Shipping Container Inspections

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CHANGE HISTORY (≤ LAST 5 REV-MODS)

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<th>Summary of Changes</th>
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<td>H-2</td>
<td>11/21/2017</td>
<td>Operations request - Equipment has been lost or disposed of</td>
<td>Table 1, page 16 - Removed POR205-HEDGEHOG-250-PIG104 and POR205-HEDGEHOG-NFT-40 from Datasheet. Modified Step 2.2.2 (added “Additional Data Sheets used within a preventative maintenance package may also be used.”)</td>
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<td>H-1</td>
<td>10/06/2016</td>
<td>New product for use in process.</td>
<td>Add Molykote 111 to supply list and specify when it is used. Move APIEZON Type N Lubricant in supply list to clarify its use.</td>
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<td>H-0</td>
<td>04/02/2015</td>
<td>Periodic review</td>
<td>Added two new steps to Section 3.2. Added new Step to Section 3.3 and Performance Document section. Added Field Preparation section. Added Note above Step 5.1.1. Deleted survey requirement for N-55 overpacks. Adjusted Step 5.3.1 and 5.3.3. Deleted survey requirement for 17-H Dot 7A Drums. Adjusted Step 5.4.1 and 5.3.3. Added new Step 5.5.1. Added new Step 5.6.1 and modified Step 5.6.7. Added new Step 5.7.2 and Records section.</td>
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<td>G-1</td>
<td>07/22/2014</td>
<td>Global Change per #-FCD-728 C-11.</td>
<td>Added leading zeroes to PMID numbers with less than 6 digits.</td>
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<td>Revised 3.2. Added 3.3. Revised 5.1.1, 5.3.1, 5.4.1.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for inspections and replacement of O-ring(s) and gasket(s) for the Pig Transport System and the Hedgehog II system.

1.2 Scope

This procedure covers inspections for shipping containers within HNF-SD-TP-SARP-001 and HNF-11651.

2.0 INFORMATION

2.1 Terms and Definitions

- NDE - Non-Destructive Examination

2.2 General Information

2.2.1 Pig Shipping Container, Non-Destructive Examination (NDE) leak-test procedure is RCD-NE-PRC-LT1.

2.2.2 Data Sheets associated with this procedure are listed on Table 1. Additional Data Sheets used within a preventative maintenance package may also be used.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Observe all posted radiation notices, labels and markings on packaging.

3.2 Radiation and Contamination Control

3.2.1 Work in radiological areas will be performed using a Radiological Work Permit in accordance with ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.

3.2.2 Contamination survey required when opening containers, exposing previously inaccessible surfaces.

3.2.3 Work areas shall be posted or controlled as survey results and work activities require.

3.3 Environmental Compliance

3.3.1 Any waste generated during the performance of this procedure shall be disposed of in accordance with TO-100-052.

3.3.2 Notification to the shift office is required for spills or leaks from shipping containers.
4.0    PREREQUISITES

4.1    Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Pig Shipping Container:
  - For single O-ring seal:
    O-ring, Parker 2-375 Neoprene 45-durometer or 9.475 in. ± 0.055 ID x 9.895 in. OD x 0.187 in. 45-duro
  - For double O-ring seal:
    Parker 2-371 Nitrile and Parker 2-376 Nitrile
  - APIEZON Type N Lubricant
- Hedgehog II, NFT Cans:
  - Molykote 111 (Silicone grease)
- N-55 Overpack:
  - 1/4-inch thick, 0-50 Duro Commercial Grade neoprene gasket,
    - OR -
  - 1/2-inch thick gasket (Two 1/4-inch neoprene weather stripping material glued together)
- 55 Gallon Drum:
  - Tubular NEOZAN gasket.
    - OR -
  - 17-H DOT 7A drum (55 gallon drum) as an integral unit.
    - OR -
  - 17-H DOT 7A drum-lid (55 gallon drum-lid)
- Drum Labels (specify #)
  - When replacing lid or drum assembly.
4.2 Performance Documents

The following documents may be needed to perform this procedure:

- Form A-6006-444, Radiological Survey Report Tracking Table
- Data Sheets associated with this procedure as listed on Table 1.

