



IAEA

Atoms for Peace: The First Half Century

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The Agency is implementing a comprehensive programme aimed at stemming the threat of nuclear terrorism.

Promoting Nuclear Security: What the IAEA is doing

The Threat of Nuclear Terrorism

In the wake of recent deadly terrorist attacks in the United Kingdom, Spain, Indonesia, India and elsewhere, the international community recognizes that new and stronger measures must be taken to protect against and prepare for a broad range of terrorist scenarios including nuclear terrorism.

Terrorists might attempt to steal a nuclear weapon or acquire the nuclear material necessary to build a nuclear device. They might also try to acquire radioactive materials with the goal of making a Radiological Dispersal Device (RDD), or so-called “dirty bomb.” They could also attempt to sabotage nuclear power stations, research reactors, storage facilities or transport operations with the aim of spreading radioactive contamination.

Such possibilities appear more probable because today's suicide terrorists hold no fears concerning their own safety — there are no self-imposed limits on consequences and the assumption that radioactive material was self-protecting has been undermined.



Combating Nuclear Terrorism

Given the multiplicity of targets and possibilities for terrorists, States must consider a comprehensive approach to combating nuclear terrorism. Among the key priorities:

- Physical protection of all nuclear materials, radioactive materials and facilities and transport systems based on national threat assessment;
- Regulatory control of nuclear and radioactive material;
- Detection and interdiction of illicit trafficking in nuclear and radioactive materials;
- Coordination of nuclear safety, security and safeguards systems for maximum benefits; and
- Preparedness to respond to emergencies.

Left: Adequate physical barriers are crucial at nuclear facilities / IAEA

Right: Physical screening is an essential component of access control at nuclear power plants / IAEA



How does the IAEA Promote Nuclear Security?

Through well-established activities, the IAEA has been providing assistance and technical support to Member States in all these areas. Almost immediately after the September 11, 2001, terrorist attacks on New York and Washington DC, the IAEA launched a three year plan for enhanced anti-terrorism activities known as the *IAEA Nuclear Security Plan of Activities*. The initial Plan aimed at reinforcing and strengthening nuclear security in a comprehensive and co-ordinated international approach.

IAEA's Nuclear Security Plan of Activities

A new IAEA Nuclear Security Plan for 2006–2009 builds upon the accomplishments of the first Plan and on strengthened international instruments and agreements.

The Plan is a broad-based, comprehensive nuclear security programme. A fundamental objective is to obtain universal adherence and political commitment by States to the relevant international legal instruments. Based on the obligations in these instruments, the IAEA develops nuclear security guidance for which it is the authoritative international organization. This guidance is issued in the IAEA Nuclear Security Series of publications. The IAEA also has a key role in helping States with capacity building activities such as training programmes, technical assistance and equipment upgrades.

The Plan focuses on three areas which build upon and expand a number of existing IAEA activities:

- *Prevention* activities aim to protect nuclear and other radioactive material and related facilities and transports from malicious acts.
- *Detection* and *response* activities aim to strengthen the capabilities of States to uncover illegal acts and possession of nuclear and radioactive material, and to effectively respond to malicious acts or threats, such as a possible dispersal of radioactivity.
- *Needs assessment, analysis* and *coordination* underpin the entire Plan and support its implementation. These include evaluation missions, cooperation with bilateral and multilateral support programmes, and information collection and evaluation.

The IAEA works with other international and regional organizations such as Interpol, Europol, the World Customs Organization, and the Universal Postal Union on the development of guidelines and recommendations, on information exchange and on coordinating activities related to nuclear security. The IAEA also participates in partnership with Member States and regional organizations, in various global and regional initiatives such as the Global Threat Reduction Initiative, the Tripartite Initiative, the European Union's Strategy against the Proliferation of Weapons of Mass Destruction and the Radiological Security Partnership.

The IAEA nuclear security activities are almost entirely funded by voluntary contributions to the Nuclear Security Fund from Member States and from organizations such as the European Union and the Nuclear Threat Initiative. The resources required to implement the IAEA Plan are estimated to be about US \$15 million per year over a period of four years.

