Nuclear Security

Objective

To contribute to global efforts to achieve effective nuclear security, by establishing current, comprehensive and complete global nuclear security guidance and providing for its application through peer reviews and advisory services and capacity building, including education and training. To assist in adherence to and implementation of nuclear security related international instruments, and to strengthen the international cooperation and coordination of assistance in a way that underpins the use of nuclear energy and applications. To lead and enhance international cooperation in nuclear security, in response to General Conference resolutions and Board of Governors directions.

The need for continued efforts to improve nuclear security worldwide was clearly demonstrated during the year by General Conference resolutions and requests for assistance. The Agency continued to assist States, upon request, in making their national nuclear security regimes more robust, sustainable and effective. In implementing the Nuclear Security Plan 2014–2017, it supported States in the areas of needs assessment, information security and cybersecurity; external coordination; the development of a global nuclear security framework; coordinated research projects (CRPs); self-assessments and peer reviews; human resource development; and risk reduction and security improvement. Physical protection remained a key focus of activities implemented under the Plan. Throughout the year, in response to Member State requests, the Agency focused increased attention on promoting the nuclear security framework globally, and on developing nuclear security guidance and providing for its use and application, including through CRPs.

Promotion of the Nuclear Security Framework

The Agency assists in the development and promotion of a comprehensive and global nuclear security framework. Its activities in this area in 2015 contributed to increased awareness of and support for relevant legally binding and non-binding international instruments. The Agency focused in particular on the entry into force of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM).

During the year, Kyrgyzstan and San Marino acceded to the CPPNM, and seven States — Botswana, Iceland, Italy, Morocco, San Marino, Turkey and the United States of America — joined its 2005 Amendment.

In December, the Agency organized the first Technical Meeting of Points of Contact and Central Authorities of States Parties to the CPPNM, held in Vienna and attended by more than 100 participants from 70 States. The meeting was aimed at improving the ability of States Parties to the CPPNM to meet their obligations under Article 5 of the Convention. This Article requires States Parties to make known to each other their Points of Contact and Central Authorities having responsibility for physical protection as well

as the provisions of the Convention relating to information exchange. Participants also discussed the responsibilities and the legal obligations of the Points of Contact and Central Authorities, and mechanisms to meet the enhanced Point of Contact responsibilities when the Amendment to the CPPNM enters into force.

Nuclear Security Guidance

In response to Member State requests, the Agency develops comprehensive guidance on nuclear security, with the active involvement of experts from Member States, which is issued in the IAEA Nuclear Security Series. In 2015 the Nuclear Security Guidance Committee began its second term. The Committee was established by the Director General in 2012 to increase Member State input into the IAEA Nuclear Security Series. To date, 65 Member States have nominated representatives to the Committee.

During the year, the Agency published four Implementing Guides: *Security of Nuclear Information* (IAEA Nuclear Security Series No. 23-G); *Risk Informed Approach for Nuclear Security Measures for Nuclear and Other Radioactive Material out of Regulatory Control* (IAEA Nuclear Security Series No. 24-G), jointly sponsored by the International Criminal Police Organization – INTERPOL; *Use of Nuclear Material Accounting and Control for Nuclear Security Purposes at Facilities* (IAEA Nuclear Security Series No. 25-G); and *Security of Nuclear Material in Transport* (IAEA Nuclear Security Series No. 26-G). In addition, the Agency published *Nuclear Forensics in Support of Investigations* (IAEA Nuclear Security Series No. 2-G (Rev. 1)), a revision of an earlier Agency publication on the topic. At the end of 2015, there were 25 publications in the IAEA Nuclear Security Series.

Capacity Building in Nuclear Security

Member States continued to benefit from education and training opportunities developed by the Agency to further strengthen national nuclear security regimes and nuclear security infrastructure. The Agency conducted a total of 108 security related training courses and workshops (23 international or regional, 85 national) in 2015, providing training to more than 2300 participants.

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Among the Agency workshops most frequently requested by Member States are the national workshops on the guidance contained in *Development, Use and Maintenance of the Design Basis Threat* (IAEA Nuclear Security Series No. 10). In the course of the year, the Agency delivered nine such workshops, bringing to 68 the total number delivered since 2009.

The fifth Joint IAEA–ICTP International School on Nuclear Security took place at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, in April and May, providing a comprehensive introduction to the field of nuclear security. The course was attended by 46 young nuclear professionals from regulatory bodies, universities, research institutions, government ministries, operators using radioactive sources and law enforcement agencies in 43 Member States.

