

Radiation and Transport Safety

Objective

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

Status of Radiation and Transport Safety around the World in 2008

Occupational radiation protection in nuclear installations was generally well managed in 2008. The most significant occupational radiation exposures continued to involve workers handling radioisotopes. Many Member States continued to incorporate the provisions 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* (Import/Export Guidance) into their national legislation.

Denials and delays of shipment of radioactive material continued to occur in all parts of the world. Although acceptable solutions are difficult to identify, it is clear that effective outreach to and communication with transport industry personnel, whose main activity is not handling radioactive material, is essential to mitigate denials and delays.

Revision of the International Basic Safety Standards

Revision of the *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources* (the BSS) continued, with coordination by the BSS secretariat.¹ Three drafting meetings were held in 2008, and a first draft of the revised BSS was completed in June. This draft was subsequently reviewed by the Agency's four Safety

¹ Consisting of representatives of eight co-sponsoring and potential co-sponsoring international organizations: the European Commission, FAO, IAEA, ILO, OECD/NEA, PAHO, UNEP and WHO.

Standards Committees.² After refining the draft on the basis of these reviews, the BSS secretariat will send it to Member States for comment in 2009, and publish the revised BSS in 2010.

Education and Training in Radiation, Transport and Waste Safety

As part of the wide range of activities on capacity building for sustainable education and training programmes in Member States, an Education and Training Appraisal mission visited Ghana, a potential regional training centre for English-speaking countries in Africa. Another mission went to Greece, which hosts the Agency's post-graduate educational course in radiation safety and the safety of sources, as well as other specialized courses for Member States in Europe. In 2008, the Agency entered into a long term agreement with Argentina in the area of education and training. Post-graduate educational courses in radiation safety and the safety of radiation sources were held in Argentina, Belarus, Malaysia, Morocco and the Syrian Arab Republic. Also in 2008, the Agency developed training material for radiation protection officers.

Improving the Radiation Safety Infrastructure in Member States

Development of a new information management system (IMSIMS) was completed in 2008. This system will be made available to Member States in 2009 to update the Radiation and Waste Safety Infrastructure Profiles for 107 countries receiving Agency assistance. IMSIMS will provide updated information about the national and regional status of radiation safety infrastructures. This information will help identify needs and priorities in Member States, which will be used when planning future Agency programmes.

The 12th International Congress of the International Radiation Protection Association, which was co-sponsored by the Agency, was held in Buenos Aires from 20 to 25 October 2008. The

² Covering nuclear, radiation, transport and waste safety.

