

CRITICAL (SUB-CRITICAL) FACILITIES

DATE:

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APPROVED BY OMB: NO. 3150-0056

EXPIRES: MM/DD/YYYY

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**INTERNATIONAL ATOMIC ENERGY AGENCY
DEPARTMENT OF SAFEGUARDS AND INSPECTION****DESIGN INFORMATION
QUESTIONNAIRE *****(CONTINUED)**

The "Confidential" marking on this form is for IAEA purposes only. It indicates that the IAEA considers the information in the completed form to be 'safeguards confidential' and is not to be confused with any U.S. security classification.

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* Questions which are not applicable may be left unanswered.

CRITICAL (SUB-CRITICAL) FACILITIES**GENERAL FACILITY DATA**

13. NUMBER OF CRITICAL ASSEMBLIES IN
THE FACILITY AND THEIR LOCATION

DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:

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GENERAL FACILITY DATA	
14. EXPECTED MAXIMUM OPERATING POWER	
15. (1) MODERATOR, (2) REFLECTOR, (3) BLANKET, (4) COOLANT	
NUCLEAR MATERIAL DESCRIPTION	
16. MAIN TYPES OF NUCLEAR MATERIAL/ FUEL AND NOMINAL WEIGHT OF NUCLEAR MATERIAL IN THE FACILITY	
17. FUEL ENRICHMENT RANGE AND PU CONTENT	

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NUCLEAR MATERIAL DESCRIPTION

<p>18. DESCRIPTION OF FUEL ELEMENTS (for each type)</p> <ul style="list-style-type: none">- physical and chemical form of fuel;- geometrical form or type;- dimensions;- number of slugs per element;- nuclear material and fissionable material and its quantity (with design tolerance);- composition of alloy, etc.	<p>DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:</p>
<p>19. CLADDING MATERIAL:</p> <ul style="list-style-type: none">- thickness;- composition of material;- bonding	
<p>20. SUB-ASSEMBLIES OF FUEL (number of fuel elements per nuclear assembly, arrangement of fuel elements in sub-assembly, configuration and nominal weight of nuclear material per sub-assembly [with design tolerance])</p>	<p>DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:</p>
<p>21. BASIC OPERATIONAL ACCOUNTING UNIT (fuel elements/assemblies, etc.)</p>	<p>DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:</p>

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NUCLEAR MATERIAL DESCRIPTION	
22. OTHER TYPES OF UNITS	
23. MEANS OF NUCLEAR MATERIAL/FUEL IDENTIFICATION	
24. OTHER NUCLEAR MATERIAL IN THE FACILITY (each separately identified)	

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CORE	
25. CORE DIAGRAM (for each critical assembly showing the general disposition, core support structure, shielding and heat removal arrangements, channels for fuel elements or sub-assemblies, control rods, moderator, reflector, beam tubes, dimensions, etc.)	DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:
26. RANGES OF CRITICAL MASS AND MAXIMUM RADIUS	
27. DESCRIPTION OF MOST COMMON CONFIGURATIONS	DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:
28. AVERAGE MEAN NEUTRON FLUX IN THE CORE: Thermal: Fast:	
29. INSTRUMENTATION FOR MEASURING NEUTRON AND GAMMA FLUX: - accuracy and type of principal instruments; - location of indicator and recorder;	
30. RADIATION LEVEL OUTSIDE/INSIDE SHIELDING AT SPECIFIED PLACES	RADIATION LEVEL DIAGRAM(S) ATTACHED UNDER REF. NUMBERS:
31. MAXIMUM RADIATION ACTIVITY OF FUEL AFTER REFUELING (at the surface and at a distance of 1 metre)	

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NUCLEAR MATERIAL FLOW

[illegible]

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NUCLEAR MATERIAL HANDLING**34. NUCLEAR MATERIAL**i) Packaging
(description)

ii) Storage Plan and Arrangements

iii) Capacity of Storage

iv) Nuclear Material Preparation
(description and identification of
layout and general arrangement)

DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:

DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:

35. FUEL TRANSFER EQUIPMENT, IF ANY

DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:

**36. ROUTES FOLLOWED BY NUCLEAR
MATERIAL**

DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:

NUCLEAR MATERIAL HANDLING	
37. MAIN EQUIPMENT USED FOR	
i) Nuclear Material Assembling	
ii) Nuclear Material Testing	
iii) Nuclear Material Measuring	
PROTECTION AND SAFETY MEASURES	
38 BASIC MEASURES FOR PHYSICAL PROTECTION OF NUCLEAR MATERIAL	

PROTECTION AND SAFETY MEASURES

39. SPECIFIC HEALTH AND SAFETY RULES
FOR INSPECTOR COMPLIANCE
(if extensive, attach separately)

NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

40. SYSTEM DESCRIPTION

Give description of:

- the nuclear material accountancy system;
- the method of recording and reporting accountancy data;
- the procedures for account adjustment after inventory and correction of mistakes, etc.

under the following headings:

- i) General

SPECIMEN FORMS USED IN ALL PROCEDURES ATTACHED
UNDER REFERENCE NUMBERS:

NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

40. SYSTEM DESCRIPTION
(Continued)

i) General (continued)

ii) Receipts

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DATE:

NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

40. SYSTEM DESCRIPTION (Continued)

iii) Shipments

iv) Physical Inventory
Description of procedures, scheduled frequency, methods of operator's inventory taking (both for item and/or bulk accountancy), including relevant assay methods and expected accuracy, access to nuclear material, methods of verification of nuclear material in the core

v) Operational Records and Accounting Records
(including method of adjustment or correction and place of preservation and language)

LIST OF MAJOR ITEMS OF EQUIPMENT REGARDED AS NUCLEAR MATERIAL CONTAINERS ATTACHED UNDER REFERENCE NUMBERS:

41. HOW OFTEN IS CORE DISASSEMBLED TO PERMIT THE VERIFICATION OF CONTAINED NUCLEAR MATERIAL?

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NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

42. FEATURES RELATED TO CONTAINMENT AND SURVEILLANCE MEASURES
(general description of applied or possible measures)

43. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 32, GIVE THE FOLLOWING (if applicable)

i) Description of Location, Type, Identification

SEPARATE SHEET(S) CAN BE ATTACHED FOR EACH MEASUREMENT POINT
IF NECESSARY, ATTACH DRAWING(S)

ii) Anticipated Types of Inventory Change and Possibilities to Use This Measurement Point for Physical Inventory Taking

iii) Physical and Chemical Form of Nuclear Material
(with cladding materials description)

iv) Nuclear Material Containers, Packaging

IF NECESSARY, ATTACH DRAWING(S)

v) Sampling Procedure and Equipment Used

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NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

43. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 32, GIVE THE FOLLOWING (if applicable)
(Continued)

vi) Measurement Method(s) and Equipment Used

vii) Source and Level of Random and Systematic Errors (measurements)

viii) Technique and Frequency of Calibration of Equipment Used

ix) Method of Converting Source Data to Batch Data

x) Means of Batch Identification

xi) Anticipated Batch Flow Rate Per Year

xii) Anticipated Number of Items Per Flow and Inventory Batch

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NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL

43. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 32, GIVE THE FOLLOWING (if applicable)
(Continued)

xiii) Type, Composition and Quantity of Nuclear Material Per Batch
(with indication of batch data, total weight of nuclear material in item, the isotopic composition (for uranium), and Pu content, when appropriate; form of nuclear material)

xiv) Features Related to Containment-Surveillance Measures

OPTIONAL INFORMATION

44. OPTIONAL INFORMATION
(that the operator considers relevant to safeguarding the facility)

Signature of Responsible Officer:

Date:
