Perform Closeout Inspection in Evaporator Room and Pump Room

USQ # EV-17-0644-S, Rev. 0

<table>
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<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tr>
<td>K-1</td>
<td>05/23/2017</td>
<td>Operations Request</td>
<td>Page 9 modified Step 5.1.4 and the following bullets, added new step 5.1.4.1, modified 5.1.4.2 &amp; 5.1.4.3</td>
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<tr>
<td>K-0</td>
<td>06/20/2016</td>
<td>Periodic Review</td>
<td>Records section and Signature line updates to comply with Standard 01, Added SAC(s) to the purpose and scope.</td>
</tr>
<tr>
<td>J-4</td>
<td>06/23/2015</td>
<td>Operations Request</td>
<td>1.2.4 Struck out &quot;Significant&quot; Added 1.2.5 &quot;Evaporator and Pump Room Transient Combustible Material Control is performed after all work activities that require entry into the evaporator room or pump room have been completed prior to entering the Operation Mode, with the exception of performing TO-600-220, 242-A Evaporator Adjust PB-1 Seal Water Needle Valve&quot;5.1 NOTE Added &quot;scaffolding, scaffolding ladders&quot;</td>
</tr>
<tr>
<td>J-3</td>
<td>07/15/2014</td>
<td>Operations Request</td>
<td>Clarified steps, included closed and latched with approved tool container condition, updated General Information.</td>
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<tr>
<td>J-2</td>
<td>06/24/2014</td>
<td>Added SAC 5.8.3</td>
<td>DSA Changes</td>
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Table of Contents

1.0 PURPOSE AND SCOPE ............................................................................................................. 3
   1.1 Purpose ................................................................................................................................ 3
   1.2 Scope ...................................................................................................................................... 3

2.0 INFORMATION ............................................................................................................................ 4
   2.1 Terms and Definitions ............................................................................................................. 4
   2.2 General Information ................................................................................................................ 5

3.0 PRECAUTIONS AND LIMITATIONS ......................................................................................... 6
   3.1 Personnel Safety ..................................................................................................................... 6
   3.2 Radiation and Contamination Control .................................................................................... 6
   3.3 Limits ...................................................................................................................................... 6

4.0 PREREQUISITES .......................................................................................................................... 7
   4.1 Performance Documents ......................................................................................................... 7
   4.2 Field Preparation .................................................................................................................... 7

5.0 PROCEDURE ............................................................................................................................... 8
   5.1 Inspect Pump Room and Evaporator Room for Debris ........................................................... 8
5.2 Records ........................................................................................................................................ 10

Checklist 1 – 242-A Pump Room and Evaporator Room Debris Inspection ........................................ 11

Figure 1 - Evaporator Room Vertical Section ..................................................................................... 13

Figure 2 - Evaporator Room Basement and Ground Floor Landing ................................................... 14

Figure 3 - Evaporator Room 10-ft and 20-ft Levels ............................................................................. 15

Attachment 1 - Pump Room and Evaporator Room Combustible Material Inventory Status Log ........ 16

Attachment 2 – Justification for Limited Pump Room and Evaporator Room Inspection .................... 18
1.0 PURPOSE AND SCOPE

1.1 Purpose

1.1.1 This procedure provides instructions to document, by visual inspection, that no loose debris (rags, laundry, trash, etc.) is present in the Pump Room or Evaporator Room prior to starting up the Evaporator or at the completion of planned maintenance. Loose debris could plug floor drains, become lodged in the Pump Room sump, and is a fire hazard.

1.1.2 This inspection provides a means by which the total heat of combustion of transient combustible materials in the Evaporator Room is controlled to less than 400,000 BTU and Pump Room is controlled to less than 56,000 BTU. This procedure also ensures that no transient combustible liquid or transient flammable liquid shall be present in the evaporator room or pump room, including within an approved tool container. SAC 5.8.2, SAC 5.8.3.

1.2 Scope

1.2.1 This Procedure may not be performed as standalone document. This Procedure must be used in conjunction with a Joint Review Group (JRG) review board approved high risk work package.

1.2.2 This procedure applies to the Pump Room and Evaporator Room at the 242-A Evaporator.

1.2.3 This inspection will occur as directed by Operations Management, but will typically occur when a considerable amount of work has been done inside the Pump Room and Evaporator Room during the most recent outage.

1.2.4 If no maintenance activities have occurred, then performance of this procedure may not be required.

1.2.5 Evaporator and Pump Room Transient Combustible Material Control is performed after all work activities that require entry into the evaporator room or pump room have been completed prior to entering the Operation Mode, with the exception of performing TO-600-220, 242-A Evaporator Adjust PB-1 Seal Water Needle Valve.

