

**RESEARCH AND DEVELOPMENT FACILITIES  
(LOCATIONS OF NUCLEAR MATERIAL IN AMOUNTS GREATER THAN  
ONE EFFECTIVE KILOGRAM)**

DATE:

**CONFIDENTIAL  
WHEN COMPLETED**

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**INTERNATIONAL ATOMIC ENERGY AGENCY  
DEPARTMENT OF SAFEGUARDS AND INSPECTION**

**DESIGN INFORMATION  
QUESTIONNAIRE \***

(CONTINUED)

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\* Questions which are not applicable may be left unanswered.

**RESEARCH AND DEVELOPMENT FACILITIES  
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**GENERAL FACILITY DATA**

13. FACILITY DESCRIPTION (with indication of accountability areas)	GENERAL DIAGRAM(S) ATTACHED UNDER REFERENCE NUMBERS:
14. NORMAL INVENTORY	

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<b>GENERAL FACILITY DATA</b>	
15. ANTICIPATED ANNUAL THROUGHPUT AND/OR INVENTORY FOR THE FACILITY WORKING AT NOMINAL CAPACITY	
16. DESCRIPTION OF THE USE OF NUCLEAR MATERIAL	
17. IMPORTANT ITEMS OF EQUIPMENT WHICH USE, PRODUCE OR PROCESS NUCLEAR MATERIAL	
<b>NUCLEAR MATERIAL DESCRIPTION</b>	
18. MAIN TYPES OF ACCOUNT UNITS TO BE HANDLED IN THE FACILITY	

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NUCLEAR MATERIAL DESCRIPTION	
19. NUCLEAR MATERIAL DESCRIPTION FOR EACH ACCOUNTABILITY AREA (general) <ul style="list-style-type: none"> <li>i) Chemical and Physical Form (with cladding materials description)</li>       <li>ii) Enrichment Ranges and Pu Content</li>       <li>iii) Estimated Nominal Weight of Nuclear Material at the Facility</li> </ul>	
20. WASTE MATERIAL <ul style="list-style-type: none"> <li>i) Source and Form (indicating major contributors; liquid or solid; range of constituents, enrichment range and Pu content, including contaminated equipment)</li>            <li>ii) Quantities in Storage and at Other Locations</li> </ul>	

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NUCLEAR MATERIAL DESCRIPTION	
<p>20. WASTE MATERIAL (Continued)</p> <p>iii) Method and Frequency of Recovery/Disposal</p>	
<p>21. OTHER NUCLEAR MATERIAL IN THE FACILITY AND ITS LOCATION (each separately located)</p>	
<p>22. MEANS OF NUCLEAR MATERIAL IDENTIFICATION IN THE FACILITY</p>	

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NUCLEAR MATERIAL DESCRIPTION	
23. RADIATION LEVEL AT NUCLEAR MATERIAL LOCATIONS (at specified places)	
NUCLEAR MATERIAL FLOW	
24. SCHEMATIC FLOW SHEET FOR NUCLEAR MATERIAL (identifying measurement points, accountability areas, inventory location, etc., for operator purposes)	DIAGRAM (S) ATTACHED UNDER REFERENCE NUMBERS:
25. TYPES, FORM AND RANGE OF QUANTITIES OF NUCLEAR MATERIAL IN:  <ul style="list-style-type: none"> <li>- Operation Areas</li> <li>- Storage Areas</li> <li>- Other Locations</li> </ul> (average data for each location)	
NUCLEAR MATERIAL HANDLING (FOR EACH ACCOUNTABILITY AREA)	
26. DESCRIPTION OF NUCLEAR MATERIAL STORAGE (indicating capacity, anticipated inventory and throughput, etc.)	DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:
27. MAXIMUM QUANTITY OF NUCLEAR MATERIAL TO BE HANDLED IN ACCOUNTABILITY AREAS	

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<p align="center"><b>NUCLEAR MATERIAL HANDLING (FOR EACH ACCOUNTABILITY AREA)</b></p>	
<p>28. MODIFICATION OF THE PHYSICAL/ CHEMICAL FORM DURING OPERATION</p>	
<p>29. NUCLEAR MATERIAL TRANSFER</p>	
<p>30. FREQUENCY OF RECEIPT AND SHIPMENT</p>	
<p>31. NUCLEAR MATERIAL TRANSFER EQUIPMENT (if applicable)</p>	<p>DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:</p>
<p>32. DESCRIPTION OF CONTAINERS USED FOR STORAGE AND HANDLING</p>	<p>DRAWING(S) ATTACHED UNDER REFERENCE NUMBERS:</p>
<p>33. ROUTES FOLLOWED BY NUCLEAR MATERIAL</p>	
<p>34. SHIELDING (for storage and transfer)</p>	

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**PROTECTION AND SAFETY**

35. BASIC MEASURES FOR PHYSICAL  
PROTECTION OF NUCLEAR MATERIAL

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

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**NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

**37. SYSTEM DESCRIPTION**

Give description of:

- the nuclear material accountancy system
- the method of recording and reporting accountancy data and establishing material balance
- the procedures for account adjustment after inventory, and corrections of mistakes, etc., under the following headings

i) General

SPECIMEN FORMS USED IN ALL PROCEDURES ATTACHED UNDER REFERENCE NUMBERS:



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**NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

37. SYSTEM DESCRIPTION  
(Continued)

ii) Receipts  
(including method of dealing with  
shipper/receiver differences and  
subsequent account corrections)

iii) Shipments  
(including waste)

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**NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

37. SYSTEM DESCRIPTION  
(Continued)

iv) Measured Discards  
(estimated quantities per year (month),  
method of management)

v) Retained Waste  
(estimated quantities per year,  
period of storing)

vi) Physical Inventory

Description of procedures, scheduled frequency, estimated distribution of nuclear material, method of operator's inventory taking (both for item and/or mass accountancy, including relevant assay method), accessibility and possible verification method for irradiated nuclear material, expected accuracy, and access to nuclear material

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

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37. SYSTEM DESCRIPTION  
(Continued)

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

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

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**NUCLEAR MATERIAL ACCOUNTANCY AND CONTROL**

39. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 24, GIVE THE FOLLOWING (if applicable)

i) Description of Location, Type, Identification

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

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

SEPARATE SHEET(S) FOR EACH MEASUREMENT POINT CAN BE ATTACHED. (If necessary, attach drawing(s).)

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39. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 24, GIVE THE FOLLOWING (if applicable)  
(Continued)

iv) Nuclear Material Containers, Packaging

v) Sampling Procedure and Equipment Used

vi) Measurement Method(s) and Equipment Used

vii) Source and Level of Random and Systematic Errors  
(weight, volume, sampling, analytical, NDA)

viii) Technique and Frequency of Calibration of Equipment Used

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39. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 24, GIVE THE FOLLOWING (if applicable)  
(Continued)

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 Inventory Batches

xiii) Anticipated Number of Items Per Flow and Inventory Batches

xiv) 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)

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39. FOR EACH MEASUREMENT POINT OF ACCOUNTABILITY AREAS, IDENTIFIED UNDER QS. 24, GIVE THE FOLLOWING (if applicable)  
(Continued)

- xv) Features Related to Containment-Surveillance Measures

**OPTIONAL INFORMATION**

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

Signature of Responsible Officer:

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Date:

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