L.7. Information required from States, including “Small Quantities Protocol” States under the Protocol Additional to Safeguards Agreements

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INFORMATION REQUIRED FROM STATES, INCLUDING "SMALL QUANTITIES PROTOCOL" STATES, UNDER THE PROTOCOL ADDITIONAL TO SAFEGUARDS AGREEMENTS

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ABSTRACT

The Model, or Additional, Protocol to the Model Safeguards Agreement, INFCIRC/153, contains, inter alia, provisions for expanded declarations from Member States to the IAEA. These provisions include earlier design information declarations and information on fuel cycles activities, such as mining and milling, that were not previously part of safeguards. The session discusses the extent of the expanded declarations and provides examples of the forms that will be used to provide the information to the Agency.

RESOURCES

1) Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards, INFCIRC/540

2) Guidelines and Format for Preparation and Submission of Declarations Pursuant to Articles 2&3 of the Model Protocol Additional to Safeguards Agreements, IAEA, August 1997

3) Guidelines and Format for Preparation and Submission of Declarations Pursuant to Articles 2&3 of the Model Protocol Additional to Safeguards Agreements from States Whose Comprehensive Safeguards Agreement Includes a Small Quantities Protocol, IAEA, April 1999
Information required from States, including "Small Quantities Protocol" States, under the Protocol Additional to Safeguards Agreements

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The Model Additional Protocol is composed of:

- Foreword
- Preamble
- 18 Articles
- 2 Annexes
## Foreword and Preamble

**Foreword:** States with comprehensive safeguards agreements must adopt all of the measures in the Model (i.e., cannot “pick and choose”)

**Preamble:** Recognizes the need to strike a balance between strengthening effectiveness and efficiency of Agency safeguards and keeping frequency and intensity of activities to a minimum

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### The Articles of the Model Protocol Address:

<table>
<thead>
<tr>
<th>Relationship between the Protocol and the Safeguards Agreement (Article 1)</th>
<th>Subsidiary Arrangements (Article 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of Information (Articles 2 and 3)</td>
<td>Communications Systems (Article 14)</td>
</tr>
<tr>
<td>Complementary Access (Articles 4 - 10)</td>
<td>Confidentiality (Article 15)</td>
</tr>
<tr>
<td>Simplified Inspector Designation (Article 11)</td>
<td>Amendment of Annexes (Article 16)</td>
</tr>
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<td>Visas (Article 12)</td>
<td>Entry into force (Article 17)</td>
</tr>
<tr>
<td>Definitions (Article 18)</td>
<td></td>
</tr>
</tbody>
</table>

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Relationship between the Protocol and Safeguards Agreement

Article 1

• The provisions of the Safeguards Agreement shall apply to the extent relevant and compatible
• In case of conflict, the provisions of the Additional Protocol apply
• Once both concluded - Safeguards Agreement and Additional Protocol to be read as a single document

Strengthened Safeguards - Conceptual Approach

The whole of a State's nuclear programme (present and future) involves an interrelated set of nuclear activities that require or are indicated by the existence of:

• Certain nuclear-related equipment
• Supporting Infrastructure
• Tell-tale traces in the environment, and
• A predictable use of nuclear material
Strengthened Safeguards - Conceptual Approach

This provides the basis for an approach involving:
• An expanded declaration by the State
• Information evaluation by the Agency
• New technical measures (e.g. environmental sampling)
• Enhanced inspector access

Strengthened Safeguards - Conceptual Approach

These elements would enable the Agency to
• evaluate the internal consistency of a State’s declaration
• evaluate the consistency of the State’s declaration with all other information available to the Agency e.g.
  • Open sources
  • Inspection data
  • Environmental sampling results
  • Additional (Complementary) access

to provide the basis for an assessment of the absence or presence of undeclared nuclear activities
The Expanded Declaration -
Article 2 of the Model Additional Protocol

- Nuclear R/D without nuclear material
- Nuclear 'Sites'
- Manufacturing of nuclear equipment
- Nuclear material before the starting point of safeguards - mines, ore concentration plants, etc.

