

Nuclear Security

Objective

To increase Member State awareness and ability to control and protect nuclear and other radioactive materials, nuclear installations and transports, from terrorist and other illegal activities, and to detect and respond to such events and provide engineering safety measures, as necessary.

Completion of the Agency's Nuclear Security Plan for 2002–2005

The Plan of Activities to Protect Against Nuclear Terrorism, approved by the Board of Governors in March 2002, set an ambitious agenda for the Agency. It combined the acceleration of existing Agency activities with the development of an extensive range of new measures to assist Member States, upon request, in the prevention, detection and response to malicious acts involving nuclear and other radioactive materials and their associated facilities and transports. Specific measures included: effective management and control of materials through regulation and accountancy; prevention of theft; physical protection of materials, locations and transports against attacks; detection of illicit trafficking; and radiological emergency response measures.

In implementing the Plan, highest priority was given to activities achieving timely improvements to nuclear security in Member States. These activities resulted in:

- Improved preparedness in States to address the risk of malicious acts;
- Increased awareness in States of the importance of establishing an infrastructure, including regulatory systems, in support of nuclear security;
- Improved physical protection of nuclear facilities;
- Enhanced radiation monitoring capabilities established at borders;
- Recovery of a substantial number of vulnerable, high activity, radioactive sources
- Increased legal commitments;
- More States joining the Illicit Trafficking Database (ITDB);
- Training and educational activities in all regions, reaching some 1500 participants;

More than 100 evaluation missions, including those for the overall assessment of needs, physical protection evaluation, vulnerability assessment and follow-up to previous activities and missions.

Nuclear Security Plan for 2006–2009

In September 2005, the Board of Governors approved a new Nuclear Security Plan covering the years 2006–2009 to support Member States in their efforts to establish and maintain effective national nuclear security regimes. The cost of implementing the Plan is estimated at \$15.5 million annually. It encompasses three main areas of activity:

- (1) *Needs assessment, analysis and coordination* to enable a structured approach to nuclear security implementation through effective prioritization of activities, monitoring progress and targeted new activities;
- (2) *Prevention* activities that assist States to protect nuclear and other radioactive material from malicious acts, such as theft and sabotage, carried out by terrorists or other criminals;
- (3) *Detection and response* activities that provide assistance to help States combat illicit trafficking and emergency response.

The Nuclear Security Plan also covers other activities, for example State systems of accounting for and control of nuclear material, radiation and installation safety, and the management of radioactive waste.

Physical Protection of Nuclear Material

During 2005, the Agency conducted four International Physical Protection Advisory Service (IPPAS) missions, which provided peer review based evaluations of State implementation of physical protection responsibilities and served as the basis of recommendations for improving physical protection systems in States (Fig. 1). The Agency also conducted physical protection courses, workshops and seminars at the national, regional and international levels.



FIG. 1. Inspecting security barriers at a nuclear facility during an Agency expert mission.

Progress was made in the development of guidance documents as part of the emerging IAEA Nuclear Security Series of publications covering such topics as security culture, design basis threat methodology, security of radioactive sources, security of radioactive waste, protection against sabotage, transport security and physical protection regulations.

Security of Radioactive Sources

Radioactive sources are used in numerous applications throughout the world and are difficult to protect due to their large numbers. The Agency is actively involved in building awareness internationally on the need to control and physically protect radioactive sources at their locations, taking a multi-track approach to assist States in their efforts to secure radioactive material. One example was work under the 'Tripartite Initiative', a multilateral effort between the Agency, the Russian Federation and the USA for securing vulnerable radioactive sources in the States of the former Soviet Union. By the end of 2005, work was completed in six States on the dismantling and relocation of high risk radioactive sources, as identified previously by fact-finding missions and agreed with the concerned national authorities.

As in previous years, the Agency continued in 2005 to carry out missions to appraise the effectiveness of national regulatory infrastructures governing both the safety and security of radioactive sources and to promote the adoption of information systems to manage source inventories and control systems. It also maintained and updated the

International Catalogue of Radioactive Sources and Devices to aid source identification and recovery efforts in States.

Combating Illicit Nuclear Trafficking

The Agency offers States a wide range of services and support in combating illicit trafficking. In 2005, the Agency provided training to monitor, detect, identify and respond to incidents involving nuclear and other radioactive material. Nuclear security missions to States were opportunities for assessing the technical and organizational means available to States to combat illicit trafficking activity and for consulting with national and local authorities on how outstanding needs should best be met. As needed, the Agency complemented its advisory assistance with technical guidance and activities for building awareness among policy makers and others involved in nuclear security.

In 2005, the Agency continued to receive reports from Member States about incidents of illicit trafficking and other related unauthorized activities involving nuclear and other radioactive material, which were subsequently recorded in the ITDB. Information reported to the ITDB indicates the potential availability of nuclear and other radioactive material for malicious use. It also shows that measures to protect this material from theft and to detect and respond to illicit trafficking in nuclear and other radioactive material require further strengthening. Membership in the ITDB reached 86 in 2005. A total of 161 incidents were reported by Member States, of which 105 occurred during 2005 (Fig. 2).

