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*(Acts whose publication is obligatory)*

**COMMISSION REGULATION (Euratom) No 302/2005  
of 8 February 2005  
on the application of Euratom safeguards**

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THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Articles 77, 78, 79 and 81 thereof,

Having regard to the approval of the Council,

Whereas:

- (1) Commission Regulation (Euratom) No 3227/76 of 19 October 1976 concerning the application of the provisions on Euratom safeguards <sup>(1)</sup> defines the nature and extent of the requirements referred to in Articles 78 and 79 of the Treaty.
- (2) In view of the increasing quantities of nuclear materials produced, used, carried and recycled in the Community, of the development of trade in these materials and of the successive enlargements of the European Union, it is essential to ensure the effectiveness of safeguards. The nature and the extent of the requirements referred to in Article 79 of the Treaty and set out in Regulation (Euratom) No 3227/76 should therefore be brought up to date in the light of developments, particularly in the fields of nuclear and information technology.
- (3) Belgium, Denmark, Germany, Greece, Spain, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the European Atomic Energy Community have concluded Agreement 78/164/Euratom <sup>(2)</sup> with the International Atomic Energy Agency in implementation of Article III(1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons. Agreement 78/164/Euratom entered into force on 21 February 1977 and was supplemented by Additional Protocol 1999/188/Euratom <sup>(3)</sup>, which entered into force on 30 April 2004.
- (4) Agreement 78/164/Euratom contains a particular undertaking entered into by the Community concerning the application of safeguards on source and special fissile materials in the territories of the Member States which have no nuclear weapons of their own and which are parties to the Treaty on the Non-Proliferation of Nuclear Weapons.
- (5) The procedures stipulated by Agreement 78/164/Euratom are the result of wide-ranging international negotiations with the International Atomic Energy Agency on the application of Article III(1) and (4) of the Treaty on the Non-Proliferation of Nuclear Weapons. These procedures were approved by the Board of Governors of that Agency.

- (6) The Community, the United Kingdom and the International Atomic Energy Agency are parties to an Agreement for the application of safeguards in the United Kingdom in connection with the Treaty on the Non-Proliferation of Nuclear Weapons <sup>(4)</sup>. That Agreement entered into force on 14 August 1978, and was supplemented by an Additional Protocol which entered into force on 30 April 2004.
- (7) The Community, France and the International Atomic Energy Agency are parties to an Agreement for the application of safeguards in France <sup>(5)</sup>. That Agreement entered into force on 12 September 1981, and was supplemented by an Additional Protocol which entered into force on 30 April 2004.
- (8) In the territories of France and the United Kingdom some installations or parts thereof as well as certain materials are liable to be involved in the production cycle for defence needs. Special safeguard procedures should therefore be applied to take account of these circumstances.
- (9) The European Council at its meeting in Lisbon on 23 and 24 March 2000 stressed the need to foster the development of state-of-the-art information technology and other telecom networks as well as the content for those networks.
- (10) In response to Additional Protocol 1999/188/Euratom, Member States should be required to communicate certain information to the Commission including a general description of sites, advance notification of the processing of waste and reports on changes of location of certain conditioned waste.
- (11) Guidelines adopted for the application of this Regulation should fully respect the Community commitments in this field, in particular those resulting from Additional Protocol 1999/188/Euratom and the Additional Protocols to the Agreement for the application of safeguards in the United Kingdom in connection with the Treaty on the Non-Proliferation of Nuclear Weapons and to the corresponding Agreement for France.
- (12) The provisions on security added to the Commission rules of procedure <sup>(6)</sup> by Commission Decision 2001/844/EC, ECSC, Euratom <sup>(7)</sup> should apply to information, knowledge and documents acquired by the parties without prejudice to Council Regulation No 3 of 31 July 1958 implementing Article 24 of the Treaty establishing the European Atomic Energy Community <sup>(8)</sup>.

<sup>(1)</sup> OJ L 363, 31.12.1976, p. 1. Regulation as last amended by Regulation (Euratom) No 2130/93 (OJ L 191, 31.7.1993, p. 75).

<sup>(2)</sup> OJ L 51, 22.2.1978, p. 1.

<sup>(3)</sup> OJ L 67, 13.3.1999, p. 1.

<sup>(4)</sup> IAEA document INFCIRC/263 dated October 1978.

<sup>(5)</sup> IAEA document INFCIRC/290 dated December 1981.

<sup>(6)</sup> OJ L 308, 8.12.2000, p. 26. Rules of procedure as last amended by Decision 2004/563/EC, Euratom (OJ L 251, 27.7.2004, p. 9).

<sup>(7)</sup> OJ L 317, 3.12.2001, p. 1.

<sup>(8)</sup> OJ 17, 6.10.1958, p. 406/58.

(13) In the interests of clarity, Regulation (Euratom) No 3227/76 should be replaced by this Regulation,

HAS ADOPTED THIS REGULATION:

#### CHAPTER I

#### SCOPE AND DEFINITIONS

##### Article 1

##### Scope

This Regulation shall apply to any person or undertaking setting up or operating an installation for the production, separation, reprocessing, storage or other use of source material or special fissile material.

It shall not apply to holders of end products used for non-nuclear purposes which incorporate nuclear materials that are in practice irrecoverable.

##### Article 2

##### Definitions

For the purposes of this Regulation, the following definitions shall apply:

1. 'non-nuclear-weapon Member States' means Belgium, the Czech Republic, Denmark, Germany, Estonia, Greece, Spain, Ireland, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Slovenia, Slovakia, Finland and Sweden;
2. 'nuclear-weapon Member States' means France and the United Kingdom;
3. 'third country' means any State which is not a member of the European Atomic Energy Community;
4. 'nuclear materials' means ores, source materials or special fissile materials as defined in Article 197 of the Treaty;
5. 'waste' means nuclear material in concentrations or chemical forms considered as irrecoverable for practical or economic reasons and which may be disposed of;
6. 'retained waste' means waste, generated from processing or from an operational accident, measured or estimated on the basis of measurements, which has been transferred to a specific location within the material balance area from which it can be retrieved;
7. 'conditioned waste' means waste, measured or estimated on the basis of measurements, which has been conditioned in such a way (for example, in glass, cement, concrete or bitumen) that it is not suitable for further nuclear use;
8. 'discards to the environment' means waste, measured or estimated on the basis of measurements, which has been irrevocably discarded to the environment as the result of a planned discharge;
9. 'categories' (of nuclear material) are natural uranium, depleted uranium, uranium enriched in uranium-235 or uranium-233, thorium, plutonium, and any other material which the Council may determine, acting by a qualified majority on a proposal from the Commission;
10. 'item' means an identifiable unit such as a fuel assembly or a fuel pin;
11. 'batch' means a portion of nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of specifications or measurements. The nuclear material may be in bulk form or contained in a number of items;
12. 'batch data' means the total weight of each category of nuclear material and, in the case of plutonium and uranium, the isotopic composition when appropriate. For reporting purposes the weights of individual items in the batch shall be added together before rounding to the nearest unit;
13. 'effective kilogram' is a special unit used in safeguarding nuclear material, obtained by taking:
  - (a) for plutonium, its weight in kilograms;
  - (b) for uranium with an enrichment of 0,01 (1 %) and above, its weight in kilograms multiplied by the square of its enrichment;
  - (c) for uranium with an enrichment below 0,01 (1 %) and above 0,005 (0,5 %), its weight in kilograms multiplied by 0,0001;

and

  - (d) for depleted uranium with an enrichment of 0,005 (0,5 %) or below, and for thorium, its weight in kilograms multiplied by 0,00005;
14. 'material balance area' means an area such that, for the purpose of establishing the material balance:
  - (a) the quantity of nuclear material in each transfer into or out of each material balance area can be determined;

and

  - (b) the physical inventory of nuclear material in each material balance area can be determined when necessary in accordance with specified procedures;

15. 'key measurement point' means a location where nuclear material appears in such a form that it may be measured to determine material flow or inventory, including but not limited to, the places where nuclear material enters, leaves or is stored in, material balance areas;
16. 'book inventory' of a material balance area means the algebraic sum of the most recent physical inventory of that material balance area, and of all inventory changes that have occurred since that physical inventory was taken;
17. 'physical inventory' means the sum of all the measured batch quantities or derived estimates of batch quantities of nuclear material on hand at a given time within a material balance area, obtained in accordance with specified procedures;
18. 'material unaccounted for' means the difference between the physical inventory and the book inventory;
19. 'shipper/receiver difference' means the difference between the quantity of nuclear material in a batch as measured at the receiving material balance area and the quantity as stated by the shipping material balance area;
20. 'source data' means those data, recorded during measurement or calibration or used to derive empirical relationships, which identify nuclear material and provide batch data, including: weight of compounds; conversion factors to determine weight of element; specific gravity; element concentration; isotopic ratios; relationship between volume and manometer readings; and relationship between plutonium produced and power generated;
21. 'site' means an area delimited by the Community and the Member State, comprising one or more installations, including closed-down installations, as defined in their relevant basic technical characteristics, whereby:
- waste treatment or waste storage installations do not constitute a site in themselves;
  - in the case of a closed-down installation where source material or special fissile material in quantities less than one effective kilogram was customarily used, the term is limited to locations with hot cells or where activities related to conversion, enrichment, fuel fabrication or reprocessing were carried out;
  - 'site' also includes all plants co-located with the installations which provide or use essential services including hot cells for processing irradiated materials not containing nuclear material; plants for the treatment, storage and disposal of waste; and buildings associated with activities specified in Annex 1 to Additional Protocol 1999/188/Euratom and identified by the State concerned;
22. 'site representative' means any person, undertaking or entity designated by the Member States being responsible for the declarations referred to in Article 3(2);
23. 'installation' means a reactor, a critical installation, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant, a separate storage installation, a waste treatment or waste storage installation; or any other location where source material or special fissile material is customarily used;
24. 'decommissioned installation' means an installation for which it has been verified that residual structures and equipment essential for its use have been removed or rendered inoperable so that it is not used to store and can no longer be used to handle, process or utilise source material or special fissile material;
25. 'closed-down installation' means an installation for which it has been verified that operations have been stopped and the nuclear material removed but which has not been decommissioned.

## CHAPTER II

## BASIC TECHNICAL CHARACTERISTICS AND PARTICULAR SAFEGUARD PROVISIONS

## Article 3

## Declaration of the basic technical characteristics

1. Any person or undertaking setting up or operating an installation for the production, separation, reprocessing, storage or other use of source material or special fissile material shall declare to the Commission the basic technical characteristics of the installation, using the relevant questionnaire shown in Annex I.

For the purpose of the first subparagraph 'use' of nuclear materials is taken to include, *inter alia*: power production in reactors, research in critical or zero energy installations, conversion, fabrication, reprocessing, storage, isotope separation, and ore concentration, as well as treatment or storage of waste.

For ore production, the provisions of Articles 24 and 25 apply.

2. Each Member State being a party to Additional Protocol 1999/188/Euratom, shall designate a site representative for each site on its territory who shall provide to the Commission a declaration containing a general description of the site, using the questionnaire shown in Annex II.

The declaration shall be submitted within 120 days of the date of entry into force of Additional Protocol 1999/188/Euratom in the Member State concerned and updates shall be submitted by 1 April of each year.

The declaration shall fulfil the requirements of Article 2(a)(iii) of Additional Protocol 1999/188/Euratom and shall be separate from the declaration required pursuant to paragraph 1 of this Article.

3. While the site representative carries the responsibility for the timely collection of the relevant information and the submission of the general description of the site to the Commission, the responsibility for the correctness and the completeness of the declarations remains with the persons or the undertakings setting up or operating the installation, and for buildings on a site which do not involve nuclear material with the Member State concerned. As far as possible the declarations provided for in paragraphs 1 and 2 shall be submitted in electronic form if they are kept in such form by the person or undertaking. If information is sent to the Commission both in electronic and in paper form, the paper form shall prevail.

#### Article 4

##### Time-limits

The declaration of the basic technical characteristics of new installations shall be communicated to the Commission in accordance with Article 3(1) at least 200 days before the first consignment of nuclear material is due to be received.

For new installations with an inventory or annual throughput of nuclear material of more than one effective kilogram, all relevant information relating to the owner, operator, purpose, location, type, capacity and expected commissioning date shall be communicated to the Commission at least 200 days before construction begins.

Changes in the basic technical characteristics for which advance notification is not required as specified in the particular safeguard provisions set out in Article 6, shall be communicated to the Commission within 30 days after the modification is complete.

Installations in the territory of States acceding to the European Union shall communicate to the Commission their basic technical characteristics within 30 days of the date of entry into force of this Regulation in that State, except for waste treatment or waste storage installations whose basic technical characteristics shall be communicated within 120 days of the date of entry into force of this Regulation in that State.

Using the questionnaire in Annex I, existing waste treatment or waste storage installations shall communicate to the Commission the basic technical characteristics of their installation within 120 days of the date of entry into force of this Regulation.

For other existing installations any additional information required by the questionnaire in Annex I shall be supplied within 120 days of the date of entry into force of this Regulation.

#### Article 5

##### Programme of activities

To enable the Commission to plan its safeguards activities, the persons or undertakings referred to in the first subparagraph of Article 3(1) shall communicate to the Commission the following information:

- (a) annually, an outline programme of activities on the basis of Annex XI, indicating, in particular, provisional dates for taking a physical inventory;
- (b) at least 40 days before taking a physical inventory, the programme for such work.

Changes affecting the outline programme of activities and, in particular, the taking of physical inventories shall be communicated to the Commission without delay.

#### Article 6

##### Particular safeguard provisions

1. Acting on the basis of the basic technical characteristics submitted pursuant to Article 3(1) and Article 4, the Commission shall adopt particular safeguard provisions relating to the matters set out in paragraph 2 of this Article. The particular safeguard provisions shall be drawn up by means of a Commission decision addressed to the person or undertaking concerned, taking account of operational and technical constraints and in close consultation with the person or undertaking concerned and the relevant Member State.

The person or undertaking to whom the decision of the Commission is addressed shall be notified thereof, and a copy of such notification shall be transmitted to the Member State concerned.

Until the Commission decision on particular safeguard provisions is adopted, the person or undertaking concerned shall apply the general provisions of this Regulation.

2. The particular safeguard provisions shall include the following:

- (a) the material balance areas and the selection of key measurement points for determining the flow and stocks of nuclear materials;
- (b) the changes in basic technical characteristics for which advance notification is required;
- (c) the procedures for keeping records of nuclear materials for each material balance area and for drawing up reports;



- (d) the frequency of, and procedures for, taking physical inventories for accounting purposes as part of safeguards measures;
- (e) the containment and surveillance measures, in accordance with the arrangements agreed upon with the person or undertaking concerned;
- (f) the arrangements for sample-taking by the person or undertaking concerned solely for safeguards purposes.

3. The particular safeguard provisions may also specify the content of subsequent communications required under Article 5 as well as the conditions under which shipments and receipts of nuclear material require advance notification.

4. The Commission shall reimburse the person or undertaking concerned the cost of those special services which are provided for in the particular safeguard provisions or which are provided as the result of a special request by the Commission or its inspectors, on the basis of an agreed estimate. The amount of, and arrangements for, the reimbursement shall be jointly determined by the parties concerned and shall be reviewed periodically.

### CHAPTER III

## NUCLEAR MATERIAL ACCOUNTANCY

### Article 7

#### Accounting system

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall maintain a system of accountancy and control for nuclear materials. This system shall include accounting and operating records and, in particular, information on the quantities, category, form and composition of these materials as provided for in Article 18, their actual location and the particular safeguards obligation as provided for in Article 17, together with details of the recipient or shipper when nuclear materials are transferred.