The Expanded Declaration -
Article 2 of the Model Additional Protocol
(continued)

- Nuclear material exempted from safeguards
- Nuclear waste on which safeguards have been terminated
- Exports of nuclear equipment
- Future plans for fuel cycle development
Guidelines

- Guidelines developed to assist States in preparing and submitting their Article 2 declarations
  - Describes purpose of information being requested (Article by Article)
  - Details information to be provided and level of detail appropriate
  - Provides table format for submission for consistent and complete information
  - Includes sample submissions

Specific Guidelines for SQP States

Small Quantities Protocol (SQP)

- The SQP is a 1-page addendum to the standard safeguards agreement that "places in abeyance" most of Part II of INFCIRC/153
- a State may have an SQP if it
  - does not possess nuclear material in excess of INFCIRC/153 Para. 37 quantities, and;
  - has no nuclear material in a "facility";
- 63 States have SQPs in force as of September 1999
Small Quantities Protocol (SQP) States

- All parts of Model Additional Protocol apply

BUT

- In practice, Article 2 declarations should be straightforward

Article 2.a(i) - Research & Development (R&D) without Nuclear Material

- Nuclear fuel cycle related (defined in Article 18.a)
- Not involving nuclear material
- Government authorized or controlled
- Not theoretical or basic scientific research
Article 2.a(ii) - Information on Operational Activities

 Purpose
 • To provide Agency opportunity to improve safeguards effectiveness or efficiency at facilities or LOFs

 Guidance
 • State must agree on the nature of the information and the timing of its submittal
 • Format, contents and procedures to provide information on case-by-case basis

 Article 2.a(iii) - Buildings on Sites

 A general description of each building on each site:
 • “site” means
   – area defined by design information for facilities
   – normally defined by external perimeter fence
   – includes co-located installations associated with the facility
 • “description” means
   – use and contents
   – approximate size
   – prior uses (in some cases)
 • a map of the site
**Article 2.a(iv) - Annex I Activities**

The scale of operations of each location engaged in Annex I activities:

- Annex I lists 15 types of activity related to enrichment, reactors and reprocessing
- description of activity itself as well as "scale of operations"
- location of and organization conducting activity

**Article 2.a(v) - Mines and Concentration Plants**

- complements Article 34 of INFCIRC/153

Information required:

- location, operational status, and production capacity
- approximate annual production for the State as a whole
- annual production for individual mines or plants if requested by the Agency
Article 2.a(vi) - Source Material (Pre-Safeguards)

• complements Article 34 of INFCIRC/153

Information required:
• locations, quantities, compositions, and intended uses of *large* holdings of *impure* uranium or thorium
• exports of *large* quantities for non-nuclear purposes
• imports of *large* quantities for non-nuclear purposes

2.a(vii) - Exempted Material

• complements Articles 36(b) and 37 of INFCIRC/153

Information required:
• quantities, uses, and locations of "quantity exempted" materials
• quantities, uses, and locations of "use exempted" materials *not yet in non-nuclear end-use form*
Article 2.a(viii) - Waste

applies to:
• intermediate or high-level waste
• containing Pu, HEU, or U-233
• safeguards terminated

Information required:
• plans for "further processing" involving separation of elements (if any), 180 days in advance
• changes in location, annually

2.a(ix) - Exports of Annex II Items

Annex II lists equipment and non-nuclear material in 7 major categories (see INFCIRC/254/Part 1).

Information required:
• identity, quantity, location of intended use for each export of Annex II equipment or material
• Agency may request confirmation by importing State
• reporting on a quarterly basis
2.a(x) - Fuel Cycle Plans

Information required:

• government approved plans for nuclear fuel cycle
• fuel cycle R&D specifically included
• 10-year horizon

Article 2.b(i) - Private Research & Development w/o Nuclear Material

analogous to Article 2.a(i)

• not government authorized or controlled
• related to parts of the nuclear fuel cycle (enrichment, reprocessing, certain types of waste processing)
• State shall make every reasonable effort to provide information
Article 2.b(ii) - Activities Identified by the Agency related to Article 2.a(iii)

