

INTERNATIONAL REGULATORY ACTIVITIES

International Commission of Radiological Protection

Revision of International Commission on Radiological Protection (ICRP) Recommendations

The International Commission on Radiological Protection was first established in 1928, as the International X-ray and Radium Protection Committee, linked to the International Congresses of Radiology. In 1950 it was restructured and renamed. Although its parent organisation remains the International Society of Radiology (ISR, the professional society of radiologist physicians), it has greatly broadened its interests to take account of the increasing uses of ionising radiation outside the medical area and practices involving the generation of radiation and radioactive materials. The Commission is a non-profit-making organisation, financed mainly by voluntary contributions from national and international bodies with an interest in radiological protection. Some additional funds accrue from royalties on the Commission's publications. Members' institutions also provide support by making in-kind contributions.

The first general recommendations of the Commission were issued in 1928 and concerned the protection of the medical profession through the restriction of working hours with medical sources. The development of both the military and industrial uses of nuclear energy led the Commission in the early 1950s to introduce recommendations for the protection of the public. In 1977, the Commission first quantified the risks of stochastic effects of radiation and proposed a system of dose limitation with its three principles of justification, optimisation of protection and individual dose limitation. In 1991, the Commission produced new recommendations partly because of revisions upward of the estimates of risk from exposure to radiation, and partly to extend its philosophy to a system of protection, rather than one of dose limitation. The principles of justification, optimisation and individual dose limitation remained, but more stringent requirements were placed on the optimisation of protection from sources by restricting maximum doses by constraints so as to limit the inequity that is likely to result from inherent economic and societal judgements. Subsequent reports providing advice on more specialised topics have been published.

The Commission has always been an advisory body, which offers its recommendations to regulatory and advisory agencies at international, regional and national levels, mainly by providing guidance on the fundamental principles on which appropriate radiological protection can be based. The Commission does not aim to provide regulatory texts, but rather believes that regulatory texts developed by national authorities should be developed from, and have aims that are broadly consistent with, its guidance. The main objective of the ICRP recommendations is to provide an appropriate standard of protection for man without unduly limiting the beneficial practices giving rise to radiation exposure. The International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, first established in 1962, have always closely followed the ICRP Recommendations.

Since issuing its latest basic recommendations in 1991 as ICRP Publication 60, the Commission has reviewed these recommendations regularly and, from time to time, has issued supplementary reports in the Annals of the ICRP. The extent of these supplementary reports and the publication of new scientific data have indicated the need for consolidation and revision of these recommendations. The recognition that the radiological protection of non-human species should receive more emphasis than in the past and societal developments in relation to expectations of transparency in establishing globally accepted recommendations are also important factors. The Commission has therefore decided to issue revised recommendations with three primary aims in mind:

- to take account of new biological and physical information and of trends in the setting of radiation safety standards;
- to improve and streamline the presentation of the recommendations; and
- to maintain as much stability in the recommendations as is consistent with the new scientific information.

The major features of the revised recommendations are:

- Maintaining the Commission's three fundamental principles of radiological protection, namely justification, optimisation and dose limitation, and clarifying how they apply to radiation sources delivering exposure and to individuals receiving exposure. This includes establishing source-related principles that apply to all controllable exposure situations, which the revised recommendations now characterise as *planned, emergency and existing exposure situations*.
- Maintaining the Commission's individual dose limits for effective dose and equivalent dose from all regulated sources that represent the maximum dose that would be accepted in planned situations by regulatory authorities.
- Using the same conceptual approach for constraining doses in source-related protection, which should be applicable to all exposure situations, regardless of the type of source. The dose constraints would then quantify the most fundamental levels of protection for workers and the public from single sources in all situations.
- Complementing the limits and constraints with the requirement to optimise protection at a source.
- Bringing up to date the understanding of the biology and physics of radiation exposure, and consequently updating the radiation and tissue weighting factors in the dosimetric quantity effective dose.
- Including a policy approach for radiological protection of non-human species.

It is anticipated that these draft recommendations should be finalised and approved in November 2006.