

LEUPA

TypeB(U) Package to Contain Fissile Substances

**INSPECTION AND MAINTENANCE
MANUAL**

Made by

IN/AP

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| REVISION SHEET | | Document No.: 0908-LE00-3BEIN-026 | | | |
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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

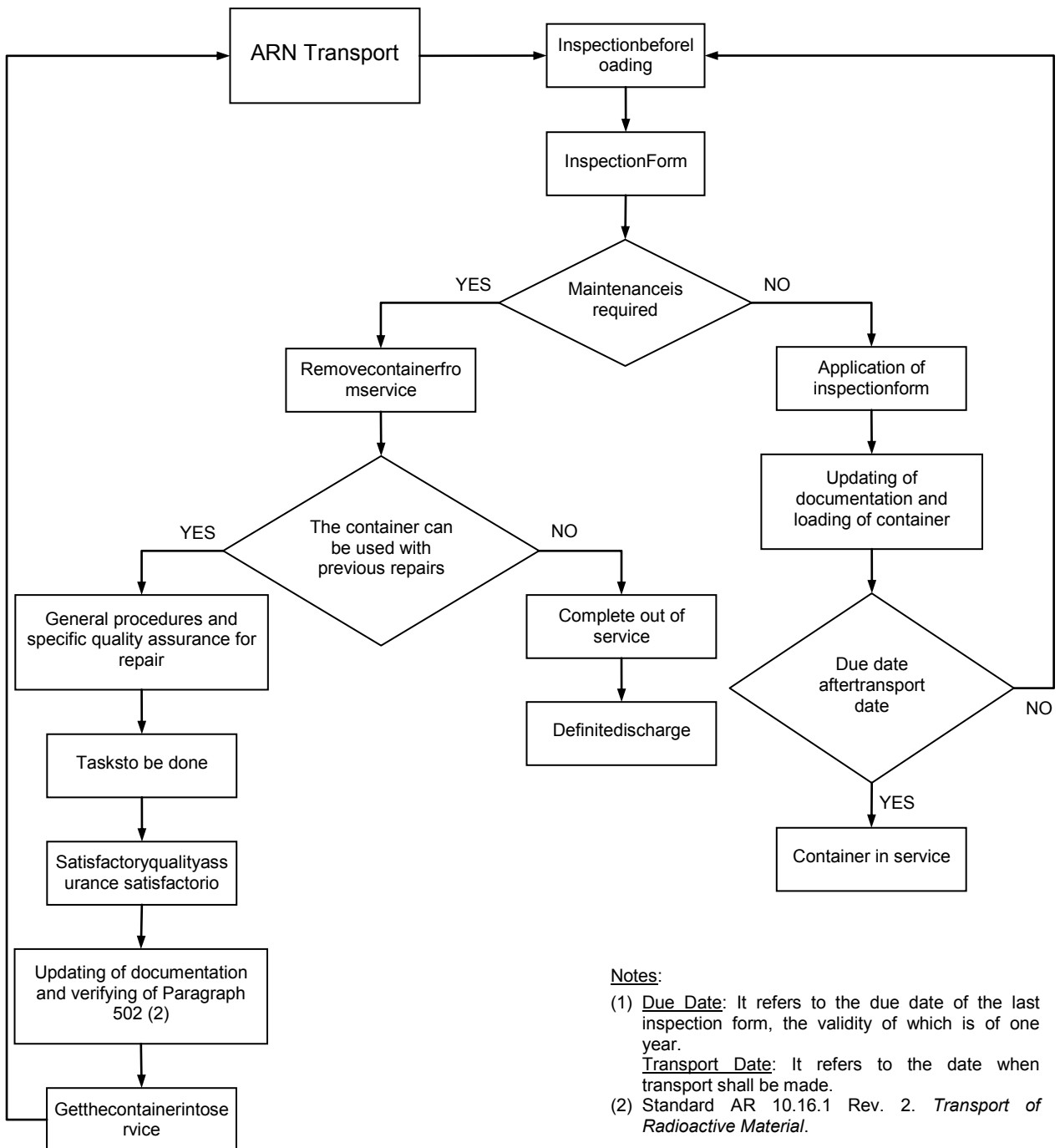
| Abbreviation | Description |
|--------------|-------------------|
| FS | Fissile Substance |

| 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 Aand 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 ARNTransport.

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

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

Picture 3: Inspection form 2

| | | | | | | | |
|------------------------------------|--|--------------------------------------|------------|--------------------------|--|--------------------------------------|--|
| LEUPA | | | | INSPECTION FORM 2 | | | |
| Date: / / | | | Page No.of | | | | |
| B – Inspection Results | | | | | | | |
| 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 | | |
| C – Approved and Documented | | | | | | | |
| Date of Approval | | | / / | | | | |
| Inspection Manager: | | <hr style="width: 100%;"/> Signature | | | <hr style="width: 100%;"/> Print Full Name | | |

Picture 5: Form for approval for inspection and maintenance

| | | | |
|---|---|---|--|
| <h1 style="margin: 0;">LEUPA</h1> | | | |
| <h2 style="margin: 0;">INSPECTION AND MAINTENANCE</h2> <h3 style="margin: 0; color: green;">APPROVED</h3> | | | |
| SERIES NUMBER | | | |
| 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 ARNTransport 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

| Plano | Título | Criterios de aceptación |
|---------------------|--|---|
| 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. |

