TSR Compliance

Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Tank Farm Alarm Response Procedure

USQ # TF-17-0030-S, Rev. 4

CHANGE HISTORY (≤ LAST 5 REV-MODS)

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<th>Summary of Changes</th>
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<td>A-5</td>
<td>10/04/2018</td>
<td>Operations/Engineering request SCR Update</td>
<td>Modified setpoints on the following alarms: HEPA Filter 1, Differential Pressure, (Low Low) HEPA Filter 2, Differential Pressure, (Low Low) HEPA Filter 1, Differential Pressure, (High High) HEPA Filter 2, Differential Pressure, (High High) Actual Volumetric Flow Rate, (Low Low) Actual Volumetric Flow Rate, (High High) CAM Sample Flow, (Low Low) CAM Sample Flow, (High) Record Sample Flow, (Low Low) Addition of 3 old alarms back into the procedure. - Exhauster Inlet Valve or Exhauster Outlet Valve (Message: Object Error) RED (TSR) - De-Entrainer Not Only One Set Opened (Message: De-Entrainer valves misaligned) RED (ES) - De-Ent Communication Failure (Message: Alarm) RED (ES)</td>
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<td>Replaced “Orange” with “Yellow” on all alarms. Added alarms HEPA Filter 1 Differential Pressure (High High), HEPA Filter 2 Differential Pressure (High High) back into procedure</td>
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<td>Operations request</td>
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RECORDS

No records are generated during the performance of this procedure.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-RT-654. **Setpoint:** 300 dpm/ft³ Slow

**Tag:** APB-RAHH-654 **7000 dpm/ft³ Fast**

**Message:** Alarm **3000 CPM**

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Continuous Air Monitor (CAM) Rad alarm.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Active primary exhaust train shuts down (if not in CAM bypass).
2. Red beacon (AP241-VTP-YA-650) for operating train illuminates.
3. Vacuum pumps shut down.

**Immediate Actions:**

[1] **EVACUATE** personnel from AP Farm to a protected or upwind area.

[2] **ENSURE** primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.

[2.1] **IF** exhauster has not shut down, **STOP** exhauster by initiating a shutdown per TO-060-420.

[3] **NOTIFY** Shift Manager of alarms and actions AND **REQUEST** Shift Manager respond per TF-AOP-021.


[5] **IF** directed by Shift Manager/OE, **RESTART** Primary ventilation per TO-060-420.

**Supplemental Actions:**

[6] **SILENCE** CAM buzzer on TFMCS.

[7] **CONTINUE** to monitor system parameters AND **NOTIFY** Shift Manager of changing indications.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Tag: APB-RAHH-654
Message: Alarm

Setpoint: 300 dpm/ft³ Slow
7000 dpm/ft³ Fast
3000 CPM

Possible Causes:
1. High radiation in primary exhaust air stream.
2. Setpoint on CAM is set too low and/or background radiation spikes have gone above the CAM alarm setpoint.
3. Breakthrough of primary and secondary HEPA filters.

References:
Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-PDIT-457.
Tag: APB-PDI-457
Message: Low Low

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)
Alarm Description: Differential pressure across HEPA #1 is too low for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.
2. Red beacon (AP241-VTP-YA-650) for operating train illuminates.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:

Possible Causes:
1. The first stage HEPA filter has had a gross breakthrough due to a spray leak, high temperature, or high pressure condition.
2. Transmitter failure.

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Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-PDIT-457.
Tag: APB-PDI-457
Message: Low Low

Setpoint: ≤ 0.2 in. W.C.

References:
- Drawings: H-14-020103
- Documents: TO-060-420, Operate AP-241 Primary Ventilation System
  TF-AOP-021, Response to Tank Farm Ventilation Upset
  RPP-16922, Environmental Specification Requirements
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

YELLOW

HEPA Filter 2
Differential Pressure (Low Low)

Panel: All TFMCS Stations
Tag: APB-PDI-458
Message: Low Low

Setpoint: ≤ 0.2 in. W.C.


Alarm Description: Differential pressure across HEPA #2 is too low for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.
2. Red beacon (AP241-VTP-YA-650) for operating train illuminates.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

YELLOW

HEPA Filter 2
Differential Pressure
(Low Low)

(Continued)

Panel: All TFMCS Stations
Tag: APB-PDI-458
Message: Low Low

Possible Causes:

1. The second stage HEPA filter has had a gross breakthrough due to a spray leak, high temperature, or high pressure condition.
2. Transmitter failure.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
RPP-16922, Environmental Specification Requirements
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations

Source: Inlet - AP241-VTP-MOV-452,
Outlet - AP241-VTP-MOV-461.

