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Data Sheet 1 - A-Train

Data Sheet 2 - B-Train

Comment Page

Functional Test Signature Sheet
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for functionally checking the Primary Exhaust Stack CAM Interlock System and associated alarms in 241-AN Farm. This procedure proves the functionality of the fan shutdown relay for all interlocks.

1.2 Scope

1.2.1 This procedure covers functionally testing 241-AN Farm Primary Exhaust Stack CAM alarming and interlock functions.

1.2.2 This procedure is universal to both A-Train and B-Train in 241-AN Farm. However, only one exhaust train can be covered by this procedure at a time.

1.2.3 With the exhaust fan (A-Train or B-Train) running, a radioactive source will be introduced to the CAM, verifying alarms activate, and CAM interlock activated on HMI.

1.2.4 A CAM power and detector failure will be simulated and the alarm relay checked for proper response.

2.0 INFORMATION

2.1 General Information

2.1.1 This procedure proves functionality of fan shutdown which is associated with all exhauster fan interlocks.

2.1.2 During performance of this test, any step, group of steps or data entry that is not applicable shall be identified by "N/A," and an explanation that is initialed and dated shall be recorded in comment section on Data Sheet.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - Failure to use the extension handle/rod when handling the gamma source will result in excessive radiation exposure.

3.1.1 Exhaust fans may shut down during this test which may cause a tank pressurization to occur and alarm to sound.

3.1.2 If during performance of this procedure any of the following conditions are found immediately stop work, place equipment in a safe condition, notify FWS and proceed as directed.

- Any equipment malfunction which could prevent fulfillment of its functional requirements
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

3.2 Radiation and Contamination Control

3.2.1 Work in Radiological Areas will be performed using a Radiation Work Permit following review by Radiological Control per TFC-ESHQ-RP_RWP-C-03, ALARA Work Planning.
3.3 Environmental Compliance

3.3.1 Tank Farm ventilation systems and exhaust monitoring systems are regulated under Washington State Administrative Code (WAC) Chapters 173-400, 173-401, 173-460 and 246-247 and applicable Notices of Construction (NOC) issued to ensure compliance with these regulations. To ensure reporting requirements are met, all planned and unplanned outages of Tank Farm ventilation equipment and exhaust monitoring systems, including portable exhausters, must be immediately reported to Environmental Compliance per the Environmental On-Call List, in compliance with TFC-ESHQ-ENV-FS_C-01.

3.3.2 Exhauster and stack monitoring record sampler equipment outage, both planned and unplanned, must be reported to Environmental per the Environmental On-Call List.

3.3.3 If functional testing of the CAM fails, Environmental shall be notified per Environmental On-Call List.

3.4 Limits

HNF-SD-WM-TSR-006, Tank Farm Technical Safety Requirements
- LCO 3.1, DST Primary Tank Ventilation Systems
- LCO 3.4, DST Induced Gas Release Event Flammable Gas Control
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:
- Beta-Gamma Radiation Source capable of generating $\geq 10,000$ counts per minute in the continuous air monitor
- Two way radio or cellular phone required for personnel inside the farm
- Password for CAM "Air Monitor System-4 (AMS-4) Beta/Gamma Particle Monitor.,” from Shift Manager or FWS
- Instrument Technician access level password for exhauster HMI, from Shift Manager
- HP access level password for exhauster HMI, from Shift Manager
- CAM Bypass key, from Shift Manager
- Vacuum grease, rags.

4.2 Performance Documents

The following procedures and documents may be needed to perform this procedure:
- TF-OPS-005, DST Daily CAM and Record Sampler Inspections
- TO-060-106, Operate 241-AN Primary Ventilation System (VTP)
- H-14-040101, Sht 8, AN241-VTP (W-314) Exhauster Train “A” Loop Diagram
- H-14-040101, Sht 24, AN241-VTP (W-314) Exhauster Train “B” Loop Diagram
- H-14-105566, Sheets 1-3, AN241 Exhauster Train “A” Effluent Monitoring Systems
- H-14-105580, Sheets 1-3, AN241 Exhauster Train “B” Effluent Monitoring Systems
- H-14-020101, P&ID 241-AN HVAC Exhauster System
- DOE-0336, Hanford Site Lockout/Tagout Procedure.
4.3 **Field Preparation**

**NOTE** - Steps in this section may be performed in any logical order.

4.3.1 **IF** equipment is found out of service, **IMMEDIATELY NOTIFY** Shift Manager and FWS.

