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Forty-fifth regular session  
Item 19 of the provisional agenda  
(GC(45)/1)

**MEASURES TO IMPROVE THE SECURITY OF NUCLEAR  
MATERIALS AND OTHER RADIOACTIVE MATERIALS**

On 11 September 2001, the Board of Governors considered the agenda item “Measures to improve the security of nuclear materials and other radioactive materials”. At the end of the discussion, the Chairman concluded, *inter alia*, as follows:

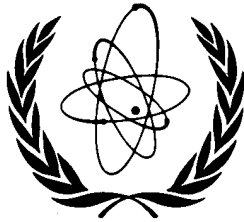
“With regard to document GOV/2001/41, widespread support was expressed for the recommendations contained in the Final Report of the Informal Open-ended Expert Meeting to Discuss Whether there is a Need To Revise the Convention on the Physical Protection of Nuclear Material. Several members expressed support for revision of the Convention. One member placed particular emphasis on the subjects which should be covered by or excluded from the scope of the amendment, as recommended by the Expert Meeting. Other members stated that there was a need to continue examining related issues before any conclusion was drawn about revising the Convention.

“In view of the positive assessment of the work and the Report of the Open-ended Expert Meeting to discuss whether the Convention on the Physical Protection Of Nuclear Material was in need of revision, the Board:

- took note of the recommendations made by the Expert Meeting and welcomed the Director General’s decision to convene in December 2001 an open-ended meeting of legal and technical experts to draft a well-defined amendment to strengthen the Convention, to be reviewed by the States Parties to the Convention;
- endorsed, as recommended by the Expert Meeting, the “Physical Protection Objectives and Fundamental Principles” as a Security Fundamentals document, as a step towards strengthening the physical protection regime. It is understood that their adoption will not lead to diminished interest on the part of Member States in becoming parties to the Convention on the Physical Protection of Nuclear Material, and that they are not a substitute for the Convention or for the recommendations in document INFCIRC/225/Rev.4 (Corrected);
- requested the Director General to transmit GOV/2001/41 to the General Conference in a document informing the Conference of its decision.“

In accordance with the request of the Board, document GOV/2001/41 is herewith transmitted to the General Conference as an Attachment to this document.

For reasons of economy, this document has been printed in a limited number. Delegates are kindly requested to bring their copies of documents to meetings.
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GOV/2001/41  
15 August 2001

International Atomic Energy Agency

# BOARD OF GOVERNORS

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Sub-item 5(c) of the provisional agenda  
(GOV/2001/27)

## NUCLEAR VERIFICATION AND SECURITY OF MATERIAL

### PHYSICAL PROTECTION OBJECTIVES AND FUNDAMENTAL PRINCIPLES

#### BACKGROUND

1. In light of the comments made at the March 1999 Board of Governors meeting, and the recommendations of the Senior Expert Group that “consideration should be given to the possible revision of the Convention on the Physical Protection of Nuclear Material to address the issues of prevention of unauthorized possession of nuclear material and access to nuclear facilities”, the Director General convened in November 1999 an Informal Open-Ended Expert Meeting to Discuss Whether there is a Need to Revise the Convention on the Physical Protection of Nuclear Material (CPPNM).

2. At its November 1999 meeting, the Informal Open-Ended Expert Meeting (Expert Meeting) charged a Working Group to examine all issues relevant for reaching a conclusion on whether there is a need to revise the CPPNM. At the request of the Working Group the Secretariat prepared a number of background papers.

3. In January 2001, the Working Group agreed on its Final Report.<sup>1</sup> This identified several initial recommendations intended to promote further the effective implementation and improvement of physical protection worldwide.

#### *Need to revise the CPPNM*

4. In May 2001, at its second meeting, the Expert Meeting adopted its own Final Report<sup>2</sup> in which it concluded that there is “a clear need to strengthen the international physical

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<sup>1</sup> The Final Report of the Working Group was distributed to all parties of the CPPNM and to Member States in March 2001.

protection regime” and that a spectrum of measures should be employed — including the drafting of a well defined amendment to strengthen the CPPNM, to be reviewed by States Parties with a view to determining if it should be submitted to an Amendment Conference in accordance with Article 20 of the CPPNM.

5. The Final Report of the Expert Meeting states that:

“The well defined amendment should cover the following subjects:

- Extension of scope to cover, in addition to nuclear material in international nuclear transport, nuclear material in domestic use, storage and transport, as well as protection of nuclear material and facilities from sabotage.
- Importance of national responsibility for physical protection.
- Importance of protection of confidential information.
- Physical Protection Objectives and Fundamental Principles, and
- Definitions.

Such an amendment should clearly exclude the following subjects:

- A requirement to submit reports to the international community on the implementation of physical protection.
- A peer review mechanism.
- A mandatory application of INFCIRC/225, e.g. through direct reference and also through “due consideration”.
- A mandatory international oversight of physical protection measures.
- Nuclear material and nuclear facilities for military use.”

