

**LEUPA**

**TypeB(U) Package to Contain Fissile Substances**

**INSPECTION AND MAINTENANCE  
MANUAL**

Made by

**INAP**

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A	Original	EL	NG	JCO	
B	Acceptance criteria	EL	NG	JCO	

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## 1 PURPOSE

1. The purpose of this manual is to ensure that transport packaging containing fissile substances, the design of which has been approved by the ARN (Nuclear Regulatory Authority) as package RA/0103/B(U)F-96 – LEUPA, is duly inspected and maintained.

## 2 SCOPE

1. This manual is applicable to all RA/0103/B(U)F-96 – LEUPA packaging. The packaging shall be inspected before each loading. No inspection is required for empty packages.

## 3 APPLICABLE DOCUMENTS

Drawing	Title
0908-LE01-3AEIN-004	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – GENERALASSEMBLY
0908-LE01-3AEIN-005	LOW ENRICHED URANIUM PACKAGE (LEUPA) – CONTAINER OF INNER CANS
0908-LE01-3AEIN-006	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY – CADMIUM CHAMBER
0908-LE01-3AEIN-007	LOW ENRICHED URANIUM PACKAGE (LEUPA) – INNER CAN
0908-LE01-3AEIN-008	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – INTERMEDIATE COVER
0908-LE01-3AEIN-009	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – EXTERNAL COVER
0908-LE01-3AEIN-010	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY
0908-LE01-3AEIN-015	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE - MAIN BODY – TYPE “A” AND “B” PLATES
0908-LE01-3AEIN-016	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY – FLANGE
0908-LE01-3AEIN-017	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY – WARNING PLATE
0908-LE01-3AEIN-018	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY – NAME PLATE
0908-LE01-3AEIN-019	LOW ENRICHED URANIUM PACKAGE (LEUPA) – PACKAGE – MAIN BODY – DESIGN AND MANUFACTURE PLATES
0908-LE01-3AEIN-020	LOW ENRICHED URANIUM PACKAGE (LEUPA) – GASKET SET AND RUBBER SUPPLEMENTS

## 4 ABBREVIATIONS

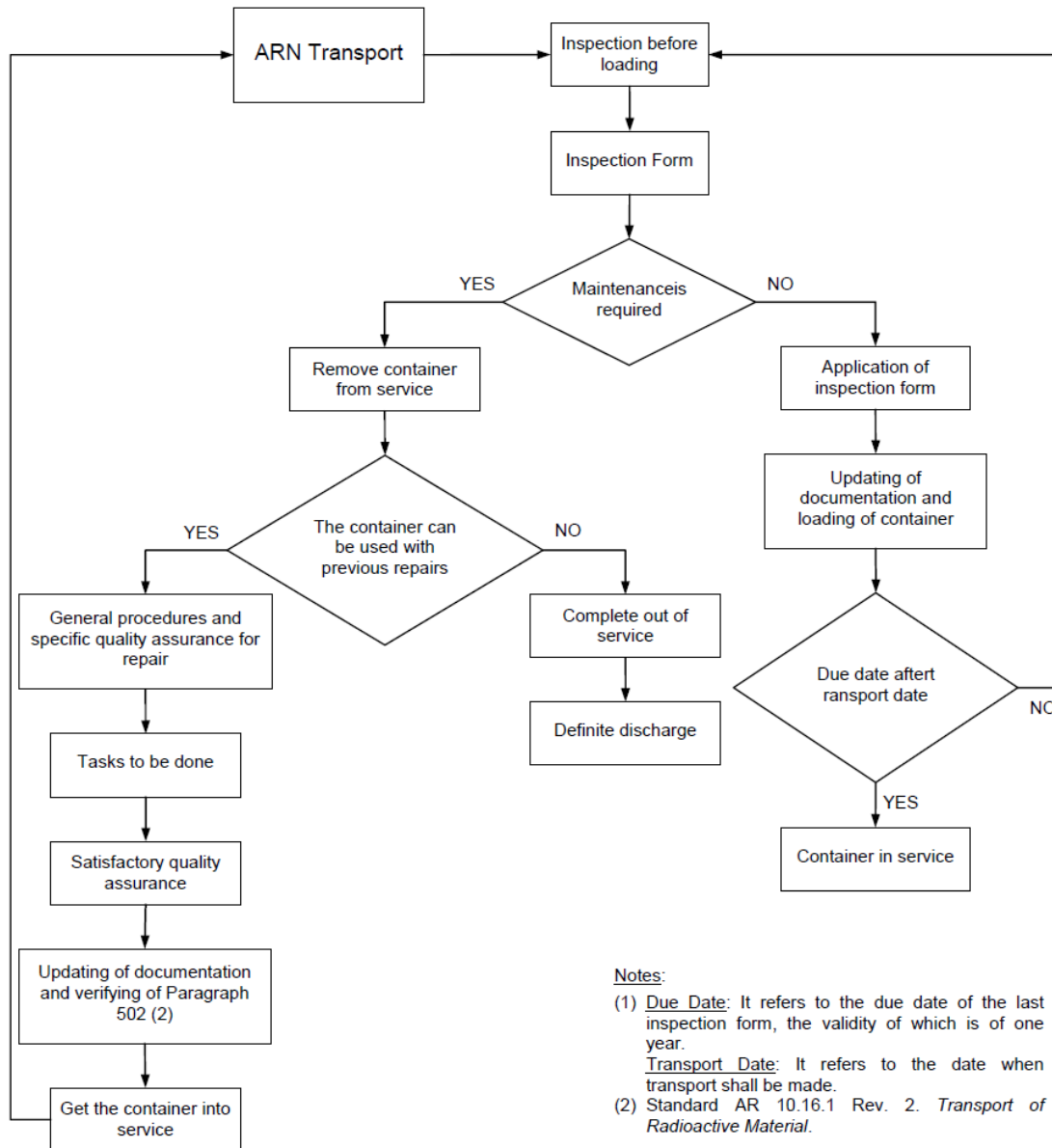
Abbreviation	Description
FS	Fissile Substance