1.2.6 Review maintenance activities performed since last campaign. If performance of all or part of the inspection described in TO-600-300 is determined by SM as not required for startup, document on Attachment 2.
2.0 INFORMATION

2.1 Terms and Definitions

- **Accessible Areas**: Rooms or areas that are accessible by means of floors, installed ladders, and platforms

- **Approved Tool Container**: The “JOBOX” located in the Evaporator Room. By this procedure, the JOBOX is verified to be located against the East Wall of the Evaporator Room and closed and latched

- **Attached Material**: Material that is physically attached to equipment or surfaces by means of an adhesive, permanent fasteners, or temporary means such as rope, wire, wire ties, etc. to prevent movement. (Material designed to be installed by plant design or documented modifications and equipment labels and valve tags installed per procedure are NOT included)

- **Concurrent Verification**: The act of checking by qualified personnel that a given operation or field calculation conforms to established criteria, as well as checking a component position, without the requirement that the check be at a separate occasion or independent of activities related to establishing the components position. For transient combustible material inventory, concurrent verification shall consist of combustible material items being identified, categorized (ordinary or rubber/plastic) and weighed or measured by an operator with the fire protection engineer witnessing and concurring.

- **Exclusion Zone**: An area (a rectangular prism) around valves HV-CA1-1, HV-CA1-7 and HV-CA1-9 in which no transient combustible material may be present during Operation Mode. The combustion free zones will be implemented as follows; Access locations are available to perform a thorough visual inspection of locations where transient combustible material might be located. The side dimensions of the combustible material free zone for HV-CA1-1 are conservatively implemented as the entire floor area of the pump room. The bottom of the cover blocks in the pump room is a clear indicator of the height of the zone in the pump room. The side dimensions of the combustible material free zones for HV-CA1-7 and HV-CA1-9 are conservatively implemented as the entire floor area of the evaporator room with the exception of the tool board on the north wall of evaporator, which is outside of the analyzed zones. The height of the zones in the evaporator room is conservatively defined as extending vertically to the bottom of the Elevation 30’ 6” platform.

- **Loose Debris/Material**: Material that is not affixed through physical or mechanical means and can be moved by hand through the application of a small force

- **Transient Ordinary Combustible Material**: Any combustible or flammable material (ordinary combustible equivalent) that is not permanently installed or stored in an Approved Tool container in accordance with the 242-A Documented Safety Analysis (DSA) and HNF-SD-WM-FHA-024, Fire Hazards Analysis for the Evaporator Facility (242-A) (FHA).
2.2 General Information

2.2.1 When performing visual inspection of the Pump Room, Evaporator Room and Airlocks the inspection will include concurrent verification of: identification of combustible material, type and quantities of the combustible material, and estimated weight or dimensions of the combustible material.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 None.

3.2 Radiation and Contamination Control

3.2.1 When work is performed in or when work will result in a high contamination, high radiation or an airborne radioactivity area, then an approved procedure or work package must be developed which is reviewed by Radiological Control per the ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03, (ALARA Work Planning). Any changes in the work package that affects radiological aspects of the work document must be approved by the appropriate project Radiological Control management.

This procedure is typically performed in conjunction with a JRG approved work package. As this work does not create any additional sources of dose than already present, any radioactive contamination, or any airborne radioactivity, this procedure may be performed without incurring any additional radiological controls using the controls of an approved work document and an approved existing RWP.

3.2.2 When working in the HRA, HCA, ARA;

- A job-specific RWP will be used for entry to Pump and Evaporator Rooms
- Continuous HPT coverage is required
- Pre-job and Post-job surveys are required
- To avoid excessive radiation exposure, stay in low dose areas as much as practicable.

3.3 Limits

NOTE - The inspection documents the basis by which transient ordinary combustible material loadings in the combined Pump Room and Evaporator Room area(s) are controlled to less than 400,000 BTU in the Evaporator Room and less than 56,000 BTU in the Pump Room.

**HNF-15279, Technical Safety Requirements for the 242-A Evaporator**

SAC 5.8.2 Evaporator and Pump Room Access and Pump Room Cover Block Control

SAC 5.8.3 Evaporator and Pump Room Transient Combustible Material Control
4.0 PREREQUISITES

4.1 Performance Documents
- TFC-OPS-OPER-C-22, Control and Use of Administrative Locks.

4.2 Field Preparation

The following conditions must be met before this procedure may commence:

4.2.1 **VERIFY** this procedure is to be performed in conjunction with a JRG review board approved high risk work package or other high risk procedure.

