

Fukushima Daiichi Nuclear Power Plant Nuclide analysis results of gamma rays in the soil

1. Result of measure Nuclide analysis results of gamma rays in the soil in the power plant are as follows. We analyzed all of the samples in which Pu was analyzed:

2. Evaluation Nuclide analysis results of gamma rays in the soil measured in 2009 in Fukushima Prefecture are as follows.
Compared with this result, highly concentrated radioactive materials were detected.

< Result of the analysis of the soil by Fukushima Prefecture in 2009 >

Cs-137: ND ~ 21Bq/kg·Dry soil, Others: ND

(Unit: Bq/kg·Dry soil)

Place of sampling		[Fixed point]*1 Ground (West-northwest approx. 500m)*2	[Fixed point]*1 Wild birds' forest (West approx. 500m)*2	[Fixed point]*1 Near the industrial waste disposal facility (South-southwest approx. 500m)*2
Date of sampling		2-Jan	2-Jan	2-Jan
Analyst		Japan Chemical Analysis Center*3	Japan Chemical Analysis Center*3	Japan Chemical Analysis Center*3
Date of measure		6-Jan	6-Jan	6-Jan
N u c l i d e s	I-131(about 8 days)	ND	ND	ND
	I-132(about 2 hours)	ND	ND	ND
	Cs-134(about 2 years)	2.9E+05	6.3E+02	1.2E+06
	Cs-136(about 13 days)	ND	ND	ND
	Cs-137(about 30 years)	3.6E+05	8.6E+02	1.5E+06
	Sb-125(about 3 years)	ND	ND	ND
	Te-129m(about 34 days)	ND	ND	ND
	Te-132(about 78 hours)	ND	ND	ND
	Ba-140(about 13 days)	ND	ND	ND
	Nb-95(about 35 days)	ND	ND	ND
	Ru-106(about 370 days)	ND	ND	ND
	Mo-99(about 66 hours)	ND	ND	ND
	Tc-99m(about 6 hours)	ND	ND	ND
	La-140(about 40 hours)	ND	ND	ND
	Be-7(about 53 days)	ND	ND	ND
Ag-110m(about 250 days)	ND	ND	ND	

*1 “ Ground”, “Near the industrial waste disposal facility”: Collected at adjoining sites in order to avoid overlap with the past samplings.

“ Wild birds' forest”: Collected vertically at each site (collection continued at one site unless no more sample was able to be collected)

*2 Distance from the stacks of the Unit 1 and 2

*3 Half-life correction for the period until the collection of the samples was not made in the analysis result by Japan Chemical Analysis Center.

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(Unit: Bq/kg·Dry soil)

Place of sampling		[Fixed point]*1 Ground (West-northwest approx. 500m)*2	[Fixed point]*1 Wild birds' forest (West approx. 500m)*2	[Fixed point]*1 Near the industrial waste disposal facility (South-southwest approx. 500m)*2
Date of sampling		9-Jan	9-Jan	9-Jan
Analyst		Japan Chemical Analysis Center*3	Japan Chemical Analysis Center*3	Japan Chemical Analysis Center*3
Date of measure		11-Jan	11-Jan	11-Jan
N u c l i d e s	I-131(about 8 days)	ND	ND	ND
	I-132(about 2 hours)	ND	ND	ND
	Cs-134(about 2 years)	2.9E+05	8.2E+02	2.3E+05
	Cs-136(about 13 days)	ND	ND	ND
	Cs-137(about 30 years)	3.6E+05	1.1E+03	2.7E+05
	Sb-125(about 3 years)	ND	ND	ND
	Te-129m(about 34 days)	ND	ND	ND
	Te-132(about 78 hours)	ND	ND	ND
	Ba-140(about 13 days)	ND	ND	ND
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Detection of Pu in the soil in Fukushima Daiichi Nuclear Power Station

1. Result of Analysis

(Unit: Bq/kg·Dry soil)

Place of sampling Distance from 1, Unit 2 stack	Date of sampling Organization	Pu-238	Pu-239, Pu-240
Ground (West-northwest approx. 500m)	January 9 Japan Chemical Analysis Center	$(1.1 \pm 0.11) \times 10^{-1}$	$(5.5 \pm 0.76) \times 10^{-2}$
Wild birds' forest (West approx. 500m)		N.D. [$<9.9 \times 10^{-3}$]	N.D. [$<9.9 \times 10^{-3}$]
Near the industrial waste disposal facility (South-southwest approx. 500m)		$(1.0 \pm 0.32) \times 10^{-2}$	$(1.1 \pm 0.34) \times 10^{-2}$
Domestic soil		N.D. $\sim 1.5 \times 10^{-1}$	N.D. ~ 4.5

Measurable limits are shown in []

- : Ministry of Education, Culture, Sports, Science and Technology "Database of Environmental Radiation" 1978-2008
- : " Ground ", " Near the industrial waste disposal facility ". Collected at adjoining sites in order to avoid overlap with the past samplings.
- " Wild birds' forest " : Collected vertically at each site (collection continued at one site unless no more sample was able to be collected)

2. Evaluation

The density of Pu-238, Pu-239, and 240 detected on January 9 is in the same level of the density measured in the fallouts observed in Japan after the past atmospheric nuclear tests. However, there are possibilities that they originate from the accident this time, taking the previous analysis results into consideration.

Pu-238, Pu-239, and Pu-240 have been detected in the samples collected after March 21 at some places; however, there have been no major changes in the amounts.

End