The system of measurements on which the records are based shall comply with the most recent international standards or shall be equivalent in quality to those standards. On the basis of these records, which shall be retained for a period of at least five years, it must be possible to draw up and substantiate the declarations made to the Commission. Accounting and operating records shall be made available to the Commission's inspectors in electronic form if they are kept in this form by the installation. Further details may be specified in the particular safeguard provisions referred to in Article 6 for each installation.

### Article 8

#### Operating records

For each material balance area, the operating records shall include, where appropriate:

- (a) the operating data used to determine changes in the quantities and composition of nuclear material;
- (b) a list of inventory items, updated to the best extent possible, and their location;
- (c) the data, including derived estimates of random and systematic errors, obtained from the calibration of tanks and instruments as well as from sampling and analysis;
- (d) the data resulting from quality control measures applied to the nuclear material accountancy system, including derived estimates of random and systematic errors;
- (e) a description of the sequence of actions taken to prepare for, and take, a physical inventory, and to ensure that the inventory is correct and complete;
- (f) a description of the actions taken in order to ascertain the cause and magnitude of any accidental or unmeasured loss that might have occurred;
- (g) the isotopic composition of plutonium, including its decay isotopes, and reference dates, if recorded at the installation for operational needs.

When available, the data referred to in point (g) shall be communicated to the Commission on request.

### Article 9

#### Accounting records

In respect of each material balance area the accounting records shall show the following:

- (a) all inventory changes, so that the book inventory can be determined at any time;
- (b) all measurement and counting results used to determine the physical inventory;
- (c) all corrections made to inventory changes, book inventories and physical inventories.

The accounting records relating to any inventory change and physical inventory shall show the material identification, batch data and source data for each batch. These records shall account separately for uranium, thorium and plutonium, in accordance with the categories listed in Article 18(2)(b). In addition, for each inventory change, the date of the change and, when appropriate, the dispatching material balance area or the shipper and the receiving material balance area or the recipient shall be indicated.

#### Article 10

##### Accounting reports

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall provide the Commission with accounting reports.

The accounting reports shall contain the information available on the date of reporting and must be corrected at a later date if necessary. Accounting reports shall be transmitted to the Commission in electronic form, except in cases where the Commission has granted a written derogation, or the transitional arrangements specified in Article 39 apply.

On a reasoned request by the Commission, further details or explanations in connection with these reports shall be supplied within three weeks.

#### Article 11

##### Initial book inventory

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall transmit to the Commission, within 30 days of the date of entry into force of this Regulation, an initial book inventory of all nuclear materials they are holding, using the format set out in Annex V. This Article does not apply to the persons or undertakings who have already transmitted an initial book inventory under Regulation (Euratom) No 3227/76, or to waste treatment or waste storage installations.

#### Article 12

##### Inventory change report

1. For each material balance area, the persons or undertakings referred to in the first subparagraph of Article 3(1) shall transmit to the Commission inventory change reports in respect of all nuclear materials using the format set out in Annex III.

Unless otherwise specified in the particular safeguard provisions referred to in Article 6 for an installation, these reports shall be sent monthly, at the latest 15 days after the end of the month, and shall state all inventory changes which have occurred or become known during that month.

2. For months in which a physical inventory is taken, and the physical inventory taking date is not the last date of the month, two separate inventory change reports shall be transmitted:

- (a) a first inventory change report containing any inventory changes up to and including the physical inventory taking date, which shall be sent at the latest, together with the second inventory change report, or together with the physical inventory listing and the material balance report if the latter are sent before the second inventory change report;
- (b) a second inventory change report containing all inventory changes from the first day after the physical inventory taking date to the end of the month which shall be sent within 15 days of the end of the month.

3. For months in which no inventory changes occur, the persons or undertakings concerned shall send the inventory change report, carrying over the ending book inventory of the previous month.

4. In order that they may be reported as a single inventory change, small inventory changes, such as transfers of samples for purposes of analysis, may be grouped together, as laid down in the particular safeguard provisions referred to in Article 6 for the installation concerned.

5. Inventory change reports may be accompanied by comments explaining the inventory changes.

#### Article 13

##### Material balance report and physical inventory listing

For each material balance area, the persons or undertakings referred to in the first subparagraph of Article 3(1) shall transmit to the Commission:

- (a) material balance reports, in the format set out in Annex IV, showing:
  - (i) beginning physical inventory;
  - (ii) inventory changes (first increases, then decreases);
  - (iii) ending book inventory;
  - (iv) ending physical inventory;
  - (v) material unaccounted for;
- (b) a physical inventory listing, in the format set out in Annex V, showing all batches separately.

The reports and the listing shall be transmitted as soon as possible and at the latest within 30 days of the date on which a physical inventory was taken.



Unless otherwise specified in the particular safeguard provisions referred to in Article 6 for an installation, a physical inventory shall be taken every calendar year and the period between two successive physical inventory takings shall not exceed 14 months.

#### Article 14

##### Special reports

The persons and undertakings referred to in the first subparagraph of Article 3(1) shall transmit to the Commission a special report whenever the circumstances referred to in Articles 15 or 22 arise.

The type of information to be supplied in such reports shall be specified in the particular safeguard provisions referred to in Article 6.

The special reports, and further details or explanations which may be requested by the Commission in connection with these reports, shall be supplied without delay.

#### Article 15

##### Unusual occurrences

A special report shall be made in the following cases:

- (a) if, as a result of any unusual incident or circumstances, it is believed that there has been or might be an increase or a loss of nuclear material in excess of the limits specified for these purposes in the particular safeguard provisions referred to in Article 6;
- (b) if the containment has unexpectedly changed from that specified in the particular safeguard provisions referred to in Article 6, to a point where an unauthorised removal of nuclear material has become possible.

The persons or undertakings concerned shall submit these reports as soon as they have become aware of any such loss or increase or sudden change in the containment conditions, or of anything which leads them to believe that there has been such an occurrence. The causes shall also be stated as soon as they are known.

#### Article 16

##### Reporting of nuclear transformations

In respect of reactors, calculated data on nuclear transformations shall be reported in the inventory change report at the latest when irradiated fuel is transferred from the reactor material balance area. In addition, other procedures for recording and reporting nuclear transformations may be specified in the particular safeguard provisions referred to in Article 6.

#### Article 17

##### Particular safeguard obligations

1. Nuclear materials subject to particular safeguard obligations entered into by the Community in an agreement concluded with a third country or an international organisation shall, unless otherwise stipulated by such an agreement, be identified separately for each obligation in the following notifications:

- (a) initial book inventory provided for in Article 11;
- (b) inventory change reports, including ending book inventories, provided for in Article 12;
- (c) material balance reports and physical inventory listings provided for in Article 13;
- (d) intended imports and exports provided for in Articles 20 and 21.

Unless specifically prohibited in any of those agreements, such separate identification shall not preclude the physical mixing of materials.

2. Paragraph 1 shall not apply to the Agreements concluded by the Community and the Member States with the International Atomic Energy Agency.

#### Article 18

##### Weight units and categories of nuclear materials

1. In any notification referred to in this Regulation, quantities of materials covered by the Regulation shall be expressed in grams.

The corresponding material accounting records shall be kept in grams or in smaller units. They shall be kept in such a manner as to render them trustworthy and, in particular, to comply with current practices in the Member States.

In the notifications, quantities may be rounded down when the first decimal is 0 to 4 and rounded up when the first decimal is 5 to 9.

2. Unless otherwise provided for in the particular safeguard provisions referred to in Article 6 the notifications shall include the following:

- (a) the total weight of the elements uranium, thorium and plutonium, and also, for enriched uranium, the total weight of the fissile isotopes;
- (b) separate material balance reports as well as separate line entries in inventory change reports and in physical inventory listings for the following categories of nuclear material:
  - (i) depleted uranium;

- (ii) natural uranium;
- (iii) uranium enriched to less than 20 %;
- (iv) uranium enriched to 20 % and above;
- (v) plutonium;
- (vi) thorium.

#### Article 19

#### Derogations

1. The Commission may grant producers and users of nuclear materials a written derogation from the rules governing the form and frequency of the notifications provided for in Articles 10 to 18, in order to take account of any particular circumstances in which safeguarded materials are used or produced.

The derogation shall be granted on submission of a request by the person or undertaking concerned using the form set out in Annex IX.

The derogation shall be granted only for a whole material balance area in which nuclear material is not processed or stored together with nuclear material for which no derogation can be granted.

2. The Commission may grant a derogation for a material balance area holding:
- (a) quantities of nuclear material commensurate with those specified in Annex I-G, which are kept in the same state for long periods;
  - (b) depleted uranium, natural uranium or thorium which is used exclusively in non-nuclear activities;
  - (c) special fissile materials when used in gram quantities or less as sensing components in instruments;
  - (d) plutonium with an isotopic concentration of plutonium-238 exceeding 80 %.

3. The persons or undertakings to whom a derogation is granted shall transmit an annual report to the Commission by 31 January of each year, using the form set out in Annex X. This report shall describe the situation at the end of the previous calendar year.

4. In the case of exports of nuclear material to a third country, the persons or undertakings to whom a derogation has been granted shall transmit a report to the Commission as soon as possible and, at the latest, within 15 days of the end of the month in which the export occurred, using the form set out in Annex X. This report shall indicate the quantity of nuclear material exported and the stock of nuclear material still subject to derogation.

5. In the case of imports of nuclear material from a third country the persons or undertakings to whom a derogation is granted shall transmit a request to the Commission to add this material to the list of materials in respect of which the derogation applies. The request shall be transmitted to the Commission as soon as the transfer date is known to the person or undertaking and, at the latest, within 15 days of the end of the month in which the transfer occurred, using the form set out in Annex IX.

6. The Commission may define other specific clauses concerning the form and the periodicity of the reports in the particular safeguard provisions referred to in Article 6.

7. If the conditions for derogation are no longer met, the derogation shall be withdrawn by the Commission, acting upon receipt of information from the person or undertaking to whom a derogation is granted.

#### CHAPTER IV

#### TRANSFERS BETWEEN STATES

#### Article 20

#### Exports and shipments

1. The persons or undertakings referred to in the first subparagraph of Article 3(1) shall give advance notification to the Commission if any source materials or special fissile materials:

- (a) are exported to a third country;
- (b) are shipped from a non-nuclear-weapon Member State to a nuclear-weapon Member State;
- (c) are shipped from a nuclear-weapon Member State to a non-nuclear-weapon Member State.

2. Advance notification is required only:

- (a) where the consignment exceeds one effective kilogram;

or

- (b) where an installation transfers a total quantity of materials to the same State that could exceed one effective kilogram in any consecutive period of twelve months, even though no single consignment exceeds one effective kilogram.

3. The notification shall be given after the conclusion of the contractual arrangements leading to the transfer, using the form set out in Annex VI, and shall reach the Commission at least eight working days before the material is to be packed for transfer.

4. If so required for reasons of physical protection, special arrangements concerning the form and transmission of the notification may be agreed upon with the Commission.

5. Exports and shipments of nuclear material contained in waste or ores are not subject to the provisions of paragraphs 1 to 4.

#### Article 21

### Imports and receipts

1. The persons or undertakings referred to in the first subparagraph of Article 3(1) shall give advance notification to the Commission if any source materials or special fissile materials:

- (a) are imported from a third country;
- (b) are received in a non-nuclear-weapon Member State from a nuclear-weapon Member State;
- (c) are received in a nuclear-weapon Member State from a non-nuclear-weapon Member State.

2. Advance notification is required only:

- (a) where the consignment exceeds one effective kilogram;
- or
- (b) where an installation imports or receives a total quantity of materials from the same State that could exceed one effective kilogram in any consecutive period of twelve months, even though no single consignment exceeds one effective kilogram.

3. The notification shall be given as far in advance as possible of the expected arrival of the material and, at the latest, on the date of receipt, using the form set out in Annex VII, and shall reach the Commission at least five working days before the material is unpacked.

4. If so required for reasons of physical protection, special arrangements concerning the form and transmission of the notification may be agreed upon with the Commission.

5. Imports and receipts of nuclear material contained in waste or ores are not subject to the provisions of paragraphs 1 to 4.

#### Article 22

### Loss or delay during transfer

A special report shall be submitted, as provided for in Article 14, by the persons or undertakings notifying a transfer under Articles 20 and 21 where, following exceptional circumstances or an incident, they have received information that nuclear materials have been lost or appear to be lost, or where there has been a considerable delay during transfer.

#### Article 23

### Communication of change of date

Any change of the dates for packing before transfer, transport or unpacking of nuclear materials which have been given in the notifications provided for in Articles 20 and 21, shall be communicated without delay, with an indication of the revised dates if known, unless the change gives rise to a special report.

## CHAPTER V

### SPECIFIC PROVISIONS

#### Article 24

### Ore producers

1. Any person or undertaking extracting ores in the territory of a Member State shall declare the basic technical characteristics of the ore extraction operations to the Commission, using the questionnaire in Annex I-J, within 120 days of the date of entry into force of this Regulation, and shall communicate the programme of activities in accordance with Article 5.

2. By way of derogation from Articles 7, 8 and 9, any person or undertaking extracting ores shall keep accounting records thereof indicating, in particular, the quantities of the ore extracted, with the average uranium and thorium content, and the stock of extracted ore at the mine. The records shall also contain details of shipments, stating the date, consignee and quantity in each case.

Such records shall be retained for at least five years.

*Article 25***Ore shipment/export reports**

By way of derogation from Articles 10 to 18, any person or undertaking extracting ores shall inform the Commission, using the form set out in Annex VIII of:

- (a) the amount of material dispatched from each mine, by 31 January of each year for the previous calendar year;

and

- (b) exports of ores to third countries, by the date of the dispatch at the latest.

*Article 26***Carriers and temporary storage agents**

Any person or undertaking engaged, within the territories of the Member States, in transporting, or temporarily storing during transport, nuclear materials shall accept or hand over such materials only against a duly signed and dated receipt. This receipt shall state the names of the parties handing over and receiving the materials and indicate the quantities carried as well as the category, form and composition of the materials.

If so required for reasons of physical protection, the description of the materials transferred may be replaced by a suitable identification of the consignment. Such identification shall be traceable to records held by the persons or undertakings referred to in the first subparagraph of Article 3(1).

Those records shall be retained by the contracting parties for at least five years.

*Article 27***Substitute records for carriers and temporary storage agents**

Records already held by persons or undertakings in accordance with existing regulations which apply to them in the territory of the Member States in which they operate may take the place of the records referred to in Article 26, provided that such records contain all the information required under that Article.

*Article 28***Intermediaries**

Any intermediaries taking part in the conclusion of any contract for the supply of nuclear materials, such as authorised agents, brokers or commission agents, shall keep all records relating to the transactions performed by them or on their behalf for at least five years after expiry of the contract. Such records shall contain the names of the contracting parties and indicate the date of the contract as well as the quantity, category, form, composition, origin and destination of the materials.

*Article 29***Transmission of information and data**

The Commission may transmit to the International Atomic Energy Agency information and data obtained pursuant to this Regulation.

*Article 30***Waste initial stock list and accounting records**

1. By way of derogation from Article 11, any person or undertaking treating or storing nuclear material that has previously been declared as retained or conditioned waste shall transmit to the Commission within 120 days of the date of entry into force of this Regulation, an initial stock list of all nuclear material by category.

2. Any person or undertaking treating or storing nuclear material that has previously been declared as retained or conditioned waste, shall keep accounting records thereof.

By way of derogation from Articles 7 to 11, Article 13 and Article 17(1) for material that has been previously declared as retained waste and Articles 7 to 13 and Article 17(1) for material that has previously been declared as conditioned waste, these records shall include:

- (a) the operating data used to determine changes in the quantities and composition of nuclear material;
- (b) a stock list to be updated yearly after the physical inventory taking;
- (c) a description of the sequence of actions taken to prepare for and take a physical inventory, and to ensure that the inventory is correct and complete;

- (d) a description of the actions taken in order to ascertain the cause and magnitude of any accidental loss that might have occurred;
- (e) all stock changes, so that the book inventory can be established when requested.

