

SCHEDULE 1

Regulation 3

PART 1

QUESTIONNAIRE FOR THE DECLARATION OF THE BASIC TECHNICAL CHARACTERISTICS OF A QUALIFYING NUCLEAR FACILITY

I-A. REACTORS

Date:

NB:

1. The reply 'not applicable' can be given to questions which are not applicable. The ONR is still entitled to request any additional information it considers necessary in connection with the relevant questionnaire in accordance with regulation 3(5).
2. The declaration, duly completed and signed, should be forwarded to the ONR in electronic form in accordance with regulation 35.

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

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 qualifying nuclear facility:
 - (a) structural containment, fences and access routes;
 - (b) storage area for incoming qualifying nuclear material;
 - (c) reactor area;
 - (d) test and experiment area, laboratories;
 - (e) storage area for outgoing qualifying nuclear material;
 - (f) disposal area for qualifying nuclear material declared as retained or conditioned waste.
10. Additional data per reactor:
 - (a) nominal thermal output;

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- (b) material that is either source material or fissionable material;
- (c) initial core enrichments;
- (d) moderator;
- (e) coolant.

GENERAL ARRANGEMENTS AT THE QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Description of qualifying nuclear material

11. Description of the use of qualifying nuclear material.
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 qualifying nuclear material per assembly, with design tolerances.
14. Cladding material.
15. Method of identifying individual assemblies, rods/pins, plates etc., if applicable.
16. Other qualifying nuclear material used in the qualifying nuclear facility (briefly state material, purpose and method of use, e.g. as booster rods).

Flow of qualifying nuclear material

17. Flow sheet showing: points where qualifying nuclear material is identified or measured; material balance areas and inventory locations used for material accountancy; and the estimated range of qualifying 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 qualifying 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.
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. Qualifying 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 qualifying 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 qualifying 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).

ACCOUNTANCY AND CONTROL OF QUALIFYING NUCLEAR MATERIAL

Accountancy system

28. Description of accountancy and control system for qualifying nuclear material (describe item and/or mass accountancy system, including assay methods used and assessed accuracies,

Status: This is the original version (as it was originally made).

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 qualifying nuclear material in the core and to qualifying nuclear material which is irradiated and outside the core; expected radiation levels.

OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS

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

I-B. CRITICAL AND ZERO ENERGY INSTALLATIONS

Date:

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

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 qualifying nuclear facility:
 - (a) structural containment, fences and access routes;
 - (b) qualifying nuclear material storage area(s);
 - (c) fuel element assembling area, laboratories, etc.;
 - (d) critical assembly.
10. Additional data:
 - (a) maximum expected operating power and/or neutron flux;
 - (b) main type(s) of qualifying nuclear material and their enrichment;

- (c) moderator;
- (d) reflector, blanket;
- (e) coolant.

GENERAL ARRANGEMENTS AT THE QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Description of qualifying nuclear material

11. Description of the use of qualifying nuclear material.
12. Outline drawings of fuel assemblies, fuel rods/pin, 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;
 - (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 qualifying nuclear material used in the qualifying nuclear facility (briefly state material, purpose and method of use, e.g. as booster rods).

Location and handling of qualifying nuclear material

17. Description, including layout drawings, of:
 - (a) storage and assembly areas and critical assembly (assemblies) proper (inventory locations) for the qualifying nuclear material;
 - (b) the estimated range of inventories of qualifying nuclear material in these locations;
 - (c) the physical arrangement of equipment used for assembling, testing and measuring qualifying nuclear material; and
 - (d) the routes followed by the qualifying 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 qualifying nuclear facility).

ACCOUNTANCY AND CONTROL FOR QUALIFYING NUCLEAR MATERIAL

Accountancy system

Status: This is the original version (as it was originally made).

19. Description of accountancy and control system for qualifying nuclear material (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 qualifying nuclear material in the core and to qualifying nuclear material, which is irradiated and outside the core; expected radiation levels.

OTHER INFORMATION RELEVANT TO APPLICATION OF SAFEGUARDS

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

I-C. QUALIFYING NUCLEAR FACILITIES WHERE CONVERSION, FABRICATION AND REPROCESSING ARE CARRIED OUT

Date:

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

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 qualifying nuclear facility, boundaries, buildings, roads, rivers, railways, etc.).
9. Layout of qualifying nuclear facility:
 - (a) structural containment, fences and access routes;
 - (b) routes followed by qualifying nuclear material;
 - (c) storage area for qualifying nuclear material which is incoming;
 - (d) each main processing area and process laboratory;

- (e) test or experimental areas;
- (f) storage area for qualifying nuclear material which is outgoing;
- (g) nuclear waste disposal area;
- (h) analytical laboratory.

GENERAL ARRANGEMENTS AT THE QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Flow, location and handling of qualifying nuclear material

10. Flow sheet showing: points where qualifying 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 a qualifying nuclear facility where reprocessing is carried out, indicating:
 - (a) locations for fuel elements and handling equipment;
 - (b) type of fuel elements including the content and enrichment of qualifying nuclear material.
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 process 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 qualifying nuclear material

Status: This is the original version (as it was originally made).

16. Description of the use of qualifying nuclear material.
17. Description, by means of flow sheets or otherwise, of estimated flow and inventory of all qualifying 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.

ACCOUNTANCY AND CONTROL FOR QUALIFYING NUCLEAR MATERIAL

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 qualifying 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 accountancy and control of qualifying nuclear material.
28. Information on the health and safety rules which have to be observed at the qualifying nuclear facility and with which the inspectors must comply.

I-D. QUALIFYING NUCLEAR FACILITIES USED FOR STORAGE

This form may only be used in respect of a separate qualifying nuclear facility which is not associated with reactors, with enrichment, conversion, fabrication or reprocessing.

Date:

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 qualifying nuclear facility, boundaries, buildings, roads, rivers, railways, etc.).
8. Layout of qualifying nuclear facility, showing structural containment, fences and access routes.

GENERAL ARRANGEMENTS AT THE QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Description of qualifying nuclear material.

