



## International Atomic Energy Agency

### **Seminar for African States on the Non-proliferation of Nuclear Weapons: The Role of Safeguards Agreements and Additional Protocols**

**Kopanong Hotel and Conference Centre, Benoni, Johannesburg, South Africa**

24-27 June 2002

#### **Safeguards Agreements: Briefing Note for African States**

##### **General Background**

Effective and comprehensive safeguards<sup>1</sup> are crucial components of the nuclear non-proliferation regime, and provide an essential foundation for peaceful nuclear co-operation. They provide non-nuclear-weapon States Parties to the Treaty on the Non-proliferation of Nuclear Weapons (NPT) a means to ensuring that they are complying with their international obligations. Effective safeguards enhance international security and stability, and thereby contribute to an environment that is conducive to the application of nuclear energy for peace, health and prosperity. All African States are among the 187 States Parties to the NPT. Since the treaty entered into force in 1970, a full-scope safeguards agreement with the IAEA has been a legally binding requirement for all non-nuclear-weapon State parties.

The discovery of Iraq's clandestine nuclear weapons programme in 1991, followed by difficulties over safeguards implementation in the Democratic People's Republic of Korea, underscored the need to strengthen the existing safeguards system by expanding the Agency's access to information about, and its physical access to, places where material is, or could be, present. This led to the strengthening of the safeguards system – incorporating lessons learned in Iraq and from verifying the dismantling of South Africa's nuclear weapons capabilities - and the emergence of comprehensive safeguards agreements with Additional Protocols as the international non-proliferation norm for all non-nuclear-weapon States.

##### **Strengthened Safeguards**

The Agency's early steps, taken to strengthen the safeguards system by enhancing its ability to detect any undeclared activities, included measures for the early provision of design information and for the voluntary provision of information, including details of exports and imports, on specific equipment and non-nuclear material. These initial measures were followed by "Programme 93+2", under which the various aspects of the safeguards system were reassessed, deficiencies identified, and the technical, financial and legal aspects of proposed strengthening measures evaluated.

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<sup>1</sup> *Comprehensive safeguards agreements are those based on INFCIRC/153 (Corrected), which require States Parties to place under safeguards all nuclear material in all peaceful nuclear activities of the State, and not to divert such material to nuclear weapons or other nuclear explosive devices. Under such agreements, the Agency has the right and obligation to ensure that all source or special fissionable material in all peaceful nuclear activities of the State is subject to safeguards, and that safeguards are in fact applied to such material. The Agency's obligation is not limited to nuclear material and facilities actually declared by the State; it also extends to that which is required to be declared.*

Some strengthening measures were developed within the existing legal authority and conferred upon the Secretariat by the “traditional” comprehensive safeguards agreements. These measures include expanding the information that States must provide on facilities, collecting environmental samples at locations to which inspectors have access under existing agreements, and using advanced technology to monitor the movement of nuclear material (e.g. unattended equipment with remote data transmission).

Other measures, requiring complementary legal authority, are embodied in the Model Protocol Additional to Safeguards Agreements (INFCIRC/540 (Corrected)), which the Board of Governors approved, at a special meeting, in May 1997. These new measures expand the information that States must provide about their nuclear material and activities, and broaden Agency inspector access.

Whereas the overall objective of “traditional” comprehensive safeguards is to verify that there has been no diversion of *declared* nuclear material, the main objective of the strengthened safeguards system, and a particular focus of the Model Additional Protocol, is to strengthen the Agency’s capability to detect *undeclared* nuclear material and activities, in order to provide credible assurance of their absence.

### **Model Additional Protocol**

Building on comprehensive safeguards agreements and earlier strengthening measures, the Model Additional Protocol provides the Agency with additional and improved tools in order to obtain as complete a picture as possible about a State’s nuclear activities and plans, and to provide credible assurance that there is no *undeclared* nuclear material or undeclared nuclear activities.

