

# **Guidelines and Format for Preparation and Submission of Declarations Pursuant to Articles 2 and 3 of the Model Protocol Additional to Safeguards Agreements**

Vienna, May 2004

## **Services Series 11**

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GUIDELINES AND FORMAT FOR  
PREPARATION AND SUBMISSION OF DECLARATIONS  
PURSUANT TO ARTICLES 2 AND 3 OF THE MODEL PROTOCOL  
ADDITIONAL TO SAFEGUARDS AGREEMENTS

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## FOREWORD

The information to be provided to the International Atomic Energy Agency (hereinafter referred to as “the Agency”) by States under an additional protocol (INFCIRC/540) is identified in Article 2. The timing with which the information is to be provided is specified in Article 3. It was widely recognized during the negotiation of the additional protocol that States and the Agency would need explanation and guidance, regarding the information to be declared, beyond that possible to incorporate in the language of the protocol itself. The Board of Governors, meeting in special session on 15 May 1997 to approve the additional protocol, was assured that such guidance would be quickly available to States. The initial Additional Protocol Reporting Guidelines, drawing from Programme 93+2 documentation and the negotiating record of Committee 24, were published in August 1997. A simplified set of Guidelines was subsequently produced for States whose safeguards agreement includes a small quantities protocol.

The Guidelines serve two purposes. First, they provide specificity as to what information is required and at what level of detail. Second, the Guidelines provide a consistent reporting format. The Guidelines have been supplemented with Agency developed software, the PROTOCOL REPORTER, which simplifies the process through which States can prepare and submit their declarations electronically.

There is no legal requirement that States follow the Guidelines in preparing and submitting their Article 2 declarations. However, if States submit declarations prepared according to these Guidelines, it will reduce greatly the Agency’s workload in processing, reviewing and storing the information provided. With minor exceptions, all States that have submitted declarations prior to 2004 have followed the Guidelines.

The process of improving the Guidelines, based on the cumulative experience of States and the Agency, began in mid-2002. The process involved the development of a detailed compendium of suggested improvements and problems, article-by-article, based on written comments from States, consultations with States and comments from Agency staff. A draft revision addressing all suggestions and comments, often accompanied by new examples, was produced and extensively reviewed within the Agency. Finally, the Agency sought comment from States on the revised Guidelines, culminating in a meeting with State authorities in London, October 2003. The revisions to the Guidelines were finalized following that meeting.

The Agency is indebted to the many States who contributed their experience and comments to the process of improving the Guidelines.

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## I. INTRODUCTION

The central components of a strengthened and more efficient safeguards system are increased access to information and increased physical access. The vehicle whereby a State party to an additional protocol will provide increased information on its nuclear activities is the declarations prescribed in Article 2 of the Model Protocol Additional to Safeguards Agreements (hereafter referred to as the Model Protocol).<sup>1/2</sup> The information required pursuant to Article 2 is not intended to limit the Agency's right to information under other provisions of the safeguards agreements.

During the meetings of the Board of Governors' Committee on Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System (Committee 24), the Secretariat was requested to provide guidelines and a standard format for use by a State party to an additional protocol in preparing and submitting the declarations provided for in Article 2 of the Model Protocol. Guidelines were prepared immediately following Board of Governors approval of the Model Protocol on 15 May 1997 and were available to States in August 1997. The Guidelines have generally been effective in providing clarification of what information is required, the appropriate level of detail and a standardized report format. Even so, the accumulated experience of States and the Secretariat has identified a number of areas where improvements are needed and this is the purpose of this revision. These Guidelines necessarily cover Article 3, which deals with the timing for submission of the various parts of the declarations, and Annexes I and II of the Model Protocol, which list and elaborate on the items referred to in Articles 2.a.(iv) and 2.a.(ix), respectively.

These Guidelines are not mandatory but rather intended as advice for States on preparing declarations. The text of the Additional Protocol remains the only legally binding document. Separate Guidelines for States whose comprehensive safeguards agreement includes a small quantities protocol have also been prepared and are available on request. In either case, the Guidelines will be used in consultations between the Agency and States regarding the information requirements of the additional protocol.

To describe the nature, scope and interrelationship of information that would be provided by States, the Secretariat included in its report on Programme 93+2 to the June 1996 Board — entitled “Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System” (reproduced in GOV/2863) an Annex II entitled “Annotated Outline of Proposed Expanded Declaration.” It referred not only to the information to be submitted under the draft protocol, as proposed at that time by the Secretariat, but also to the information to be provided under comprehensive safeguards agreements, including the strengthening measures referred to

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<sup>1</sup> Approved by the Board of Governors on 15 May 1997, as reproduced in INFCIRC/540 (Corrected).

<sup>2</sup> The general reference in these Guidelines to a “State party to an additional protocol” is made without prejudice to the possibility that regional systems may be parties to such agreements as well

in GOV/2807 and approved by the Board of Governors on 15 June 1995. The information required by INFCIRC/153-type safeguards agreements was indicated as “**Part 1**”. The items of information to be submitted under the protocol were indicated as “**Part 2**”. Although the information covered by Article 2 of the Model Protocol differs in some details from that proposed in GOV/2863, Annex II of GOV/2863 remains useful for understanding the combined scope of the information States will provide under safeguards agreements with additional protocols.

The totality of information required under a safeguards agreement with an additional protocol is intended to provide the Agency with a fuller and clearer understanding of the nuclear activities in a State and will serve three important purposes:

- Because of its scope and comprehensiveness, this information will lead to increased transparency, thus allowing the Agency to confirm with a high degree of confidence that no undeclared nuclear activities are concealed within the State’s declared programme and that no elements of that programme are used for undeclared nuclear activities;
- By committing itself to an expanded declaration about its nuclear and nuclear-related activities, the State will provide considerably improved information on all aspects of its nuclear activities, which can be compared with information obtained from other sources (e.g., on procurement activities or from environmental sampling) for consistency and follow-up. The more accurate and comprehensive the information, the less frequently questions and inconsistencies should arise; and
- The requested information will provide a basis for the efficient planning and implementation of Agency activities relevant not only to the safeguarding of declared nuclear material, but also to the providing of assurance of the absence of undeclared nuclear material and nuclear activities in the State.

The approach reflected in Article 2 is intended to be comprehensive, while ensuring that States are not burdened by excessive or irrelevant reporting. The required information does not include all details of a State’s nuclear activities, but represents a reasonable balance between the benefits of having additional information and the practicalities and costs of regularly providing and using such information. States are not asked to provide information which may not be within their reach but nonetheless (Article 2.b.), the State is obliged to make “every reasonable effort” to provide the requested information.

The Agency applies a stringent regime to protect all confidential information coming to its knowledge in accordance with the provisions of Article 15 of the Model Protocol. The procedures and practices of the Agency for meeting this obligation are subject to periodic review by the Board of Governors (GOV/2897, GOV/2959 and GOV/INF/2002/1).

The Agency understands that, at some locations identified in the Article 2 declarations, a State may wish to make arrangements for managed Agency access pursuant to Article 7 of its

additional protocol. The need for managed access at specific locations on sites or other locations, where the State foresees such a need, should be identified in the declarations to the extent practical. Where the State sees a continuing need for access controls, the arrangements proposed by the State for managing Agency access to specific locations on sites should be communicated to the Agency as soon as possible. For other locations, the proposed arrangements for managed access would be provided by the State upon receiving notice from the Agency of the need for access. The State's proposal for how access might be managed would be evaluated by the Agency in light of specific Agency objectives. As stipulated in Article 7 of the Model Protocol, the arrangements should not preclude the Agency from “conducting the activities necessary to provide credible assurance of the absence of undeclared nuclear material and activities at the location in question, including the resolution of a question relating to the correctness and completeness of the information referred to in Article 2 or of an inconsistency relating to that information”.

The information provided under additional protocols will be processed and evaluated, both for internal consistency and consistency with all other relevant information available to the Agency. This may result in the identification of inconsistencies in the information, questions regarding the information or the need for specific information to be amplified or clarified. Agency requests for amplification or clarification of any of the information provided relevant for purposes of safeguards, will be made under Article 2.c. of the Model Protocol. In the event of an inconsistency or question, the process of resolution is as specified in Article 4.d of the Model Protocol, which is similar to the well-established consultative process under existing safeguards agreements for resolving discrepancies and anomalies.

The following sections provide general guidance for preparing and submitting declarations and specific guidance for each paragraph of Article 2 of the Model Protocol. The sections providing specific guidance contain the text of each paragraph of Article 2 from the Model Protocol, followed by relevant definitions from the Model Protocol; the purpose and intended use of the information; explanations, the declaration submission times and the format for submitting the information, with examples.

Where the State, in spite of the advice given in these guidelines, is unsure whether a declaration is required or of the form and timing in which a declaration should be made, informal contacts with the Agency to seek advice or clarify the issues of concern are highly recommended.



## II. GENERAL GUIDANCE

1. The preferred language in which the declarations are to be provided is English, the working language of the Secretariat. However, a submission in any official language of the Agency would be acceptable.
2. The sample formats are shown in hard copy form to facilitate understanding of the level of detail expected, and submission in that form is acceptable. However, States are strongly urged to submit these declarations (including maps) electronically to facilitate processing and use by the Agency, as well as to minimize transcription errors. Specifications for providing the information electronically, together with documentation describing Agency developed software called the PROTOCOL REPORTER are provided in the attachments 2 and 3 to these Guidelines. States are strongly recommended to utilize the PROTOCOL REPORTER for preparing and submitting their declarations.
3. A separate declaration is required for each article and, in the case of Article 2.a.(iii), for each site and for any update of a previously provided declaration. Each declaration should show the name of the State (or Party) and the number of the declaration, with the first declaration number being “1” and continuing sequentially for each subsequent declaration. Each entry on each declaration should be numbered sequentially beginning with “1” on each declaration. The combination of the State, the declaration number and the entry number provides a unique reference for each declaration entry. This reference number should be entered in the “Ref.” column in other declarations whenever it is relevant to make reference to another declaration entry.
4. The header information for each declaration should consist of the name of the State (Party); the INFCIRC number of the Safeguards Agreement to which the Protocol is additional; the number of the Protocol article covered by the declaration (e.g., Article 2.a.(ix)(a)); the declaration number; the date the declaration is prepared; and the declaration period. There are two kinds of declaration periods. The first is for initial declarations that provide the description of an activity or inventory at a point in time within 180 days of entry into force of the Protocol; the appropriate entry for such a declaration period is an “as of” date. The second is for update declarations that provide a description of activities over a period of time. In this case the appropriate entry for the declaration period is the beginning date and the ending date of the time period with the understanding that the information provided is valid as of the ending date. A declaration period is most often appropriate for updates but it may also be appropriate for initial declarations depending when the Protocol enters into force. For initial declarations, the declaration period most convenient for States and the Agency is the most recent calendar year. The examples provided in the sections that follow provide further clarification.

5. All dates should be entered as YYYY-MM-DD, e.g., 2002-11-21 for 21 November 2002.
6. All material quantities will be rounded by the Agency to the nearest tenth of a reporting unit.
7. The “Ref.” column should be used to refer in the current entry to another entry. The contents of the “Ref.” column consist of the relevant declaration and entry numbers (e.g., 13–22 provides a reference to entry 22 of declaration 13). The reference indicates that the current entry either adds to or updates information in another entry earlier declared under the same article or complements information in an entry declared under another article. Several references may be reported, if necessary. The State is not shown as part of the reference except where it is necessary to refer to an entry declared by another State as, for example, where the Agency is requesting confirmation from an importing State of an export declared by another State.
8. If more than one page is used for declarations submitted in hard copy, the name of the State, the declaration number, the article number and “page x of y pages” should be entered on each page.
9. A declaration is required for each article and, in the case of Article 2.a.(iii) each site, at the times specified in Article 3. The initial set of declarations due 180 days after entry into force pursuant to Article 3.a would normally consist of declaration numbers 1 through 7 plus the number of sites. Thus, for a State with five sites, the initial set of declarations would in most cases consist of 12 declarations numbered 1 for Article 2.a.(i), 2–6 for the five sites under 2.a.(iii) and 7–12 for Articles 2.a.(iv), (v), (vi)(a), (vii), (x) and 2.b.(i), respectively. Any subsequent declarations (including updates) should be numbered sequentially from the last used declaration number. Further, responses to specific requests from the Agency are *declarations*, which again should be numbered sequentially from the last used declaration number. In some cases declaration number 1 may be the first quarterly declaration of exports (Article 2.a.(ix)(a)) due 60 days after the end of the calendar quarter during which the additional protocol enters into force (see example in Attachment 1).
10. If there is nothing to be declared under an article, “Nothing to Declare” should be entered in the comment line of the header. Similarly when there is no change to declare with respect to a previously submitted declaration, “No Change” should be entered in the comment line of the header. If there has been any change in an entry since the previous declaration, the correspondent entry in the update declaration for that article must be submitted in its entirety as a new declaration entry. The new entry should cross-reference the previous entry that is being changed or updated. This reference signals that the current entry adds or updates information. If an update

declaration is silent with respect to an entry provided previously, the Agency will assume that the previously provided entry is still valid.

11. Further, while updates of the information referred to in Article 3.a. for the period covering the previous calendar year are to be provided by 15 May of each year (i.e., per Article 3.b.), corrections or additions to previously provided information can be provided at any time. The full set of update declarations required by 15 May of each year can be submitted at any time before that date. It would be helpful if the information were provided as soon as it is available. This would help alleviate operational difficulties for the Agency in dealing with a sudden flood of data on 15 May.
12. Should the 31 December YYYY (where YYYY is the year of entry into force) be within the 180 day period following the date of entry into force of the additional protocol, then it is suggested for a State to select that 31 December YYYY as the “As of” date of the initial declaration. In such cases, the first annual update for the eight Articles included in the initial declaration would be expected by the 15 May YYYY+2 rather than 15 May YYYY+1. The annual updates for the declarations pursuant to Articles 2.a.(vi)(b) and (c) and 2.a.(viii) are expected independently of the “As of” date of the initial declaration at the times specified in Articles 3.c and 3.e.
13. The Agency would welcome any note or notes with a declaration whenever the State considers it useful to elaborate on or explain a declaration entry. Such notes should reference the declaration number or declaration entry numbers, as appropriate. The use of the comments column is optional and could be a mechanism to provide additional information about an entry. This additional information can also be provided as an attachment to the declarations.
14. For explanation of terms, the reader of these guidelines is referred to the “IAEA Safeguards Glossary, 2001 Edition” (published by the IAEA in the International Nuclear Verification Series No. 3).
15. All declarations should be transmitted through regular channels of communication to:

Director  
Division of Safeguards Operations A or B or C (as appropriate)  
Department of Safeguards  
International Atomic Energy Agency  
Wagramer Strasse 5  
A-1400 Vienna, Austria

### III. SPECIFIC GUIDANCE

The following sections provide specific guidance for each individual article of Article 2 of the Model Protocol.

#### Article 2.a.(i)

“..... shall provide the Agency with a declaration containing:

- (i) A general description of and information specifying the location of *nuclear fuel cycle-related research and development activities* not involving *nuclear material* carried out anywhere that are funded, specifically authorized or controlled by, or carried out on behalf of, ..... .”

Article 18.a provides that:

“*Nuclear fuel cycle-related research and development activities* means those activities which are specifically related to any process or system development aspect of any of the following:

- conversion of *nuclear material*,
- enrichment of *nuclear material*,
- nuclear fuel fabrication,
- reactors,
- critical facilities,
- reprocessing of nuclear fuel,
- processing (not including repackaging or conditioning not involving the separation of elements, for storage or disposal) of intermediate or high-level waste containing plutonium, *high enriched uranium* or uranium-233,

but do not include activities related to theoretical or basic scientific research or to research and development on industrial radioisotope applications, medical, hydrological and agricultural applications, health and environmental effects and improved maintenance.”

Article 18.e provides that:

“*High enriched uranium* means uranium containing 20 percent or more of the isotope uranium-235.”

Article 18.h provides that:

“*Nuclear material* means any source or any special fissionable material as defined in Article XX of the Statute. The term source material shall not be interpreted as applying to ore or ore

residue. Any determination by the Board under Article XX of the Statute of the Agency after the entry into force of this Protocol which adds to the materials considered to be source material or special fissionable material shall have effect under this Protocol only upon acceptance by ..... ”

### **Purpose and use of the information**

There are nuclear processes and associated process equipment that can be developed to an advanced level without the introduction of nuclear material. Examples include centrifuges utilized to enrich uranium in the isotope U-235 or the development of pulsed columns and centrifugal contactors used in the separation of plutonium. Information provided under Article 2.a.(i), Article 2.b.(i) and information on fuel cycle research and development (R&D) involving nuclear material provided under the safeguards agreement give the Agency as complete a picture as practical of the R&D activities in a State relevant to the future development of its fuel cycle.

The reporting under Article 2.a.(i) addresses the nuclear fuel cycle-related R&D activities not involving nuclear material, per Article 18.a., where the State is involved. The reporting under Article 2.b.(i) requires that the State make every reasonable effort to provide the Agency with information regarding private sector nuclear fuel cycle-related R&D not involving nuclear material that are specifically related to enrichment, reprocessing and the processing of intermediate or high level waste containing plutonium, high enriched uranium or uranium-233.