The reporting requirements for the processing of retained waste shall be specified in the particular safeguard provisions referred to in Article 6.

#### Article 31

##### Processing of waste

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall give advance notification to the Commission of any processing campaign of material that has previously been declared as retained or conditioned waste, excluding repackaging or further conditioning without separation of elements.

This advance notification, using the form set out in Annex XII, shall include information on the amount of plutonium, high enriched uranium and uranium-233 per batch, the form (glass, high active liquid, etc.), the expected duration of the campaign, and the location of the material before and after the campaign. Such notification shall be communicated to the Commission at least 200 days before the campaign starts.

#### Article 32

##### Transfers of conditioned waste

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall submit, by 31 January of each year at the latest, annual reports on:

- (a) shipments or exports of conditioned waste to an installation within or outside the territories of the Member States, using the form set out in Annex XIII;
- (b) receipts or imports of conditioned waste from an installation without a material balance area code or from an installation outside the territories of the Member States, using the form set out in Annex XIV;
- (c) changes in location of conditioned waste containing plutonium, high enriched uranium or uranium-233, using the form set out in Annex XV.

#### Article 33

##### International obligations

The provisions of this Regulation, and in particular Article 3(2), Article 31 and point (c) of Article 32, shall be applied in conformity with the obligations of the Community and non-nuclear-weapon Member States, under Additional Protocol 1999/188/Euratom.

#### CHAPTER VI

##### SPECIFIC PROVISIONS APPLICABLE IN THE TERRITORIES OF THE NUCLEAR-WEAPON MEMBER STATES

#### Article 34

##### Specific provisions for nuclear-weapon Member States

1. This Regulation shall not apply:
  - (a) to installations or parts of installations which have been assigned to meet defence requirements and which are situated in the territory of a nuclear-weapon Member State;
  - or
  - (b) to nuclear materials which have been assigned to meet defence requirements by that nuclear-weapon Member State.
2. For nuclear materials, installations or parts of installations which are liable to be assigned to meet defence requirements and which are situated in the territory of a nuclear-weapon Member State, the extent of the application of this Regulation and the procedures under it shall be defined by the Commission in consultation and in agreement with the Member State concerned, taking into account the provisions of the second paragraph of Article 84 of the Treaty.
3. Notwithstanding paragraphs 1 and 2:
  - (a) the provisions of Articles 3(1), 4 and 6 shall apply to installations or parts of installations which at certain times are operated exclusively with nuclear materials liable to be assigned to meet defence requirements but which at other times are operated exclusively with civil nuclear materials;
  - (b) the provisions of Articles 3(1), 4 and 6 shall apply, with exceptions for reasons of national security, to installations or parts of installations to which access could be restricted for such reasons but which produce, treat, separate, reprocess or use in any other way, simultaneously, both civil nuclear materials and nuclear materials assigned or liable to be assigned to meet defence requirements;

- (c) the provisions of Articles 2 and 5, Articles 7 to 32, paragraphs 1 and 2 of this Article and Articles 35, 36 and 37 shall apply in relation to all civil nuclear materials situated in the installations or parts of installations referred to in points (a) and (b) of this paragraph;
- (d) the provisions of Article 3(2), Article 31 and Article 32(c) shall not apply in the territories of nuclear-weapon Member States.

## CHAPTER VII

## FINAL PROVISIONS

## Article 35

**Confidentiality of data**

The Commission provisions on security set out in Decision 2001/844/EC/ECSC/Euratom shall apply without prejudice to Regulation No 3 implementing Article 24 of the Treaty establishing the European Atomic Energy Community, to information, knowledge and documents acquired or obtained by the Commission under the present Regulation.

The security of information transmission shall be agreed between the Commission and the person, undertaking or entity concerned, and shall be in accordance with Member State requirements for the transmission of such information.

## Article 36

**Installations controlled from outside the Community**

Where an installation is controlled by a person or undertaking established outside the Community, any obligations imposed by this Regulation shall be fulfilled by the local management of the installation.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 8 February 2005.

## Article 37

**Guidelines**

The Commission shall adopt and publish Guidelines for the application of this Regulation by means of a Recommendation, and, if necessary, update them in the light of the experience gained, in close consultation with the Member States, and after having obtained observations from interested parties.

## Article 38

**Repeal**

Regulation (Euratom) No 3227/76 is repealed.

References to the repealed Regulation shall be construed as references to this Regulation.

## Article 39

**Transitional period**

The Commission may grant an exemption from the obligation to use the reporting formats set out in Annexes III, IV and V. The exemption shall apply to persons or undertakings using the reporting format of Annex II, III and IV of Regulation (Euratom) No 3227/76 on the date of entry into force of this Regulation. It shall be granted for a maximum of five years from that date.

The persons or undertakings referred to in the first subparagraph of Article 3(1) shall, within a period of three years of the date of entry into force of this Regulation, inform the Commission of the date on which they intend to start using the reporting formats set out in Annexes III, IV and V. Upon duly justified request and the presentation of an implementation programme the Commission may, on a case by case basis, extend the period by up to two years.

## Article 40

**Entry into force**

This Regulation shall enter into force on the twentieth day following its publication in the *Official Journal of the European Union*.

For the Commission  
Andris PIEBALGS  
Member of the Commission



## ANNEX I

**QUESTIONNAIRE FOR THE DECLARATION OF THE BASIC TECHNICAL  
CHARACTERISTICS OF THE INSTALLATIONS****I-A. REACTORS**

Date: .....

NB:

1. Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.
2. The reply 'not applicable' can be given to questions which are not applicable. The Commission is still entitled to request any additional information it considers necessary in connection with the relevant questionnaire.
3. The declaration, duly completed and signed, should be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail address.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Purpose and type.
7. Operating mode influencing its production (shift system adopted, approximate dates of operating periods in year, etc.)
8. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc.)
9. Layout of installation:
  - (a) structural containment, fences and access routes;
  - (b) incoming-material storage area;
  - (c) reactor area;
  - (d) test and experiment area, laboratories;
  - (e) outgoing-material storage area;
  - (f) nuclear waste disposal area.
10. Additional data per reactor:
  - (a) nominal thermal output;
  - (b) source material or special fissile material;
  - (c) initial core enrichments;

- (d) moderator;
- (e) coolant.

GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Description of nuclear material (\*)**

11. Description of the use of nuclear material (Article 3(1)).
12. Outline drawings of fuel assemblies, fuel rods/pins, fuel plates etc., in sufficient detail to indicate general structure with overall dimensions. (Provisions for pin exchange should be described, if applicable, and an indication given if this is a routine operation.).
13. Fuel material (including material in control or shim assemblies, if applicable):
  - (a) chemical composition or main alloy constituents;
  - (b) average enrichment per assembly;
  - (c) nominal weight of nuclear material per assembly, with design tolerances.
14. Cladding material.
15. Method of identifying individual assemblies, rods/pins, plates etc., if applicable.
16. Other nuclear material used in the installation (briefly state material, purpose and method of use, e.g. as booster rods).

**Flow of nuclear material**

17. Flow sheet showing: points where nuclear material is identified or measured; material balance areas and inventory locations used for material accountancy; and the estimated range of nuclear material inventories at these locations under normal operating conditions.
18. Expected nominal fuel cycle data, including:
  - (a) reactor core loading;
  - (b) expected burn-up;
  - (c) annual refuelling amount;
  - (d) refuelling interval (on-load or off-load);
  - (e) forecast of throughput and inventory, and of receipts and shipments.

**Handling of nuclear material**

19. Layout of the fresh fuel storage area, drawings of fresh fuel storage locations, and description of packaging.
20. Drawings of fresh fuel preparation and/or assay room and reactor loading area.

(\*) Items 12 to 15 are to be answered for each type of assembly in the installation. Terminology consistent with item 12 should be used.

21. Drawings of transfer equipment for fresh and irradiated fuel, including refuelling machines or equipment.
22. Drawings of reactor vessel showing location of core and openings in vessel; description of method of fuel handling in vessel.
23. Drawing of core showing: general layout, lattice, form, pitch and dimensions of core; reflector; location, shapes and dimensions of control devices; experimental and/or irradiation positions.
24. Number and size of channels for fuel assemblies and control devices in the core.
25. Spent fuel storage area:
  - (a) drawing of storage area;
  - (b) method of storage;
  - (c) design storage capacity;
  - (d) drawing of equipment for handling irradiated fuel;
  - (e) minimum cooling time before shipment of spent fuel;
  - (f) drawing and description of shipping cask for spent fuel (e.g. to determine whether sealing is possible).
26. Nuclear material testing area (if applicable):
  - (a) brief description of the activities performed;
  - (b) description of main equipment (e.g. hot cell, fuel assembly decladding and dissolving equipment);
  - (c) description of shipping containers for nuclear material and of waste and scrap packaging (e.g. to determine whether sealing is possible);
  - (d) description of storage area for non-irradiated and irradiated nuclear material;
  - (e) drawings of the above, if not covered elsewhere.

**Coolant data**

27. Coolant flow diagrams as required for heat balance calculations (indicating pressure, temperatures and mass flow rates at main points).

## NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

**Accountancy system**

28. Description of nuclear material accountancy and control system (describe item and/or mass accountancy system, including assay methods used and assessed accuracies, supplying specimen blank forms used in all accountancy and control procedures). Period during which such records must be retained should be stated.

**Physical inventory**

29. Description of: procedures, scheduled frequency and methods for operator's physical inventory taking (both for item and/or mass accountancy, including main assay methods and expected accuracy); access to nuclear material in the core and to irradiated nuclear material outside the core; expected radiation levels.

## OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS

30. Organisational arrangements for material accountancy and control.
31. Information on the health and safety rules which have to be observed at the installation, and with which the inspectors must comply.

**I-B. CRITICAL AND ZERO ENERGY INSTALLATIONS**

Date: .....

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Purpose and type.
7. Operating mode (shift system adopted, approximate dates of operating periods in year, etc.)
8. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc.)
9. Layout of installation:
  - (a) structural containment, fences and access routes;
  - (b) nuclear material storage area(s);
  - (c) fuel element assembling area, laboratories, etc.;
  - (d) critical assembly proper (\*).
10. Additional data (\*):
  - (a) maximum expected operating power and/or neutron flux;
  - (b) main type(s) of nuclear material and their enrichment;
  - (c) moderator;
  - (d) reflector, blanket;
  - (e) coolant.

## GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Description of nuclear material**

11. Description of the use of nuclear material (Article 3(1)).
12. Outline drawings of fuel assemblies, fuel rods/pins, fuel plates etc., in sufficient detail to indicate general structure with overall dimensions.
13. Fuel material (including material in control or shim assemblies, if applicable).
  - (a) chemical composition or main alloy constituents;

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(\*) To be provided for each critical assembly if more than one in the installation.

- (b) form and dimensions;
  - (c) enrichment of fuel rods/pins, fuel plates etc.;
  - (d) nominal weight of nuclear material, with design tolerances.
14. Cladding material.
  15. Method of identifying individual assemblies, rods/pins, plates etc., if applicable.
  16. Other nuclear material used in the installation (briefly state material, purpose and method of use, e.g. as booster rods).

#### **Location and handling of nuclear material**

17. Description, including layout drawings, of:
  - (a) nuclear material storage and assembly areas and critical assembly (assemblies) proper (inventory locations);
  - (b) the estimated range of inventories of nuclear material in these locations;
  - (c) the physical arrangement of equipment used for assembling, testing and measuring nuclear material;and
  - (d) the routes followed by nuclear material.
18. Sketch of critical assembly core showing core support structure, shielding and heat removal systems, with description (to be provided for each critical assembly if more than one in the installation).

#### **NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

##### **Accountancy system**

19. Description of nuclear material accountancy and control system (describe item and/or mass accountancy system, including assay methods used and assessed accuracies, supplying specimen blank forms used in all accountancy and control procedures). Period during which such records must be retained should be stated.

##### **Physical inventory**

20. Description of: procedures, scheduled frequency and methods for operator's physical inventory taking (both for item and/or mass accountancy, including main assay methods and expected accuracy); access to nuclear material in the core and to irradiated nuclear material outside the core; expected radiation levels.

#### **OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS**

21. Organisational arrangements for material accountancy and control.
22. Information on the health and safety rules which have to be observed at the installation and with which the inspectors must comply.



**I-C. CONVERSION, FABRICATION AND REPROCESSING INSTALLATIONS**

Date: .....

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Purpose and type.
7. Operating mode influencing its production (shift system adopted, approximate dates of operating periods in year, etc.)
8. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc.)
9. Layout of installation:
  - (a) structural containment, fences and access routes;
  - (b) routes followed by nuclear material;
  - (c) incoming nuclear material storage area;
  - (d) each main processing area and process laboratory;
  - (e) test or experimental areas;
  - (f) outgoing nuclear material storage;
  - (g) nuclear waste disposal area;
  - (h) analytical laboratory.

## GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Flow, location and handling of nuclear material**

10. Flow sheet showing: points where nuclear material is identified or measured; material balance areas and inventory locations used for material accountancy; and the estimated range of nuclear material inventories at these locations under normal operating conditions. The description should include (if applicable):
  - (a) batch size or flow rate;
  - (b) method of storage or packing;
  - (c) storage capacity;
  - (d) general forecasts of throughput and inventory and of receipts and shipments.

11. In addition to point 10 above, a description and a layout drawing should be provided of feed storage areas for reprocessing installations, indicating:
  - (a) locations for fuel elements and handling equipment;
  - (b) type of fuel elements including nuclear material content and enrichment.
12. In addition to point 10 above, the description of the recycling stage of the process should include, if available:
  - (a) duration of temporary storage;
  - (b) schedules for external recycling (if applicable).
13. In addition to point 10 above, the description of the discard stage of the process should include the discard method (disposal or storage).
14. Under steady-state conditions, for each flow sheet referred to in points 10 and 17 and assuming the modes of operation in point 7, state:
  - (a) the nominal throughput per year;
  - (b) the in-process inventory based on design capacity.
15. Description of the normal procedures adopted for complete or partial clean-out of the plant. Include description of special sampling and measurement points associated with the clean-out procedure and subsequent physical inventory taking, if not described in point 10 above.

#### **Description of nuclear material**

16. Description of the use of nuclear material (Article 3(1)).
17. Description, by means of flow sheets or otherwise, of estimated flow and inventory of all nuclear material for storage and process areas. The description should include:
  - (a) physical and chemical form;
  - (b) content range or expected upper limits for each category of solid or liquid discard material;
  - (c) enrichment range.

#### **NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

##### **Accountancy system**

18. Description of the accountancy system used to record and report accountancy data and establish material balances, supplying specimen blank forms used in all procedures. Period during which such records must be retained should be stated.
19. Indicate when and how often material balances are established, including those established during campaigns. Description of method and procedure for adjusting accounts after a physical inventory taking.
20. Description of procedure for handling shipper/receiver differences and method of adjusting accounts.
21. Description of procedure for correcting accounts following procedural or clerical errors and its effect on shipper/receiver differences.

**Physical inventory**

22. Refer to point 15. Identify items of equipment on the flow sheets referred to in points 10 and 17 that are to be regarded as containers for nuclear material under physical inventory conditions. State the schedule of physical inventory taking during the campaign.

**Methods for measurement, sampling and analysis**

23. Description of method for establishing each measurement at the point indicated; equations or tables used and calculations made to determine actual quantities of weights or volumes should be identified. Indicate whether data are recorded automatically or manually. Method and practical procedures for sampling at each point indicated should be described.
24. Description of analytical methods used for accountancy purposes. Refer to a manual or report, if possible.

**Control of measurement accuracy**

25. Description of: measurement quality control programme needed for material accountancy purposes, including programmes (together with accuracy values) for the continuing appraisal of analytical, weight, volume and sampling precisions and biases, and for the calibration of associated equipment; method of calibrating the measuring equipment referred to in point 24; type and quality of standards used for analytical methods referred to in point 24; type of analytical equipment used, indicating method and frequency of calibration.

