Function Check Moore Industries Safety Trip Alarm at 242-A Evaporator

Tank Farm Maintenance Procedure

USQ # EV-18-0707-S, Rev. 0

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for a function check on Moore Industries Safety Trip Alarms.

1.2 Scope

This procedure applies to Moore Industries (STA) Safety Trip Alarms, both Current/Voltage and RTD, as configured for operation in the 242-A Evaporator.

This procedure may only be performed when 242-A Evaporator is in SHUTDOWN mode.

This procedure provides maintenance of equipment that supports Evaporator DSA for LCO 3.1 and LCO 3.2

2.0 INFORMATION

2.1 Terms and Definitions

- STA - Safety Trip Alarm
- TC - Thermocouple
- RTD - Resistance Temperature Device.

2.2 General Information

2.2.1 To maintain the integrity of the Safety Instrumented System (SIS), zero dependence between the performance of calibrations on redundant instrumentation must be maintained. To achieve this, the same personnel must not be used to perform calibrations on redundant instruments pairs. The specific instrumentation to which this applies is identified in the procedure steps.

2.2.2 The use of software applications have not been approved for use with this equipment.

2.2.3 It is required that procedures 6-PCD-870 and TF-FT-680 022 are performed after completion of this procedure.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 If a lock and tag is required during the performance of this procedure, comply with the DOE-0336, Hanford Site Lockout/Tagout Procedure.

3.1.2 If working around live circuits, extreme caution should be used. Failure to follow electrical safety practices as outlined in DOE–0359, Hanford Site Electrical Safety Program could result in serious injury.

3.1.3 Failure to use protective equipment when working on or near energized systems could result in serious injury. 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 and Risk Screening by Radiological Control per ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.

3.3 Limits

HNF-15279, 242-A Evaporator Technical Safety Requirements

LCO 3.1 - C-A-1 Vessel Flammable Gas Control System

LCO 3.2 - C-A-1 Vessel Waste High Level Control System
4.0 PREREQUISITES

4.1 Special Tools, Equipment and Supplies

The following supplies may be needed to perform this procedure:
- Digital Multimeter (DMM)
- RTD simulator (or equivalent)
- Calibrated 4-20mA Current Source
- Thermometer (for determining ambient air temperature)
- Three 2KΩ-1/2W resistors
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- DOE-0336, Hanford Site Lockout/Tagout Program
- Moore Industries STA manual 225-748-01E
- Moore Industries STA manual 225-748-00D.

4.3 Field Preparation

4.3.1 NOTIFY Operations to configure system to allow performance of this procedure.

4.3.2 INFORM Operations that alarm may be tripped several times while testing.

4.3.3 IF Lockout/Tagout was applied, ENSURE Lockout/Tagout and over-locking requirements have been satisfied per DOE-0336, Hanford Site Lockout/Tagout Procedure.
FUNCTION CHECK Moore Industries Safety Trip Alarm at 242-A Evaporator

5.0 PROCEDURE

NOTE - This procedure may be performed on the bench or in the field.

- Sections that are not required may be skipped with concurrence of the field work supervisor.

- Words in “parentheses” are written as they appear on the Moore STA display.

- Use SELECT button as your ENTER, and UP and DOWN buttons to navigate through the menu of the STA module.

- Figure 1 displays the STA Menu tree; Figure 2 displays the STA View Menu tree.

- The STA unit is expected to go into fault when an input connection is disconnected. To clear the fault the STA unit will need to be reset. Steps to perform an STA module reset are included in Attachment 2 – Reset STA Module.

5.1 Perform Function Check for Safety Trip Alarm (STA)

5.1.1 ENSURE Operations has configured system to allow performance of this procedure as requested in Step 4.3.1.

5.1.2 IF during the performance of this procedure the M&TE or STA module loses power, RESET the STA module per Attachment 2 – Reset STA Module.

NOTE: - The technicians performing the function check must be independent of the technicians performing the verification check. The verification check is a technician who verifies the results are recorded correctly and that the instrument passed calibration.

5.1.3 IF performing function check on YYC-CA1-4, ENSURE that the technician performing the function check is different than the technician performing the verification check on this STA unit. (TSR, LCO 3.2)

5.1.3.1 IF function checking YYC-CA1-4, PRINT names below:

____________________________________ / __________________________
Technician FWS

5.1.3.2 IF independently verifying YYC-CA1-4, PRINT names below:

____________________________________ / __________________________
Technician FWS
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.4 IF performing function check on YYC-CA1-12 and YYC-CA1-13, **ENSURE** that the technician performing the function check is different than the technician performing the verification check on each of these two STA units. (TSR, LCO 3.1)

5.1.4.1 **IF** function checking YYC-CA1-12, **PRINT** names below:

________________________ / ________________

Technician FWS

5.1.4.2 **IF** independently verifying YYC-CA1-12, **PRINT** names below:

________________________ / ________________

Technician FWS

5.1.4.3 **IF** function checking YYC-CA1-13, **PRINT** names below:

________________________ / ________________

Technician FWS

5.1.5 **IF** independently verifying YYC-CA1-13, **PRINT** names below:

________________________ / ________________

Technician FWS
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.6 IF function checking YYC-EA1-1, and YYC-EA1-1S, ENSURE that the technician performing the function check is different than the technician performing the verification check on each of these two STA units. (TSR, LCO 3.1)

5.1.6.1 IF function checking YYC-EA1-1, PRINT names below:

__________________________ / ______________________
Technician                  FWS

5.1.6.2 IF independently verifying YYC-EA1-1, PRINT names below:

__________________________ / ______________________
Technician                  FWS

5.1.6.3 IF function checking YYC-EA1-1S, PRINT names below:

__________________________ / ______________________
Technician                  FWS

5.1.6.4 IF independently verifying YYC-EA1-1S, PRINT names below:

__________________________ / ______________________
Technician                  FWS

NOTE - CB1 & CB2 in CA1-ENCL-205 does not de-energize all voltage in panel CA1-ENCL-205. There are two sources of power.

5.1.7 OPEN circuit breakers CB1 and CB2 in CA1-ENCL-205.

5.1.8 DISCONNECT wires from STA unit.

5.1.9 IF performing bench test, REMOVE STA unit from panel 205 AND RETURN to shop.

5.1.10 USING an ohmmeter, MEASURE the resistance between the STA casing and all exposed pins on the front of the unit, except the terminal ground.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.11 WITH the exception of the terminal ground, IF any resistance value between the STA casing and the exposed pins are less than 1 MΩ, NOTIFY FWS for resolution AND RECORD pin label or placement on the following line(s):

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

5.1.12 RECONNECT wiring to STA unit.

5.1.13 TURN ON power by performing one of the follow:

5.1.13.1 IF performing FIELD test, REENERGIZE CB1 & CB2 in CA1-ENCL-205.

OR

5.1.13.2 IF performing BENCH test on YYC-CA1-12, YYC-CA1-13, or YYC-CA1-4, CONNECT test power supply to STA unit per Figure 3

OR

5.1.13.3 IF performing BENCH test on YYC-CA1-1 and YYC-CA1-1S, CONNECT test power supply to STA unit per Figure 4.

5.1.14 IF performing function check on YYC-CA1-12, YYC-CA1-13, or YYC-CA1-4, PERFORM the following:

5.1.14.1 SET process calibrator to 2 wire simulate mode.

NOTE – Moore STA module is supplies 24VDC to loop.

5.1.14.2 CONNECT process calibrator to be powered by the TX output of the STA unit (see Figure 3).

5.1.14.3 RESET the STA module per Attachment 2 – Reset STA Module.

5.1.14.4 GO TO Step 5.1.37.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

NOTE - Step 5.1.15 applies to STA modules YYC-EA1-1 and YYC-EA1-1S.

5.1.15 IF performing function check on YYC-EA1-1 or YYC-EA1-1S, CONFIGURE STA unit for type J thermocouple input by performing the following:

5.1.15.1 USING Figure 1 – STA Menu Tree, NAVIGATE STA until “CONFIG INPUT” is displayed.

5.1.15.2 WHEN “CONFIG INPUT” is displayed, PRESS SELECT.

5.1.15.3 WHEN “SENSR TYPE” (sensor type) is displayed, PRESS SELECT.

5.1.15.4 USE the UP and DOWN buttons to scroll the sensor selection list when “T/C” is displayed, PRESS SELECT.

5.1.15.5 USE the UP and DOWN buttons to scroll the TC selection list when “T/C J” is displayed, PRESS SELECT.

5.1.15.6 USE the UP and DOWN buttons to scroll the temperature units selection list when “DEG C” is displayed, PRESS SELECT.

5.1.15.7 USING the UP and DOWN buttons, LOCATE “EXIT SENR” AND PRESS SELECT.

5.1.15.8 USING the UP and DOWN buttons, LOCATE “SCALE INPUT” AND PRESS SELECT.

5.1.15.9 WHEN “SCALE MODE” is displayed, PRESS SELECT.

5.1.15.10 USING the UP and DOWN buttons, LOCATE “SCALE OFF” AND PRESS SELECT.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.15.11 WHEN “EXIT SCALE” is displayed, PRESS SELECT.

5.1.15.12 USING Figure 1 – STA Menu Tree, NAVIGATE STA until “CONFIG EXIT” is displayed AND PRESS SELECT.

5.1.15.13 USING the UP and DOWN buttons, LOCATE “SAVE YES” AND PRESS SELECT.

5.1.16 ON the Moore STA module, LIFT the following leads:
- 2
- 3
- 4.

5.1.17 ON the Moore STA module, SHORT pins 3 and 4 AND CHECK that STA displayed temperature is within 5°C Celsius of the case temperature. For temperature accuracy the probe must be in contact with case while checking temperature.

