

# STOCKHOLM CONFERENCE

## SUMMARY OF THE INTERNATIONAL CONFERENCE ON THE SECURITY OF MATERIAL IN STOCKHOLM, SWEDEN

BY RICHARD HOSKINS

*Preventing illicit uses of nuclear material and radioactive sources was a major international concern even before the spectre of nuclear terrorism was raised by terrorist attacks in September 2001. At an IAEA international conference in Stockholm, Sweden, convened in May 2001, international experts examined ways and means of strengthening systems for the protection of nuclear and radioactive material.*

*The Conference — formally called “Security of Material: Measures to Prevent, Intercept and Respond to Illicit Uses of Nuclear Material and Radioactive Sources” — was attended by more than 300 experts from around the world. It was organized by the IAEA in cooperation with the European Police Office (Europol), the International Criminal Police Organization - Interpol (ICPO-Interpol), and the World Customs Organization (WCO), and hosted by the Swedish Nuclear Power Inspectorate.*

*In the Conference Summary Document, participants underscored the importance of establishing stronger systems for nuclear security, and they outlined a number of steps for the future in particular areas. Following are excerpts from the Document. More information on the Conference is accessible on the IAEA's WorldAtom Web site at [http://www.iaea.org/worldatom/Press/P\\_release/2001/prn0110.shtml](http://www.iaea.org/worldatom/Press/P_release/2001/prn0110.shtml).*

Over the last 20 years, developments in civil nuclear programmes have resulted in many more nuclear facilities and much more nuclear material in use and storage, and the dismantlement of nuclear weapons has resulted in increased inventories of sensitive nuclear materials in peaceful use and storage. Unless thoroughly controlled and protected at the national and facility level, this material may be vulnerable to theft or sabotage.

IAEA Member States and other international organizations have become increasingly aware of the consequences which might result from illegal activities involving these materials. Where nuclear material is involved, the primary danger is in the proliferation of nuclear weapons, whether to States or sub-national groups. Where other radioactive materials and radioactive sources are involved, the dangers are the radiation and health effects, and damage to property and to the environment. These dangers can be the consequence of radioactive materials being used in radiological weapons.

Incidents involving illicit trafficking reported during the last decade have prompted a range of both national and international measures. These are designed to prevent the loss

of material and, if loss occurs, to ensure that measures to recover material are rapidly enacted and that any consequences are mitigated.

### TREATIES, CONVENTIONS, AGREEMENTS & RECOMMENDATIONS

#### Observations

A number of international undertakings are relevant for the security of nuclear material and other radioactive materials. In particular, they are the:

- Treaty on the Non-Proliferation of Nuclear Weapons (NPT);
- Convention on the Physical Protection of Nuclear Material (CPPNM);
- Convention on Early Notification of a Nuclear Accident;
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency;
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management;
- Convention on Nuclear Safety;
- Code of Conduct on the Safety of Radiation Sources and the Security of Radioactive Materials.

---

*Mr. Hoskins is a senior staff member in the IAEA Office of Physical Protection and Material Security, Department of Safeguards.*

In addition, recommendations for the physical protection of nuclear materials against theft and sabotage are contained in INFCIRC/225/Rev.4, the Information Circular published by the IAEA. Functional requirements for a State's system of accounting for and control of nuclear material (SSAC) contained in INFCIRC/153 comprehensive safeguards agreements contribute to combating illicit trafficking by guiding the establishment of technical and administrative control systems for nuclear material. The Basic Safety Standards provide the requirements in the field of safety and the protection of health.

The CPPNM, a foundation stone in measures for the physical protection of nuclear material, opened for signature in 1979 and has 69 States Parties. In November 1999, the Director General of the IAEA convened an "Informal, Open-Ended Expert Meeting to Discuss Whether There is a Need to Revise the CPPNM". A Working Group of the Informal Open-Ended Expert Meeting examined the issues related to the question raised, and concluded that there is a need to strengthen the international physical protection regime.

### Summary Statements

States' initiatives to strengthen the international physical protection regime are strongly supported.

