Sample Used Cooling Water from 242-A, Flush RC-2 Monitoring Pig

Tank Farm Plant Operating Procedure

242-A Evaporator

USQ # EV-18-0570-D Rev. 0

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-7</td>
<td>04/12/2018</td>
<td>Operations request</td>
<td>Title update - added &quot;used&quot; before cooling updated prerequisites Added new field prep section Section 5.2 struck out Step 5.2.4 &amp; 5.2.21 Updated cross ref links.</td>
</tr>
<tr>
<td>P-6</td>
<td>04/11/2018</td>
<td>Inconsequential change</td>
<td>Step 5.2.24 cross ref link not updated in previous PCA when steps were added. Updated cross ref links.</td>
</tr>
<tr>
<td>P-5</td>
<td>02/15/2018</td>
<td>242-A Steam/Process Condensate Sampler Project</td>
<td>Added new steps CONFIRM RC2-PIG status indicates FLUSHING and steps for CONFIRM RC2-PIG status indicates MONTRING. New NOTES and Steps in Section 5.2 for donning PPE, NOTIFYING control room operator. New steps in 5.2 for sequence of opening valves and flushing sample line into sink, and closing valves, writing on and handling sample bottles, performing a post-job radiological survey.</td>
</tr>
<tr>
<td>P-4</td>
<td>12/07/2017</td>
<td>Operations request to make sampling procedures consistent</td>
<td>Modified type water to Clean water and reagent water. For both samples and field blanks, Modified steps on filling out the sample bottle labels and the COC. Added new steps to check info between labels and COC for consistency. Added request for radiological survey. Deleted Figure 4.</td>
</tr>
<tr>
<td>P-3</td>
<td>04/18/2016</td>
<td>Operations request to match figure 2</td>
<td>Figure 1 changed &quot;1/2&quot; URW-SAMPLE-M31&quot; to match same formatting as in figure 2. Other formatting changes to keep current with TFC-OPS-OPER-STD-01</td>
</tr>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions to sample used cooling water from 242-A and flush the RC-2 monitoring pig.

1.2 Scope

This procedure applies when cooling water is supplied to the evaporator condensers. Cooling water is sampled to verify that condenser tubes are not leaking.

2.0 INFORMATION

2.1 General Information

2.1.1 Figure 1 through Figure 3 are provided as additional information to assist in the performance of this procedure.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 An emergency shower must be identified and available before performing this procedure.

3.1.2 Face shield and Safety glasses must be worn when taking samples.

3.2 Radiation and Contamination Control

3.2.1 When performed without a work package, this procedure is limited to radiological areas and work activities permitted by a Radiological Work Permit (RWP).

3.2.2 When work is performed in or when work will result in a high contamination, high radiation, or an airborne radioactivity area, an approved work package must be developed which is reviewed by Radiological Control per ALARA work planning procedure TFC-ESHQ-RP_RWP-C-03.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Gloves (Nitrile, Latex, Vinyl)
- Safety glasses
- Face shield
- Protective clothing
- One 1-gallon plastic jug
- Sample bottles as specified by Process Memo
- Sample tags
- Rags
- Plastic bag
- Hose
- Contaminant-free (Clean) water (e.g., reagent water, deionized or laboratory ‘Q’ water) for filling field blank bottles, if a field blank is specified. Raw or tap water cannot be used to fill field blank bottles. Details will be provided in the Process Memo
- Clear plastic tape
- Black ink pen with waterproof ink.

4.2 Performance Documents

The following document may be needed to perform the procedure:

- TO-100-052, Perform Waste Generation, Segregation, Accumulation and Clean-up
4.3 Field Preparations

4.3.1 **ENSURE** appropriate paperwork to accompany samples to laboratory is available (completed to the extent prior to the sample collection) **AND** is ready for sampling operations to commence.

4.3.2 **IF** a field blank sample is being used, **ENSURE** Contaminant free (Clean) water (e.g., reagent water, deionized or laboratory ‘Q’ water) is available.

4.3.3 **ENSURE** sample bottles are labeled **AND**

**USING** black pen with waterproof ink, **PERFORM** the following:

4.3.3.1 **RECORD** the Time/Date Sample was taken

4.3.3.2 **RECORD** Sample Collector Initials

4.3.3.3 **COVER** sample labels with clear plastic tape to protect them from moisture.
5.0 PROCEDURE

5.1 Perform Flushing of RC-2 Monitoring Pig

NOTE - This Section is only performed when directed by Shift Manager.

5.1.1 SET RC2-PIG (G17/6, F18/6) Used Raw Water Sample to FLUSH.

5.1.2 CONFIRM RC2-PIG status indicates FLUSHING.

5.1.3 POSITION valves as follows (refer to Figure 1):

<table>
<thead>
<tr>
<th>Valve</th>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2-3</td>
<td>CLOSED</td>
<td>FIAS-RC2-1/Sample Return Line block valve</td>
</tr>
<tr>
<td>RC2-11</td>
<td>CLOSED</td>
<td>1/2-inch Used Raw Water Drain-M31</td>
</tr>
<tr>
<td>RC2-12</td>
<td>OPEN</td>
<td>Drain valve</td>
</tr>
<tr>
<td>RC2-35</td>
<td>OPEN</td>
<td>Flush Funnel Isolation Valve</td>
</tr>
</tbody>
</table>

5.1.4 FILL one, clean, 1-gallon plastic jug with raw water.

NOTE - Overfilling funnel could cause water to spill onto the floor.