**Statistical evaluation**

26. Description of methods for statistical evaluation of data collected in measurement control programmes for evaluating the precision and the accuracy of measurements and for estimating measurement uncertainties (i.e. determination of the standard deviations of random and systematic error in the measurements). Also description of statistical procedures used to combine individual error estimates to obtain the standard deviations of overall error for shipper/receiver differences, the book inventory, the physical inventory and material unaccounted for.

**OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS**

27. Organisational arrangements for material accountancy and control.
28. Information on the health and safety rules which have to be observed at the installation and with which the inspectors must comply.

**I-D. STORAGE INSTALLATIONS (\*)**

Date: .....

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Purpose and type.
7. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc.).
8. Layout of installation, showing structural containment, fences and access routes.

## GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Description of nuclear material**

9. Description of the use of nuclear material (Article 3(1)).
10. Description, by means of drawings or otherwise, of all nuclear material in the installation, showing:
  - (a) all types of items, including normal handling equipment;
  - (b) chemical composition or main alloy constituents;
  - (c) form and dimensions;
  - (d) enrichment;
  - (e) nominal weight of nuclear material, with design tolerances;
  - (f) cladding materials;
  - (g) methods of identifying items.

**Location and handling of nuclear material**

11. Description, by means of layout drawings or otherwise, of:
  - (a) nuclear material storage areas (inventory locations);
  - (b) the estimated range of inventories of nuclear material in these locations;

(\*) Separate installations not normally associated with reactors, with enrichment, conversion and fabrication installations, or with chemical reprocessing and recovery installations.

- (c) nuclear material storage and/or shipping containers;
- (d) the routes and equipment used for movement of nuclear material, if applicable.

#### NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

##### **Accountancy system**

12. Description of nuclear material accountancy and control system (describe item and/or mass accountancy system, including assay methods used and assessed accuracies, supplying specimen blank forms used in all accountancy and control procedures). Period during which such records must be retained should be stated.

##### **Physical inventory**

13. Description of procedures, scheduled frequency and methods for operator's physical inventory taking (both for item and/or mass accountancy, including main assay methods), and expected accuracy.

#### OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS

14. Organisational arrangements for material accountancy and control.
15. Information on the health and safety rules which have to be observed at the installation and with which the inspectors must comply.

**I-E. ISOTOPE SEPARATION INSTALLATIONS**

Date: .....

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail address.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Building schedule (if installation not in operation):
  - (a) date building starts;
  - (b) date of installation acceptance;
  - (c) commissioning date.
7. Purpose and type (nominal separation capacity, enrichment facilities, etc.)
8. Operating mode influencing its production (shift system adopted, approximate periods of operating times in year, etc.)
9. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc.)
10. Layout of installation:
  - (a) structural containment, fences and access routes;
  - (b) containment of certain parts of the installation;
  - (c) routes followed by nuclear material;
  - (d) incoming nuclear material storage area;
  - (e) each main processing area and process laboratory, including weighing and sampling area, decontamination, purification and feed areas, etc.;
  - (f) test or experimental areas;
  - (g) outgoing nuclear material storage area;
  - (h) nuclear waste disposal area;
  - (i) analytical laboratory.

## GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Description of nuclear material**

11. Description of the use of nuclear material (Article 3(1)).
12. Description, by means of flow sheets or otherwise, of estimated flow and inventory of all nuclear material for storage and process areas. The description should include:
  - (a) physical and chemical form;



- (b) enrichment range for feed, product and tails;
- (c) content range or expected upper limits for each category of solid or liquid discard material.

#### **Flow, location and handling of nuclear material**

13. Description, by means of diagrams or otherwise, of storage and process areas. The description should include:
  - (a) sampling and measuring points;
  - (b) batch size and/or flow rate;
  - (c) method of storage or packing;
  - (d) storage capacities.
14. In addition to point 13 above, the description of the installation should include:
  - (a) separation capacity;
  - (b) enrichment techniques or methods;
  - (c) possible points for feed, product and tails;
  - (d) recycling facilities;
  - (e) type and size of UF<sub>6</sub> cylinders used, filling and emptying methods.
15. Power consumption should be given, where necessary.
16. Each diagram should indicate, under steady-state conditions:
  - (a) nominal throughput per year;
  - (b) physical inventory of in-process materials;
  - (c) material loss rate owing to leakage, decomposition, deposition, etc.;
  - (d) arrangements for regular plant maintenance (periodic shutdown or continuous component replacement, etc.)
17. Description of special sampling and measurement points associated with decontamination of off-process equipment that is to be maintained or replaced.
18. Description of process waste disposal point, including disposal method, storage period, type of disposal, etc.

#### **NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

##### **Accountancy system**

19. Description of the accountancy system used to record and report accountancy data and to establish material balances, supplying specimen blank forms used in all procedures. Period during which such records must be retained should be stated.
20. Indicate when and how often material balances are established, including any established during campaigns. Description of method and procedure for adjusting accounts after a physical inventory taking.

21. Description of procedure for handling shipper/receiver differences and method of adjusting accounts.
22. Description of procedure for correcting accounts owing to procedural or clerical errors and the effect on shipper/receiver differences, if applicable.

#### **Physical inventory**

23. Identification of items of equipment mentioned in the description referred to in points 13 and 18 that are to be regarded as containers for nuclear material under physical inventory conditions. State the timing of physical inventory taking.

#### **Methods for measurement, sampling and analysis**

24. Refer to the information given under points 13 and 17 for location of sampling and measurement points.
25. Description of method for establishing each measurement at the point indicated; equations or tables used and calculations made to determine actual quantities of weights or volumes should be identified. Indicate whether data are recorded automatically or manually. Method and practical procedures for sampling at each point indicated should be described. Indicate number of samples taken and rejection criteria.
26. Description of analytical methods used for accountancy purposes. Refer to a manual or report, if possible.

#### **Control of measurement accuracy**

27. Description of programmes for the continuous appraisal of weight, volume and sampling precision and biases, and for the calibration of associated equipment.
28. Descriptions of type and quality of standards used for analytical methods referred to in point 26, type of analytical equipment used, method and frequency of calibration.

#### **Statistical evaluation**

29. Description of methods for statistical evaluation of data collected in measurement control programmes for evaluating the precision and the accuracy of measurements and for estimating measurement uncertainties (i.e. determination of the standard deviations of random and systematic error in the measurements). Also description of statistical procedures used to combine individual error estimates to obtain the standard deviations of overall error for shipper/receiver differences, the book inventory, the physical inventory and material unaccounted for.

#### **OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS**

30. Organisational arrangements for material accountancy and control.
31. Information on the health and safety rules which have to be observed at the installation, and with which the inspectors must comply.

**I-F. INSTALLATIONS USING NUCLEAR MATERIAL IN QUANTITIES EXCEEDING ONE EFFECTIVE KILOGRAM**

Date: .....

For any installation of a type not referred to in sections A to E which uses more than one effective kilogram per annum, information should be given on the following:

- identification of the installation,
- general arrangements at the installation, including those relating to material use and accountancy, containment and surveillance,
- description of the use of nuclear material (Article 3(1)),
- nuclear material accountancy and control system, including techniques for physical inventory taking,
- other information relevant to the application of safeguards.

The information required under these headings is, where applicable, the same as that required for the types of installations coming under sections C, D and E of this Annex.

**I-G. INSTALLATIONS CANDIDATE MEMBERS OF THE CATCH All MBA (CAM)**

Date: .....

For these holders, the total inventory is calculated as the sum of the stock of each category of nuclear material held, each expressed as a percentage of the following limits:

|                       |                     |
|-----------------------|---------------------|
| depleted uranium      | 350 000 g <b>or</b> |
| thorium               | 200 000 g <b>or</b> |
| natural uranium       | 100 000 g <b>or</b> |
| low enriched uranium  | 1 000 g <b>or</b>   |
| high enriched uranium | 5 g <b>or</b>       |
| plutonium             | 5 g                 |

For example:

- (a) a holder with 4 g of plutonium has a percentage inventory equal to 80 % (4/5);
- (b) a holder with 1 g of high enriched uranium plus 20 000 g of natural uranium has a percentage inventory equal to 40 % (1/5 + 20 000/100 000).

**IDENTIFICATION OF THE INSTALLATION AND OF THE NUCLEAR MATERIAL**

1. Name.
2. Owner and/or operator.
3. Location, exact address with telephone and fax numbers and e-mail addresses.
4. Type of nuclear material.
5. Description of containers used for storage and handling.
6. Description of the use of nuclear material (Article 3(1)).

**NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

The holders' obligations have been simplified as following:

**A. Limits on holdings/movements**

If any individual receipt of nuclear material exceeds the quantities indicated above or if the 'percentage inventory' of the installation exceeds 100 % at any time, the Commission must be notified immediately.

**B. Accounting/operating records to be maintained**

Accounting/operating records must be kept in a manner permitting ready verification of reports made to the Commission and of any correction thereto.

C. **Inventory change reports (ICR)**

Need be submitted only if an inventory change occurs.

A note explaining unusual inventory changes and corrections or any other piece of information included in the report should be attached. In particular, the identification and address should be given of any entity to which material is shipped (including export) or from whom material is received (including import).

Even if no inventory change occurred during the year, an ending book inventory by category as at 31 December must be declared. This declaration must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg by 31 January of each year.

D. **Report form**

No special form is required for the report under C above. The report can be made by letter.

**I-H. WASTE TREATMENT OR WASTE STORAGE INSTALLATIONS (\*)**

Date: .....

## IDENTIFICATION OF THE INSTALLATION

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Present status (e.g. under construction, in operation or closed down).
6. Purpose and type.
7. Area layout (map showing the installation, boundaries, buildings, roads, rivers, railways, etc).
8. Layout of installation:
  - (a) structural containment, fences and access routes;
  - (b) routes followed by nuclear material;
  - (c) nuclear waste disposal areas;
  - (d) each main processing area and process laboratory;
  - (e) test or experimental areas;
  - (f) analytical laboratory.

## GENERAL ARRANGEMENTS AT THE INSTALLATION, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

**Locations and handling of nuclear material**

9. Description of the use of nuclear material (Article 3(1)).
10. Description, by means of drawings or otherwise, of:
  - (a) nuclear material storage areas (inventory locations);
  - (b) the estimated range of inventories of nuclear material in these locations;
  - (c) nuclear material storage and/or shipping containers;
  - (d) the routes and equipment used for movement of nuclear material, if applicable.

## NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

**Accountancy system**

11. Description of the nuclear material accountancy and control system, supplying specimen blank forms used in all accountancy and control procedures. Period during which such records must be retained should be stated.

(\*) Separate installations engaged solely in the handling, storing or processing of waste materials (not forming a part of enrichment, conversion, fabrication, chemical reprocessing and recovery installations or of reactors).



**Physical inventory**

12. Description of procedures, scheduled frequency and methods for operator's physical inventory taking (both for item and/or mass accountancy including main assay methods), and expected accuracy.

## OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS

13. Organisational arrangements for material accountancy and control.
14. Information on the health and safety rules which have to be observed at the installation and with which the inspectors must comply.

**I-J. OTHER INSTALLATIONS (\*)**

Date: .....

## IDENTIFICATION OF THE INSTALLATION AND OF THE NUCLEAR MATERIAL

1. Name.
2. Location, exact address with telephone and fax numbers and e-mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Type of nuclear material.
6. Description of containers used for storage and handling (e.g. to determine whether sealing is possible).
7. Description of the use of nuclear material (Article 3(1)).
8. In the case of ore producers, the potential annual throughput of the installation.
9. The current status (e.g. under construction, in operation or closed down).

## NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

10. Description of the procedures for nuclear material accountancy and control, including procedures for physical inventory taking.
11. Organisational arrangements for material accountancy and control.

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(\*) The term 'other' denotes all the installations not covered by sections A to H, and where nuclear material in quantities not exceeding one effective kilogram is habitually used. It also specifically includes ore producers (point 8 above).

## ANNEX II

**GENERAL DESCRIPTION OF THE SITE <sup>(1)</sup>**

| Site identification<br>Declaration No <sup>(2)</sup><br>Reporting period <sup>(3)</sup> | Declaration date<br>Comments <sup>(4)</sup> | Ref. <sup>(6)</sup> | MBA code <sup>(7)</sup> | Building <sup>(8)</sup> | General description, including use<br>of contents <sup>(9)</sup> | Comments <sup>(10)</sup> |
|-----------------------------------------------------------------------------------------|---------------------------------------------|---------------------|-------------------------|-------------------------|------------------------------------------------------------------|--------------------------|
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |
|                                                                                         |                                             |                     |                         |                         |                                                                  |                          |

Name and signature of the site representative: .....

*Explanatory notes*

- <sup>(1)</sup> The initial declaration should include all nuclear installations, and all other buildings on their sites as described in Article 2(21). A separate entry should be made for each building on the site. Subsequent annual update declarations should include only those sites and buildings which have undergone a change since the previous declaration. A map of the site shall be attached with the initial declaration and updated when necessary.
- <sup>(2)</sup> The 'Declaration No' is a sequential number for each site, starting with '1' for the initial site declaration.
- <sup>(3)</sup> The 'Reporting period' for the initial declaration is an 'as of' date, while for all subsequent annual updates the appropriate entry is the beginning and the ending date of the time period. It is understood that the information provided is valid as of the ending date. All dates should be reported using the DDDMMYYYY format.
- <sup>(4)</sup> Comments applicable to the whole of the site.
- <sup>(5)</sup> Each 'Entry' in each declaration should be numbered sequentially, beginning with '1'.
- <sup>(6)</sup> The 'Ref.' column should be used to refer to another entry. The contents of the 'Ref.' column consist of the relevant declaration and entry numbers (e.g. 10-20 refers to entry 20 of declaration 10). The reference indicates that the current entry adds to or updates information reported earlier. Several references may be inserted, if necessary.
- <sup>(7)</sup> The 'MBA code' column should make reference to the MBA code to which the building in this entry belongs.
- <sup>(8)</sup> The 'Building' column should include a building number or other designation that provides an unambiguous identification of the building on the schematic map of the site.
- <sup>(9)</sup> The 'General description' for each building should include:
- (a) the approximate size of the building in terms of the number of floors and the total square metres of floor space;

- (b) the use of the building, including any prior uses of the building that might be relevant to interpreting other information, such as the results of environmental sampling, available to the Commission; and
- (c) the main contents of the building, where this is not readily apparent from the stated use.

However, descriptions of activities previously provided in the Basic Technical Characteristics questionnaire need not be repeated.

