### Change History (≤ Last 5 Rev-Mods)

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
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<tr>
<td>F1</td>
<td>07/14/2015</td>
<td>Company Driven</td>
<td>Removed all references of CHAMPS.</td>
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</table>
| F-0     | 04/08/2015   | Periodic Review             | Added the following text or worded as appropriate to meet procedure guidelines as a new step in the restoration section at 5.2.3 to ensure any waste generated during the performance of this work is managed appropriately per procedure TO-100-052.  
Added section 4.2 “Performance Documents” and added TO-100-052 to the performance documents section.  
Clarified vague statements.                                                                 |
| E-1     | 02/22/2013   | DOE Standard                | Replaced references to document TFC-ESHQ-S-STD-03, Electrical Safety with DOE–0359, Hanford Site Electrical Safety Program.                        |
| E-0     | 01/10/2012   | All changes are as a result of the periodic review process. | Globally deleted all ACTION NOTEs and replaced with new steps. Globally deleted/converted all vague phrases. Added new steps 5.1.16.1 thru 5.1.16.3 and 5.2.1. |
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for calibrating the Leeds and Northrup Speedomax M Mark III Recorder.

1.2 Scope

This procedure applies to the Leeds and Northrup Speedomax M Mark III Recorder.

2.0 INFORMATION

NONE

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Compliance with DOE–0359, Hanford Site Electrical Safety Program is required when working with this procedure.

3.2 Radiation and Contamination Control

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.

4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following equipment and supplies may be needed to perform this procedure:

- A milliamp current source and milliamp (mA) meter (If Data Sheet calls for mA)
- A voltage source and millivolt (mV) meter (If Data Sheet calls for mV)
- Window cleaning detergent and rags
- Other tools, equipment and supplies as identified by the FWS or procedure user.

4.2 Performance Documents

- TO-100-052, Perform Waste Generation, Segregation, Accumulation and Clean-up.
5.0 PROCEDURE

5.1 Calibrate Recorder In-Place or In-Shop

5.1.1 IF performance of any steps in this procedure is not required for procedure completion, INDICATE steps not performed by entering "N/A" on appropriate Data Sheet signoff space AND

EXPLAIN in the COMMENT/REMARKS section of the Data Sheet.

5.1.2 REMOVE equipment from service.

5.1.3 CLEAN recorder door and scales.

5.1.4 IF Data Sheet calls for mA, CONNECT current source to input of recorder with a mA meter in series with one of the input leads.

5.1.5 IF Data Sheet calls for mV, CONNECT voltage source to input of recorder with mV meter in parallel with the input leads.

5.1.6 APPLY power AND

ALLOW 15 minutes for warm-up.

5.1.7 ENTER each input value from Data Sheet AND

RECORD each "As-Found" value on Data Sheet.

5.1.8 IF "As-Found" data is within the tolerance given by Data Sheet, RECORD "As-Found" data in "As-Left" Section of Data Sheet AND

GO TO Section 5.2.

5.1.9 REMOVE power to recorder.

5.1.10 CHECK scale alignment, pen mechanical zero and full scale stops.

5.1.11 APPLY power AND

ALLOW 15 minutes for warm-up.
5.1 Calibrate Recorder In-Place or In-Shop (Cont.)

5.1.12 APPLY a source signal equal to zero reading on scale.

5.1.13 IF readout is not zero, ADJUST zero adjustment on pen circuit board.

5.1.14 APPLY a source signal equal to 100% reading.

5.1.15 IF readout is not 100%, ADJUST span using either coarse span or fine span.

5.1.16 REPEAT Steps 5.1.12 through 5.1.15 until calibration is achieved for each pen

OR

IF instrument cannot be calibrated PERFORM the following:

5.1.16.1 STOP work.

5.1.16.2 NOTIFY FWS instrument cannot be calibrated.

5.1.16.3 IF instrument requires repair, REPAIR instrument as directed by FWS in accordance with the requirements of TFC-OPS-MAINT-C-01, Tank Operations Contractor Work Control.

5.1.16.4 IF instrument requires replacement, REPLACE instrument as directed by FWS in accordance with the requirements of TFC-OPS-MAINT-C-01, Tank Operations Contractor Work Control.

5.1.17 ENTER each input value from Data Sheet AND

RECORD each "As-Left" value on Data Sheet.
5.2 Restoration

5.2.1 RESTORE equipment to service.

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

5.2.3 ENSURE any waste generated during the performance of this work is managed appropriately per procedure TO-100-052.

5.3 Acceptance Criteria

Comparison and verification of data in applicable steps of the procedure are within the limits of the data sheet steps, satisfies the Acceptance Criteria for this procedure.

5.4 Review

5.4.1 INFORM Operations management and FWS testing is complete.

5.4.2 The FWS MUST REVIEW AND ENSURE the following:
- Completed Data Sheets meet 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 Comments/Remarks section of Data Sheet.

5.5 Records

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

The identified record custodian is responsible for record management in accordance with TFC-BSM-IRM_DC-C-02 or other applicable requirements.
Figure 1  Span Adjustment Board