#### Main Features

The key features of the Model Additional Protocol are that it:

- (1) **Enables the Agency to obtain more information** from States about their nuclear material, activities and plans than is provided for in the reporting requirements in comprehensive safeguards agreements. Broadly speaking, pursuant to an Additional Protocol, States must provide the Agency with information about: all aspects of their nuclear fuel cycle; all buildings at nuclear “sites”; long-term (ten years) nuclear development plans; nuclear-related research and development activities and facilities; the manufacture of key items (e.g., equipment, materials) functionally related to the nuclear fuel cycle; and exports of specified equipment and non-nuclear material.
- (2) **Expands physical access for Agency inspectors** (i) to ensure the absence of undeclared nuclear material or activities at any location referred to in Article 5.a.(i) or (ii) of an Additional Protocol on a selective basis; (ii) to resolve a question relating to the correctness and completeness of the information provided to the Agency by States under Article 2 of an Additional Protocol, or to resolve an inconsistency relating to that information; or (iii) to confirm, for safeguards purposes, a State’s declaration of the decommissioned status of a facility, or of a location outside of facilities at which nuclear material was customarily used. In seeking to balance the rights and obligations of the State and the Agency, the other side of the coin is that the Model Additional Protocol requires the Agency, inter alia, (a) not to seek to verify the information supplied under the Additional Protocol in a mechanistic or systematic way; (b) in

general to give advance notice, specifying the activities to be carried out during “complementary access” (the term given to the enhanced physical access rights for Agency inspectors in the Model Additional Protocol); (c) to give the State an opportunity to resolve any questions or inconsistencies arising from information provided to the Agency **before** any request for complementary access is made; and (d) to accept managed access upon request by the State, in order to prevent the dissemination of proliferation sensitive information, to meet safety or physical protection requirements, or to protect proprietary or commercially sensitive information.

- (3) **Contains certain improved administrative procedures** including, for example: streamlined procedures for designating inspectors and providing them with visas; and improved means by which inspectors to communicate with Agency Headquarters. The improved procedures aim to make safeguards implementation more effective and efficient.

### The Benefits Stemming from an Additional Protocol

Strengthened safeguards generate more complete information about a State’s nuclear material and activities, thereby contributing to greater nuclear “transparency” in respect of that State. The implementation of strengthening measures, in particular those in the Model Additional Protocol, will enable the Agency to provide greater assurance with regard to the absence of any undeclared nuclear material and activities. This will help to build trust in and between States, thereby contributing to greater international stability and security. Such a climate is conducive to the peaceful use of nuclear energy and to a more robust nuclear non-proliferation regime. From the Agency’s perspective, the new safeguards strengthening measures in the Model Additional Protocol will also enable safeguards to be implemented more effectively and allow the Agency’s resources to be used more efficiently.

### Integrated Safeguards

In States that have both a comprehensive safeguards agreement and an Additional Protocol in force, the Agency will, in due course, be able to implement an optimal combination of all safeguards measures. Towards that end, priority is being given by the Agency to the development of “integrated safeguards”, which will result from integrating “traditional” safeguards measures, based on nuclear material accountancy, with the new safeguards strengthening measures so as to achieve maximum effectiveness and efficiency within available resources.

### Status of the Conclusion of Safeguards Agreements and Additional Protocols

As of 1 March 2002, 130 of the 182 non-nuclear-weapon States Parties to the NPT have concluded their mandatory comprehensive safeguards agreements with the IAEA for the exclusive purpose of verifying the fulfilment of obligations assumed under the NPT. Of the remaining 52 States, 31 are situated in Africa. Three African States have signed Additional Protocols and one of those (with Ghana) is being applied provisionally. A total of 61 Additional Protocols have been approved by the IAEA Board of Governors and signed, and 24 have entered into force.

The significance of comprehensive safeguards agreements and Additional Protocols has been acknowledged, inter alia, in a wide range of international forums. A recent, pertinent example is that the Final Document of the 2000 NPT Review Conference encourages all States Parties

to the Treaty, in particular those with substantial nuclear programmes, “to conclude Additional Protocols as soon as possible and to bring them into force or provisionally apply them as soon as possible”. The 2000 UN General Assembly confirmed this outcome, and the 2001 UNGA also underlined the importance of the IAEA’s work in relations to efforts to reduce the threat of nuclear terrorism.

### “Small Quantities Protocol” (SQP) States

Many States with comprehensive safeguards agreements have little or no nuclear material and/or nuclear activities. Such States have usually concluded an SQP along with their safeguards agreements. Most African States with outstanding NPT obligations are eligible to conclude an SQP with the IAEA, thus facilitating the implementation of safeguards on the national level.