5.1.18 IF STA displayed temperature is not within 5°C Celsius of case temperature, NOTIFY FWS.

5.1.19 ON the Moore STA module, REMOVE short/jumper from pins 3 and 4.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.20 CONFIGURE STA unit for a 4-wire RTD input by performing the following:

5.1.20.1 USING Figure 1 – STA Menu Tree, NAVIGATE STA until “CONFG INPUT” is displayed.

5.1.20.2 WHEN “CONFG INPUT” is displayed, PRESS SELECT.

5.1.20.3 WHEN “SENSR TYPE” (sensor type) is displayed, PRESS SELECT.

5.1.20.4 USE the UP and DOWN buttons to scroll the sensor selection list AND

WHEN “RTD 4WIRE” is displayed, PRESS SELECT.

5.1.20.5 USE the UP and DOWN buttons to scroll the RTD selection list AND

WHEN “P3850 100” is displayed, PRESS SELECT.

5.1.20.6 USE the UP and DOWN buttons to scroll the temperature unit selection list AND

WHEN “DEG C” is displayed, PRESS SELECT.

5.1.20.7 USING the UP and DOWN buttons, LOCATE “EXIT SENR” AND

PRESS SELECT.

5.1.20.8 USING Figure 1 – STA Menu Tree, NAVIGATE STA until “CONFG EXIT” is displayed AND

PRESS SELECT.

5.1.20.9 USING the UP and DOWN buttons, LOCATE “SAVE YES” AND

PRESS SELECT.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.21 CONNECT RTD simulator per Figure 4 – STA RTD Connection Diagram AND

SET simulator to 100Ω Platinum RTD.

5.1.22 SET RTD simulator to 136°C.

5.1.23 RESET the STA module per Attachment 2 – Reset STA Module.

5.1.24 DISCONNECT input connection from pin 1 AND CHECK that fault relay by performing the following:

5.1.24.1 MEASURE voltage between NO3 & CM3 (Figure 4 – STA RTD Connection Diagram) AND

CHECK STA module for the following:

- For YYC-EA1-1is voltage between 22.8V and 25.2V
  ____Yes ____No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V
  ____Yes ____No

VERIFY that fault relay by performing the following:

5.1.24.2 MEASURE voltage between NO3 & CM3 (Figure 4 – STA RTD Connection Diagram) AND

CHECK STA module for the following:

- For YYC-EA1-1is voltage between 22.8V and 25.2V
  ____Yes ____No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V
  ____Yes ____No

5.1.25 RECONNECT input connection to pin 1.

5.1.26 RESET the STA module per Attachment 2 – Reset STA Module.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.27 DISCONNECT input connection from pin 2 AND

CHECK that fault relay by performing the following:

5.1.27.1 MEASURE voltage between NO3 & CM3 AND

CHECK STA module for the following:

- For YYC-EA1-1 is voltage between 22.8V and 25.2V
  _____Yes _____No
- For YYC-EA1S is voltage between 22.8V and 25.2V
  _____Yes _____No

VERIFY that fault relay by performing the following:

5.1.27.2 MEASURE voltage between NO3 & CM3 AND

CHECK STA module for the following:

- For YYC-EA1-1 is voltage between 22.8V and 25.2V
  _____Yes _____No
- For YYC-EA1S is voltage between 22.8V and 25.2V
  _____Yes _____No

5.1.28 RECONNECT input connection to pin 2.

5.1.29 RESET the STA module per Attachment 2 – Reset STA Module.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.30 DISCONNECT input connection from pin 3 AND CHECK that fault relay by performing the following:

5.1.30.1 MEASURE voltage between NO3 & CM3 AND CHECK STA module for the following:
- For YYC-EA1-1 is voltage between 22.8V and 25.2V
  - Yes ______ No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V
  - Yes ______ No

VERIFY that fault relay by performing the following:

5.1.30.2 MEASURE voltage between NO3 & CM3 AND CHECK STA module for the following:
- For YYC-EA1-1 is voltage between 22.8V and 25.2V
  - Yes ______ No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V
  - Yes ______ No

5.1.31 RECONNECT input connection to pin 3.

5.1.32 RESET the STA module per Attachment 2 – Reset STA Module.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.33 DISCONNECT input connection from pin 4 AND CHECK that fault relay by performing the following:

5.1.33.1 MEASURE voltage between NO3 & CM3 AND CHECK STA module for the following:

- For YYC-EA1-1 is voltage between 22.8V and 25.2V _____Yes _____No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V _____Yes _____No

VERIFY that fault relay by performing the following:

5.1.33.2 MEASURE voltage between NO3 & CM3 AND CHECK STA module for the following:

- For YYC-EA1-1 is voltage between 22.8V and 25.2V _____Yes _____No
- For YYC-EA1-1S is voltage between 22.8V and 25.2V _____Yes _____No

5.1.34 RECONNECT input connection to pin 4.

5.1.35 RESET the STA module per Attachment 2 – Reset STA Module.

5.1.36 IF any of the fault relays failed to de-energize, NOTIFY FWS.

5.1.37 CONFIGURE STA unit Alarm 1 and 2 trip values by, PERFORMING the following:

5.1.37.1 USING Figure 1 – STA Menu Tree, NAVIGATE STA until “CONFG ALARM” is displayed.

5.1.37.2 WHEN the “CONFG ALARM” is displayed, PRESS SELECT.

5.1.37.3 WHEN “CONFG ALARM1” is displayed, PRESS SELECT.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.37.4 WHEN “ENTER TRIP” is displayed, PRESS SELECT.