Whilst steps have already been taken to improve the physical security of nuclear material and other radioactive materials, continued efforts are required at both the national and international levels.

### Steps for the Future.

- Work towards adopting the measures proposed to strengthen the international physical protection regime.
- Encourage States to join the CPPNM, including States which, though they have no domestic nuclear programme, are used as transit routes for nuclear material.
- Convene a conference in 2003 to review progress on measures to improve security of nuclear and other radioactive materials and to counter illicit trafficking.

## THREATS & RISKS TO NUCLEAR SECURITY

### Observations

The continued occurrence of cases of illicit trafficking in nuclear material and other radioactive substances is a downstream consequence of inadequate protection, control or management at the source of the material. Such cases may be inadvertent or the result of a deliberate act, aiming at causing damage or to obtain undue financial gain.

The risks of theft and sabotage of nuclear material and other radioactive substances, and the risk of sabotage of nuclear facilities should be considered as part of a comprehensive approach which also involves nuclear safety and radiation protection considerations. Such an "all risk" approach should take into account, in a graded and adapted manner, the wide spectrum of potential risks; national and sub-national, individual and group, theft and sabotage, and the range of consequences including nuclear weapon proliferation,

radiological contamination and environmental damage.

The risk of terrorist attacks on nuclear facilities should be considered by States in the development of their "Design Basis Threat". A low level of perceived national threat does not justify the complete absence of security arrangements for nuclear material, other radioactive materials, or nuclear facilities.

Training on methods and tools for assessing the effectiveness and vulnerability of physical protection systems is important.

### Summary Statements

Improved methodology, improved information on illicit trafficking and other events involving theft, sabotage or threats thereof, and on potential sources of threat, together with better information exchange and improved cooperation with competent international organizations, would contribute to improving threat assessments.

### Steps for the Future

- Improve and strengthen the mechanisms for information exchange in the area of security of material.
- Increase information exchange, including information on theft, threat of theft, sabotage or other illegal events involving nuclear material and other radioactive substances.

## PREVENTION OF ILLICIT USES

### Observations

Nuclear security includes the establishment of measures for nuclear material accountabil-

ity, physical protection, nuclear safety, radiation protection and export/import control, as well as law enforcement, detection and response measures.

National regulatory systems underpin arrangements to prevent illicit trafficking by ensuring that nuclear material and radioactive sources are properly controlled and protected during legitimate use, storage and transport. They reflect States' own interests as well as international obligations and are guided by internationally formulated recommendations, guidelines and standards, as well as national circumstances and needs.

Effectiveness depends on the comprehensiveness of the system, and on recognition of the synergy between the different measures. Gaps in the coverage of the system increase its vulnerability and will reduce the overall level of protection.

One or several regulatory authorities with relevant statutory powers and duties may carry implementation responsibilities. No single law enforcement body can deal effectively with illegal events involving nuclear material or other radioactive substances. Various national regulatory and law enforcement authorities are likely to have a role to play in what must be collective effort.

Internal cooperation between national bodies with the relevant responsibilities, and national cooperation with the appropriate international organisations are fundamental components of a comprehensive approach to nuclear security.

### Summary Statements

A comprehensive and cooperative approach is required for threat assessment and for the selection and implementation of countermeasures. States should ensure that their regulatory systems cover the different measures necessary in a comprehensive approach to counter theft, sabotage or other illegal intention. There is synergy between the different measures.

Continued and increased efforts are required to assist States establishing the necessary technical, administrative and regulatory measures.

### Steps for the Future

■ States should establish a comprehensive legislative and regulatory system that covers technical, administrative and regulatory systems for the prevention, detection and response to illegal activities involving nuclear and other radioactive materials. The IAEA should increase its efforts to assist States in these efforts, including developing a framework for a comprehensive system and evaluating, upon request, established systems.

## PHYSICAL PROTECTION OF NUCLEAR MATERIAL

### Observations

Measures to strengthen nuclear material protection and to ensure material accountability are increasingly established in States. The (IAEA) Action Plan for Safety of Radioactive Sources and Security of Radioactive Material is being implemented.