4.3.2 Shift Manager **VERIFY** that there are no ongoing transfers and no waste disturbing activities that requires this system to be OPERATIONAL and in operation.

_________________________ / ______________________ / ________________________________
Signature Print (First & Last) Date
Shift Manager

4.3.3 **ENSURE** primary ventilation system is in service.

4.3.4 **VERIFY** Shift Manager has notified Environmental per Section 3.3 that exhaust stack CAM functional testing will be conducted. *(LCO 3.4)*

_________________________ / ______________________ / ________________________________
Signature Print (First & Last) Date
Shift Manager

4.3.5 **REQUEST** Shift Manager **DESIGNATE** exhaust fan to be operating upon completion of this procedure.

Exhaust Fan AN241-VTP-EF-009 (A-Train) _____

Exhaust Fan AN241-VTP-EF-010 (B-Train) _____
5.0 PROCEDURE

NOTE - Exhaust fan(s) may shut down unexpectedly and may be restarted per operating procedure TO-060-106, to facilitate completion of this procedure.

- If any alarm fails, it is permissible to continue with the procedure and make a note in the comment section of data sheet.

- Alarms at the following locations may be re-acknowledged:
  - HMI
  - Continuous air monitor.

- The use of ABB software is approved by Engineering to monitor DCS alarm logic.

- Failed functional tests require documenting results on work record and data sheet per TFC-OPS-MAINT-C-01, Tank Farm Contractor Work Control procedure.

5.1 Initial Setpoints and Alarms

5.1.1 NOTIFY Shift Manager to initiate time monitoring per LCO 3.1.A. (LCO 3.1)

5.1.2 LOGIN at HMI with Technician User Name and access level password.

5.1.3 IF any alarm fails during testing, RECORD failure in comment section of data sheet and continue with the procedure.

Verify Calibration

5.1.4 CHECK CAM calibration data.

5.1.5 IF CAM is within calibration, GO TO Step 5.1.7.

5.1.6 IF CAM is not within calibration, RECORD the following on the Comment Page AND

  PROCEED as directed by Shift Manager.
  - Shift Manager notification of condition
  - All directions received from Shift Manager
  - All actions taken.

5.1.7 RECORD serial number and calibration due date of CAM being tested on either Data Sheet 1 or Data Sheet 2.
5.1 Initial Setpoints and Alarms (Cont.)

Verify Alarm Setpoints

5.1.8 PRESS number [5] key on CAM.

5.1.9 RECORD As-Found "SLOW ALARM SETPOINT" on either Data Sheet 1 or Data Sheet 2.

5.1.10 IF As-Found slow alarm setpoint is equal to 300 DPM/ft$^3$, PROCEED to Step 5.1.13.

5.1.11 RESET slow alarm setpoint to 300 DPM/ft$^3$ using the following menus:

"PASSWORD",

"ALARM PARAMETERS",

"SLOW ALARM INTERVAL",

"SLOW ALARM SETPOINT".

5.1.12 PRESS number [5] key on CAM.

5.1.13 RECORD As-Left slow alarm setpoint on either Data Sheet 1 or Data Sheet 2.

5.1.14 PRESS number [6] key on CAM.

5.1.15 RECORD "FAST ALARM SETPOINT" on either Data Sheet 1 or Data Sheet 2.

5.1.16 IF As-Found fast alarm setpoint is equal to 7,000 DPM/ft$^3$, PROCEED to Step 5.1.19.

5.1.17 RESET fast alarm setpoint to 7,000 DPM/ft$^3$ using the following menus:

"PASSWORD",

"ALARM PARAMETERS",

"FAST ALARM INTERVAL",

"FAST ALARM SETPOINT".
5.1 Initial Setpoints and Alarms (Cont.)

5.1.18 PRESS number [6] key on CAM.

5.1.19 RECORD As-Left fast alarm setpoint on either Data Sheet 1 or Data Sheet 2.

5.1.20 PRESS number [7] key on CAM.

5.1.21 RECORD As-Found "BETA ALARM SETPOINT" (Beta Net Count Rate) on either Data Sheet 1 or Data Sheet 2.

5.1.22 IF Beta Net Count Rate setpoint value (As-Found) is equal to 3,000 counts per minute, PROCEED to Step 5.1.27.

5.1.23 IF Beta Net Count Rate setpoint value (As-Found) is less than 10,000 counts per minute, PROCEED to Step 5.1.25.

5.1.24 IF Beta Net Count Rate setpoint value (As-Found) is greater than 10,000 counts per minute, RECORD the following on the Comment Page AND PROCEED as directed by Shift Manager.
   • Shift Manager notification of condition
   • All directions received from Shift Manager
   • All actions taken.