The Agency continued to coordinate efforts in education and training with its respective networks. The fourth annual Meeting of the International Network for Nuclear Security Training and Support Centres (NSSC Network) was held at the Agency's Headquarters in February. The meeting was attended by 65 participants from 47 Member States and the European Union, the Center for Strategic and International Studies, and the World Institute of Nuclear Security.

In August, the Agency hosted the annual meeting of the International Nuclear Security Education Network (INSEN). The meeting was attended by 97 participants from 37 Member States.

To enhance national capacities to detect material out of regulatory control, the Agency donates detection instruments to States. In the course of 2015, the Agency donated some 780 detection instruments, including four portal monitors.

International Conference on Computer Security in a Nuclear World

Secure computer systems are essential to nuclear security, and Member States often request support in developing comprehensive and resilient computer and information security systems. To address this important issue, in June the Agency hosted the International Conference on Computer Security in a Nuclear World: Expert Discussion and Exchange at its Headquarters in Vienna. Organized in cooperation with the International Criminal Police Organization – INTERPOL, the International Telecommunication Union, the United Nations Interregional Crime and Justice Research Institute, and the International Electrotechnical Commission, the conference drew over 700 participants from 92 Member States and 17 organizations. Among the topics discussed were computer security threats in the context of nuclear security (Fig. 1); computer security and system designs; coordination of computer security in a nuclear security regime; nuclear security regulatory approaches; computer security programmes; management of computer security; and computer security culture and capacity. The conference provided a global forum for competent authorities, operators, system and security vendors, and other stakeholders to share information and discuss computer security as it relates to nuclear security.

Improving the Advisory Services and Peer Review Process

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In 2015, the Agency began developing new guidelines for International Nuclear Security Advisory Service (INSServ) missions. The new INSServ guidelines will ensure that INSServ missions are compatible with, and complementary to, International Physical Protection Advisory Service (IPPAS) missions, which assess a State's nuclear security regime in relation to regulated activities for nuclear and other radioactive material, associated facilities and associated activities. The INSServ missions will be a peer review and advisory service for a State's national nuclear security regime as it relates to nuclear and other radioactive material out of regulatory control. The Agency developed and organized a workshop to increase the pool of experts available for IPPAS missions. The workshop provided an overview of the IPPAS process, the objectives and scope of IPPAS missions, the roles and responsibilities of IPPAS team members, the IPPAS Guidelines, and the IPPAS mission report.

During the year, the Agency developed an IPPAS database of all good practices from IPPAS mission reports. More than 70% of the host countries have agreed to share this database with all States through the Nuclear Security Information Portal. The IPPAS database does not disclose the country or the facility where the good practice information comes from.

To date, a total of 76 INSServ missions had been conducted to 64 Member States, and a total of 69 IPPAS missions had been conducted to 43 Member States, one non–Member State and the Terrestrial Environment Laboratory in Seibersdorf.

Incident and Trafficking Database

During 2015, Cambodia, Guatemala and Honduras joined the programme. In the course of the year, States confirmed 226 incidents to the Incident and Trafficking Database (ITDB). While most of these incidents involved radioactive sources and radioactively contaminated material, States confirmed 26 incidents involving nuclear material. The triennial meeting

FIG. 1. A demonstration of a hypothetical cyberattack on both a competent authority and a nuclear power plant given at the International Conference on Computer Security in a Nuclear World: Expert Discussion and Exchange, held in June.

of Points of Contacts to the ITDB was held in July in Vienna, and was attended by representatives from 89 States as well as the International Criminal Police Organization – INTERPOL. The main outcome of the meeting was agreement on measures for improving reporting and communication, including the approval of an ITDB conceptual framework, a revised system of classifying incidents and updated reporting guidelines. This agreement will improve the quality of incident reports submitted by States.

Nuclear Security Fund

In the course of 2015, financial pledges to the Nuclear Security Fund were accepted by the Agency in the amount of €30.4 million. The €30.4 million included financial contributions from Belgium, Canada, China, Estonia, Finland, France, Indonesia, Italy, Japan, Kazakhstan, the Republic of Korea, New Zealand, Norway, the Russian Federation, Spain, the Sudan, Sweden, the United Kingdom, the United States of America and Zimbabwe. In-kind contributions of €180 148 were also received.