

Incident and Emergency Preparedness and Response

Objective

To maintain and enhance effective and compatible Agency, national, regional and international emergency response capabilities and arrangements for early warning and timely response to nuclear or radiological incidents and emergencies independent of whether they arise from an accident, negligence or nuclear security event. To improve the provision and sharing of information on radiation incidents and emergencies among States, international organizations and the public/media.

Safety Standards and Guidelines

In the area of emergency preparedness and response, three publications in the Emergency Preparedness and Response (EPR) series were issued: *Communication with the Public in a Nuclear or Radiological Emergency*; *Considerations in Emergency Preparedness and Response for a State Embarking on a Nuclear Power Programme*; and *Lessons Learned from the Response to Radiation Emergencies (1945–2010)*. The Agency also released training material to accompany the publication on public communications.

The Agency is revising the Safety Requirements publication *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GS-R-2). At a technical meeting, representatives of Member States and international organizations reviewed the revised draft.

Communication with Member States

The procedures described in the new EPR publication *Operations Manual for Incident and Emergency Communication* were put into operation on 1 June 2012. The manual, which describes the Agency's expectations regarding notification and reporting, the exchange of official information and the timely provision of assistance, reflects changes based on lessons identified from experience in exchanging information, and in responding to and providing assistance during incidents and emergencies over the past few years. It also, for the first time, specifies time expectations on the Agency and on Member States regarding notification and information exchange in the event of an emergency.

The possibility that emergency situations can arise from criminal or other nuclear security acts is also addressed in the manual.

The Agency's Unified System for Information Exchange in Incidents and Emergencies (USIE) is designed to improve the communication and coordination systems that deliver information to emergency responders. In 2012, USIE was improved to provide more functionality and allow contact points to conduct routine tasks themselves, such as granting and removing access within their

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organizations and updating emergency contact details. Additionally, the Agency held a number of workshops for designated emergency contact points on incident and emergency communications and on USIE, which were attended by representatives of 47 countries. Training sessions were also held for national officers of the International Nuclear and Radiological Event Scale on the use of the scale and on USIE.

Response to Events

In 2012, the Agency was directly informed, or indirectly became aware, of 219 events involving or suspected to involve ionizing radiation. The Agency took response actions in 34 events. The Agency offered its good offices in 17 events (11 of which were triggered by the occurrence of earthquakes and tsunamis) (Fig. 1).

Following requests from Member States, three field assistance missions were carried out to provide dose reconstruction, medical advice and help with source recovery (Figs 2 and 3). The missions were coordinated by the Agency through its Response and Assistance Network (RANET). The RANET

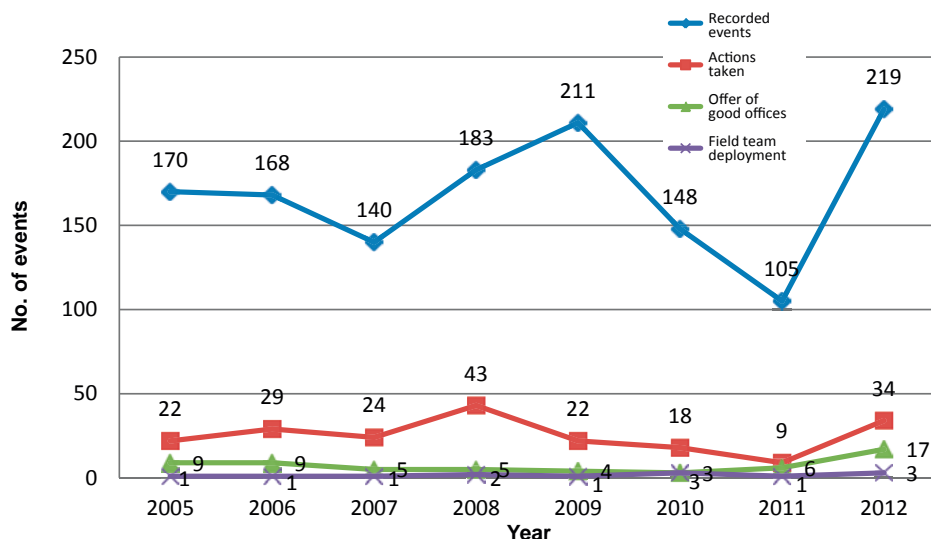


FIG. 1. Number of radiation events the Agency became aware of, and the Agency responses, since 2005.

assistance teams comprised experts from Australia, France and the USA. In one case involving an industrial radiography accident, in addition to the mission, medical treatment was provided in a specialized French hospital with financial support provided by the USA.

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Response and Assistance Network

In 2012, Canada, Norway and the United Kingdom registered their national assistance capabilities in RANET, while Australia and the USA added new assistance capabilities to their current registrations. RANET membership now includes 22 Member States.

At an Agency meeting, it was concluded that there was a need to expand RANET’s scope, mainly by including assessment and advice to competent authorities on on-site response activities to mitigate the impacts of emergencies at nuclear facilities. The Agency also hosted discussions with the aim of enhancing international assistance during the Sixth Meeting of the Representatives of Competent Authorities Identified under the Convention on

Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. Suggestions included investigating a mechanism for financing assistance missions, establishing minimum compatibility guidelines for the outputs generated during assistance missions, and developing coordination mechanisms between RANET and the European Union.

