

Radiation and Transport Safety

Objective

To achieve global harmonization of radiation and transport safety standards and standards for the safety and security of radiation sources and thereby to raise the levels of protection of people, including Agency staff, against radiation exposure.

Revision of the Basic Safety Standards

The Agency, in cooperation with the co-sponsoring and potential co-sponsoring organizations, initiated the revision of the

International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (the BSS)

in 2007 at a technical meeting in July that involved more than 130 participants. The meeting made recommendations on the revision of the BSS, including one that the revised edition should follow the 2007 recommendations of the ICRP to the extent possible. Progress reports on the revision of the BSS were made to the Commission on Safety Standards and the various Safety Standards Committees at their meetings in 2007. The committees endorsed the change in the structure of the BSS, based on ICRP

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exposure situations, and provided detailed guidance on how education and training, reference levels, existing exposure situations and terminology should be treated.

Application of the Agency’s Safety Standards

In response to a request of the Government of Chile, the Agency conducted an appraisal of the operational aspects of the radiation protection of workers and the public within the major facilities of the Chilean Nuclear Energy Commission (Fig. 1).

This was the first combined appraisal for occupa-

tional and public protection performed on an operational organization. The appraisal resulted in recommendations and suggestions on where

improvements were necessary or desirable to further strengthen national activities. A number of good practices were also identified for dissemination to other Member States.

In 2007, the Agency participated in gamma spectrometry and dose rate measurements in an emergency situation intercomparison exercise in Austria (Fig. 2). This exercise — which was organized by the Austrian Research Centers in cooperation with the Agency and the Austrian



FIG. 1. Radioisotope production facility visited during the appraisal of the Chilean Nuclear Energy Commission.



FIG. 2. High resolution gamma spectroscopy systems being tested under field conditions at the in situ intercomparison scenario exercise in Austria.

Nuclear, Biological and Chemical Defence School — tested preparedness in the event of contamination after an accident and emergency situation, including malicious acts or as a legacy from past activities.

Assisting Member States to Improve their Safety Infrastructure

Comprehensive radiation and waste safety infrastructure profiles have now been developed and are being maintained for 107 Member States. Each profile is based on six thematic safety areas (TSAs) that cover: national regulatory infrastructure; occupational protection; medical exposure, including patient protection; public and environmental protection; emergency preparedness and response; and education and training. The information in the profile is derived from numerous sources, including mission reports, country reports at regional coordination meetings and self-assessment questionnaires. These profiles provide the basis for an analysis of each State's regulatory infrastructure relative to the safety and security of radiation sources, resulting in the development of country specific action plans that identify both the priorities and the actions to be taken by the Member State, and the assistance to be provided by the Agency. This coordinated assistance facilitates Member State

progress towards the application of international safety standards.

Strengthening Radiation Protection: Education and Training in Radiation, Transport and Waste Safety

The General Conference welcomed the Secretariat's efforts to ensure the wide participation of developing countries in the forthcoming XII Congress of the International Radiation Protection Association.

In 2007, the Agency held postgraduate educational courses on radiation protection and the safety of radiation sources in Argentina (in Spanish), Malaysia (in English), Morocco (in French), South Africa (in English) and the Syrian Arab Republic (in Arabic). In addition, the Agency completed a number of teaching aids for radiation protection officer training courses. Also during the year, the Agency conducted an education and training appraisal mission in Morocco. In addition to noting several good practices, the mission identified areas for improvement.

Other assistance to Member States in 2007 included training courses in the radiation protection of health professionals. The range of training material available to Member States was expanded with the release of a new package on the prevention of accidental exposure in radiotherapy.

Code of Conduct on the Safety and Security of Radioactive Sources

In June, technical and legal experts met in Vienna on the implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Import and Export of Radioactive Sources. Information was exchanged and a variety of topics were discussed, including: infrastructure for regulatory control; facilities and services available to the persons authorized to manage radioactive sources; training of staff in the regulatory body, law enforcement agencies and emergency service organizations; experience in establishing a national register of radioactive sources; and national strategies for gaining or regaining control over orphan sources. The meeting confirmed that there was widespread international support for the Code of Conduct and the Guidance. The meeting recognized that implementation of the provisions of the Code of Conduct was uneven among Member States due to, inter alia, facilities and services available to the persons authorized to manage the radioactive sources, training of staff in the regulatory body, law enforcement agencies and emergency services, legislation and regulations on safety and security of radioactive sources, national strategies for gaining or regaining control over orphan sources, and financial resources.

Radiological Protection of Patients

In line with the recommendations of the International Action Plan on the Radiological Protection of Patients, activities were begun to provide information to health professionals. Building on the success of the dedicated web site on the radiological protection of patients (<http://rpop.iaea.org>), the site was enhanced with information on the radiation protection of paediatric patients, since children are a subgroup of the population at greater risk from radiation exposure.

In a project initiated under a regional cooperation agreement for Asia and the Pacific, the Asian Network of Cardiologists in Radiation Protection was established in 2007. The Agency is coordinating the activities of the network by organizing and supporting an annual meeting with network members, providing technical coordination and monitoring the action plans developed during the annual meeting.

Safe Transport of Radioactive Material

As part of the implementation of the Action Plan of the International Steering Committee on Denials of Shipment of Radioactive Material established in 2006, the Agency convened a two day regional workshop in Montevideo in July to discuss the reasons for denials of shipment, the role of the Agency and the Transport Regulations in alleviating denials, and the effect of denials on industry. Participants also made presentations on the instances and effects of denials of shipment in their countries. The main outcomes of the workshop included a regional plan of action to address instances of denials and a regional network to ensure that communication is facilitated and is ongoing. These resulted in additional actions being proposed, and feedback has been received on how the workshop participants implemented actions in their countries.

Ionizing Radiation Warning — Supplementary Symbol

A new radiation warning symbol (Fig. 3) was published by the ISO as Standard No. 21482: Ionizing-Radiation Warning — Supplementary Symbol. The introduction of the new symbol is a result of the Agency's efforts to develop a universal radiation warning symbol. The new symbol is intended to supplement rather than replace the trefoil sign for ionizing radiation on Category 1, 2 and 3 sources, which are defined as dangerous sources capable of causing death or serious injury if accessed by unauthorized persons. The Agency will assist Member States in the appropriate use of the new symbol.



FIG. 3. The new radiation warning symbol to supplement the existing trefoil sign.