4.3 Field Preparations

Note - Step 4.3.1 can be performed at any time and/or repeated for the duration of these work instructions.

4.3.1 RECORD all Radiological Survey Report (RSR) number(s), on site form A-6006-444, “Radiological Survey Report Tracking Table,” prior to end of shift.

4.3.2 HPT PERFORM pre-job contamination and radiation survey of the work area.
5.0 PROCEDURE

NOTE - Sections 5.1 through 5.6 can be performed in any logical order.
- Not all sections of this procedure will be performed at one time due to the different inspection frequencies of the various components.

5.1 Pig Shipping Container

NOTE - Step 5.1.1 may be repeated throughout the inspection process.

5.1.1 PERFORM radiological survey of all Pig Shipping Containers to be inspected.

5.1.2 INSPECT O-ring seating surfaces for damage or warping.

5.1.3 INSPECT closure bolts and nuts for any signs of degradation and/or suspect headmarker.

5.1.4 INSTALL new O-rings using APIEZON type N lubricant sparingly.

5.1.5 INSPECT internal and external surface (e.g. welds, punctures, dents > 1/4”).

5.1.6 IF deficiencies are identified during inspections, NOTIFY FWS/management or designee.

5.1.7 QA WITNESS completion of inspections AND INITIAL/DATE Data Sheet.

5.1.8 RETURN Pig Shipping Container to as-found configuration, being careful not to scratch mating surfaces.

5.1.9 NOTIFY FWS/management container is ready to be sent to NDE.
5.2 N-55 Overpack

5.2.1 **INSPECT** toggle clamps on N-55 to ensure operational **AND** LUBRICATE as necessary.

5.2.2 **VISUALLY INSPECT** tiedown straps to ensure not frayed or worn.

5.2.3 **INSPECT** N-55 container surface for dents or weld degradation.

5.2.4 **IF** deficiencies are identified during inspections, **NOTIFY** FWS/management or designee.

5.2.5 **QA WITNESS** completion of the inspections **AND** **INITIAL/DATE** Data Sheet.

5.2.6 **ENSURE** N-55 Overpack is returned to as-found configuration.
5.3 N-55 Overpack Gasket

5.3.1 PERFORM visual inspection of N-55 Overpack gasket for signs of the following:

- aging,
- cracking,
- hardening,
- stretching and thickness within 1/4" to 1/2",
- or any other defect which could impair sealing of surface.

5.3.2 IF gasket does not have any signs of defects, INDICATE on Data Sheet gasket does not need to be replaced AND GO TO Step 5.3.4.

5.3.3 IF gasket does have signs of any defects which could impair sealing of surface, PERFORM the following gasket replacement steps.

5.3.3.1 CONFIGURE unit for gasket replacement.

5.3.3.2 REMOVE used gasket from N-55 Overpack.

5.3.3.3 REPLACE gasket material with an equivalent thickness of 1/4" to 1/2".

5.3.4 QA PERFORM the following:

5.3.4.1 Witness completion of the inspections.

5.3.4.2 VERIFY thickness of gasket is within 1/4" to 1/2".

5.3.4.3 INITIAL/DATAE Data Sheet.

5.3.5 ENSURE N-55 Overpack is returned to as-found configuration.
5.4 17-H Dot 7A Drum (55 Gallon Drum)

5.4.1 **PERFORM** visual inspection of 55 gallon drum gasket for signs of the following:
- aging,
- cracking,
- hardening,
- stretching,
- or any other defect which could impair sealing of surface.

5.4.2 **IF** gasket does not have any signs of defects, **INDICATE** on Data Sheet gasket does not need to be replaced **AND**

**GO TO** Step 5.4.8.

5.4.3 **IF** gasket does have signs of any defects which could impair sealing of surface, **CONTINUE** with this section.

5.4.4 **CONFIGURE** unit for gasket replacement.

**NOTE** - A drum assembly or a drum lid alone comes with a new gasket.

5.4.5 **CONTACT** Engineer or FWS to determine if drum lid or drum needs to be replaced.