Status: This is the original version (as it was originally made).

9. Description of the use of qualifying nuclear material.
10. Description, by means of drawings or otherwise, of all qualifying nuclear material in the qualifying nuclear facility, 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 qualifying nuclear material, with design tolerances;
 - (f) cladding materials;
 - (g) methods of identifying items.

Location and handling of qualifying nuclear material

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

ACCOUNTANCY AND CONTROL FOR QUALIFYING NUCLEAR MATERIAL

Accountancy system

12. Description of accountancy and control system for qualifying nuclear material (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 accountancy and control of qualifying nuclear material.
15. Information on the health and safety rules which have to be observed at the qualifying nuclear facility and with which the inspectors must comply.

I-E. QUALIFYING NUCLEAR FACILITIES WHERE ISOTOPES ARE SEPARATED

Date:

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

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 qualifying nuclear facility not in operation):
 - (a) date building starts;
 - (b) date of acceptance for the qualifying nuclear facility;
 - (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 qualifying nuclear facility, boundaries, buildings, roads, rivers, railways, etc.).
10. Layout of qualifying nuclear facility:
 - (a) structural containment, fences and access routes;
 - (b) containment of certain parts of the qualifying nuclear facility;
 - (c) routes followed by qualifying nuclear material;
 - (d) storage area for qualifying nuclear material which is incoming;
 - (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) storage area for qualifying nuclear material which is outgoing;
 - (h) nuclear waste disposal area;
 - (i) analytical laboratory.

GENERAL ARRANGEMENTS AT THE QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Description of qualifying nuclear material.

11. Description of the use of qualifying nuclear material.

Status: This is the original version (as it was originally made).

12. Description, by means of flow sheets or otherwise, of estimated flow and inventory of all qualifying 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 qualifying 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 UF₆ 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 qualifying nuclear material;
 - (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 equipment that is off-process and is to be maintained or replaced.
18. Description of process waste disposal point, including disposal method, storage period, type of disposal, etc.

ACCOUNTANCY AND CONTROL FOR QUALIFYING NUCLEAR MATERIAL

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 qualifying 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 equipment which is used for analysis together with the 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

Status: This is the original version (as it was originally made).

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

I-F. QUALIFYING NUCLEAR FACILITY USING QUALIFYING NUCLEAR MATERIAL IN QUANTITIES EXCEEDING ONE EFFECTIVE KILOGRAM

Date:.....

NB This form/questionnaire must only be used for a qualifying nuclear facility using qualifying nuclear material in quantities exceeding one effective kilogram which are not reactors (I-A), critical or zero energy installations (I-B), qualifying nuclear facilities where conversion, fabrication or reprocessing are carried out (I-C), qualifying nuclear facilities used for storage (I-D), or qualifying nuclear facilities where isotopes are separated (I-E).

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

1. Name.
2. Location, exact address with telephone number and fax numbers and e mail addresses.
3. Owner (legally responsible body or individual).
4. Operator (legally responsible body or individual).
5. Type of qualifying 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 qualifying nuclear material.
8. The current status (e.g. under construction, in operation or closed down).

ACCOUNTANCY AND CONTROL OF QUALIFYING NUCLEAR MATERIAL

9. Description of the accountancy and control system for qualifying nuclear material, including inventories for physical inventory taking.
10. Organisational arrangements for accountancy and control of qualifying nuclear material.

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 qualifying nuclear facility coming under sections C, D and E of Part 1 of Schedule 1.

I-G. QUALIFYING NUCLEAR FACILITY FOR THE TREATMENT AND STORAGE OF WASTE

Date:

This form may only be used by a separate qualifying nuclear facility engaged solely in the handling, storing or processing of waste materials (not forming a part of enrichment, conversion, fabrication, chemical reprocessing and recovery facilities or of reactors).

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY

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 qualifying nuclear facility, boundaries, buildings, roads, rivers, railways, etc.).
8. Layout of qualifying nuclear facility:
 - (a) structural containment, fences and access routes;
 - (b) routes followed by qualifying 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 QUALIFYING NUCLEAR FACILITY, INCLUDING THOSE RELATING TO MATERIAL USE AND ACCOUNTANCY, CONTAINMENT AND SURVEILLANCE

Locations and handling of qualifying nuclear material

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

Status: This is the original version (as it was originally made).

ACCOUNTANCY AND CONTROL OF QUALIFYING NUCLEAR MATERIAL

Accountancy system

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

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 accountancy and control of qualifying nuclear material.
14. Information on the health and safety rules which have to be observed at the qualifying nuclear facility and with which the inspectors must comply.

I-H. OTHER QUALIFYING NUCLEAR FACILITY OR A QUALIFYING NUCLEAR FACILITY WITH LIMITED OPERATION

Date:

IDENTIFICATION OF THE QUALIFYING NUCLEAR FACILITY AND OF THE QUALIFYING 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 qualifying 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 qualifying nuclear material.
8. In the case of ore producers, the potential annual production of the qualifying nuclear facility.
9. The current status (e.g. under construction, in operation or closed down).

ACCOUNTANCY AND CONTROL FOR QUALIFYING NUCLEAR MATERIAL

10. Description of the accountancy and control system for qualifying nuclear material, including procedures for physical inventory taking.
11. Organisational arrangements for accountancy and control of qualifying nuclear material.
The relevant questionnaire, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 14

PART 2

INVENTORY CHANGE REPORT

| <i>Label/tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|--------------------|----------------|--|----------|
| 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 qualifying 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 |

Status: This is the original version (as it was originally made).

