Incident and Emergency Preparedness and Response

Objective

To establish effective and compatible national, regional and international emergency preparedness and response capabilities and arrangements for early warning and timely response to actual, potential or perceived nuclear or radiological incidents and emergencies independent of whether the incident or emergency arises from an accident, negligence or malicious act. To improve provision/sharing of information on incidents and emergencies among Member States, international organizations and the public/media.

Safety Standards and Guidelines

In the area of emergency preparedness and response, a number of Agency guidelines were developed or refined. These included *Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GSG-2) and three publications in the Emergency Preparedness and Response (EPR) Series: *EPR-Research Reactor: Generic Procedures for Response to a Nuclear or Radiological Emergency at Research Reactors*; *EPR-Triga Research Reactor: Generic Procedures for Response to a Nuclear or Radiological Emergency at Triga Research Reactors*; and *EPR-Biodosimetry: Cytogenetic Dosimetry: Applications in Preparedness for and Response to Radiation Emergencies*. The Agency also released training material entitled *EPR-Research Reactor: Generic Procedures for Response to a Nuclear or Radiological Emergency at Research Reactors – Training Material.*

Compliance with Current Standards

The Emergency Preparedness Review (EPREV) service, offered to Member States since 1999, focuses on independent assessments of national preparedness for responding to radiation incidents and emergencies, and of compliance with Agency Safety Requirements, such as *Preparedness and Response for a Nuclear or Radiological Emergency* (IAEA Safety Standards Series No. GS-R-2), and relevant Safety Guides. The scope of EPREV covers preparedness for all radiological and nuclear incidents and emergencies that may affect a Member State, whether or not the country has nuclear facilities.

FIG. 1. Members of an EPREV mission team visiting the Arkhangelsk region of the Russian Federation.

In 2011, EPREV missions were conducted in Albania, Estonia, Georgia, Latvia, Pakistan and the Russian Federation (Fig. 1), while the regulatory aspects of the national radiation emergency preparedness systems were assessed in the Republic of Korea, Slovenia, Switzerland and the United Arab Emirates within the framework of Integrated Regulatory Review Service (IRRS) missions. The Agency also conducted 22 missions to assist Member States in developing and strengthening different aspects of national emergency preparedness and response systems. A number of conclusions arose from these missions, for example, that national plans for nuclear and radiological emergencies at the local and national levels needed to be established or improved in Member States; that better coordination between the various relevant governmental bodies with responsibilities in the area of emergency

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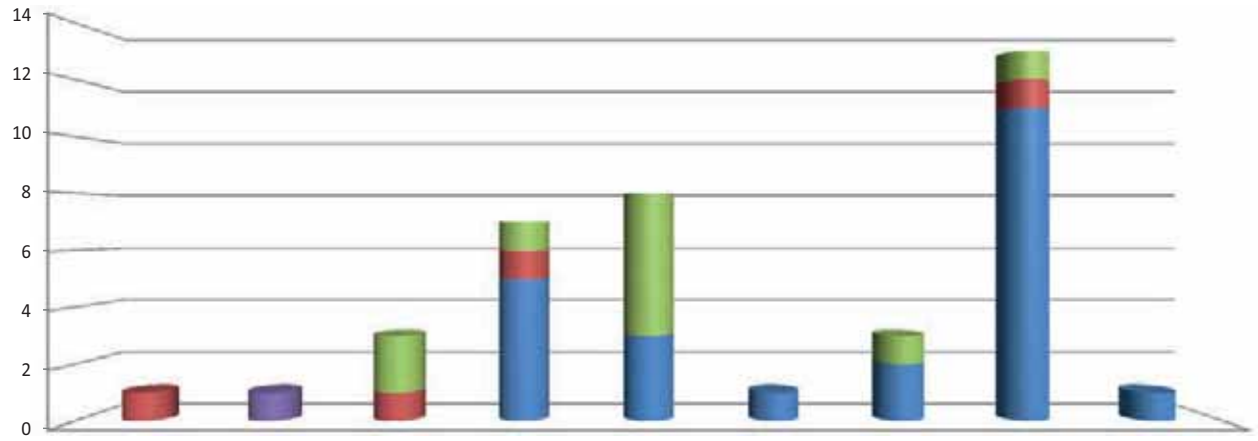