5.1.37.5 USING the UP and DOWN buttons, SET the alarm trip point to one of the following values:
- 12mA (STA units YYC-CA1-12, YYC-CA1-13, 12mA = 403.25 Torr, or YYC-CA1-4, 12mA = 7.5 InH20)
  OR
- 200°C (STA units YYC-EA1-1 and YYC-EA1-1S).

5.1.37.6 PRESS SELECT.

5.1.37.7 USING the UP and DOWN buttons, LOCATE “SET HIGH/LOW” AND
PRESS SELECT.

5.1.37.8 USING the UP and DOWN buttons, LOCATE “ALARM LOW” AND
PRESS SELECT.

5.1.37.9 USING the UP and DOWN buttons, LOCATE “ENTER DELAY” AND
PRESS SELECT.

5.1.37.10 USING the UP and DOWN buttons, SET the delay value to “0” seconds AND
PRESS SELECT.

5.1.37.11 USING the UP and DOWN buttons, LOCATE “EXIT ALRM1” AND
PRESS SELECT.

5.1.37.12 USING the UP and DOWN buttons, LOCATE “CONF ALRM2” AND
PRESS SELECT.

5.1.37.13 WHEN “ENTER TRIP” is displayed, PRESS SELECT.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.37.14 **USING** the UP and DOWN buttons, **SET** the alarm trip point to one of the following values:

- 12mA (STA unit configured with a 4-20mA input, 12mA = 403.25 Torr; 12mA = 7.0 InH₂O)

  OR

- 200°C (STA unit with RTD input).

5.1.37.15 **PRESS SELECT.**

5.1.37.16 **USING** the UP and DOWN buttons, **LOCATE** “SET HIGH/LOW” **AND**

  **PRESS SELECT.**

5.1.37.17 **USING** the UP and DOWN buttons, **LOCATE** “HIGH” **AND**

  **PRESS SELECT.**

5.1.37.18 **USING** the UP and DOWN buttons, **LOCATE** “ENTER DELAY” **AND**

  **PRESS SELECT.**

5.1.37.19 **USING** the UP and DOWN buttons, **SET** the delay value to “0” seconds **AND**

  **PRESS SELECT.**

5.1.37.20 **USING** the UP and DOWN buttons, **LOCATE** “EXIT ALRM2” **AND**

  **PRESS SELECT.**

5.1.37.21 **WHEN** “EXIT ALARM” is displayed, **PRESS SELECT.**

5.1.37.22 **USING** the UP and DOWN buttons, **LOCATE** “CONFIG EXIT” **AND**

  **PRESS SELECT.**

5.1.37.23 **USING** the UP and DOWN buttons, **LOCATE** “SAVE YES” **AND**

  **PRESS SELECT.**
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.38 IF performing Function Check on STA units YYC-CA1-12, YYC-CA1-13 or YYC-CA1-4, PERFORM the following:

5.1.38.1 SET the process calibrator to 20mA AND

CHECK STA unit for the following:

- YYC-CA1-4 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-4 is STA unit displaying 14.5 ± 0.15 InH20?
  - Yes No

  OR

- YYC-CA1-12 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-12 is STA unit displaying 800 ± 7.95 Torr?
  - Yes No

  OR

- YYC-CA1-13 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-13 is STA unit displaying 800 ± 7.95 Torr?
  - Yes No

VERIFY STA unit for the following:

- YYC-CA1-4 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-4 is STA unit displaying 14.5 ± 0.15 InH20?
  - Yes No

  OR

- YYC-CA1-12 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-12 is STA unit displaying 800 ± 7.95 Torr?
  - Yes No

  OR

- YYC-CA1-13 is there adequate power (i.e. No brown outs)?
  - Yes No
- YYC-CA1-13 is STA unit displaying 800 ± 7.95 Torr?
  - Yes No
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.38.2 IF No was marked in Step 5.1.38.1, NOTIFY FWS for resolution.

5.1.39 IF performing Function Check on STA units YYC-EA1-1 or YYC-EA1-1S, CONNECT RTD simulator per Figure 4.

5.1.40 INSTALL a 2kΩ-1/2W resistor into each of the following terminals (See Figure 3):
- CM1
- CM2
- CM3.

5.1.41 IF performing FIELD test, OPEN fuse holder on TB-4 FU 8 AND CONNECT positive (+) terminal to TB-4 FU 8.

OR

IF performing BENCH test, CONNECT positive (+) terminal of 24VDC to open end of resistors.

5.1.42 CONNECT the following STA terminals to negative (-) terminal TB-4, 17. (See Figure 3)
- NO1
- NO2
- NO3.

OR

IF performing BENCH test, CONNECT the following STA terminals to the negative (-) terminal of the 24VDC power supply.
- NO1
- NO2
- NO3.

