## Tank Farm Maintenance Procedure

### CALIBRATION

**USQ # N/A-4**

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-0</td>
<td>05/03/2016</td>
<td>Periodic Review</td>
<td>Deleted note above 5.2.3, Changes made to 5.3.1, 5.3.2, &amp; added special instruction above 5.3.3</td>
</tr>
<tr>
<td>E-2</td>
<td>09/15/2015</td>
<td>Maintenance Request PCA</td>
<td>Struck statement under 2.0 &amp; added “NONE”. Struck Steps 5.1.1, 5.2.1, 5.2.6, 5.3.1, 5.3.2, 5.4.4. Add Special Instructions prior to 5.1. Add Step 5.2.7. Reworded Steps 5.2.5, 5.2.6, 5.3.3, 5.4.4, 5.6.1.</td>
</tr>
<tr>
<td>E-1</td>
<td>11/20/2014</td>
<td>CHAMPS Removal</td>
<td>Removed reference to CHAMPS, updated records statements and removed next periodic review date.</td>
</tr>
<tr>
<td>E-0</td>
<td>04/09/2013</td>
<td>Periodic Review</td>
<td>Removed vague phrases, reformatted steps, and rewored note to step.</td>
</tr>
<tr>
<td>D-1</td>
<td>02/04/2013</td>
<td>DOE Standard</td>
<td>Replaced references to document TFC-ESHQ-S-STD-03, Electrical Safety with DOE-0359, Hanford Site Electrical Safety Program.</td>
</tr>
</tbody>
</table>
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform method for cleaning, inspection, and calibration of Dwyer Photohelic Series 3000 and Capsu-Photohelic Series 43000 differential pressure switches and gauges.

1.2 Scope

This procedure applies to cleaning, inspection, and calibration of Dwyer Photohelic Series 3000 and Capsu-Photohelic Series 43000 differential pressure switches and gauges.

2.0 INFORMATION

NONE

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

Follow electrical safety practices in DOE–0359, Hanford Site Electrical Safety Program.

3.2 Radiation and Contamination Control

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

3.2.2 When disconnecting, breaching or opening systems or system components that are currently or previously connected to waste tanks or waste transfer systems;

- Continuous HPT coverage is required
- Pre-job and post-job surveys are required
- Installer verify integrity of sleeving or containment prior to installation
- When breaching containment, a damp rag as a minimum will be used to contain the breach until radiological verifications have been performed.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Pressure Reducing Valve
- Manometer (fluid or digital) or equivalent
- Digital Multimeter
- Soft cloth
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.

4.2 Performance Documents

The following document(s) may be needed to perform this procedure:

- VI-22097, Isolation Exhaust System Components, Manufacturer's Information Manual, B-33.

4.3 Field Preparation

4.3.1 **ENSURE** applicable Lock and Tag, Authorized Worker Lockout/Tagout or Energized Electrical Work Permit requirements have been satisfied.
5.0  PROCEDURE

Special Instructions

If any step is not required for procedure completion, record “N/A” in the applicable space(s) on the Data Sheet and document explanation in the Data Sheet’s Comments/Remarks section.

5.1  Cleaning and Inspection

5.1.1  CLEAN instrument with soft cloth.

5.1.2  INSPECT instrument for the following:
   • Signs of moisture, corrosion or other foreign matter inside instrument
   • Cracked instrument casing or glass
   • Bent or broken pointers.

5.1.3  CHECK instrument gauge is legible.

5.1.4  RECORD inspection results in Comments Section on Datasheet.
5.2 As-Founds

5.2.1 REMOVE instrument from service by closing isolation valves.

5.2.2 REMOVE calibration caps or signal lines.

5.2.3 CONNECT test equipment.

5.2.4 CONNECT Multimeter, set to indicate continuity across switch output terminals

OR

USE existing audible/visual annunciator, CONFIRM alarm set-point.

5.2.5 APPLY test input values specified on Data Sheet AND

RECORD As-Found values on Data Sheet.

5.2.6 IF As-Found output values are within tolerance per Data Sheet and no adjustments are desired, RECORD As-Left values on Data Sheet AND

GO TO Section 5.4, Restoration.

5.2.7 IF As-Found values are out of tolerance, GO TO Section 5.3.
5.3 Calibration

5.3.1 **ADJUST ZERO** with both taps OPEN to atmosphere.

NOTE - Unit needs to be powered up to operate

5.3.2 **SET** the indicating pointer on the zero mark by **TURNING** adjustment screw within the output tolerance specified on Data Sheet.

NOTE - Alarm is indicated by contact state changes on Multimeter or as indicated by audible/visual enunciator.

**Special Instruction**

Make pressure connections to the ¼” NPT female taps using adapters, appropriate for the type of tubing being used. ¼” OD SS or larger.

For differential pressures, use either high or low taps and vent the unused tap.

5.3.3 **APPLY** test inputs specified on Data Sheet **AND**

**CHECK** output values for tolerance.

5.3.4 **IF** values are within tolerance per Data Sheet, **RECORD** As-Left values on Data Sheet **AND**

**GO TO** Restoration, Section 5.4.

5.3.5 **IF** values are not within tolerance per Data Sheet, **REPEAT** Steps 5.3.1 through 5.3.4 until values are within tolerance **OR**

**IF** unable to bring values into tolerance and replacement parts are required, **PERFORM** the following:

5.3.5.1 **NOTIFY** FWS

5.3.5.2 **CONTACT** Planning for BOM

5.3.5.3 **REQUEST** planning to print new Data Sheet(s)

5.3.5.4 **ACQUIRE** new part(s) from material coordinator.

5.3.5.5 **RE-PERFORM** Section 5.3.
5.4 Restoration

5.4.1 **ENSURE** all test equipment has been disconnected and removed and equipment has been restored to original configuration.

5.4.2 **CHECK** for leaks.

5.4.3 **ENSURE** alarms are reset or cleared.

5.5 Acceptance Criteria

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.

5.6 Review

5.6.1 **INFORM** FWS test is complete.

5.6.2 FWS **REVIEW AND ENSURE** the following:

- Completed Data Sheets meet the acceptance criteria
- Comments sections are filled out appropriately
- Any work requests needed as a result of this procedure are identified and generated, and the work request number(s) recorded in Comments/Remarks section of Data Sheet.

5.7 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.
Figure 1 Test Connection

4-13/16 DIA. HOLE

SNAP RING GROOVE

HI
PNEUMATIC PRESSURE TAPS

MANOMETER OR EQUIVALENT

AIR SUPPLY