Tag: Inlet - APB-MOV-452
Outlet - APB-MOV-461

Message: Object Error

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Inlet or Outlet MOV out of position required for operation. Valve is not communicating

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures

Automatic Actions:

None

Immediate Actions:

[1] EVACUATE personnel from AP Farm to a protected or upwind area.

[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.

[2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.


[4] IF directed by Shift Manager, STOP waste disturbing activities to AP Farm.


Supplemental Actions:


[7] INITIATE work order to troubleshoot and repair or replace degraded components.

Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations


Tag: Inlet - APB-MOV-452
Outlet - APB-MOV-461

Message: Object Error

Setpoint: N/A

Possible Causes:
1. Defective/out of calibration valve position transmitter.
2. Equipment Failure.
3. Equipment Disconnected.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
TF-AOP-021, Response to Tank Farm Ventilation Upset.
RPP-16922, Environmental Specification Requirements.
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**YELLOW**

**Tank AP# Pressure (High High)**

**Panel:** All TFMCS Stations (# =Tank Number)

**Source:** AP101-WST-PDIT-111
AP102-WST-PDIT-112
AP103-WST-PDIT-113
AP104-WST-PDIT-114
AP105-WST-PDIT-115
AP106-WST-PDIT-116
AP107-WST-PDIT-117
AP108-WST-PDIT-118

**Tag:** AP101-PDIT-111, AP102-PDIT-112
AP103-PDIT-113, AP104-PDIT-114
AP105-PDIT-115, AP106-PDIT-116
AP107-PDIT-117, AP108-PDIT-118

**Message:** High High

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control).

**Alarm Description:** Tank vapor space pressure too high for continued operation.

**Setpoint:** ≥ -0.3 in. W.C.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

Activates audible warming alarm to notify farm occupants of pressurization.

**Immediate Actions:**

1. **EVACUATE** personnel from AP Farm to a protected or upwind area.
2. **CHECK** primary exhaust train is running.
   2.1. **IF** exhauster has shut down, **NOTIFY** Shift Manager of alarms and actions AND **REQUEST** Shift Manager respond per TF-AOP-021.
   2.1.1 **IF** directed by Shift Manager/OE, **RESTART** Primary ventilation per TO-060-420.

**Supplemental Actions:**

3. **CONTINUE** to monitor system parameters AND **NOTIFY** Shift Manager of changing indications.

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Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

YELLOW

Tank AP# Pressure
(High High)

Setpoint: ≥ -0.3 in. W.C.

Panel: All TFMCS Stations

Source: AP101-WST-PDIT-111,
AP102-WST-PDIT-112,
AP103-WST-PDIT-113,
AP104-WST-PDIT-114,
AP105-WST-PDIT-115,
AP106-WST-PDIT-116,
AP107-WST-PDIT-117,
AP108-WST-PDIT-118

Tag: AP101-PDIT-111, AP102-PDIT-112,
AP103-PDIT-113, AP104-PDIT-114,
AP105-PDIT-115, AP106-PDIT-116,
AP107-PDIT-117, AP108-PDIT-118

Message: High High

(Continued)

Possible Causes:

1. Both Primary A and B Train fans OFF.
2. Hot waste entering tank during transfer raises the pressure through evaporation (more likely with jetted transfers).
3. Dome intrusive work or open riser, open pit drain, and/or missing sealing media on pit cover block cracks/seams/penetrations, admits too much air.
4. Failure of pressure transmitter.
5. Gas release event if accompanied by level and temperature anomalies.
6. Plugged HEPA filters.
7. Failed closed exhaust damper duct valve.
8. HEPA filter(s) of active primary exhaust train plugged or saturated.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**YELLOW**

**CAM Transmitter Failure**

**Panel:** All TFMCS Stations  
**Source:** AP241-VTP-RT-654.  
**Tag:** APB-RAX-654  
**Setpoint:** N/A

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Continuous Air Monitor (CAM) indicates instrument failure.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Immediate Actions:**

1. **IF** TFMCS displays alarm “CAM Hi Hi Radiation”, **GO TO** CAM Hi-Hi Radiation alarm response.

2. **NOTIFY** Shift Manager of alarms **AND REQUEST** permission to:
   - **SWITCH** to Standby Exhauster
   - **CONTINUE** to RUN Primary Exhauster
   - **OR**
   - **SHUTDOWN** ventilation.
   - **START** OR **STOP** exhauster per TO-060-420.