5.1.43 IF performing FIELD test, CLOSE fuse holder on TB-4 FU 8.

5.1.44 APPLY one of the following inputs:
- 16mA (STA units YYC-CA1-12, YYC-CA1-13 or YYC-CA1-4)
  OR
- 300°C (STA units YYC-EA1-1 or YYC-EA1-1S).
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.45 **CHECK** that STA displayed value matches the applied input value within the following tolerance values: (1% tolerance values)

- 601.625 Torr +/- 7.94 Torr (YYC-CA1-12, or YYY-CA1-13)
- 10.75 InH20 +/- 0.15 InH20 (YYC-CA1-4)
- 300°C +/- 4°C (YYC-EA1-1 or YYC-EA1-1S).

**NOTE** - Step 5.1.46 tests the normally open contacts.

5.1.46 **USING** DMM, **MEASURE** voltage across the following pins **AND** **RECORD** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO1 to CM1</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NO2 to CM2</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td>NO3 to CM3</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1S</td>
</tr>
</tbody>
</table>

**VERIFY** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO1 to CM1</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NO2 to CM2</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td>NO3 to CM3</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1S</td>
</tr>
</tbody>
</table>

5.1.47 **IF** the measured voltage is outside of expected range, **NOTIFY** FWS.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.48  **APPLY** one of the following inputs:

- 6mA (STA units YYC-CA1-12, YYC-CA1-13 or YYC-CA1-4)
  **OR**
- 100°C (STA units YYC-EA1-1 or YYC-EA1-1S).

5.1.49  **CHECK** that STA displayed value matches the applied input value within the following tolerance values: (1% tolerance values)

- 105.65 Torr +/- 7.94 Torr (YYC-CA1-12 or YYC-CA1-13)
- 1.375 InH20 +/- 0.15 InH20 (YYC-CA1-4)
- 100°C +/- 4°C (YYC-EA1-1 or YYC-EA1-1S)

5.1.50  **USING** DMM, **MEASURE** voltage across the following pins **AND**

**RECORD** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NO1 to CM1</td>
<td>Between 22.8V and 25.2V</td>
</tr>
<tr>
<td>NO2 to CM2</td>
<td>Less than 0.1V</td>
</tr>
<tr>
<td>NO3 to CM3</td>
<td>Less than 0.1V</td>
</tr>
</tbody>
</table>

**VERIFY** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NO1 to CM1</td>
<td>Between 22.8V and 25.2V</td>
</tr>
<tr>
<td>NO2 to CM2</td>
<td>Less than 0.1V</td>
</tr>
<tr>
<td>NO3 to CM3</td>
<td>Less than 0.1V</td>
</tr>
</tbody>
</table>

5.1.51  **IF** the measured voltage is outside of expected range, **NOTIFY** FWS.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.52 DISCONNECT wire from input terminal 2 AND CHECK the following:
- STA unit display reads “WIRE 2 BROKE”
- INPUT LED indication is red
- FAULT LED indication is red.

5.1.53 USING DMM, MEASURE voltage across pins NO3 and CM3 AND RECORD in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>YYC-CA1-12</th>
<th>YYC-CA1-13</th>
<th>YYC-CA1-4</th>
<th>YYC-EA1-1</th>
<th>YYC-EA1-1S</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VERIFY in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>YYC-CA1-12</th>
<th>YYC-CA1-13</th>
<th>YYC-CA1-4</th>
<th>YYC-EA1-1</th>
<th>YYC-EA1-1S</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.1.54 RECONNECT wire to input terminal 2.

5.1.55 IF voltage across pins NO3 and CM3 is not within the expected range, NOTIFY FWS.

5.1.56 RESET the STA module per Attachment 2 – Reset STA Module.

5.1.57 IF performing FIELD test, OPEN TB-4 FU 8.

OR

IF performing BENCH test, SHUT OFF 24VDC power supply
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.58 PERFORM the following:

5.1.58.1 DISCONNECT wire from NO1 terminal AND CONNECT wire to NC1

5.1.58.2 DISCONNECT wire from NO2 terminal AND CONNECT wire to NC2

5.1.58.3 DISCONNECT wire from NO3 terminal AND CONNECT wire to NC3.

5.1.59 IF performing FIELD test, CLOSE TB-4 FU 8

OR

IF performing BENCH test, TURN ON 24VDC power supply.

5.1.60 APPLY one of the following inputs:

- 16mA (STA units YYC-CA1-12, YYC-CA1-13 or YYC-CA1-4)
  OR
- 300°C (STA units YYC-EA1-1 or YYC-EA1-1S).

5.1.61 CHECK that STA displayed value matches the applied input value within the following tolerance values: (1% tolerance values)

- 601.625 Torr +/- 7.94 Torr (YYC-CA1-12, or YYC-CA1-13)
- 10.75 InH20 +/- 0.15 InH20 (YYC-CA1-4)
- 300°C +/- 4°C (YYC-EA1-1 or YYC-EA1-1S).
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.62 USING DMM, MEASURE voltage across the following pins AND RECORD in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC1 to CM1</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NC2 to CM2</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-4</td>
</tr>
</tbody>
</table>

VERIFY in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC1 to CM1</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NC2 to CM2</td>
<td>Less than 0.1V</td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td>YYC-CA1-4</td>
</tr>
</tbody>
</table>

5.1.62.1 IF any measured voltage is outside of expected range, NOTIFY FWS.

5.1.63 APPLY one of the following inputs:
- 6mA (STA units YYC-CA1-12, YYC-CA1-13 or YYC-CA1-4)
  OR
- 100°C (STA units YYC-EA1-1 or YYC-EA1-1S).
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.64 **CHECK** that STA displayed value matches the applied input value within the following tolerance values: (1% tolerance values)
- 105.65 Torr +/- 7.94 Torr (YYC-CA1-12, YYC-CA1-13)
- 1.375 InH20 +/- 0.15 InH20 (YYC-CA1-4)
- 100°C +/- 4°C (YYC-EA1-1, YYC-EA1-1S).