5.1.25 RESET setpoint to 3,000 counts per minute using the following menus:
   • "PASSWORD",
   • "ALARM PARAMETERS",
   • "NET ALARM INTERVAL",
   • "NET ALARM SETPOINT".

5.1.26 PRESS number [7] key on the continuous air monitor's keypad.

5.1.27 RECORD As-Left "BETA ALARM SETPOINT" (Beta Net Count Rate) on the either Data Sheet 1 or Data Sheet 2.

5.1.28 CHECK alarm/status indicators are as listed in "Initial Conditions" line of either Data Sheet 1 or Data Sheet 2.

5.1.29 IF any alarm/status indicators are not as listed, RESET indicator/alarm.

5.1.29.1 IF alarm/status indicators or panel alarm lights still are not as listed, NOTIFY FWS.
5.2 CAM Detector Failure

NOTE - Remainder of test may shut down fan several times during performance.

5.2.1 INITIATE failure of CAM detectors by adjusting Beta high voltage of beta detector to zero using the following menus:

"PASSWORD",

"DETECTOR PARAMETERS",

"BETA HIGH VOLTAGE".

NOTE - This value will be used in later steps to reset the voltage to its As-Found value.

5.2.1.1 RECORD As-Found Beta high voltage on either Data Sheet 1 or Data Sheet 2.

5.2.1.2 IF As-Found Beta High Voltage is not within the range of 750V to 1050V, NOTIFY FWS.

5.2.1.3 PRESS EDIT AND TYPE "0" to change voltage to zero.

5.2.1.4 PRESS ENTER on keypad to accept changed voltage.

5.2.1.5 PRESS MENU twice to return CAM to operation.

NOTE - For reference on CAM relays, Exhauster Loop diagrams are listed in Section 4.2.

5.2.2 CHECK CAM fail relay changes states.

5.2.3 CHECK status of alarms and status indicators are as listed in "Fail Test" line of either Data Sheet 1 or Data Sheet 2.

5.2.4 AFTER CAM MALFUNCTION light is lit, PRESS red "Alarm Ack" button on CAM to clear audible alarm.
5.2 CAM Detector Failure (Cont.)

5.2.5 RETURN CAM Beta high voltage to recorded As-Found value using the following menus:

"PASSWORD",

"DETECTOR PARAMETERS",

"BETA HIGH VOLTAGE".

5.2.5.1 PRESS EDIT AND TYPE in recorded As-Found value from Step 5.2.1.1.

5.2.5.2 RECORD As-Left Beta high voltage on either Data Sheet 1 or Data Sheet 2.

5.2.5.3 PRESS ENTER to accept changed voltage.

5.2.5.4 PRESS MENU twice to return CAM to operation.

5.2.6 AFTER green “READY” light on CAM is lit ACKNOWLEDGE all alarms.

NOTE - Operator access level is needed for fan restart.

5.2.7 IF fan shuts down, RESTART fan per TO-060-106 AND CONTINUE test.

5.2.8 CHECK alarm/status indicators are as listed in "Reset 1" line of either Data Sheet 1 or Data Sheet 2.

5.2.9 IF any alarm/status indicators are not as listed RESET indicator/alarm.

5.2.9.1 IF alarm/status indicators or panel alarm lights still are not as listed, NOTIFY FWS.

5.2.10 INITIAL / DATE in last column of either Data Sheet 1 or Data Sheet 2 to satisfy verification steps for CAM test.
5.3 High Radiation Alarms and Interlock for Exhaust Fan

5.3.1 PREPARE for HIGH alarm status on CAM using the following menus:

"PASSWORD",

"INSTRUMENT PARAMETERS",

"GAMMA SUBTRACT FACTOR".

NOTE - This value will be used in later Steps to reset "GAMMA SUBTRACT FACTOR" to its As-Found value.

5.3.1.1 RECORD As-Found Gamma Subtract Factor value on either Data Sheet 1 or Data Sheet 2.

5.3.1.2 PRESS EDIT AND

TYPE "0" to change value to zero.

5.3.1.3 PRESS ENTER to accept changed value.

5.3.1.4 PRESS MENU twice to return CAM to operation.

5.3.2 ENSURE exhaust fan is running.

NOTE - Exhauster should be operated in CAM BY-PASS mode only when performing maintenance and/or RadCon routines.

