

Evaluation of Environment Radiation Monitoring Results

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Nuclear Safety Commission

Nuclear Safety Commission (NSC) evaluates the Environmental Monitoring Results published by Ministry of Education, Culture, Sports, Science and Technology (MEXT). The evaluation results based on the information published on April 28 and 29, 2011 are described as below:

1. Ambient radiation dose around Fukushima Dai-ichi NPP

- Observation of ambient radiation dose rate at 20km or more far from Fukushima dai-ichi NPP found a relatively higher dose rate locally at several measuring points. It however does not reach the level that affects people's health.
- A part of area where the integrated dose was high value, and annual cumulative dose after the onset of the accident would potentially reach 20 mSv was set to be "Deliberate Evacuation Area".
- The measuring result in accordance with "The enforced plan for environmental monitoring" was announced.

We need to further watch a variation of dose rate carefully, considering other factors such as weather and wind direction.

2. Dust sampling in the air around Fukushima Dai-ichi NPP

- With regard to the measuring result of the dust sample collected at 20 km or more far from Fukushima dai-ichi NPP on April 26 and 27, the maximum radioactivities were 1.55 Bq/m³ (1.55×10^{-6} Bq/cm³) for I-131, not detected for Cs-134 and 0.662 Bq/ m³ (6.62×10^{-7} Bq/cm³) for Cs-137.
- For all of I-131, Cs-134 and Cs-137, the values are lower than the concentration limit (Note1).

We need to further watch a variation of dust sampling data carefully, considering other factors such as weather and wind direction.

3. Airborne monitoring

- No additional information was published regarding the airborne monitoring result.

4. Environmental sample around Fukushima Dai-ichi NPP

- Monitoring results was obtained on the land water (pond or rain), soil, fallout and sea water. Weed and land water showed relatively higher values; we further need continued measurement on the drinking water (tap water) and foods.
- According to the result collected at off-shore of Fukushima on April 27, the maximum radioactive concentration of I-131, Cs-134 and Cs-137 in the seawater was as follows: On the surface layer and in the low layer (depth: 114 to 163m), not detected. In the interlayer (depth: 65 to 90m), not detected for I-131, 20.6Bq/L ($2.06 \times 10^{-2} \text{Bq/cm}^3$) for Cs-134 and 19.4Bq/L ($1.94 \times 10^{-2} \text{Bq/cm}^3$) for Cs-137. The radioactive concentration in the dust above the sea was not detected for all of I-131, Cs-134 and Cs-137.
- According to the result collected at off-shore of Ibaraki on April 25, the maximum radioactive concentration of I-131, Cs-134 and Cs-137 in the seawater was as follows: On the surface layer, 5.8Bq/L ($5.8 \times 10^{-3} \text{Bq/cm}^3$) for I-131 and not detected for Cs-134 and Cs-137. In the interlayer (depth: 48 to 394m), 9.1Bq/L ($9.1 \times 10^{-3} \text{Bq/cm}^3$) for Cs-134 and not detected for I-131 and Cs-137. In the low layer, 6.0Bq/L ($6.0 \times 10^{-3} \text{Bq/cm}^3$) for I-131, 12.6Bq/L ($1.26 \times 10^{-2} \text{Bq/cm}^3$) for Cs-134 and not detected for Cs-137.
- For all of I-131, Cs -134 and Cs-137 at off-shore of Fukushima and Ibaraki, the values are lower than the concentration limit (Note2).

For the sea products, be aware of the information announced by the Ministry of Health, Labor and Welfare (MHLW) regarding relevant intervention.

We also need to continue environmental monitoring by related organizations under the arrangement by MEXT, considering various elements such as weather change.

5. Environmental radioactivity level survey by prefecture

1) Ambient radiation dose rate

Some prefectures showed a higher value compared with the average values obtained before the accident, however, it does not affect people's health.

2) Drinking water (tap water)

- Be aware of the information related announced by the MHLW regarding relevant intervention.
- In the prefectures of Tochigi, Gunma and others, readings of drinking water (tap water) monitoring were 0.68 Bq/kg for radioactive iodine and 0.14 Bq/kg for radioactive cesium at maximum as far as the data on radioactivity level in drinking water by prefecture published by MEXT was evaluated. Both were lower than the indices to limit ingestion of food and drink (Note3).

We consider that further monitoring is needed on a continuous basis.

(Note)

- (Note 1) Limits of the radioactivity in the air outside the peripheral monitoring area boundary as specified by the law are $5 \times 10^{-6} \text{ Bq/cm}^3$ for I-131, $2 \times 10^{-5} \text{ Bq/cm}^3$ for Cs-134 and $3 \times 10^{-5} \text{ Bq/cm}^3$ for Cs-137.
- (Note 2) Limits of the radioactivity in the water outside the peripheral monitoring area boundary as specified by the law are $4 \times 10^{-2} \text{ Bq/cm}^3$ for I-131, $6 \times 10^{-2} \text{ Bq/cm}^3$ for Cs-134 and $9 \times 10^{-2} \text{ Bq/cm}^3$ for Cs-137.
- (Note 3) Indices to limit ingestion of drinking water shown on “Regulatory Guide of Emergency Preparedness for Nuclear Facilities” are 300 Bq/kg for radioactive iodine and 200 Bq/kg for radioactive cesium.