6. As indicated in his introductory statement to the June 2001 Board, the Director General — in response to the recommendation of the Expert Meeting — decided to convene an open-ended group of legal and technical experts to draft an amendment; the meeting will take place in Vienna from 3 to 7 December 2001.

7. The Expert Meeting Report contains a number of other recommendations which are considered below.

#### *Physical Protection Objectives and Fundamental Principles*

8. The Working Group recommended that the Secretariat compile from INFCIRC/225/Rev.4 (Corrected) (“*The Physical Protection of Nuclear Material and Nuclear Facilities*”) with the assistance of Member States a set of fundamental principles of physical protection. A document containing ‘Physical Protection Objectives and Fundamental Principles’ was developed in response to that request.<sup>3</sup> The Expert Meeting invited the

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<sup>2</sup> The Final Report of the Expert Meeting was distributed to all parties of the CPPNM and to Member States in August 2001.

<sup>3</sup> See Attachment to this document.

Director General to submit the Physical Protection Objectives and Fundamental Principles as a Security Fundamentals document to the September session of the Board of Governors for its endorsement.

9. As concerns the relationship between the CPPNM and the Physical Protection Objectives and Fundamental Principles, the Working Group Report recommended that “the well defined amendment” of the CPPNM should cover, inter alia, the content of the Physical Protection Objectives and Fundamental Principles. The Expert Group adopted that recommendation.

10. To the extent that the Physical Protection Objectives and Fundamental Principles strengthen, or raise awareness of, the physical protection regime, the Director General sees merit in their being adopted — provided that this would not lead to diminished interest by Member States in becoming party to the CPPNM and provided it is understood that they are not a substitute for the CPPNM or INFCIRC/225/Rev.4 (Corrected) and that they would not diminish the commitments of many States as set forth in various legally binding agreements to be guided by the recommendations in INFCIRC/225/Rev.4 (Corrected).

#### *Other recommendations*

11. With regard to the recommendations of the Expert Meeting dealing with Agency programmatic activities, all these recommendations have been reviewed and taken into account, as appropriate, in the “Plan of Activities”, as reported in paragraphs 37–38 in document GOV/2001/37-GC/(45)/20. In the Plan, reference is made to the relevant programmatic recommendations of the Expert Meeting.

12. In one of its Recommendations, the Expert Meeting invited the Director General to establish a “Programme Advisory Group on Security”. Given the financial considerations and the size of the programme, the Director General will consider this recommendation in conjunction with other alternatives for receiving advice on the programme, including making use of the Standing Advisory Group on Safeguards Implementation (SAGSI) in view of the link between security of material and safeguards.

#### **RECOMMENDED ACTION BY THE BOARD**

13. It is recommended that the Board, taking into account the views expressed in para. 10 above, consider the recommendation of the Expert Meeting to endorse “the *Physical Protection Objectives and Fundamental Principles* ... as set out [in the Attachment to this document] as a ‘Security Fundamentals’ document”.

## **PHYSICAL PROTECTION OBJECTIVES AND FUNDAMENTAL PRINCIPLES**

### **1. INTRODUCTION**

101. At the 26-30 June 2000 meeting of the Working Group of the Informal Open-Ended Expert Meeting to Discuss Whether There is a Need to Revise the Convention on the Physical Protection of Nuclear Material, Secretariat Paper No.7, *IAEA Physical Protection Recommendations and Guidance and Their Use*, was discussed. As noted in the Chairman's Report of that meeting, during the discussion of that paper it was suggested that "An analysis of INFCIRC/225/Rev. 4 (Corrected) could be performed in which the Physical Protection Fundamentals and Requirements embedded in its text could be extracted. The Working Group could subsequently decide if and how it wished to link these fundamental principles to the CPPNM". The Working Group "recommended that the Secretariat compile from INFCIRC/225/Rev.4 (Corrected) (with the assistance of the Drafting Group), a set of Fundamentals and Requirements reflecting the fundamental principles of physical protection of nuclear material." The Working Group indicated that "the connection between the CPPNM and the principles and fundamentals should be addressed at a later meeting" determined during subsequent discussion at the June meeting to be the November Meeting of the Working Group.

102. This document was developed with the assistance of physical protection experts from some Member States in response to that request. The physical protection objectives and fundamental principles formulated in this document are based on the recommendations, concepts and terminology contained in INFCIRC/225/Rev.4 (Corrected), *The Physical Protection of Nuclear Material and Nuclear Facilities*.

103. Physical protection against the theft or other unlawful taking of nuclear materials and against the sabotage of nuclear material and facilities by individuals or groups has long been a matter of national and international concern. Although responsibility for establishing and operating a comprehensive physical protection system for nuclear materials and facilities within a State rests entirely with the Government of that State, the need for international co-operation becomes particularly evident in situations where the effectiveness of physical protection in one State depends on other States taking, as appropriate, adequate measures to deter or defeat hostile actions against nuclear facilities and materials when such materials are transported across national frontiers.

104. Physical protection plays an important part in supporting nuclear non-proliferation objectives and in protecting public health and safety and the environment.