	Emergency monitoring	Embarking States	Exercise preparation, conduction, evaluation	Medical response	National capabilities	Nuclear response	Public information	Radiological response	Research reactors response
Interregional		1							
Regional			2	1	5		1	1	
Subregional	1		1	1				1	
National				5	3	1	2	11	1

FIG. 2. Workshops and courses devoted to emergency preparedness and response in 2011, by subject area.

preparedness and response was essential; and that the infrastructure and capability of regulatory bodies in several Member States required strengthening.

Capacity Building in Member States

Training and exercises are a key element of building capacity and competence in Member States. The Agency has focused on supporting the establishment of EPR capacity building centres (CBCs). Three countries (in the Africa, Europe and Latin America regions) have been identified as having the capability to perform the functions foreseen for these CBCs and the willingness to act as partners in this joint effort.

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In 2011, the Agency organized 38 training events, including workshops and courses on various aspects of emergency preparedness and response. Activities aimed at strengthening capacity in Member States are also in line with the IAEA Action Plan on Nuclear Safety. Figure 2 illustrates the areas in which the training events were held and the geographical coverage of these activities. The Agency also continued to assist Member States in reviewing and upgrading their national EPR capabilities.

Incident and Emergency Communications

On its protected Unified System for Information Exchange in Incidents and Emergencies (USIE) web site, the Agency published a draft of a new operations manual for Member States and States Parties to 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'). This manual will supersede the *Emergency Notification and Assistance Technical Operations Manual (EPR-ENATOM 2007)*, and has been renamed *Incident and Emergency Communication Manual* to better reflect its purpose of dealing with incidents and emergencies, not just events linked to the Early Notification Convention and the Assistance Convention. In addition, the manual includes guidance on reporting for International Nuclear and Radiological Event Scale (INES) national officers, who can input INES reports through the USIE web site. The manual also describes additional response procedures for INES emergency contact points and provides details of new exercises that were developed with a wider scope.

Response and Assistance Network

The Agency continued to encourage Member States to join the Response and Assistance Network (RANET). While no new RANET registrations were received during 2011, a number of Member States have indicated their interest in joining the network. The lessons learned from the accident at TEPCO's Fukushima Daiichi nuclear power plant (hereinafter referred to as the Fukushima Daiichi accident) identified several areas where RANET can be enhanced. Consequently, a number of activities related to RANET have been included in the IAEA Action Plan on Nuclear Safety.

In 2011, two projects were launched to assist in the harmonization of response and assistance capabilities provided under RANET. The first involved development of the assistance products that are currently defined in Appendix F to *IAEA Response and Assistance Network (EPR-RANET 2010)*. The aim is to provide more detailed specification of the products arising from monitoring and assessment activities conducted during RANET activities. The second project focused on development of a RANET operations manual, which will be used by RANET Field Assistance Teams and Joint Assistance Teams to ensure interoperability and consistency in responding to a request for assistance in the case of a nuclear accident or radiological emergency.

Strengthening In-house Preparedness and Response Capabilities

Plans for in-house training were developed early in the year, with a view to providing as many on the job training sessions as possible. These training sessions were designed to complement exercises aimed at testing the performance of the main response functions of the Agency's Incident and Emergency System (IES). In the first quarter of 2011, this in-house training led to the conduct of a full scale activation exercise focusing on the functioning of the IES Technical Team and the actions to be taken under the severe accident scenario of a total blackout at a nuclear power plant. However, the need for the Agency to respond urgently to the Fukushima Daiichi accident led to the discontinuation of the exercise part of the in-house training plan after the first quarter of the year.