In-house Preparedness and Response

In implementing the IAEA Action Plan on Nuclear Safety (the Action Plan), which expanded the response mandate of the Agency, efforts continued in 2012 on



FIG. 2. Brachytherapy source recovery in a hospital in Cambodia in 2012.



FIG. 3. Dose measured by electron paramagnetic resonance spectroscopy on fingernails of workers involved in an accident in Peru. (Photograph courtesy of IRSN, France.)

enhancing in-house capabilities, particularly staff participation, in the incident and emergency system (IES) to strengthen the Agency's preparedness to respond to radiation emergencies. A professional experience and skills survey was completed by 1076 Agency staff members, identifying competences and capabilities that could be essential when responding to radiation emergencies. All staff involved in the IES underwent intensive training in 2012: 35 training sessions and 34 drills and exercises were organized for all technical, managerial, liaison and logistical functions within the established response structure of the IES (Fig. 4).



FIG.4. The Director General (centre) and his senior staff at a full response IES exercise in 2012.

Compliance with Current Standards

The Action Plan called on Member States to conduct a prompt national review and thereafter regular reviews of their emergency preparedness and response arrangements and capabilities. The Agency

provided support and assistance through Emergency Preparedness Review (EPREV) missions¹. In 2012, EPREV missions were conducted in Armenia, Bosnia and Herzegovina, Croatia, Kazakhstan, Lithuania, Serbia, Uruguay and Vietnam, while the regulatory

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aspects of the national radiation emergency preparedness systems were assessed in Finland, Greece, Slovakia and Sweden within the framework of Integrated Regulatory Review Service missions. A number of conclusions arose from these missions. For example, national plans for nuclear and radiological emergencies at the local and national levels needed to be established or improved; stronger coordination was necessary between the various relevant governmental regulatory bodies with responsibilities in the area of EPR; and the infrastructure and capability of regulatory bodies in several Member States required strengthening. Good practices in the prompt application of the Agency's safety standards and guidance were also identified. The Agency also conducted 34 expert missions to assist Member States in developing and strengthening different aspects of national emergency preparedness and response systems, such as medical, public information and first response facets.

Capacity Building in Member States

Training and exercises continued to be key elements of capacity building in Member States. The Agency organized 36 training events, including workshops and courses on various aspects of EPR such as medical, public information and first

¹ The EPREV service, offered to Member States since 1999, is an independent assessment of preparedness for responding to radiation incidents and emergencies, and of compliance with the Agency's Safety Requirements, *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GS-R-2), and relevant Safety Guides.

response capabilities (Fig. 5). The Agency also focused on supporting the establishment of EPR capacity building centres.

Inter-agency Coordination

Based on lessons identified in the response to the Fukushima Daiichi accident, the Agency, as the secretariat of the Inter-Agency Committee on

Radiological and Nuclear Emergencies, initiated and coordinated preparation of the 2013 edition of the *Joint Radiation Emergency Management Plan of the International Organizations (JPLAN)*. It also initiated preparation of the ConvEx-3 (2013) exercise that will be hosted by Morocco and conducted in November 2013. The key objective of this full scale exercise is to evaluate the response in the case of a radiological emergency that is triggered by a nuclear security event(s).

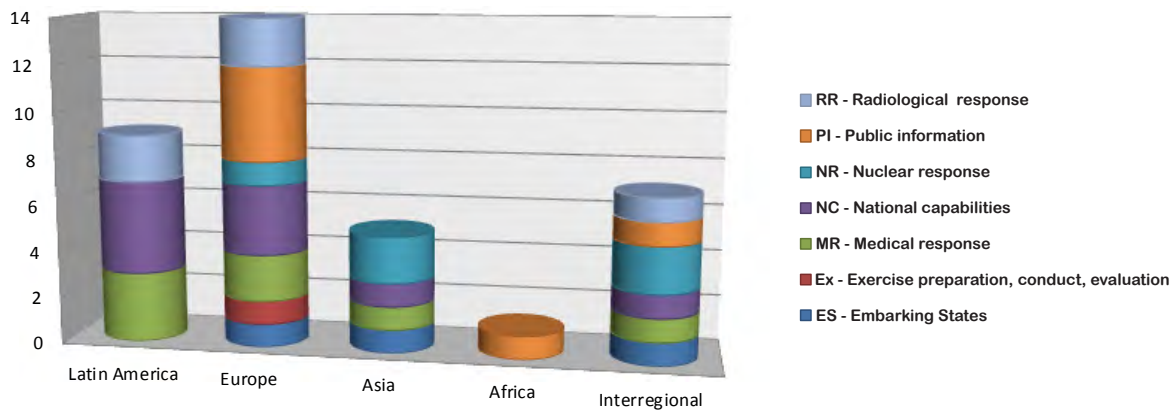


FIG. 5. Number of training events per region in 2012 and the event-specific EPR areas.