

Incident and Emergency Preparedness and Response

Objective

To maintain and enhance effective and compatible Agency, national, regional and international emergency preparedness and response (EPR) 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 malicious act. 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

As part of its efforts to continue improving emergency preparedness and response (EPR) arrangements and capabilities in Member States, the Agency is developing comprehensive international standards, guidance and tools. In 2013, it published *Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor (EPR-NPP Public Protective Actions 2013)*, part of the Agency's Emergency Preparedness and Response series. The publication outlines the actions necessary to protect the public in the event of an emergency at a light water reactor, including an emergency involving spent fuel. It provides a basis for developing, at the preparedness stage, the tools and criteria that would be needed to take protective and other actions in response to such an emergency.

The Agency also published the *IAEA Report on Preparedness and Response for a Nuclear or Radiological Emergency in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant*,¹ part of a series of International Experts Meeting reports. The publication highlights lessons learned and identifies the main actions needed for improved emergency preparedness and response at all levels, drawing on information from and the discussions and conclusions of various Agency meetings on emergency preparedness and response, and on Agency activities undertaken since the accident in 2011.

Communication with Member States

To improve reporting and information sharing, the Agency develops relevant guidance and makes it available in a number of the Agency's official languages. It also provides experts in Member States with information on the strategy, criteria and practical steps involved in reporting

¹ Available at: <http://www.iaea.org/newscenter/focus/actionplan/reports/preparedness0913.pdf>.

nuclear or radiological incidents and emergencies. To this end, the *Operations Manual for Incident and Emergency Communication (EPR-IEComm 2012)* was translated into Chinese, French and Russian, and made available to contact points for nuclear or radiological incidents and emergencies. The Agency also conducted exercises to test communication channels and parts or all of the international response procedures.

The Agency enhanced the usability of its secure Unified System for Information Exchange in Incidents and Emergencies (USIE) web site for reporting nuclear or radiological incidents and emergencies. It also improved features such as those for alerts and alert confirmations. Enhancements were also made to the International Radiological Information Exchange (IRIX) standard data set and data format for the exchange of information during nuclear or radiological incidents and emergencies. This standard provides web server to web server interfaces for importing and exporting information and data relevant in an emergency.

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Response to Events

In 2013, the Agency was directly informed of, or indirectly became aware of, 219 events involving or suspected to involve ionizing radiation (Fig. 1). It took response actions in 51 of these events and offered good offices in 18 events — ten of which were in relation to events triggered by earthquakes and tsunamis — and delivered two assistance missions.

Response and Assistance Network

A Response and Assistance Network (RANET) Technical Meeting was held in Vienna to finalize *IAEA Response and Assistance Network (EPR-RANET 2013)*, one of the EPR publications issued by the Agency in 2013. This publication contains changes reflecting recent developments in RANET, including: the addition of a new functional area to address on-site assistance and advice following an emergency at a nuclear installation; modifications to the concept of operations that build on and streamline the version

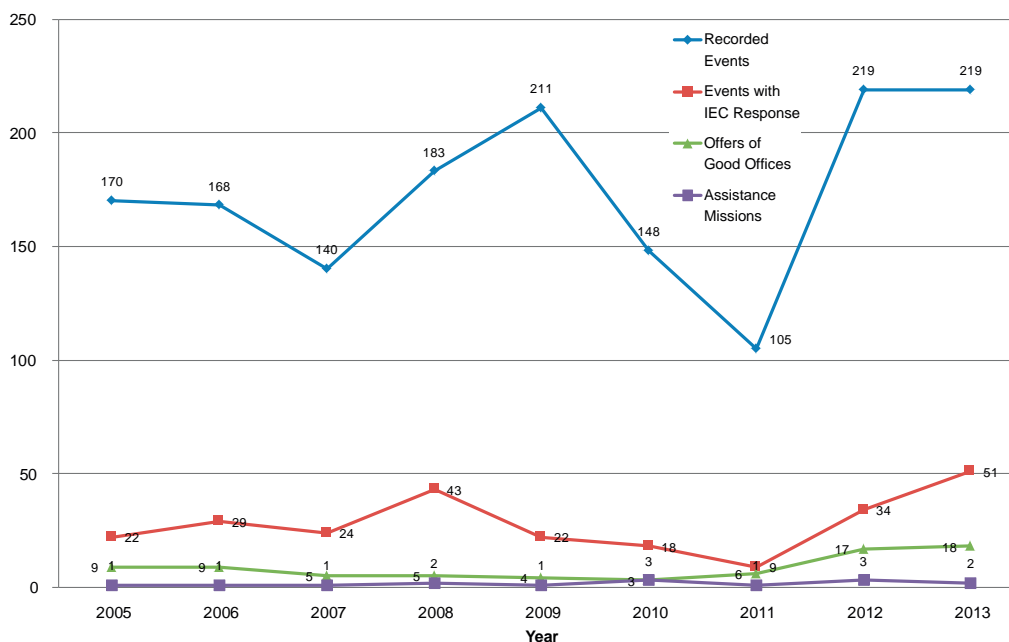


FIG. 1. Number of radiation events the Agency became aware of, and Agency responses, since 2005.

in EPR-RANET 2010; a description of the review of RANET national assistance capabilities, elaborating concepts introduced in EPR-RANET 2010; changes to the registration form to reflect recent developments in RANET; and inclusion of task lists to support assistance mission leaders. A RANET database containing information about the national assistance capabilities registered by Member States was also developed and made available on the USIE web site.