Reinforcing the Global Framework

Today, there is a stronger legal platform for promoting nuclear security. In July 2005, 88 Member States and EURATOM agreed to amend the *Convention on Physical Protection of Nuclear Material* (CPPNM) of 1979. Once it enters into force, it will be legally binding for State Parties to protect nuclear material for peaceful domestic use and storage and international transport and to protect facilities and transport from sabotage. The Convention spells out physical protection objectives and fundamental principles. Under the CPPNM the States are responsible for physical protection, for protecting confidential information and for prosecution of persons committing punishable acts.

In April 2005, the UN General Assembly adopted the *International Convention for the Suppression of Acts of Nuclear Terrorism* which has now been signed by more than 100 states. This Convention details offences relating to unlawful and intentional possession and use of nuclear or radioactive material. It covers a broad scope including RDD as well as nuclear explosive devices. It obliges States to protect nuclear and radioactive materials taking into account the IAEA recommendations and functions. It also sets obligations for States to cooperate and share information and to inform UN Secretary General and through him the IAEA.

In addition, *UN Security Council Resolution 1540*, which is binding on all States, contains obligations regarding accounting and physical protection of nuclear material as well as commitments to prevent trafficking in weapons-related material and their delivery systems. It also expects States to fulfill their commitment to multilateral cooperation, in particular within the framework of the International Atomic Energy Agency.

UN Security Council Resolution 1373 sees a close connection between international terrorism and the illegal movement of nuclear materials. The resolution obliges all States to criminalize assistance for terrorist activities, deny financial support and safe haven to terrorists and exchange information for the prevention and prosecution of criminal acts.

More than 80 Member States have made political commitments to the *Code of Conduct on the Safety and Security of Radioactive Sources*, a non-binding instrument covering the establishment of an adequate system of regulatory control for radioactive sources.

Brought together, these international legal instruments contain commitments for States ranging from prevention,

detection and response to the mitigation of consequences of possible nuclear terrorist actions.

Deficiencies remain, however, in the legal, administrative, and technical arrangements for controlling and protecting nuclear materials and radioactive sources in some countries. Recent incidents have resulted in intensified efforts to address these problems and ensure the consistent application of international guidance on security promoted by the IAEA and partner organizations.

IAEA Advisory Services to Upgrade Security

The IAEA has established several advisory services to help its Member States assess the effectiveness of their national nuclear security arrangements and to identify any enhancements needed. The Agency provides peer reviews in areas such as regulatory or control infrastructures, physical protection systems and material control systems.

International Teams of Senior Legal and Technical Experts (ITEs) advise Member States on the implementation of international instruments related to preventing nuclear terrorism.

The International Physical Protection Advisory Service (IPPAS) has, since 1995, been helping Member States to strengthen the protection of nuclear materials and facilities. At the request of a Member State, IPPAS assembles a team of international experts to assess the State's system, compare it with international best practices and make recommendations for improvements. The IPPAS mission can be conducted on a nation-wide or facility-specific basis. Around 40 IPPAS missions have already been carried out in States in all regions of the world.

The International Nuclear Security Advisory Service (INSServ) reviews both overall and specific needs of States to strengthen their capacity to prevent, detect and respond to nuclear terrorism. INSServ missions aim at identifying the broadest nuclear security needs including measures against illicit trafficking and to control and secure radioactive sources. With growing experience and knowledge, the Agency is positioned to move rapidly in arranging INSServ and implementing their recommendations.

On the basis of information collected on needs and States' requests, *Integrated Nuclear Security Support Plans (INSSPs)* are prepared which outline a comprehensive response involving the State, the IAEA and other donors if appropriate. INSSPs are in development for more than 30 states and have become central to implementing improvements in their nuclear security.

The International SSAC Advisory Service (ISSAS) provides assistance to Member States in strengthening their State System of Accountancy and Control (SSAC). ISSAS support is available to all countries with nuclear materials and facilities. ISSAS missions compare the procedures and practices in Member States with the obligations specified

under safeguards agreements, with international consensus guidelines and against equivalent practices in other countries.

