Press Release
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Evaluation of Environment Radiation Monitoring Results

Original released on August 8, 2011
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 between August 4 and 7, 2011 are described as below:

1. Ambient radiation dose around Fukushima Dai-ichi NPP

- Observation of ambient radiation dose rate at 20km or further from Fukushima Dai-ichi NPP found relatively higher dose rates locally at several measuring points. They however do not reach the level that might affect people's health.

- Regarding ambient radiation dose rate within 20km radius range of Fukushima Dai-ichi NPP, a relatively higher dose rate was observed in northwestward.

- A part of the area at 20km or further from Fukushima Dai-ichi NPP where the integrated dose is so high that annual cumulative dose after the onset of the accident would potentially exceed 20mSv, was set to be "Deliberate Evacuation Area".

- High ambient dose spots not having regional extent as "Deliberate Evacuation Area", outside of "Deliberate Evacuation Area" and "Restricted Area", where ambient radiation dose rate is continually so high that their annual cumulative dose after the onset of the accident would exceed 20mSv are set to be "Specific Spots Recommended for Evacuation".

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 samples collected at 20km or further from Fukushima Dai-ichi NPP between August 1 and 4, I-131, Cs-134, Cs-137, I-132, Te-132 and other radioactive materials were lower than the detection limit.

We need to further watch variations 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 collected between August 1 and 6 were obtained on the weed, land water, soil and fallout. The soil still showed relatively higher values; we further need continued measurement on the drinking water (tap water) and foods.

- With regard to the measuring results of seawater collected around Fukushima Dai-ichi NPP between August 2 and 5, Cs-134 and Cs-137 were detected at some points close to Fukushima Dai-ichi NPP. However, they were lower than the concentration limit (Note 1).

- With regard to the measuring results of seawater collected around Fukushima Dai-ichi NPP between July 11 and 14, Sr-89 and Sr-90 were detected. However, they were lower than the concentration limit(Note 1). Nevertheless, it seems that detected Strontium was released from Fukushima Dai-ichi NPP, because they were much higher than normal background levels and Sr-89 with a short half-life period was detected.

- With regard to the measuring results of ground water collected in Fukushima prefecture on July 19 and 20, I-131, Cs-134 and Cs-137 were lower than the detection limit.

It is a matter of concern both domestically and internationally to grasp the concentration and distribution of radiological materials in marine environment. As the NSC showed in the report entitled "The Basic Ideas for Future Radiation Monitoring" on July 21, it is necessary to adopt the detection limits established for investigating the radioactivity level in the environment.

For the food distribution restrictions, 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 higher values compared with the average values obtained before the accident, however, their values do not affect people's health.

2) Drinking water (tap water)

- Be aware of the information on relevant intervention announced by the MHLW.

- As far as the data on radioactivity level in drinking water by prefecture published by MEXT was evaluated, radioactive iodine and cesium were lower than the detection limit. They were lower than the indices to limit ingestion of food and drink (Note2).

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

(Note)

(Note 1) Limits of the radioactivity in the water outside the peripheral monitoring area boundary as specified by the law are 4×10^{-2}Bq/cm^3 (40Bq/L) for I-131, 6×10^{-2}Bq/cm^3 (60Bq/L) for Cs-134, 9×10^{-2}Bq/cm^3 (90Bq/L) for Cs-137, 3×10^{-1}Bq/cm^3 (300Bq/L) for Sr-89, and 3×10^{-2}Bq/cm^3 (30Bq/L) for Sr-90.

(Note 2) Indices to limit ingestion of drinking water shown on "Regulatory Guide of Emergency Preparedness for Nuclear Facilities" are 300Bq/kg for radioactive iodine and 200Bq/kg for radioactive cesium.

(Provisional translation)

Standpoint of the Nuclear Safety Commission for the Termination of Urgent Protective Actions implemented for the Accident at Fukushima Dai-ichi Nuclear Power Plant of the Tokyo Electric Power Company

August 4th, 2011
Nuclear Safety Commission

1. Basic Standpoint

(1) Conditions for the termination

The Nuclear Safety Commission (NSC) is of the opinion that discontinuation of urgent protective actions (actions to be implemented in an emergency for radiation protection, such as evacuation and indoor sheltering), which have been implemented for the accident at Fukushima Dai-ichi Nuclear Power Plant (NPP) of the Tokyo Electric Power Co., Inc., should be based upon the fulfillment of the following conditions.