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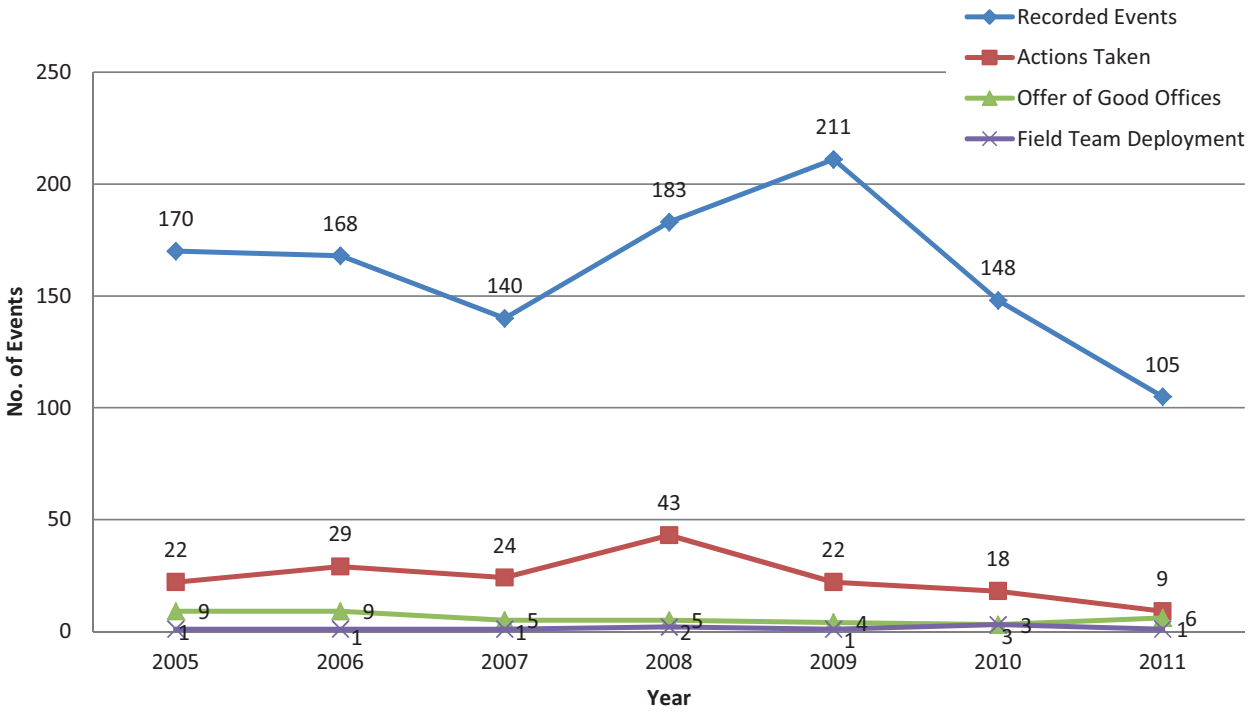

FIG. 3. Events recorded and responses by the Agency between 2005 and 2011 (the Field Team Deployment figure for 2011 does not include Japan).

The Agency's response to the accident, as well as subsequent actions taken, is described in a separate chapter in this report.

Other Radiation Events

In 2011, the Agency was directly informed or indirectly became aware of 105 events involving or suspected to involve ionizing radiation. The Agency took action in nine cases for the purpose of authenticating and verifying information with external counterparts, or providing and sharing official information, and offered its service in six cases (Fig. 3).

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In one case in 2011, the Agency received a request for assistance from the Government of Bulgaria under the auspices of the Assistance Convention in relation to the overexposure of workers at a gamma irradiation facility in the town of Stamboliysky. An Agency RANET Assistance Mission, supported by a designated centre in France, was quickly deployed to Bulgaria to undertake a medical evaluation of the exposed workers and assess the doses they had incurred. The Assistance Mission also advised the Bulgarian counterpart organization on the medical follow-up for the workers. Through a bilateral arrangement between the authorities in Bulgaria and France, the overexposed workers were treated in a specialized medical care facility in France.