
IAEA Nuclear Security Program

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Abstract:

Although nuclear security is a State responsibility, it is nevertheless an international concern, as the consequences of a nuclear security incident would have worldwide impact. These concerns have resulted in the development of numerous international instruments on nuclear security since the terrorist events in the USA on September 11, 2001. The IAEA Office of Nuclear Security has been charged to assist Member States to improvement their nuclear security and to meet the intent of these international obligations in order to ensure a cohesive thread of nuclear security protects the global community.

The programs underway and planned by the Office of Nuclear Security will be discussed in this paper.

1 INTRODUCTION

The IAEA has been involved in physical protection of nuclear facilities and materials since the early 1970's. The first IAEA recommendations on physical protection, called the grey book, was published in 1972, shortly after the Munich Olympics. This document has been periodically updated, the last time in 1999, as INFCIRC 225.

In 1978, the IAEA initiated a physical protection training course, the International Training Course of Physical Protection. The course provided Member States with a comprehensive and systematic review of physical protection technologies and evaluation methodologies. The course has been offered 19 times since 1978 to over 700 participants from 60 countries.

In the mid-1990's the IAEA developed an advisory service to assist Member States in Nuclear Security, the International Physical Protection Advisory Service (IPPAS). The service provide expert advice to Member States upon request. As an outcome of the missions, the IAEA began assisting Member States on an ad hoc basis with physical protection upgrades and to provide additional training and workshops as requested.

The events of September 11, 2001 brought to public attention the severe impact that terrorist events could have on society. The possibility of such terrorist acts conducted against nuclear and radiological facilities and materials has prompted the international community to strive to strengthen the protection of these materials and facilities and to improve communication. Consequently, the IAEA expanded and accelerated its efforts in physical protection, and has since embarked on a formal program approved by the Board of Governors, the Nuclear Security Program Plan, to assist Member States to improve Nuclear Security.

2 INTERNATIONAL INSTRUMENTS FOR NUCLEAR SECURITY

The international community, in response to increasing concerns of international nuclear terrorism, have developed several instruments on nuclear security. The intent of these is to provide a framework by which a cohesive, seamless, and integrated global nuclear security regime will exist. These instruments include: the Convention on the Physical Protection of Nuclear Materials and Nuclear Facilities and its Amendment, the UN Security Council Resolution 1540, and the Convention on the Suppression of Acts of Nuclear Terrorism.

2.1 Convention on the Physical Protection of Nuclear Materials and Nuclear Facilities and its Amendment

The convention, as amended by State parties in July 2005, requires, among other things, that signatories develop and implement physical protection systems for domestic use, storage, and transport of nuclear materials and for nuclear facilities. Further, it defines twelve fundamental principles of physical protection.

2.2 UN Security Council Resolution 1540

The Security Council resolution, adopted on 28 April 2004, obliges States to develop and maintain effective physical protection measures for nuclear, chemical, and biological materials. It also requires States to develop and establish appropriate effective national export and trans-shipment controls over these same items.

2.3 Convention on the Suppression of Acts of Nuclear Terrorism

The Convention, once ratified by States, requires signatories to adopt appropriate measures to ensure protection of radioactive and nuclear materials, taking into account the relevant recommendations and functions of the International Atomic Energy Agency.

3 IAEA NUCLEAR SECURITY PROGRAM

The Nuclear Security Program (NSP) approved by the Board of Governors, provides a structured approach to the IAEA program to assist Member States efforts to improve Nuclear Security. The plan emphasizes assistance to States in implementing international instruments, development of international nuclear security guidance, assessment of needs at Member States, assisting with development of human resources, and development of outreach programs.

To meet these areas of emphasis, the Office of Nuclear Security provides extensive security advisory services, is developing a series of guidance documents, and provides a number of training courses. Currently, INFCIRC 225/Rev 4, *Physical Protection of Nuclear Facilities and Nuclear Materials*, serves as the primary guidance document for the international community. A primary effort of the NSP is to develop a series of nuclear security guidance documents that draw upon the wealth of knowledge on physical protection accumulated within the international community to assist Member States to meet their international obligations. The Nuclear Security Series (NSS) is the result of this effort.

The NSP outlines three program areas for the IAEA:

- Needs Assessment, Analysis and Coordination,
- Prevention, and
- Detection and Response.

The activities in each of the areas will be discussed.

3.1 Needs Assessment, Analysis and Coordination

The Needs Assessment, Analysis and Coordination includes development of overarching programs of support with Member States, and to gather and organize data on international nuclear security. Three primary efforts are: the implementation of International Nuclear Security Service (INSServ) missions, the development of Integrated Nuclear Security Support Plans (INSSP), and maintenance of the Illicit Trafficking Database.