<sup>(10)</sup> Comments applicable to each entry.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, or the equivalent form in electronic format, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

## ANNEX III

## INVENTORY CHANGE REPORT (ICR)

| Label/tag            | Content        | Comments                                                                                         | #  |
|----------------------|----------------|--------------------------------------------------------------------------------------------------|----|
| MBA                  | Character (4)  | MBA code of reporting MBA                                                                        | 1  |
| Report type          | Character (1)  | I for Inventory Change Report                                                                    | 2  |
| Report date          | DDMMYYYY       | Date on which the report was completed                                                           | 3  |
| Report number        | Number (8)     | Sequential number, no gaps                                                                       | 4  |
| Line count           | Number (8)     | Total number of lines reported                                                                   | 5  |
| Start report         | DDMMYYYY       | Date of first day in reporting period                                                            | 6  |
| End report           | DDMMYYYY       | Date of last day in reporting period                                                             | 7  |
| Reporting person     | Character (30) | Name of person responsible for the report                                                        | 8  |
| Transaction ID       | Number (8)     | Sequential number                                                                                | 9  |
| IC code              | Character (2)  | Type of inventory change                                                                         | 10 |
| Batch                | Character (20) | Unique identifier for a batch of nuclear material                                                | 11 |
| KMP                  | Character (1)  | Key measurement point                                                                            | 12 |
| Measurement          | Character (1)  | Measurement code                                                                                 | 13 |
| Material form        | Character (2)  | Material form code                                                                               | 14 |
| Material container   | Character (1)  | Material container code                                                                          | 15 |
| Material state       | Character (1)  | Material state code                                                                              | 16 |
| MBA from             | Character (4)  | MBA code of shipping MBA (for IC codes RD and RF only)                                           | 17 |
| MBA to               | Character (4)  | MBA code of receiving MBA (for IC codes SD and SF only)                                          | 18 |
| Previous batch       | Character (20) | Name of previous batch (for IC code RB only)                                                     | 19 |
| Original date        | DDMMYYYY       | Accounting date of the line to be corrected (always of first line in correction chain)           | 20 |
| PIT date             | DDMMYYYY       | Date of physical inventory taking (PIT) to which MF adjustment refers (use with IC code MF only) | 21 |
| Line number          | Number (8)     | Sequential number, no gaps                                                                       | 22 |
| Accounting date      | DDMMYYYY       | Date on which the inventory change occurred or became known                                      | 23 |
| Items                | Number (6)     | Number of items                                                                                  | 24 |
| Element category     | Character (1)  | Category of nuclear material                                                                     | 25 |
| Element weight       | Number (24.3)  | Element weight                                                                                   | 26 |
| Isotope              | Character (1)  | G for U-235, K for U-233, J for a mixture of U-235 and U-233                                     | 27 |
| Fissile weight       | Number (24.3)  | Weight of fissile isotope                                                                        | 28 |
| Isotopic composition | Character(130) | U, Pu isotopic weight (only if agreed in particular safeguard provisions)                        | 29 |
| Obligation           | Character (2)  | Safeguards obligation                                                                            | 30 |
| Previous category    | Character (1)  | Previous category of nuclear material (use for IC codes CB, CC and CE only)                      | 31 |

| Label/tag            | Content         | Comments                                                                                                            | #  |
|----------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|----|
| Previous obligation  | Character (2)   | Previous obligation (use for IC codes BR, CR, PR and SR only)                                                       | 32 |
| CAM code from        | Character (8)   | Code to identify the shipping small holder                                                                          | 33 |
| CAM code to          | Character (8)   | Code to identify the receiving small holder                                                                         | 34 |
| Document             | Character (70)  | Operator-defined reference to supporting documents                                                                  | 35 |
| Container ID         | Character (20)  | Operator-defined identifier for the container                                                                       | 36 |
| Correction           | Character (1)   | D for deletions, A for additions forming part of a deletion/addition pair, L for late lines (stand-alone additions) | 37 |
| Previous report      | Number (8)      | Report number of line to be corrected                                                                               | 38 |
| Previous line        | Number (8)      | Line number of line to be corrected                                                                                 | 39 |
| Comment              | Character (256) | Operator comment                                                                                                    | 40 |
| Burn-up              | Number (6)      | Burn-up in MWdays/tonne (use for IC codes NL and NP in nuclear reactors only)                                       | 41 |
| CRC                  | Number (20)     | Hash code of line for quality control purposes                                                                      | 42 |
| Previous CRC         | Number (20)     | Hash code of line to be corrected                                                                                   | 43 |
| Advance notification | Character (8)   | Reference to advance notification sent to Euratom (use for IC codes RD, RF, SD and SF only)                         | 44 |
| Campaign             | Character (12)  | Campaign identifier for reprocessing installations                                                                  | 45 |
| Reactor              | Character (12)  | Reactor code for reprocessing campaigns                                                                             | 46 |
| Error path           | Character (8)   | Special code for evaluation purposes                                                                                | 47 |

#### Explanatory notes

1. MBA:

Code of the reporting material balance area. This code is notified to the installation concerned by the Commission.

2. REPORT TYPE:

I for inventory change reports.

3. REPORT DATE:

Date on which the report was completed.

4. REPORT NUMBER:

Sequential number, no gaps.

5. LINE COUNT:

Total number of lines reported.

6. START REPORT:

Date of first day of reporting period.

7. END REPORT:

Date of last day of reporting period.

8. REPORTING PERSON:

Name of person responsible for the report.

9. TRANSACTION ID:

Sequential number. This is used to identify all inventory change lines relating to the same physical transaction.

## 10. IC CODE:

One of the following codes must be used:

| Keyword                               | Code | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Receipt                               | RD   | Receipt of nuclear material from a material balance area within the European Union.                                                                                                                                                                                                                                                                                                                                                                        |
| Import                                | RF   | Import of nuclear material from a third country.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Receipt from non-safeguarded activity | RN   | Receipt of nuclear material from a non-safeguarded activity (Article 34).                                                                                                                                                                                                                                                                                                                                                                                  |
| Shipment                              | SD   | Transfer of nuclear material to a material balance area within the European Union.                                                                                                                                                                                                                                                                                                                                                                         |
| Export                                | SF   | Export of nuclear material to a third country                                                                                                                                                                                                                                                                                                                                                                                                              |
| Shipment to non-safeguarded activity  | SN   | Transfer of nuclear material to a non-safeguarded activity (Article 34).                                                                                                                                                                                                                                                                                                                                                                                   |
| Transfer to conditioned waste         | TC   | Nuclear material contained in waste that is measured or estimated on the basis of measurements, and which has been conditioned in such a way (e.g. in glass, cement, concrete or bitumen) that it is not suitable for further nuclear use. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area. Separate records must be kept for this type of material.                                         |
| Discards to the environment           | TE   | Nuclear material contained in waste that is measured or estimated on the basis of measurements, and which has been irrevocably discarded to the environment as the result of a planned discharge. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area.                                                                                                                                           |
| Transfer to retained waste            | TW   | Nuclear material generated from processing or from an operational accident contained in waste that is measured or estimated on the basis of measurements, and which has been transferred to a specific location within the material balance area from which it could be retrieved. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area. Separate records must be kept for this type of material. |
| Retransfer from conditioned waste     | FC   | Retransfer of conditioned waste to the inventory of the material balance area. This applies whenever conditioned waste undergoes processing.                                                                                                                                                                                                                                                                                                               |
| Retransfer from retained waste        | FW   | Retransfer of retained waste to the inventory of the material balance area. This applies whenever retained waste is retrieved from the specific location within the material balance area, either for any processing involving the separation of elements in the material balance area or for any shipment from the material balance area.                                                                                                                 |
| Accidental loss                       | LA   | Irretrievable and inadvertent loss of a quantity of nuclear material as the result of an operational accident. Use of this code requires a special report to be sent to the Commission.                                                                                                                                                                                                                                                                    |
| Accidental gain                       | GA   | Nuclear material unexpectedly found, except when detected in the course of a physical inventory taking. Use of this code requires a special report to be sent to the Commission.                                                                                                                                                                                                                                                                           |
| Category change                       | CE   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another as a result of an enrichment process (only one line to be reported per category change).                                                                                                                                                                                                                                                                  |
| Category change                       | CB   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another as a result of a blending operation (only one line to be reported per category change).                                                                                                                                                                                                                                                                   |

| Keyword                         | Code | Explanation                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category change                 | CC   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another for all types of category change not covered by codes CE and CB (only one line to be reported per category change).                                                                                                                                                |
| Rebatching                      | RB   | Accountancy transfer of a quantity of nuclear material from one batch to another (only one line to be reported per rebatching).                                                                                                                                                                                                                                     |
| Change in particular obligation | BR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), to balance the total uranium stock following a blending operation (only one line to be reported per change of obligation).                                                                                                             |
| Change in particular obligation | PR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), used when nuclear material enters or leaves an accountancy pool (only one line to be reported per change of obligation).                                                                                                               |
| Change in particular obligation | SR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), following an obligation exchange or a substitution (only one line to be reported per change of obligation).                                                                                                                            |
| Change in particular obligation | CR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), for all cases not covered by codes BR, PR or SR (only one line to be reported per change of obligation).                                                                                                                               |
| Nuclear production              | NP   | Increase in the quantity of nuclear material due to nuclear transformation.                                                                                                                                                                                                                                                                                         |
| Nuclear loss                    | NL   | Decrease in the quantity of nuclear material due to nuclear transformation.                                                                                                                                                                                                                                                                                         |
| Shipper/receiver difference     | DI   | Shipper/receiver difference (see Article 2.19).                                                                                                                                                                                                                                                                                                                     |
| New measurement                 | NM   | Quantity of nuclear material, in one particular batch, accounted for in the nuclear material balance area, being the difference between a newly measured quantity and the quantity formerly accounted for, and which is neither a shipper/receiver difference nor a correction.                                                                                     |
| Balance adjustment              | BJ   | Quantity of nuclear material accounted for in the material balance area, being the difference between the result of a physical inventory taken by the plant operator for his own purposes (without reporting a physical inventory listing to the Commission) and the book inventory established on the same date.                                                   |
| Material unaccounted for        | MF   | Book adjustment for material unaccounted for. Must be equal to the difference between the ending physical inventory (PE) and the ending book inventory (BA) reported in the material balance report (Annex IV). The original date must be that of the physical inventory taking, while the accounting date must be after the date of the physical inventory taking. |
| Roundings                       | RA   | Rounding adjustment to make the sum of the quantities reported in a given period coincide with the ending book inventory of the material balance area.                                                                                                                                                                                                              |
| Isotope adjustment              | R5   | Adjustment to make the sum of the isotope quantities reported coincide with the ending book inventory for U-235 of the material balance area.                                                                                                                                                                                                                       |
| Material production             | MP   | Quantity of nuclear material, obtained from substances originally not subject to safeguards, which has become subject to safeguards because its concentration now exceeds the minimum levels.                                                                                                                                                                       |



| Keyword               | Code | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Termination of use    | TU   | Quantity of nuclear material considered as irrecoverable for practical or economic reasons which is:<br>(i) incorporated in end products used for non-nuclear purposes;<br>or<br>(ii) contained in waste in very low concentrations measured or estimated on the basis of measurements, even if these materials are not discarded to the environment.<br><br>The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area. |
| Ending book inventory | BA   | Book inventory at the end of a reporting period and at the PIT date, separate for each category of nuclear material and for each particular safeguards obligation.                                                                                                                                                                                                                                                                                                          |

## 11. BATCH:

The batch designation may be chosen by the operator, but:

- (a) in the case of the inventory change 'Receipt (RD)', the batch designation used by the shipper must be reported;
- (b) a batch designation must not be used again for another batch in the same material balance area.

## 12. KMP:

Key measurement point. The codes are notified to the installation concerned in the particular safeguard provisions. If no codes have been specified, '&' should be used.

## 13. MEASUREMENT:

The basis on which the quantity of nuclear material reported was established has to be indicated. One of the following codes must be used:

| Measured | Estimated | Explanation                                                                                                                                                                          |
|----------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M        | E         | In the reporting material balance area.                                                                                                                                              |
| N        | F         | In another material balance area.                                                                                                                                                    |
| T        | G         | In the reporting material balance area when the weights have already been given in a previous inventory change report or physical inventory listing.                                 |
| L        | H         | In another material balance area when the weights have already been given in a previous inventory change report or physical inventory listing for the present material balance area. |

## 14. MATERIAL FORM:

The following codes must be used:

| Main type of material form                     | Subtype | Code |
|------------------------------------------------|---------|------|
| Ores                                           |         | OR   |
| Concentrates                                   |         | YC   |
| Uranium hexafluoride (UF <sub>6</sub> )        |         | U6   |
| Uranium tetrafluoride (UF <sub>4</sub> )       |         | U4   |
| Uranium dioxide (UO <sub>2</sub> )             |         | U2   |
| Uranium trioxide (UO <sub>3</sub> )            |         | U3   |
| Uranium oxide (U <sub>3</sub> O <sub>8</sub> ) |         | U8   |
| Thorium oxide (ThO <sub>2</sub> )              |         | T2   |

| Main type of material form | Subtype       | Code |
|----------------------------|---------------|------|
| Solutions                  | Nitrate       | LN   |
|                            | Fluoride      | LF   |
|                            | Other         | LO   |
| Powder                     | Homogeneous   | PH   |
|                            | Heterogeneous | PN   |
| Ceramics                   | Pellets       | CP   |
|                            | Spheres       | CS   |
|                            | Other         | CO   |
| Metal                      | Pure          | MP   |
|                            | Alloys        | MA   |
| Fuel                       | Rods, pins    | ER   |
|                            | Plates        | EP   |
|                            | Bundles       | EB   |
|                            | Assemblies    | EA   |
|                            | Other         | EO   |

| Main type of material form | Subtype                                                     | Code |
|----------------------------|-------------------------------------------------------------|------|
| Sealed sources             |                                                             | QS   |
| Small quantities/samples   |                                                             | SS   |
| Scrap                      | Homogeneous                                                 | SH   |
|                            | Heterogeneous (clean-outs, clinkers, sludges, fines, other) | SN   |
| Solid waste                | Hulls                                                       | AH   |
|                            | Mixed (plastics, gloves, papers, etc.)                      | AM   |
|                            | Contaminated equipment                                      | AC   |
|                            | Other                                                       | AO   |
| Liquid waste               | Low active                                                  | WL   |
|                            | Medium active                                               | WM   |
|                            | High active                                                 | WH   |
| Conditioned waste          | Glass                                                       | NG   |
|                            | Bitumen                                                     | NB   |
|                            | Concrete                                                    | NC   |
|                            | Other                                                       | NO   |

## 15. MATERIAL CONTAINER:

The following codes must be used:

| Type of container       | Code |
|-------------------------|------|
| Cylinder                | C    |
| Pack                    | P    |
| Drum                    | D    |
| Discrete fuel unit      | S    |
| Bird cage               | B    |
| Bottle                  | F    |
| Tank or other container | T    |
| Other                   | O    |

## 16. MATERIAL STATE:

The following codes must be used:

| State                       | Code |
|-----------------------------|------|
| Fresh nuclear material      | F    |
| Irradiated nuclear material | I    |
| Waste                       | W    |
| Irrecoverable material      | N    |

## 17. MBA FROM:

Use only for inventory change codes RD and RF. For inventory change code RD, the code of the shipping material balance area is reported. If this code is unknown, the code 'F', 'Q' or 'W' (for the shipping MBA in France, the United Kingdom or a non-nuclear-weapon State) is reported and the shipper's full name and address must be entered in the comment field (40). For inventory change code RF, the country code of the exporting state, or the MBA code of the exporting installation if known, is reported, and the shipper's full name and address must be entered in the comment field (40).

## 18. MBA TO:

Use only for inventory change codes SD and SF. For inventory change code SD, the code of the receiving material balance area is reported. If this code is unknown, the code 'F', 'Q' or 'W' (for the receiving MBA in France, the United Kingdom or a non-nuclear-weapon State) is reported and the receiver's full name and address must be entered in the comment field (40). For inventory change code SF, the country code of the importing state or the MBA code of the importing installation if known, is reported, and the receiver's full name and address must be entered in the comment field (40).

## 19. PREVIOUS BATCH:

Batch designation before rebatching. The batch designation after the rebatching must be reported in field 11.

## 20. ORIGINAL DATE:

In the case of a correction, the day, month and year when the line to be corrected was originally entered must be reported. For correction chains, the original date is always the accounting date of the first line in the chain. For late lines (stand-alone additions), the original date is the date on which the inventory change occurred.

## 21. PIT DATE:

Date of the physical inventory taking as reported in the material balance report on which the book adjustment for MUF (material unaccounted for) is based. Use only with inventory change code MF.

## 22. LINE NUMBER:

Sequential number starting with 1 in each report, no gaps.

## 23. ACCOUNTING DATE:

Day, month and year when the inventory change occurred or became known.