- Running system in CAM bypass requires notification of Environmental.

5.3.3 OBTAIN permission from Shift Manager/OE to operate running exhauster in CAM Bypass Mode.

5.3.4 LOG ON to HMI that is being placed in CAM Bypass.

5.3.5 INSERT AND TURN CAM interlock key AND

PUSH appropriate CAM Bypass button as listed below:

<table>
<thead>
<tr>
<th>Train</th>
<th>Bypass button</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>AN241-VTP-PB-554</td>
</tr>
<tr>
<td>B</td>
<td>AN241-VTP-PB-654</td>
</tr>
</tbody>
</table>

5.3.6 REMOVE CAM interlock key.
5.3 **High Radiation Alarms and Interlock for Exhaust Fan (Cont.)**

5.3.7 **NAVIGATE** to the Exhauster AMS-4 screen.

5.3.8 **CONFIRM** the “CAM Bypass Active” text is displayed.

5.3.9 **NAVIGATE** to Exhauster Stack Sampler screen.

---

**WARNING**

*Failure to use the extension handle/rod when handling the gamma source will result in excessive radiation exposure.*

---

5.3.10 **USING** an extension handle and/or rod, **PLACE AND HOLD** gamma source at in-line sample head in sample cabinet until the CAM alarms:

- RE-554A in ENCL-550  A-Train
- RE-654A in ENCL-650  B-Train.

**NOTE** - CAM green "READY" light, "MALFUNCTION" light, alarm horn and red strobe light on CAM and red flashing beacon light and bell may change states due to loss of flow and fast alarm monitoring conditions, but have no bearing on outcome of high radiation test.

- There is an approximate 60 second delay between application of the gamma source and response from the HMI.

5.3.11 **AFTER** CAM alarms, **CHECK** status of alarms and status indicators are as listed in "High Radiation" line of either Data Sheet 1 or Data Sheet 2.

5.3.12 **CHECK** the following are flashing RED:

- RAH-554 (for A-Train) or RAH-654 (for B-Train) alarm indicator
- “Clr Cond” below RAH-554 (for A-Train) or RAH-654 (for B-Train)

5.3.13 **REMOVE** gamma source from in-line sample head.

5.3.14 **PRESS** red "Alarm Ack" pushbutton on CAM.
5.3 **High Radiation Alarms and Interlock for Exhaust Fan (Cont.)**

NOTE - The RESET button has dynamic text. If the H-Hi radiation field condition still exists the text on the button will read “ClrCond” and be displayed as solid or flashing red depending on the state of the alarm. If the HiHi radiation field condition is cleared and the alarm has not been acknowledged, the text will read “AckAlm” flashing green.

5.3.15 **IF** “RESET” button is present below RAH-554 (for A-Train) or RAH-654 (for B-Train) **PERFORM** the following:

5.3.15.1 As necessary, **ACKNOWLEDGE** alarm.

5.3.15.2 **CLICK** “RESET” button.

5.3.15.3 **CLICK** on ENTER.

5.3.15.4 **CONFIRM** “RESET” button is no longer present.

5.3.16 **IF** “RESET” button is still present **CONTACT** Engineering for directions AND **DOCUMENT** all directions received on Comment Page.

5.3.17 **RESET** "GAMMA SUBTRACT FACTOR" to its previous value using the following menus:

"PASSWORD",

"INSTRUMENT PARAMETERS",

"GAMMA SUBTRACT FACTOR".

5.3.17.1 **PRESS** **EDIT** AND **TYPE** previously recorded As-Found value from either Data Sheet 1 or Data Sheet 2.

5.3.17.2 **RECORD** As-Left Gamma Subtract Factor value on either Data Sheet 1 or Data Sheet 2.

5.3.17.3 **PRESS** ENTER to accept changed value.

5.3.17.4 **PRESS** MENU twice to return CAM to operation.

5.3.18 **IF** shutdown, **RESTART** fan under test per operating procedure TO-060-106.
5.3 High Radiation Alarms and Interlock for Exhaust Fan (Cont.)

5.3.19 IF shutdown, CONFIRM vacuum pump has restarted.

5.3.20 CHECK status of alarms and status indicators are as listed in "Reset 2" line of either Data Sheet 1 or Data Sheet 2.

5.3.21 IF any alarm/status indicators are not as listed RESET indicator/alarm.

5.3.21.1 IF alarm/status indicators or panel alarm lights still are not as listed, NOTIFY FWS.
5.4 Exhaust Stack CAM Power Failure

NOTE - Power must remain off for approximately one (1) minute before power restoration.