Radiation Safety and Security of Radioactive Sources Appraisal (RaSSIA) missions assess the effectiveness of national regulatory infrastructures for radiation safety and security of radioactive sources against established international standards. Member States receive a comprehensive assessment of their regulatory infrastructure together with an action Plan designed to bring the regulatory infrastructure up to international Standards. The IAEA also provides advice to help Member States develop national strategies to find and secure "orphan" radiation sources.

The Emergency Preparedness Review (EPREV) service conducts, upon request, reviews of preparedness for nuclear or radiological emergencies in Member States. Each EPREV mission is conducted by a team of experts with extensive experience in response and preparedness for nuclear and/or radiological emergencies.

Training and Technical Assistance

The improvement of existing technical systems in States and human resource development are main objectives of the Agency's Nuclear Security Plan. Training and upgrades of equipment/facilities is an essential part of capacity building for the establishment of national nuclear security infrastructures.

The IAEA offers a large number of training courses for regulatory authorities, customs police, border monitoring and other security related organizations. The IAEA runs about 50 nuclear-security related training courses per year with participants from over 80 States.

The IAEA also provides technical assistance and equipment upgrades in the form of detection and monitoring, control, and physical protection equipment. From mid-2005 to mid-2006, the Agency procured almost 800 pieces of equipment for some 20 States around the globe.

The IAEA *Nuclear Security Equipment Laboratory* was established in 2003 to support the procurement of equipment and to perform acceptance tests and maintenance for the various equipment projects. It also provides technical support for Agency's Coordinated Research Projects (CRP) on detection equipment (now complete) and nuclear forensics. A CRP on "Application of Nuclear Forensics in Illicit Trafficking of Nuclear and Other Radioactive Material" is helping Member States to better characterize seized items while preserving the forensic evidence.

Reducing Risk

Nuclear research reactors play an important role in the development of the peaceful uses of atomic energy. There are about 248 operational research reactors worldwide in addition to 240 in shut down mode. Many research reactors use High Enriched Uranium (HEU) fuel that could be used in a nuclear weapon. High priority is being given to improving their physical protection and to converting the reactors to use Low Enriched Uranium (LEU) fuel. The IAEA has, over some years, supported the *Reduced Enrichment for Research and Test Reactors programme (RERTR)* and other programmes to return research reactor fuel (fresh and spent) to the country of origin. The goal is both to reduce proliferation and security risks by eliminating or consolidating inventories of high-risk material and to improve the security of such facilities.

The IAEA has also developed several international partnerships to reduce and eventually eliminate the use of HEU in civil nuclear applications. Under the US supported Global Threat Reduction Initiative, the IAEA has removed over 120 kilograms of fresh HEU from vulnerable locations. The Nuclear Threat Initiative, (NTI) has provided \$5 million to help the IAEA remove 2.5 metric tonnes of irradiated HEU and LEU fuel from Serbia.

Under the Tripartite Initiative, involving the IAEA, the Russian Federation, the United States and the IAEA arranged for the dismantlement and secure storage of numerous high activity vulnerable radioactive sources in the Newly Independent States. Elsewhere, the IAEA has carried out missions to recover more than 100 high-activity and neutron sources from countries including Côte d'Ivoire, Haiti, Panama, South Africa, Sudan, Tanzania and Uruguay.

Illicit Trafficking Data Base

IAEA's Illicit Trafficking Data Base (ITDB) provides a reliable source of data and a vehicle for the exchange of information and analysis on illicit trafficking and other unauthorized incidents. The reports, submitted by States provide information the analysis of which gives insights into potential threats, methods and strategies for theft, illicit movements and evasion of detection, and into the market for illicit material. In 2006, more than 90 States were participating in the ITDB.

Safety, Security and Safeguards

Synergies flow from cooperation and coordination of security work with the IAEA's safety and safeguards related activities. The IAEA undertakes joint safety and security missions to evaluate national laws and regulations for the control of sources; the legislative assistance programme takes a comprehensive approach which recognizes the importance of the interface between security, safety and safeguards; engineering safety design reduces the vulnerability of vital areas in nuclear facilities to sabotage; national systems for accounting and control of nuclear material deter and/or allow early discovery of theft; and physical protection measures and measures to detect illicit trafficking contribute to non-proliferation objectives.