105. These physical protection objectives and fundamental principles are intended for nuclear material in use and storage, and during transport, and for nuclear facilities using or storing such materials.

## 2. OBJECTIVES

201. The **PHYSICAL PROTECTION OBJECTIVES** are to establish and to maintain conditions to:

- *protect against unauthorized removal of nuclear material in use and storage, and during transport;*
- *ensure the implementation of rapid and comprehensive measures by the State to locate and recover missing or stolen nuclear material;*
- *protect against sabotage of nuclear facilities and sabotage of nuclear material in use and storage and during transport; and*
- *mitigate or minimize the radiological consequences of sabotage.*

## 3. FUNDAMENTAL PRINCIPLES OF PHYSICAL PROTECTION OF NUCLEAR MATERIAL AND NUCLEAR FACILITIES

301. The following physical protection fundamental principles have to be considered as the basis for achieving the Physical Protection Objectives:

### **FUNDAMENTAL PRINCIPLE A: *Responsibility of the State***

*The responsibility for the establishment, implementation and maintenance of a physical protection regime within a State rests entirely with that State.*

### **FUNDAMENTAL PRINCIPLE B: *Responsibilities during International Transport***

*The responsibility of a State for ensuring that nuclear material is adequately protected extends to international transport thereof, until that responsibility is properly transferred to another State, as appropriate.*

### **FUNDAMENTAL PRINCIPLE C: *Legislative and Regulatory Framework.***

*The State is responsible for establishing and maintaining a legislative and regulatory framework to govern physical protection. This framework should provide for the establishment of applicable physical protection requirements and include a system of evaluation and licensing or other procedures to grant authorization. This framework should include a system of inspection of nuclear facilities and transport to verify compliance with applicable requirements and conditions of the license or other authorizing document, and to establish a means to enforce applicable requirements and conditions, including effective sanctions.*

### **FUNDAMENTAL PRINCIPLE D: *Competent Authority.***

*The State should establish or designate a competent authority which is responsible for the implementation of the legislative and regulatory framework, and is provided with adequate authority, competence and financial and human resources to fulfill its*

*assigned responsibilities. The State should take steps to ensure an effective independence<sup>4,5</sup> between the functions of the State's competent authority and those of any other body in charge of the promotion or utilization of nuclear energy.*

**FUNDAMENTAL PRINCIPLE E: Responsibility of the License Holders**

*The responsibilities for implementing the various elements of physical protection within a State should be clearly identified. The State should ensure that the prime responsibility for the implementation of physical protection of nuclear material or of nuclear facilities rests with the holders of the relevant licenses or of other authorizing documents (e.g., operators or shippers).*

**FUNDAMENTAL PRINCIPLE F: Security Culture<sup>6</sup>**

*All organizations involved in implementing physical protection should give due priority to the security culture, to its development and maintenance necessary to ensure its effective implementation in the entire organization.*

**FUNDAMENTAL PRINCIPLE G: Threat**

*The State's physical protection should be based on the State's current evaluation of the threat.*

**FUNDAMENTAL PRINCIPLE H: Graded Approach<sup>7</sup>**

*Physical protection requirements should be based on a graded approach, taking into account the current evaluation of the threat, the relative attractiveness, the nature of the material and potential consequences associated with the unauthorized removal of nuclear material and with the sabotage against nuclear facilities or nuclear material.*

**FUNDAMENTAL PRINCIPLE I: Defence in Depth**

*The State's requirements for physical protection should reflect a concept of several layers and methods of protection (structural or other technical, personnel and organizational) that have to be overcome or circumvented by an adversary in order to achieve his objectives.*

**FUNDAMENTAL PRINCIPLE J: Quality Assurance**

*A quality assurance policy and quality assurance programmes should be established and implemented with a view to providing confidence that specified requirements for all activities important to physical protection are satisfied.*

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<sup>4</sup> Effective independence means that organizational units, which are responsible for licensing and supervisory activities, are protected by regulatory or organizational means against any undue influence by other units or bodies on the execution of their tasks.

<sup>5</sup> If the elements of the State's system of physical protection are divided between two or more authorities, arrangements should be made for overall co-ordination. Clear lines of responsibility should be established and recorded between the relevant entities.

<sup>6</sup> Security culture includes characteristics and attitudes in organizations and of individuals which establish that physical protection issues receive the attention warranted by their significance.

<sup>7</sup> INFCIRC/225/Rev. 4 (Corrected), Section 4.2.5.1.

**FUNDAMENTAL PRINCIPLE K: *Contingency Plans***

*Contingency (emergency) plans to respond to unauthorized removal of nuclear material or sabotage of nuclear facilities or nuclear material, or attempts thereof, should be prepared and appropriately exercised by all license holders and authorities concerned.*

**FUNDAMENTAL PRINCIPLE L: *Confidentiality***

*The State should establish requirements for protecting the confidentiality of information, the unauthorized disclosure of which could compromise the physical protection of nuclear material and nuclear facilities.*