5.4.1 ENSURE CAM is still in “CAM Bypass Active” mode.

5.4.2 TURN CAM power switch to OFF.

NOTE - For reference on CAM relays, Exhauster Loop diagrams are listed in Section 4.2.

5.4.3 CHECK alarm and status indicators are as listed in "Power Off" line of either Data Sheet 1 or Data Sheet 2.

5.4.4 AFTER at least one minute has passed, TURN CAM Power switch to ON.

5.4.5 NAVIGATE to Exhauster Stack Sampler screen.

5.4.6 IF a CAM High Radiation alarm has occurred, PERFORM the following:

5.4.6.1 PRESS red "Alarm Ack" pushbutton on CAM.

NOTE - The REST button has dynamic text. If the HiHi radiation field condition still exists the text on the button will read “ClrCond” and be displayed as solid or flashing red depending on the state of the alarm. If the HiHi radiation field condition is cleared and the alarm has not been acknowledged, the test will read “AckAlm” flashing green.

5.4.6.2 IF “RESET” button is present below RAH-554 (for A-Train) or RAH-654 (for B-Train) PERFORM the following:

a. As necessary ACKNOWLEDGE alarm.

b. CLICK “RESET” button.

c. CLICK on ENTER.

d. CONFIRM “RESET” button is no longer present.

5.4.6.3 IF “RESET” button is still present CONTACT Engineering for directions AND DOCUMENT all directions received on Comment Page.
5.4 Exhaust Stack CAM Power Failure (Cont.)

Take CAM Out of Bypass Mode

5.4.7 IF not logged in, LOG onto any HMI that interfaces with exhauster to be taken out of CAM Bypass mode.

5.4.8 GO TO appropriate stack monitor screen.

5.4.9 CLICK on AMS-4 button.
5.4 Exhaust Stack CAM Power Failure (Cont.)

NOTE - The “CAM Bypass Active” message will flash on the HMI screen when in the Bypass mode.

5.4.10 CLICK on ANA-HS-554 or ANB-HS-654 to open the object faceplate.

5.4.11 EXPAND the fan faceplate by selecting the three button bar.

5.4.12 SELECT Alarm/Event tab.

5.4.13 SELECT Reset button in “Diff” group box.

5.4.13.1 CLICK on ENTER.

5.4.14 CONFIRM the “CAM Bypass Inactive” text is displayed.

5.4.15 NOTIFY Shift Manager/OE exhauster has been removed from CAM Bypass mode.

NOTE - Operator access level is needed for fan restart.

5.4.16 IF fan shuts down, RESTART fan per procedure TO-060-106 AND CONTINUE test.

5.4.17 AFTER “READY” green lit on CAM is lit, GO TO HMI alarms page (F5).

5.4.18 ACKNOWLEDGE all alarms.

5.4.19 CHECK alarm and status indicators are as listed in “Reset 3” line of either Data Sheet 1 or Data Sheet 2.

5.4.20 INITIAL / DATE in last column of either Data Sheet 1 or Data Sheet 2 to satisfy verification steps.

5.4.21 IF any alarm/status indicators are not as listed, RESET indicator/alarm.

5.4.21.1 IF alarm/status indicators or panel alarm lights still are not as listed, NOTIFY FWS.

5.4.22 LOGOUT at HMI.
5.5 Restoration

5.5.1 ENSURE exhaust fan specified by Shift Manager in Step 4.3.5 or as later directed by Shift Manager is operating per operating procedure TO-060-106.

5.5.2 VERIFY Exhaust Stack Radiation Monitor components have been restored to pre-test configuration or as directed by Shift Manager and all exceptions recorded on Comment Page.

____________________________________ / ___________________________ / ___________________________
Signature                  Print (First & Last)                  Date

Shift Manager /OE

5.5.3 FWS INFORM responsible Shift Manager status of test.

5.5.4 IF the CAM passed the test, NOTIFY Shift Manager to stop time monitoring. (LCO 3.1)

5.5.5 REPORT all discrepancies to OE immediately upon completion of this procedure AND

RECORD in comment section of Data Sheet.

5.5.6 CONFIRM Shift Manager has notified Health Physics organization TF-OPS-005 must be performed on tested primary ventilation system before system can be officially returned to OPERATIONAL status.

