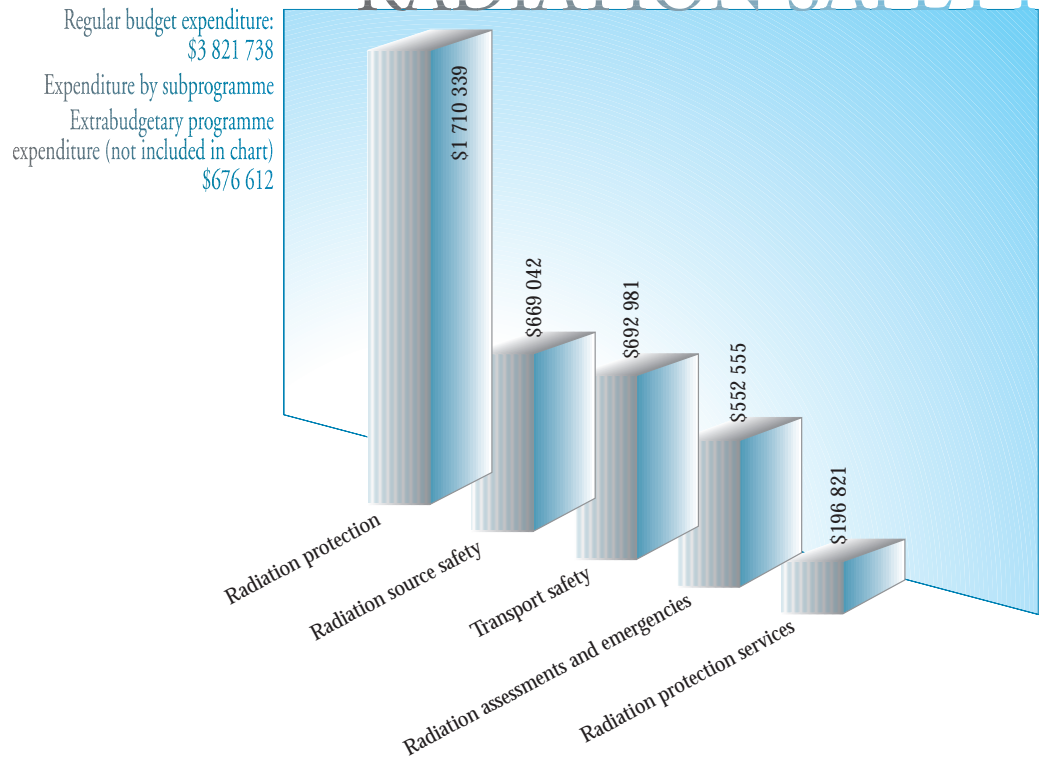


RADIATION SAFETY



The radiation safety programme has two complementary objectives: development of a unified set of safety standards based on consensus; and provision for the application of these standards in Member States and through other international organizations. In order to achieve these objectives, the programme emphasized a number of areas of work covering the relevant underlying research, the development of requirements level consensus documents and supporting guides and the preparation of practical manuals and other documents to assist in standards implementation by regulatory authorities. Many of these documents provide the technical underpinning for technical co-operation projects, including the Model Project on strengthening radiation and waste safety infrastructures in over 50 Member States. In addition, considerable effort was devoted to emergency response activities, including servicing the Conventions on Early Notification of a Nuclear Accident and Assistance in the Case of a Nuclear Accident or Radiological Emergency. To support these activities a considerable number of research programmes, training courses, conferences and other information exchange meetings were organized under the technical co-operation programme.

Radiation protection

One of the key regulatory assumptions supporting the system of radiological protection of the International Commission on Radiological Protection (ICRP) and the Basic Safety Standards (BSS) is that any increment of radiation dose delivered to a person leads to a proportional increment of risk of adverse health effects. This assumption, and other aspects of the relevant radiobiology affecting the regulation of exposure to radiation, were examined at an international conference, entitled 'Low Doses of Ionizing Radiation: Biological Effects and Regulatory Control', held in Seville, Spain, in November. The conclusions supported this current regulatory assumption as the most radiobiologically defensible basis for radiation protection.

Development of a set of Safety Guides to complement the BSS continued, with a number of drafts being circulated for comment to all Member States in preparation for final approval by the appropriate standards advisory committee. The Guides will then be considered by the Advisory Commission on Safety

Standards (ACSS) for transmission to the Director General.

