(Attachment 3)

Fukushima Daiichi Nuclear Power Station: Am and Cm analysis result in the soil

1. Analysis result

(Unit: Bq/kg・Dry soil)

Sampling spot (): Distance from the stack of Unit 1, 2	Date of sampling/ Analyses organization	Pu-238[*1]	Pu-239[*1] Pu-240[*1]	U-234[*2]	U-235[*2]	U-238[*2]	Am-241	Cm-242	Cm-243 Cm-244
①Playground (west-northwest approx. 500m)	June 13/ Japan Chemical Analysis Center	$(1.2\pm0.12)\times10^{-1}$	$(6.8\pm0.85)\times10^{-2}$	$(1.2\pm0.07)\times10^{1}$	$(5.2\pm0.97)\times10^{-1}$	$(1.3\pm0.07)\times10^{1}$	N.D. [$<1.9\times10^{-2}$]	$(1.3\pm0.070)\times10^{0}$	$(7.1\pm1.1)\times10^{-2}$
②Forest of wild birds（west approx. 500m）		N.D. [$<1.2\times10^{-2}$]	$(1.9\pm0.49)\times10^{-2}$	$(6\pm0.4)\times10^{0}$	$(2.8\pm0.69)\times10^{-1}$	$(6.7\pm0.44)\times10^{0}$	N.D. [$<1.6\times10^{-2}$]	$(3.1\pm0.62)\times10^{-2}$	N.D. [$<1.1\times10^{-2}$]
③ Adjacent to industrial waste disposal facility（south-southwest approx. 500m）		$(1.0\pm0.11)\times10^{-1}$	$(4.5\pm0.66)\times10^{-2}$	$(5.6\pm0.34)\times10^{0}$	$(2\pm0.51)\times10^{-1}$	$(5.2\pm0.33)\times10^{0}$	N.D. [$<4.3\times10^{-2}$]	$(1.3\pm0.081)\times10^{0}$	$(3.8\pm0.92)\times10^{-2}$
Average nuclide density ratio of fuel in Units 1 to 3 (ratio in case the ratio of Pu-238 is considered as 1)[*3]		1	－	－	－	－	0.1	10	1

*1：Released on July 8th, 2011　*2：Released on July 13th, 2011　*3：Values calculated by ORIGEN Code (round number)

2. Evaluation

Detected Cm is considered to derive from the accident due to following reasons.

- Cm-242, Cm-243 and Cm-244 are nuclides that do not exist in the natural world. In particular, Cm-242 whose half-life is relatively short (approximately 160 days) was detected.
- The density ratio of each nuclides （Am-241/Cm-242/Cm-243,Cm-244） to Pu-238 in the sample① and ③ is almost the same as the average nuclide density ratio of fuel in Units 1 to 3.

  Pu-238 in the sample ①: （Cm-242/Cm-243,Cm-244） 1：(11/0.9)

  Pu-238 in the sample ③: （Cm-242/Cm-243,Cm-244） 1：(13/0.4)

End