
Radiation and Transport Safety

Objective

To achieve global harmonization of the development and application of the Agency's safety standards in this area, and to increase the safety of radiation sources and thereby raise the levels of protection of people, including Agency staff, against the harmful effects of radiation.

Protection of the Public

In 2015, the Agency concluded a three year project on radiation monitoring and remediation carried out in cooperation with Fukushima Prefecture, in which it provided assistance on questions related to remediation of areas affected by the accident at the Fukushima Daiichi nuclear power plant, safe management of waste collected during remediation activities and radiation monitoring. As part of these activities, the Agency provided support and assistance to projects carried out by Fukushima Prefecture related to treatment of remediation waste in municipal incinerators, remediation activities in rivers and lakes, and radiation protection issues in forests. A two year extension of the project has been approved.

Radiation Protection of Patients

In November, the Agency held a training course in Vienna on implementing guidance on radiation protection and safety in medical uses of ionizing radiation. The course presented the requirements established in *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards* (IAEA Safety Standards Series No. GSR Part 3) for the safe use of ionizing radiation in medicine, and provided recommendations and guidance on meeting these requirements in medical facilities (Fig. 1). More than 50 representatives of 27 Member States and 3 international organizations participated in the training. The Agency also held two Technical Meetings on reducing unnecessary medical exposures, attended by more than 100 participants from all regions.



FIG. 1. Planning the use of ionizing radiation for cancer treatment in a radiotherapy clinic in Zimbabwe. The Agency provided training in meeting requirements for the safe use of ionizing radiation in medical facilities to more than 50 medical professionals in 2015.

Occupational Radiation Protection

The use of nuclear and radiation technologies continues to increase in many sectors around the world. In this context, the Agency released a new ISEMIR-IR (Information System on Occupational Exposure in Medicine, Industry and Research – Industrial Radiography) tool. ISEMIR-IR is a web based system that supports the exchange of experience, lessons learned and best practices aimed at reducing occupational doses in the area of industrial radiography.

The Agency's Occupational Radiation Protection Appraisal Service (ORPAS) provides Member States, on request, with an independent assessment and evaluation of their national occupational radiation protection programme. Such evaluations are useful in maintaining or enhancing programme effectiveness and highlight potential areas for improvement. Member States also benefit from the information on best practices available through ORPAS. In 2015, the Agency conducted ORPAS missions to Ecuador and the United Arab Emirates, and a preparatory ORPAS mission to Ghana.

During the year, the Agency published two publications on occupational radiation protection: *Naturally Occurring Radioactive Material (NORM VII)*, the proceedings of the seventh international symposium on naturally occurring radioactive material organized by the Agency; and *Radiation Protection of Itinerant Workers* (Safety Reports Series No. 84), on the radiation protection issues associated with the use of itinerant workers, and the managerial and practical arrangements necessary to ensure that radiation doses are adequately controlled.

Regulatory Infrastructure

An increasing number of Member States without nuclear installations are making use of the Agency's Integrated Regulatory Review Service (IRRS). In 2015, IRRS missions were conducted to six Member States without operating nuclear power plants: Croatia, Indonesia, Ireland, Malta, the United Republic of Tanzania and the United Arab Emirates. The effectiveness of the regulatory infrastructure for radiation, transport and waste safety was also reviewed in IRRS missions to five Member States with operating nuclear power plants: Armenia, Finland, Hungary, Slovakia and Switzerland. Advisory missions on strengthening national regulatory infrastructure for radiation safety were conducted to Bosnia and Herzegovina, the Lao People's Democratic Republic, Papua New Guinea and Uruguay. In addition, the Agency organized two workshops to train staff of regulatory bodies to serve as IRRS reviewers in radiation safety.

Transport Safety

In 2015, the Agency published the *Schedules of Provisions of the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition)* (IAEA Safety Standards Series No. SSG-33). This publication provides information on determining the correct package type and the appropriate operational and administrative requirements to be applied when shipping radioactive material.

The Agency conducted 12 regional capacity building events in 2015 aimed at enhancing transport safety in Member States in Africa, Asia, Latin America, the Mediterranean, Europe and the Pacific Islands. The activities drew over 250 participants from over 80 Member States, who participated in practical exercises (Fig. 2) and worked collaboratively to define regional actions to improve transport safety.

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FIG. 2. Participants in a Regional Meeting on Transport Safety in the Pacific Islands take part in a practical exercise on responding to a transport incident.

Education and Training in Radiation Safety

The Agency encourages Member States to establish national strategies for education and training in radiation, transport and waste safety. In this connection, a consultative meeting was held in Vienna to enable policy and decision makers to follow up on initiatives taken by Member States to establish national education and training strategies. The meeting, attended by representatives of some fifty Member States, highlighted the need for sustainability when building competence in radiation protection and safety, in accordance with the Agency's Strategic Approach to Education and Training in Radiation, Transport and Waste Safety (2011–2020). During the year, three Education and Training Appraisal (EduTA) missions were conducted, to Greece, Israel and Lithuania.

In 2015, the Agency held seven Postgraduate Educational Courses in Radiation Protection and the Safety of Radiation Sources, in Algeria, Argentina, Ghana (two separate courses), Greece, Malaysia and Morocco. Regional train the trainers courses for radiation protection officers were held in Morocco, Namibia, Portugal and the United Arab Emirates.

Under a regional project entitled 'Strengthening Education and Training Infrastructure, and Building Competence in Radiation Safety', the Agency developed a train the trainers course for radiation protection officers. The first course was held in Portugal in June, for Member States in Europe, with 32 participants from 22 Member States in the region taking part. The training aimed at supporting implementation of national strategies for education and training in radiation, transport and waste safety, and at maintaining and expanding competencies to facilitate implementation of national education and training programmes. Participants also received additional training to act as trainers of radiation protection officers in their own countries.

Radiation Safety Information Management System

The web based Radiation Safety Information Management System (RASIMS) platform is a tool that enables Member States to monitor the status and level of implementation of their radiation safety infrastructure in line with the Agency's safety standards. In 2015, the information provided through this collaborative platform was used in the evaluation of requests for procurement of radiation sources for Member States. It was also considered prior to the submission of technical cooperation project proposals for approval by the Agency's Policy-Making Organs. During the year, 18 Member States appointed RASIMS National Coordinators and 100 Member States accessed RASIMS to update their radiation safety profiles.

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