This combined information will increase the transparency of a State's nuclear programme and will improve the basis for confirming the overall consistency of the State's nuclear programme with its nuclear-related activities, imports and exports (of specified equipment and non-nuclear materials listed in Annex II of the Model Protocol).

### **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. The original version of the Article 2 Guidelines reiterated the language of the Model Protocol regarding Article 2.a.(i) reporting requirements with little further explanation. Experience of both the Agency and States clearly indicates that clarification is needed, but it must be acknowledged in advance that it is not possible to cover every possible case. Judgment will still be required, consistent with the spirit and intent of the additional protocol, and consultations with the Agency are encouraged.
3. The language of Article 2.a.(i) (and 2.b.(i)) specifies that only a general description, at the programme or project level, of the relevant R&D need be provided. Details are not required or needed but the general description needs to be clear regarding the R&D

being carried out, the time frame and the objective(s). The examples that follow are intended to provide further clarification regarding level of detail. It is recognized that the distinction between what must be declared under Articles 2.a(i) and 2.b(i) is sometimes difficult, and should sometimes be decided on a case by case basis in consultation with the Agency.

4. Article 18.a provides a positive definition of what is meant by nuclear fuel cycle-related R&D (i.e., those activities which are specifically related to any process or systems development aspect of the seven indicated areas of the fuel cycle) and then goes on to exclude what is termed “theoretical or basic scientific research” and R&D on specified non-nuclear applications, health and environmental effects and improved maintenance. Specifically R&D addressing industrial radioisotopes, medical, hydrological and agricultural applications need not be declared. Difficulties may arise in deciding what is “theoretical or basic scientific research” and in dealing with the considerable intersection that exists between R&D addressing health and environmental effects and improved maintenance (which are specifically excluded) and R&D addressing safety (which was not excluded).
5. Theoretical and basic research addresses some basic or fundamental aspect of a process. Theoretical and basic research may develop from established principles and the results of the research may have an application but the research, as presently constituted, is not motivated by nor does it address application (e.g., the intent is to add to a body of scientific knowledge). The decision regarding research being theoretical or basic and the reporting obligation under Article 2.a(i) is best addressed through the answer to two questions:
  - (a) Does the research, if successfully concluded, have direct application?
  - (b) Is the application, wholly or in part, directly related to the development of the nuclear processes or systems identified in Article 18.a?

For example, research directed to the measurement of chemical reaction rates that is to be used in the development of a process for reprocessing spent fuel should be reported, as the answer to both questions is yes. On the other hand, similar research directed to the chemistry for recovery of a radioisotope for medical applications from irradiated target material need not be reported (i.e., the answer to the second question is no). Seen in this fashion, feasibility studies or computer based studies (e.g., simulations) that address development of any of the elements of the fuel cycle identified in article 18.a should be reported.

6. Research on any of a number of elements that relate to the safe operation of any of the processes identified in Article 18.a. should be reported. Safety considerations, whether they are hardware design and operating procedures to prevent criticalities, systems for

heat removal in the event of a loss of coolant, instrumentation and equipment to control reactors or a myriad of other factors are inherent to the development of the identified processes. This is the rationale for including these kinds of research in the reporting requirements under Article 2.a.(i). Obviously, a safety failure can have health, environmental or maintenance consequences but this is incidental to the reporting requirements. Among the kinds of research that are specifically excluded from a reporting obligation are those that directly address health and environmental effects and improved maintenance. Studies addressing the long term health effects of exposure to low levels of ionizing radiation, research on the transport of certain radionuclides in the environment and the development of a NDA device for assessing the continuing integrity of piping in the primary coolant loop of a power reactor are examples of research that need not be reported. It is recognized that in some instances States will need to make a judgment on whether a specific safety project requires declaration. As already mentioned in the Introduction, consultations with the Agency are recommended.

7. Clarification of some other language and intent of Article 2.a.(i) and 18.a. are provided as follows:

- (c) The language “---carried out anywhere that are funded, specifically authorized or controlled by, or carried out on behalf of, ---” is intended to cover any nuclear fuel cycle-related R&D where the State is involved, either in pursuit of its own interests or on behalf of any other entity. Examples of State involvement would be: ownership, funding, administrative control or licensing.
- b) The phrase “related to any process or system development aspect” is intended in a broad sense to include R&D to improve the performance of an existing process or system and components of a multi-component R&D project where nuclear material is not present even though one or more of the components do involve nuclear material.

8. For each entry, the “Fuel Cycle Stage” column should include the relevant area of R&D listed in Article 18.a (e.g., conversion or enrichment). Single R&D projects may be relevant to more than one fuel cycle stage. When this is the case, other fuel cycle stages should be reflected in the comment column. As a “Fuel Cycle Stage”, the term *reactor* should be taken broadly to include spent fuel management. Spent fuel management should also include R&D activities related to disposal of spent fuel. When single R&D projects involve activities at more than one location, the activity at each location should be reflected in a separate entry.
9. The “Location” column should include the name of the organization and the address where the R&D is being carried out. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific

enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, to provide notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographic coordinates are required in order for the Agency to be able to locate the activity. If the activity is located at a nuclear facility or location outside facilities (LOF), the facility or LOF code (optionally also the site name or code) should be included in the "Location" column, and the Article 2.a.(iii) declaration and entry number for the building housing the activity should be entered in the "Ref." column. There may be instances where the R&D is being carried out at several locations, possibly even in other States or by several organizations. The declaration should include a separate entry for each organization and the locations at which the activities take place, including locations in other States.

10. The updates to declarations under Article 2.a.(i) will generally be status reports covering activities over a period of time (e.g., the status of activities at the end of a calendar year covering activities carried out in the course of the year). Previously declared R&D that may have been stopped during the year in question should be reported one last time even though the status at end of the period is that the project is terminated.
11. The "General Description" of each R&D activity should include:
  - a. The title of the R&D activity;
  - b. The activity's project number or other unique designation to avoid any ambiguities in future references to the activity;
  - c. The relationship or connection of the State to the R&D activity;
  - d. A brief description of the work being performed (where the work is distributed over several organizations, the description of the work should identify who is doing what);
  - e. The objectives of the specific R&D activity and the degree to which those objectives have been met at the time of the declaration (e.g., whether work toward the objective has just begun or is in progress or the objective has been met);
  - f. The intended application of the R&D results if this is not apparent from the objectives; and
  - g. Identification, if applicable, of the organization and location within another State with which there is collaboration on the R&D activity.



12. In addition, it would be helpful to the Agency to have included under the “General Description” of each R&D activity the places, if any, on the site or location at which managed access may be applicable (Article 7.b).

#### **Declaration submission times**

1. In accordance with Article 3.a., the initial declaration for Article 2.a.(i) should be dispatched to the Agency within 180 days of the entry into force of an additional protocol. The declaration should normally reflect the “as of” date for the status of R&D being described. This “as of” date may be any date between the entry into force of an additional protocol and 180 days after entry into force.
2. In accordance with Article 3.b., the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be one calendar year (see Attachment 1).

## Example

### *Format of declaration for Article 2.a.(i) (initial declaration with example entries)*

Name of State (or Party):	Ruritania		
Safeguards Agreement INFCIRC:	000	Protocol Article:	2.a.(i)
Declaration number:	2	Declaration Date:	2001-10-14
Declaration period:	as of 2001-10-01		
Comment:	This is declaration number 2. Number 1 was declaration for Article 2.a.(ix)(a) for the period 30 April 2001 to 30 June 2001.		

Entry	Ref.	Fuel Cycle Stage	Location	General Description	Comments
1	3-21	Enrichment of nuclear material	Advanced Projects Agency, 23 Main Avenue, R-1384 Pointsmore, Ruritania. (APA laboratory on site AEC-NRC, building RA-18)	RAPA Isotope Separation - Phase I. Project RA-01-12. Privately funded but carried out at the APA, a government laboratory. Phase I is a study of the feasibility of adapting a molecular method of laser isotope separation for stable isotopes (developed at the University of Ruritania) to uranium enrichment. The objectives are to conduct a feasibility study of the use of two commercially available laser systems. Work is just beginning with completion scheduled for the end of 2003.	
2		Enrichment of nuclear material	Advanced Projects Agency, 23 Main Avenue, R-1384 Pointsmore, Ruritania (APA headquarters)	RAPA Isotope Separation - Phase II. Project RA-01-12. Privately funded but carried out at the APA, a government laboratory. Phase II is an engineering and economic study of adapting a molecular method of laser isotope separation for stable isotopes (developed at the University of Ruritania) to uranium enrichment. The objectives are to develop estimates of enrichment costs and prepare design of laboratory-scale test equipment. Work is scheduled for completion at the end of 2002.	
3		Reactors	Univ. of Ruritania Engineering School, McGrath Building, 401 Macron Drive, R-2257 Dembigh, Ruritania	Development of a generalized computer simulation package (GCSP) for the calculation of nuclear fuel burn-up and the accumulation of specified fission and activation products, as a function of time and position in the reactor, for several types of LWR cores. The objective is an improved reactor code that will support implementation of an advanced nuclear fuel management scheme to achieve high burn-up without loss of safety margins. This is a 3-year project set for completion 2003-06-30 being carried out in the Nuclear Engineering Department, University of Ruritania (project UR/GCSP/01). The sponsors are a consortium of private utilities and the Ruritania Ministry of Science and Industry.	

**Example (continuation)***Format of declaration for Article 2.a.(i) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(i)

Declaration number: 2 Declaration Date: 2001-10-14

Declaration period: as of 2001-10-01

Comment: This is declaration number 2. Number 1 was declaration for Article 2.a.(ix)(a) for the period 30 April 2001 to 30 June 2001

Entry	Ref.	Fuel Cycle Stage	Location	General Description	Comments
4		Nuclear fuel fabrication	Univ. of Ruritania Engineering School, McGrath Building, 401 Macron Drive, R-2257 Dembigh, Ruritania	Design and testing of an induction-coil nuclear fuel pellet sintering oven. This is a Government funded development effort (Project RU-00-11). The objectives are: (1) the design of a sintering oven that meets a variety of specified temperature control requirements; and (2) the construction and demonstration of a prototype oven. Work is nearing completion on the design phase (scheduled for completion 2001-11-30).	
5		Processing of Waste	Uratopia Nuclear Center, 15 King Road, U1250, Flavia Nova, Uratopia	The Government of Ruritania, through the Advanced Project Agency (APA), is participating, with the Atomic Energy Commission of Uratopia in an international project with the objective of producing a detailed comparative analysis of several identified nuclear waste management strategies in terms of costs, environmental impact and technical difficulty. The strategies currently identified are: (1) spent fuel conditioning and storage in a geologic repository; (2) reprocessing, Pu recycle with conditioning (vitrification) of HAW; and (3) reprocessing, Pu recycle with partitioning/transmutation of HAW prior to conditioning. At this point, the study is limited to a review of the literature, initial project definition and strategy. The activities are carried out in Uratopia with participation of Ruritania (APA) specialists. The comparative analysis and the identification of the next steps to be taken are to be completed by the end of 2003.	Reprocessing

## Example

*Format of declaration for Article 2.a.(i) (first annual update declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(i)

Declaration number: 13 Declaration Date: 2002-05-02

Declaration period: 2001-05-01 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Fuel Cycle Stage	Location	General Description	Comments
1	2-2	Enrichment of nuclear material	Advanced Projects Agency (APA), 23 Main Avenue, R-1384 Pointsmore, Ruritania	The project (Phase II. Project RA-01-12) was extended until December 2003 in order to evaluate the feasibility and costs of all the commercially available laser systems that could be suitable for the enrichment of uranium.	
2	2-4	Nuclear fuel fabrication	Univ. of Ruritania Engineering School, McGrath Building, 401 Macron Drive, R-2257 Dembigh, Ruritania	Design and testing of an induction-coil nuclear fuel pellet sintering oven. This is a Government funded development effort (Project RU-00-11). The objectives are: (1) the design of a sintering oven that meets a variety of specified temperature control requirements; and (2) the construction and demonstration of a prototype oven. The design of the oven is complete and a prototype will be available for testing by mid-year 2003.	
3	2-3	Reactors	Univ. of Ruritania Engineering School, McGrath Building, 401 Macron Drive, R-2257 Dembigh, Ruritania	The GCSP reactor code development project (UR/GCSP/01) has reached the conclusion that the fission and activation cross-sections for certain isotopes of several minor actinide elements are not sufficiently known for neutron energies in the appropriate thermal range. A separate study has been approved by the sponsors, that involves queries/consultations with the IAEA to see if better information is available and to assess the availability of target materials should a measurement programme be necessary. This side effort to the development of GCSP is to be completed by mid-2004. The main project has been extended until 2006.	

## **Article 2.a.(ii)**

“..... shall provide the Agency with a declaration containing:

- (ii) Information identified by the Agency on the basis of expected gains in effectiveness or efficiency, and agreed to by ....., on operational activities of safeguards relevance at *facilities* and *locations outside facilities* where *nuclear material* is customarily used.”

Article 18.i provides that:

“*Facility* means:

- (i) A reactor, a critical facility, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant or a separate storage installation; or
- (ii) Any location where *nuclear material* in amounts greater than one effective kilogram is customarily used.”

Article 18.j provides that:

“*Location outside facilities* means any installation or location, which is not a *facility*, where *nuclear material* is customarily used in amounts of one effective kilogram or less.”

## **Purpose and use of the information**

Article 2.a.(ii) establishes a mechanism to provide information, agreed between the Agency and the State, that could facilitate and increase the efficiency of safeguards implementation. Each additional item of information may be identified by the Agency on the basis of expected gains in safeguards effectiveness or efficiency or both and, following consultations with and agreement by the State, included in the State's Article 2.a.(ii) declarations for specific circumstances for specific facilities or LOFs. For example, the information could be used by the Agency to facilitate implementation of integrated safeguards approaches that incorporate unannounced or short notice routine inspections, for the evaluation of remotely transmitted surveillance records or to schedule interim inspections for flow verification. These arrangements could be mutually beneficial in reducing overall Agency inspection effort and the corresponding effort by operators and by the State.

## **Explanations**

1. Depending on the nature of the facility or LOF, the information could include, by way of example, more timely information on nuclear material transfers and inventories,

empty spent fuel cask transfers, crane movement records, reactor fuel production, isotope production programmes and the schedule and nature of maintenance activities.

2. Such information, when provided in advance, could be used in conjunction with unannounced or short notice inspections to increase the inspection coverage of nuclear material.

### **Declaration submission times**

Article 3.f provides that the timing and frequency for the provision of any such information would be as agreed by the State and the Agency. The information to be provided, how it is to be provided and the frequency with which it is to be provided would be subject to the agreement of the State. This provision would become operative when and if the State and the Agency so agree.

### **Format of declarations for Article 2.a.(ii)**

The format, contents and procedures for the provision of this information to the Agency would be specified on a case-by-case basis once a particular application of the article had been identified. This could result from a proposal either by the Agency or by the State, and agreed to by both parties.

## **Article 2.a.(iii)**

“..... shall provide the Agency with a declaration containing:

- (iii) A general description of each building on each *site*, including its use and, if not apparent from that description, its contents. The description shall include a map of the *site*.”

Article 18.b provides that:

“*Site* means that area delimited by ..... in the relevant design information for a *facility*, including a *closed-down facility*, and in the relevant information on a *location outside facilities* where *nuclear material* is customarily used, including a *closed-down location outside facilities* where *nuclear material* was customarily used (this is limited to locations with hot cells or where activities related to conversion, enrichment, fuel fabrication or reprocessing were carried out). It shall also include all installations, co-located with the *facility* or location, for the provision or use of essential services, including: hot cells for processing irradiated materials not containing *nuclear material*; installations for the treatment, storage and disposal of waste; and buildings associated with specified items identified by ..... under Article 2.a.(iv) above.”

Article 18.d provides that:

“*Closed-down facility* or *closed-down location outside facilities* means an installation or location where operations have been stopped and the nuclear material removed but which has not been decommissioned.”

## **Purpose and use of the information**

A primary objective of strengthened safeguards is to provide assurance that no undeclared nuclear material or activities are co-located with nuclear facilities and LOFs in order to utilize the infrastructure of manpower, technology, equipment and services that is in place to support elements of the declared programme. This article, Article 2.b.(ii) and the associated access provisions support this objective. The information in these declarations will be the basis for actions to obtain credible assurance regarding the absence of undeclared nuclear material and activities on sites. It will be used for planning complementary access to the sites of facilities and LOFs and for evaluation of consistency with the results of access activities and other information available to the Agency.

## **Explanations**

1. A separate declaration, each with its own declaration number should be made for each site. Guidance for the header, the “entry column” and the “Ref.” column is contained

in the GENERAL GUIDANCE section. The header for a site declaration contains a field for the “Site identification”. The content of the field should indicate the site code and/or site name as long as it provides an unambiguous identification of the site.