Improvements have also been made to increase the effectiveness of controls over the import and export of nuclear material and radioactive sources.

Several countries have amended their criminal code for illegal possession of nuclear or radioactive materials.

States are upgrading the physical protection of their nuclear material and nuclear facilities because:

- facilities were constructed when the requirements were less severe;
- the political or administrative conditions prevailing in the State have evolved;
- they are responding to the results of an IPPAS (the International Physical Protection Advisory Service, an IAEA programme) mission;
- they have decided to implement the recommendations contained in INFICIRC/225/Rev.4.

The establishment or upgrading of physical protection measures is a complex operation. The degree of complexity depends upon the size and type of facility.

The design of physical protection measures benefits greatly from cooperation and coordination amongst the relevant specialists and from the availability of internationally acceptable guiding documents.

Interaction between licensees and holders of authorizations, State authorities and response forces are vital for the implementation of physical protection systems.

International cooperation and support, bilateral or multilateral, is an important

factor for the success of the endeavour.

The development of the Design Basis Threat should also serve as the basis for the evaluation of the effectiveness of physical protection measures in a performance-based approach.

### Summary Statements

Whilst steps have already been taken to improve the physical security of nuclear material and other radioactive substances, continued efforts are required at both the national and international levels.

### Steps for the Future

- Improve available recommendations, guidelines and standards for nuclear security. Initiate the development of additional guiding documents to assist States in their efforts to establish the necessary technical, administrative and regulatory systems for the various functions. Develop a conceptual model for a national regulatory and cooperation structure.
- Increase information exchange, including information of theft, threat of theft, sabotage or other illegal events involving nuclear material and other radioactive substances.
- Obtain an overview of threat elements including the terrorist groups, in cooperation with national competent authorities and with ICPO-Interpol, as relevant for nuclear applications. The purpose would be to establish a knowledge base available for the establishment of Design Basis Threats.
- Further develop the threat and vulnerability assessment

methodology and include the necessary training in the IAEA's training programme.

- Increase cooperation with all actors, at national or international levels as applicable, involved in the planning, establishment and maintenance of the physical protection system.
- Plan and exercise responses to potential malevolent actions.

## ILLICIT TRAFFICKING IN RADIOACTIVE SOURCES & NUCLEAR MATERIAL

### Observations

Incomplete reporting of cases of illicit trafficking continues. Insufficient information is available on many cases reported to the IAEA's Illicit Trafficking Database Programme, sometimes also to the point of contact.

A database containing the designs of containers approved for transport of radioactive material could help customs officers to detect illicit transport in legally approved containers.

Detection equipment is being provided in a few States to law enforcement authorities, including hand-held, fixed and mobile equipment for border monitoring.

The capabilities of existing detection equipment are limited. Continued research and development is needed into improving detection capabilities and usability.

Forensic capabilities need to be available at national and international levels. Further research and development is needed in the field of nuclear forensics.

Internationally agreed normative documents are not available for radiation monitoring at border crossings.

An international tagging system for radioactive materials might help accountancy, tracking and determination of the origin of materials involved in trafficking incidents.

States which are vulnerable to being used as transit routes for illicitly trafficked material deserve increased attention.

There is a need to develop or enhance international or cross-border cooperation in the field of illicit trafficking. International organizations, including the IAEA, ICPO-Interpol, and WCO, can provide assistance to national authorities involved in combating illicit trafficking.

Training should be made available to all staff involved in combating illicit trafficking.

### Summary Statements

More and better information is needed on incidents of illicit trafficking.

There is a need to improve the effectiveness of border monitoring through better detection equipment, by better trained staff and by having improved types and quality of information available.

### Steps for the Future

- Implement the IAEA's Coordinated Technical Research Programme to improve technology needed for detection and response to illegal activities involving nuclear material and other radioactive substances. *(See article, page 30.)*
- Establish the framework for the necessary analytical capabilities at national and regional levels. □