Technical Procedure

WMP-18013

Diaphragm Operated Pressure Switches

Revision 1, Change 3

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Project: WFMP
Topic: Maintenance

Reference Use
Diaphragm Operated Pressure Switches

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CHANGE SUMMARY

AJHA Skill-based
Periodic Review Due Date: 07/10/2015
Validation Date: 1/03/2012

Rev. 1, Chg. 2
PR#: 22259
USQ Screen Number: GCX-8

Description of Change
Periodic Review; update Periodic Review due date on pg 2 per PRC-PRO-MS-589, CH2M HILL Plateau Remediation Company Procedures, Section 3.14

Rev. 1, Chg. 1
PR#: 21213
USQ Screen Number: GCX-3

Description of Change

- Per the validation add a step after 4.1.7 (new step 4.1.8) to read: Observe and record reset value if directed by data sheet.
- Step 4.1.8 (new step 4.1.9) change value to "value/values"
- Step 4.1.9 add “c”. (new step 4.1.10.c): Observe and record reset value if directed by data sheet.
- Update format to coincide with PRC-STD-MS-40241, CH2M Hill Plateau Remediation Company Procedure Standards
- Step 4.2.4 change to read “Inform the Shift Operations Manager (SOM)”
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1.0 INTRODUCTION

1.1 Purpose

The purpose of this procedure is to provide directions for calibrating Diaphragm-Operated Pressure Switches.

1.2 Scope

This procedure provides a safe, uniform method of calibrating Diaphragm-Operated Pressure Switches.

1.3 Applicability

This procedure is used by facility personnel when identified in a JCS Work Package.

1.4 Implementation

This procedure is effective upon publication.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Limitation

2.1.1 Do not exceed manufacturer's maximum pressure or vacuum range for switch while applying inputs.

3.0 PREREQUISITES

3.1 Tools, Equipment, and Materials

3.1.1 Input source (pressure or vacuum, range per data sheet).

3.1.2 Calibrated Digital Manometer or Test Gauge.

3.1.3 Calibrated Digital Multimeter (DMM).

3.2 Pre-Start Items

3.2.1 Measuring and Test Equipment (M&TE), used to collect acceptance criteria data, meets the requirements of PRC-PRO-MN-490, Calibration Management Program or as identified on PM/S data sheet.

3.2.2 Appropriate safe work methods and PPE requirements have been established if using voltage measurement method (at >50 volts) to verify switch operation.
4.0 PERFORMANCE

4.1 Instructions

4.1.1 VERIFY pressure switch is isolated from system as necessary to allow calibration.

4.1.2 DISCONNECT input tubing.

4.1.3 CONNECT manometer (or gauge) AND INPUT source to input port.

NOTE: Switch operation at specified inputs may be verified by checking voltage or continuity across contacts, actuation of connected alarms or equipment, or other appropriate methods.

4.1.4 LIFT, TAPE, and MARK signal output leads as necessary.

4.1.5 CONNECT voltmeter or ohmmeter, if used.

4.1.6 CHECK data sheet to determine if trip occurs with pressure or vacuum increasing or decreasing.

4.1.7 VARY input pressure until switch trips, AND RECORD input value in as-found section of data sheet.

4.1.8 OBSERVE AND RECORD reset value, if directed by data sheet.

4.1.9 IF as-found value is within tolerance per data sheet and no adjustments are desired, THEN RECORD as-found value/values in as-left column, AND GO TO Step 4.1.11.

4.1.10 PERFORM Calibration as follows:

   a. VARY input to trip and reset switch, AND ADJUST trip point until trip is optimized within tolerance.

   b. RECORD as-left trip value in as-left section of data sheet.

   c. OBSERVE AND RECORD reset value, if directed by data sheet.

4.1.11 DISCONNECT all M&TE.

4.1.12 RECONNECT all lifted leads.

4.1.13 RECONNECT input tubing.
4.2 Restoration

4.2.1 ENSURE all alarms caused by calibration are cleared, **AND** RESET, as applicable.

- Alarms may remain locked in, based on plant conditions.

4.2.2 APPLY calibration labels, if required by facility.

4.2.3 PERFORM post maintenance/operational testing as defined on component data sheet, if applicable.

4.2.4 INFORM the Shift Operations Manager (SOM) that test is complete.

5.0 RECORD IDENTIFICATION

All records are required to be managed in accordance with PRC-PRO-IRM-10588, Records Management Processes. OCRWM records are also managed in accordance with PRC-PRO-QA-19579, *OCRWM Records Management*.

### Records Capture Table

<table>
<thead>
<tr>
<th>Name of Record</th>
<th>Submittal Responsibility</th>
<th>Retention Responsibility</th>
<th>OCRWM Retention Schedule (If OCRWM Related)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All maintenance procedures are used within a work package. Records generated are handled as directed by PRC-PRO-WKM-12115, Work Management.</td>
<td>FWS</td>
<td>Work Control</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6.0 SOURCES

6.1 References

PRC-PRO-MN-490, *Calibration Management Program*

PRC-PRO-IRM-10588, *Records Management Processes*

7.0 APPENDIXES

None