“In 2013, a process for assessment and prognosis in response to an emergency at a nuclear power plant was developed and reported to the Board of Governors.”

In-house Preparedness and Response

The IAEA Action Plan on Nuclear Safety (the Action Plan) expanded the Secretariat’s response role in an emergency at a nuclear power plant to cover the need “to provide Member States, international organizations and the general public with timely, clear, factually correct, objective and easily understandable information during a nuclear emergency on its potential consequences, including analysis of available information and prognosis of possible scenarios based on evidence, scientific knowledge and the capabilities of Member States.” In 2013, a process for assessment and prognosis in response to an emergency at a nuclear

power plant was developed and reported to the Board of Governors. In developing this process, constraints and limitations were identified, tools for assessment and prognosis were set up, Agency staff were trained, and discussions were initiated with Member States on the minimum required set of data and parameters for assessment and prognosis.

Compliance with Current Standards

In accordance with the Action Plan, the Agency continued to assist Member States by appraising national EPR arrangements through Emergency Preparedness Review (EPREV) missions, and by reviewing the effectiveness of regulatory processes associated with EPR through Integrated Regulatory Review Service (IRRS) missions. In 2013, an EPREV mission was conducted to Jordan, and two EPREV preparatory missions were conducted, to Kuwait and South Africa. The effectiveness of the regulatory processes in relation to EPR was assessed in IRRS missions to Belgium, Bulgaria, the Czech Republic, Poland and the Russian Federation. In addition, the Agency conducted four expert missions — to Indonesia, Nicaragua, Thailand and Tunisia — to assist in assessing national EPR arrangements or testing EPR capabilities through exercises.

As part of its efforts to improve the quality of its appraisal services, the Agency initiated a review of the effectiveness of appraisals in the EPR area. In 2013, the Agency conducted a series of meetings and workshops to discuss improvements in the quality of EPREV missions. The EPREV Guidelines were enhanced and strengthened, leading to more focused and detailed recommendations. The EPR module of the IRRS was also modified to focus on the comprehensiveness of the EPR regulations and the effectiveness of the verification processes of regulatory bodies.

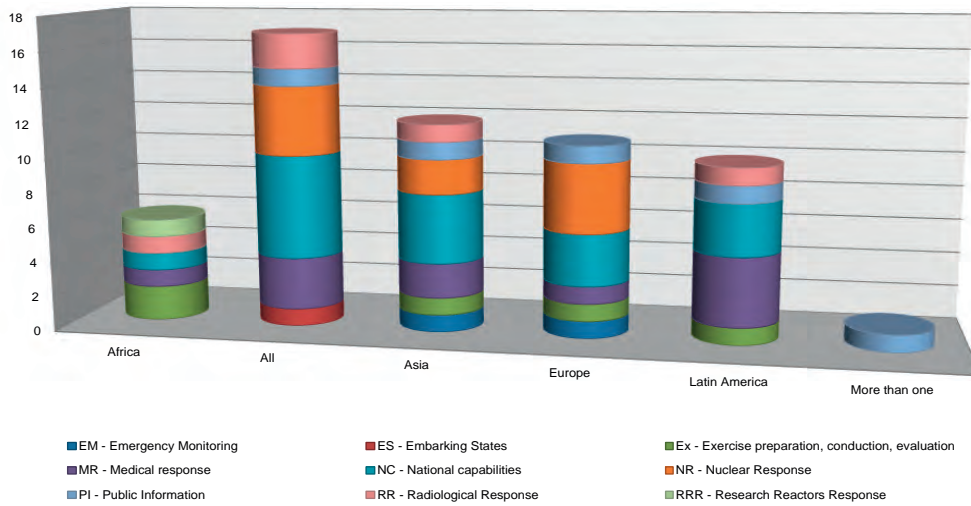


FIG. 2. EPR training events by region in 2013.

Capacity Building in Member States

To help Member States build EPR capacity, the Agency provides state of the art training at the interregional, regional and national levels, and is establishing regional EPR capacity building centres, with several centres per region, each focusing on a specific area (or areas) of specialization in EPR. In 2013, it conducted 58 EPR training events, covering all major areas, including medical aspects, public communications, preparedness for and response to nuclear or radiological emergencies, biodosimetry, first response and consequence assessment (Fig. 2). Several train the trainers sessions were also held, reflecting the growing focus on the long term sustainability of training programmes.

Inter-Agency Coordination

The Regular Meeting of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE) in May 2013 endorsed the *Joint Radiation Emergency Management Plan of the International Organizations*

(JPLAN), which was published by the Agency as EPR-JPLAN 2013.

The ConvEx-3 (2013) exercise, held in November and hosted by Morocco, was designed to allow Member States and international organizations to evaluate their response to a severe radiological emergency triggered by a nuclear security event and to identify EPR areas requiring improvement. Fifty-nine Member States, including Morocco, and ten international organizations, including the Agency, participated in the exercise, which lasted approximately 25 hours (Fig. 3). Twenty-four Member States and six international organizations tested their EPR arrangements and capability to respond to this type of event. The participation of relevant international organizations (including INTERPOL and Europol) contributed to the harmonized international response and the provision of consistent public information. Effective cooperation with the Moroccan Government in preparing, conducting and evaluating the exercise contributed to the improvement of emergency preparedness to respond to radiological emergencies worldwide.



FIG. 3. The Director General (centre, wearing orange vest) and members of his senior management team at the ConvEx3 (2013) exercise.