USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-4</td>
<td>07/17/2018</td>
<td>Maintenance Request</td>
<td>Changes to address Druck Pressure Calibrator and indicator usage. Added figures and attachment.</td>
</tr>
<tr>
<td>A-3</td>
<td>07/12/2017</td>
<td>WRPS-PER-2016-2301.1</td>
<td>Added Figure, Attachment and steps regarding druck pressure calibrator and indicator equipment usage, and provided guidance to take when liquid enters a druck.</td>
</tr>
<tr>
<td>A-2</td>
<td>06/15/2017</td>
<td>Periodic Review</td>
<td>Updated Records statement to current Standard.</td>
</tr>
<tr>
<td>A-1</td>
<td>07/26/2016</td>
<td>Correct Use Type</td>
<td>Change from continuous use to reference use per document owner’s direction.</td>
</tr>
<tr>
<td>A-0</td>
<td>08/27/2015</td>
<td>Conversion to WRPS Format</td>
<td>New Procedure – Supersedes ETF-PRO-MN-51444 (EL18087)</td>
</tr>
</tbody>
</table>

Table of Contents

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

2.0 INFORMATION ............................................................................................................................... 3

3.0 PRECAUTIONS AND LIMITATIONS ............................................................................................... 3
  3.1 Radiation and Contamination Control ...................................................................................... 3
  3.2 Environmental Compliance .................................................................................................... 3

4.0 PREREQUISITES ........................................................................................................................... 4
  4.1 Special Tools, Equipment, and Supplies ................................................................................... 4
  4.2 Performance Documents .......................................................................................................... 4

5.0 PROCEDURE ................................................................................................................................. 5
  5.1 Initial Setup .............................................................................................................................. 5
  5.2 As-Found Data ........................................................................................................................ 6
  5.3 Calibration ............................................................................................................................... 6
  5.4 Restoration .............................................................................................................................. 7
  5.5 Acceptance Criteria .................................................................................................................. 7
  5.6 Review .................................................................................................................................... 7
5.7 Records ................................................................................................................................. 7

Attachment 1 - Water Trap/Pressure M&TE ............................................................................. 8

Attachment 2 – Calibration Instructions .................................................................................. 10

Figure 1 - M&TE Connection Diagram .................................................................................... 11

Figure 2 - How the Trap Works ................................................................................................. 12

Figure 3 – Negative Pressure Connection ................................................................................ 13

Figure 4 – Positive Pressure Connection .................................................................................. 14
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform method for calibration of Rosemount® Model 3311 current-to-pressure transducer.

1.2 Scope

This procedure involves calibrating the Rosemount Model 3311 current-to-pressure transducer.

2.0 INFORMATION

None.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Radiation and Contamination Control

3.1.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure, TFC-ESHQ-RP_RWP-C-03.

3.2 Environmental Compliance

3.2.1 In the event of a spill/leak/release, notify the SOM/FWS and respond per ETF-ERP-85B-003, Emergency Spill or Release at ETF.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

NOTE - Measuring and Test Equipment used to collect acceptance criteria data during performance of this procedure shall meet the following requirements:
- Be within its current calibration cycle as evidenced by an affixed calibration label
- Be capable of desired range
- Accuracy is equal to or greater than M&TE tolerance specified on PM/S data sheet or is at least four times greater than specified device tolerance.

The following supplies may be needed to perform this procedure:
- CMD
- Milliamp source, adjustable for output range of controller
- Gauge to read pressure output of transducer, 0 to 30 psi
- Volume chamber
- Water trap device Figure 2.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- Vendor information: Manual 3311, VI-1373-011-0-001, Current-to-Pressure Transducer
- Radiological survey plan
- Waste planning checklist
- Pressure M&TE vendor manual.
5.0 PROCEDURE

5.1 Initial Setup

NOTE - M&TE connections are shown in Figure 1.
- With control valve disconnected, output of transducer may oscillate, requiring replacement of valve with volume chamber.
- This procedure is only applicable for a full range, direct action unit.

5.1.1 IF performing this procedure on a system that has the potential for free liquids or moisture to enter the Pressure M&TE, USE a water trap device.