2. It is the State’s responsibility to define the geographical area constituting a site. In most cases the site area is obvious and consistent with Article 18.b. and with information previously provided to the Agency. There are a few instances, however, where it is not so obvious and the following additional guidance is provided:

- The vast majority of sites are expected to be contiguous geographical areas. Due to changes that have occurred over time or the location of an installation providing an essential service to a site, there may be sites comprised of two or more separate areas.
- When the geographical area of a site defined by a State appears idiosyncratic (e.g., appears to have been modified to exclude a building) or when a site is comprised of two or more separate areas (particularly in cases where the geographical area defined to be a site differs from that previously identified in the response to a Design Information Questionnaire), it is recommended that the State’s declaration for the site at issue include an explanation. (e.g., why specific buildings are excluded, see paragraph 13 in the General Guidance and the example below).
- The phrase “essential services” refers to installations providing services essential to the nuclear activities of the site. Such installations should be declared if they are located near the facility or LOF in question. Installations for providing normal utilities (e.g., electrical sub-stations and sewage treatment plants) need not be declared when they are not co-located. There may be instances where an installation located adjacent to but outside what would normally be thought of as the site does provide an essential service (e.g., a training center, or computing services). Such installations should be included in the declaration for the site. Ownership should not be factor in deciding whether a building is included in a site.
- The site should also include all installations co-located with the nuclear facility(ies) or LOF(s) and associated with the provision or use of services, such as hot cells, waste and decontamination facilities, training centers, electrical substations, water treatment, shielded cask storage, cooling towers, mechanical workshops and general stores. The declaration under Article 2.a.(iii) should also include all co-located buildings housing R&D activities reported under Article 2.a.(i) or 2.b.(i) or associated with the equipment and non-nuclear materials reported under Article 2.a.(iv). Sites with a facility and



those associated with most nuclear LOFs would normally not be less than a single building.

- There are many non-nuclear LOFs, i.e., LOFs where the nuclear material is in a non-nuclear application (a common example is depleted uranium shielding used in a radiation therapy unit in a hospital). For such cases, the site could be limited to a room or several rooms in a building. A preferred way to deal with these locations is for States to request that the nuclear material be exempted from safeguards under the non-nuclear use exemption provision contained in comprehensive safeguards agreements. Exemption, depending upon the nature and form of the material, does not eliminate other reporting obligations (e.g., Article 2.a.(vii)(b) of the Additional Protocol) but locations holding only exempted material are not considered to be LOFs.
  - The criteria for defining the geographical area of a site do not, at least in principle, depend upon whether the facility and/or LOF is operating or closed-down. A closed-down facility remains a facility with an associated site until the State declares, and the Agency agrees, that the facility, for purposes relevant to safeguards, has been decommissioned. The same argument applies to the closed-down LOFs specified in Article 18.b.
  - In some complex cases (e.g. universities or former nuclear research centers that now conduct mainly non-nuclear work) it may be difficult to decide which buildings require declaration as part of a site. Those buildings relevant to the nuclear activities of the site should be declared according to the criteria already discussed. Information on other nearby buildings could be provided as an attachment to the declaration or in some other way agreed between the State and the Agency. It would be important for buildings that previously contained nuclear material or housed nuclear related activities to be described. Such buildings would not be part of the site but the information provided on them will facilitate the correct planning and implementation of Agency safeguards activities for the site.
3. The initial declaration should include all buildings (and other relevant structures including temporary buildings or structures) on each site, with a separate entry for each building. Subsequent annual update declarations should only address those site declarations and associated buildings involving a change since the previous declaration. An update declaration for a site should be a new declaration with the relevant entries (where changes have occurred or new information is provided) submitted in their entirety. Entries which remain the same do not have to be repeated.

4. The “Facility/LOF code” column should contain the facility code (or in the case of LOFs the combination of MBA/KMP codes) for any building on the site that is part of a facility (or LOF).
5. The “Building” column should include a building number or other designation that provides an unambiguous identification of the building on the site map.
6. The “General Description” for each building should include:
  - a. The size of the building (the number of floors and the approximate total square meters of floor area or the dimensions of the building);
  - b. The use of the building and, where not apparent from the stated use, the main contents of the building; and
  - c. Although not formally required, there will be instances where it will be helpful if the declaration entry for a building describes previous uses. This is particularly relevant when previous uses involved nuclear material.

Information previously provided in the facility DIQ or LOF description need not be repeated but the DIQ or LOF information should be current and accurately reflect the situation at the facility or LOF.

7. A current diagram or map of the site showing the exact boundary of the site, the location of all buildings and other structures, railways, roads, rivers, etc., is to be attached to the Article 2.a.(iii) declaration for each site. The scale and geographical orientation to the North of the map or diagram should be indicated. If possible, geographical coordinates for at least one reference location in the map or diagram should be provided. The availability of coordinates will facilitate the identification by the Agency of buildings on maps and satellite images.

#### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(iii) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should be the “as of” date for the general descriptions provided. This “as of” date may be any date between the entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. The

information provided should be valid as of the ending date of the declaration period. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be one calendar year (see Attachment 1).

## Example

### *Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification: AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
1	3-21 5-1	RBE-	RBE	A small pilot centrifuge enrichment cascade (see response to DIQ- RBE-, 1998-08-20) (see attached schematic map)	
2		RBF-	RBF	Fuel fabrication and testing facility (see response to DIQ- RBF-, 1991-02-10) including post-irradiation test facility (APEX)	
3		RBR-	RBR	Research and radioisotope production reactor (see response to DIQ - RBR-, 1982-02-17)	
4		RBF-	RA-1	Two floors (total 850m <sup>2</sup> ; distributed 500m <sup>2</sup> main floor and 250m <sup>2</sup> partial basement). Building includes extensive hot cell complex utilized for post irradiation examination of fuel and other materials.	
5			RA-2	Two floors (total 1160m <sup>2</sup> ), housing administration and general services	
6			RA-3	Three floors (total 1800m <sup>2</sup> not including limited basement housing storage and utilities). Engineering support services primarily devoted to civil engineering support for the site.	
7			RA-4	One floor (total 430m <sup>2</sup> ). Physical protection services to the site (managed access).	
8		RC-A, KMP A	RA-5	One floor (total 500m <sup>2</sup> , not including limited basement training storage and utilities). Radiochemistry including development of analytical methods and low-level radiochemical measurements).	

**Example (continuation)***Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification: AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
9			RA-6	Two floors plus basement (total 450m <sup>2</sup> ). Housing common heating and air conditioning utilities.	
10			RA-7	One floor (total 550m <sup>2</sup> ). Auxiliary office space for RBR- personnel.	
11			RA-8	One floor (total 510m <sup>2</sup> ). Central stores annex including office space for administration personnel.	
12			RA-9	Two floors (total 1200m <sup>2</sup> ). Central receiving and stores for the site.	
13			RA-10	Three floors (total 1500m <sup>2</sup> ). Physics and life sciences support (together with building RA-11).	
14			RA-11	Two floors (total 900m <sup>2</sup> ). Physics and life sciences support. First floor includes small mechanical/optical workshop.	
15			RA-12	One floor (total 1100m <sup>2</sup> ). Cafeteria serving the site including serving area and a store.	
16			RA-13	One floor (total 320m <sup>2</sup> ). Visitor center.	
17			RA-14	Three floors (total 560m <sup>2</sup> including basement). Housing low-level solid waste conditioning/packaging installations and encapsulation R&D facility.	

### Example (continuation)

*Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification: AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
18			RA-15	Two floors (total 1800m <sup>2</sup> ). Housing high-active waste treatment and vitrification studies.	
19			RA-16	Two floors (total 3000m <sup>2</sup> including partial basement). Radioisotope production, includes extensive hot cell complex.	
20			RA-17	One floor (total 150m <sup>2</sup> ). Waste treatment.	
21	2-1 5-1		RA-18	One floor (total 1070m <sup>2</sup> ). Enrichment development center includes Annex I centrifuge manufacturing. Approximately 1/3 of the space is leased by the Advanced Project Agency (managed access may apply in some areas.)	
22			RA-19	Two floors (total 460m <sup>2</sup> ). Housing mechanical and optical workshops.	
23			S1	Security gate 1.	
24			S2	Security gate 2.	
25			S3	Security gate 3.	
26			S4	Security gate 4.	

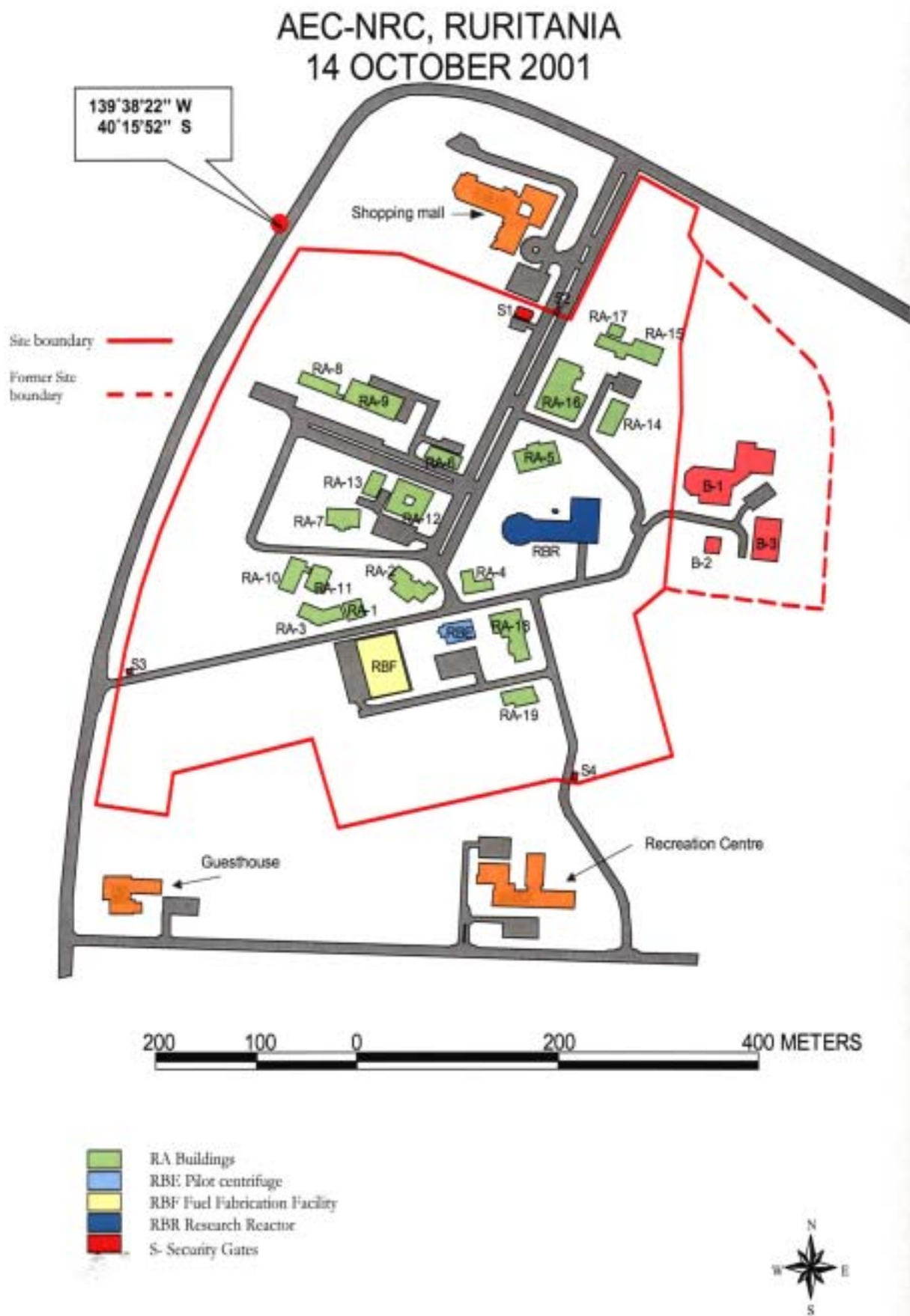


Figure 1: AEC-NRC Site Map (Attachment to Declaration No. 3).

### **Attachment (not part of declaration)**

#### **B-buildings (not part of site AEC-NRC)**

The original site boundary (dotted line), as previously communicated to the Agency in responses to DIQs, included buildings B-1, B-2 and B-3. These buildings once housed studies directed to the exploitation of low-grade (<50 ppm U) uranium ore deposits existing in Ruritania. The studies addressed a number of mining, milling and refining options. This work was stopped when it became apparent that recovery costs exceeded the price of uranium on international markets. The buildings have been sold to private companies engaged in bio-engineering R&D (B-2, B-3) and solid-state physics (B-1). The private owners have indicated a willingness to meet with the Agency and to deal with any concerns. Both companies have indicated that their work is highly proprietary.



## Example

*Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification: RBA

Declaration number: 4 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for locations of buildings in RBA.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
1	9-4	RBA-	RBA	Facility RBA-, a LWR (900 MW PWR), see response to DIQ-RBA, 1992-09-01 (see attached schematic map). Reactor and spent fuel building Two floors (total 8200 m <sup>2</sup> ).	
2		RBA-	Y	Service building and irradiated equipment bunker. (total 4560 m <sup>2</sup> )	
3		RBA-	Z	Turbine and related equipment building. Two floors, total 4200m <sup>2</sup> .	
4			1	One floor (total 150 m <sup>2</sup> ), entrance gate, visitor reception, physical protection.	
5			2	Two floors (total 1200 m <sup>2</sup> ), storage tanks and low-level waste packaging and decontamination.	
6			3	One floor (total 500 m <sup>2</sup> ), central receiving and general store.	
7			4	One floor (total 70 m <sup>2</sup> ), cafeteria.	
8			5	Two floors (total 1500 m <sup>2</sup> ), power house with space for additional turbines needed for planned second PWR.	
9			6	One floor (total 300 m <sup>2</sup> ), water treatment.	
10			7	One floor (total 360 m <sup>2</sup> ), pump house, primary electric pumps with diesel backup.	
11			8	Electrical substation. One floor (total 700m <sup>2</sup> ).	
12			9	Switchyard (Total 2000 m <sup>2</sup> ). Contains facilities for switching and transferring power.	
13			10	Administration and security (managed access). One floor (1800m <sup>2</sup> )	

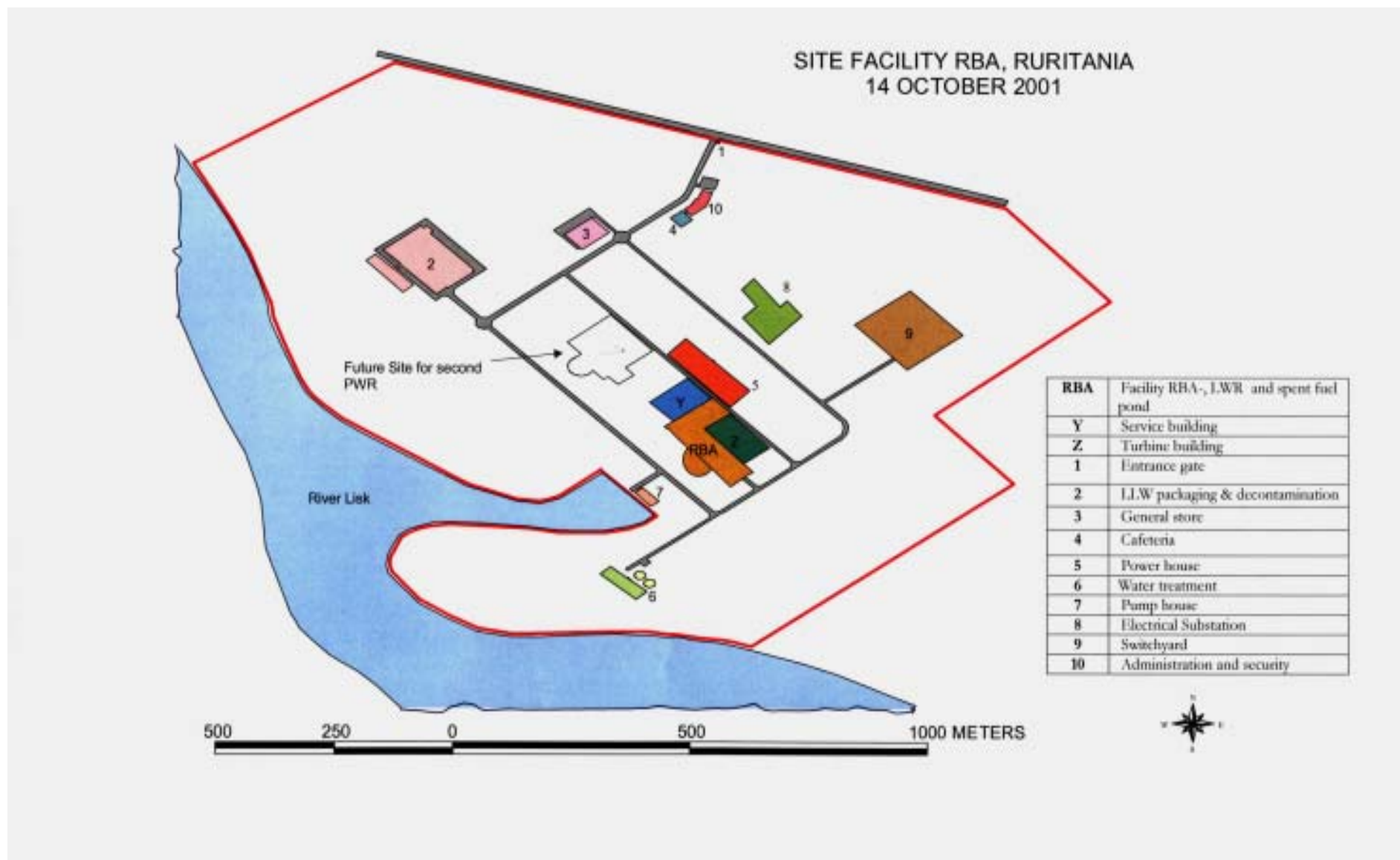


Figure 2: RBA Site Map (Attachment to Declaration No. 4)

### Example

*Format of declaration for Article 2.a.(iii) (first annual update declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: . 2.a.(iii)

Site Identification AEC-NRC

Declaration number: 14 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
1	3-21 2-1 5-1		RA-18	One floor (total 1070m <sup>2</sup> ). Enrichment development center includes Annex I centrifuge manufacturing. The Advanced Project Agency work has been expanded and they lease now half the space in this building.	

