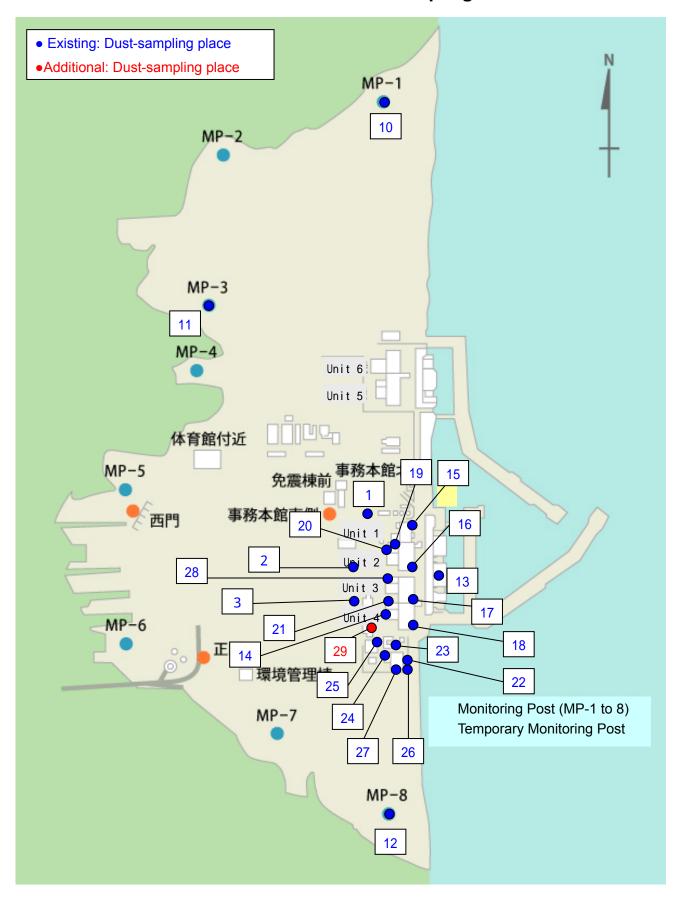
<sup>\*</sup> The radioactivity density is the sum of the volatile nuclides density and the particulate nuclides density.

O.OE - O is the same as O.O x 10<sup>-O</sup>

<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 are as follows.

### **Location of Dust-sampling**



### **List of Dust-sampling Places**

No.	Sampling Place	No.	Sampling Place
4	North Side Slope of	40	Unit 1 Waste Treatment Facility Building
1	Unit 1	19	(West side Opening)
	West Side Slope of		Unit 2 Waste Treatment Facility Building
2	Unit 1 & Unit 2	20	(West side Opening)
2	West Side Slope of	04	Unit 4 Waste Treatment Facility Building
3	Unit 3 & Unit 4	21	(Northwest side Opening)
40	MD 4	00	Process Main Building Opening
10	MP - 1	22	(East Side Opening)
44	MD 2	22	Incineration Workshop Building Opening
11	MP - 3	23	(Southwest side Opening)
12		24	On-site Bunker Building
	MP - 8		(Large Equipment Hatch of On-site Bunker Building)
			Opening of Miscellaneous Solid Waste Volume
13	Sea Side of Unit 1-4	25	Reduction Treatment Building
			(Northeast side opening)
44	Unit 4 Reactor Building Opening		Process Main Building
14	( Large Equipment Hatch of Reactor Building )	26	(Inside of Decontamination Facility)
	Unit 1 Turbine Building Opening		Exhaust Facility of Granular Solid Storage Tank
15	( Large Equipment Hatch of		(Exhaust Opening side)
	Turbine Building ) Unit 2 Turbine Building Opening		
16	( Large Equipment Hatch of Turbine Building )		Unit 3 Waste Treatment Facility Building
			(West side Opening)
17	Unit 3 Turbine Building Opening	29	Auxiliary Operation Shared Facility
	( Large Equipment Hatch of Turbine Building )		(Machine Hatch, South Stairs, and North Stairs on 3 <sup>rd</sup> Floor)
	Unit 4 Turbine Building Opening		
18	( Large Equipment Hatch of		
	Turbine Building )	V	

<sup>\*</sup> Indicated in blue: Existing / Indicated in red; Additional

<sup>\*</sup> In regard to the west gate, sampling is conducted daily.

<sup>\*</sup> Points 4 – 9 (mountainside of Unit 1, 2 and 3, in front of the Environment Monitoring Building, in front of the Water Treatment Building and in front of the Switching Yard of Unit 5 and 6) are unused numbers, as sampling was suspended in January, 2012 (published on January 11).