Work package number: ______________________
________________________/_____________________/__________________

Signature                  Print (First & Last)                  Date
Shift Manager /OE

4.2.2 **CONFIRM** no additional work is scheduled for the pump or evaporator room (i.e., all maintenance is complete) prior to Evaporator startup.
5.0 PROCEDURE

NOTE – Field work steps in Section 5.0 of this procedure may only commence if this procedure is performed in conjunction with a JRG approved high risk work package. (See Step 4.2.1)

5.1 Inspect Pump Room and Evaporator Room for Debris

NOTE - Areas inspected within these rooms may include scaffolding, scaffolding ladders ledges, beams, piping, valves, motor operations, transmitters, all major components, walls, etc.
- The attached Figure 1, Figure 2 and Figure 3 show locations to be inspected.

5.1.1 OBTAIN a copy of the last performed TO-600-300, Perform Closeout Inspection in Evaporator Room and Pump Room procedure.

5.1.2 RECORD the starting Date and Time on Checklist 1.

NOTE - Steps 5.1.3 through 5.1.5 are performed simultaneously.
- Steps 5.1.4 and 5.1.5 do not require concurrent verification.
- The estimated weight in step 5.1.3.3 should be conservative (high).

5.1.3 USE Concurrent Verification and Attachment 1 to, visually inspect all accessible areas of the Pump Room and Evaporator Room for the following:

5.1.3.1 CHECK for any change in or un-inventoried /unauthorized transient combustibles in the room.

5.1.3.2 RECORD any changes from last inspection on the Inventory Status Log Attachment 1.

5.1.3.3 FOR additions to the Inventory Status log, RECORD quantities, type of combustible and estimated weights or dimensions of new transient combustible.

5.1.3.4 ENSURE that no combustible liquids or flammable liquids remain in the Pump Room or Evaporator Room including approved storage container.

5.1.3.5 ENSURE that no transient combustible materials are stored in the exclusion zones around HV-CA1-1, HV-CA1-7, and HV-CA1-9.
5.1 Inspect Pump Room and Evaporator Room for Debris (Cont.)

5.1.4 VISUALLY INSPECT all accessible areas in the Pump Room and Evaporator Room per Checklist 1 for the following criteria:

- No loose debris or material (rags, trash, clothing, tools, etc.) in the room
- No unattached material (plastic sheeting, test equipment, drain hoses and sleeving, etc.) in the room
- No change in or un-inventoried /unauthorized chemicals in the room

5.1.4.1 VISUALLY INSPECT all accessible areas in the Pump Room and Evaporator Room per Attachment 1 for the following criteria: Approved tool container is closed and latched.

5.1.4.2 RECORD results of inspection on Checklist 1 and Attachment 1.

5.1.4.3 RECORD any changes from last inspection on Checklist 1 and Attachment 1.

5.1.5 WHILE inspecting rooms for debris, CHECK for other system or mechanical deficiencies that may need attention (e.g., leaks; un-banded, loose or missing insulation; lighting problems; etc.) AND RECORD any discrepancies found on Checklist 1.

5.1.6 AFTER the inspection is complete, SIGN AND DATE Checklist 1 and Attachment 1.

5.1.7 NOTIFY the 242-A SM of any discrepancies.

5.1.8 FORWARD the completed Checklist 1 and Attachment 1 to 242-A SM for review and concurrence.

5.1.9 FORWARD a copy of the completed Attachment 1 and Attachment 2 to Engineering to complete the calculation for SAC compliance.
5.2 Records

5.2.1 PERFORM the following for records identified within this procedure.

5.2.1.1 RECORD the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.2.1.2 SUBMIT the package to the central shift office.

<table>
<thead>
<tr>
<th>Records Submittal Checklist</th>
<th>Number of times completed</th>
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<td>4.2 Field Preparation</td>
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<td>Attachment 1</td>
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<tr>
<td>Attachment 2</td>
<td></td>
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</tbody>
</table>

5.2.2 FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.

________________________/________________________/________________________
Signature                  Print (First and Last)                Date
FWS/OE/Shift Manager

The record custodian identified in the company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
### Checklists

#### 1. Evaporator Room / Airlock - Elevation 40'6"

<table>
<thead>
<tr>
<th>Inspect for Presence of:</th>
<th>Y/N</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Loose Debris</td>
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<td></td>
</tr>
<tr>
<td>Unattached Material</td>
<td></td>
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<td>Combustibles</td>
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<tr>
<td>Airlock Free of Debris</td>
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#### 2. Evaporator Room - Elevation 30'6"

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#### 3. Evaporator Room - Elevation 20'6"

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<td>Combustibles</td>
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#### 4. Evaporator Room - Elevation 10'6"

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<tr>
<td>Unattached Material</td>
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<td>Combustibles</td>
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**Checklist 1 – 242-A Pump Room and Evaporator Room Debris Inspection (Cont.)**