An SQP has the legal effect of holding in abeyance the implementation of most of the detailed provisions set out in a comprehensive safeguards agreement<sup>2</sup> until such time as the State has, in peaceful nuclear activities within its territory or under its jurisdiction or control anywhere:

- (i) Nuclear material in quantities exceeding the limits of paragraph 37 of INFCIRC/153<sup>3</sup>; or
- (ii) Nuclear material in a facility as defined in INFCIRC/153<sup>4</sup>.

What still applies, however, is the implementation of the basic undertaking of a comprehensive safeguards agreement, that is for a State to accept safeguards on all its nuclear material in all peaceful nuclear activities within its territory or under its jurisdiction or control anywhere. What also remains in force and in effect is the Agency’s corresponding obligation to ensure that safeguards will be applied on all such material for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or to other nuclear explosive devices. The Model Additional Protocol provides the Agency with additional tools to enable it to better carry out its obligations in this regard, including providing assurance about the absence of any undeclared nuclear material and activities.

If a State has little or no nuclear material or activities what would be the purpose of such a State concluding an Additional Protocol? The answer is that, by concluding an Additional Protocol with the Agency, an SQP State can make a further contribution to nuclear non-proliferation by demonstrating its willingness to accept strengthened safeguards. More and more commitments to this effect by States will be mutually reinforcing and the strengthened safeguards system will become ever more robust.<sup>5</sup>

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<sup>2</sup> The exceptions are paragraphs 33, 34, 39, 42 and 91. Note that these paragraph references correspond to the paragraph reference in INFCIRC/153. The reference might differ from the corresponding paragraph numbers in a particular agreement.

<sup>3</sup> (a) One kilogram in total of special fissionable material, which may consist of one or more of the following: (i) plutonium, (ii) total<sup>235</sup>U contained in uranium enriched to 20% or higher, and (iii) enriched uranium below 20% taken account of by multiplying its weight by five times the square of its enrichment; (b) Ten metric tons in total of natural uranium and depleted uranium with an enrichment above 0.5%; (c) Twenty metric tons of depleted uranium with an enrichment of 0.5%; or below; and (d) Twenty metric tons of thorium.

<sup>4</sup> A “facility” is defined in INFCIRC/153 as a (a) a reactor, critical facility; conversion plant, fabrication plant, reprocessing plant, isotope separation plant, or separate storage installation, or (b) any location where nuclear material in amounts greater than one effective kilogram is customarily used.

<sup>5</sup> Specific guidance for SQP States that conclude Additional Protocols, based on the more general guidance prepared for non-SQP States and promulgated in August 1997, was developed in April 1999. The guidance reflects the fact that declarations submitted by SQP States under an Additional Protocol are expected to be short and simple. It also specifies the time frames within which a State (with or without an SQP) is to submit information to the Agency under Article 2 of an Additional Protocol. (In most cases this is within 180 days of the date on which the relevant Additional Protocol enters into force. There are, however, some limited exceptions.) Additionally, the guidance specifies the time frames within which updates of that information is to be submitted (in most cases by 15 May each year and reporting the situation prevailing at the end of the

## Overview of Status of Safeguards Agreement in African States

### Current Situation as of 16 November 2001

- Number of States Parties to the NPT: **53** of which **31** IAEA Member States
- Number of States parties to the NPT which have not yet concluded their legal requirement to bring into force a comprehensive safeguards agreement with the Agency: **31** of which **13** IAEA Member States
- Number of States parties which have yet to conclude an Additional Protocol to their comprehensive safeguards agreement: **50** of which **28** IAEA Member States

### Comprehensive Safeguards Agreements (NPT Safeguards)

- \* There are **24** States with which comprehensive safeguards agreements have yet to be concluded.

Angola	Benin	Botswana
Burkina Faso	Burundi	Cape Verde
Central African Rep	Chad	Comoros
Congo, Rep. of the	Djibouti	Eritrea
Guinea	Guinea Bissau	Kenya
Liberia	Mali	Mauritania
Mozambique	Rwanda	Sao Tomé & Principe
Seychelles	Somalia	Uganda

- \* There are **5** States with which such agreements have been signed but are not yet in force.

Cameroon	Gabon	Sierra Leone
Tanzania	Togo	

- \* There are **2** such agreements that have been approved by the Board of Governors but have not yet been signed.

Equatorial Guinea	Niger
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### Additional Protocols

- \* There are **3** states, which have signed Additional Protocols

Ghana	Namibia	Nigeria
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- \* There is **1** state, which applies its Additional Protocol provisionally pending entry-into-force

Ghana