Abbreviation	Description
LEUPA	Low Enriched Uranium Package for Transport

## 5 INSPECTION PROCEDURE

1. The owner of package shall appoint a technical group in charge of the development of the tasks established in this manual.
2. The owner of package shall appoint an operation group to perform tasks of disassembly, visual inspection and assembly of the involved packages.
3. Inspection shall be undertaken and approved within three (3) months prior to each loading.
4. Inspection and maintenance procedure shall be carried out following the flux diagram specified in Picture 1:.
5. An inspection form shall be filled in for each inspection (Picture 2:, Picture 3: and Picture 4:).
6. The operation group is responsible for the required inspection before each loading and for the documentation of points A and B of the inspection form (Picture 1: and Picture 2:).
7. The inspection form shall be sent to the technical group to be approved.
8. The technical group shall decide whether the package is acceptable for transport or if it requires repair and maintenance operations.
9. If package state is acceptable for transport, the technical group shall approve the inspection form, and send an authorized copy to the operation group to be attached to dispatch documentation. A packaging label shall be put indicating its approval status for transport (see Picture 5:).
10. Inspection forms shall be sent to ARN Transport.

**Picture 1: Flux diagram of inspection and maintenance procedure**



**Notes:**

- (1) Due Date: It refers to the due date of the last inspection form, the validity of which is of one year.
- Transport Date: It refers to the date when transport shall be made.
- (2) Standard AR 10.16.1 Rev. 2. *Transport of Radioactive Material*.

**Picture 2: Inspection form 1**

<b>LEUPA</b>		<b>INSPECTION FORM 1</b>		
Date: / /		Page No.of		
Packaging: <b>LEUPA</b>		Type of Material to be Transported:		
Series Number:				
A – Visual Inspection		Accepted	Rep. / Maint.	Notes
<b>Body and Covers:</b>				
<b>Structure:</b>	Corrosion			
	Fissures                      or Breaking			
	Dents			
<b>Bolts and Washers:</b>				
<b>Welding:</b>	Fissures                      or Breaking			
	Corrosion			
<b>Elastometer in Inner Covers:</b>	Pasting			
	Breaking			
	Wearing			
<b>Name Plate:</b>	Clamping			
	Paint			
<b>Warning Plate:</b>	Clamping			
	Paint			
<b>Spiral Gasket Container of Inner Cans:</b>				
<b>INNER CANS</b>				
<b>Cans:</b>	Fissure or Braking			
	Corrosion			
	Deformation			
<b>Lids:</b>	Fissure                      or Breaking			
	Corrosion			
	Wear			

**Picture 3: Inspection form 2**

<b>LEUPA</b>				<b>INSPECTION FORM 2</b>			
Date: / /			Page No.of				
<b>B – Inspection Results</b>							
Acceptable for Service	Yes	No	(Cross out what does not correspond)				
Inspection Manager:	<hr style="width: 100%;"/> Signature		<hr style="width: 100%;"/> Print Full Name				
<b>C – Approved and Documented</b>							
Date of Approval			/ /				
Inspection Manager:	<hr style="width: 100%;"/> Signature		<hr style="width: 100%;"/> Print Full Name				