5.1.65 **USING DMM, MEASURE** voltage across the following pins AND **RECORD** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NC1 to CM1</td>
<td>Less than 0.1V</td>
<td></td>
</tr>
<tr>
<td>NC2 to CM2</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
</tr>
</tbody>
</table>

**VERIFY** in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td>NC1 to CM1</td>
<td>Less than 0.1V</td>
<td></td>
</tr>
<tr>
<td>NC2 to CM2</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>Between 22.8V and 25.2V</td>
<td></td>
</tr>
</tbody>
</table>

5.1.65.1 **IF** any measured voltage is outside of expected range, **NOTIFY** FWS.
5.1 Perform Function Check for Safety Trip Alarm (STA) (Cont.)

5.1.66 DISCONNECT wire from input terminal 2 AND CHECK the following:
- STA unit display reads “WIRE 2 BROKE”
- FAULT LED indication is red
- INPUT LED indication is red.

5.1.67 USING DMM, MEASURE voltage across pins NC3 and CM3 AND RECORD in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1S</td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>less than 0.1V</td>
<td></td>
</tr>
</tbody>
</table>

VERIFY in the table below:

<table>
<thead>
<tr>
<th>PINS/CONTACTS</th>
<th>Expected Voltage Range</th>
<th>Measured Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-CA1-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YYC-EA1-1S</td>
</tr>
<tr>
<td>NC3 to CM3</td>
<td>less than 0.1V</td>
<td></td>
</tr>
</tbody>
</table>

5.1.68 IF voltage across pins NC3 and CM3 is not within the expected range, NOTIFY FWS.

5.1.69 RECONNECT wire to input terminal 2.

5.1.70 RESET the STA module per Attachment 2 – Reset STA Module.

5.1.71 IF performing FIELD test, OPEN TB-4 FU 8

OR

IF performing BENCH test, SHUT OFF 24VDC power supply.

5.1.72 REMOVE all test wiring from terminals.

5.1.73 REMOVE all 2kΩ-1/2W resistors from terminals.
5.2 Reconfigure Alarm Trip Set-point to its As Found Condition

5.2.1 **RECONNECT** wiring to original configuration.

5.2.2 **USE** Figure 1 – STA Menu Tree **AND**

**NAVIGATE** STA until “CONFIG ALARM” is displayed.

5.2.3 **WHEN** the “CONFIG ALARM” is displayed, **PRESS** SELECT.

5.2.4 **WHEN** “CONFIG ALARM1” is displayed, **PRESS** SELECT.

5.2.5 **WHEN** “ENTER TRIP” is displayed, **PRESS** SELECT.

**NOTE** – Degrees °C will automatically switch over to °F upon completion of Section 5.3.

5.2.6 **USING** the UP and DOWN buttons, **SET** the alarm trip value to one of the following normal operating values:

- 190 Torr (STA units YYC-CA1-12, YYC-CA1-13)
  **OR**
- 157°C (STA units YYC-EA1-1 or YYC-EA1-1S)
  **OR**
- 7.5 InH20 (STA unit YYC-CA1-4).

5.2.7 **WHEN** the desired alarm trip value is displayed, **PRESS** SELECT.

5.2.8 **WHEN** “ENTER DB” (Dead Band) is displayed, **PRESS** SELECT.

5.2.9 **USING** the UP and DOWN buttons, **SET** the dead band to “0” **AND**

**PRESS** SELECT.

5.2.10 **WHEN** “SET HI/LO” is displayed, **PRESS** SELECT.

5.2.11 **USE** the UP and DOWN buttons to locate “ALARM HI” and, **PRESS** SELECT.

5.2.12 **WHEN** “SET LATCH” is displayed, **PRESS** SELECT.

5.2.13 **USE** the UP and DOWN buttons to locate “LATCH OFF” and, **PRESS** SELECT.

5.2.14 **WHEN** “ENTER DELAY” is displayed, **PRESS** SELECT.
5.2 Reconfigure Alarm Trip Set-point to its As Found Condition (Cont.)

5.2.15 USING the UP and DOWN buttons, SET the delay value to “5” seconds AND PRESS SELECT.

5.2.16 WHEN “EXIT ALRM1” is displayed, PRESS SELECT. (This will exit the “CONFG ALRM1” menu).

NOTE – Alarm 2 (Relay #2) is not used and has a set-point value only to prevent unwanted alarms.