## 24. ITEMS:

The number of items making up the batch must be reported. If an inventory change consists of several lines, the sum of the number of items reported must equal the total number of items belonging to the same transaction ID. If the transaction involves more than one element the number of items should be declared in the line(s) for the element category of highest strategic value only (in descending order: P, H, L, N, D, T).

## 25. ELEMENT CATEGORY:

The following codes must be used:

| Category of nuclear material                                                | Code |
|-----------------------------------------------------------------------------|------|
| Plutonium                                                                   | P    |
| High enriched uranium<br>(20 % enrichment and above)                        | H    |
| Low enriched uranium<br>(higher than natural but less than 20 % enrichment) | L    |
| Natural uranium                                                             | N    |
| Depleted uranium                                                            | D    |
| Thorium                                                                     | T    |

## 26. ELEMENT WEIGHT:

The weight of the element category referred to in field 25 must be reported. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 27. ISOTOPE:

This code indicates the fissile isotopes involved and should be used when the weight of fissile isotopes is reported (28). Use the code G for U-235, K for U-233, and J for a mixture of U-235 and U-233.

## 28. FISSILE WEIGHT:

Unless otherwise stated in the particular safeguard provisions, the weight of fissile isotopes must only be reported for enriched uranium and category changes involving enriched uranium. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 29. ISOTOPIC COMPOSITION:

If agreed in the particular safeguard provisions the isotopic composition of U and/or Pu must be reported in the format as a list of weights [number(18,3)] separated by semi-colons to denote the weight of U-233, U-234, U-235, U-236, U-238 or Pu-238, Pu-239, Pu-240, Pu-241, Pu-242. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 30. OBLIGATION:

Indication of the particular safeguards obligation assumed by the Community under an Agreement concluded with a third country or an international organisation, to which the material is subject (Article 17). The Commission will communicate the appropriate codes to the installations.

## 31. PREVIOUS CATEGORY:

Code of the category of nuclear material before the category change. The corresponding code after the change must be reported in field 25. Use only with the inventory change codes CE, CB and CC.

## 32. PREVIOUS OBLIGATION:

Code of the particular safeguards obligation to which the nuclear material was subject before the change. The corresponding obligation code after the change must be reported in field 30. Use only with the inventory change codes BR, CR, PR and SR.

## 33. CAM CODE FROM:

Code of installation of Annex I-G shipping material. The Commission will communicate to the operator or entity the appropriate code. Simplified reporting procedures apply to these operators.

## 34. CAM CODE TO:

Code of installation of Annex I-G receiving material. The Commission will communicate to the operator or entity the appropriate code. Simplified reporting procedures apply to these operators.

## 35. DOCUMENT:

Operator-defined reference to supporting document(s).

## 36. CONTAINER ID:

Operator-defined container number. Optional data element which can be used in those cases where the container number does not appear in the batch designation.

## 37. CORRECTION:

Corrections have to be made by deleting the wrong line(s) and adding the correct one(s), where appropriate. The following codes must be used:

| Code | Explanation                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D    | Deletion. The line to be deleted must be identified by indicating in field 38 the report number (4), in field 39 the line number (22) and in field 43 the CRC (42) which were declared for the original line. Other fields need not be reported.                                                                      |
| A    | Addition (forming part of a deletion/addition pair). The correct line must be reported with all data fields, including the 'previous report' field (38) and the 'previous line' field (39). The 'previous line' field (39) must repeat the line number (22) of the line being replaced by the deletion/addition pair. |
| L    | Late line (stand-alone addition). The late line to be added must be reported with all data fields, including the 'previous report' field (38). The 'previous report' field (38) must contain the report number (4) of the report in which the late line should have been included.                                    |

## 38. PREVIOUS REPORT:

Indicate the report number (4) of the line to be corrected.

## 39. PREVIOUS LINE:

For deletions, or additions forming part of a deletion/addition pair, indicate the line number (22) of the line to be corrected.

## 40. COMMENT:

Free-text comment field for short comments by operator (replaces separate concise note).

## 41. BURN-UP:

For inventory changes of type NP or NL in nuclear reactors, burn-up in MWdays/tonne.

## 42. CRC:

Hash code of line for quality control purposes. The Commission will inform the operator of the algorithm to be used.

## 43. PREVIOUS CRC:

Hash code of the line to be corrected.

## 44. ADVANCE NOTIFICATION:

Reference code for the advance notification (Articles 20 and 21). Use with inventory changes SF and RF and with those inventory changes of type SD and RD when the States where the shipper and receiver are located are not party to the same safeguards agreement with the International Atomic Energy Agency and Euratom.

## 45. CAMPAIGN:

Unique identifier for the reprocessing campaign. Use only for inventory changes in the process material balance area(s) of spent fuel reprocessing installations.

## 46. REACTOR:

Unique identifier for the reactor from which irradiated fuel is being stored or reprocessed. Use only for inventory changes in spent fuel storage or reprocessing installations.

## 47. ERROR PATH:

Special code describing measurement errors and their propagation, for material balance evaluation purposes. The codes are agreed between the installation and the Commission.

## GENERAL REMARKS CONCERNING THE COMPLETION OF THE REPORTS

1. In the case of transfer of nuclear material, the shipper must provide the receiver with all the necessary information for the inventory change report.
  2. If numerical data contain fractions of units, a point should precede the decimal digits.
  3. The following 55 characters may be used: the 26 capital letters A to Z, figures 0 to 9 and the characters 'plus', 'minus', 'slash', 'asterisk', 'space', 'equal', 'greater than', 'less than', 'point', 'comma', 'open bracket', 'close bracket', 'colon', 'dollar', 'percent', 'quotation mark', 'semi-colon', 'question mark' and 'ampersand'
  4. Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.
  5. Reports must be prepared according to a world-wide accepted labelled reporting format, agreed between the Commission and operators.
  6. The reports, duly completed and digitally signed, should be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.
-

## ANNEX IV

**MATERIAL BALANCE REPORT (MBR)**

| Label/tag        | Content         | Comments                                                                                                            | #  |
|------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|----|
| MBA              | Character (4)   | MBA code of reporting MBA                                                                                           | 1  |
| Report type      | Character (1)   | M for Material Balance Report                                                                                       | 2  |
| Report date      | DDMMYYYY        | Date on which the report was completed                                                                              | 3  |
| Start report     | DDMMYYYY        | Starting date of MBR (date of last PIT +1 day)                                                                      | 4  |
| End report       | DDMMYYYY        | End date of MBR (date of current PIT)                                                                               | 5  |
| Report number    | Number (8)      | Sequential number, no gaps                                                                                          | 6  |
| Element category | Character (1)   | Category of nuclear material                                                                                        | 7  |
| Line count       | Number (8)      | Total number of lines reported                                                                                      | 8  |
| Reporting person | Character (30)  | Name of person responsible for report                                                                               | 9  |
| IC code          | Character (2)   | Type of inventory change                                                                                            | 10 |
| Line number      | Number (8)      | Sequential number, no gaps                                                                                          | 11 |
| Element weight   | Number (24.3)   | Element weight                                                                                                      | 12 |
| Isotope          | Character (1)   | G for U-235, K for U-233, J for a mixture of U-235 and U-233                                                        | 13 |
| Fissile weight   | Number (24.3)   | Weight of fissile isotope                                                                                           | 14 |
| Obligation       | Character (2)   | Safeguards obligation                                                                                               | 15 |
| Correction       | Character (1)   | D for deletions, A for additions forming part of a deletion/addition pair, L for late lines (stand-alone additions) | 16 |
| Previous report  | Number (8)      | Report number of line to be corrected                                                                               | 17 |
| Previous line    | Number (8)      | Line number of line to be corrected                                                                                 | 18 |
| Comment          | Character (256) | Operator comment                                                                                                    | 19 |
| CRC              | Number (20)     | Hash code of line for quality control purposes                                                                      | 20 |
| Previous CRC     | Number (20)     | Hash code of line to be corrected                                                                                   | 21 |

*Explanatory notes*

## 1. MBA:

Code of the reporting material balance area. This code is notified to the installation concerned by the Commission.

## 2. REPORT TYPE:

M for material balance reports.

## 3. REPORT DATE:

Date on which the report was completed.

## 4. START REPORT:

Start date of MBR, date of the day immediately following the day of the previous physical inventory taking.

## 5. END REPORT:

End date of MBR, date of current physical inventory taking.

## 6. REPORT NUMBER:

Sequential number, no gaps.

## 7. ELEMENT CATEGORY:

The following code for categories of nuclear material must be used:

| Category of nuclear material                                                | Code |
|-----------------------------------------------------------------------------|------|
| Plutonium                                                                   | P    |
| High enriched uranium<br>(20 % enrichment and above)                        | H    |
| Low enriched uranium<br>(higher than natural but less than 20 % enrichment) | L    |
| Natural uranium                                                             | N    |
| Depleted uranium                                                            | D    |
| Thorium                                                                     | T    |

## 8. LINE COUNT:

Total number of lines reported.

## 9. REPORTING PERSON:

Name of person responsible for report.

## 10. IC CODE:

The different types of inventory information and of inventory change should be entered in the sequence indicated below. The following codes must be used:

| Keyword                                             | Code | Explanation                                                                                                                                        |
|-----------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Beginning physical inventory                        | PB   | Physical inventory at the beginning of the reporting period (must be equal to the physical inventory at the end of the previous reporting period). |
| Inventory changes<br>(only codes in the list below) |      | For each type of inventory change, one consolidated line has to be entered for the entire reporting period (first increases, then decreases).      |
| Ending book inventory                               | BA   | Book inventory at the end of the reporting period. It must be equal to the arithmetic sum of the MBR entries above.                                |
| Ending physical inventory                           | PE   | Physical inventory at the end of the reporting period.                                                                                             |
| Material unaccounted for                            | MF   | Material unaccounted for. Must be calculated as<br>'ending physical inventory (PE)<br>minus<br>'ending book inventory (BA)'.<br>'                  |



For inventory changes, one of the following codes must be used:

| Keyword                               | Code | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Receipt                               | RD   | Receipt of nuclear material from a material balance area within the European Union.                                                                                                                                                                                                                                                                                                                                                                       |
| Import                                | RF   | Import of nuclear material from a Third Country                                                                                                                                                                                                                                                                                                                                                                                                           |
| Receipt from non-safeguarded activity | RN   | Receipt of nuclear material from a non-safeguarded activity (Article 34).                                                                                                                                                                                                                                                                                                                                                                                 |
| Shipment                              | SD   | Transfer of nuclear material to a material balance area within the European Union.                                                                                                                                                                                                                                                                                                                                                                        |
| Export                                | SF   | Export of nuclear material to a Third Country.                                                                                                                                                                                                                                                                                                                                                                                                            |
| Shipment to non-safeguarded activity  | SN   | Transfer of nuclear material to a non-safeguarded activity (Article 34).                                                                                                                                                                                                                                                                                                                                                                                  |
| Transfer to conditioned waste         | TC   | Nuclear material contained in waste that is measured or estimated on the basis of measurements, and which has been conditioned in such a way (e.g. in glass, cement, concrete or bitumen) that it is not suitable for further nuclear use. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area. Separate records must be kept for this type of material.                                        |
| Discards to the environment           | TE   | Nuclear material contained in waste that is measured or estimated on the basis of measurements, and which has been irrevocably discarded to the environment as the result of a planned discharge. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area.                                                                                                                                          |
| Transfer to retained waste            | TW   | Nuclear material generated from processing or from an operational accident contained in waste that is measured or estimated on the basis of measurements and which has been transferred to a specific location within the material balance area from which it could be retrieved. The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area. Separate records must be kept for this type of material. |
| Retransfer from conditioned waste     | FC   | Retransfer of conditioned waste to the inventory of the material balance area. This applies whenever conditioned waste undergoes processing.                                                                                                                                                                                                                                                                                                              |
| Retransfer from retained waste        | FW   | Retransfer of retained waste to the inventory of the material balance area. This applies whenever retained waste is retrieved from the specific location within the material balance area, either for any processing involving the separation of elements in the material balance area or for any shipment from the material balance area.                                                                                                                |
| Accidental loss                       | LA   | Irrecoverable and inadvertent loss of a quantity of nuclear material as the result of an operational accident. Use of this code in the MBR is only allowed if a special report was sent to the Commission when the inventory change occurred or became known.                                                                                                                                                                                             |
| Accidental gain                       | GA   | Nuclear material unexpectedly found, except when detected in the course of a physical inventory taking. Use of this code in the MBR is only allowed if a special report was sent to the Commission when the inventory change occurred or became known.                                                                                                                                                                                                    |
| Category change                       | CE   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another as a result of an enrichment process.                                                                                                                                                                                                                                                                                                                    |
| Category change                       | CB   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another as a result of a blending operation.                                                                                                                                                                                                                                                                                                                     |
| Category change                       | CC   | Accountancy transfer of a quantity of nuclear material from one category (Article 18) to another for all types of category change not covered by codes CE and CB.                                                                                                                                                                                                                                                                                         |

| Keyword                         | Code | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Change in particular obligation | BR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), to balance the total uranium stock following a blending operation.                                                                                                                                                                                                                                                                                                                               |
| Change in particular obligation | PR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), used when nuclear material enters or leaves an accountancy pool.                                                                                                                                                                                                                                                                                                                                 |
| Change in particular obligation | SR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), following an obligation exchange or a substitution.                                                                                                                                                                                                                                                                                                                                              |
| Change in particular obligation | CR   | Accountancy transfer of a quantity of nuclear material from one particular safeguards obligation to another (Article 17(1)), for all cases not covered by codes BR, PR or SR.                                                                                                                                                                                                                                                                                                                                                 |
| Nuclear production              | NP   | Increase in the quantity of nuclear material due to nuclear transformation.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Nuclear loss                    | NL   | Decrease in the quantity of nuclear material due to nuclear transformation.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Shipper/receiver difference     | DI   | Shipper/receiver difference (See Article 2.19).                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| New measurement                 | NM   | Quantity of nuclear material, in one particular batch, accounted for in the nuclear material balance area, being the difference between a newly measured quantity and the quantity formerly accounted for, and which is neither a shipper/receiver difference nor a correction.                                                                                                                                                                                                                                               |
| Balance adjustment              | BJ   | Quantity of nuclear material accounted for in the material balance area, being the difference between the result of a physical inventory taken by the plant operator for his own purposes (without reporting a physical inventory listing to the Commission) and the book inventory established on the same date.                                                                                                                                                                                                             |
| Roundings                       | RA   | Rounding adjustment to make the sum of the quantities reported in a given period coincide with the ending book inventory of the material balance area.                                                                                                                                                                                                                                                                                                                                                                        |
| Isotope adjustment              | R5   | Adjustment to make the sum of the isotope quantities reported coincide with the ending book inventory for U-235 of the material balance area.                                                                                                                                                                                                                                                                                                                                                                                 |
| Material production             | MP   | Quantity of nuclear material, obtained from substances originally not subject to safeguards, which has become subject to safeguards because its concentration now exceeds the minimum levels.                                                                                                                                                                                                                                                                                                                                 |
| Termination of use              | TU   | Quantity of nuclear material considered as irrecoverable for practical or economic reasons which is: <ul style="list-style-type: none"> <li>(i) incorporated in end products used for non-nuclear purposes; or</li> <li>(ii) contained in waste in very low concentrations measured or estimated on the basis of measurements, even if these materials are not discarded to the environment.</li> </ul> <p>The quantity of nuclear material involved is to be subtracted from the inventory of the material balance area.</p> |

## 11. LINE NUMBER:

Sequential number starting with 1, no gaps.

## 12. ELEMENT WEIGHT:

The weight of the element category referred to in field 7 must be reported. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 13. ISOTOPE:

This code indicates the kind of fissile isotopes involved and should be used when the weight of fissile isotopes is reported. Use the code G for U-235, K for U-233, and J for a mixture of U-235 and U-233.

