

3 ICRP and NCRP Recommendations on Dose Limits

The recommendations of the International Commission on Radiological Protection (ICRP) and the United States National Council on Radiation Protection and Measurements (NCRP) are summarized in this section. These recommendations have not been endorsed by the United States Nuclear Regulatory Commission. Their status in the United States is therefore advisory in nature. They are succinctly outlined here to give the gist of current scientific thinking to help organizations in formulating ALARA policies and programs.

3.1 ICRP Publication 60, 1990 Recommendations of the International Commission on Radiological Protection

Table 3.1 ICRP Publication 60 - recommended dose limits^a

Application	Dose limit	
	Occupational	Public
Effective dose	20 mSv per year, averaged over defined periods of 5 years ^b	1 mSv in a year ^c
Annual equivalent dose in:		
the lens of the eye	150 mSv	15 mSv
the skin ^d	500 mSv	50 mSv
the hands and feet	500 mSv	---

^aThe limits apply to the sum of the relevant doses from external exposure in the specified period and the 50-year committed dose (to age 70 years for children) from intakes in the same period.

^bWith the further provision that the effective dose should not exceed 50 mSv in any single year. Additional restrictions apply to the occupational exposure of pregnant women.

^cIn special circumstances, a higher value of effective dose could be allowed in a single year, provided that the average over 5 years does not exceed 1 mSv per year.

^dThe limitation on the effective dose provides sufficient protection for the skin against stochastic effects. An additional limit is needed for localized exposures in order to prevent deterministic effects.

3.2 NCRP Report No. 91, Recommendations on Limits for Exposure to Ionizing Radiation

1. The cumulative effective dose equivalent to a worker should not exceed 1 times the worker's age in year; i.e., $1 \times N$ instead of the former $5(N-18)$ formula.
2. Use of committed effective dose equivalent for planning purposes and the use of annual (rather than committed) doses for post-(internal) exposure control.

3. A monthly dose limit as well as a limit on total gestation dose to the embryo/fetus.
4. The use of "reference levels" set up by the radiation user below the regulatory limits.
5. A Negligible Individual Risk Level of 1 mrem (0.01 mSv) per year.