Present laws and regulations in Japan have not yet incorporated the 2007 Recommendations of the ICRP, but dose limits specified in the 2007 Recommendations are mostly the same as those in the 1990 Recommendations. Therefore, dose limits in Japan also mostly coincide with those specified in the 2007 Recommendations. Japan has uniquely specified dose limits for female radiation workers (5 mSv per three months).

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Updated on March 31, 2020
The accident at TEPCO’s Fukushima Daiichi NPS occurred while deliberations were continuing over the incorporation of the 2007 Recommendations of the ICRP into domestic laws and regulations.

The accident changed exposure situations, and the idea of reference levels, which had been unfamiliar to Japanese laws and regulations, was adopted for public exposure. In exposure dose control using reference levels, an initial reference level is first set based on the standards for respective exposure situations specified in the 2007 Recommendations of the ICRP so as to ensure that no one receives an unduly high dose. Secondly, if the situation has improved and there is almost no one who receives a high dose exceeding the reference level, a new lower reference level is set as necessary to efficiently achieve exposure dose reduction.

In the meantime, regarding occupational exposure, the emergency dose limit was temporarily raised from 100 mSv to 250 mSv as an exception for an unavoidable case for the purpose of preventing the expansion of the disaster at the NPS. Later, as the work to achieve stable cold shut-down conditions of the reactors was completed, this exceptional measure was abandoned.

Considering the need to develop regulations on the prevention of radiation hazards during emergency work in preparation for any possible nuclear emergencies at nuclear facilities in the future, the Ordinance on Prevention of Ionizing Radiation Hazards was partially amended to raise the exceptional emergency dose limit to 250 mSv. The amended Ordinance was put into force on April 1, 2016.

(Related to p.170 of Vol. 1, "Reduction of Exposure Doses Using Reference Levels")

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In Japan, the new standard limits for radioactive materials in foods were established and were put into force on April 1, 2012. Under the new standard limits, foods are classified into four categories, and the standard limit for drinking water, which people take most frequently, was set at 10 Bq/kg.

The standard limit for general foods was set at 100 Bq/kg. However, for "infant foods" consumed by infants under one year old and for "milk" whose intake by children is extremely high, the standard limit was set at 50 Bq/kg, respectively.

All foods other than infant foods were categorized as general foods based on the idea to minimize gaps in additional doses caused by differences in individuals' eating habits. The value was set with sufficient room to ensure safety no matter what foods people eat as long as radioactive Cs concentrations therein are within the standard limit.

Regulation values vary by country due to differences in annual exposure dose limits based on which the respective countries set their standard limits and in contamination rates in foods, etc. (In Japan, regulation values were set on the safe side based on the annual exposure dose limit of 1 mSv and on the assumption that 50% of general foods and 100% of milk and infant foods are contaminated. On the other hand, the Codex Alimentarius Commission specifies the annual exposure dose limit as 1 mSv and assumes that 10% of foods are contaminated.)


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There is scientific evidence for the fact that radiation doses of 100 to 200 mSv or over in a relatively short time increase deterministic effects (tissue reactions) and cancer risks. Therefore, in an emergency due to a radiation accident, the initial reference level is set to avoid annual exposure doses of 100 mSv or over in order to prevent serious physical disorders. When the situation improves as the accident is brought under control and there is almost no one who receives a high dose exceeding the initial reference level, a new lower reference level (such as 1 to 20 mSv per year) is set to curb increases in risks of any possible cancer in the future, thereby further promoting exposure dose reduction (p.164 of Vol. 1, "Exposure Situations and Protection Measures").

As the standard limit in normal times, 1 mSv/year is adopted. As a result, some misunderstand that radiation exposure exceeding 1 mSv per year is dangerous or that they may be exposed to radiation up to that level. However, dose limits do not represent the threshold dividing the safety and the danger.

It is not that radiation exposure up to 1 mSv per year is permissible. Principally, radiation exposure should be reduced as low as practically achievable in light of various circumstances.

(Related to p.117 of Vol. 1, "Relationship between Solid Cancer Deaths and Doses")

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