

# Incident and Emergency Preparedness and Response

## Objective

*To maintain and further enhance efficient Agency, national and international emergency preparedness and response (EPR) capabilities and arrangements for effective response to nuclear/radiological emergencies independent of their cause. To improve provision/sharing of information on nuclear or radiological incidents and emergencies among Member States, international stakeholders and the general public/media in preparedness stage and during response.*

## Strengthening Emergency Preparedness Arrangements

The Agency assists Member States in strengthening their emergency preparedness and response (EPR) arrangements and capabilities through Emergency Preparedness Review (EPREV) missions and EPR training events and workshops. In 2016, the Agency conducted a preparatory mission to Indonesia and two EPREV missions to Hungary and Indonesia. It also reviewed specific aspects of Member State EPR arrangements through the Integrated Regulatory Review Service (IRRS) and the Operational Safety Review Team (OSART) service.

The number of Member States using the Agency's Emergency Preparedness and Response Information Management System (EPRIMS) increased in 2016: by the end of the year, 88 Member States had appointed EPRIMS national coordinators and there were a total of 198 national EPRIMS users. EPRIMS, which was launched by the Agency in September 2015, enables Member States to assess their preparedness for nuclear and radiological emergencies and to share information with other countries. It provides structured self-assessment templates based on the requirements established in *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GSR Part 7).

The Agency published an e-learning course entitled 'Communication with the Public in a Nuclear or Radiological Emergency'. This on-line training tool provides examples of good practice for public communication, including the selection of spokespersons, management of media relationships and organization of public communication within a command and control structure. To increase the reach of its EPR guidance, in June the Agency publication *Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor* (EPR-NPP-PUBLIC PROTECTIVE ACTIONS 2013) was made available in Spanish.

The Agency organized a total of 38 training events and workshops to assist Member States in implementing the requirements of GSR Part 7 and to increase knowledge and understanding of the Agency's EPR guidance. This included two Schools of Radiation Emergency Management organized to address the need for comprehensive training in Member States on all relevant EPR topics, including general EPR framework requirements, hazard assessment, protective strategy, protection of emergency workers, public communication, international assistance and early notification (Fig. 1). In May, the Agency

---

*"The Agency organized a total of 38 training events and workshops to assist Member States in implementing the requirements of GSR Part 7 and to increase knowledge and understanding of the Agency's EPR guidance."*

---



FIG. 1. Participants in the School of Radiation Emergency Management held in Traiskirchen, Austria, in October (photograph courtesy of S. Schoenhacker).

and the International Labour Organization jointly organized a webinar on protection criteria for emergency workers and helpers in a nuclear or radiological emergency. The webinar was aimed at participants from relevant authorities — including both employers and emergency workers — having responsibilities, rights and duties in relation to occupational radiation protection in a nuclear or radiological emergency. Around 110 people took part worldwide. Two new capacity building centres for EPR were designated in 2016, in Austria and the Republic of Korea.

More than 250 health care professionals from 45 Member States participated in 11 national, regional and interregional events related to medical preparedness and response to a nuclear or radiological emergency. These events covered basic and specialized training, and described

radiological health hazards and approaches to putting these hazards into perspective when communicating with the public.

The Agency organized four workshops on effective public communication in an emergency: two in the Russian Federation, one in South Africa and one hosted by the RANET Capacity Building Centre in Fukushima Prefecture, Japan, for the Asia and the Pacific region.

More than 190 participants from over 45 Member States and 11 international organizations took part in a total of 12 events, including Technical Meetings, workshops and training courses, related to communication with the public in nuclear or radiological emergencies. These events covered, for example, the drafting of a safety guide on public communication during emergencies and the revision of guidance on the use of the International Nuclear and Radiological Event Scale (INES) as a communication tool.

### Response Arrangements with Member States

During 2016, the Agency organized 13 Convention Exercises (ConvEx) with Member States and international organizations. Carried out in the framework of the Convention on Early Notification of a Nuclear Accident (the Early Notification Convention) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (the Assistance Convention), the exercises were used to test emergency communication channels and the Agency's assessment and prognosis process. Member State capabilities were also tested regarding: requesting assistance during a nuclear or radiological emergency and preparing for its receipt; exchanging emergency information on appropriate protective actions; and communicating with the public. An exercise version of the International Radiation Monitoring Information System (IRMIS) that allows the use of simulated radiation monitoring data was developed and successfully used for the first time during a ConvEx exercise in 2016. The Agency organized four workshops on notification, reporting and requesting assistance, involving 50 participants from 20 Member States.

A Technical Meeting to Review the IAEA's Assessment and Prognosis Procedures for Nuclear and Radiological Emergencies was held in Vienna, Austria, in late November and early December. The meeting was attended by 77 participants from 53 Member States and 3 international organizations, who reviewed and discussed the Agency's assessment and prognosis process and associated communication procedures. On-line assessment and

*“More than 190 participants from over 45 Member States and 11 international organizations took part in a total of 12 events... related to communication with the public in nuclear or radiological emergencies.”*

prognosis tools developed by the Agency, including the Reactor Assessment Tool, the Protective Actions Assessment Tool and the Radiological Source Assessment Tool, were made available to Member States at the Technical Meeting.