**Location: Evaporator Room / Airlock - Elevation 0'-0''**

<table>
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<th>Y/N</th>
<th>Comments</th>
</tr>
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<tr>
<td>Unattached Material</td>
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<td></td>
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<tr>
<td>Combustibles</td>
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<tr>
<td>Airlock Free of Debris</td>
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**Location: Evaporator Room Basement - Elevation -10'-0''**

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<td>Combustibles</td>
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<td>Floor Drain Unobstructed</td>
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**Location: Pump Room**

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<td>Unattached Material</td>
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<tr>
<td>Combustibles</td>
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____________________/____________________/_____________
Signature                  Print (First & Last)               Date
Operator

____________________/____________________/_____________
Signature                  Print (First & Last)               Date
Shift Manager
Perform Closeout Inspection in Evaporator Room and Pump Room

Figure 1 - Evaporator Room Vertical Section

- 42 in. Vapor Line to Condenser E-C-1
- 16 in. Steam Line
- E-A-1 Reboiler
- Operating Level
- Evaporator Vessel C-A-1
- Platform 40 ft. 6 in.
- Platform 30 ft. 6 in.
- LADDER
- AIRLOCK
- Grade: 0 ft. 0 in.
- Elevation: -10 ft. 0 in.
- Drain Line to TK-102-AW
- Return to Pump Room
- 28 in. Recirculation
Perform Closeout Inspection in Evaporator Room and Pump Room

Figure 2 - Evaporator Room Basement and Ground Floor Landing

VENT DUCT
LADDER #6
LADDER #7
AIRLOCK
EVAPORATOR ELEVATION
10 ft. 0 in.
PLATFORM ELEVATION
0 ft. 0 in.
Perform Closeout Inspection in Evaporator Room and Pump Room

Figure 3 - Evaporator Room 10-ft and 20-ft Levels
Perform Closeout Inspection in Evaporator Room and Pump Room

Attachment 1 - Pump Room and Evaporator Room Combustible Material Inventory Status Log

<table>
<thead>
<tr>
<th>ITEM</th>
<th>INSPECT DATE</th>
<th>¹LOC</th>
<th>DESCRIPTION</th>
<th>²MAT'L TYPE (O, R, P)</th>
<th>QTY</th>
<th>ESTIMATED WEIGHT (PER ITEM) OR DIMENSIONS (LxWxH)</th>
<th>COMMENTS</th>
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¹Location is Pump Room (PR), Evaporator Room including level (ER-XX), Airlock (AL-0 or AL-40)

²Material Type is Ordinary (wood, cardboard, cotton cloth, paper) or Rubber/Plastic; O, R, P
Perform Closeout Inspection in Evaporator Room and Pump Room

Attachment 1 - Pump Room and Evaporator Room Combustible Material Inventory Status Log (Cont.)

Check ✓

- No transient combustible liquid or transient flammable liquid are present in the evaporator room or pump room, including within an approved tool container.
- No transient combustible materials are present in the exclusion zones
- Approved JOBOX is stored against the East Wall of the Evaporator Room and is closed and latched.

___________________________ / __________________________ / __________________________
Signature                  Print (First & Last)                  Date
242-A Operator

___________________________ / __________________________ / __________________________
Signature                  Print (First & Last)                  Date
Fire Protection Engineer

___________________________ / __________________________ / __________________________
Signature                  Print (First & Last)                  Date
242-A Shift Manager
Perform Closeout Inspection in Evaporator Room and Pump Room

Attachment 2 – Justification for Limited Pump Room and Evaporator Room Inspection

Date of last completed inspection: ________________

<table>
<thead>
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<th>WORK PACKAGE</th>
<th>DATE COMPLETE</th>
<th>SCOPE/JUSTIFICATION</th>
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**AREAS REQUIRING INSPECTION (Y/N)**

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<th>(Y/N)</th>
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<th>(Y/N)</th>
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<tbody>
<tr>
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<td></td>
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<td></td>
<td>Evaporator Rm 0’ 0”</td>
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</tr>
<tr>
<td>Evaporator Rm 10’ 6”</td>
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<td>Evaporator Rm 20’ 6”</td>
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<td>Evaporator Rm 30’ 6”</td>
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</tr>
<tr>
<td>Evaporator Rm 40’ 6”</td>
<td></td>
<td>Airlock 0’</td>
<td></td>
<td>Airlock 40’</td>
<td></td>
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____________________ / ______________________ /
Signature Print (First & Last) Date
242-A Facility Shift Manager

____________________ / ______________________ /
Signature Print (First & Last) Date
242-A Facility Shift Manager