| <i>Label/tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|----------------------|-----------------|---|----------|
| 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 qualifying 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 qualifying nuclear material (use for IC codes CB, CC and CE only) | 31 |
| Previous obligation | Character (2) | Previous obligation (use for IC codes BR, CR, PR and SR only) | 32 |
| Document | Character (70) | Operator-defined reference to supporting documents | 33 |
| Container ID | Character (20) | Operator-defined identifier for the container | 34 |
| Correction | Character (1) | D for deletions, A for additions forming part of a deletion/addition pair, L for late lines (stand-alone additions) | 35 |
| Previous report | Number (8) | Report number of line to be corrected | 36 |
| Previous line | Number (8) | Line number of line to be corrected | 37 |
| Comment | Character (256) | Operator comment | 38 |
| Burn-up | Number (6) | Burn-up in MW days/tonne (use for IC codes NL and NP in nuclear reactors only) | 39 |
| CRC | Number (20) | Hash code of line for quality control purposes | 40 |
| Previous CRC | Number (20) | Hash code of line to be corrected | 41 |
| Advance notification | Character (8) | Reference to advance notification sent to the ONR (use for IC codes RD, RF, SD, SN and SF only) | 42 |
| Campaign | Character (12) | Campaign identifier for qualifying nuclear facilities which carry out reprocessing | 43 |
| Reactor | Character (12) | Reactor code for reprocessing campaigns | 44 |
| Error path | Character (8) | Special code for evaluation purposes | 45 |

Explanatory notes

1. **MBA:**
Code of the reporting material balance area. This code is notified to the qualifying nuclear facility concerned by the ONR.
 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:
-

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| <i>Keyword</i> | <i>Code</i> | <i>Explanation</i> |
|---------------------------------------|-------------|--|
| Receipt | RD | Receipt of qualifying nuclear material from material balance area within the United Kingdom. |
| Import | RF | Import of qualifying nuclear material. |
| Receipt from non-safeguarded activity | RN | Receipt of qualifying nuclear material from a non-safeguarded activity. |
| Shipment | SD | Transfer of qualifying nuclear material to a material balance area within the United Kingdom. |
| Export | SF | Export of qualifying nuclear material. |
| Shipment to non-safeguarded activity | SN | Transfer of qualifying nuclear material to a non-safeguarded activity. |
| Transfer to conditioned waste | TC | Qualifying 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 qualifying 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 | Qualifying 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 qualifying nuclear material involved is to be subtracted from the inventory of the material balance area. |
| Transfer to retained waste | TW | Qualifying 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 qualifying 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 qualifying nuclear material as the result of an operational accident. Use of this code requires a special report to be sent to the ONR. |
| Accidental gain | GA | Qualifying 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 ONR. |

| <i>Keyword</i> | <i>Code</i> | <i>Explanation</i> |
|------------------------------|-------------|---|
| Category change | CE | Accountancy transfer of a quantity of qualifying nuclear material from one category 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 qualifying nuclear material from one category to another as a result of a blending operation (only one line to be reported per category change). |
| Category change | CC | Accountancy transfer of a quantity of qualifying nuclear material from one category 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 qualifying nuclear material from one batch to another (only one line to be reported per rebatching). |
| Change particular obligation | in BR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguards obligation to another, to balance the total uranium stock following a blending operation (only one line to be reported per change of obligation). |
| Change particular obligation | in PR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguards obligation to another, used when qualifying nuclear material enters or leaves an accountancy pool (only one line to be reported per change of obligation). |
| Change particular obligation | in SR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguards obligation to another, following an obligation exchange or a substitution (only one line to be reported per change of obligation). |
| Change particular obligation | in CR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguards obligation to another, 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 qualifying nuclear material due to nuclear transformation. |
| Nuclear loss | NL | Decrease in the quantity of qualifying nuclear material due to nuclear transformation. |
| Shipper/receiver difference | DI | Shipper/receiver difference. |
| New measurement | NM | Quantity of qualifying 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 qualifying 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 ONR) and the book inventory established on the same date. |

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| <i>Keyword</i> | <i>Code</i> | <i>Explanation</i> |
|--------------------------|-------------|--|
| 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 (Part 4). 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 qualifying 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 qualifying nuclear material considered as irrecoverable for practical or economic reasons which is: (i) incorporated in end products used for non-nuclear purposes; or (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. The quantity of qualifying 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 qualifying nuclear material and for each particular safeguard 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 qualifying nuclear facility concerned in the particular safeguard provisions or otherwise in writing. If no codes have been specified, '&' should be used.

13. MEASUREMENT:

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

| <i>Measured</i> | <i>Estimated</i> | <i>Explanation</i> |
|-----------------|------------------|--|
| 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:

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

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| <i>Main type of material form</i> | <i>Subtype</i> | <i>Code</i> |
|-----------------------------------|----------------|-------------|
| | Plates | EP |
| | Bundles | EB |
| | Assemblies | EA |
| | Other | EO |

| <i>Main type of material form</i> | <i>Subtype</i> | <i>Code</i> |
|-----------------------------------|---|-------------|
| 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:

| <i>The following codes must be used:</i> | |
|--|-------------|
| <i>Type of container</i> | <i>Code</i> |
| Cylinder | C |
| Pack | P |
| Drum | D |
| Discrete fuel unit | S |
| Bird cage | B |
| Bottle | F |

| | |
|--|---|
| <i>The following codes must be used:</i> | |
| Tank or other container | T |
| Other | O |

16. MATERIAL STATE

The following codes must be used:

| <i>State</i> | <i>Code</i> |
|---|-------------|
| Fresh qualifying nuclear material | F |
| Irradiated qualifying nuclear material | I |
| Waste | W |
| Irrecoverable qualifying nuclear 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 'Q' 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 'Q' 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

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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:

| <i>Category of qualifying nuclear material</i> | <i>Code</i> |
|--|-------------|
| Plutonium | P |
| High enriched uranium (20% enrichment and above) | H |
| Low enriched uranium (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 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 any additional obligation assumed by the United Kingdom under a relevant international agreement, to which the qualifying nuclear material is subject (regulation 19). The ONR may communicate the appropriate codes to the qualifying nuclear facility.

31. PREVIOUS CATEGORY:

Code of the category of qualifying 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 safeguard obligation to which the qualifying 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. DOCUMENT:

Operator-defined reference to supporting document(s).

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34. 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.

35. 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:

| <i>Code</i> | <i>Explanation</i> |
|-------------|---|
| 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. |

36. PREVIOUS REPORT:

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

37. PREVIOUS LINE:

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

38. COMMENT:

Free-text comment field for short comments by operator.

