

Incident and Emergency Preparedness and Response

Objective

To maintain and enhance effective and compatible Agency, national and international emergency preparedness and response (EPR) capabilities and arrangements for early warning of and effective response to incidents and emergencies, independent of whether they arise from an accident, natural disaster, negligence or criminal act. To improve provision/sharing of information on nuclear or radiological incidents and emergencies among Member States, international stakeholders and the public/media.

Safety Standards and Guidelines

The Agency develops comprehensive international standards and guidance to support Member States in strengthening their emergency preparedness and response (EPR) arrangements and capabilities. In this connection, in 2015 the Agency published *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GSR Part 7). Jointly sponsored by 13 international organizations,¹ the publication establishes the requirements for ensuring an adequate level of preparedness and response for a nuclear or radiological emergency, irrespective of its cause.

During the year, the Agency also established the Emergency Preparedness and Response Standards Committee (EPRReSC) under the Commission on Safety Standards. A total of 56 Member States and 11 international organizations nominated over 100 representatives to EPRReSC. At its first meeting, in November, the Committee provided its action plan for the review of safety standards related to EPR and created two working groups: one to explore ways of improving communication to the public during an emergency, and the other to propose a revised and optimized EPR safety standards structure based on GSR Part 7.

¹ The Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Civil Aviation Organization, International Labour Organization, International Maritime Organization, International Criminal Police Organization – INTERPOL, OECD Nuclear Energy Agency, Pan American Health Organization, Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, United Nations Environment Programme, United Nations Office for the Coordination of Humanitarian Affairs, World Health Organization and World Meteorological Organization.

Response Arrangements with Member States

During 2015, the Agency conducted six Convention Exercises (ConvEx) with Member States and international organizations. These exercises are used to practise key elements of response arrangements such as the official information exchange protocols, the Agency's Unified System for Information Exchange in Incidents and Emergencies (USIE) and the process for provision of international assistance to a Member State. The Agency also participated in over 30 bilateral national exercises, in which the Agency and Member States practised international notifications and the exchange of information and results of assessment and prognosis during a nuclear emergency. The Agency conducted six workshops on notification, reporting and requesting assistance in 2015, with more than 80 participants from 30 Member States.

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In April, the Agency hosted an International Experts Meeting on Assessment and Prognosis in Response to a Nuclear or Radiological Emergency. The meeting was attended by more than 200 experts from 70 Member States and 5 international organizations. It provided an important opportunity for participants to discuss, at the international level, the assessment and prognosis process during a nuclear or radiological emergency, including the Agency's role.

In 2015, the Agency launched the first test version of its International Radiation Monitoring Information System (IRMIS). The system provides Member States and the Agency with a mechanism to exchange and visualize large amounts of environmental radiation monitoring data during a nuclear or radiological emergency. IRMIS complements the USIE functionality and uses the International Radiological Information Exchange (IRIX) standard as the data exchange format.

The Agency also enhanced the communication and international assistance features of its secure USIE web site for reporting nuclear and radiological emergencies. The site now offers off-line completion of forms used in emergency communication and their subsequent submission to USIE and other emergency notification systems using the IRIX standard.

Response to Events

In 2015, the Agency was directly informed, or indirectly became aware, of 264 events involving or suspected to involve ionizing radiation (Fig. 1). It took response actions in 29 of these events. Six offers of good offices were made, including for events involving the loss of radioactive sources and those triggered by earthquakes.

Response and Assistance Network

The Agency's Response and Assistance Network (RANET) is made up of Member States that have registered their national assistance capabilities. The network is ready to provide assistance to States, upon request, during an emergency. In 2015, one additional Member State — the Republic of Korea — joined RANET, increasing the total membership to 28. In April, the Agency conducted a RANET Workshop on Monitoring during a Nuclear or Radiological Emergency, designed to assist Member States in building capacity and strengthening their EPR capabilities. Held at the Agency's RANET Capacity Building Centre in Fukushima Prefecture, Japan, the workshop was attended by 17 participants from 8 Member States.