## Example

*Format of declaration for Article 2.a.(iii) (first annual update declaration with example entries)*

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Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification RBA

Declaration number: 15 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: No change

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments

## Article 2.a.(iv)

“..... shall provide the Agency with a declaration containing:

- (iv) A description of the scale of operations for each location engaged in the activities specified in Annex I to this Protocol.”

ANNEX I reads as follows:

### “LIST OF ACTIVITIES REFERRED TO IN ARTICLE 2.a.(iv) OF THE PROTOCOL

- (i) The manufacture of *centrifuge rotor tubes* or the assembly of *gas centrifuges*.

*Centrifuge rotor tubes* means thin-walled cylinders as described in entry 5.1.1(b) of Annex II.

*Gas centrifuges* means centrifuges as described in the Introductory Note to entry 5.1 of Annex II.

- (ii) The manufacture of *diffusion barriers*.

*Diffusion barriers* means thin, porous filters as described in entry 5.3.1(a) of Annex II.

- (iii) The manufacture or assembly of *laser-based systems*.

*Laser-based systems* means systems incorporating those items as described in entry 5.7 of Annex II.

- (iv) The manufacture or assembly of *electromagnetic isotope separators*.

*Electromagnetic isotope separators* means those items referred to in entry 5.9.1 of Annex II containing ion sources as described in 5.9.1(a) of Annex II.

- (v) The manufacture or assembly of *columns* or *extraction equipment*.

*Columns* or *extraction equipment* means those items as described in entries 5.6.1, 5.6.2, 5.6.3, 5.6.5, 5.6.6, 5.6.7 and 5.6.8 of Annex II.

- (vi) The manufacture of *aerodynamic separation nozzles* or *vortex tubes*.

*Aerodynamic separation nozzles* or *vortex tubes* means separation nozzles and vortex tubes as described respectively in entries 5.5.1 and 5.5.2 of Annex II.

- (vii) The manufacture or assembly of *uranium plasma generation systems*.

*Uranium plasma generation systems* means systems for the generation of uranium plasma as described in entry 5.8.3 of Annex II.

- (viii) The manufacture of *zirconium tubes*.

*Zirconium tubes* means tubes as described in entry 1.6 of Annex II.

- (ix) The manufacture or upgrading of *heavy water or deuterium*.

*Heavy water or deuterium* means deuterium, heavy water (deuterium oxide) and any other deuterium compound in which the ratio of deuterium to hydrogen atoms exceeds 1:5000.

- (x) The manufacture of *nuclear grade graphite*.

*Nuclear grade graphite* means graphite having a purity level better than 5 parts per million boron equivalent and with a density greater than  $1.50 \text{ g/cm}^3$ .

- (xi) The manufacture of *flasks for irradiated fuel*.

A *flask for irradiated fuel* means a vessel for the transportation and/or storage of irradiated fuel which provides chemical, thermal and radiological protection, and dissipates decay heat during handling, transportation and storage.

- (xii) The manufacture of *reactor control rods*.

*Reactor control rods* means rods as described in entry 1.4 of Annex II.

- (xiii) The manufacture of *criticality safe tanks and vessels*.

*Criticality safe tanks and vessels* means those items as described in entries 3.2 and 3.4 of Annex II.

- (xiv) The manufacture of *irradiated fuel element chopping machines*.

*Irradiated fuel element chopping machines* means equipment as described in entry 3.1 of Annex II.

- (xv) The construction of *hot cells*.

*Hot cells* means a cell or interconnected cells totaling at least 6 m<sup>3</sup> in volume with shielding equal to or greater than the equivalent of 0.5 m of concrete, with a density of 3.2 g/cm<sup>3</sup> or greater, outfitted with equipment for remote operations.”

### **Purpose and use of the information**

The purpose of this provision is to obtain sufficient information to provide a basis for assurances that manufacturing activities in the limited but very important areas covered by Annex I are consistent with a State’s declared programme and that these activities are used only to support the declared programme. This information will provide the Agency with an overview of the infrastructure directly supporting the State’s nuclear fuel cycle and contribute to the transparency of the State’s nuclear and nuclear-related activities.

The information on the scope and scale of these activities, together with the information on exports and imports of equipment and non-nuclear material identified in Annex II and provided pursuant to Article 2.a.(ix), will be compared for consistency with the State’s declared nuclear programme. This may provide indications of where an infrastructure exists that could support nuclear activities that are not part of the declared nuclear programme.

Article 16.b of the Model Protocol provides for amendment of Annex I and Annex II. Proposals for amendment could result from technological developments or experience with the physical model of the nuclear fuel cycle from which Annex I is derived. The physical model, a major component of the Agency’s expanded analysis of information developed as a Part I measure of “Programme 93+2”, describes each nuclear activity that could be involved in the nuclear fuel cycle from source material acquisition to the production of weapons useable nuclear material. (A brief outline of the improved analysis is available in Agency document GOV/INF/759. The Technical Background Documentation on “Programme 93+2” which was made available to States in March 1995 provides a more detailed description.)

### **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. A separate entry should be made for each location and each activity listed in Annex I. The “Annex I Item” column should refer to the relevant activity listed in Annex I to the Protocol (e.g., (iii) or (xv)). The “Location” column should include the name of the organization and the address where the activity is being carried out. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other

parts of the State's declarations and, should access be necessary, to provide a notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographic coordinates are required in order for the Agency to be able to locate the activity on a detailed map. If the activity is located on the site of a nuclear facility or LOF, the facility or LOF code (or a site code/name if one is used) should be included in the "Location" column, and the Article 2.a.(iii) declaration and entry number for the building housing the activity should be entered in the "Ref." column. There is no requirement to declare manufacturing activities conducted on behalf of the State in another State as this issue will be generally covered in the export declarations by the other State of the items concerned. If a location ceases the production of an item in Annex I (or the construction of hot cells is completed) a last declaration to this effect should be made and no additional declarations are needed unless production recommences.

3. The "Description of the Scale of Operations" column for each location should include:
  - a. A brief description of the activity and its products sufficient for the Agency to determine their relationship to the State's nuclear fuel cycle and programme (taking into account exports);
  - b. An indication of the scale of operation of each manufacturing activity listed in Annex I (e.g. the approximate production capacity and the extent to which that capacity was utilized during the declaration period or just production during the declaration period). There is no requirement to declare general capabilities of the State for the production of items in Annex I if production does not actually take place; and
  - c. The places, if any, at the location where managed access may be applicable. This is optional, although it would be useful for the State at least to declare its intentions in advance of any request from the Agency for access to the location in question (Article 7.b.). Details regarding the State's proposal for managed access could be provided in the course of consultations pursuant to Agency access.
4. Without prejudice to Article 16 of the Model Additional Protocol (INFCIRC/540), information on items not included in Annexes I and II (e.g. tritium, metallic beryllium and boron 10) may be provided on a voluntary basis. Entry 4 of the Article 2.a.(iv) example declaration is an example of how a State might choose to provide information on these items. The space in the "Annex I item" column should be left blank. .
5. For initial declaration the phrase: "The manufacture" (for items (i)-(xiv)), and the phrase "The construction" (for item (xv)) are to be taken to mean the existence of the named manufacturing or construction activity at any point during the declaration



period even though such activities may have been stopped or concluded prior to the end of the declaration period. Further, all activities identified in Annex I should be declared even if the resulting products are for export. Manufacturing of components for hot cells (e.g. shielded windows, remote manipulators) does not need to be declared.

### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(iv) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should be the “as of” of the general descriptions provided. This “as-of” date may be any date between entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. The information provided should be valid as of the ending date of the declaration period. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be the most recent calendar year (see Attachment 1).

## Example

*Format of declaration for Article 2.a.(iv) (an initial declaration with example entries)*

Name of State (or Party):	Ruritania		
Safeguards Agreement INFCIRC:	000	Protocol Article:	2.a.(iv)
Declaration number:	5	Declaration Date:	2001-10-14
Declaration period:	as of 2001-10-01		
Comment:			

Entry	Ref.	Annex I Item	Location	Description of the scale of operations	Comments
1	3-21	i	Rotating Machines Inc., 17 Cook St. Palo Bajo, Ruritania Building RA-18 (AEC-NRC site)	Manufacture of centrifuge rotor tubes and the assembly of gas centrifuges for the pilot centrifuge enrichment cascade (RBE-). The capacity is approximately 200 rotor tubes and assembled centrifuges per year. 20 manufactured during the period. Managed access will be needed in some areas.	
2		ix	Deuterium, Ltd., 2 Wood Road, R-4227, Gironte, Ruritania	Heavy water production. Production capacity is approximately 200 tonnes per year with about 50% of the rated capacity in service during the declaration period. With minor exceptions, the heavy water produced was for nuclear use.	
3		x	Specialty Metals Co., 11 Shermann Street, R-7811, Speyar, Ruritania	Production of nuclear grade graphite. Production capacity is about 1,000 tonnes per year. Production during the declaration period was at a rate of about 60% of capacity. All but approximately 10 tonnes of the material produced went to non-nuclear uses.	
4			Specialty Metals Co., 11 Shermann Street, R-7811, Speyar, Ruritania	Production of high purity beryllium metal and high-purity (99.997%) bismuth (5 ppm or less silver). Several kg of beryllium and several 10's of kg bismuth produced during the declaration period.	This item is declared on a voluntary basis.

### Example

*Format of declaration for Article 2.a.(iv) (first annual update declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iv)

Declaration number: 16 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Annex I Item	Location	Description of the scale of operations	Comments
1	5-2	ix	Deuterium, Ltd., 2 Wood Road, R-4227, Gironte, Ruritania	Heavy water production. Production capacity has been increased to approximately 300 tonnes per year with about 70% of the rated capacity in service during the declaration period. With minor exceptions, the heavy water produced was for nuclear use both domestically and also to constitute a stock for export.	
2	3-3	xv	General Radiosotopes Ltd., High Road 201, Istar, Ruritania	Construction of a complex of 10 interconnected hot cells for the separation, treatment and packaging of radioisotopes for industrial and medical purposes. The total internal volume of these cells will be approximately 32 cubic meters. Construction started in July 2001 and will take approximately two years. Part of the radioisotopes will be produced at RBR-, part by the use of accelerators and other imported.	

## **Article 2.a.(v)**

“..... shall provide the Agency with a declaration containing:

- (v) Information specifying the location, operational status and the estimated annual production capacity of uranium mines and concentration plants and thorium concentration plants, and the current annual production of such mines and concentration plants for ..... as a whole. .... shall provide, upon request by the Agency, the current annual production of an individual mine or concentration plant. The provision of this information does not require detailed *nuclear material* accountancy.”

### **Purpose and use of the information**

The purpose of this article is to contribute to the completeness of the Agency's knowledge of all of the State's holdings of nuclear material. This includes the capacity to produce source material, both in operating or closed-down mines. The information, together with information on inventories, imports and exports of nuclear material, would be used to assess the consistency of these holdings with the State's declared nuclear programme.

### **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. The entries in the “Operation” and “Status” columns should specify the element involved and the operation, e.g., “U mine and milling (concentration),” “Th concentration plant,” etc., and its operational status, i.e., “operating,” “temporarily closed-down,” or “permanently closed-down.” A separate entry is required for each operation. The reporting obligation includes all mines and concentration plants regardless of their operational status. The declaration should include mining activities where uranium is, or has been, produced as a by-product. A mine that has been permanently closed should be dealt with only once, declaring it closed-down and with a zero production capacity. Locations of environmentally restored former mines could also voluntarily be declared for completeness and transparency of the declaration. The total current annual production figures for the State as a whole require two entries: one for uranium and one for thorium. For those entries, the word “Total” should be entered in the “Status” column.
3. Responses to specific Agency requests for the current annual production of an individual mine or concentration plant may be included in a separate Article 2.a.(v) declaration, or in an annual Article 2.a.(v) update declaration as a separate entry if the declaration is dispatched within 60 days of the Agency request. The “Ref.” column in

such an entry should show the declaration entry reference number for the declared estimated annual production capacity for that year for that mine or plant and the words “Actual” and the year (e.g., Actual 1998) entered in the “Status” column.

4. The “Location” column should include the name of the organization and the address where the mine or plant is located. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, to provide notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity in respect to location, geographical coordinates should be provided to permit the Agency to be able to find the location in a map. If the mine or plant is located on the site of a nuclear facility or LOF, the facility or LOF code should be included in the “Location” column, and the Article 2.a.(iii) declaration and entry numbers for the buildings housing the activity should be entered in the “Ref.” column. The “Location” column for the “Total” entry (reporting the total current annual production figures for the State as a whole) should be the name of the State. A map annotated with the locations would be helpful.
5. The “Estimated Annual Production Capacity (tonnes of element: U or Th)” column should include:
  - a. For an individual mine and concentration plant (normally, U ore concentration plants are co-located with the mine; if not, the U ore concentration plant(s) should be described in a separate entry(ies)), the estimated annual production capacity stated in tonnes of element, uranium (U) or thorium (Th), as appropriate;
  - b. For the current annual production (actual) of the State as a whole, the tonnes of uranium and thorium that were produced during the declaration period (i.e., the most recent calendar year for initial declaration and updates); and
  - c. For the current annual production (actual) of an individual mine or concentration plant in response to an Agency request, the tonnes of uranium or thorium produced at the specified mine or plant during the year in question.

### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(v) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should normally reflect the “as of” date for the information provided. This “as of” date may be any date between entry into force of the Protocol and 180 days after entry into force. However, while an “as of” date is appropriate in

the initial declaration regarding operational status, it is anticipated that the declared annual production capacities and the declared current annual production will be for the most recent calendar year.

2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. The information provided should be valid as of the ending date of the declaration period. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be the most recent calendar year (see Attachment1).
3. Article 2.a.(v) provides for declarations of the current annual production of an individual mine or concentration plant upon specific Agency request, but neither Article 2 nor Article 3 specifies a time for the response to such a request. Such responses should be dispatched within 60 days of the request (consistent with the required response time in Article 3.g for response to a request, pursuant to Article 2.a.(ix)(b), for confirmation of an import) using the same format as for other Article 2.a.(v) declarations. Responses may be made as a separate declaration or by inclusion in an annual Article 2.a.(v) declaration if dispatched within 60 days of the request.