5.2.17 WHEN “CONFG ALRM2” is displayed, PRESS SELECT.

5.2.18 WHEN “ENTER TRIP” is displayed, PRESS SELECT.

NOTE – Degrees °C will automatically switch over to °F upon completion of Section 5.3.

5.2.19 USING the UP and DOWN buttons, SET the alarm trip value to one of the following normal operating values:

- 800 Torr (STA units YYC-CA1-12, YYC-CA1-13)
- 400°C (STA units YYC-EA1-1 or YYC-EA1-1S)
- 14.5 InH20 (STA unit YYC-CA1-4).

5.2.20 WHEN the desired alarm trip value is displayed, PRESS SELECT.

5.2.21 WHEN “ENTER DB” (Dead Band) is displayed, PRESS SELECT.

5.2.22 USING the UP and DOWN buttons, SET the dead band to “0” AND PRESS SELECT.

5.2.23 WHEN “SET HI/LO” is displayed, PRESS SELECT.

5.2.24 USING the UP and DOWN buttons locate “ALARM HI” and, PRESS SELECT.

5.2.25 WHEN “SET LATCH” is displayed, PRESS SELECT.

5.2.26 USING the UP and DOWN buttons locate “LATCH OFF” and, PRESS SELECT.
5.2 Reconfigure Alarm Trip Set-point to its As Found Condition (Cont.)

5.2.27 WHEN “ENTER DELAY” is displayed, PRESS SELECT.

5.2.28 USING the UP and DOWN buttons, SET the delay value to “0” seconds AND PRESS SELECT.

5.2.29 WHEN “EXIT ALRM2” is displayed, PRESS SELECT. (This will exit the “CONFG ALARM2” menu).

5.2.30 WHEN “EXIT ALARM” is displayed, PRESS SELECT. (This will direct the STA to the Configure analog output menu).

5.2.31 USING the UP and DOWN buttons, LOCATE “CONFG EXIT” AND PRESS SELECT.

5.2.32 USING the UP and DOWN buttons, LOCATE “SAVE YES” AND PRESS SELECT.

5.2.33 IF performing Proof Test on STA unit configured with a 4-20mA input signal, GO TO Section 5.4 Restoration.

5.2.34 IF performing Proof Test on STA unit with RTD/TC input, GO TO Section 5.3 Reconfigure Zero and Full Scale Inputs (3-Wire RTD).
5.3 Reconfigure Zero and Full Scale Inputs (3-Wire RTD)

5.3.1 USE Figure 1 – STA Menu Tree AND

NAVIGATE STA until “CONFIG INPUT” is displayed.

5.3.2 WHEN “CONFIG INPUT” is displayed, PRESS SELECT.

5.3.3 WHEN “SENSR TYPE” (sensor type) is displayed, PRESS SELECT.

5.3.4 USE the UP and DOWN buttons to scroll the sensor selection list AND

WHEN “RTD 3WIRE” is displayed, PRESS SELECT.

5.3.5 USE the UP and DOWN buttons to scroll the RTD selection list AND

WHEN “P3850 100” is displayed, PRESS SELECT.

5.3.6 USE the UP and DOWN buttons to scroll the temperature unit selection list AND

WHEN “DEG F” is displayed, PRESS SELECT.

5.3.7 WHEN “INPUT ZERO” is displayed, PRESS SELECT.

5.3.8 SET the “INPUT ZERO” value to 0°F using the UP and DOWN buttons AND

WHEN the desired “INPUT ZERO” value is displayed, PRESS SELECT.

5.3.9 WHEN “INPUT FULL” is displayed, PRESS SELECT.

5.3.10 SET the “INPUT FULL” value to 400°F using the UP and DOWN buttons AND

WHEN the desired “INPUT FULL” value is displayed, PRESS SELECT.

5.3.11 WHEN “EXIT SENSR” is displayed, PRESS SELECT.

5.3.12 WHEN “SCALE INPUT” is displayed, PRESS the DOWN button until “CONFIG EXIT” is displayed AND

PRESS SELECT.

5.3.13 USING the UP and DOWN buttons, LOCATE “SAVE YES” AND

PRESS SELECT.
5.4 Restoration

5.4.1 IF STA unit was removed from field, **REINSTALL** STA unit to As-Found location within panel CA1-ENCL-205.

5.4.2 IF any problems were encountered with calibration, **INFORM** FWS.

5.4.3 IF not already disconnected, **DISCONNECT AND REMOVE** the Test Equipment.

5.4.4 **RECORD** the Test Equipment information and calibration status on the following line(s):

____________________________________________________________

____________________________________________________________

____________________________________________________________

____________________________________________________________

5.4.5 **CHECK** equipment restoration by observing indications are consistent with expected conditions.

5.4.6 **NOTIFY** Operations that testing is complete and system may be returned to desired configuration.
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).

5.6 **Review**

5.6.1 **INFORM** FWS test is complete.

