

# Incident and Emergency Preparedness and Response

## Objective

To establish effective and compatible national, regional and international capabilities and arrangements for preparedness, early warning, 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 a deliberate act, and for sharing official, technical and public information among Member States and relevant international organizations.

## Emergency Preparedness and Response around the World in 2009

The ability to adequately respond to a nuclear or radiological emergency remains a central element of international nuclear safety and radiation protection efforts. Although further capacity building efforts in this area are required, experience showed that those countries involved in a response coordinated by the Agency significantly improved their emergency response capabilities. Subsequent events were reported in a timely manner and

the response was conducted independently and successfully. If the events required international assistance, these countries knew well the procedures to activate an international response.

## Capacity Building and Assistance to Member States

The evaluation of Member State self-assessments of national emergency preparedness and response capabilities underlines the need to continue efforts to strengthen them. Agency assistance includes the organization, on request, of Emergency Preparedness Review (EPREV) missions. In 2009, the Agency conducted two such missions. In addition, eight missions were carried out to assist in developing and strengthening different aspects of national emergency preparedness and response systems.

Three Integrated Regulatory Review Service (IRRS) missions were conducted to review emergency preparedness and response aspects of national regulatory systems.

The Agency organized 25 training courses at the regional and national levels on various aspects of emergency preparedness and response. In addition, three Agency Fellows were

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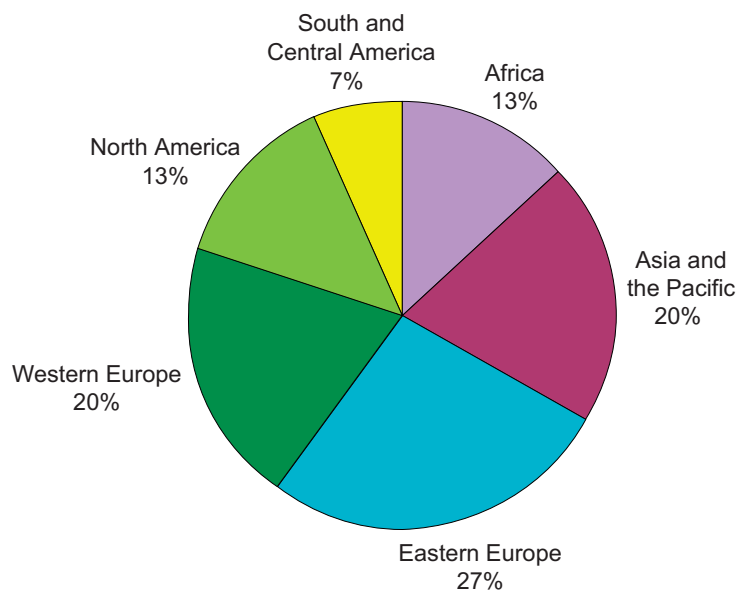


FIG. 1. Distribution by region of Member State capabilities registered with RANET.