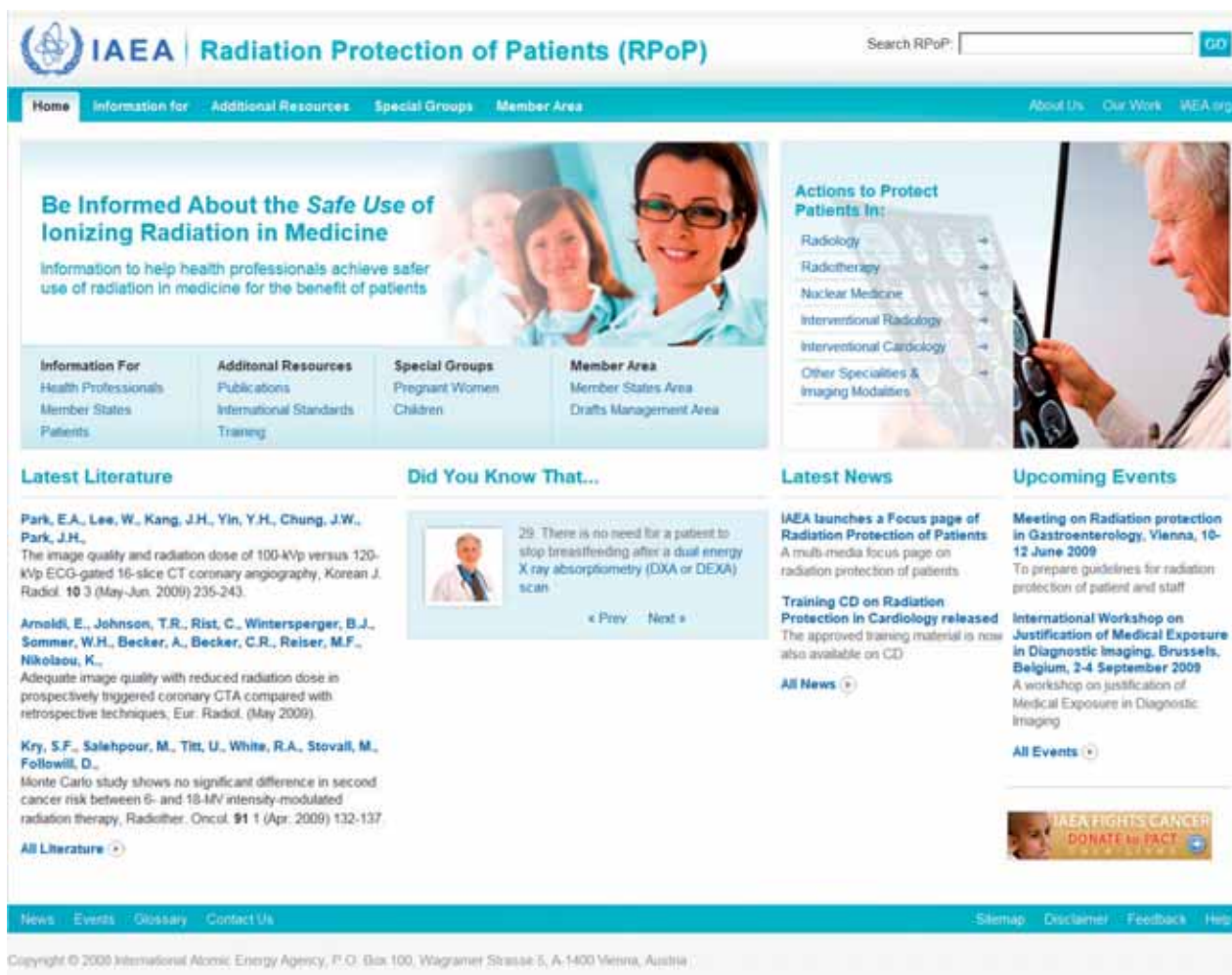


FIG. 1. The Agency's RPOP web site recorded more than two million hits in 2008.

objectives were to strengthen radiation protection worldwide by ensuring a broad gathering of professionals directed at the promotion and enhancement of radiation protection. The congress offered an opportunity for feedback from all areas where ionizing radiation is applied; this feedback has been particularly valuable in the revision process of the International Basic Safety Standards.

Safe Transport of Radioactive Material

In 2008, the Board of Governors approved the 2009 edition of *Regulations for the Safe Transport of Radioactive Material* (the Transport Regulations). In addition, the Agency published an updated version of the main guidance on the Transport Regulations, providing a stronger basis for the safe transport of radioactive material worldwide.

As part of the implementation of the Action Plan of the International Steering Committee on Denials of Shipment of Radioactive Material, the Agency

convened regional workshops, in China, Italy, Madagascar and the United Republic of Tanzania, to discuss the reasons for denials of shipment, the role of the Agency and the Transport Regulations in reducing denials, and the effect of denials on industry. Participants also made presentations on the instances and effects of denials of shipment in their individual countries. The main outcomes of the workshops included regional plans of action to address instances of denials and regional networks to ensure that communication is facilitated and is ongoing. A database for recording instances of denial was established in collaboration with ICAO and IMO to facilitate understanding of the causes of denials of shipment. By the end of 2008, the database held more than 100 denial reports. During the 52nd regular session of the General Conference, a meeting was convened to provide information to Member States on denials of shipment.

In September 2008, a group of coastal and shipping States held, with Agency participation, a fourth round of informal discussions in Vienna with

a view to maintaining dialogue and consultation aimed at improving mutual understanding, confidence building and communication in relation to safe maritime transport of radioactive material.

Radiation Protection of Patients

The medical use of ionizing radiation is growing around the world. At the same time, new and advanced medical radiation technologies are being introduced at a rapid pace. The increasingly innovative uses of radiation in the medical area, while of great benefit, are creating new radiation protection challenges. Whereas other exposures to ionizing radiation have remained at a constant level or have decreased over the past decade, medical exposures have increased markedly.

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Medical uses constitute the largest human-made source of ionizing radiation to the world’s population; in some countries they are now a larger source of exposure than natural background radiation.

In response to this challenge, the Agency continues to provide comprehensive guidance on the radiation protection of patients. The Radiation Protection of Patients (RPOP) web site (<http://rpop.iaea.org/RPOP/Content/index.htm>) (Fig. 1) is one source of information on the medical uses of radiation. In addition, three Safety Reports Series publications were produced in 2008 focusing on new

technologies (Fig. 2). Training materials for health professionals using new imaging and radiotherapy technology were also issued on CD-ROM.

Radiation Protection of Workers

In addition to ensuring individual and workplace monitoring of its staff, including experts and trainees, the Agency supported several projects on the radiation protection of workers. As an example, measures were taken in 2008 to assist Chile in implementing the recommendations from the occupational radiation protection appraisal that the

Agency conducted in 2007. Information on occupational radiation protection issues was also presented at regional training courses

and workshops organized by the Agency’s technical cooperation programme. The Agency provided guidance to Member States on the procurement of equipment, for example to Belarus for monitoring radiation exposure to radon. It also gave advice on procurement and delivery of a thyroid measurement system to Uruguay.