### Example

*Format of declaration for Article 2.a.(v) (an initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(v)

Declaration number: 6 Declaration Date: 2001-10-14

Declaration period: as of 2001-10-01

Comment: \_\_\_\_\_

Entry	Ref.	Operation	Status	Location	Estimated Annual Production Capacity (tonnes of element: U or Th)	Comments
1		U mine and concentration	operating	Comstock mining, South Fork, Union County, Ruritania, (17° 40' 16" E x 43° 13' 48" N) (see attached map)	300	
2		U mine and concentration	closed down	Comstock mining, South Fork, Union County, Ruritania, (18° 40' 28" E x 43° 19' 8" N) (see attached map).	0	permanently closed down
3		Th concentration	operating	J. Roger Miling, Inc., 1200 Highway 94, middle Creek, Union County, Ruritania (see attached map).	100	
4	6-5	U mine	closed down	Eldorado Mining and Milling, Sunset Mountain, Fremont County, Ruritania, (16° 30' 14" E x 43° 15' 31" N) (see attached map).	40	temporarily closed down
5	6-4 6-6	U concentration	operating	Eldorado Mining and Milling, Sunset Mountain, Fremont County, Ruritania, (16° 30' 14" E x 43° 15' 31" N) (see attached map).	90	U concentration
6	6-5	U mine	operating	Eldorado Mining and Milling, Sunset Mountain, Fremont County, Ruritania, (16° 40' 20" E x 43° 30' 5" N) (see attached map).	90	
7		U plant	operating	Rurifert Ltd., Black River City, Ruritania, (18° 40' 20" E x 43° 30' 5" N) (see attached map).	1	U concentration as by-product from phosphate plant
7		U mines/concentr.	Total	Ruritania	250	actual
8		Th concentration	Total	Ruritania	90	actual

## Example

*Format of declaration for Article 2.a.(v) (first annual update declaration with example entries)*

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Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(v)

Declaration number: 17 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Operation	Status	Location	Estimated Annual Production Capacity (tonnes of element: U or Th)	Comments
1	6-3	Th concentration	closed down	J. Roger Miling, Inc., 1200 Highway 94, middle Creek, Union County, Ruritania (see attached map).	0	shutdown for at least two years due to maintenance and building of new installations
2		Th concentration	Total	Ruritania	0	actual



## Article 2.a.(vi)

“..... shall provide the Agency with a declaration containing:

- (vi) Information regarding source material which has not reached the composition and purity suitable for fuel fabrication or for being isotopically enriched, as follows:
  - (a) The quantities, the chemical composition, the use or intended use of such material, whether in nuclear or non-nuclear use, for each location in ..... at which the material is present in quantities exceeding ten metric tons of uranium and/or twenty metric tons of thorium, and for other locations with quantities of more than one metric ton, the aggregate for ..... as a whole if the aggregate exceeds ten metric tons of uranium or twenty metric tons of thorium. The provision of this information does not require detailed *nuclear material* accountancy;
  - (b) The quantities, the chemical composition and the destination of each export out of ....., of such material for specifically non-nuclear purposes in quantities exceeding:
    - (1) ten metric tons of uranium, or for successive exports of uranium from ..... to the same State, each of less than ten metric tons, but exceeding a total of ten metric tons for the year;
    - (2) twenty metric tons of thorium, or for successive exports of thorium from ..... to the same State, each of less than twenty metric tons, but exceeding a total of twenty metric tons for the year;
  - (c) The quantities, chemical composition, current location and use or intended use of each import into ..... of such material for specifically non-nuclear purposes in quantities exceeding:
    - (1) ten metric tons of uranium, or for successive imports of uranium into ..... each of less than ten metric tons, but exceeding a total of ten metric tons for the year;
    - (2) twenty metric tons of thorium, or for successive imports of thorium into ..... each of less than twenty metric tons, but exceeding a total of twenty metric tons for the year;

it being understood that there is no requirement to provide information on such material intended for a non-nuclear use once it is in its non-nuclear end-use form.”

Source material is defined in Article XX.3 of the Statute of the Agency as “uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate; any other material containing one or more of the foregoing in such concentration as the Board of Governors shall from time to time determine; and such other material as the Board of Governors shall from time to time determine.”

### **Purpose and use of the information**

The purpose of this article, together with the information provided under Articles 2.a.(v), 2.a.(vii) and 2.a.(viii), is to complement the information already provided through nuclear material accounting reports pursuant to paragraphs 59-65 and 67 of INFCIRC/153 and, thereby provide the Agency with as complete a picture as practical of all nuclear material within the State relevant to actual or potential nuclear activities within the State. The information would be used to confirm the consistency between the State's declared nuclear programme and its holdings of nuclear material.

The information on exports and imports of nuclear material for non-nuclear purposes, in conjunction with the information on exports and imports for other than non-nuclear purposes reported pursuant to paragraphs 34(a) and (b) of INFCIRC/153, provides the Agency with as complete a picture as is practical of the State's international transfers of nuclear material. It would be used to confirm the consistency of the exports and imports of this material with the State's declared holdings and with imports and exports declared by other States.

Some of the information required by this article is already provided by some States under the Voluntary Reporting Scheme. Information provided as declarations under Article 2.a.(vi) does not need to be repeated under voluntary reporting. However, the voluntary reporting may contain additional information not required by the Additional Protocol and the Agency welcomes the continued provision of that information.

### **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. In Part (a), a separate entry should be made for each location at which uranium exceeding 10 metric tonnes or thorium exceeding 20 tonnes is present. If the aggregate of uranium at other locations, each having more than one tonne of uranium, exceeds 10 tonnes, or the aggregate of thorium at other locations, each having more than one

tonne of thorium, exceeds 20 tonnes, these aggregates are to be reported as separate entries, with “..... aggregate for other locations with more than one tonne” entered in the “Location” column.

3. In Part (a), the entries in the initial declaration should reflect the situation as of the date of entry into force. Subsequent annual update declarations should reflect the situation on 31 December of the previous year.
4. In Part (b), a separate entry should be made for each export, for specifically non-nuclear purposes, of more than 10 tonnes of uranium or more than 20 tonnes of thorium. If, during the declaration period, multiple exports each of less than 10 tonnes of uranium but totaling more than 10 tonnes are made to the same State, each such export should be reported as a separate entry (see entries 9-11 of the example). If, during the declaration period, multiple exports each of less than 20 tonnes of thorium but totaling more than 20 tonnes are made to the same State, each such export should be reported as a separate entry.
5. In Part (c), a separate entry should be made for each import, for specifically non-nuclear purposes, of more than 10 tonnes of uranium or more than 20 tonnes of thorium. If, during the declaration period, multiple imports each of less than 10 tonnes of uranium but totaling more than 10 tonnes are received, each such import should be reported as a separate entry (see entries 12-13 of the example). If, during the declaration period, multiple imports each of less than 20 tonnes of thorium but totaling more than 20 tonnes are received, each such import should be reported as a separate entry.
6. The “Location” column (in Parts (a) and (c)) should include the name of the organization and the address where the source material is located. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, provide notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographic coordinates are required in order for the Agency to be able to find the location on a map. If the location is on the site of a nuclear facility or LOF, the facility or LOF code should be included in the “Location” entry, and the Article 2.a.(iii) declaration and entry number for the building housing the material should be entered in the “Ref.” column.
7. In Part (b), the “Destination” column should include the name of the State to which the export was made. Any interim destination State(s) should be entered in the “Interim Destination” column.

8. The entry in the “Chemical Composition” column should include the chemical composition of the source material, e.g.,  $\text{U}_3\text{O}_8$ , or  $\text{ThO}_2$ .
9. The entry in the “Quantity” column should include the element weight in tonnes.
10. In Part (a), the entry in the “Code” column under “Intended Use” should include the code N for nuclear (activities related to those defined in Article 18.a including research and development) or code NN for non-nuclear (all other activities) and the entry in the “Use” column should be the particular use (intended), e.g., conversion for enrichment or ceramics. An inventory(s) of source material for which no use has yet been identified (e.g., strategic stockpiles or material intended for export) should be declared with the code ND for not designated (intended use is not yet defined).
11. In Part (b), the date the export took place should be entered in the “Export Date” column.
12. In Part (c), the State which exported the material should be entered in the “Exporting State” column.
13. In Part (c), the entry in the “Use (Intended)” column should include only the particular use, without the NN code, since only imports for non-nuclear use are to be reported under the Additional Protocol.
14. In Part (c), the date the material arrived in the State should be entered in the “Import Date” column.
15. There is no requirement to include material in this declaration once it is in its non-nuclear end-use form.

#### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(vi)(a) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should normally reflect the “as of” date for the nuclear material holdings being described. The “as-of” date may be any date between entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. The information provided should be valid as of the ending date of the declaration period. With the exception of the time period between the initial declaration and the first

annual update, it is expected that the declaration period will be the most recent calendar year (see Attachment 1).

3. In accordance with Article 3.c, the annual declarations for Articles 2.a.(vi)(b) and (c) (exports and imports) should be dispatched to the Agency by 15 May of each year. These declarations should be labeled in the header with the time period covered by the declaration. The initial declarations should cover the time period between entry into force of the Protocol and the end of that calendar year. With this exception it is expected that the declaration period will be the most recent calendar year (see Attachment 1).

## Example

*Format of declaration for Article 2.a.(vi)(a) (an initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(vi)

Declaration number: 7 Declaration Date: 2001-10-14

Declaration period: as of 2001-10-01

Comment: \_\_\_\_\_

Part (a) – Holdings as of the last day of the declaration period

Entry	Ref.	Location	Chemical Composition	Quantity (tonnes of element U or Th)	Intended Use Code	Intended Use	Comments
1		J. Roger Milling, Inc., 77 Prospect Way, Middleton, R-2118, Ruritania	U <sub>3</sub> O <sub>8</sub>	58	NN	paint	
2		Rockwin Conversion Company, 1 Cake Court, R-7815, Speyar, Ruritania	U <sub>3</sub> O <sub>8</sub>	184	N	conversion for enrichment	
3		Heavy Metals, Inc., 48 Wilson Avenue, R-7813, Speyar, Ruritania	U <sub>3</sub> O <sub>8</sub>	376	NN	ceramics	
4		Ruritania national strategic stockpile	U <sub>3</sub> O <sub>8</sub>	1000	ND		
5		Ruritania aggregates for other locations each with more than one tonne	various (U)	16	NN	ceramics	
6		Ruritania aggregates for other locations each with more than one tonne	various (Th)	24	N	conversion for fuel fabrication	

### Example

*Format of declaration for Article 2.a.(vi) (including the first update for Article 2.a.(vi)(a) with example entries)*

*Article 2.a.(vi) consists of three parts, (a), (b) and (c), and a separate declaration format, designated Parts (a), (b) and (c) should be used for each.*

*The three parts should have a common header and a common declaration number.*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(vi)

Declaration number: 18 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Part (a) — Holdings as of the last day of the declaration period

Entry	Ref.	Location	Chemical Composition	Quantity (tonnes of element U or Th)	Intended Use Code	Intended Use	Comments
1	7-1	J. Roger Milling, Inc., 77 Prospect Way, Middleton, R-2118, Ruritania	U <sub>3</sub> O <sub>8</sub>	60	NN	paint	
2	7-2	Rockwin Conversion Company, 1 Cake Court, R-7815, Speyar, Ruritania	U <sub>3</sub> O <sub>8</sub>	174	N	conversion for enrichment	
3	7-3	Heavy Metals, Inc., 48 Wilson Avenue, R-7813, Speyar, Ruritania	U <sub>3</sub> O <sub>8</sub>	370	NN	ceramics	
4	7-4	Ruritania national strategic stockpile	U <sub>3</sub> O <sub>8</sub>	1010	ND		
5	7-5	Ruritania aggregates for other locations each with more than one tonne	various (U)	15	NN	ceramics	
6	7-6	Ruritania aggregates for other locations each with more than one tonne	various (Th)	20	N	conversion for fuel fabrication	

### Example (continuation)

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(vi)

Declaration number: 18 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

#### Part (b) — Exports

Entry	Ref.	Destination	Interim destination	Chemical Composition	Quantity (tonnes of element U or Th)	Export Date	Comments
7		Uratopia		U <sub>3</sub> O <sub>8</sub>	16	2001-10-03	
8		Thoritania		ThO <sub>2</sub>	25	2001-10-14	
9		Smalitania	Transitania	U <sub>3</sub> O <sub>8</sub>	4.2	2001-10-24	
10		Smalitania		U <sub>3</sub> O <sub>8</sub>	3.2	2001-11-01	
11		Smalitania		U <sub>3</sub> O <sub>8</sub>	4.9	2001-12-13	

#### Part (c) — Imports

Entry	Ref.	Location	Chemical Composition	Quantity (tonnes of element U or Th)	Use (intended)	Exporting State	Import Date	Comments
12		Webster Pigments, Ltd., 10 Noah Lane, R-3380, Redstone, Ruritania	U <sub>3</sub> O <sub>8</sub>	7.6	Paint	Shippertania	2001-10-11	
13		Leelan Ceramics, Inc., 20 West Aven., R-7814, Speyar, Ruritania	U <sub>3</sub> O <sub>8</sub>	4.5	Ceramics	Shippertania	2001-11-09	
14		Heavy Metals, Inc., 48 Wilson Avenue, R-7813, Speyar, Ruritania	ThO <sub>2</sub>	25	Mantels/filaments	Uratopia	2001-12-04	



## Article 2.a.(vii)

“..... shall provide the Agency with a declaration containing:

- (vii) (a) information regarding the quantities, uses and locations of *nuclear material* exempted from safeguards pursuant to [paragraph 37 of INFCIRC/153]\*;
- (b) information regarding the quantities (which may be in the form of estimates) and uses at each location, of *nuclear material* exempted from safeguards pursuant to [paragraph 36(b) of INFCIRC/153]<sup>3/</sup> but not yet in a non-nuclear end-use form, in quantities exceeding those set out in [paragraph 37 of INFCIRC/153]<sup>3/</sup>. The provision of this information does not require detailed *nuclear material* accountancy.

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\* – The reference to the corresponding provision of the relevant Safeguards Agreement should be inserted where bracketed references to INFCIRC/153 are made.”

## Purpose and use of the information

The purpose of this article, together with the information provided under Articles 2.a.(v), 2.a.(vi) and 2.a.(viii), is to complement the information already provided through accounting reports pursuant to paragraphs 59-65 and 67 of INFCIRC/153 and, thereby provide the Agency with as complete a picture as practical of all nuclear material within the State relevant to actual or potential nuclear activities within the State. The information is used to help confirm the consistency between the State's declared nuclear programme, its holdings and use of nuclear material and other information available to the Agency, including the results of complementary access.

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<sup>3/</sup> Paragraph 37 of INFCIRC/153 states that:

“The Agreement should provide that *nuclear material* that would otherwise be subject to safeguards shall be exempted from safeguards at the request of the State, provided that *nuclear material* so exempted in the State may not at any time exceed:

- (a) One kilogram in total of special fissionable material, which may consist of one or more of the following:
  - (i) Plutonium;
  - (ii) Uranium with an *enrichment* of 0.2 (20%) and above, taken account of by multiplying its weight by its *enrichment*; and
  - (iii) Uranium with an enrichment below 0.2 (20%) and above that of natural uranium, 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 0.005 (0.5%);
- (c) Twenty metric tons of depleted uranium with an *enrichment* of 0.005 (0.5%) or below; and
- (d) Twenty metric tons of thorium;

or such greater amounts as may be specified by the Board of Governors for uniform application.”

Paragraph 36(b) of INFCIRC/153 states that:

“The Agreement should provide that the Agency shall, at the request of the State, exempt *nuclear material* from safeguards, as follows:

- (b) *Nuclear material*, when it is used in non-nuclear activities in accordance with paragraph 13 above, if such *nuclear material* is recoverable.”

## Explanations

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. A separate entry is to be made for each location and each type of nuclear material having nuclear material exempted from safeguards pursuant to paragraph 37 of INFCIRC/153. A separate entry is also made for each location having nuclear material exempted from safeguards pursuant to paragraph 36(b) of INFCIRC/153, provided (1) the material is not yet in a non-nuclear end-use form and (2) the quantities at the location exceed the quantities set out in paragraph 37 of INFCIRC/153.
3. The “Location” column should include the name of the organization and the address where the exempted material is located. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, to provide a notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographic coordinates are required in order for the Agency to be able to find the location on a map. If the location is on the site of a nuclear facility or LOF, the facility or LOF code should be included in the “Location” column, and the Article 2.a.(iii) declaration and entry numbers for the building housing the material should be entered in the “Ref.” column.
4. The entry in the “Exemption” column should include the corresponding article number from the relevant safeguards agreement under which the exemption was made, e.g., 36(b) or 37.
5. The entry in the “Material” column should identify the element and, for uranium, the percentage of U-233 or U-235, as appropriate, for other than natural uranium. The entry in the “Quantity of Element” column should be the element weight in kilograms for natural and depleted uranium and thorium and in grams for plutonium, uranium-233 and enriched uranium (the reporting units specified in paragraph 101 of INFCIRC/153). A separate entry should be made for each material type.
6. The entry in the “Code” column under “Intended Use” should include the code NN (for non-nuclear) or N (for nuclear) and the entry in the “Use” column should be the particular use or intended use, e.g., gamma shielding or post irradiation examination.
7. There is no requirement to include in this declaration material exempted pursuant to paragraph 36(b) of INFCIRC/153 once it is in its non-nuclear end-use form.

8. Detailed nuclear material accountancy is not required for declarations of nuclear material exempted pursuant to paragraph 36(b) of INFCIRC/153.

#### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(vii) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should normally reflect the “as of” date for the nuclear material quantities being described. The “as of” date may be any date between entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. The information provided should be valid as of the ending date of the declaration period. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be the most recent calendar year (see Attachment 1).