- In light of the purpose of urgent protective actions, continuation of such actions is judged to be unnecessary or unjustified. In concrete terms, it is expected with certainty that the criteria for the application of current actions or new criteria to be set for the termination of current actions will be fulfilled.

(2) Adjustment with new protective actions

In the termination of the current urgent protective actions, it is often necessary to implement new protective actions, such as measures for proper control of exposure, decontamination, and improvement of situation. Therefore, attention should be paid to the following point.

- For the proper termination of urgent protective actions, preparations required for new protective actions should be made with the implementation period, method and practical contents, etc., in advance of the termination of the current actions.

(3) Coordination with local governments and residents

In order to terminate the current urgent protective actions and efficiently and effectively implement new protective actions, it is important to let the

related local governments and residents participate in the decision-making process. This will help local governments and residents understand the new protective actions more deeply, and it is expected that the new actions will be more effective and implemented more smoothly. Therefore, attention should be paid to the following point.

- In the termination of current urgent protective actions and the planning of new protective actions, such as measures for proper control of exposure, decontamination and remediation, a framework for involvement of related local governments and residents to participate in the process should be constructed and utilized properly.

2. Standpoint for the termination of each urgent protective action

In accordance with the basic standpoint above, the following shows the standpoint for the termination of the major urgent protective actions that are currently implemented. The NSC is of the opinion that it is possible to gradually reduce the area for the urgent protective actions.

(1) Standpoint for the termination in the Emergency Evacuation-Prepared Area

The Emergency Evacuation-Prepared Area has been designated for smooth reaction of local residents by letting them be "always prepared for sheltering or evacuation in case of further emergency," because "the possibility of requirement of indoor sheltering or evacuation remains in the present sheltering area, within a 20–30 km radius from the Fukushima Dai-ichi NPP, since the plant has not yet reached a stable condition."

In light of the purpose of such designation, the NSC considers that the current protective actions in the Emergency Evacuation-Prepared Area can be terminated when the possibility to occur a situation in this area that requires urgent sheltering or evacuation is judged to be extremely small. The condition for termination is as follows.

- The possibility to occur a situation that requires urgent sheltering or evacuation is extremely small judged from conditions and situations of the Fukushima Dai-ichi NPP, and even if such a situation should occur, it is judged that residents have enough time to react to the situation. In addition, in order to reduce the present residents' exposure (including internal exposure; the same hereafter), necessary decontamination and monitoring should be implemented.

(2) Standpoint for partial termination in the Evacuation Area (within a 20km-radius)

The area where the residents were ordered to be evacuated (the Evacuation Area) has been designated in order to avoid possible exposure with high doses to radioactive materials released in a large amount due to the accident at the Fukushima Dai-ichi NPP.

In light of the purpose of such designation, the NSC considers that the current evacuation in a part of the area can be terminated when the possibility to occur a situation that requires urgent sheltering or evacuation is judged to be extremely small with the exception of the condition for termination is as follows. There are still some places in this area where the annual cumulative dose after the onset of the accident would be 20 mSv or more. It is necessary to treat these places in the same way as the "Deliberate Evacuation Area" and continue the evacuation.

- The possibility to occur a situation that requires urgent sheltering or evacuation is extremely small judged from present conditions and situations of the Fukushima Dai-ichi NPP, and even if such a situation should occur, it is judged that residents have enough time to react to the situation. In addition, in order to reduce the present residents' exposure, necessary decontamination and monitoring should be implemented.
- Residents' annual dose in the area after the termination of evacuation is expected with certainty to be 20 mSv or less, and efforts to reduce the dose as low as reasonably achievable should be made, with the reference level within the range of 1–20 mSv per year, and a long-term goal of 1 mSv per year. In addition, prior to the termination of evacuation, necessary decontamination should be implemented, and detailed monitoring should be carried out, in order to estimate exposure dose that residents would receive.
- An optimized plan of protective actions to reduce exposure in the area is clearly made, including measures for proper control of exposure, decontamination and improvement of situation, etc. The plan should indicate that residents' annual exposure dose would be 1mSv or less in the long term with the efforts to reduce exposure.