One of the more difficult judgements that a regulatory authority has to make is which activities need to be regulated and which may safely be left outside the regulatory system. A balance needs to be struck between ensuring public safety and avoiding over-regulation. In this connection, significant progress was made, through a specialists meeting on exclusion, exemption and clearance from regulatory control, in clarifying the problem and the terminology used to deal with it. The emerging consensus will be reflected in a Safety Guide.

Radiation source safety

A number of reports and other tools helpful to Member States in establishing or improving their regulatory infrastructures, particularly their systems for notification, registration, licensing and inspection of radiation sources, were approved for publication. In particular, one book focuses on the organization and implementation of a national infrastructure for the protection and safety of radiation sources. This is supported by examples of safety assessment plans for the authorization and inspection of radiation sources in medicine, industry and research. Another major step was the specification and development of a software package — the Regulatory Authority Information System (RAIS) — that will contain modules on inventory, authorization, inspection, enforcement and follow-up actions.

Further advice and feedback from operational experience with accidents and incidents was prepared for publication as lessons learned from accidents in industrial radiography. Direct assistance was provided to Member States under the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency and through general arrangements dealing with specific accidents or incidents. A number of reports on such accidents are being prepared.

Transport safety

Work began on integrating the 1996 edition of the *Regulations for the Safe Transport of Radioactive Material* into the requirements of the United Nations ECOSOC

Committee of Experts on the Transport of Dangerous Goods, the International Civil Aviation Organization, the International Maritime Organization and Member States. A target date of 1 January 2001 was adopted to ensure that the revised requirements can enter into force simultaneously for all modes of transport. The new requirements will include stronger packaging for the transportation by air of larger quantities of materials.

The process used to keep the transport regulations up to date was reviewed to ensure that changes can be made when needed. The recommendations of a Technical Committee on both the frequency of changes and the procedures involved will be considered by the Transport Safety Standards Advisory Committee (TRANSSAC). Another Technical Committee considered ways to improve the Agency's transport safety databases, which currently contain information on package design approvals, quantity of packages shipped, accidents and exposures resulting from transport activities. A recommendation that the frequency and content of these data collection efforts be changed will be considered by TRANSSAC.

Radiation assessments and emergencies

In response to advice from the Radiation Safety Standards Advisory Committee (RASSAC) that there is a need for a requirements level document on radiation assessments and emergencies, the work programme was modified, with the necessary Guides and other supporting documents being rescheduled to follow in a co-ordinated fashion. However, some technical documents that consolidated existing material were published on the development of emergency response preparedness for nuclear or radiological accidents and on model procedures for protective actions during a nuclear accident. These documents have formed the basis of technical co-operation projects in the field of emergency planning, particularly in Armenia, and in a regional project aimed at harmonizing nuclear emergency response in eastern and central Europe.

The Agency participated in an international emergency exercise based on a hypothetical accident at the Loviisa nuclear power plant in Finland. The exercise, organized by the OECD/NEA and involving 28 States and five international organizations, demonstrated that the

Agency's reorganized emergency response system could fulfil its obligations under the Conventions. The lessons learned from the exercise have been incorporated into revised operating procedures for the Agency's Emergency Response Centre.

There was a noticeable increase in the number of requests for assistance during the year that were accommodated through the Agency's technical co-operation programme. A team went to Bangladesh to perform a radiological assessment following an explosion at a gas well in which a number of radioactive sources could not be accounted for. Medical assistance was provided for the treatment of a victim of a critical assembly accident in the Russian Federation. Following the discovery of 12 sources at a military training centre in Georgia, an Agency team carried out a radiological assessment and assisted in the safe storage of the sources. Nine persons who were severely exposed are being treated in hospitals in France and Germany under medical assistance organized by the WHO and the Agency. A team was also sent to Costa Rica to assist the local authorities in assessing the consequences of an accident in a radiotherapy unit in which a miscalibrated source was used for some time, resulting in incorrect doses to more than 100 patients.

Radiation protection services

The provision of radiation safety services included the monitoring of about 400 Agency staff and 200 field experts, provision of ad hoc training in radiation protection and support for the Agency's Action Team in Iraq. A quality assurance programme was initiated with the aim of complying with the standards of the International Organization for Standardization.