The Agency expanded its Unified System for Information Exchange in Incidents and Emergencies (USIE) web site in 2016. Enhanced functionalities were introduced, including automatic exchange of information among national and international bodies, such as information to be displayed on relevant Agency and European Commission web sites. Another new functionality enables the Agency and those States Parties to the Assistance Convention that have registered their National Assistance Capabilities (NAC) in the Agency's Response and Assistance Network (RANET) to update their existing registrations directly through USIE.

In 2016, Denmark, Spain and Ukraine registered their NAC in RANET, while Canada added additional resources under its registered NAC resources. A total of 31 States Parties to the Assistance Convention have registered their NAC resources in the Agency's RANET. The Agency continued to organize RANET workshops on radiation monitoring during nuclear or radiological emergencies at the RANET Capacity Building Centre in Fukushima Prefecture, Japan.

The Eighth Meeting of the Representatives of Competent Authorities Identified under the Early Notification Convention and the Assistance Convention was held in Vienna, Austria, in June. The representatives discussed matters such as information exchange, international assistance, communicating with the public, training and exercises. The meeting's conclusions covered the utilization of IRMIS, operationalization of the assessment and prognosis process, implementation of the ConvEx exercise regime and sharing of lessons from exercises. During the year, one State became a Party to each Convention; by the end of the year, there were 120 Parties to the Convention on Early Notification of a Nuclear Accident and 113 Parties to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

## Response to Events

In 2016, the Agency was directly informed by the competent authorities, or indirectly became aware based on earthquake alerts from the Agency web site or information from the media, of 234 events involving or suspected to involve ionizing radiation (Fig. 2). It took

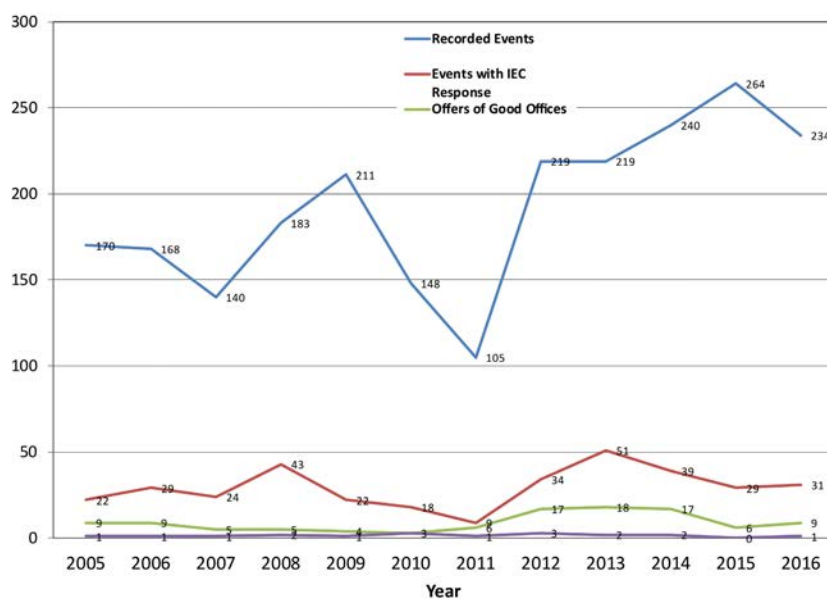


FIG. 2. Number of radiation events the Agency became aware of, and Agency responses, since 2005.

response actions in 31 of these events. Nine offers of good offices were made, including for events involving the loss of radioactive sources and those triggered by earthquakes. In 2016, in response to a request from Georgia, the Agency sent an assistance mission to support the relevant authorities by providing medical advice on managing the radiation injury of a patient affected by the radiological accident that occurred in Lilo, Georgia, in 1997.

## Inter-Agency Coordination

In December, the Agency conducted a tabletop exercise to test and improve the public communication procedures based on the Joint Radiation Emergency Management Plan of the International Organizations (JPLAN). The exercise involved public information officers from seven member organizations of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE). The lessons learned from the exercise will contribute to further improvements of the IACRNE procedures for the inter-agency coordination of public communication during an emergency.

In the context of the JPLAN, the Agency signed Practical Arrangements with the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) in 2016. The arrangements describe cooperation that may be pursued subject to the Parties' respective mandates, governing regulations, rules, policies and procedures in the case of a nuclear or radiological emergency, particularly with an actual or potential atmospheric release of radioactive materials. The Agency also signed Practical Arrangements with the World Association of Nuclear Operators (WANO) to cooperate in the area of response to radiation incidents and emergencies in WANO member nuclear installations.

## In-house Preparedness and Response

The Agency organized a comprehensive programme of training, drills and exercises in 2016 to enhance the skills and knowledge of those Agency staff members who serve as qualified responders under the Incident and Emergency System (Fig. 3). The programme offered approximately 150 hours of training during the year, including 84 training classes delivered to nearly 200 Agency staff responders.



FIG. 3. Agency staff responders during an internal exercise in 2016.