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 against the harmful effects of radiation.

Radiation Safety and Monitoring

The Agency conducted Occupational Radiation Protection Appraisal Service (ORPAS) missions to Chile, Malaysia, Morocco and Paraguay, and preparatory ORPAS missions to Chile, Nicaragua and Panama (Fig. 1). The missions encouraged national regulatory authorities and end users to consider applying the graded approach in areas such as: licensing of radiation practices; safety assessment and inspection of facilities and activities; and review or development of radiation protection regulations for facilities and activities.

In 2017, the Agency's laboratory for radiation safety technical services earned re-accreditation under the ISO/IEC 17025 standard, affirming that it meets the highest quality and procedural standards and has the required competence to provide valid results. Throughout the year, the laboratory provided services such as assessment of occupational exposure for more than 800 staff and 2100 non-staff engaged in activities under Agency

FIG. 1. An ORPAS team member monitors the iodine-131 production process during a mission to the CCHEN Lo Aguirre Nuclear Research Centre in Chile.

control or supervision; workplace monitoring, including response to radiation incidents and emergencies; and calibration of equipment for radiation measurements. In 2017, the laboratory participated in five inter-laboratory comparison exercises in order to receive independent feedback on the quality of its analytical results. These exercises were organized by internationally recognized proficiency testing service providers such as the Association for the Promotion of Quality Control in Radiotoxicological Analysis (PROCORAD) and the European Radiation Dosimetry Group (EURADOS). In all the inter-laboratory comparison exercises, the laboratory ranked among the best performing participants. To support the radiation safety technical services, the Agency initiated procurement of a new radiophotoluminescence glass dosimeter system under the Major Capital Investment Fund project entitled 'Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)'.

The Agency conducted two Education and Training Appraisal (EduTA) missions: to Argentina, in November, and to the United Arab Emirates, in February. EduTA missions review the status of the legal and regulatory provisions for education and training in radiation protection and the safety of radiation sources. The Agency also carried out advisory missions on establishing a national strategy and policy for education and training in radiation protection and safety to the Democratic Republic of the Congo, in January, and to Uganda, in August.

Specialized training events in the field of radiation, transport and waste safety included a regional Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources held in Malaysia from May to November (Fig. 2), and three Schools for Drafting Regulations on Radiation Safety for the Caribbean (January), Europe (July), and Asia and the Pacific (August). The latter were prepared and implemented using the Control of Sources Network, under the International Regulatory Network and the Global Nuclear Safety and Security Network (GNSSN). During the year, more than 3000 people took part in e-learning activities offered on the Agency's Radiation Protection of Patients web site.

FIG. 2. Participants in the 14th regional Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources, held in Malaysia.

The International Conference on Radiation Protection in Medicine: Achieving Change in Practice was held in Vienna in December. The conference's 534 participants from 97 Member States and 16 international organizations discussed the implementation of the Bonn Call for Action to improve radiation protection in medicine, in particular the need for development of the Bonn Call for Action Implementation Toolkit. In addition, in the framework of the Practical Arrangements with Argentina's Nuclear Regulatory Authority,

the Agency supported the review and development of regulatory guidance on radiological protection in radiotherapy, addressing in particular the potential increase in the risk of secondary cancers.

The Agency continued to help Member States evaluate their need for a national action plan to control exposure due to radon. In November, it trained 20 architects and building professionals from 13 Member States in Europe in the use of technology and techniques for reducing radon concentrations in existing buildings at a regional training course held in cooperation with the University of Cantabria in Ciudad Rodrigo, Spain, at the university's radon test facility. It also provided support to Montenegro in upgrading its national system for reducing public exposure to radon indoors, through an Agency technical cooperation project.

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Regulatory Infrastructure

The Agency conducted six IRRS missions to Member States without operating nuclear power plants: Botswana, Cyprus, Ethiopia, Guatemala, Nigeria and the former Yugoslav Republic of Macedonia. It also carried out three follow-up IRRS missions to Member States without operating nuclear power plants: Greece, Jordan and Poland.

The Agency, through its Programme of Action for Cancer Therapy (PACT), continued to support assessment and enhancement of radiation safety infrastructure in Member States having a particular interest in establishing or enhancing their cancer control capacity. Four imPACT (integrated missions of PACT) Review missions were conducted during the year: to Burundi, in March; to the Republic of the Congo, in June; to Swaziland, in August; and to Togo, in September.

In June, the Agency organized an Open-ended Meeting of Legal and Technical Experts on the Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources, in Vienna, Austria. One hundred eighty experts from 101 Member States exchanged information and shared experiences on the establishment and implementation of financial provisions to ensure safe management and secure protection of radioactive sources once they have become disused. Participants also discussed the associated challenges faced by regulatory bodies and other stakeholders. The Agency finalized the development of the Guidance on the Management of Disused Radioactive Sources, supplementary to the Code of Conduct on the Safety and Security of Radioactive Sources. The Guidance was approved by the Board of Governors and endorsed by the General Conference in September.

The Agency organized two international workshops in Vienna in March, attended by a total of 95 experts from 73 Member States. The first workshop, on 'Implementation of a National Cradle-to-Grave Control System for Radioactive Sources', addressed all the steps necessary for the safe and secure management of radioactive sources, from their production or import into a country to their disposal or export to another country. The second workshop, on the 'National Registers of Radiation Sources', looked at the experience of and lessons learned by regulatory bodies in establishing and maintaining a national register of radiation sources.

Transport Safety

The Agency supported capacity building for regulatory oversight of transport of radioactive material in over 80 Member States through workshops involving more than 190 delegates from the Africa, Asia and the Pacific, Latin America and Europe regions. The workshops were held in Vienna in January, August and September; Bangkok, Thailand, in May; Auckland, New Zealand, in June (Fig. 3); San Jose, Costa Rica, in August; Madrid, Spain, in September; Sliema, Malta, in October; Accra, Ghana, in October; and Montevideo,

FIG. 3. Participants in a decontamination exercise for the Pacific Islands, held in New Zealand in June.

Uruguay, in November. These workshops included a drafting school for transport safety regulations, a 'train the trainers' course, and workshops on transport safety compliance inspections and emergency response for transport accidents.

Radiation Safety Information Management System

The Agency's Radiation Safety Information Management System (RASIMS) helps Member States that receive technical support from the Agency to assess progress made in their implementation of the Agency's radiation safety standards. The Agency organized a workshop in Vienna in May for RASIMS national coordinators from 15 Member States in the Asia and the Pacific region to assist them in updating the information in RASIMS on their national radiation safety infrastructure. Experts from nine Member States participated in two consultants meetings, held in Vienna in June and November, that tested and evaluated the new version of the RASIMS platform.