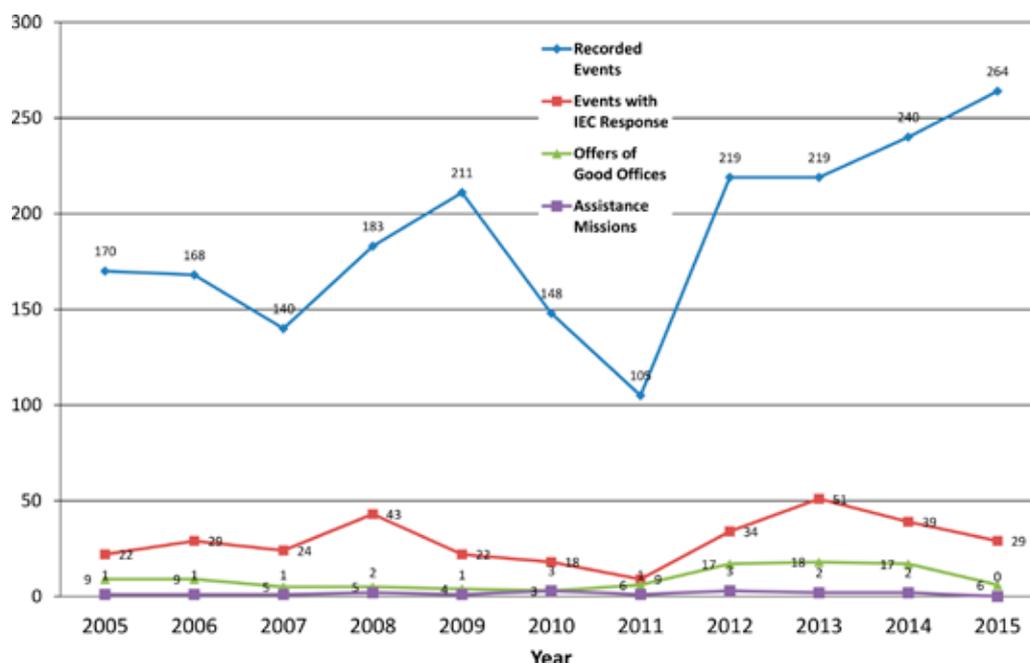


FIG. 1. Number of radiation events the Agency became aware of, and Agency responses, since 2005.

In-house Preparedness and Response

The Agency conducted a comprehensive programme of training, drills and exercises in 2015 to enhance the skills and knowledge of Agency staff members who serve as qualified responders under the Incident and Emergency System (Fig. 2). The programme offered approximately 130 hours of training during the year, including 78 training classes delivered to over 170 Agency staff responders. The exercises were used to test various elements of the response arrangements, including the notification and exchange of official information, the provision of public information, and the assessment and prognosis process.



FIG. 2. Agency staff responders during an internal exercise in 2015.

Strengthening Emergency Preparedness Arrangements

The Agency conducts international peer review missions to assist Member States in enhancing their emergency arrangements. These include advisory missions on EPR, Emergency Preparedness Review (EPREV) missions and a module of the Integrated Regulatory Review Service (IRRS) missions. In 2015, the Agency conducted an advisory mission to Kuwait on medical aspects of EPR, in cooperation with the World Health Organization. It also conducted five EPREV missions, to Ghana, Jamaica, Kenya, Nigeria and the United Arab Emirates, and two EPREV preparatory missions, to Ghana and Hungary.

In September, the Agency launched the Emergency Preparedness and Response Information Management System (EPRIMS). This new system provides Member States with a comprehensive tool for conducting systematic self-assessments of emergency arrangements based on the most recent Agency safety standards. EPRIMS is expected to contribute to the global harmonization of EPR and to provide the Agency with a valuable source of credible information during emergencies.

In October, over 420 participants from 82 Member States and 18 international organizations attended the International Conference on Global Emergency Preparedness and Response, held at the Agency's Headquarters in Vienna. The conference covered topics such as international cooperation, communication, past emergencies, and education and training, in order to share knowledge and strengthen national systems. Experts in EPR discussed challenges and identified key priorities for further improving readiness to respond to nuclear and radiological emergencies.

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Capacity Building in Member States

The Agency conducted over 30 training events in 2015, covering all aspects of EPR for nuclear and radiological emergencies. This included a Workshop on Hazard Assessment and Protection Strategy for Radiation Emergencies, held in Malaysia in October, with 24 participants from 16 countries. The Agency also organized a Workshop on Designing Effective National Off-site Emergency Centres for Nuclear or Radiological Emergencies. The workshop, held in December in Daejeon, Republic of Korea, was attended by 15 participants from 8 Asian Nuclear Safety Network countries (Indonesia, Japan, Kazakhstan, the Republic of Korea, Malaysia, the Philippines, Thailand and Viet Nam).

The Agency also established the School of Radiation Emergency Management. The School offers comprehensive instruction in the basic principles of EPR for radiation emergencies, based on the current Agency safety standards and guidelines. A pilot was held in September at the Abdus Salam International Centre for Theoretical Physics, in Trieste, Italy, with 27 participants from 17 Member States. A School was then held in November at the Institute of Radiation Protection and Dosimetry of the National Nuclear Energy Commission (CNEN), in Rio de Janeiro, Brazil, with 30 participants from 16 Member States (Fig. 3). Both events were implemented within the framework of technical cooperation projects. The Agency plans to make the School a regular event at regional EPR capacity building centres.



FIG. 3. Participants in the School of Radiation Emergency Management held in November at the CNEN's Institute of Radiation Protection and Dosimetry in Rio de Janeiro, Brazil.

In 2015, the Agency conducted 15 expert missions to Member States in Asia, Europe and Latin America on subjects ranging from supporting the establishment of radiation monitoring networks to assisting the national hazard assessment process. The missions were designed to help Member States enhance their national emergency arrangements. The Agency also initiated a project, in coordination with the European Union, to enhance emergency arrangements in member States of the Association of Southeast Asian Nations in order to build upon and optimize existing regional EPR capabilities, including the sharing of radiation monitoring data through IRMIS.

Inter-Agency Coordination

The Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE), a mechanism facilitating coordinated preparedness and response actions in the case of nuclear and radiological emergencies, held its regular meeting in November. The Committee initiated proposals for the 2016 edition of the Joint Radiation Emergency Management Plan of the International Organizations (JPLAN), endorsed consolidated proposals for its work plan and granted the status of participating organization to the International Labour Organization. An IACRNE task group composed of representatives of the Agency, the International Civil Aviation Organization and the World Meteorological Organization was established to develop a Significant Meteorological Information (SIGMET) advisory system for cases where radioactive material has been released into the atmosphere.