Spray Washer Equipment Operation

Tank Farm Plant Operating Procedure

GENERAL

USQ # GCX-2

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tr>
<td>F-0</td>
<td>06/30/2016</td>
<td>Periodic Review</td>
<td>No changes.</td>
</tr>
<tr>
<td>E-2</td>
<td>10/14/2015</td>
<td>Added detail for changing workforce</td>
<td>Revise wording for CAUTION (No valving required). Deleted CAUTION for use of in-line filters (engineered into system). No check required. Added Note on rotary support truck. Section 5.1 Clarified Note on water drum. Split up step to ensure pressures. Section 5.2 Revise step to ensure hose is disconnected. Added steps for turning pump on and off for clarity.</td>
</tr>
<tr>
<td>E-1</td>
<td>11/20/2014</td>
<td>Operations request. Lessons learned. Operational flexibility.</td>
<td>Add operational flexibility in case power and hose connection is already established. Add condition for pump outlet pressure limit (when hoses are connected for re-circ). Add directions for re-positioning of supply hose for operational flexibility. Add specification for pressure.</td>
</tr>
<tr>
<td>E-0</td>
<td>07/17/2014</td>
<td>Periodic Review/Re-activation</td>
<td>Update terminology to new core sample system. Add Cautions for equipment safety. Revised Environmental section to identify specific requirements. Remove references to nitrogen, which will not be used. Revise wording for clarity and HPI. Add TSR in Header and AC 5.7 notations.</td>
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# Spray Washer Equipment Operation

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the instructions necessary for Startup, Operation, Shutdown and Winterization of spray washer equipment.

1.2 Scope

1.2.1 If this procedure is used during core sampling activities, it may be used only in conjunction with an approved work package and Core Sampling System operating procedure. *(AC 5.7)*

1.2.2 This procedure applies to the Startup, Operation and Shutdown of the spray washer equipment on Rotary Support Truck A (RST-A).

1.2.3 This procedure also covers the winterizing of RST-A spray washer equipment and miscellaneous spray washer equipment associated with core sampling (drill string spray washer, grapple hoist box washer, and sample hoist box washer).

2.0 INFORMATION

2.1 Terms and Definitions

RST-A - Rotary Support Truck A.

2.2 General Information

2.2.1 A hazard assessment was completed on Lithium Bromide (LiBr) 0.3M aqueous solution that determined the required PPE is covered under the GHA for chemical use.

2.2.2 When this activity is performed in conjunction with core sampling activities, the Core Sampling System operating procedure will document that the Waste Leak Path Evaluation has been performed. *(AC 5.7)*
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Use appropriate personnel protection equipment and extreme care when handling hot water to prevent scald injuries.

3.1.2 The spray wash assembly has thermally hot components and liquids; special attention should be given to avoid contact with hot piping, hoses and liquids.

3.1.3 When connecting or disconnecting lines with hot water greater than 110°F, wear leather or rubber gloves, long sleeves and face shield.

3.2 Equipment Safety

CAUTION - Failure to connect water drum to pump inlet will result in damage to pump.

CAUTION - Operating pump for more than 2 minutes with air will damage pump.

CAUTION - Failure to perform this activity could result in water freezing in the fittings and causing damage to the fittings and tubing, which would also result in inadequate equipment decontamination.

3.3 Radiation and Contamination Control

NOTE - Rotary Support Truck A (RST A) is a Radiologically Controlled Vehicle (RCV).

3.3.1 Work in radiological areas will be performed using a Radiological Work Permit following review by Radiological Control per the ALARA procedure TFC-ESHQ-RP_RWP-C-03.
3.4 Environmental Compliance

3.4.1 In accordance with TFC-ESHQ-ENV_RM-C-04, “Water Discharge in Tank Farms”, routine maintenance and operation activities may result in small incidental discharge of raw water as long as the below listed limits and conditions are met. (ref. TFC-ESHQ-ENV_RM-C-04, Table 2, Water Discharge at Tank Farms for the listing of approved incidental discharges):

- No discharge from a single activity may exceed 60 gallons released to the soil.
- Appropriate best management practices (BMPs) shall be implemented to prevent unnecessary discharges.
- No ponding of liquid.
- During pre-job planning, measures to limit soil erosion will be incorporated in the work plan.
- During performance of the work, all measures to limit ponding and/or erosion will be implemented.

3.4.2 Immediately report any spills or releases to Environmental per the Environmental On-Call List in accordance with procedure TFC-ESHQ-ENV_FS-C-01. This includes any water discharge to surface contamination areas.