39. BURN-UP:

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

40. CRC:

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

41. PREVIOUS CRC:

Hash code of the line to be corrected.

42. ADVANCE NOTIFICATION:

Reference code for the advance notification (regulations 21 and 22). Use with inventory changes SF and RF.

43. CAMPAIGN:

Unique identifier for the reprocessing campaign. Use only for inventory changes in the process material balance area(s) of those qualifying nuclear facilities where spent fuel is reprocessed.

44. REACTOR:

Unique identifier for the reactor from which irradiated fuel is being stored or reprocessed. Use only for inventory changes in those qualifying nuclear facilities where spent fuel is stored or reprocessed.

45. ERROR PATH:

Special code describing measurement errors and their propagation, for material balance evaluation purposes. The codes are agreed between the qualifying nuclear facility and the ONR.

GENERAL REMARKS CONCERNING THE COMPLETION OF THE REPORTS

1. In the case of transfer of qualifying 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'.

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5. Reports must be prepared according to a world-wide accepted labelled reporting format, agreed between the ONR and operators.
6. The reports, duly completed and digitally signed, should be forwarded to the ONR in accordance with regulation 35.

Regulation 15

PART 3 MATERIAL BALANCE REPORT (MBR)

| <i>Label/tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|------------------|----------------|---|----------|
| 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 qualifying 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 |

| <i>Label/tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|------------------|-----------------|--|----------|
| 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 qualifying nuclear facility concerned by the ONR.

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 qualifying nuclear material must be used:

| <i>Category of qualifying nuclear material</i> | <i>Code</i> |
|--|-------------|
| Plutonium | P |
| High enriched uranium | H |

Status: This is the original version (as it was originally made).

| <i>Category of qualifying nuclear material</i> (20% enrichment and above) | <i>Code</i> |
|--|-------------|
| Low enriched uranium (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:

| <i>Keyword</i> | <i>Code</i> | <i>Examination</i> |
|---|-------------|--|
| 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 (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 'ending physical inventory (PE)' minus 'ending book inventory (BA)' |

| <i>Keyword</i> | <i>Code</i> | <i>Examination</i> |
|----------------|-------------|--------------------|
|----------------|-------------|--------------------|

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

| <i>Keyword</i> | <i>Code</i> | <i>Explanation</i> |
|---------------------------------------|--------------------|---|
| Receipt | RD | Receipt of nuclear material from a material balance area within the United Kingdom. |
| Import | RF | Import of qualifying nuclear material. |
| Receipt from non-safeguarded activity | RN | Receipt of qualifying nuclear material from a non-safeguarded activity. |
| Shipment | SD | Transfer of nuclear material to a material balance area within the United Kingdom. |
| Export | SF | Export of qualifying nuclear material. |
| Shipment to non-safeguarded activity | SN | Transfer of qualifying nuclear material to a non-safeguarded activity. |
| Transfer to conditioned waste | TC | Qualifying 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 qualifying 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 | Qualifying 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 qualifying nuclear material involved is to be subtracted from the inventory of the material balance area. |
| Transfer to retained waste | TW | Qualifying 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 qualifying 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 |

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| <i>Keyword</i> | <i>Code</i> | <i>Examination</i> |
|------------------------------|-------------|---|
| | | material balance area or for any shipment from the material balance area. |
| Accidental loss | LA | Irretrievable and inadvertent loss of a quantity of qualifying 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 ONR when the inventory change occurred or became known. |
| Accidental gain | GA | Qualifying 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 ONR when the inventory change occurred or became known. |
| Category change | CE | Accountancy transfer of a quantity of qualifying nuclear material from one category to another as a result of an enrichment process. |
| Category change | CB | Accountancy transfer of a quantity of qualifying nuclear material from one category to another as a result of a blending operation. |
| Category change | CC | Accountancy transfer of a quantity of qualifying nuclear material from one category to another for all types of category change not covered by codes CE and CB. |
| Change particular obligation | in BR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguard obligation to another, to balance the total uranium stock following a blending operation. |
| Change particular obligation | in PR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguard obligation to another, used when qualifying nuclear material enters or leaves an accountancy pool. |
| Change particular obligation | in SR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguard obligation to another, following an obligation exchange or a substitution. |
| Change particular obligation | in CR | Accountancy transfer of a quantity of qualifying nuclear material from one particular safeguard obligation to another, for all cases not covered by codes BR, PR or SR. |
| Nuclear production | NP | Increase in the quantity of qualifying nuclear material due to nuclear transformation. |
| Nuclear loss | NL | Decrease in the quantity of qualifying nuclear material due to nuclear transformation. |
| Shipper/receiver difference | DI | Shipper/receiver difference. |
| New measurement | NM | Quantity of qualifying nuclear material, in one particular batch, accounted for in the qualifying 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 qualifying nuclear material accounted for in the material balance area, being the difference between the result |

| <i>Keyword</i> | <i>Code</i> | <i>Examination</i> |
|---------------------|-------------|--|
| | | of a physical inventory taken by the plant operator for his own purposes (without reporting a physical inventory listing to the ONR) 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 qualifying 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 qualifying nuclear material considered as irrecoverable for practical or economic reasons which is: <ul style="list-style-type: none"> (i) incorporated in end products used for non-nuclear purposes; or (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. The quantity of qualifying nuclear material involved is to be subtracted from the inventory of the material balance area. |

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:

Status: This is the original version (as it was originally made).

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 any additional obligation assumed by the United Kingdom under a relevant international agreement, to which the qualifying nuclear material is subject (regulation 19). The ONR may communicate the appropriate codes to the qualifying nuclear facility.

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:

| <i>Code</i> | <i>Explanation</i> |
|-------------|---|
| 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.

20. CRC:

Hash code of line for quality control purposes. The ONR must 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 Part 2 apply to this Part as appropriate.