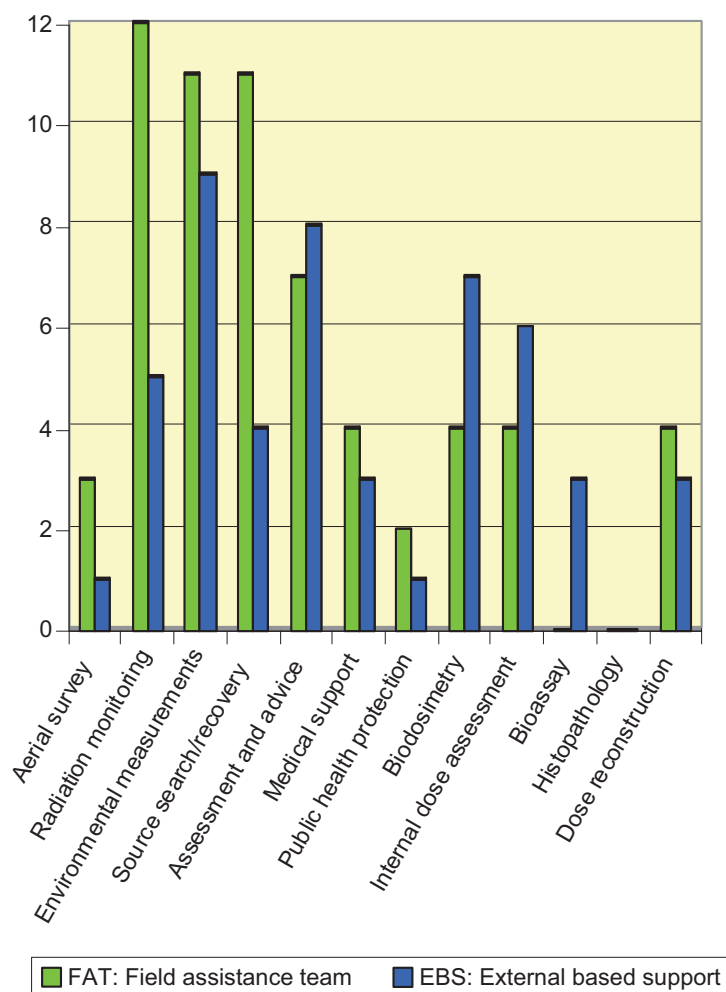


FIG. 2. Member State capabilities registered with RANET.

trained as part of technical cooperation projects, and awareness briefings on emergency preparedness and response were given to 18 delegations from Member States.

By the end of 2009, 16 Member States had registered a number of assistance capabilities with the Agency's Response Assistance Network (RANET) (Fig. 1). While this is an improvement over the previous year and while more Member States have pledged to register with the network, RANET requires significantly greater commitment by Member States in order to serve as an effective and reliable assistance tool. In addition, certain capabilities are yet to be registered (for example, histopathology), as shown in Fig. 2.

An international exercise in 2009 tested current capabilities for the safe and expeditious transport of samples for biological dosimetry assessment. Known as 'ShipEx-1', this exercise was a test of RANET and international cooperation. Blood samples were shipped from the Peruvian Institute of Nuclear Energy, in Peru, to participating

laboratories in 13 countries within the Latin American Biological Dosimetry Network and the IAEA Response Assistance Network. Conclusions from the exercise are expected to contribute to the timely and safe shipment of biological samples in international assistance missions.

## Event Response

Through various reporting mechanisms, the Agency was informed of 211 safety related events involving, or suspected of involving, ionizing radiation. Most of these events were found to have no safety significance and/or no radiological impact on people or the environment. In 22 cases, the Agency authenticated and verified information, and also provided information or assistance to the requesting party.

Following a request for assistance from Ecuador, the Agency organized a field mission to provide medical advice, and later treatment, in a case related to overexposure due to the handling of an

iridium-192 industrial radiography source. France provided the medical treatment to the exposed person, who recovered after several months of intense and specialized medical therapy.

## Unified Reporting System

In response to a request by the Agency's General Conference for a review of the mechanisms for reporting incidents and emergencies, the Secretariat is developing a unified reporting system that will replace the Agency's current Early Notification and Assistance Conventions (ENAC) web site and the Nuclear Events Web-based System (<http://www-news.iaea.org/news/>). A preview of the system was made available for test use by national authorities during the year. The system is expected to go into operation in 2010.

## Key Emergency Preparedness and Response Publications

In 2009, the Agency undertook revision of a publication issued earlier, *Cytogenetic Analysis for*

*Radiation Dose Assessment* (Technical Reports Series No. 405). The revision took account of the lessons learned from application of this manual in past emergencies and during exercises, as well as new methods and techniques developed over the last few years. A *First Responder's Toolkit* was published, containing manuals on responding to radiological emergencies and CD-ROMs for training courses and e-learning. An *Emergency Planner's Toolkit* was also issued containing two manuals: *Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency — 2003* (EPR-Method) and *Preparation, Conduct and Evaluation of Exercises to Test Preparedness for a Nuclear or Radiological Emergency — 2005* (EPR-Exercises).

Implementation began in 2009 of the emergency preparedness and response part of the Norwegian funded Safe Nuclear Energy Project, entitled 'Regional Excellence Programme Romania'. Draft procedures for response to emergencies at research reactors of TRIGA design were developed based on the methodology used in generic procedures for response to emergencies at research reactors.