## Example

*Format of declaration for Article 2.a.(vii) (an initial declaration with example entries)*

Name of State (or Party):	Ruritania		
Safeguards Agreement INFCIRC:	000	Protocol Article:	2.a.(vii)
Declaration number:	8	Declaration Date:	2001-10-14
Declaration period:	as of 2001-10-01		
Comment:			

Entry	Ref.	Location	Exemption	Material	Quantity of Element	Intended Use Code	Intended Use	Comments
1		ABC Casting Co., 10 Uranium Drive, R-7819, Speyar, Ruritania	36(b)	DU (0.6%)	12 500 kg	NN	manufacturing of gamma shielding	
2	3-2	APEX, 48 Main Ave., R-1835, Pointsmore, Ruritania, Experimental Post-Irradiation Examination Facility (site AEC-NRC, facility RBF-)	37	Pu	10 g	N	post irradiation examination	
3	3-2	APEX, 48 Main Ave., R-1835, Pointsmore, Ruritania, Experimental Post-Irradiation Examination Facility (site AEC-NRC, facility RBF-)	37	LEU (2%)	60 g	N	post irradiation examination	
4		University of Ruritania Engineering School, McGrath Building, 401 Macron Drive, R-2257 Dembigh, Ruritania	37	HEU (40%)	35 g	N	experimental fuel fabrication	
5		RMC Research Institute, 14 Waterport Street, R-4157 Rostmore, Ruritania	37	Pu	1 g	N	in storage	Pu in Pu-Be neutron source

## Example

*Format of declaration for Article 2.a.(vii) (first annual update declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(vii)

Declaration number: 19 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Location	Exemption	Material	Quantity of Element	Intended Use Code	Intended Use	Comments
1	8-1	ABC Casting Co., 10 Uranium Drive, R-7819, Speyar, Ruritania	36(b)	DU (0.6%)	10 500 kg	NN	manufacturing of gamma shielding	

## Article 2.a.(viii)

“..... shall provide the Agency with a declaration containing:

- (viii) Information regarding the location or further processing of intermediate or high-level waste containing plutonium, *high enriched uranium* or uranium-233 on which safeguards have been terminated pursuant to [paragraph 11 of INFCIRC/153]<sup>2/</sup>. For the purpose of this paragraph, "further processing" does not include repackaging of the waste or its further conditioning not involving the separation of elements, for storage or disposal.

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<sup>2/</sup> The reference to the corresponding provision of the relevant Safeguards Agreement should be inserted where bracketed references to INFCIRC/153 are made.”

## Purpose and use of the information

The purpose of this article, together with the information provided under articles 2.a.(v), 2.a.(vi) and 2.a.(vii), is to complement information already provided through accounting reports pursuant to paragraphs 59-65 and 67 of INFCIRC/153 and, thereby, provide the Agency with as complete a picture as practical of all nuclear material within the State relevant to actual or potential nuclear activities within the State. The information is used to confirm the consistency between the State's declared nuclear programme and its holdings of nuclear material.

Most of the plutonium, high enriched uranium and uranium-233 in retained waste and irradiated fuel is under safeguards. However, there are increasing quantities of conditioned (vitrified) waste with very low concentrations of plutonium, high enriched uranium and uranium-233 upon which safeguards have been terminated. Reports under article 2.a.(viii) keep the Agency informed regarding the location of this waste and any plans to process it further where the processing involves the separation of elements.

Among the elements that could be separated from reprocessing plant waste neptunium-237, and to a much lesser extent the isotopes of americium, are weapons-useable materials. The quantities of neptunium produced are relatively small (~2 % of the produced plutonium). The quantities of separated neptunium are too limited today to justify the imposition of detailed material accountancy safeguards (i.e., amend the definition of special fissionable material). This situation could change should States implement advanced nuclear waste treatment strategies that involve the separation of minor actinides (including neptunium or americium) from waste generated in the reprocessing of irradiated fuel.

Under this article holdings of neptunium and americium in waste generated by reprocessing plants could be also reported by States on a strictly voluntary basis.

## Explanations

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. Part (a) is an annual report to declare any changes in location of wastes covered by Article 2.a.(viii) that occurred during the preceding calendar year. A separate entry is required for each change of location during the year. The language of Article 2.(a). (viii) presumes that the Agency is aware of current locations. Where this is not the case, the State will be contacted separately by the Agency to correct the situation.
3. Part (b) of this declaration is used only for advance notice when further processing of waste is planned. Any subsequent change in processing dates or processing location should be notified to the Agency. In Part (b) a separate entry is made for each campaign of further processing other than “repackaging of the waste or its further conditioning not involving the separation of elements, for storage or disposal.”
4. The “Waste Type ” is a column that should state the type of waste before any conditioning took place, e.g., hulls, feed clarification sludge, high-activity liquid, or intermediate-activity liquid.
5. The “Conditioned Form” is an optional column that could be used to show the current conditioned form of the waste, e.g., glass, ceramic, cement or bitumen.
6. The “Number of Items” is an optional column that could be used to show the number of items, e.g., glass canisters or cement blocks, to be involved in a single processing campaign or the number of items moved during the year from the same originating (“previous”) location to the same new location.
7. The “Quantity” are optional columns that could be used to include the total number of grams of plutonium, high enriched uranium or uranium-233 (or neptunium and americium) contained collectively in items in the “Number of Items” entry. The “Quantity” columns may be based on the quantity data used in the inventory change reports on the termination, e.g., the average nuclear material quantities per item, and does not require a measurement of each item.
8. In Part (a), the “Previous Location” column should indicate the location of the waste before the change in location and the “New Location” column should indicate the location after the change.
9. In Part (b), the “Location” columns should show the location of the waste at the time of the declaration and the “Processing Location” should show the location where the planned processing is to take place.

10. The location columns should include the name of the organization and the address where the waste is located (or was located or will be processed). The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, to provide a notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographical coordinates are required in order for the Agency to be able to find the location on a map. If a location is on the site of a nuclear facility or LOF, the facility or LOF code should be included in the location columns, and the Article 2.a.(iii) declaration and entry number for the building(s) housing or processing the material should be entered in the "Ref." column.
11. In Part (b), the "Processing Dates" column should indicate the dates the further processing campaign is expected to begin and to end.
12. In Part (b), the "Processing Purpose" column should indicate the intended result of the processing, e.g., recovery of plutonium or separation of specified fission or activation products.

#### **Declaration submission times**

1. In accordance with Article 3.e, information on the location of and plans for further processing of waste as specified in Article 2.a.(viii) should be dispatched to the Agency no later than 180 days before the processing takes place.
2. In accordance with Article 3.e, the annual declaration on changes in the location of wastes covered by Article 2.a.(viii) should be dispatched to the Agency by 15 May of each year for the period covering the previous calendar year.



## Example

*Format of declaration for Article 2.a.(viii) (annual update declaration with example entries)*

*Article 2.a(viii) contains two different declarations requirements, and a separate declaration format, designated Parts (a) and (b), should be used for each. The two parts should have a common Header and, if submitted at the same time, should have a common Declaration Number.)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(viii)

Declaration number: 22 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

### Part (a) — Changes in location

Entry	Ref.	Waste Type	Conditioned Form (optional)	Number of items (optional)	Quantity Pu (optional)	Quantity HEU (optional)	Quantity U233 (optional)	Quantity Np/Am (optional)	Previous Location	New Location	Comments
1	3-17	hulls	Cement blocks	15 blocks	35 g	40 g			AEC-NRC site, Building RA-14	Ruritania Waste Storage Facility, 700 Highway 13, Far Away, Ruritania	

### Part (b) — Further processing notice

Entry	Ref.	Waste Type	Conditioned Form (optional)	Number of items (optional)	Quantity Pu (optional)	Quantity HEU (optional)	Quantity U233 (optional)	Quantity Np/Am (optional)	Location	Processing Location	Processing Dates	Processing Purpose	Comments
2	3-18	High active liquid waste	none	1 tank	180 g				AEC-NRC site, Buildg. RA-15	AEC-NRC site, Building RA-15	2002-11-30 to 2003-05-30	Pu recovery and conditioning by vitrification.	

## **Article 2.a.(ix)**

“..... shall provide the Agency with a declaration containing:

- (ix) The following information regarding specified equipment and non-nuclear material listed in Annex II:
  - (a) For each export out of ..... of such equipment and material: the identity, quantity, location of intended use in the receiving State and date or, as appropriate, expected date, of export;
  - (b) Upon specific request by the Agency, confirmation by ....., as importing State, of information provided to the Agency in accordance with paragraph (a) above.”

The text of Annex II is not reproduced here because of its length.

### **Purpose and use of the information**

The purpose of this article is to obtain information on the State's international transfers in the areas covered by Annex II. The information will contribute substantially to the transparency of the State's nuclear and nuclear-related activities and to the Agency's understanding of these activities. It is expected that Annex II will be revised according to the provisions of Article 16 of the Additional Protocol when necessary.

The information on international transfers of equipment and non-nuclear material covered by Annex II will be compared for consistency with States declared nuclear programmes. This will provide indications of where transfers are occurring or where an infrastructure exists that could support nuclear activities that are not part of declared nuclear programmes. Should questions arise, an importing State may be asked to confirm an exporting State's declaration.

Some of the information required by this article is already provided by some States under the Voluntary Reporting Scheme. Information provided as declarations under Article 2.a.(ix) does not need to be repeated under voluntary reporting. However, the voluntary reporting may contain additional information not required by the Additional Protocol and the Agency welcomes the continued provision of that information.

### **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.

2. The format provided should be used for submission of the Article 2.a.(ix)(a) declaration on exports for each calendar quarter including the partial quarter that may occur immediately after entry into force. An entry may include multiple items of the same type shipped to a single destination. If no exports covered by Article 2.a.(ix)(a) occurred during the quarter, the declaration should be submitted with the entry “Nothing to declare” in the comments section of the header.
3. The “Annex II Paragraph Number” column should indicate the full paragraph number in Annex II, e.g., 5.1.1.(b) for centrifuge rotor tubes. Article 16.b of the Model Protocol provides for amendment of Annex II. Proposals for amendment could result from technological developments, experience in the analysis and use of the information or further developments in perspectives regarding the proliferation sensitivity of various equipment and non-nuclear materials.
4. The “Identity of Specific Item(s)” column should include, as appropriate, item dimensions, capacity (volume), throughput, material of construction, identification or serial numbers, key specifications of non-nuclear material, name and address of the manufacturer, and any other information that will help identify the item(s).
5. The “Quantity” column, in the case of equipment, should indicate the number of the items in the shipment. In the case of exports of non-nuclear material, the entry should be the weight of the material in kilograms or tonnes, as appropriate.
6. The “Location of Intended Use” column should indicate the name and address of the company or organization in the receiving State where the item(s) will be used.
7. For exports, the “Export Date ” should indicate the date on which the export actually occurred or the date when the export is believed to have been made. A single date, not a range of dates, should be entered in this column. If the export cannot be characterized by a single date, an explanation should be provided in the comments column.
8. For imports, if the Agency requests confirmation by the importing State of the receipt of a specific export from another State, the Agency will send the request to the importing State, providing the name of the exporting State and exporter’s details for “Identity of Specific Item(s),” “Quantity,” and “Location of Intended Use”, requesting confirmation of the information and the actual date of import. The response to such a request should be a separate declaration following the Article 2.a.(ix) format (without the “Declaration Period”). An entry in the “Ref.” column should name the exporting State and reference the exporting State’s declaration. The entry in the “Import Date” column should indicate the date the item(s) was received. If the items have not been received, this should be noted with the entry “not received” in the “Import Date” column. Further information may be provided in an accompanying note. The State’s

response to an Agency request for confirmation of a reported export needs to be specific enough to support a request for complementary access.

#### **Declaration submission times**

1. In accordance with Article 3.d, the quarterly declarations of exports covered by Article 2.a.(ix)(a) should be dispatched to the Agency within 60 days of the end of the quarter.
2. In accordance with Article 3.g, the information on each import covered by Article 2.a.(ix)(b) and specifically requested by the Agency should be dispatched to the Agency within 60 days of the Agency's request.

## Example

*Format of declaration for Article 2.a.(ix) (a quarterly declaration with example entries)*

*The format provided should be used for submission of the Article 2.a(ix)(a) declarations on exports. The header provided here should also be used for the response to each Agency request, pursuant to Article 2.a(ix)(b), for confirmation of receipt of a particular export declared to the Agency by another State, together with the appropriate confirmation or non-confirmation)*

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Name of State (or Party):	Ruritania		
Safeguards Agreement INFCIRC:	000	Protocol Article:	2.a.(ix)
Declaration number:	1	Declaration Date:	2001-08-11
Declaration period:	2001-04-30 through 2001-06-30		
Comment:			

### Part (a) — Exports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Export Date	Comments
1		5.7.13	Cooper vapor laser; manufactured by Central Laser Systems, Inc., 27 Main Ave., R-1385 Pointsmore, Ruritania, serial nos. LC-300291, LC-200356, LC-500992	3 items	Lasers Limited, 10 Bufort, EX-788, Dedam, Exportania	2001-05-15	
2		2.2	Nuclear grade graphite; less than 4 ppm boron equivalent; 1.63 g.cm <sup>3</sup> density; produced by United Carbon, Inc, 44 South Place, R-2287 Centerville, Ruritania	34 tonnes	Western Reactor Products.,401 East Columbia Street, EX-220, Carbondale, Exportania	2001-06-01	

### Part (b) — Imports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Import Date	Comments

## Example

*Format of declaration for Article 2.a.(ix) (a quarterly declaration with example entries)*

*If there are no activities to declare under this Article, the corresponding quarterly declaration has still to be submitted, reporting “Nothing to declare” in the header.*

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Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(ix)

Declaration number: 11 Declaration Date: 2001-10-30

Declaration period: 2001-07-01 through 2001-09-30

Comment: Nothing to declare

### Part (a) — Exports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Export Date	Comments

### Part (b) — Imports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Import Date	Comments

### Example

*Format of declaration for Article 2.a.(ix)(a) and (b) (confirmation of imports per IAEA request)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(ix)

Declaration number: 12 Declaration Date: 2002-02-28

Declaration period: 2001-10-01 through 2001-12-31

Comment: Part (b) — Imports: confirmation of import as per IAEA request SG-2001-29

#### Part (a) — Exports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Export Date	Comments
1		2.2	Nuclear grade graphite; less than 4 ppm boron equivalent; 1.63 g.cm <sup>3</sup> density; produced by United Carbon, Inc, 44 South Place, R-2287 Centerville, Ruritania	21 tonnes	Western Reactor Products.,401 East Columbia Street, EX-220, Carbondale, Exportania	2001-11-20	

#### Part (b) — Imports

Entry	Ref.	Annex II Paragraph	Identity of Specific Item(s)	Quantity (no. or wt.)	Location of Intended Use	Import Date	Comments
2	4-1	1.4	PWR control rods. Manufactured by Global Fuels Ltd., 25 London, Street, Gorgon, Industrialia. Rod numbers RBA-CR-1 to RBA-CR-24	24 rods	RBA PWR (on site RBA)	2001-11-01	

## Article 2.a.(x)

“..... shall provide the Agency with a declaration containing:

- (x) General plans for the succeeding ten-year period relevant to the development of the nuclear fuel cycle (including planned *nuclear fuel cycle-related research and development activities*) when approved by the appropriate authorities in .....

### Purpose and use of the information

Declarations of plans for development of the State’s nuclear fuel cycle will assist the Agency in its long-term planning and contribute to increased transparency and assurance that the declared present nuclear programme and nuclear fuel cycle-related R&D are generally consistent with the declared plans for future development of the fuel cycle. Information about planned nuclear R&D to support the future development of the nuclear fuel cycle will contribute to the transparency of the State’s nuclear programme.

The phrase “appropriate authorities” is intended to mean those governmental offices or governmental entities with long-range planning responsibilities for development of the nuclear fuel cycle.

The declaration should include all general government and private sector plans approved by the appropriate authorities for the succeeding ten-year period. Declarations under this article are not to be understood as a substitute for early provision of design information.

### Explanations

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. The format provided should be used for submission of the Article 2.a.(x) initial and annual update declarations. Only new information or changes in previously declared information should be included in subsequent annual update declarations. If there is no new information or no changes to report the update declaration may consist of only the header with the entry “No change” in the blank space at the lower right of the header.
3. The “Fuel Cycle Stage” column should indicate one of the stages identified in Article 18.a, e.g., reactors, or any other part of the fuel cycle, e.g., source material recovery.
4. The “General Plans for Development of the Nuclear Fuel Cycle” column should include a brief statement of the development plans, including the intended results, any target completion dates or overall schedule for the development and the locations



involved. The information should be sufficient to enable the Agency to understand how the development fits into the declared programme of the State and the direction that programme might be taking. For developments leading to a new nuclear facility, once development has reached the point that reporting requirements are as stipulated under the early provision of design information, it should not be included in subsequent Article 2.a.(x) declarations and an update of the appropriate declaration entry should reflect this. Similarly, when other development plans reach the point of implementation and thus become reportable under another article of the Protocol, the corresponding entries under Article 2.a.(x) should indicate this and not be included in subsequent Article 2.a.(x) declarations.

5. The “General Plans for Nuclear Fuel Cycle-Related Research and Development Activities” column should include a general description of each R&D plan, its overall objectives, any target date or overall schedule for the R&D and the locations involved. The information should be sufficient to enable the Agency to understand where and how the R&D fits into the declared programme of the State and the direction that programme might be taking. If a planned R&D activity is not related to a part of the State’s current nuclear programme or to a planned fuel-cycle development (e.g., activities in conjunction with a co-operation agreement with another State), an explanation should be included.
6. The declaration should include all developments and activities for the succeeding ten-year period that have been approved by the appropriate authorities.

#### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.a.(x) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should be the “as of” date of the general plans submitted. This “as-of” date may be any date between the entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration and should be as of 31 December of the previous year. With the exception of the time period between the initial declaration and the first annual update, it is expected that the declaration period will be the most recent calendar year (see Attachment 1).