A new CRP was started in 2005 to assist States in the application of nuclear forensics in combating illicit trafficking. The objective is to strengthen the capability of Member States to characterize seized items while preserving forensic evidence, and to utilize nuclear forensics techniques for nuclear attributions.

Three publications in the new IAEA Nuclear Security Series were circulated to Member States for comments prior to being issued. The first provides a set of technical specifications for use in the design, testing, qualifying and purchase of border radiation monitoring equipment, with an emphasis on facilitating the deployment of equipment in States. The second publication provides guidance to States on the tools and procedures of nuclear forensics

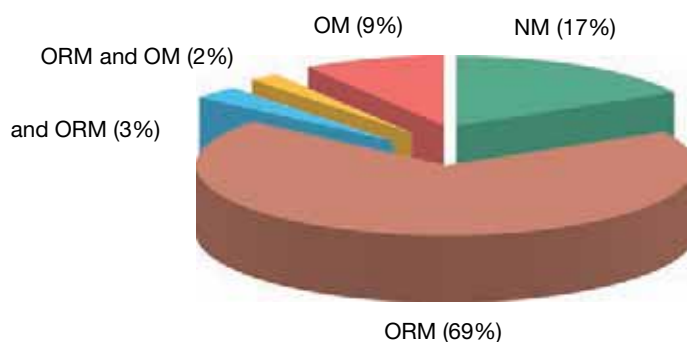


FIG. 2. Confirmed incidents of illicit trafficking and other related unauthorized activities involving nuclear and other radioactive material, as reported to the ITDB in 2005 (NM: nuclear material; OM: other material, which includes mainly radioactively contaminated materials; ORM: other radioactive material, which includes mainly radioactive sources).

investigations in responding to illicit trafficking events involving radioactive material. The third, prepared in cooperation with Interpol and the UPU, provides a description of the techniques and equipment used to detect and control radioactive material in international mail transported by public postal operators.

International Cooperation

Agency activities in the area of nuclear security continue to be underpinned by collaboration and

coordination with other regional, transnational and international organizations. In March 2005, the Agency organized an international conference on 'Nuclear Security: Global Directions for the Future', in London. The conference, which was held in cooperation with the European Union, Organization for Security and Co-operation in Europe, International Criminal Police Organization, European Police Office and the World Customs Organization, recognized that the risk of successful acts of nuclear terrorism remains high. Other areas of agreement included: priorities for reducing this risk and continued efforts to implement

Amendment to the Convention on the Physical Protection of Nuclear Material

In response to requests from a majority of States parties to the Convention on the Physical Protection of Nuclear Material (CPPNM), a conference was held in Vienna, from 4 to 8 July 2005, to consider proposed amendments to the convention. The conference adopted by consensus, an amendment to the CPPNM on 8 July 2005. Delegates of 81 States Parties signed the Final Act of the Conference.

The amendment provides for an expanded regime by strengthening the convention in a number of areas. First, the amendment extends the scope of application of the CPPNM by requiring States to establish, implement and maintain a regime applicable to the physical protection of nuclear material in domestic use, storage and transport, and of nuclear facilities. Second, with regard to the prevention and combating of offences relating to nuclear material and nuclear facilities worldwide, the amendment specifies new offences and provides for the revision of the majority of existing offences under the CPPNM. In particular, it requires States to bring under their jurisdiction and make punishable under their national laws certain offences including theft, robbery, smuggling of nuclear material or sabotage of nuclear facilities, as well as acts related to directing and contributing to the commission of such offences. Third, new arrangements for expanded cooperation, assistance and coordination amongst States, for example regarding rapid measures to locate and recover stolen nuclear material, to mitigate any radiological consequences of sabotage, and to prevent and combat relevant offences, are foreseen. The amendment will enter into force on the thirtieth day after the date on which two thirds of the States parties have deposited their relevant instruments with the Director General.

The General Conference, in welcoming the amendment to the CPPNM, encouraged "all States party to the Convention to ratify the amendment as soon as possible and to deposit instruments of ratification, acceptance or approval with the depositary to enable the early entry into force of the amendment." In addition, "all States party to the Convention [were encouraged] to act in accordance with the object and purpose of the amendment until such time as the amendment enters into force."

preventive measures, the emphasis being on the physical protection of and accountability for radioactive material in use, storage and transport. The conference identified the importance of a clear allocation of responsibilities, implementation of a nuclear security culture, and of a graded approach in addressing threats, taking into consideration the risks and potential consequences. The conference also recognized that the Agency had a leading role in the effort to improve the global nuclear security framework and to promote its implementation.

The Joint Action cooperation between the Agency and European Union, initiated on 1 January 2005, entails concerted work to secure nuclear and

other radioactive material, including those in non-nuclear use, and to enhance detection and response capabilities in States in south-eastern Europe, Central Asia and the Caucasus. The project's priorities include: strengthening the physical protection of nuclear and of other radioactive material in use, storage and transport, and of nuclear facilities; strengthening the security of radioactive material in non-nuclear applications; and strengthening the capabilities of States in the detection of and response to illicit trafficking. In July 2005, a new agreement was signed, extending the implementation period, the scope of the assistance and the geographical regions covered by the project. ■