The third meeting of the Steering Committee of the international Action Plan for Occupational Radiation Protection was held in 2008. Four actions of the 14 were closed as fully completed, four were considered complete but requiring follow-up and six were still in progress. Recommendations by

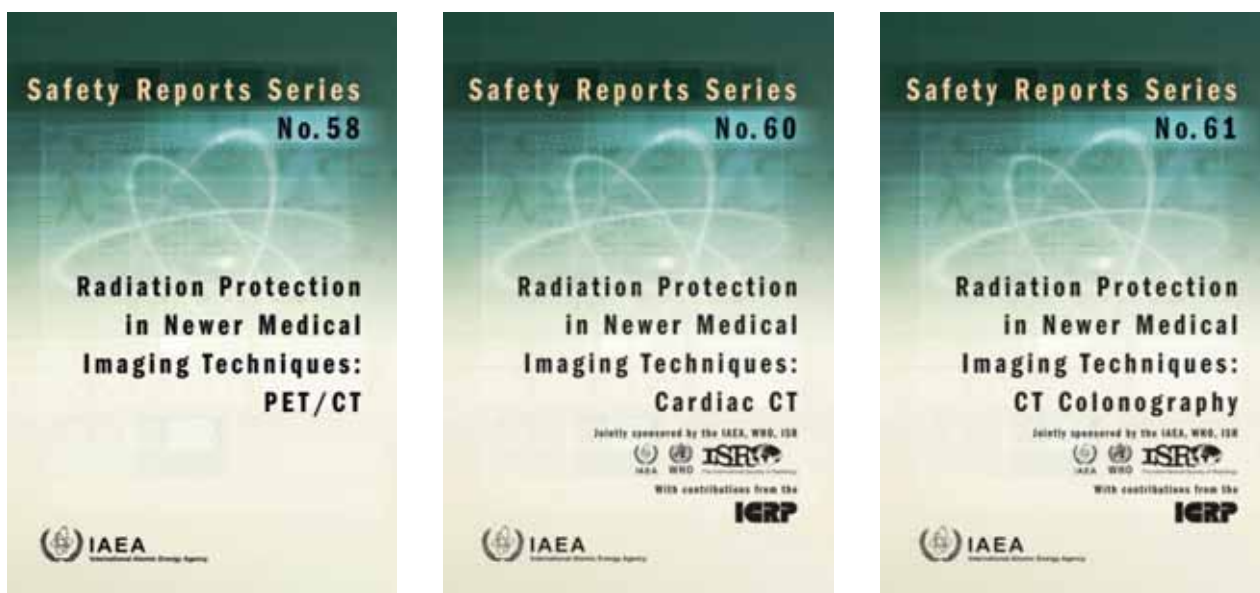


FIG. 2. Three new publications issued in 2008 on radiation protection in the use of newer imaging technologies.

the Steering Committee are related to the impact of new technologies on occupational exposure in the medical sector, radiation protection criteria for workers in existing exposure situations, the increasing lack of skilled workers and the impact of new scientific developments on the radiation protection of workers. In addition, a new project on the Information System on Occupational Exposure in the Medical, Industrial and Research Areas was initiated to improve the availability and adequacy of radiation protection data in these areas, and thus help to identify trends and future needs.

Code of Conduct on the Safety and Security of Radioactive Sources

In May 2008, 167 technical and legal experts from 88 Member States and two non-Member States, and observers from the European Commission, the Organization for Security and Co-operation in Europe and the International Source Suppliers and Producers Association met in Vienna to exchange lessons learned from the implementation by States of the Import/Export Guidance. Significant issues came to light, such as difficulties in the provision of information to exporting States on the regulatory and technical capacity of importing States.

Participants requested international assistance in developing regional networks and the use of existing networks to discuss implementation of the Import/Export Guidance. They also called for a general review of the guidance at the next information exchange meeting, planned for 2010.

Radiation Monitoring and Protection Services at the Vienna International Centre

With no interruption of its daily services, the individual radiation monitoring and protection services laboratories (comprising the whole body counter, urine analysis and external dosimetry) moved from the Agency's Laboratories, Seibersdorf to the Vienna International Centre (VIC) in 2008, resulting in savings of time and financial resources for the Agency (Fig. 3). Accredited at the international level since 2006, the services laboratories are recognized by the Agency's radiation safety regulator as a technical service provider for individual and workplace monitoring. Since they comply fully with the Agency's safety standards, Member States can use these services as a model to implement the standards dealing with occupational exposure control.



FIG. 3. The whole body counter in its new location at the VIC.