

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

**DESIGN INFORMATION  
QUESTIONNAIRE\***

**IAEA USE ONLY**

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The purpose of this document is to obtain the facility design information required by the Agency in order to discharge its safeguards responsibilities. It will also serve as a check list for examination of design information by Agency inspector(s). If, in any area, insufficient space is available add further sheets to the extent necessary.

<b>IAEA USE ONLY</b>	
<b>COUNTRY</b>	
<b>COUNTRY OFFICER</b>	
<b>TYPE</b>	
<b>DATE OF INITIAL DATA</b>	
<b>VERIFICATION</b>	
<b>LAST REVIEW AND UPDATING</b>	

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

N-71/Rev1 (Nov 76)

Enclosure 6

# ISOTOPIC ENRICHMENT PLANTS

Date: \_\_\_\_\_

GENERAL INFORMATION			
1. NAME OF THE FACILITY (incl. usual abbreviation)			
2. LOCATION AND POSTAL ADDRESS			
3. OWNER (legally responsible)			
4. OPERATOR (legally responsible)			
5. DESCRIPTION (main features only)			
6. PURPOSE			
7. STATUS (planned; under construction; in operation)			
8. CONSTRUCTION SCHEDULE DATES (if not in operation)	Start of Construction	Commissioning	Operation
9. NORMAL OPERATING MODE (days only, two-shift, three shift; number of days/annum, etc.)			
10. FACILITY LAYOUT (structural containment, fences, access, nuclear material storage areas, laboratories, waste disposal areas, routes followed by nuclear material, experimental and test areas, etc.)	DRAWING(S) ATTACHED UNDER REF. Nos.		
11. SITE LAYOUT (site plan showing in sufficient detail; location, premises and perimeter of facility, other buildings, roads, railways, rivers, etc.)	DRAWING(S) AND/OR MAPS ATTACHED UNDER REF. Nos.		
12. NAMES AND/OR TITLE AND ADDRESS OF RESPONSIBLE OFFICERS (for nuclear material accountancy and control and contact with the Agency. If possible attach organization charts showing position of officers)			

<b>OVERALL PROCESS PARAMETERS</b>			
13. FACILITY DESCRIPTION (indicating all process stages and storage areas and feed, product, tail and waste points)	GENERAL FLOW DIAGRAM(S) ATTACHED UNDER REF. Nos.		
14. PROCESS DESCRIPTION (identifying sampling and key measurement points; MBAs; inventory locations)	FLOWSHEET(S) FOR NORMAL OPERATION ATTACHED UNDER REF. Nos.		
15. DESIGN CAPACITY (throughput and energy consumption)	MTUSW/annum  MW		
16. ANTICIPATED THROUGHPUT (in the form of a forward programme indicating proportion of various feeds and products)			
<b>NUCLEAR MATERIAL DESCRIPTION AND FLOW</b>			
	<i>FEED</i>	<i>PRODUCT</i>	<i>TAILS</i>
17. MAIN MATERIAL DESCRIPTION			
(i) Chemical and Physical Form			
(ii) Throughput and Enrichment Ranges (for normal flowsheet operation indicating if blending and/or recycling takes place)			
(iii) Batch Size/Flow Rate and Campaign Period			
(iv) Maximum Capability as Concentration of Top Product (Nat. U Feed)			
(v) Storage Inventory (indicating any change with throughput)			
(vi) Frequency of Receipt or shipment			

<b>NUCLEAR MATERIAL DESCRIPTION AND FLOW</b>	
<p>18. WASTE MATERIAL</p> <p>(i) Source and Form (indicating major contribution; liquid or solid; range of constituents; enrichment range; include contaminated equipment)</p> <p>(ii) Storage Inventory Range, Method and Frequency of Recovery/Disposal</p>	
<p>19. CONTAINER AND STORAGE AREA DESCRIPTIONS</p>	<p>SEPARATE NOTE TO BE ATTACHED describing for feeds, products, tails and wastes: the type and size of containers used (incl. Operational capacity); method of storage; filling and emptying procedures (inc. Time cycles); and any special identification features.</p>
<p>20. MEASURED DISCARDS AND RETAINED WASTE</p> <p>(i) As % of input</p>	
<p>21. INVENTORY</p> <p>(i) In-Process (within plant and equipment during normal operation; indicate quantity form and main locations and any significant change with time or throughput)</p> <p>(ii) Other locations (quantity, form and location of inventory not already specified)</p>	