## Example

*Format of declaration for Article 2.a.(x) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(x)

Declaration number: 9 Declaration Date: 2001-10-14

Declaration period: as of 2001-10-01

Comment: \_\_\_\_\_

Entry	Ref.	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-Related Research and Development Activities	Comments
1			Uranium exploration in South Kings Province of Ruritania (years 2002 to 2005); development of uranium leaching mine in West Kings Province (2003-2006); cooperative thorium exploration with Exportania in their Northcentral Landes (2003-2007).	Development and testing of in-situ leaching techniques for West Kings type deposits (2002-2004), Univ. of Ruritania, Dembigh, Ruritania.	
2	2-1 3-1	Enrichment of nuclear material		Laboratory-scale test and further development of the molecular method of laser isotope separation, depending on the results of the current Phase I and II of Project RA-01-12 (planned 2003 to 2006), Advanced Projects Agency, Pointsmore, Ruritania.	
3		Reactors	A multi-unit nuclear power station comprising three LWRs of approximately 1200 MW(e) each is planned in the Western part of Ruritania. Site characterization and NSSS selection activities are underway with plans to reach final decision no later than early 2002.		
4	4-1	Reactors	A second PWR 900 MW(e) is planned for the site RBA. All infrastructure is in place with construction stated to begin by the end of 2002.		

## Example

*Format of declaration for Article 2.a.(x) (first annual update declaration with example entries)*

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Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(x)

Declaration number: 20 Declaration Date: 2002-05-02

Declaration period: 2001-10-02 through 2001-12-31

Comment: \_\_\_\_\_

Entry	Ref.	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-Related Research and Development Activities	Comments
1	9-3	Reactors	Development of a multi-unit nuclear power station. Site characterization activities are completed and Calorica, Western Ruritania has been selected. Previous plans have been downscaled to the construction of only two reactor units. An advanced BWR 1300 MW(e) has been selected as the reactor type. Construction of the first unit will begin no later than February 2005. Construction of the second unit will start one year later.		

## **Article 2.b.(i)**

“..... shall make every reasonable effort to provide the Agency with the following information:

- (i) A general description of and information specifying the location of *nuclear fuel cycle-related research and development activities* not involving *nuclear material* which are specifically related to enrichment, reprocessing of nuclear fuel or the processing of intermediate or high-level waste containing plutonium, *high enriched uranium* or uranium-233 that are carried out anywhere in ..... but which are not funded, specifically authorized or controlled by, or carried out on behalf of, ..... For the purpose of this paragraph, "processing" of intermediate or high-level waste does not include repackaging of the waste or its conditioning not involving the separation of elements, for storage or disposal.”

## **Purpose and use of the information**

Information provided under Article 2.b.(i), together with information provided under Article 2.a.(i) and information on fuel cycle R&D involving nuclear material provided under the Safeguards Agreement, give the Agency as complete a picture as practical of the State's R&D relevant to the development of enrichment, reprocessing and processing of intermediate or high level waste as well as a picture of developments of other parts of the fuel cycle involving the State.

This combined information will increase the transparency of a State's nuclear programme and will improve the basis for confirming the overall consistency of the State's declared nuclear programme with its nuclear-related activities, exports and imports (of specified equipment and non-nuclear material listed in Annex II of the Model Protocol).

The submission schedule and the content of the information to be declared under Article 2.b.(i) are identical to those under Article 2.a.(i), except Article 2.b.(i) is limited to three areas of the fuel cycle (enrichment, reprocessing and processing of intermediate or high level waste) and the obligation of the State is to make every reasonable effort to provide the information. In case doubts exist about under which Article, 2.a.(i) or 2.b.(i), a declaration should be made, consultations between the State and the Agency are recommended.

## **Explanations**

1. Guidance for the header, the “Entry” column and the “Ref.” column is contained in the GENERAL GUIDANCE section.
2. For each entry, the “Fuel Cycle Stage” column should indicate one of the three relevant areas of R&D (i.e., enrichment, reprocessing, or processing of waste, as

appropriate). When single R&D projects involve activities at more than one location, the activity at each location should be reflected in a separate entry.

3. As provided for in Article 18.a of the Model Protocol, the R&D activities to be reported are limited to those specifically related to a process or system development aspect of any of the three fuel cycle areas. The various clarification and explanations provided for Article 2.a.(i) apply here as well. Applied research related to process development would be reported where the intended end-use is a nuclear application (e.g., design features related to criticality control and components manufactured from materials resistant to UF<sub>6</sub> are examples of where the intended end-use is a nuclear application).
4. The reporting on waste processing is further limited to intermediate or high-level waste containing plutonium, high enriched uranium or uranium-233. Reporting is not required on R&D on repackaging or conditioning that does not involve separation of elements.
5. Theoretical and basic scientific research is not to be reported, nor is R&D on industrial radioisotope applications; on medical, hydrological or agricultural applications; on health or environmental effects; or on improved maintenance. Thus, by way of example, R&D on the bituminization of intermediate level waste, on neutron activation measurements of non-nuclear material or on development of health physics procedures for nuclear reactors need not be reported. The explanations provided for Article 2.a.(i) are relevant here.
6. The “Location” column should include the name of the organization and the address where the R&D is being carried out. This is essential even if the name and address of a parent organization is included optionally. The address must be detailed and specific enough for the Agency to be able to determine the geographical relationship of the location to other locations specified in this or other parts of the State's declarations and, should access be necessary, to provide notice of access that is unambiguous in respect of location. Where there is any imprecision or ambiguity as to location, geographic coordinates are required to enable the Agency to locate the activity on a map. If the activity is located on the site of a nuclear facility or LOF, the facility or LOF code should be included in the “Location” column, and the Article 2.a.(iii) declaration and entry number for the building housing the activity should be entered in the “Ref.” column. There may be instances where the R&D is being carried out at several locations (possibly even in several States), or by several organizations, the declaration should include a separate entry for each organization and the locations at which the activities take place.
7. The updates to declarations under Article 2.b.(i) will generally be status reports covering activities over a period of time (e.g., the status of activities at the end of a

calendar year covering activities carried out in the course of the year). Previously declared R&D that may have been stopped during the year in question should be reported one last time even though the status at end of the period is that the project is terminated.

8. The “General Description” of each R&D activity should include:
  - a. The title of the R&D activity;
  - b. The activity's project number or other unique designation to avoid any ambiguities in future references to the activity and the name and address of the private organization sponsoring the work if it is different from the organization performing the R&D;
  - c. A brief description of the work being performed;
  - d. The objectives of the specific R&D activity and the degree to which those objectives have been met at the time of the declaration (e.g., whether work toward the objective has just begun or is in progress or the objective has been met);
  - e. The intended application of the R&D results if this is not apparent from the objectives; and
  - f. Identification, if applicable, of the organization and location within another State with which there is collaboration on the R&D activity.
9. In addition, it would be helpful to the Agency to have included under the “General Description” of each R&D activity the places, if any, on a site or other locations at which managed access may be applicable (Article 7.b).

#### **Declaration submission times**

1. In accordance with Article 3.a, the initial declaration for Article 2.b(i) should be dispatched to the Agency within 180 days of the entry into force of the Protocol. The declaration period should normally reflect the “as of” date for the status of the R&D being described. This “as of” date may be any date between the entry into force of the Protocol and 180 days after entry into force.
2. In accordance with Article 3.b, the annual updates of this declaration should be dispatched to the Agency by 15 May of each year. These declaration updates should be labeled in the header with the time period covered by the declaration. With the exception of the time period between the initial declaration and the first annual

update, it is expected that the declaration period will be one calendar year (see Attachment 1).

## Example

*Format of declaration for Article 2.b.(i) (an initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.b.(i)

Declaration number: 10 Declaration Date: 2001-10-14

Declaration period: as of 2001-10-01

Comment: \_\_\_\_\_

Entry	Ref.	Fuel Cycle Stage	Location	General Description	Comments
1		Enrichment of nuclear material	Central Laser Research, Inc., 67 East Drive, R-1398, Pointsmore, Ruritania	CSR Laser development. Project CSR-267. Development of new lasers and determination of their optimum excitation frequencies for application to atomic vapor laser isotope separation of uranium. A continuing project worth feasibility assessment scheduled to end in 2003.	
2		Processing of waste	University of Ruritania, Chemical Engineering Dept., Toth building, 410 Macron Drive, R-2257 Dembigh, Ruritania	Conceptual and laboratory-scale work on the separation of neptunium, americium, curium and plutonium from high level radioactive waste to investigate the chemical processes involved and potential application to alternative nuclear waste treatment methods. Project UR/HLW/RD1.	
3		Reprocessing of nuclear fuel	University of Ruritania, Chemical Engineering Dept., Toth building, 410 Macron Drive, R-2257 Dembigh, Ruritania	Design study (UR/REP/RD6) on advanced dry (fluoride volatilization method) or advanced wet (ion exchange method) reprocessing system. The activity to develop a conceptual design of the system is in progress.	



**Example**

*Format of declaration for Article 2.b.(i ) (first annual update declaration with example entries)*

Name of State (or Party):

Ruritania

Safeguards Agreement INFCIRC:

000

Protocol Article:

2.b.(i)

Declaration number:

21

Declaration Date:

2002-05-02

Declaration period:

2001-10-02 through 2001-12-31

Comment:

No changes

Entry	Ref.	Fuel Cycle Stage	Location	General Description	Comments

## **Article 2.b.(ii)**

“..... shall make every reasonable effort to provide the Agency with the following information:

- (ii) A general description of activities and the identity of the person or entity carrying out such activities, at locations identified by the Agency outside a *site* which the Agency considers might be functionally related to the activities of that *site*. The provision of this information is subject to a specific request by the Agency. It shall be provided in consultation with the Agency and in a timely fashion.”

## **Purpose and use of the information**

A primary objective of strengthened safeguards is to provide assurance that no undeclared nuclear material or activities are co-located with nuclear facilities and LOFs in order to utilize the infrastructure of manpower, technology, equipment and services that is in place to support declared activities. That is the purpose of this article, Article 2.a.(iii) and the associated access provisions. Article 2.b.(ii) provides an Agency right to information concerning activities at a particular location which the State has not included as part of a site but which the Agency considers may be functionally related to the activities on the site.

The information in the Article 2.b.(ii) declarations will be used to help resolve Agency questions about a specific activity. In the event the information provided by the State is not sufficient to resolve the Agency's questions, the information will be used for planning any needed complementary access to the location in question and for comparison for completeness and consistency with the results of access activities and with other information available to the Agency.

A site boundary will not automatically change upon receipt by the Agency of a 2.b.(ii) declaration regarding a location. If required, any change in a site boundary can be reflected by the State in the next update for Article 2.a.(iii).

## **Explanations**

1. Guidance for the header and the “Entry” column is contained in the GENERAL GUIDANCE section.
2. The “Agency Request” space in the header should be the date and reference number of the Agency's request to which the declaration is responding. A separate declaration should be made in response to each Agency request, although a request and the State's response may involve more than one location.

3. The “Location” column should indicate the location identified in the Agency's request.
4. A separate entry should be made for each distinct activity at the location in question. The “General Description” of each activity should include a brief description of the physical features of the activity, (e.g., type and approximate size of the building or buildings), and a brief description of the activity, (e.g., storage of heavy equipment or manufacturing of machine tools). Where the location of an activity is not apparent from the description, a schematic map should be provided. In addition, it would be helpful to the Agency to have included under “General Description” the extent, if any, to which managed access may be applicable (Article 7.b).
5. The “Carried Out By” column should indicate the name of the entity or organization carrying out the activity, with an indication of whether it is a private entity or is Government-owned, operated or controlled.

### **Declaration submission times**

An Article 2.b.(ii) declaration need only be provided in response to a specific request by the Agency. The response is to be provided in conjunction with consultations with the Agency and in a timely fashion. Each Agency request will include an indication of the urgency of a response and a proposal for a time for the consultations at which the response would be provided.

## Example

*Format of declaration for Article 2.b.(ii) (per IAEA request with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.b.(ii)

Declaration number: 23 Declaration Date: 2002-04-28

Agency Request: SG-RU-001, dated 2002-03-25

Comment: \_\_\_\_\_

Entry	Ref.	Location	General Description	Carried out by	Comments
1		On Route 25, 2.4 km south of site AEC-NRC	Roughly 600 m2 single-floor building housing commercial-scale precision, computer-controlled machine tool manufacturing for diverse industrial applications. Should the Agency seek access it would need to be managed through the shrouding of certain proprietary equipment.	ARGO Precision Machining Inc., (private owner and operator)	
2		On Route 25, 2.4 km south of site AEC-NRC	Two roughly 800 m2 sheet metal warehouses on railroad siding, used for storing heavy-duty rail transport casks.	Ruritania Railways (State owned)	
3		On Route 32, 7.8 km south of site RBA-	Two industrial-duty manufacturing buildings (1200m2 total). Produces corrosions-resistant, stainless steel vessels for the chemical industry.	Prestige Metal Fabricators, Inc. (private owner and operator)	

## **Article 2.c**

- “c. Upon request by the Agency, ..... shall provide amplifications or clarifications of any information it has provided under this Article, in so far as relevant for the purpose of safeguards.”

### **Purpose and use of the information**

The purpose of this article is to facilitate implementation of the Additional Protocol and to help ensure the correct understanding by the Agency of the information in the State's declarations. It may also contribute to resolving Agency questions without recourse to complementary access. This article is used routinely for amplification and clarification of issues related to declarations.

### **Explanations**

1. Guidance for the header is contained in the GENERAL GUIDANCE section.
2. The “Agency Request” space in the header should indicate the date and reference number of the Agency's request to which the declaration is responding. A separate declaration should be made in response to each Agency request, although a request and the State's response may involve more than one location. The State's response is a new declaration even though the response is simply a revision of previously provided information. The new declaration should cross reference the previous declaration and entry as appropriate.
3. The “Reference” column should indicate the State's declaration and the entry numbers about which the Agency has requested amplification or clarification. These should be taken from the Agency's request. The Agency will indicate the urgency of the request when the request is transmitted.

### **Declaration submission times**

The Model Protocol does not specify due dates for the responses under this article. In its requests for amplifications and clarifications the Agency will include an indication of the urgency of a response.

### **Format of declarations for Article 2.c**

The State may use the attached model format from the Protocol Reporter or respond with a free format letter.

## Example

*Suggested format of declarations for Article 2.c (according to the Protocol Reporter)*

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Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.c

Declaration number: \_\_\_\_\_ Declaration Date: \_\_\_\_\_

Agency Request: (Date and reference number)

Comment: \_\_\_\_\_

Entry	Ref.	References	Response (Amplification and clarification)	Comments
		<i>(The State's relevant declaration and entry numbers as taken from Agency's request)</i>	<i>(State's response)</i>	

**Attachment 1: Determination of Declaration Due Dates and Numbering**

Date due	Remarks	Declaration Number
<b>30 April 2001</b>	Ruritania brought an additional protocol into force	
<b>29 August 2001</b>	First Article <b>2.a(ix)(a)</b> declaration is due (for the period 30 April 2001 to 30 June 2001)	<b>1</b>
<b>27 October 2001</b>	Initial declaration package is due (8 declarations). The declaration "as of " date can be <i>any date between 30 April 2001 and 27 October 2001</i> (entry into force of the protocol and 180 days thereafter): <b>2.a(i)</b> - government fuel cycle R&D (w/o nuclear material) <b>2.a(iii)</b> - buildings on sites <b>2.a(iv)</b> - Annex I activities <b>2.a(v)</b> - capacities and locations of mines and concentration plants <b>2.a(vi)(a)</b> - source material holdings <b>2.a(vii)</b> - exempted material <b>2.a(x)</b> - R&D and fuel cycle plans <b>2.b(i)</b> - private fuel cycle R&D (w/o nuclear material)	<b>2</b> <b>3,4</b> <b>5</b> <b>6</b> <b>7</b> <b>8</b> <b>9</b> <b>10</b>
<b>29 November 2001</b>	Next Article <b>2.a(ix)(a)</b> declaration is due (for the period 1 July 2001 to 30 September 2001)	<b>11</b>
<b>01 March 2002</b>	Next Article <b>2.a(ix)(a)</b> declaration is due (for the period 1 October 2001 to 31 December 2001)	<b>12</b>
<b>15 May 2002</b>	First updates of declarations are due (for the period 1 May 2001 to 31 December 2001). Updates should include all eight articles included in the initial declaration package declarations (for the period 1 May 2001 to 31 December 2001). <b>2.a(i)</b> - government fuel cycle R&D (w/o nuclear material) <b>2.a(iii)</b> - buildings on sites <b>2.a(iv)</b> - Annex I activities <b>2.a(v)</b> - capacities and locations of mines and concentration plants <b>2.a(vi)(a)(b)(c)</b> source material <b>2.a(vii)</b> - exempted material <b>2.a(x)</b> - R&D plans <b>2.b(i)</b> - private fuel cycle R&D (w/o nuclear material) and declaration for the following article : <b>2.a(viii)</b> - changes in location of waste	<b>13</b> <b>14, 15</b> <b>16</b> <b>17</b> <b>18</b> <b>19</b> <b>20</b> <b>21</b> <b>22</b>
	<b>2.b(ii)</b> - Per IAEA's request: information on locations outside sites (received 2002-04-08)	<b>23</b>

<b>30 May 2002</b>	Next Article <b>2.a(ix)(a)</b> declaration is due <i>(for the period 1 January 2002 to 31 March 2002).</i>	*
<b>29 August 2002</b>	Next Article <b>2.a(ix)(a)</b> declaration is due <i>(for the period 1 April 2002 to 30 June 2002).</i>	*
<b>29 November 2002</b> *	Next Article <b>2.a(ix)(a)</b> declaration is due <i>(for the period 17 July 2002 to 30 September 2002)</i>	*
<b>01 March 2003</b> *	Next Article <b>2.a(ix)(a)</b> declaration is due <i>(for the period 1 October 2002 to 31 December 2002).</i>	*
<b>15 May 2003</b> *	Next annual updates are due (articles as described for 15 May 2002, but for the period <i>1 January 2002 to 31 December 2002).</i>	*

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\* Date and declaration number determined in the same manner as in the examples above.



