

People's exposure to radiation

Planned exposure situations

Situations where protection measures can be planned in advance and the level and range of exposure can be reasonably forecast

Dose limits

(Public exposure) 1 mSv/year
(Occupational exposure)
100 mSv/5 years and
50mSv/year

Measures

Manage disposal of radioactive waste and long-lived radioactive waste

Existing exposure situations

Situations where exposure has already occurred as of the time when a decision on control is made

Reference level

A lower dose range within 1 to 20 mSv/year, with a long-term goal of 1 mSv/year

Measures

Ensure voluntary efforts for radiological protection and cultivate a culture for radiological protection

Emergency exposure situations

Contingency situations where urgent and long-term protection measures may be required

Reference level

Within 20 to 100 mSv/year

Measures

Evacuate, shelter indoors, analyze and ascertain radiological situations, prepare monitoring, conduct health examinations, manage foods, etc.

mSv: millisieverts

Source: Prepared based on the ICRP Publication 103, "The 2007 Recommendations of the International Commission on Radiological Protection" (ICRP, 2007)

The International Commission on Radiological Protection (ICRP) categorizes exposure situations into normal times that allow planned control (planned exposure situations), emergencies such as an accident or nuclear terrorism (emergency exposure situations), and the recovery and reconstruction period after an accident (existing exposure situations) and sets up protection standards for each of them.

In normal times, protection measures should aim to prevent any exposure that may cause physical disorders and to reduce risks of developing cancer in the future as low as possible. Therefore, the dose limit for public exposure is set at 1 mSv per year, requiring proper management of places where radiation or radioactive materials are handled to ensure that annual public exposure doses do not exceed this level.

For workers who handle radiation, the dose limit is set at 100 mSv per five years.

On the other hand, in an emergency such as a nuclear accident (emergency exposure situations), as physical disorders that would never be seen in normal times may develop, priority should be placed on measures to prevent serious physical disorders rather than on measures to be taken in normal times (to reduce risks of developing cancer in the future). Therefore, a reference level of 20 to 100 mSv/year is set for the public instead of applying dose limits and efforts to reduce exposure doses are required. For people who are engaged in emergency measures or rescue activities, a level of 1,000 or 500 mSv may sometimes be adopted as a rough indication depending on the circumstances.

Then, in the recovery and reconstruction period (existing exposure situations), a reference level is to be set within the range of 1 to 20 mSv/year, which is lower than the reference level in an emergency but higher than the dose limits applicable in normal times. (Related to p.171 of Vol. 1, "ICRP Recommendations and Responses of the Japanese Government")

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