5.4.6 **IF** replacing drum assembly or lid, **PERFORM** the following:

5.4.6.1 **ENSURE** label on replaced lid matches drum identification numbers.

**OR**

**ENSURE** label on drum assembly matches replaced drum assembly identification numbers.
5.4 17-H Dot 7A Drum (55 Gallon Drum) (Cont.)

5.4.7 INSTALL new drum lid with gasket,

OR

REPLACE drum assembly.

5.4.8 QA WITNESS completion of inspections and drum assembly or lid replacement (if applicable) AND INITIAL/DATE Data Sheet.

5.4.9 RETURN drum unit to as found configuration.
5.5 Replace O-Ring on Nuclear Filter technology (NFT) Container

5.5.1 **PERFORM** radiological survey when exposing previously inaccessible surfaces.

5.5.2 **REMOVE AND DISPOSE** of existing O-ring on NFT container.

5.5.3 **INSPECT** O-ring sealing surfaces **AND**

**CONFIRM** they are free from the following defects:
- Foreign materials
- Scratches
- Other imperfections.

5.5.4 **INSPECT** new o-ring (Parker P/N 2-166-VM835-75 or P/N 2-166-VM128-75) for the following:
  - It is clean
  - Not cut
  - Not torn
  - Has no other damage.

5.5.5 **LUBRICATE AND INSTALL** new o-ring using Molykote 111 silicone grease.

5.5.6 **RE-INSTALL** lid.
5.6 Replace O-Rings on 250 ml Pig

5.6.1 **PERFORM** radiological survey when exposing previously inaccessible surfaces.

5.6.2 **REMOVE AND DISPOSE** of existing 250 ml Pig O-rings.

5.6.3 **INSPECT** O-ring sealing surfaces **AND**

**CONFIRM** they are free from the following defects:
- Foreign materials
- Scratches
- Other imperfections.

5.6.4 **INSPECT** new o-rings (Parker P/N 2-153-N103-70 or 2-153-N-304-75) for the following:
- They are clean
- Not cut
- Not torn
- Have no other damage.

5.6.5 **LUBRICATE AND INSTALL** new o-rings using Molykote 111 silicone grease.

5.6.6 **RE-INSTALL** lid and base.

**NOTE** - Top screw is 1” long (socket or torx flat head cap screw #8-32unc-3a, ASTM F835) and bottom screws are ¾” long (socket or torx flat head cap screw #8-32unc-3a, ASTM F835).

5.6.7 **INSPECT** screws for damaged threads or stripped sockets **AND**

**IF** damaged, **REPLACE**.

5.6.8 **RE-INSTALL** screws.

5.6.9 **TORQUE** bottom screws in a crisscross pattern to 17–18 in-lb.
5.7 Restoration

5.7.1 **RESTORE** work area to the As-Found condition by removing all tools, unused material, debris generated during work, etc.

5.7.2 **HPT PERFORM** post-job radiation and contamination survey of the work area.

5.8 Acceptance Criteria

5.8.1 Acceptance Criteria has been met when Steps in this procedure have been satisfactorily performed and As-Left values meet the specifications and tolerance(s) per the Data Sheet.

5.8.2 NDE testing performed by NDE Services.

5.9 Review

5.9.1 **RECORD** information relating any failure(s), in sufficient detail to generate a Work Request, in Comments/Remarks section of Data Sheet AND **CONTACT** Engineer or FWS.

5.9.2 **IF** deficiencies cannot be immediately repaired, **REQUEST** FWS/management or designee to initiate a Work Request AND **RECORD** work request number in the Comments section of Data Sheet.

5.9.3 **COMPLETE AND SIGN** Data Sheets.

5.9.4 **RETURN** Work Package to FWS.

5.10 Records

The performance of this procedure generates no records. However, Data Sheets associated with the procedure are record material and are maintained in the work package as record material.

The identified record custodian is responsible for record management in accordance with TFC-BSM-IRM_DC-C-02 or other applicable requirements.
### Table 1 - Data Sheet List

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