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

- Comments sections are filled out appropriately
- Work requests needed as a result of this procedure are identified and generated on the following line(s):

  ______________________________________

  ______________________________________

  ______________________________________

  ______________________________________

  ______________________________________

  ______________________________________

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.
Figure 1 – STA Menu Tree
Function Check Moore Industries Safety Trip Alarm at 242-A Evaporator

Figure 2 – STA View Menu Tree
Figure 3 – STA Current Source Connection Diagram

For Bench Test, Connect to 24VDC Power Supply
Figure 4 – STA RTD Connection Diagram

For Bench Test, Connect to 24VDC Power Supply
# Table 1 – Error Codes

<table>
<thead>
<tr>
<th>Error Message</th>
<th>What it Means</th>
<th>What to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS INIT</td>
<td>The system is completing initialization</td>
<td>Wait. Operation should commence in a few seconds.</td>
</tr>
<tr>
<td>ERROR CKSUM</td>
<td>The configuration stored in non-volatile memory is invalid</td>
<td>Using the menu system, trigger the unit to use the FCTRY CFG selection in the options menu causing it to reset to factory configuration. Next configure as appropriate for the application.</td>
</tr>
<tr>
<td>ERROR CONFIG</td>
<td>User has reconfigured the unit with an illegal configuration</td>
<td>Usually caused by changing the input range, or scaled range such that the trip points and/or deadband settings have become illegal. Reconfigure with legal values.</td>
</tr>
<tr>
<td>WIREn BROKE</td>
<td>A specific wire was detected as broken</td>
<td>Repair the broken wire(s), and use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>WIRES BROKE</td>
<td>Undetermined wire broken</td>
<td>Check the input and/or the selected input mode/sensor type (specifically a RTD’s alpha value), and use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>ERROR OUTOF/ LIMIT</td>
<td>The measured resistance / voltage was outside the RTD or Thermocouple table’s range</td>
<td>Check the input signal to ensure that it is within the sensor limits and use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>ERROR INSAT</td>
<td>Input saturation condition (input reached 110% of calibrated range)</td>
<td>Check the input signal to ensure that it is within the sensor limits and use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>ERROR OOR</td>
<td>Input has gone outside the legal range (as defined by the input LRV and URV by more than 1%)</td>
<td>Check the input and/or the input Upper and Lower Range settings and use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>ERROR LINE/ RES</td>
<td>Excessive lead resistance</td>
<td>Check sensor lead resistance. A resistance over 35 ohms is excessive (5 ohms for the Cu RTD). Use the menu system to RESET FAULTS or cycle power.</td>
</tr>
<tr>
<td>ERROR CALIB</td>
<td>Calibration data is bad</td>
<td>These errors are generated by internal diagnostics (see STA Diagnostics and Fault Alarms p7). Spurious errors that could be caused by external factors like transients or surges, may result in a diagnostic failure and trigger the fault alarm. Cycle power to the unit to clear the latched fault alarm. If the error persists, then please record the error message and contact Moore Industries Customer Service Support for further assistance.</td>
</tr>
<tr>
<td>ERROR FCTRY/ INFO</td>
<td>Factory information is bad</td>
<td></td>
</tr>
<tr>
<td>ERROR ADC _ _</td>
<td>General ADC failure</td>
<td></td>
</tr>
<tr>
<td>ERROR RJC</td>
<td>Reference Junction Compensation RTD burnout</td>
<td></td>
</tr>
<tr>
<td>ERROR RLAYF</td>
<td>Fault alarm failure</td>
<td></td>
</tr>
<tr>
<td>ERROR RLAY1</td>
<td>Trip alarm 1 hardware failure</td>
<td></td>
</tr>
<tr>
<td>ERROR RLAY2</td>
<td>Trip alarm 2 hardware failure</td>
<td></td>
</tr>
<tr>
<td>ERROR SW _ _</td>
<td>General software failure detected by diagnostics</td>
<td></td>
</tr>
<tr>
<td>ERROR HW _ _</td>
<td>General hardware failure detected by diagnostics</td>
<td></td>
</tr>
</tbody>
</table>

* Error messages ERROR ADC, ERROR SW, and ERROR HW will also include a 2 or 3 digit suffix. Moore Industries Customer Service Technicians will use these codes to help determine the origin of the error.

**Note:**
The Manual Reset (MR) contact does not affect the fault relay.
<table>
<thead>
<tr>
<th>°F</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance in Ohms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-320</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-310</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-300</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-290</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-280</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-270</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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Attachment 1 – RTD Temperature versus Resistance Chart (Cont.)

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**Function Check Moore Industries Safety Trip Alarm at 242-A Evaporator**

**Type**: CONTINUOUS

**Document No.**: 3-PCD-877

**Rev/Mod**: B-4

**Release Date**: 05/07/2018

**Page**: 40 of 42
Attachment 2 – Reset STA Module

i. **USE** Figure 1 – STA Menu Tree **AND**
   
   **NAVIGATE** STA until “CONFIG INPUT” is displayed.

ii. **WHEN** “CONFIG INPUT” is displayed, **PRESS SELECT**.

iii. **USING** the UP and DOWN buttons, **LOCATE** “RESET FAULT” **AND**
   
   **PRESS SELECT**.

iv. **USING** the UP and DOWN buttons, **LOCATE** “RESET YES” **AND**
   
   **PRESS SELECT**.
Signature Sheet

Participating personnel enter their printed name, signature, and initials below.

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