3.1.1 Nuclear Security Series

The basis for the Nuclear Security Series is under development. This document, the *Nuclear Security Fundamentals*, will draw upon the work by Member States in developing the twelve fundamental principles of physical protection, and will expand their scope to include radioactive materials other than nuclear.

3.1.2 International Nuclear Security Service (INSServ) missions

These missions, to assess the needs of a Member State for Nuclear Security provide a high level review of the national security regime for both nuclear and radiological facilities and materials. They review the scope of the nuclear security program and identify areas in which support or further discussion may be warranted. The result of these missions is an Integrated Nuclear Security Support Plan for assistance of the IAEA to the Member State.

3.1.3 Integrated Nuclear Security Support Plans

Development and execution of these plans, which result from the INSServ missions provides a basis for providing assistance to a Member State in a structured and systematic manner. They consist of a schedule of activities to be undertaken by the IAEA and the State to benefit the national nuclear security program.

3.1.4 Illicit Trafficking Database

Data on the illicit trafficking of nuclear and other radioactive materials is gathered and organized within the illicit trafficking database. Management of the database provides insights into trends, and permits insight into the severity of the threats to nuclear security.

3.2 Prevention

Prevention includes providing support to Member States for the development of the national nuclear security regime, and the resulting security for nuclear and radiological materials at these facilities. This task involves providing guidance, conducting advisory missions, providing training, and providing technical assistance.

3.2.1 Nuclear Security Series Guidance Documents

Several documents are in various stages of development for the NSS. These include:

- Security of Transport

- Protection Against Insider Adversaries
- Development of Design Basis Threat
- Vital Area Identification
- Guidance for the Prevention of Sabotage
- Nuclear Security Culture
- Model Regulations
- Physical Protection of Research Reactors

3.2.2 Advisory Missions

The Office of Prevention offers two different advisory services upon request of a Member State: IPPAS missions, and RASSIA missions. The former concerns the national nuclear security regime as well as protection at the facility level for nuclear facilities and materials. The latter, conducted in conjunction with the IAEA radioactive source safety staff, concerns the national nuclear safety and security regime for radioactive sources. The output of either mission is a report with recommendations, suggestions, and good practices.

3.2.3 Training

A broad training program is implemented based upon perceived needs of Member States and specific requests. The basis for all training is the ITC. Other training courses are taught in regional and national settings as appropriate. These courses and workshops provide Member States with assistance in developing human resources to effectively implement national nuclear security responsibilities. The courses and workshops presented include:

- Design Basis Threat Workshop
- Foundations of Nuclear Security
- Protection Against Sabotage
- Protection Against Insiders
- Identification of Vital Areas
- Physical Protection of Research Reactors and Associated Facilities

3.2.4 Technical Support

In some cases, funding can be provided either directly, or indirectly through a donor, to Member States for improvement of physical protection systems. These upgrades have been or are underway in Europe, Africa, and South East Asia.

In addition, specific, ad hoc requests for assistance are pursued as the situation permits. These could include requests for advice, training, and sabbaticals.

3.3 Detection and Response

Detection and Response includes providing assistance to Member States to detect and respond to unauthorized transport of nuclear and radiological materials, including inter and intra border transport.

3.3.1 Nuclear Security Series Documents

Documents completed include the *Handbook on Illicit Trafficking*, and three Technical documents: *Prevention of Nuclear Security Incidents*, *Detection of Radioactive Materials at Borders*, and *Response to Nuclear Security Incidents*. In addition, several documents are under development, including the *Nuclear Security at Major Public Events* and, *Nuclear Forensics*.

3.3.2 Technical Support

In some cases, equipment is provided to States to enable personnel monitoring border crossings and points of entry to detect unauthorized transport of radioactive substances. In each case, training on this equipment is provided to assist personnel with its appropriate use.

3.3.3 Training

Several training courses are presented for front line officers, management, and response personnel on methods to detect and respond to unauthorized transport of radioactive materials. The primary course is the International Nuclear Security Seminar. Other courses include:

- Nuclear Security Awareness
- Introduction to Radiation Detection Equipment
- Combatting Illicit Trafficking involving Nuclear and Other Radioactive Materials
- Radiation Detection Equipment for Front Line Officers
- Response to Illicit Trafficking
- Advanced Detection Equipment involving Nuclear and Other Radioactive Materials

4 CONCLUSION

The IAEA Office of Nuclear Security provides a wide range of activities to assist Member States to meet international obligations for nuclear security. The activities are outlined in a Board of Governors approved Nuclear security Plan. The activities are divided into three areas: Needs Assessment, Analysis and Coordination, Prevention, and Detection and Response.