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulations 13 and 15

PART 4
PHYSICAL INVENTORY LISTING (PIL)

| <i>Label/Tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|--------------------|----------------|--|----------|
| 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 qualifying nuclear material | 9 |
| KMP | Character (1) | Key measurement point | 10 |
| Measurement | Character (1) | Measurement code | 11 |
| Element category | Character (1) | Category of qualifying 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 |

Status: This is the original version (as it was originally made).

| <i>Label/Tag</i> | <i>Content</i> | <i>Comments</i> | <i>#</i> |
|------------------|-----------------|---|----------|
| 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 qualifying nuclear facility concerned by the ONR.

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 qualifying nuclear facility concerned in the particular safeguard provisions or otherwise in writing. If no code has been specified, '&' should be used.

11. MEASUREMENT:

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

| <i>Measured</i> | <i>Estimated</i> | <i>Explanation</i> |
|-----------------|------------------|--|
| 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:

Status: This is the original version (as it was originally made).

| <i>Category of qualifying nuclear material</i> | <i>Code</i> |
|--|-------------|
| Plutonium | P |
| High enriched uranium (20% enrichment and above) | H |
| Low enriched uranium (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:

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

| <i>Main type of material form</i> | <i>Subtype</i> | <i>Code</i> |
|-----------------------------------|---|-------------|
| | 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:

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

Status: This is the original version (as it was originally made).

| Type of container | Code |
|-------------------|------|
|-------------------|------|

15. MATERIAL STATE:

The following codes must be used:

| State | Code |
|---|------|
| Fresh qualifying nuclear material | F |
| Irradiated qualifying nuclear material | I |
| Waste | W |
| Irrecoverable qualifying nuclear 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 any additional obligation assumed by the United Kingdom under a relevant international agreement, to which the qualifying nuclear material is subject (regulation 19). Regulation 19(4) governs the making available of appropriate codes by the ONR.

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:

| <i>Code</i> | <i>Explanation</i> |
|-------------|---|
| 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:

Status: This is the original version (as it was originally made).

Free-text comment field for short comments by operator.

28. CRC:

Hash code of line for quality control purposes. The ONR must 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 qualifying 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 Part 2 apply to this Part as appropriate.

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 21

PART 5

ADVANCE NOTIFICATION OF EXPORTS/
SHIPMENTS OF QUALIFYING NUCLEAR MATERIAL

1. Reference code:
2. Material balance area code:
3. Qualifying nuclear facility (shipper): ... Facility or location outside facility (receiver):
4. Quantities split up by category of qualifying nuclear material and any obligation arising from a relevant international agreement:
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 qualifying nuclear material will be stored or prepared:
13. Last date when qualifying nuclear material can be identified:
14. Approximate dates of dispatch:
Expected dates of arrival:
15. Use:

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 ONR to the qualifying nuclear facility concerned.
3. Name, address and country of the qualifying nuclear facility shipping and of the facility or location outside a facility receiving, the qualifying nuclear material. The receiver at the ultimate destination should also be indicated where applicable.

Status: This is the original version (as it was originally made).

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 qualifying 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 explanatory note 14 in Part 2 of this Schedule.
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 qualifying 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 qualifying nuclear 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 qualifying nuclear material has been assigned.

This form, duly completed and signed, must be forwarded to the ONR in accordance with regulation 35.

Regulation 22

PART 6
**ADVANCE NOTIFICATION OF IMPORTS/
RECEIPTS OF QUALIFYING NUCLEAR MATERIAL**

1. Reference code:
2. Material balance area code:
3. Qualifying nuclear facility (receiver):... Facility or location outside facility (shipper):
3. Quantities split up by category of qualifying nuclear material and any obligation arising from a relevant international agreement:
4. Chemical composition:
5. Enrichment or isotopic composition:
6. Physical form:
7. Number of items:
8. Description of containers and seals:
9. Means of transport:
10. Date of arrival:
11. Location where qualifying nuclear material will be unpacked:
12. Date(s) when qualifying nuclear material can be unpacked:

Status: This is the original version (as it was originally made).

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 ONR to the qualifying nuclear facility concerned.
3. Name, address and country of the qualifying nuclear facility receiving, and of the installation shipping, the qualifying nuclear material.
4. The total weight of the elements must 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 must be indicated.
6. If applicable, the degree of enrichment or the isotopic composition must be indicated.
7. Use the description of qualifying nuclear materials as laid out in explanatory note 14 in Part 2 of this Schedule.
8. The number of items included in the shipment must 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 qualifying nuclear material will be unpacked and can be identified, and where its quantity and composition can be verified.
13. Date(s) when qualifying nuclear material will be unpacked.

This form, duly completed and signed, must be forwarded to the ONR in accordance with regulation 35.

Regulation 28

PART 7
REPORT OF ORE EXPORTS/SHIPMENTS

Operator 2:

Qualifying nuclear facility 3:

Code 4:

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

1. The report is to be made for each export consignment at the date of shipment.
2. Name and address of the operator.
3. Name of the qualifying nuclear facility in respect of which the report is made.
4. Code of the qualifying nuclear facility as notified to the operator by the ONR.

This form, duly completed and signed, must be forwarded to the ONR in accordance with regulation 35.

Regulation 4

Status: This is the original version (as it was originally made).

PART 8

OUTLINE PROGRAMME OF ACTIVITIES

Communications should cover the next calendar year.

In particular, communications should include the following information:

1. types of operations, e.g. anticipated throughput of proposed campaigns with indication of type and quantity of fuel elements to be fabricated or reprocessed, enrichment programmes, reactor operating programmes, with planned shutdowns;
2. expected schedule of arrival of qualifying nuclear materials, stating the amount of material per batch, the form (UF₆, UO₂, fresh or irradiated fuels, etc.), anticipated type of container or packaging;
3. 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;
4. dates by which the quantity of qualifying nuclear material in products is expected to be determined, and dates of dispatch;
5. dates and duration of physical inventory taking.