5.6 Acceptance Criteria

5.6.1 RETURN this procedure to OE for completion of the review Section 5.7.

5.7 Review

5.7.1 Engineer shall REVIEW AND EVALUATE test data for acceptability. Any deficiencies and actions taken shall be recorded on Comment Page.
5.8 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.
# AN Tank Farm VTP Stack CAM Interlock Functional Check

## Data Sheet 1 - A-Train

<table>
<thead>
<tr>
<th>Serial Number: __________________</th>
<th>Calibration Due Date: __________________</th>
<th>(AC) Acceptance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>As-Found</td>
<td>Desired Value</td>
<td>As-Left</td>
</tr>
<tr>
<td>Initial Setpoints:</td>
<td>Slow alarm setpoint (DPM/ft³)</td>
<td>300 (299-301) DPM/ft³</td>
</tr>
<tr>
<td>Fast alarm setpoint (DPM/ft³)</td>
<td>7000 (6999-7001) DPM/ft³</td>
<td></td>
</tr>
<tr>
<td>Beta alarm setpoint (DPM/ft³)</td>
<td>3000 (2999-3001) DPM/ft³</td>
<td></td>
</tr>
</tbody>
</table>

### Test Steps

<table>
<thead>
<tr>
<th>Test Steps</th>
<th>Continuous Air Monitor (CAM)</th>
<th>A-Train HMI</th>
<th>Initial and Date (AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“READY” Green Light (✓)</td>
<td>“MAL-FUNCTION” Amber Light (✓)</td>
<td>“Audible Alarm” (✓)</td>
</tr>
<tr>
<td>Initial Condition</td>
<td>Lit</td>
<td>Not Lit</td>
<td>Silent</td>
</tr>
<tr>
<td>Fail Test</td>
<td>Not Lit</td>
<td>Lit</td>
<td>Sounding/ Sounded</td>
</tr>
<tr>
<td>Reset 1</td>
<td>Lit</td>
<td>Not Lit</td>
<td>Silent</td>
</tr>
<tr>
<td>High Radiation</td>
<td>Lit</td>
<td>Not Lit</td>
<td>Sounding/ Sounded</td>
</tr>
<tr>
<td>Reset 2</td>
<td>Lit</td>
<td>Not Lit</td>
<td>Silent</td>
</tr>
<tr>
<td>Power Off</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Reset 3</td>
<td>Lit</td>
<td>Not Lit</td>
<td>Silent</td>
</tr>
</tbody>
</table>

### CAM Detector Failure:
- Beta High Voltage: 
- High Radiation: 
  - Gamma Subtract Factor: 
  - Source Number: 

User Sign/Print (First & Last) /Date

---

**Type**: CONTINUOUS  
**Document No.:** 6-RM-866  
**Rev/Mod**: C-1  
**Release Date**: 11/30/2017  
**Page**: 22 of 25
### Data Sheet 2 - B-Train

<table>
<thead>
<tr>
<th>Test Steps</th>
<th>Continuous Air Monitor (CAM)</th>
<th>B-Train HMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;READY&quot; Green Light (✓)</td>
<td>&quot;MAL-FUNCTION&quot; Amber Light (✓)</td>
</tr>
<tr>
<td>Initial Condition</td>
<td>Lit</td>
<td>Not Lit</td>
</tr>
<tr>
<td>Fail Test</td>
<td>Not Lit</td>
<td>Lit</td>
</tr>
<tr>
<td>Reset 1</td>
<td>Lit</td>
<td>Not Lit</td>
</tr>
<tr>
<td>High Radiation</td>
<td>Lit</td>
<td>Not Lit</td>
</tr>
<tr>
<td>Reset 2</td>
<td>Lit</td>
<td>Not Lit</td>
</tr>
<tr>
<td>Power Off</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Reset 3</td>
<td>Lit</td>
<td>Not Lit</td>
</tr>
</tbody>
</table>

### As-Found

| CAM Detector Failure: | Source Number | Beta High Voltage | Gamma Subtract Factor: |

- Beta High Voltage: ________
- Gamma Subtract Factor: ________________

- User Sign/Print (First & Last) /Date
Comment Page

Record Any Comments Encountered During Performance of the Test Below.

<table>
<thead>
<tr>
<th>Work Package No.:</th>
<th>Date:</th>
</tr>
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<tbody>
<tr>
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ENVIRONMENTAL RECORD

Signature / Print (First & Last) / Date
## Functional Test Signature Sheet

All persons participating in the performance of this test shall enter their printed name, signature and initials below.

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<tr>
<th>Names (Printed)</th>
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