5.1.1.1 ENSURE the Water Trap is installed in a vertical position to operate correctly Figure 2.

5.1.1.2 IF liquids or moisture gets into the Water Trap or Pressure M&TE REFER to Attachment 1.

5.1.2 IF performing this procedure on a system that is potentially contaminated, FOLLOW Calibration Instructions. (Attachment 2)

5.1.3 IF control valve cannot be exercised, PERFORM the following:

5.1.3.1 SHUT OFF transducer air supply.

5.1.3.2 DISCONNECT control valve from output of transducer.

5.1.3.3 INSTALL test gauge in output line of transducer.

5.1.3.4 TURN ON transducer air supply.

5.1.4 IF control valve can be exercised, PERFORM the following:

5.1.4.1 SHUT OFF transducer air supply.

5.1.4.2 INSTALL test gauge in output of transducer.

5.1.4.3 TURN ON transducer air supply.

5.1.5 CONNECT CMD in series with input wires.

5.1.6 IF not using controller for input current to transducer, CONNECT milliamp source to input of transducer.
5.2 As-Found Data

5.2.1 VARY input per PM/S data sheet.

5.2.2 RECORD as-found values on PM/S data sheet.

5.2.3 IF as-found values are not within specified tolerance per data sheet, GO TO Section 5.3, Calibration,

    OR

    IF as-found values are within specified tolerance, but deemed marginal, and optimization is desired, GO TO Section 5.3,

    OR

    IF as-found values are within specified tolerance, RECORD as-found values in as-left column of data sheet AND

    GO TO Section 5.4, Restoration.

5.3 Calibration

NOTE - Output will increase with clockwise rotation of Zero or Span.

5.3.1 APPLY minimum input per PM/S data sheet AND

    ADJUST Zero.

5.3.2 APPLY maximum input per PM/S data sheet AND

    ADJUST Span.

5.3.3 REPEAT Steps 5.3.1 and 5.3.2 until both values are within tolerance.

5.3.4 VARY input per PM/S data sheet AND

    RECORD as-left values on data sheet.
5.4 Restoration

5.4.1 RE-LAND field wiring.
5.4.2 RESTORE to as-found conditions.
5.4.3 VERIFY alarms are reset or cleared.
5.4.4 INFORM SOM test is complete and instrument/equipment/system may be returned to service.

5.5 Acceptance Criteria

Acceptance criteria has been met when steps in this procedure have been satisfactorily performed and results are recorded on the data sheet(s).

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
   • Work requests needed as a result of this procedure are identified and generated
   • Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Comments/Remarks section of the data sheet.

5.7 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

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.
Water Trap with Potentially Contaminated Liquid

1. If potentially contaminated liquid gets into Water Trap, Suspend the work.
2. Notify the FWS.
3. When provided approval from the FWS proceed as follows.
4. Remove Pressure M&TE from field.
5. Return to a RMA.
6. Disassemble the Water Trap.
7. Allow trap to dry overnight.
8. Survey disassembled trap components in accordance with Radcon survey plan.
9. If the Water Trap can be released return it to tool crib.
10. If the Water Trap cannot be released, dispose of it per waste planning checklist.

Water Trap with Clean Liquid (NOT Contaminated)

1. If clean liquid gets into Water Trap, disassemble the Water Trap.
2. Allow Water Trap to dry overnight.
3. Re-assemble the Water Trap.
4. Return the Water Trap to the tool crib.
Attachment 1 - Water Trap/Pressure M&TE (Cont.)

**M&TE with Potentially Contaminated Liquid**

1. If potentially contaminated liquid gets past water trap and inside Pressure M&TE, Suspend the work.

2. Notify FWS.

3. Wait for further directions.

**M&TE with Clean Liquid (NOT Contaminated)**

1. If clean liquid gets past the water trap disassemble and dry out Pressure M&TE per manufactures direction.

2. Return the M&TE to the tool crib.

3. Request the M&TE to be returned to NIST calibration lab for recalibration.
Attachment 2 – Calibration Instructions

Positive pressure calibrations:

Note: Vent Valve assembly is required on all positive pressure calibrations to ensure M&TE is not contaminated by venting potential process air back through M&TE.
Install vent valve assembly Per Figure 4
Ensure IV is open and VV is closed
Proceed with calibration per work package
➢ Whenever venting is required during calibration steps, vent stored pressure as follows.

NOTE - Valve IV can remain open when reading is required via M&TE.
Ensure IV valve is closed
Ensure VV valve is opened
Repeat sequence as necessary to complete the calibration.
After all steps are completed for the calibration, perform RCT survey release plan XXX

Negative pressure calibrations:

Note: use of surrogate filter is required for negative pressure calibrations to ensure M&TE is not contaminated by pulling process air into M&TE while drawing Vacuum.
Negative calibrations should be performed as follows.
Ensure surrogate filter holder has media installed.
Connect filter in-line per Figure 3
Ensure IV is Open
Pull a representative vacuum into M&TE through filter
Ensure IV is Closed
Vent through VV
RCT to perform survey of the media.
IF no contamination found remove surrogate filter holder/manifold and proceed with calibration.
Figure 1 - M&TE Connection Diagram
Figure 2 - How the Trap Works

1. Gas/Air enters through the top slot which goes into the chamber.
2. Dirt and Moisture particles are collected in the chamber, which is visible through the clear transparent glass window.
3. Then Gas/Dry Air goes into the centre slot where it enters the instrument.
Figure 3 – Negative Pressure Connection
Figure 4 – Positive Pressure Connection