This communication, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 30(1)(a)

PART 9

ANNUAL REPORT ON EXPORTS/SHIPMENTS OF CONDITIONED WASTE (Note. 1)

| | | |
|--|-----------------------|----|
| Name of the qualifying nuclear facility which is shipping: | | |
| MBA code of the qualifying nuclear facility which is shipping: | Reporting period from | to |

| Date | MBA code of the receiving qualifying nuclear facility or name and address of the receiving facility outside the United Kingdom 2. | Conditioned form 3. | Quantity 4. | Remarks |
|------|---|---------------------|-------------|---------|
| | | | g of P | |
| | | | g of U-235 | |

| <i>Date</i> | <i>MBA code of the receiving qualifying nuclear facility or name and address of the receiving facility outside the United Kingdom 2.</i> | <i>Conditioned form 3.</i> | <i>Quantity 4.</i> | <i>Remarks</i> |
|-------------|--|----------------------------|--|----------------|
| | | | g of U g of T | |
| | | | g of P g of U-235 g of U g of T | |
| | | | g of P g of U-235 g of U g of T | |
| | | | g of P g of U-235 g of U g of T | |

Date and place of dispatch of report:

Name and position of signatory:

Signature:

Explanatory notes

1. This report must include all the shipments or exports of conditioned waste to facilities or qualifying nuclear facilities outside the United Kingdom that have occurred during the reporting period.
2. Full name and address to be filled in for exports.
3. The ‘Conditioned form’ column must show the conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.

Status: This is the original version (as it was originally made).

4. The quantity column may be based on the quantity data recorded at the qualifying nuclear facility and does not require measurements of the items exported/shipped.

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 30(1)(b)

PART 10

ANNUAL REPORT ON IMPORTS/RECEIPTS OF CONDITIONED WASTE

(Note 1)

| | | |
|--|-----------------------|----|
| Name of the receiving qualifying nuclear facility: | | |
| MBA code of the receiving qualifying nuclear facility: | Reporting period from | to |

| <i>Date</i> | <i>Name, address and, if known, MBA code of the qualifying nuclear facility which is shipping the waste</i> | <i>Conditioned form 2.</i> | <i>Quantity 3.</i> | <i>Remarks</i> |
|-------------|---|----------------------------|--------------------|----------------|
|-------------|---|----------------------------|--------------------|----------------|

| | | | | |
|--|--|--|--|--|
| | | | g of P g of U-235 g of U g of T | |
| | | | g of P g of U-235 g of U g of T | |
| | | | g of P g of U-235 g of U g of T | |
| | | | g of P g of U-235 | |

| <i>Date</i> | <i>Name, address and, if known, MBA code of the qualifying nuclear facility which is shipping the waste</i> | <i>Conditioned form 2.</i> | <i>Quantity 3. g of U g of T</i> | <i>Remarks</i> |
|-------------|---|----------------------------|--|----------------|
|-------------|---|----------------------------|--|----------------|

Date and place of dispatch of report:

Name and position of signatory:

Signature:

Explanatory notes

1. This report is required for conditioned waste which has been received from installations/qualifying nuclear facilities or from installations outside the United Kingdom.
2. The 'Conditioned form' column must show the conditioned form of the waste, e.g. glass, ceramic, cement or bitumen.
3. The quantity column may be based on the quantity data recorded at the qualifying nuclear facility and does not require measurements of the items imported/received.

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 31(2)(a)

PART 11
REQUEST FOR A QUALIFYING NUCLEAR
FACILITY WITH LIMITED OPERATION

1. Date:
2. Qualifying nuclear facility:
3. Material balance area code:

Status: This is the original version (as it was originally made).

- 4. Category of qualifying nuclear material:
- 5. Enrichment or isotopic composition:
- 6. Quantities:
- 7. Chemical composition:
- 8. Physical form:
- 9. Number of items:
- 10. Intended use:
- 11. Particular safeguards obligation:

| | |
|--|-------|
| Request granted as above... | Date: |
| Name and position of signatory granting the request: | |
| Signature:... (for the ONR) | |

Explanatory Note

This form should be used when a request for the application of regulation 31 is made.

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

Regulation 33(2)

PART 12

**ADVANCE NOTIFICATION OF INTENDED WITHDRAWAL OF
QUALIFYING NUCLEAR MATERIAL FROM CIVIL ACTIVITIES**

Date _____

This is to notify the ONR that a withdrawal of qualifying nuclear material from civil activities is intended to be made as follows:

- (a) Material Balance Area code: _____
- (b) Facility code: _____
- (c) Quantity: _____ g/kg total weight of element _____
_____ g/kg fissile isotope(s), if applicable
- (d) Chemical composition: _____
- (e) Enrichment or isotopic composition (if appropriate): _____
- (f) Physical form: _____
- (g) Number of items: _____
- (h) Description of containers and seals: _____
- (i) Shipment identification data: _____
- (j) Name of the operator: _____
- (k) Proposed date of withdrawal: _____

(Signature)

For the operator

This form, duly completed and signed, must be sent to the ONR in accordance with regulation 35.

SCHEDULE 2

Regulation 6(3)

The Components of an Accountancy and Control System

The components of an accountancy and control system, referred to in regulation 6(3), are set out below:

- 1) a structure of material balance areas in which the physical inventory of qualifying nuclear material in each area and the transfers of qualifying nuclear material into and out of each area can be determined. This structure should be designed to maximise the control of qualifying nuclear material flows and physical inventories;
- 2) defined roles and responsibilities, that are assigned, and communicated to the staff of a qualifying nuclear facility to meet the obligations contained in these Regulations;
- 3) quality assurance and quality control measures that detect, describe, address, and reduce sources of errors in and poor performance of the system;
- 4) a programme of measurements that provides accurate, suitably precise, and representative information that quantifies and characterises qualifying nuclear material;
- 5) a measurement control programme that validates and provides traceability for measurement results and their uncertainties and ensures that measurements comply with the relevant international standards or are equivalent in quality to those standards, for example by assessing, approving, recording, and calibrating measurement procedures;
- 6) the ability to track and document the movement of qualifying nuclear material through receipts, packaging, re-packaging, processing, storage, and shipment in a timely manner. The system should show the location, characteristics, and containment of all qualifying nuclear material;
- 7) the ability to unambiguously identify batches of qualifying nuclear material in whatever containers, process vessels, or equipment they may be located in. The locations in which qualifying nuclear material can be held, as well as positions within these areas, should also be identifiable;
- 8) an inventory control system to regularly check the agreement between records of qualifying nuclear material, and between those records and the physical reality, and take appropriate action to manage discrepancies as they arise by investigating, documenting, reporting, and resolving such discrepancies;
- 9) the ability to manage anomalies consistent with the loss or gain of a significant amount of qualifying nuclear material, or any other situation corresponding with regulation 17 (unusual occurrences), in a timely manner by, for example, recognising, investigating, and documenting such anomalies. The system should define personnel responsibilities and authorities to carry out the actions required by regulation 16 (special reports);
- 10) data processing procedures that store, trace, identify, and produce the information required by these Regulations, and that are required to facilitate the checking of data against the physical reality;
- 11) reporting and notification procedures that transmit the information required by these Regulations through appropriate channels to the ONR and according to appropriate deadlines;
- 12) receipt and shipment procedures that check the quantity and characteristics of qualifying nuclear material entering or leaving a qualifying nuclear facility against the accountancy information that must accompany such receipts and shipments. These procedures should also allow for the introduction or extraction of qualifying nuclear material to or from the tracking, identification, and inventory control processes described above;
- 13) a Physical Inventory Taking (PIT), that is carried out in accordance with regulation 15(3) and 31(4)(b) at least every calendar year, with the period between two successive physical inventory takings not exceeding 14 months;

- 14) procedures for a PIT that describe the responsibilities of those involved, the methods they should use, the records that should be kept, the associated measurement uncertainties and material balance tests (where appropriate), the reporting that must be made to the ONR, and the steps for authenticating any information made available to inspectors under these Regulations; and
- 15) a List of Inventory Items (LII), generated from a PIT, that facilitates inspector verification of information provided to ONR against the physical reality. The LII should include information on the mass and composition of qualifying nuclear material per item, as well as its location, containment, identity, and type.

SCHEDULE 3

Regulations 51 and 52

Consequential and supplementary amendments for Nuclear Safeguards Act 2000 and related legislation

PART 1

Nuclear Safeguards and Electricity (Finance) Act 1978

1. The Nuclear Safeguards and Electricity (Finance) Act 1978 is amended as follows.
2. In section 1—
 - (a) in sub-section (1), for “made on 6th September at Vienna between the United Kingdom, the European Economic Energy Community and the International Atomic Energy Agency” substitute “made on 7th June 2018 at Vienna between the United Kingdom and the International Atomic Energy Agency”;
 - (b) in sub-section (2), omit the words from the beginning to “1977, and”;
 - (c) in paragraph (a) of subsection (2), omit the words “(of which the Protocol attached thereto forms an integral part)”.
3. In section 2(1)—
 - (a) in paragraph (a) for “articles 71 to 84” substitute “articles 69 to 82”;
 - (b) in paragraph (b) for “article 50” substitute “article 48”;
 - (c) in the words after paragraph (b) for “article 85 of the Safeguards Agreement” substitute “article 83 of the Safeguards Agreement”.
4. In section 2(2)—
 - (a) in paragraph (a)—
 - (i) for “articles 5, 9(c) and 87” substitute “articles 4, 9(c) and 85”;
 - (ii) omit “and the provisions of the Protocol which forms part of the Safeguards Agreement”;
 - (b) in paragraph (b) for “where article 83 applies” substitute “where article 81 applies”.
5. In section 2(7) for “article 92(2)” substitute “article 90”.
6. In section 3(1)(b) for “article 76(d)” substitute “article 74(d)”.

Nuclear Safeguards Act 2000

7. The Nuclear Safeguards Act 2000 is amended as follows.
8. In section 1(1)—
 - (a) in the definition of “Additional Protocol” for “on 22nd September 1998 (Cm.4282)” substitute “on 7th June 2018”;
 - (b) in the definition of “Additional Protocol information” omit “, or the third or fourth paragraph of Annex III to,”;
 - (c) in the definition of “Agency inspector” for “Article 85 of the Safeguards Agreement” substitute “Article 83 of the Safeguards Agreement”;
 - (d) in the definition of “Safeguards Agreement” for “on 6th September 1976 between the United Kingdom, the European Atomic Energy Community and the Agency” substitute “on 7th June 2018 between the United Kingdom and the Agency”.
9. In section 1(3) for “22nd September 1998” substitute “7th June 2018”.

The Nuclear Safeguards (Notification) Regulations 2004

10. The Nuclear Safeguards (Notification) Regulations 2004 are amended as follows.
11. In regulation 2, omit the definition of “the commencement date”.
12. Omit regulation 3.
13. In the Schedule—
 - (a) in the heading for Part I for “ACTIVITIES REFERRED TO IN REGULATIONS 3(1) AND 4(1)” substitute “ACTIVITIES REFERRED TO IN REGULATION 4(1)”; and
 - (b) in paragraph 1 for “The activities referred to in regulations 3(1) and 4(1) are” substitute “The activities referred to in regulation 4(1) are”.

PART 2

General consequential and supplementary amendments

Revocation of retained EU law

- 14.—(1) The following are revoked—
 - (2) Commission Regulation (EURATOM) 302/2005(1); and
 - (3) any Decision made by the Commission under—
 - (a) Article 6 of Regulation (EURATOM) 302/2005; or
 - (b) Articles 7 and 8 of Regulation (EURATOM) 3227/76(2)
- which was directed to a person in the United Kingdom and in force on commencement day.

(1) OJ L 54, 28.2.2005 p.1-71.

(2) OJ L 363, 31.12.1976, p.1-57.

SCHEDULE 4

Regulation 53

Transitional provisions

Declaration of basic technical characteristics

1. An operator of a qualifying nuclear facility, which exists on commencement day, may satisfy the requirement of regulation 3(1) (to provide the ONR with a declaration of basic technical characteristics) by providing to the ONR, within the period of thirty days beginning on commencement day written confirmation that the information concerning basic technical characteristics which was provided by the operator to the Commission under Article 3 of Commission Regulation (EURATOM) 302/2005 is still correct on commencement day.