(3) Standpoint for the termination in the Deliberate Evacuation Area

The Deliberate Evacuation Area has been designated in order to avoid residents' being exposed to a high dose, since "high cumulative doses have been estimated in some areas outside the 20 km of the Fukushima Dai-ichi NPP due to local deposition of radioactive materials released from the plants affected by the weather and geographical conditions."

In light of the purpose of such designation, the NSC considers that the current evacuation in this area can be terminated when residents are expected with certainty not to be exposed to a high dose (20 mSv per year or more, including internal exposure) by effect of weathering and decontamination, etc. The condition for termination is as follows.

- Residents' annual dose in the area after the termination of evacuation is expected with certainty to be 20 mSv or less, and efforts to reduce the dose as low as reasonably achievable should be made, with the reference level within the range of 1-20 mSv per year, and a long-term goal of 1 mSv per year. In addition, prior to the termination of evacuation, necessary decontamination should be implemented, and detailed monitoring should be carried out, in order to estimate exposure dose that residents would receive.
- An optimized plan of protective actions to reduce exposure in the area is clearly made, including measures for proper control of exposure, decontamination and improvement of situation, etc. The plan should indicate that residents' annual exposure dose would be 1mSv or less in the long term with the efforts to reduce exposure.

(Reference) Standpoint of international standards for the termination of urgent protective actions.

(ICRP Pub.82)

・(122) The simplest basis for justifying the discontinuation of intervention after an accident is to confirm that the exposures have decreased to the action levels that would have prompted the intervention. If such a reduction in exposure is not feasible, the generic reference level of existing annual dose below which intervention is not likely to be justifiable could provide a basis for discontinuing intervention.

(ICRP Pub.109)

・(73) The termination of protective measures is another area where the interaction of urgent protective measures and later protective measures is particularly obvious. Withdrawing all urgent protective measures and then, some time later, initiating new protective measures such as decontamination may, purely from consideration of future doses and dose rates, seem the optimum course of action. It may not be optimum from a practical and 'cost' viewpoint. For example, ··· decontamination may be carried out more efficiently in the absence of people living in the area.

・(103) The active participation of stakeholders will, in general, bring relevant local knowledge, experience, and values to decision-making processes such that the resulting detailed protection strategies are more likely to be well focused, understood, and supported.

・(106) It is important to involve, wherever possible, relevant stakeholders in discussions regarding termination of protective measures. While it will be difficult, if not impossible, to discuss decisions with populations sheltered at home, it will be essential to discuss decisions to return to evacuated areas with those who have been evacuated, and the termination of protective measures implemented at a later stage.

・(108) The involvement of relevant stakeholders is essential, and processes and procedures should be established to ensure that such involvement can take place efficiently.

・(115) The change from an emergency exposure situation to an existing exposure situation will be based on a decision by the authority responsible for the overall response. ··· The Commission recommends that planning for the transition from an emergency exposure situation to

an existing exposure situation should be undertaken as part of the overall emergency preparedness, and should involve all relevant stakeholders.

(ICRP Pub.111)

- (50) The Commission recommends that the reference level for the optimization of protection of people living in contaminated areas should be selected from the lower part of the 1–20 mSv/year band recommended in Publication 103 for the management of this category of exposure situation.

(IAEA BSS SSNo115)

- V.26. A protective action will be discontinued when further assessment shows that continuation of the action is no longer justified.

(DS379 (new BSS))

- 4.5. (f) Optimized protection strategies for the implementation and termination of measures to protect members of the public who may be exposed in an emergency, including considerations for protection of the environment

(IAEA GS-R2)

- 4.44. A protective action shall be discontinued when it is no longer justified.
- 4.46. National guidelines in accordance with international standards shall be adopted for the termination of urgent protective actions.
- 4.87. "A protective action [shall] be discontinued when further assessment shows that continuation of the action is no longer justified."