- Agency may make a request for information regarding locations outside a site that may be related to the site
- State shall make every reasonable effort to provide information
Article 3 - Due Dates for Declarations

Significant dates and time intervals:

- 180 days after entry into force - "initial" declaration package (Article 3.a)
- May 15 of each year (Articles 3.b, 3.c, and 3.e)
- 60 days after the end of each quarter for Annex II exports (Article 3.d)
- other dates and periods in special cases (Articles 3.f and 3.g)

15 July 98 State brings Protocol into force
11 Jan 99 "Initial" declaration package due
(8 sub-articles listed in Article 3.a)
01 Mar 99 First Article 2.a(ix)(a) declaration due
(for period 01 Oct 98 to 31 Dec 98)
15 May 99 First update package due
(for period 15 Jul 98 to 31 Dec 98)
30 May 99 Next Article 2.a(ix)(a) declaration due, etc.
General Issues

- Separate declarations for each sub-article and update
- Guidelines present declaration formats
- Cross referencing is important
- "Null" declarations are requested
  - initial declarations
  - updates

Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2

General Header
Name of State: Ruritania
INFCIRC/XYZ
Declaration date: 1999-06-05
Declaration number: 1

Safeguards Agreement
Protocol Article: 2.a(1)

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref.</th>
<th>Fuel Cycle Stage</th>
<th>Location</th>
<th>General Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Nothing to declare</td>
</tr>
</tbody>
</table>
**Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2 (continued)**

<table>
<thead>
<tr>
<th>Declaration number: 2</th>
<th>Protocol Article: 2.a.(iii)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name and location: Nothing to declare</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref.</th>
<th>Facility(ies) on Site</th>
<th>Building</th>
<th>General Description Including Use and Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Nothing to declare</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Declaration number: 3</th>
<th>Protocol Article: 2.a.(iv)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref.</th>
<th>Annex I Item</th>
<th>Location</th>
<th>Description of Scale of Operations Including Use and Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Nothing to declare</td>
</tr>
</tbody>
</table>

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**Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2 (continued)**

<table>
<thead>
<tr>
<th>Declaration number: 4</th>
<th>Protocol Article: 2.a.(v)</th>
</tr>
</thead>
</table>

**Part (a) - Individual Mines and Plants**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref.</th>
<th>Operation</th>
<th>Status</th>
<th>Location</th>
<th>Estimated Annual Production Capacity (tonnes of element: U or Th)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5-1</td>
<td>U mine and concentration plants</td>
<td>Operating</td>
<td>Ruritania Phosphate Industries 2 Won Road, Gircote, Ruritania, R4227 (17°40'28&quot;E x 43°13'48&quot;N)</td>
<td>150</td>
</tr>
</tbody>
</table>

| Part (b) - Total for the State |

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref.</th>
<th>Operation</th>
<th>Current Annual Production for State as a Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>U mine and concentration plants</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Th plants</td>
<td>0</td>
</tr>
</tbody>
</table>
### Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2 (continued)

**Declaration number: 5**  
**Part (a) - Holdings as of the last day of the declaration period**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref</th>
<th>Location</th>
<th>Chemical Composition</th>
<th>Quantity (tonnes of element: U or Th)</th>
<th>Current or Intended Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4-1</td>
<td>Ruritania Phosphate Industries 2 Won Road, Gironte, Ruritania, R-4227</td>
<td>U$_3$O$_8$</td>
<td>120</td>
<td>Waiting for export</td>
</tr>
</tbody>
</table>

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**Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2 (continued)**

**Declaration number: 6**  
**Protocol Article: 2.a(vi)**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Ref</th>
<th>Location</th>
<th>Material</th>
<th>Quantity of Element</th>
<th>Current or Intended Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Nothing to declare</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of an Initial Article 2 Declaration for a SQP State with an Uranium Mine and Concentration Plant but no other activities specified in Article 2 (continued)

<table>
<thead>
<tr>
<th>Declaration number: 7</th>
<th>Protocol Article: 2.a.(vi)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>4-1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Declaration number: 8</th>
<th>Protocol Article: 2.b.(i)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>Ref.</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>