Initial book inventory

2. An operator of a qualifying nuclear facility, which exists on commencement day, may satisfy the requirement of regulation 13 (to provide the ONR with an initial book inventory, by sending to the ONR) within the period of 15 days beginning on commencement day, a physical inventory listing (set out in Part 4 of Schedule 1) which shows the position on commencement day and has been generated from the nuclear material management system at the qualifying nuclear facility.

Inventory change report

3.—(1) An operator of a qualifying nuclear facility, which exists on commencement day, must send two inventory change reports to the ONR, under regulation 14 within the period of 15 days beginning on the day on which the end of the month occurs, which began before and ends on or after commencement day—

- (a) the first report must set out any inventory changes which have occurred or become known to the operator during the period from the start of the month to commencement day; and
- (b) the second report must set out any inventory changes which have occurred or become known to the operator during the period from commencement day to the end of the month.

(2) Sub-paragraph (1) does not apply if commencement day does not fall on a day which is not the last day of a month.

Material balance report

4. An operator of a qualifying nuclear facility, which exists on commencement day, must carry out the first physical inventory for each material balance area, in accordance with regulation 15(3), within a period of 14 months beginning on the day on which the last physical inventory was carried out under Article 13 of Commission Regulation (EURATOM) 302/2005.

Stock list for conditioned and retained waste held on commencement day

5. If during the period of twelve months ending on commencement day an operator of a qualifying nuclear facility that is used to treat or store retained or conditioned waste has sent a stock list to the Commission under Article 31(1) of Commission Regulation (EURATOM) 302/2005 the operator is to be treated as having complied with regulation 29(2).

Advance notification or report

6.—(1) Where—

- (a) an advance notification or report is required or permitted;

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- (b) the notification or report relates to a matter which occurs on or after commencement day; and
- (c) an operator of a qualifying nuclear facility sent to the Commission, before commencement day, an advance notification or report in respect of that matter under the Article of Commission Regulation (EURATOM) 302/2005 set out in the first column of the table;

the advance notification or report, which was sent to the Commission, is to be treated, for the purposes of these Regulations, as having been sent by the operator to the ONR under the relevant regulation set out in the second column of the table.

| <i>Relevant provision of Commission Regulation (EURATOM) 302/2005</i> | <i>Relevant provision of these Regulations</i> |
|--|---|
| 1. Information on new qualifying nuclear facilities (Article 4 and 24) | Regulation 3(2) |
| 2. Advance notice of changes to the basic technical characteristics of a qualifying nuclear facility Article 4 | Regulation 3(3) |
| 3. Programme of activities Article 5 | Regulation 4 |
| 4. Special Report Article 14 | Regulation 16(1) |
| 5. Advance notification of exports of qualifying nuclear material Article 20 and Annex VI | Regulation 21(1) and (2) and the form set out in Part 5 of Schedule 1 |
| 6. Advance notification of imports of qualifying nuclear material Article 21 and Annex VII | Regulation 22(1)-(3) and the form set out in Part 6 of Schedule 1 |

(2) To the extent that, in the period of six months before commencement day, an operator sent a special report to the Commission under Article 14 of Commission Regulation (EURATOM) 302/2005, then the operator must comply with regulations 16(3) and 17(3) in respect of that special report.

Advance notification on or after commencement day

7.—(1) If—

- (a) the activities listed in sub-paragraph 3(1)(b) or (c)(i)-(iii) occur on or after commencement day; and
- (b) paragraph 7 of this Schedule does not apply

the operator must, unless the ONR has previously agreed in writing to a shorter notice period, make the declaration to the ONR on or after commencement day and not later than 200 days prior to the date on which the activity occurs.

(2) In the case of a new qualifying nuclear facility, which comes into existence on or after 1st January 2021, as described in regulation 7(3), the operator must, unless the ONR has previously agreed in writing to a shorter notice period, send an accountancy and control plan to the ONR no later than 200 days prior to the day on which qualifying nuclear material is first received at the facility.

Accountancy and control of qualifying nuclear material

8.—(1) An operator of a qualifying nuclear facility or other person who, on commencement day, was required to keep records by the following Articles of Commission Regulation (EURATOM) 302/2005—

- (a) 8 (operating records),
- (b) 9 (accounting records),
- (c) 24(2) (extraction of ores),
- (d) 30(2) (waste) or
- (e) 26 (carriers and temporary storage agents)

must retain those records for a period of at least five years commencing with commencement day.

(2) An operator must, if requested by the ONR, make the records, referred to in paragraph (1), available for inspection by the ONR at the relevant qualifying nuclear facility and provide the ONR with copies. The records may be made available in electronic form if they are kept in this form by the operator.

(3) An operator must keep the accounting records retained under sub-paragraph (1) up to date.

Operator of qualifying nuclear facility with limited operation

9.—(1) Where, on commencement day, an operator—

- (a) does not qualify for an exemption under regulation 32 of these Regulations;
- (b) benefits from a derogation granted by the Commission in respect of a particular qualifying nuclear facility or qualifying nuclear material, under Article 19 of Commission Regulation (EURATOM) 302/2005 or Article 22 of Regulation (EURATOM) 3227/76; or
- (c) operates a qualifying nuclear facility—
 - (i) in which less than one effective kilogram of qualifying nuclear material is produced, processed, stored, handled, disposed of or otherwise used; and
 - (ii) which is not a reactor, a critical facility, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant nor a separate storage installation

the operator shall be treated as benefitting from regulation 31(8) for a period of twelve months commencing on commencement day.

(2) An operator to whom paragraph (1) applies must, during the twelve month period commencing on commencement day, comply with the requirements of these Regulations, as adapted by regulation 31(8), and may, with the consent of the ONR substitute, for some or all of the forms required by these Regulations, the forms and information which the operator would have been required to send to the Commission during that 12 month period had these Regulations not commenced.