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1.0 PURPOSE AND SCOPE

1.1 Purpose

To provides instructions for calibrating the Taylor Quick-Scan Series 1300 recorder.

1.2 Scope

This procedure involves the Taylor Quick-Scan Series 1300 recorder.

2.0 INFORMATION

NONE

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 IF working around live circuits, compliance with DOE–0359, Hanford Site Electrical Safety Program is required.

3.1.2 Job specific protective equipment requirements should be addressed during the pre-job brief and be in accordance with TFC-ESHQ-S_IS-C-02.

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 tools may be needed to perform this procedure:

- Voltage/current source, e.g., Transmation or equivalent
- Digital multimeter.
5.0 UNIVERSITY OF ILLINOIS AT CHICAGO PROCEDURE

5.1 Calibrate Recorder

NOTE - The steps following are for each channel/pen; therefore, Recorder calibration may be accomplished by performing Section 5.1 for each active channel/pen.

5.1.1 DISCONNECT input leads at recorder input terminals.

5.1.2 CONNECT voltage/current source to input terminals of recorder.

5.1.3 IF a separate digital multimeter is needed, CONNECT digital multimeter in series with one of the input terminals.

5.1.4 APPLY inputs per Data Sheet AND RECORD output values in As-Found section of Data Sheet.

5.1.5 IF As-Found values are NOT within specified tolerance per Data Sheet, GO TO Step 5.1.6,

OR

IF As-Found values are within specified tolerance, but deemed marginal, and optimization is desired, GO TO Step 5.1.6,

OR

IF As-Found values are within specified tolerance, RECORD As-Found values in As-Left column of Data Sheet AND GO TO Section 5.2 or 5.3 as applicable.

5.1.6 APPLY Minimum input value per Data Sheet.

NOTE - Always approach minimum from upscale.

5.1.7 ADJUST ZERO adjustment screw for Minimum indication per Data Sheet.
5.1 Calibrate Recorder (Cont.)

5.1.8 **APPLY** Maximum input value per data sheet.

5.1.9 **ADJUST** SPAN adjustment screw for Maximum indication per Data Sheet.

5.1.10 **REPEAT** Steps 5.1.6 through 5.1.9 until ZERO and SPAN adjustments are within tolerance.

5.1.11 **APPLY** inputs per Data Sheet **AND CHECK** output values for tolerance.

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

**GO TO** Section 5.2 or 5.3 as applicable.

5.1.13 **IF** values are not within tolerance per Data Sheet, **REPEAT** Steps 5.1.6 through 5.1.12 until values are within tolerance, **OR**

**IF** values cannot be brought into tolerance, **NOTIFY** FWS for resolution **AND**

**STOP WORK** until further directed.
5.2 Calibrate Alarm

5.2.1 NOTIFY operations that alarm(s) will be activated.

5.2.2 REPEAT the following steps for each pen on recorder as applicable.

5.2.3 CONNECT digital multimeter across alarm terminals for pen that is being calibrated.

5.2.4 ADJUST input voltage/current source to alarm trip point per Data Sheet AND RECORD alarm trip point value in As-Found column of Data Sheet.

5.2.5 IF As-Found alarm trip point value is NOT within specified tolerance per Data Sheet, GO TO Step 5.2.6,

OR

IF As-Found alarm trip point value is within specified tolerance, but deemed marginal, and optimization is desired, GO TO Step 5.2.6,

OR

IF As-Found alarm trip point value is within specified tolerance, RECORD in As-Left column of Data Sheet AND GO TO Restoration Section 5.3.

NOTE - Potentiometer R8 is adjusted for calibration of Alarm 1 and potentiometer R9 is adjusted for calibration of Alarm 2.

5.2.6 APPLY alarm trip point value per Data Sheet AND ADJUST applicable alarm adjustment potentiometer (R8/R9) until alarm relay de-energizes (test light for alarm just turns on or off).

5.2.7 REPEAT step 5.2.6 until alarm trip point is set.
5.2 Calibrate Alarm (Cont.)

5.2.8 If alarm trip point value is within tolerance per Data Sheet, RECORD As-Left value on Data Sheet AND

GO TO Restoration, Section 5.3,

OR

IF alarm trip point value cannot be brought into tolerance, NOTIFY FWS for resolution AND

STOP WORK until further directed.
5.3 Restoration

5.3.1 IF any problems were encountered with calibration, INFORM FWS.

5.3.2 ENSURE Test Equipment has been disconnected and removed.

5.3.3 ENSURE Test Equipment information and calibration status are recorded on Data Sheet.

5.3.4 ENSURE equipment system restoration by observing indications are consistent with expected conditions.

5.3.5 NOTIFY Operations that testing is complete and system may be returned to desired configuration.

5.4 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.

5.5 Review

5.5.1 INFORM FWS test is complete.

5.5.2 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, as applicable.

5.6 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 identified record custodian is responsible for record management in accordance with TFC-BSM-IRM_DC-C-02 or other applicable requirements.