3.5 Limits

HNF-SD-WM-TSR-006 Tank Farms Technical Safety Requirements

AC 5.7 Waste Leak Evaluation Program

4.0 PREREQUISITES

None
5.0 PROCEDURE

5.1 Startup and Operate RST-A Spray Washer

NOTE - As field conditions dictate, Sections 5.1 through Sections 5.3 may be performed in any logical order.

- Water may be substituted for 0.3 molar LiBr solution only upon approval by Engineer, if no further sampling activities will be conducted in this riser and the system is drained completely after completion of wash activities.

5.1.1 IF water drum level is low, FILL/REFILL water drum to desired level with 0.3 molar LiBr solution or water (see note above).

CAUTION
Failure to connect water drum to pump inlet will result in damage to pump.

5.1.2 ENSURE water drum is connected to pump inlet.

5.1.3 ENSURE power is connected to unit.

5.1.4 ENSURE drum heater is on (LCD for temperature controller is \( \leq 110^\circ \)).

5.1.5 ENSURE supply hoses are connected to winterization purge manifold.

5.1.6 TURN pump ON.

5.1.7 ENSURE PG-1 is \( \leq 500 \) psig.

5.1.8 ENSURE PG-2 is \( \leq 120 \) psig.

5.1.9 TURN pump OFF.

NOTE - The following step will ensure there is no residual pressure in the lines.

5.1.10 OPEN spray wash pressure bleed valve to ensure hose reels are depressurized.

5.1.11 CLOSE spray wash pressure bleed valve.
5.1 **Startup and Operate RST-A Spray Washer (Cont.)**

**NOTE** - If hoses are connected to the winterization purge manifold, fluid can be re-circulated through hose reel to keep from freezing in cold weather.

5.1.12 **CONNECT** supply hose(s) to desired location(s).

5.1.13 **TURN** pump ON AND OFF as needed for washing activities.

5.1.14 **IF** supply hose needs to be repositioned, **PERFORM** the following:

5.1.14.1 **OPEN** spray wash pressure bleed valve to ensure hose reels are depressurized.

5.1.14.2 **CLOSE** spray wash pressure bleed valve.

5.1.14.3 **DISCONNECT** spray wash supply hose from spray washer AND

**RETURN** to Step 5.1.12.
5.2 Shut Down RST-A Spray Washer Equipment Operation

NOTE - The following step will ensure there is no residual pressure in the lines.

5.2.1 OPEN spray wash pressure bleed valve to ensure hose reels are depressurized.

5.2.2 CLOSE spray wash pressure bleed valve.

5.2.3 ENSURE spray wash supply hose(s) are disconnected from spray washers.

5.2.4 WHEN wash activities on riser are completed, ENSURE wash fluid is blown from system as follows:

5.2.4.1 CONNECT supply hose(s) to winterization purge manifold.

5.2.4.2 DISCONNECT pump supply line from bottom of tank AND RECONNECT to winterization purge manifold.

5.2.4.3 ENSURE air supply is approximately 35 psi.

5.2.4.4 CONNECT air supply to winterization purge manifold.

CAUTION
Operating pump for more than 2 minutes with air will damage pump.

5.2.4.5 TURN pump ON.

5.2.4.6 OPERATE pump for 30 - 60 seconds with spray wash pressure bleed valve CLOSED.

5.2.4.7 OPEN spray wash pressure bleed valve AND OPERATE pump for an additional 15 to 30 seconds.

5.2.4.8 TURN pump OFF.

NOTE - Purge air may be left on until water stops going into drum.

5.2.4.9 DISCONNECT air from winterization purge manifold.

5.2.4.10 CLOSE spray wash pressure bleed valve.

5.2.4.11 DISCONNECT supply hose(s) from winterization purge manifold.
5.3 Winterize Miscellaneous Associated Spray Washer Equipment

NOTE - This section is only applicable to drill string spray washer, grapple hoist box washer, and sample hoist box washer.

- This section must be performed for all components used at the end of each shift during the months of October through March.

CAUTION

Failure to perform this activity could result in water freezing in the fittings and causing damage to the fittings and tubing, which would also result in inadequate equipment decontamination.

5.3.1 ENSURE air supply is approximately 35 psi.

5.3.2 CONNECT air supply line to desired spray washer.

5.3.3 REPEAT above steps as necessary to remove water from all spray washer components used during core sampling activities.

5.4 Records

No records are generated during the performance of this procedure.