## 14. FISSILE WEIGHT:

Unless otherwise stated in the particular safeguard provisions, the weight of fissile isotopes must only be reported for enriched uranium and category changes involving enriched uranium. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 15. OBLIGATION:

Indication of the particular safeguards obligation assumed by the Community under an Agreement concluded with a third country or an international organisation, to which the material is subject (Article 17). The Commission will communicate the appropriate codes to the installations.

## 16. CORRECTION:

Corrections have to be made by deleting the wrong line(s) and adding the correct one(s), where appropriate. The following codes must be used:

| Code | Explanation                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D    | Deletion. The line to be deleted must be identified by indicating in field 17 the report number (6), in field 18 the line number (11) and in field 21 the CRC (20) which were declared for the original line. Other fields need not be reported.                                                                      |
| A    | Addition (forming part of a deletion/addition pair). The correct line must be reported with all data fields, including the 'previous report' field (17) and the 'previous line' field (18). The 'previous line' field (18) must repeat the line number (11) of the line being replaced by the deletion/addition pair. |
| L    | Late line (stand-alone addition). The late line to be added must be reported with all data fields, including the 'previous report' field (17). The 'previous report' field (17) must contain the report number (6) of the report in which the late line should have been included.                                    |

## 17. PREVIOUS REPORT:

Indicate the report number (6) of the line to be corrected.

## 18. PREVIOUS LINE:

For deletions, or additions forming part of a deletion/addition pair, indicate the line number (11) of the line to be corrected.

## 19. COMMENT:

Free-text comment field for short comments by operator (replaces separate concise note).

## 20. CRC:

Hash code of line for quality control purposes. The Commission will inform the operator of the algorithm to be used.

## 21. PREVIOUS CRC:

Hash code of the line to be corrected.

## GENERAL REMARKS CONCERNING THE COMPLETION OF THE REPORTS

General remarks 2, 3, 4, 5 and 6 at the end of Annex III apply *mutatis mutandis*.

## ANNEX V

## PHYSICAL INVENTORY LISTING (PIL)

| Label/Tag          | Content         | Comments                                                                                                            | #  |
|--------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|----|
| MBA                | Character (4)   | MBA code of reporting MBA                                                                                           | 1  |
| Report type        | Character (1)   | P for physical inventory listings                                                                                   | 2  |
| Report date        | DDMMYYYY        | Date on which the report was completed                                                                              | 3  |
| Report number      | Number (8)      | Sequential number, no gaps                                                                                          | 4  |
| PIT date           | DDMMYYYY        | Date on which the physical inventory was taken                                                                      | 5  |
| Line count         | Number (8)      | Total number of lines reported                                                                                      | 6  |
| Reporting person   | Character (30)  | Name of person responsible for report                                                                               | 7  |
| PIL_ITEM_ID        | Number (8)      | Sequential number                                                                                                   | 8  |
| Batch              | Character (20)  | Unique identifier for a batch of nuclear material                                                                   | 9  |
| KMP                | Character (1)   | Key measurement point                                                                                               | 10 |
| Measurement        | Character (1)   | Measurement code                                                                                                    | 11 |
| Element category   | Character (1)   | Category of nuclear material                                                                                        | 12 |
| Material form      | Character (2)   | Material form code                                                                                                  | 13 |
| Material container | Character (1)   | Material container code                                                                                             | 14 |
| Material state     | Character (1)   | Material state code                                                                                                 | 15 |
| Line number        | Number (8)      | Sequential number, no gaps                                                                                          | 16 |
| Items              | Number (6)      | Number of items                                                                                                     | 17 |
| Element weight     | Number (24.3)   | Element weight                                                                                                      | 18 |
| Isotope            | Character (1)   | G for U-235, K for U-233, J for a mixture of U-235 and U-233                                                        | 19 |
| Fissile weight     | Number (24.3)   | Weight of fissile isotope                                                                                           | 20 |
| Obligation         | Character (2)   | Safeguards obligation                                                                                               | 21 |
| Document           | Character (70)  | Operator-defined reference to supporting documents                                                                  | 22 |
| Container ID       | Character (20)  | Operator-defined identifier for the container                                                                       | 23 |
| Correction         | Character (1)   | D for deletions, A for additions forming part of a deletion/addition pair, L for late lines (stand-alone additions) | 24 |
| Previous report    | Number (8)      | Report number of line to be corrected                                                                               | 25 |
| Previous line      | Number (8)      | Line number of line to be corrected                                                                                 | 26 |
| Comment            | Character (256) | Operator comment                                                                                                    | 27 |
| CRC                | Number (20)     | Hash code of line for quality control purposes                                                                      | 28 |
| Previous CRC       | Number (20)     | Hash code of line to be corrected                                                                                   | 29 |

*Explanatory notes*

## 1. MBA:

Code of the reporting material balance area. This code is notified to the installation concerned by the Commission.

## 2. REPORT TYPE:

P for physical inventory listings.

## 3. REPORT DATE:

Date on which the report was completed.

## 4. REPORT NUMBER:

Sequential number, no gaps.

## 5. PIT DATE:

Day, month and year when the physical inventory was taken, reflecting the situation at 24.00.

## 6. LINE COUNT:

Total number of lines reported.

## 7. REPORTING PERSON:

Name of person responsible for report.

## 8. PIL\_ITEM\_ID:

Sequential number, common to all PIL lines related to the same physical object.

## 9. BATCH:

If batch follow-up is required in the particular safeguard provisions, the batch designation previously used for the batch in an inventory change report or in a previous physical inventory listing must be used.

## 10. KMP:

Key measurement point. The codes are notified to the installation concerned in the particular safeguard provisions. If no code has been specified, '&' should be used.

## 11. MEASUREMENT:

The basis on which the quantity of nuclear material reported was established has to be indicated. One of the following codes must be used:

| Measured | Estimated | Explanation                                                                                                                                                                          |
|----------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M        | E         | In the reporting material balance area.                                                                                                                                              |
| N        | F         | In another material balance area.                                                                                                                                                    |
| T        | G         | In the reporting material balance area when the weights have already been given in a previous inventory change report or physical inventory listing.                                 |
| L        | H         | In another material balance area when the weights have already been given in a previous inventory change report or physical inventory listing for the present material balance area. |

## 12. ELEMENT CATEGORY:

The following codes must be used:

| Category of nuclear material                                                | Code |
|-----------------------------------------------------------------------------|------|
| Plutonium                                                                   | P    |
| High enriched uranium<br>(20 % enrichment and above)                        | H    |
| Low enriched uranium<br>(higher than natural and less than 20 % enrichment) | L    |
| Natural uranium                                                             | N    |
| Depleted uranium                                                            | D    |
| Thorium                                                                     | T    |

## 13. MATERIAL FORM:

The following codes must be used:

| Main type of material form                     | Subtype                                                     | Code |
|------------------------------------------------|-------------------------------------------------------------|------|
| Ores                                           |                                                             | OR   |
| Concentrates                                   |                                                             | YC   |
| Uranium hexafluoride (UF <sub>6</sub> )        |                                                             | U6   |
| Uranium tetrafluoride (UF <sub>4</sub> )       |                                                             | U4   |
| Uranium dioxide (UO <sub>2</sub> )             |                                                             | U2   |
| Uranium trioxide (UO <sub>3</sub> )            |                                                             | U3   |
| Uranium oxide (U <sub>3</sub> O <sub>8</sub> ) |                                                             | U8   |
| Thorium oxide (ThO <sub>2</sub> )              |                                                             | T2   |
| Solutions                                      | Nitrate                                                     | LN   |
|                                                | Fluoride                                                    | LF   |
|                                                | Other                                                       | LO   |
| Powder                                         | Homogeneous                                                 | PH   |
|                                                | Heterogeneous                                               | PN   |
| Ceramics                                       | Pellets                                                     | CP   |
|                                                | Spheres                                                     | CS   |
|                                                | Other                                                       | CO   |
| Metal                                          | Pure                                                        | MP   |
|                                                | Alloys                                                      | MA   |
| Fuel                                           | Rods, pins                                                  | ER   |
|                                                | Plates                                                      | EP   |
|                                                | Bundles                                                     | EB   |
|                                                | Assemblies                                                  | EA   |
|                                                | Other                                                       | EO   |
| Sealed sources                                 |                                                             | QS   |
| Small quantities/samples                       |                                                             | SS   |
| Scrap                                          | Homogeneous                                                 | SH   |
|                                                | Heterogeneous (clean-outs, clinkers, sludges, fines, other) | SN   |
| Solid waste                                    | Hulls                                                       | AH   |
|                                                | Mixed (plastics, gloves, papers, etc.)                      | AM   |
|                                                | Contaminated equipment                                      | AC   |
|                                                | Other                                                       | AO   |
| Liquid waste                                   | Low active                                                  | WL   |
|                                                | Medium active                                               | WM   |
|                                                | High active                                                 | WH   |
| Conditioned waste                              | Glass                                                       | NG   |
|                                                | Bitumen                                                     | NB   |
|                                                | Concrete                                                    | NC   |
|                                                | Other                                                       | NO   |

## 14. MATERIAL CONTAINER:

The following codes must be used:

| Type of container       | Code |
|-------------------------|------|
| Cylinder                | C    |
| Pack                    | P    |
| Drum                    | D    |
| Discrete fuel unit      | S    |
| Bird cage               | B    |
| Bottle                  | F    |
| Tank or other container | T    |
| Other                   | O    |

## 15. MATERIAL STATE:

The following codes must be used:

| State                       | Code |
|-----------------------------|------|
| Fresh nuclear material      | F    |
| Irradiated nuclear material | I    |
| Waste                       | W    |
| Irrecoverable material      | N    |

## 16. LINE NUMBER:

Sequential number starting with 1 in each report, no gaps.

## 17. ITEMS:

Each physical inventory line must indicate the number of items involved. If a group of items belonging to the same batch are reported as several lines, the sum of the number of items reported must equal the total number of items in the group. If the lines involve more than one element category, the number of items should be declared in the line(s) for the element category of highest strategic value only (in descending order: P, H, L, N, D, T).

## 18. ELEMENT WEIGHT:

The weight of the element category referred to in field 12 must be reported. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 19. ISOTOPE:

This code indicates the fissile isotopes involved and should be used when the weight of fissile isotopes is reported. Use the code G for U-235, K for U-233, and J for a mixture of U-235 and U-233.

## 20. FISSILE WEIGHT:

Unless otherwise stated in the particular safeguard provisions, the weight of fissile isotopes must only be reported for enriched uranium and category changes involving enriched uranium. All weights must be reported in grams. The decimal digits appearing in the accounting lines can be reported up to a maximum of three decimal places.

## 21. OBLIGATION:

Indication of the particular safeguards obligation assumed by the Community under an Agreement concluded with a third country or an international organisation, to which the material is subject (Article 17). The Commission will communicate the appropriate codes to the installations.

## 22. DOCUMENT:

Operator-defined reference to supporting document(s).

## 23. CONTAINER ID:

Operator-defined container number. Optional data element which can be used in those cases where the container number does not appear in the batch designation.

## 24. CORRECTION:

Corrections have to be made by deleting the wrong line(s) and adding the correct one(s), where appropriate. The following codes must be used:

| Code | Explanation                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D    | Deletion. The line to be deleted must be identified by indicating in field 25 the report number (4), in field 26 the line number (16) and in field 29 the CRC (28) which were declared for the original line. Other fields need not be reported.                                                                      |
| A    | Addition (forming part of a deletion/addition pair). The correct line must be reported with all data fields including the 'previous report' field (25) and the 'previous line' field (26). The 'previous line' field (26) must contain the line number (16) of the line being replaced by the deletion/addition pair. |
| L    | Late line (stand-alone addition). The late line to be added must be reported with all data fields, including the 'previous report' field (25). The 'previous report' field (25) must contain the report number (4) of the report in which the late line should have been included.                                    |

## 25. PREVIOUS REPORT:

Indicate the report number (4) of the line to be corrected.

## 26. PREVIOUS LINE:

For deletions, or additions forming part of a deletion/addition pair, indicate the line number (16) of the line to be corrected.

## 27. COMMENT:

Free-text comment field for short comments by operator (replaces separate concise note).

## 28. CRC:

Hash code of line for quality control purposes. The Commission will inform the operator of the algorithm to be used.

## 29. PREVIOUS CRC:

Hash code of the line to be corrected.

## GENERAL REMARKS CONCERNING THE COMPLETION OF THE REPORTS

If, on the date the physical inventory was taken, there was no nuclear material in the material balance area, only labels from 1 to 7, 16, 17 and 28 above should be completed on the report.

General remarks 2, 3, 4, 5 and 6 at the end of Annex III apply *mutatis mutandis*.



## ANNEX VI

## ADVANCE NOTIFICATION OF EXPORTS/SHIPMENTS OF NUCLEAR MATERIAL

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

1. Reference code:
2. Material balance area code:
3. Installation (shipper):...                      Installation (receiver):  

---

---
4. Quantities split up by category of nuclear material and particular safeguards obligation:
5. Chemical composition:
6. Enrichment or isotopic composition:
7. Physical form:
8. Number of items:
9. Description of containers and seals:
10. Shipment identification data:
11. Means of transport:
12. Location where material will be stored or prepared:
13. Last date when material can be identified:
14. Approximate dates of dispatch:  
Expected dates of arrival:
15. Use:
16. Supply agency's contractual reference:

**Date and place of dispatch of notification:****Name and position of signatory:****Signature:***Explanatory notes*

1. Reference code for advance notifications to be used in the inventory change report (use up to eight characters).
2. Code of the reporting material balance area as notified by the Commission to the installation concerned.
3. Name, address and country of the installation shipping, and of the installation receiving, the nuclear material. The receiver at the ultimate destination should also be indicated where applicable.
4. The total weight of the elements should be given in grams. The weight of fissile isotopes should be indicated, if applicable. The weights must be split up by category of nuclear material and particular safeguards obligation.
5. Chemical composition should be indicated.

6. If applicable, the degree of enrichment or the isotopic composition should be indicated.
7. Use the description of materials as laid out in Annex III (14) to this Regulation.
8. The number of items included in the shipment should be indicated.
9. Description (type) of containers, including features that would permit sealing.
10. Shipment identification data (e.g. container markings or numbers).
11. Indicate, where appropriate, the means of transport.
12. Indicate the location within the material balance area where the nuclear material is prepared for shipping and can be identified, and where its quantity and composition can if possible be verified.
13. Last date when material can be identified and when its quantity and composition can if possible be verified.
14. Approximate dates of dispatch and of expected arrival at destination.
15. Indicate the use to which the nuclear material has been assigned.
16. Indicate, where appropriate:
  - supply agency's contractual reference or, if not available, the date on which the contract was concluded or considered as concluded by the Supply Agency, and any useful references;
  - for jobbing contracts (Article 75 of the Treaty) and for contracts for the supply of small quantities of material (Article 74 of the Treaty, and Commission Regulation No 17/66/Euratom as amended by Regulation (Euratom) No 3137/74), the date of notification to the supply agency and any useful references.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

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## ANNEX VII

## ADVANCE NOTIFICATION OF IMPORTS/RECEIPTS OF NUCLEAR MATERIAL

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

1. Reference code:
2. Material balance area code:
3. Installation (receiver):... Installation (shipper):  

---

---
4. Quantities split up by category of nuclear material and particular safeguard obligation:
5. Chemical composition:
6. Enrichment or isotopic composition:
7. Physical form:
8. Number of items:
9. Description of containers and seals:
10. Means of transport:
11. Date of arrival:
12. Location where materials will be unpacked:
13. Date(s) when materials will be unpacked:
14. Supply agency's contractual reference:

**Date and place of dispatch of notification:****Name and position of signatory:****Signature:***Explanatory notes*

1. Reference code for advance notifications to be used in the inventory change report (use up to eight characters).
2. Code of the reporting material balance area as notified by the Commission to the installation concerned.
3. Name, address and country of the installation receiving, and of the installation shipping, the nuclear material.
4. The total weight of the elements should be given in grams. The weight of fissile isotopes shall be indicated if applicable. The weights must be split up by category of nuclear material and particular safeguards obligation.
5. Chemical composition should be indicated.
6. If applicable, the degree of enrichment or the isotopic composition should be indicated.
7. Use the description of materials as laid out in Annex III (14) to this Regulation.
8. The number of items included in the shipment shall be indicated.
9. Description (type) of containers and, if possible, of the seals affixed.
10. Indicate, where appropriate, the means of transport.

