

Trial finding of new dust sampling method around the West Gate of Fukushima Daiichi Nuclear Power Station

Trial contents

In order to evaluate the amount of radioactive materials discharged to the air in more detail, we tried to reduce the detection limit of radioactive materials in the collected dust by lengthening time of collecting sample (increasing the amount of collection).

Sampling method

[Current method] Collect sample by dust sampler installed in the monitoring car after moving to monitoring point by car
[New method] Collect sample by special timer-controlled dust sampler which is installed at monitoring point

Sampling condition

Method	Current method	New method
Timing of sampling	August 5,2011 11:30 ~ 12:10	August 5,2011 12:30 ~ 17:30
Sampling time	40 min	300 min
Collection amount	Approx. $1.7 \times 10^{+6} \text{ cm}^3$	Approx. $1.5 \times 10^{+7} \text{ cm}^3$

Analysis result (Comparison of detection limit)

Method		Current method	New method
Volatile	I-131	$< 1.4 \times 10^{-6} \text{ Bq/cm}^3$	$< 1.5 \times 10^{-7} \text{ Bq/cm}^3$
	Cs-134	$< 3.6 \times 10^{-6} \text{ Bq/cm}^3$	$< 4.0 \times 10^{-7} \text{ Bq/cm}^3$
	Cs-137	$< 4.0 \times 10^{-6} \text{ Bq/cm}^3$	$< 4.3 \times 10^{-7} \text{ Bq/cm}^3$
Particle	I-131	$< 7.2 \times 10^{-7} \text{ Bq/cm}^3$	$< 7.9 \times 10^{-8} \text{ Bq/cm}^3$
	Cs-134	$< 2.0 \times 10^{-6} \text{ Bq/cm}^3$	$< 2.4 \times 10^{-7} \text{ Bq/cm}^3$
	Cs-137	$< 2.1 \times 10^{-6} \text{ Bq/cm}^3$	$< 2.4 \times 10^{-7} \text{ Bq/cm}^3$

Timer-controlled Dust Sampler



[Photo by] Tokyo Electric Power Company