## **Attachment 2: Formatting Instructions and Procedures for Electronic Submission of Declarations**

Additional Protocol declarations may be submitted to the Agency on hard copy in Word or PDF format, using the sample forms provided in the guidelines, however, **States are urged to provide the information electronically, using the Agency developed software, the PROTOCOL REPORTER.** The purpose of the software is to help the relevant Authorities within a State to collect and manage the information to be reported under Additional Protocol. This includes helping them to consolidate the submissions from operators to the reporting authority, producing output in the standard format as defined in the “Guidelines” and creating an ASCII text file containing the submission data for electronic transmission.

The Agency offers the software free of charge to States that are interested in receiving it. To receive the CD-ROM containing the full system and the relevant documentation, the attached 'Requirements and conditions for the provision and use of the Protocol Reporter' should be signed and forwarded to Director, Division of Safeguards Information Technology, Department of Safeguards, International Atomic Energy Agency, Wagramer Strasse 5, A-1400 Vienna, Austria indicating the recipient address for the system.

This attachment describes the format to be used when submitting the declarations in computer-readable format or required specifies the format.

### **I. General Guidance**

All declarations will be submitted as a character-delimited, 8-bit ASCII text file using the ISO-8859-1 character set with the backslash (\, ASCII code 092) as the recommended delimiter (plain text, no formatting like underscore, bold). If another character set or delimiter character is to be used, this will be agreed by the State and the Agency.

The State and the Agency will agree on the medium (e.g., diskette, e-mail) to be used by the State in submitting its declarations to the Agency in computer-readable format prior to such submission. A change in the medium used by a State will also be subject to agreement between the State and the Agency.

### **II. Specific Guidance**

All declarations submitted at one time should be submitted in a single file. If the size of the resulting file would be larger than that which can be supported by the medium used to submit the declarations, multiple files should be submitted.

The entries in the declarations are to be separated by one (or more) carriage return and/or line feed characters).

The delimiter character separates columns within an entry. This delimiter character may not appear in any column as part of the text of the declaration. The delimiter character is not to be included before the first column or after the last column in the entry.

The information to be submitted under each sub-article should consist of a record containing the header information, one or more records containing the entry data and, optionally, one or more records containing notes. If the header record contains the notation "Nothing to Declare" or

"No Change", there would be no data records to report. Optionally, each of the records may be preceded by an additional record of the same format containing the column titles (see an attached example of this method of reporting under sub-article 2.a.(iii)).

Each record will start with two fields specifying the appropriate sub-article number (e.g., 2.a.(i), 2.a.(vi).c, 2.b.(ii)) or the word "NOTE" (in upper, lower or mixed case) and the declaration number. The remainder of the information in the entry is as specified in the "Guidelines".

The order of the fields of the header record is: sub-article number, declaration number, entry number (zero for the header), State name, Safeguards Agreement INFCIRC number, start date, end (or "as of") date, and comments or notations. (See the first record of the example-.)

Notes may be submitted as a part of any file. These notes may provide additional explanation or clarification of a specific declaration entry or of a specific declaration as a whole, or they may be independent of any specific declaration and refer to the State's declarations as a whole. If a note refers to a specific declaration entry, the "Ref." column should specify the relevant declaration and entry numbers (e.g., 13-22 provides a reference to declaration number 13, entry number 22). If it refers to a particular declaration or declarations, only the relevant declaration numbers) should be provided in the "Ref." column. If the note is independent of any specific declaration, the "Ref." column should be left blank.

### III. Example

The example presented in **Attachment 3** below is based on the example of the declaration pursuant to Article 2.a.(iii) provided in the text to which this is an attachment.

### IV. Procedures for electronic submission of Additional Protocol Declarations to the IAEA via e-mail.

The Additional Protocol declarations may be submitted to the Agency in electronic form: either on diskette, through diplomatic pouch, or as an **encrypted** attachment to a plain-text electronic mail message. In both cases the data should be in form of a delimited ASCII text file, using the Agency developed software, the PROTOCOL REPORTER (as described above). The encryption software used by the Agency is the commercially available, public-key encryption program PGP (Pretty Good Privacy), described in detail on the Internet site <http://www.pgpinternational.com>.

Please note that if **submitted via e-mail**, the declarations must be encrypted and submitted **directly to the relevant SG Operations Divisions** dedicated e-mail address. Should a State decide to use such method of transmission, then the corresponding encryption key will be provided in a manner agreed to by both parties, potentially on diskette sent by public mail, diplomatic pouch or personally or via e-mail attachment to a normal Internet message.

The procedures below describe the Agency's general requirements for transmission of AP declaration as encrypted *e-mail* attachment.

## Procedures

1. Additional Protocol declarations may be submitted as an encrypted attachment to a plain-text electronic mail message. All attachments containing confidential information must be encrypted using the PGP encryption program.
2. A public-key encryption scheme relies on a pair of encryption keys: a public key to be used for encryption and a private key to be used for decryption. The recipient of the encrypted message provides a copy of his/her “public” key to the sender. The sender uses the recipient’s “public” key to encrypt the message and sends the message to the recipient. The recipient then uses his/her “private” key to decrypt the message. If the sender has provided the recipient with the sender’s “public” key, the sender may digitally sign the transmission; the recipient then verifies the signature using the sender’s “public” key.
3. The State will be provided with the Agency’s public key transmitted in a manner agreed to by both parties, potentially on diskette sent by public mail, diplomatic pouch or personally or via e-mail attachment to a normal Internet message.
4. A key-pair for use by the SGOx staff responsible for decrypting and loading the data has been generated. A single public key will be used in the respective Division for all Additional Protocol submissions regardless of the submitting State.
5. Under PGP encryption, the private key is accessed through the use of a Passphrase. The Passphrase to be used at the Agency will be maintained by the staff responsible for decrypting and loading the data. If the Passphrase is compromised, the old encryption key pair will be deleted and a new encryption key pair with a new Passphrase will be generated and distributed to all users of the public key. In case of the Passphrase being compromised, all States using the compromised key-pair will be notified immediately by agreed means (e.g., fax, e-mail, telephone call) that the public key is no longer to be used for transmissions to the Agency and that a new public key is being transmitted using the agreed upon means.
6. Special mailboxes (**xxxxxxxxxxxx@iaea.org**) have been established at the IAEA to handle the receipt of Additional Protocol Declarations from SGOx States. *The exact name of the mailbox and the corresponding encryption keys are provided upon request to the Member States.*
7. The State will send the AP declarations reports as a plain-text e-mail transmittal letter with an encrypted attachment to the above e-mail address. The “Subject” line of the e-mail must specify the **country name** and the word “**Additional Protocol**”; the body of the plain-text e-mail provides other information currently used in the transmittal letter; the PGP encrypted and digitally signed attachment provides the actual State declaration. The minimum information to be provided in the plain-text body of the e-mail will be:

- a) The date of dispatch of the e-mail;
- b) Name of the dispatching country;
- c) Reference number for the dispatch;
- d) The dispatching organization or office;
- e) The name of the dispatcher;
- f) The total number declarations;
- g) *If multiple files are provided, the total number of declarations and entries should be provided for each file (optional).*

8. If States submit several files, they are encouraged to compress, using an agreed upon compression scheme, the individual files into a single file before encryption and signature; the name of the individual files should be meaningful. It would be useful if the encrypted file attachment would have the extension .PGP.

9. Each mailbox has a automatic reply rule attached to it to provide immediate acknowledgement to the sender of the transmission that the e-mail has been received successfully. The Director's office of the respective SGOx division should be contacted immediately by phone if the sender does not receive an automatic reply within an hour.

After successful decryption and analysis of the data, should it be necessary to request clarification and/or amplification, a letter will be sent to the official State authority, as is currently the practice.

(To allow automated processing of the reports, the State is requested to send its transmittal letter information in the following format:

***Date of Dispatch:***

***Dispatching Country:***

***Dispatch Reference Number:***

***Dispatching Organization:***

***Dispatcher:***

***File Name:***

***File Size in bytes:***

***Number of Declarations \_\_\_\_\_ and \_\_\_\_\_ Entries)***

### Attachment 3: Examples of Protocol Reporter output in hardcopy and character-delimited format

*Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
1	3-21 5-1	RBE-	RBE	A small pilot centrifuge enrichment cascade (see response to DIQ– RBE–, 1998-08-20) (see attached schematic map).	
2		RBF-	RBF	Fuel fabrication and testing facility (see response to DIQ– RBF–, 1991-02-10) including post-irradiation test facility (APEX).	
3		RBR-	RBR	Research and radioisotope production reactor (see response to DIQ – RBR–, 1982-02-17)	
4		RBF-	RA-1	Two floors (total 850m <sup>2</sup> ; distributed 500m <sup>2</sup> main floor and 250 m <sup>2</sup> partial basement). Building includes extensive hot cell complex utilized for post irradiation examination of fuel and other materials.	
5			RA-2	Two floors (total 1160m <sup>2</sup> ), housing administration and general services.	
6			RA-3	Three floors (total 1800m <sup>2</sup> not including limited basement housing storage and utilities). Engineering support services primarily devoted to civil engineering support for the site.	
7			RA-4	One floor (total 430m <sup>2</sup> ). Physical protection services to the site (managed access).	
8		RC-A, KMP A	RA-5	One floor (total 500m <sup>2</sup> , not including limited basement training storage and utilities). Radiochemistry including development of analytical methods and low-level radiochemical measurements).	

### Example (continuation)

*Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: . 2.a.(iii)

Site Identification AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
9			RA-6	Two floors plus basement (total 450m <sup>2</sup> ). Housing common heating and air conditioning utilities.	
10			RA-7	One floor (total 550m <sup>2</sup> ). Auxiliary office space for RBR- personnel.	
11			RA-8	One floor (total 510m <sup>2</sup> ). Central stores annex including office space for administration personnel.	
12			RA-9	Two floors (total 1200m <sup>2</sup> ). Central receiving and stores for the site.	
13			RA-10	Three floors (total 1500m <sup>2</sup> ). Physics and life sciences support (together with building RA-11).	
14			RA-11	Two floors (total 900m <sup>2</sup> ). Physics and life sciences support. First floor includes small mechanical/optical workshop.	
15			RA-12	One floor (total 1100m <sup>2</sup> ). Cafeteria serving the site including serving area and a store.	
16			RA-13	One floor (total 320m <sup>2</sup> ). Visitor center.	
17			RA-14	Three floors (total 560m <sup>2</sup> including basement). Housing low-level solid waste conditioning/packaging installations and encapsulation R&D facility.	

**Example (continuation)***Format of declaration for Article 2.a.(iii) (initial declaration with example entries)*

Name of State (or Party): Ruritania

Safeguards Agreement INFCIRC: 000 Protocol Article: 2.a.(iii)

Site Identification: AEC-NRC

Declaration number: 3 Declaration Date: 2001-10-14

Declaration period: As of 2001-10-01

Comment: See attached map for location of buildings in AEC-NRC.

Entry	Ref.	Facility/LOF Code	Building	General Description, Including Use and Contents	Comments
18			RA-15	Two floors (total 1800m <sup>2</sup> ). Housing high-active waste treatment and vitrification studies.	
19			RA-16	Two floors (total 3000m <sup>2</sup> including partial basement ). Radioisotope production, includes extensive hot cell complex.	
20			RA-17	One floor (total 150m <sup>2</sup> ). Waste treatment.	
21	2-1 5-1		RA-18	One floor (total 1070m <sup>2</sup> ). Enrichment development center includes Annex I centrifuge manufacturing. Approximately 1/3 of the space is leased by the Advanced Project Agency (managed access may apply in some areas.)	
22			RA-19	Two floors (total 460m <sup>2</sup> ). Housing mechanical and optical workshops.	
23			S1	Security gate 1.	
24			S2	Security gate 2.	
25			S3	Security gate 3.	
26			S4	Security gate 4.	

**Reformatted for electronic submission to the Agency (on diskette , CD-ROM or as encrypted e-mail attachment):**

Protocol Article\Declaration Number\Entry\State(Source) Name\INFCIRC Number\Site\Start Date\End(as of) Date\Declaration Date\Comments  
 2.a.(iii)\1\0\Ruritania\000\AEC-NRC\2001-04-30\2002-06-30\Format of declarations for Article 2.a(iii) (an initial declaration with example entries)  
 Protocol Article\Declaration Number\Entry\Ref.\Facility(ies) on Site\Building\General Description, Including Use and Contents\Comments  
 2.a.(iii)\1\1\3-21,5-1\RBE-\RBE\A small pilot centrifuge enrichment cascade (see response to DIQ- RBE-, 1998-08-20) (see attached schematic map)\  
 2.a.(iii)\1\2\RBF-\RBF\Fuel fabrication and testing facility (see response to DIQ- RBF-, 1991-02-10)including post-irradiation test facility (APEX)\  
 2.a.(iii)\1\3\RBR-\RBR\Research and radioisotope production reactor (see response to DIQ - RBR-, 1982-02-17)\  
 2.a.(iii)\1\4\RBF-RA-1\Two floors (total 850m<sup>2</sup>; distributed 500m<sup>2</sup> main floor and 250 m<sup>2</sup> partial basement). Building includes extensive hot cell complex utilized for post irradiation examination of fuel and other materials.\  
 2.a.(iii)\1\5\RA-2\Two floors (total 1160m<sup>2</sup>), housing administration and general services\  
 2.a.(iii)\1\6\RA-3\Three floors (total 1800 m<sup>2</sup> not including limited basement housing storage and utilities). Engineering support services primarily devoted to civil engineering support for the site.\  
 2.a.(iii)\1\7\RA-4\One floor (total 430 m<sup>2</sup>). Physical protection (managed access).\  
 2.a.(iii)\1\8\RC-A, KMP\RA-5\One floor (total 500 m<sup>2</sup>, not including limited basement training storage and utilities). Radiochemistry including development of analytical methods and low-level radiochemical measurements).\  
 2.a.(iii)\1\9\RA-6\Two floors plus basement (total 450 m<sup>2</sup>). Housing common heating and air conditioning utilities.\  
 2.a.(iii)\1\10\RBR-RA-7\One floor (total 550 m<sup>2</sup>). Auxiliary office space for RBR- personnel.\  
 2.a.(iii)\1\11\RA-8\One floor (total 510 m<sup>2</sup>). Central stores annex including office space for administration personnel.\  
 2.a.(iii)\1\12\RA-9\Two floors (total 1200 m<sup>2</sup>). Central receiving and stores for the site.\  
 2.a.(iii)\1\13\RA-10\Three floors (total 1500 m<sup>2</sup>). Physics and life sciences support (together with building RA-11).\  
 2.a.(iii)\1\14\RA-11\Two floors (total 900 m<sup>2</sup>). Physics and life sciences support. First floor includes small mechanical/optical workshop.\  
 2.a.(iii)\1\15\RA-12\One floor (total 1100m<sup>2</sup>). Cafeteria serving the site including serving area and a store.\  
 2.a.(iii)\1\16\RA-13\One floor (total 320 m<sup>2</sup>). Visitor center.\  
 2.a.(iii)\1\17\RA-14\Three floors (total 560 m<sup>2</sup> including basement). Housing low-level solid waste conditioning/packaging and encapsulation R&D.\  
 2.a.(iii)\1\18\RA-15\Two floors (total 1800 m<sup>2</sup>). Housing high-active waste treatment and vitrification studies.\  
 2.a.(iii)\1\19\RA-16 \Two floors (total 3000 m<sup>2</sup> including partial basement). Radioisotope production, includes extensive hot cell complex.\  
 2.a.(iii)\1\20\RA-17\One floor (total 150 m<sup>2</sup>). Waste treatment.\  
 2.a.(iii)\1\21\ 2-1\RA-18\One floor (total 1070 m<sup>2</sup>). Enrichment development center includes Annex I centrifuge manufacturing. Approximately 1/3 of the space is leased by the Advanced Project Agency (managed access may apply in some areas.)\  
 2.a.(iii)\1\22\RA-19 \Two floors (total 460 m<sup>2</sup>). Housing mechanical and optical workshops.\  
 2.a.(iii)\1\23\S1\Security gate 1.\  
 2.a.(iii)\1\24\S2\Security gate 2.\  
 2.a.(iii)\1\25\S3\Security gate 3.\  
 2.a.(iii)\1\26\S4\Security gate 4.\