5.1.5 SLOWLY POUR raw water from the 1-gallon plastic jug into the sample flush funnel RC-2 (refer to Figure 2).

5.1.6 REPEAT Steps 5.1.4 and 5.1.5 as often as necessary to flush the system and adequately reduce radiation levels shown on RI-RC2-1, (G#57, F18), as directed by Shift Manager.

5.1.7 WHEN flush is complete, POSITION valves as follows:

<table>
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<th>Description</th>
</tr>
</thead>
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<tr>
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<tr>
<td>RC2-35</td>
<td>CLOSED</td>
<td>Flush Funnel Isolation Valve</td>
</tr>
</tbody>
</table>

5.1.8 SET RC2-PIG (G17/6, F18/6) to “NO FLUSH”.

5.1.9 CONFIRM RC2-PIG status indicates MONTRING.
5.2 Collect a Grab Sample

NOTE - Frequency of sampling and number of samples are specified by Process Memo for sampling or as requested by Shift Manager.

- If more than one sample bottle is requested, the same sample number will be used for each bottle.

5.2.1 DON proper PPE.

- Face shield
- Chemical goggles or Safety Glasses with side shields
- Nitrile gloves
- Arm Sleeves.

5.2.2 ENSURE a radiological pre-job survey is performed.

5.2.3 OBTAIN the appropriate number and size of sample bottles as directed by Process Memo.

5.2.4 NOTIFY Control Room Operator.
5.2 Collect a Grab Sample (Cont.)

5.2.5 OPEN valve RC2-33.

5.2.6 SLOWLY OPEN valve RC2-38 for approximately 2-3 minutes to flush sample line into sample sink.

5.2.7 AFTER flushing is complete, CLOSE valve RC2-38.

5.2.8 PLACE hose assembly in clean sample bottle.

5.2.9 SLOWLY OPEN valve RC2-38 (refer to Figure 3).

5.2.10 ALLOW sample bottle to fill.

5.2.11 AFTER sample bottle is full, CLOSE valve RC2-38 (refer to Figure 3)

5.2.12 REMOVE hose assembly from sample bottle.

5.2.13 CAP sample bottle.

5.2.14 WIPE sample bottle(s) with rags.

5.2.15 DISCARD used rags in an appropriate container per TO-100-052.

5.2.16 REPEAT Steps 5.2.7 through 5.2.15 for the remaining sample bottles.

5.2.17 CLOSE valve RC2-33.

5.2.18 ENTER on the COC, the following information for each sample taken:
   - Collector’s name
   - Collection Date and Time for each sample (from sample labels)

5.2.19 CHECK information on container labels and COC is complete, consistent, and correct.
5.2 Collect a Grab Sample (Cont.)

NOTE - The Process Memo for sampling may provide details. Raw water or tap water cannot be used for the field blank.

5.2.20 IF field blank samples are necessary, uncap field sample bottle and fill with clean water (do not use raw water or tap water) AND CAP field blank sample bottle.

5.2.21 WIPE sample bottle(s) with rags.

5.2.22 REPEAT Steps 5.2.20 through 5.2.21 for the remaining sample bottles.

5.2.23 DISCARD used rags in an appropriate container per TO-100-052.

5.2.24 ENTER on the COC, the following information for each sample taken:
  • Collector’s name
  • Collection Date and Time for each sample (from sample labels)

5.2.25 CHECK information on container labels and COC is complete, consistent, and correct.

5.2.26 REQUEST radiological survey of the exterior of the sample bottles and packaging.

5.2.27 IF contamination or radiation levels above background are found, NOTIFY Shift Manager and Radiological Control.

5.2.28 PACKAGE samples and transport per 242-65J-002.

5.2.29 ENSURE a post-job radiological survey is performed.
5.3 Records

The performance of this procedure generates no records. However PM data sheets associated with the procedure are records and are maintained in the work package as record material.

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.
Sample Used Cooling Water from 242-A, Flush RC-2 Monitoring Pig

Figure 1 – Normal Raw Water Route Through RE-RC2-1

½” URW-SAMPLE-M31

1/2”URW SAMPLE RETURN LINE

DIVERT

NORMAL

HVRC2-1

1/2”URW SAMPLE RETURN LINE

TO1” URW SAMPLE DRAIN

To TEDF

1/2”URW-DRAIN-M31

HVRC2-2

RC2-12

RC2-11

S

S

RC2-3

HVRC2-4

RC2-35

RADIATION DETECTOR & SAMPLE CELL RE-RC2-1 (MONITORING PIG)

1/2”URW-SAMPLE RETURN-M31

VALVE LEGEND

SOLENOID

GLOBE

2-WAY BALL
Figure 2 – Flush Route Through RE-RC2-1

Sample Used Cooling Water from 242-A, Flush RC-2 Monitoring Pig

To TEDF

To 1” URW SAMPLE DRAIN

1/2” URW SAMPLE -M31

DIVERT

NORMA |LV

HV-RC2-1

1/2” URW SAMPLE RETURN LINE

HV-RC2-2

S

RC2-12

1/2” URW DRAIN-M31

RC2-3

RC2-35

RADIATION DETECTOR & SAMPLE CELL RE-RC2-1 (MONITORING PIG)

1/2” URW -SAMPLE RETURN-M31

FLUSH FUNNEL RC-2

HV-RC2-4

FIAS RC2-1

VALVE LEGEND

S

SOLENOID

S

GLOBE

2-WAY BALL

Type
CONTINUOUS

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Figure 3 – Grab Sample Location