Ground deposition maps of iodine 131 discharged from Fukushima Daiichi were produced using a newly developed method for analyzing airborne monitoring data — Joint study with JAEA and DOE/NNSA —

- Ground deposition “area” maps taken by airborne monitoring were exclusive to those of cesium 134 and 137.
- As for the short half life of iodine 131 (8 days), ground deposition data were very limited and area distribution was unknown.

**Key point of announcement**

- A Japan-U.S. joint study developed a new method for analyzing data taken by airborne monitoring.
  - JAEA and DOE developed a method to analyze each nuclide ground deposition amount from spectra data taken by airborne monitoring.
- Iodine 131 deposition amounts were analyzed based on early airborne monitoring data.
  - Iodine 131 deposition maps were created based on the analysis on ground deposition amounts by extracting iodine data taken from early airborne monitoring by DOE on April 2 and 3.
- A comparison were performed between soil samplings and airborne monitoring data to verify the validity.
  - An analytical results corrected for radioactive decay were compared to soil sampling (June 14, 2011) of iodine 131 and cesium 134. It was found both were almost identical. It also confirmed that analytical data were well matched with results from third airborne monitoring (July 2, 2011) as for cesium 134.

**Image Descriptions**

- Detector (a large sized NaI detector):
  - 3 detector (5cm X 10cm X 40cm) are in the box.

- A result of iodine 131 measured on April 2 and 3.

- Extracting iodine 131 peak and cesium 134 peak from spectra.

- An aircraft used by DOE for monitoring.

- Fukushima Daiichi NPP.
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comparison between a conventional method and a new evaluation method

Measure at test line (midair above the plain ground)

Conventional method

New analytical method

Attenuation coefficient evaluated by Monte Carlo method and actual measurement (only cesium 134)

Gross count

Air dose rate

Evaluation is difficult because proportion differs from region to region and nuclide has various types

Deposition concentration for each nuclide is directly evaluated.

134Cs and 137Cs measured with In-situ Ge

Cesium 134 and 137 deposition concentration

134Cs and 137Cs measured with In-situ Ge

Cesium 134 and 137 deposition concentration

Cesium 134 deposition concentration