**Picture 4: Inspection form 3**

LEUPA		INSPECTION FORM 3	
Notes Pages:		Page No.of	

(Attach as many pages as deemed necessary)

**Picture 5: Form for approval for inspection and maintenance**

<h1 style="margin: 0;">LEUPA</h1>			
<h2 style="margin: 0;">INSPECTION AND MAINTENANCE</h2> <h2 style="margin: 0; color: green;">APPROVED</h2>			
<b>SERIES NUMBER</b>			
Date of Inspection			
Due Date			
Approval Manager:	<hr style="width: 80%; margin: 0 auto;"/> Signature	<hr style="width: 80%; margin: 0 auto;"/> Write Full Name	

### 5.1 Requirements of Repair and Maintenance Operations

1. The package shall be retired from service.
2. The quality assurance procedures shall be applied for the repairing and maintenance of package.
3. Modifications to the design are not allowed without the application of the Quality Assurance procedures and the consent of INVAP S.E. and ARN Transport.
4. All necessary tasks in accordance with the procedures established in the execution of the above point shall be carried out.
5. Documentation must be sent to ARN Transport and then the package shall be returned to service.
6. The technical group is responsible for the updating and filing in of inspection and maintenance documentation.
7. The term between the inspection and transport cannot be more than one (1) year. In case this condition is not complied with, the package shall be downloaded and a new inspection carried out before transport.
8. No inspection is required prior to transport of empty package.

### 6 ACCEPTANCE CRITERIA

1. These criteria apply to all components of LEUPA package draw number 0908-LE01-3AEIN-004 - GENERAL ASSEMBLY.
2. If any of the components do not meet these criteria should be removed from service.

**Acceptance criteria table**

Draw	Title	Acceptance criteria
0908-LE01-3AEIN-004	LEUPA - PACKAGE - GENERAL ASSEMBLY	It must have all components and each must exceed the acceptance criteria.
0908-LE01-3AEIN-005	LEUPA - PACKAGE - MAIN BODY - CONTAINER OF INNER CONTAINERS	You must not have any signs of corrosion, any deformations or bumps on the inside. The welds must be free of cracks
0908-LE01-3AEIN-006	LEUPA - PACKAGE - MAIN BODY - CADMIUM CHAMBER	Must not have any signs of corrosion and deformation. The threads must be in good condition for a proper fit of the cover.
0908-LE01-3AEIN-007	LEUPA - INNER CONTAINER	Must not have any signs of corrosion and deformation, bumps or cracks in any of their faces The thread and the cover must seal the container tightly. The welds must be free of cracks
0908-LE01-3AEIN-008	LEUPA - PACKAGING - INTERMEDIATE COVER	Must not have any signs of corrosion and deformation, bumps or cracks in any of their faces. The welds must be free of cracks
0908-LE01-3AEIN-009	LEUPA - PACKAGING - EXTERNAL COVER	Must not have any signs of corrosion and deformation, bumps or cracks in any of their faces.
0908-LE01-3AEIN-010	LEUPA - PACKAGING - MAIN BODY	Must not have any signs of corrosion and deformation, bumps or cracks in any of their faces. The welds must be free of cracks The threads must be in good condition
0908-LE01-3AEIN-015	LEUPA - PACKAGING - MAIN BODY - TYPE "A" & "B" SHEETS	There must be signs of corrosion and their identification should be read clearly. Fixing welds should not be cracked
0908-LE01-3AEIN-016	LEUPA - PACKAGING - MAIN BODY - FLANGE	You must not have signs of corrosion nor deformations, bumps or cracks in any of their faces. All threads must be in good condition. The welds must be free of cracks
0908-LE01-3AEIN-017	LEUPA - PACKAGING - MAIN BODY - WARNING PLATE	There must be signs of corrosion and their identification should be read clearly. Fixing welds should not be cracked
0908-LE01-3AEIN-018	LEUPA - PACKAGING - MAIN BODY - NAME PLATE	There must be signs of corrosion and their identification should be read clearly. Fixing welds should not be cracked
0908-LE01-3AEIN-019	LEUPA - PACKAGING - MAIN BODY - DESIGN AND MANUFACTURE PLATE	There must be signs of corrosion and their identification should be read clearly. Fixing welds should not be cracked
0908-LE01-3AEIN-020	LEUPA - SET OF JOINTS - RUBBER SUPPLEMENTS	Must not show signs of wear, rending, or cuts.