11. Expected or actual date of arrival in the reporting material balance area.
12. Indicate the location within the material balance area where the material will be unpacked and can be identified, and where its quantity and composition can be verified.
13. Date(s) when material will be unpacked.
14. Indicate, where appropriate:
  - supply agency's contractual reference or, if not available, the date on which the contract was concluded or considered as concluded by the Supply Agency, and any useful references,
  - for jobbing contracts (Article 75 of the Treaty) and for contracts for the supply of small quantities of material (Article 74 of the Treaty, and Commission Regulation No 17/66/Euratom as amended by Regulation (Euratom) No 3137/74), the date of notification to the supply agency and any useful references.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

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## ANNEX VIII

REPORT OF ORE EXPORTS/SHIPMENTS <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Undertaking <sup>(2)</sup>:Mine <sup>(3)</sup>:Code <sup>(4)</sup>:

Year:

| Date | Consignee | Quantity contained in g: |            | Remarks |
|------|-----------|--------------------------|------------|---------|
|      |           | of uranium               | of thorium |         |
|      |           |                          |            |         |

**Date and place of dispatch of report:****Name and position of signatory:****Signature:***Explanatory notes*

<sup>(1)</sup> The shipment report is to be made at the latest by the end of January of each year for the previous year, with a separate entry for each consignee. The export report is to be made for each export consignment at the date of shipment.

<sup>(2)</sup> Name and address of the reporting undertaking.

<sup>(3)</sup> Name of the mine in respect of which the report is made.

<sup>(4)</sup> Code of the mine as notified to the undertaking by the Commission.

**NB:** Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

## ANNEX IX

**REQUEST FOR DEROGATION OF AN INSTALLATION FROM THE RULES GOVERNING THE FORM AND FREQUENCY OF NOTIFICATIONS****EUROPEAN COMMISSION — EURATOM SAFEGUARDS**

1. Date:
2. Installation:
3. Material balance area code:
4. Category of nuclear material:
5. Enrichment or isotopic composition:
6. Quantities:
7. Chemical composition:
8. Physical form:
9. Number of items:
10. Type of derogation (Article 19(2)):
  - (a) small quantities kept unchanged for a long period
  - (b) non-nuclear activities
  - (c) sensing components
  - (d) Pu with Pu-238 content greater than 80 %
11. Intended use:
12. Particular safeguards obligation:
13. Date of transfer... From

---

**Date and place of dispatch of request:**

**Name and position of signatory:**

**Signature:**

---

**Derogation granted as above...**

**Date:**

**Name and position of signatory granting the derogation:**

**Signature:...** *(for the Commission)*

*Explanatory Notes*

This form should be used either when the initial request is made for derogation of an installation from the rules governing the form and frequency of notifications, or when nuclear material which may qualify for a derogation is imported from a third country.

Point 13 should be used only in the case of imports, and should state the name and address of the shipper.

A separate request should be submitted for each type of derogation (Article 19(2)).

*NB:* Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

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## ANNEX X

ANNUAL REPORT OR EXPORT REPORT FOR DEROGATED NUCLEAR MATERIAL <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

MBA code:

Declaration date:

Reporting period:

Declaration No:  
from:Name of the installation:  
to:

| Type of report <sup>(2)</sup> | Entry <sup>(3)</sup> | Ref. <sup>(4)</sup> |       | Inventory change information <sup>(5)</sup> | MBA code or name and address of corresponding installation | Element | Enrichment | Weight of element | Use                                   |                            | Type of derogation under Article 19(2) |
|-------------------------------|----------------------|---------------------|-------|---------------------------------------------|------------------------------------------------------------|---------|------------|-------------------|---------------------------------------|----------------------------|----------------------------------------|
|                               |                      | Declaration         | Entry |                                             |                                                            |         |            |                   | Nuclear or non-nuclear <sup>(6)</sup> | Description <sup>(7)</sup> |                                        |
|                               |                      |                     |       |                                             |                                                            |         |            |                   |                                       |                            |                                        |
|                               |                      |                     |       |                                             |                                                            |         |            |                   |                                       |                            |                                        |
|                               |                      |                     |       |                                             |                                                            |         |            |                   |                                       |                            |                                        |

**Date and place of dispatch of report:****Name and position of signatory:****Signature:***Explanatory Notes*

- <sup>(1)</sup> This form should be used either as an annual report to declare any changes in the inventory of nuclear material held by the MBA to which a derogation has been granted as well as the stocks at the beginning and at the end of the reporting period (Article 19(3)), or as an export report in the case of exports to a third country (Article 19(4)).
- <sup>(2)</sup> The 'Type of report' column should show 'A' when the form is used for an annual report or 'EXP' when the form is used to report exports of nuclear material from the MBA to which a derogation has been granted.
- <sup>(3)</sup> 'Entry' in each declaration should be numbered sequentially, beginning with '1'.
- <sup>(4)</sup> The 'Ref.' column should be used to refer to another entry. The contents of the 'Ref.' column consist of the relevant declaration and entry numbers. The reference indicates that the current entry adds to or updates information reported earlier.
- <sup>(5)</sup> The 'Inventory change information' column should be used to state the type of inventory change that occurred during the reporting period and/or the stock at the beginning and at the end of the reporting period. The IC codes of Annex III should be used. The code BB should be used to update the stock at the beginning of the period.
- A separate entry should be made for each type of derogation, for each corresponding installation and for each type of inventory change.
- <sup>(6)</sup> The 'Nuclear or non-nuclear' column should show 'N' if the nuclear material is used in nuclear activities or 'NN' if it is used in non-nuclear activities.
- <sup>(7)</sup> The 'Description' column should indicate the actual or intended use of the nuclear material.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.



## ANNEX XI

## OUTLINE PROGRAMME OF ACTIVITIES

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Communications should, if possible, cover the next two years.

In particular, communications should indicate:

- types of operations, e.g. proposed campaigns with indication of type and quantity of fuel elements to be fabricated or reprocessed, enrichment programmes, reactor operating programmes, with planned shutdowns,
- expected schedule of arrival of materials, stating the amount of material per batch, the form (UF<sub>6</sub>, UO<sub>2</sub>, fresh or irradiated fuels, etc.), anticipated type of container or packaging,
- anticipated schedule of waste processing campaigns (other than repackaging, or further conditioning without separation of elements), stating the amount of material per batch, the form (glass, high active liquid, etc.), anticipated duration and location,
- dates by which the quantity of material in products is expected to be determined, and dates of dispatch,
- dates and duration of physical inventory taking.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This communication, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

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## ANNEX XII

ADVANCE NOTIFICATION OF FURTHER WASTE PROCESSING ACTIVITIES <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Name of installation:

Declaration date:

Declaration No:

| Entry <sup>(2)</sup> | Ref. <sup>(3)</sup> | Waste type prior to conditioning <sup>(4)</sup> | Conditioned form <sup>(5)</sup> | Number of items <sup>(6)</sup> | Quantity <sup>(7)</sup> |     |       | Location <sup>(8)</sup> | Processing location <sup>(9)</sup> | Processing dates <sup>(10)</sup> | Processing purpose <sup>(11)</sup> |
|----------------------|---------------------|-------------------------------------------------|---------------------------------|--------------------------------|-------------------------|-----|-------|-------------------------|------------------------------------|----------------------------------|------------------------------------|
|                      |                     |                                                 |                                 |                                | Pu                      | HEU | U-233 |                         |                                    |                                  |                                    |
|                      |                     |                                                 |                                 |                                |                         |     |       |                         |                                    |                                  |                                    |
|                      |                     |                                                 |                                 |                                |                         |     |       |                         |                                    |                                  |                                    |
|                      |                     |                                                 |                                 |                                |                         |     |       |                         |                                    |                                  |                                    |
|                      |                     |                                                 |                                 |                                |                         |     |       |                         |                                    |                                  |                                    |

**Date and place of dispatch of report:****Name and position of signatory:****Signature:***Explanatory notes*

- <sup>(1)</sup> This form should be used for advance notification when further processing of waste is planned in accordance with Article 31. Any subsequent change in processing dates or processing location should also be notified. A separate entry should be made for each campaign of further processing other than repackaging of the waste, or its further conditioning not involving the separation of elements, carried out for storage or disposal purposes.
- <sup>(2)</sup> 'Entry' in each declaration should be numbered sequentially, beginning with '1'.
- <sup>(3)</sup> The 'Ref.' column should be used to refer to another entry. The contents of the 'Ref.' column consist of the relevant declaration and entry numbers (e.g. 10-20 refers to entry 20 of declaration 10). The reference indicates that the current entry adds to or updates information reported earlier. Several references may be inserted, if necessary.
- <sup>(4)</sup> The 'Waste type prior to conditioning' column should state the type of waste before any conditioning took place, e.g. hulls, feed clarification sludge, high active liquid, or intermediate active liquid.
- <sup>(5)</sup> The 'Conditioned form' column should show the current conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.
- <sup>(6)</sup> The 'Number of items' column should show the number of items, e.g. glass canisters or cement blocks, to be involved in a single processing campaign.
- <sup>(7)</sup> The 'Quantity' column should include, if available, the total amount, in grams, of plutonium, high enriched uranium or uranium-233 contained in the items entered in the 'Number of Items' column. The entry in the 'Quantity' column may be based on the quantity data used in the inventory change reports, and does not require a measurement of each item.
- <sup>(8)</sup> The 'Location' column should include the name and address of the installation and should show the location of the waste at the time of the declaration. The address must be sufficiently detailed to indicate the geographical position of the location in relation to other locations specified in this or other declarations, and to indicate how the location may be reached should access be necessary. If a location is on the site of a nuclear installation, the installation code should be included in the location column.
- <sup>(9)</sup> The 'Processing location' column should show the location where the planned processing is to take place.

- (<sup>10</sup>) The 'Processing dates' column should indicate the dates on which the further processing campaign is expected to begin and to end.
- (<sup>11</sup>) The 'Processing purpose' column should indicate the intended result of the processing, e.g. recovery of plutonium or separation of specified fission products.

**NB:** Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

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## ANNEX XIII

ANNUAL REPORT ON EXPORTS/SHIPMENTS OF CONDITIONED WASTE <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Name of the shipping installation:

MBA code of the shipping installation:

Reporting period from

to

| Date | MBA code of the receiving installation or Name and address of the receiving installation <sup>(2)</sup> | Conditioned form <sup>(3)</sup> | Quantity <sup>(4)</sup>                  | Remarks |
|------|---------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------|---------|
|      |                                                                                                         |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                                                         |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                                                         |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                                                         |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |

**Date and place of dispatch of report:****Name and position of signatory:****Signature:***Explanatory notes*<sup>(1)</sup> This report shall include all the shipments or exports of conditioned waste to installations within or outside the territories of the Member States that have occurred during the reporting period.<sup>(2)</sup> MBA code to be filled in for shipments to installations within the territories of the Member States, full name and address to be filled in for exports to installations outside the territories of the Member States, or when the MBA code is unknown.<sup>(3)</sup> The 'Conditioned form' column should show the conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.<sup>(4)</sup> The quantity column may be based on the quantity data recorded at the installation and does not require measurements of the items exported/shipped.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

## ANNEX XIV

ANNUAL REPORT ON IMPORTS/RECEIPTS OF CONDITIONED WASTE <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Name of the receiving installation: \_\_\_\_\_  
 MBA code of the receiving installation: \_\_\_\_\_

Reporting period from \_\_\_\_\_ to \_\_\_\_\_

| Date | Name, address and, if known, MBA code of the shipping installation | Conditioned form <sup>(2)</sup> | Quantity <sup>(3)</sup>                  | Remarks |
|------|--------------------------------------------------------------------|---------------------------------|------------------------------------------|---------|
|      |                                                                    |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                    |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                    |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |
|      |                                                                    |                                 | g of P<br>g of U-235<br>g of U<br>g of T |         |

**Date and place of dispatch of report:** \_\_\_\_\_

**Name and position of signatory:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

*Explanatory notes*

- <sup>(1)</sup> This report is required for conditioned waste which has been received from installations without an MBA code or from installations outside the territories of the Member States.  
<sup>(2)</sup> The 'Conditioned form' column should show the conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.  
<sup>(3)</sup> The quantity column may be based on the quantity data recorded at the installation and does not require measurements of the items imported/received.

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.

## ANNEX XV

ANNUAL REPORT ON CHANGES IN LOCATION OF CONDITIONED WASTE <sup>(1)</sup>

## EUROPEAN COMMISSION — EURATOM SAFEGUARDS

Name of installation:

Declaration date:

Declaration No:

Reporting period:

| Entry <sup>(2)</sup> | Ref. <sup>(3)</sup> | Waste type prior to conditioning <sup>(4)</sup> | Conditioned form <sup>(5)</sup> | Number of items <sup>(6)</sup> | Quantity <sup>(7)</sup> |     |       | Previous location <sup>(8)</sup> | New location <sup>(9)</sup> |
|----------------------|---------------------|-------------------------------------------------|---------------------------------|--------------------------------|-------------------------|-----|-------|----------------------------------|-----------------------------|
|                      |                     |                                                 |                                 |                                | Pu                      | HEU | U-233 |                                  |                             |
|                      |                     |                                                 |                                 |                                |                         |     |       |                                  |                             |
|                      |                     |                                                 |                                 |                                |                         |     |       |                                  |                             |
|                      |                     |                                                 |                                 |                                |                         |     |       |                                  |                             |
|                      |                     |                                                 |                                 |                                |                         |     |       |                                  |                             |

NB: All transfers of conditioned waste should be grouped by type of waste (prior to conditioning and after conditioning) and by previous location

**Date and place of dispatch of report:****Name and position of signatory:****Signature:***Explanatory notes*

- <sup>(1)</sup> Annual report to declare any changes in location of wastes covered by point (c) of Article 32 that occurred during the preceding calendar year. A separate entry is required for each change of location during the year.
- <sup>(2)</sup> 'Entry' in each declaration should be numbered sequentially, beginning with '1'.
- <sup>(3)</sup> 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. 10—20 provides a reference to entry 20 of declaration 10). The reference indicates that the current entry adds to or updates information in another entry earlier declared. Several references may be reported, if necessary.
- <sup>(4)</sup> The 'Waste type prior to conditioning' column should show the type of waste before any conditioning took place, e.g. hulls, feed clarification sludge, high active liquid, or intermediate active liquid.
- <sup>(5)</sup> The 'Conditioned form' column should show the current conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.
- <sup>(6)</sup> The 'Number of items' column should 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.
- <sup>(7)</sup> The 'Quantity' column should include (if available) the total amount, in grams, of plutonium, high enriched uranium or uranium-233 contained in the items entered in the 'Number of Items' column. The 'Quantity' column may be based on the quantity data used in the inventory change reports, e.g. the average quantity of nuclear material per item, and does not require a measurement of each item.
- <sup>(8)</sup> The 'Previous location' column should indicate the location of the waste before the change in location (see also explanatory note no 8 for Annex XII).
- <sup>(9)</sup> The 'New location' column should indicate the location after the change (see also explanatory note no 8 for Annex XII).

NB: Under Article 79 of the Treaty, those subject to safeguards requirements shall notify the authorities of the Member State concerned of any communications they make to the Commission pursuant to Article 78 and the first paragraph of Article 79 of the Treaty.

This form, duly completed and signed, must be forwarded to the European Commission, Euratom Safeguards, L-2920 Luxembourg.