<b>PLANT MAINTENANCE</b>	
<p>22. MAINTENANCE, DECONTAMINATION, CLEAN-OUT</p>	<p>SEPARATE NOTE TO BE ATTACHED</p> <p>Describe plans and procedures and defining all sampling and key measurement points associated with:</p> <ul style="list-style-type: none"> <li>(i) normal plant maintenance</li> <li>(ii) plant and equipment decontamination and subsequent nuclear material recovery;</li> <li>(iii) plant and equipment clean-out including means of ensuring vessels are empty</li> </ul>
<b>PROTECTION AND SAFETY MEASURES</b>	
<p>23. BASIC MEASURES FOR PHYSICAL PROTECTION OF NUCLEAR MATERIAL</p>	
<p>24. SPECIFIC HEALTH AND SAFETY RULES FOR INSPECTOR COMPLIANCE (if extensive, attach separately)</p>	

**NUCLEAR MATERIAL ACCOUNTANCY**

25. SYSTEM DESCRIPTION

Give description of the nuclear material accounting system, the method of recording and reporting accountancy data and establishing material balances, procedures for account adjustment after plant inventory, mistakes, etc. Under the following headings:

- (i) General

SPECIMEN FORMS USED IN ALL PROCEDURES ATTACHED UNDER REF. Nos.

**NUCLEAR MATERIAL ACCOUNTANCY**

SYSTEM DESCRIPTION (CONTINUED)

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

(iii) Shipments  
(product and waste)

<b>NUCLEAR MATERIAL ACCOUNTANCY</b>	
<p>SYSTEM DESCRIPTION (CONTINUED)</p> <p>(iv) Physical Inventory (frequency, procedures, estimated distribution)</p>	<p>LIST OF MAJOR ITEMS OF EQUIPMENT REGARDED AS NUCLEAR MATERIAL CONTAINERS ATTACHED UNDER REF. Nos.</p>
<p>(v) Measured Discards and Retained Waste</p>	
<p>(vi) Operational records and Accounts (including method of adjustment or correction and place of preservation and language)</p>	



<b>NUCLEAR MATERIAL ACCOUNTANCY</b>	
<p>26. FOR EACH KEY MEASUREMENT POINT IDENTIFIED UNDER Qs. 14 AND 22 GIVE THE FOLLOWING</p> <p>(i) Identification</p>	
<p>(ii) Chemical and Physical Form of Material</p>	
<p>(iii) Sampling Procedures and Equipment Used</p>	
<p>(iv) Measurement/.Analytical Method and Equipment Used</p>	
<p>(v) Source and level of Random and Systematic errors (weighing, volume, sampling, analytical)</p>	
<p>(vi) Method of Converting Source Data to Batch data (standard calculative procedures, constant and empirical relationships)</p>	
<p>FILL IN A PAGE 8 AND A PAGE 9 FOR EACH KMP</p>	

**NUCLEAR MATERIAL ACCOUNTANCY**

(vii) Calculative and Error Propagation Technique

(viii) Technique and Frequency of Calibration of Equipment Used

(ix) Programme for the continuing Appraisal of the Accuracy of Weight, volume, Sampling Techniques and Measurement Methods

(x) Programme for Statistical Evaluation of Data from (viii) and (ix)

FILL IN A PAGE 8 AND A PAGE 9 FOR EACH KMP

**NUCLEAR MATERIAL ACCOUNTANCY**

27. OVERALL LIMIT OF ERROR

Describe procedures to combine individual measurement error measurements to obtain the overall limit of error for:

- (i) S/R Differences
- (ii) Book Inventory
- (iii) Physical Inventory
- (iv) MUF

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

\_\_\_\_\_  
Signature of Responsible Officer

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Date