3. **REQUEST** Shift Manager respond per TF-AOP-021.

**Supplemental Actions:**

4. **NOTIFY** Environmental on-call per TF-REC-001

5. **REQUEST** HPT to investigate alarm per TF-OPS-005

6. **CONTINUE** to monitor system parameters **AND**  
   **NOTIFY** Shift Manager of changing indications.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**YELLOW**

**CAM Transmitter Failure**

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-RT-654.

**Tag:** APB-RAX-654

**Message:** Alarm  

**Setpoint:** N/A

(Continued)

**Possible Causes:**

1. CAM failure.
2. Sampling head(s) disconnected.
3. Instrument malfunction.
4. Loss of power to CAM.
5. Setpoint out of adjustment.

**References:**

**Drawings:**  H-14-020103

**Documents:**  TO-060-420, Operate AP-241Primary Ventilation System  
TF-OPS-005, DST Daily CAM and Record Air Sampler Inspections  
TF-AOP-021, Response to Tank Farm Ventilation Upset  
RPP-16922, Environmental Specification Requirements  
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: (See Table 2)
Tag: N/A Setpoint: N/A
Message: (See Table 2)
System Alarms (See Table 2)

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)
Alarm Description: Various System Alarms

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
None

Immediate Actions:
[2] RESPOND to alarm per Table 2.
[3] IF alarm clears, EXIT this ARP.

Supplemental Actions:
[5] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:
1. Failed equipment of the exhauster system.
2. Loss of power to servers, controllers, power supplies etc.
3. Maintenance and PM.

References:
Drawings: None
Documents: HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: ABB Hardware or Software Alarm
Tag: N/A
Message: Varies
Setpoint: N/A
Alarm Class: Equipment Status (ES)
Alarm Description: An exhauster TFMCS alarm on the Hardware Alarm screen that is not addressed by any other alarm already in this procedure.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- Exhauster TFMCS alarms not addressed in this ARP may occur on the System Hardware Alarm screen which are native to the ABB System (description cannot be changed) and will require evaluation by Engineering.

Automatic Actions:
None

Immediate Actions:
[2] IF alarm clears, EXIT this ARP.
[3] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager notify Engineering for assistance to evaluate and troubleshoot the malfunction.

Supplemental Actions:
[4] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:
1. An event has occurred that has created a degraded condition that must be evaluated.

References:
Drawings: None
Documents: None
HEPA Filter 1 Differential Pressure  
(High High)

Panel: All TFMCS Stations
Source: AP241-VTP-PDIT-457.
Tag: APB-PDI-457  
Setpoint: > 5.8 in. W.C.
Message: High High

Alarm Description: Differential pressure across HEPA #1 is too high for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
[3] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.
[5] STOP waste disturbing activities to AP Farm.

Supplemental Actions:

Possible Causes:
2. The first stage HEPA filter has become plugged. An examination of historical data should show a gradual increase in the dP over time.
3. The first stage HEPA filter has become saturated with condensation. This is likely only if there is a problem with the heater.
4. Transmitter failure.

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Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-PDIT-457.
Tag: APB-PDI-457
Message: High High

Setpoint: > 5.8 in. W.C.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
RPP-16922, Environmental Specification Requirements
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
HEPA Filter 2
Differential Pressure (High High)

Panel: All TFMCS Stations
Tag: APB-PDI-458
Message: High High
Setpoint: > 3.90 in. W.C.

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Differential pressure across HEPA #2 is too high for continued operation

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
[3] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.
[5] STOP waste disturbing activities to AP Farm.

Supplemental Actions:

Possible Causes:
2. The second stage HEPA filter has become plugged. An examination of historical data should show a gradual increase in the dP over time.
3. The second stage HEPA filter has become saturated with condensation. This is likely only if there is a problem with the heater.
4. Transmitter failure.

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Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Tag: APB-PDI-458
Message: High High

Setpoint: > 3.90 in. W.C.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
RPP-16922, Environmental Specification Requirements
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
**Respond to B-Train Alarms at 241-AP VTP Exhaust Skid**

**Skid Seal Pot Level (Low Low)**

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-LT-480.

**Tag:** APB-LI-480

**Setpoint:** ≤ 20%

**Message:** Low Low

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Exhaust train seal pot level is too low for continued operation.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Active primary exhaust train shuts down.

**Immediate Actions:**

1. EVACUATE personnel from AP Farm to a protected or upwind area.
2. ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   - [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.
3. NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.
4. STOP waste disturbing activities to AP Farm.
5. IF directed by Shift Manager/OE;
   - [5.1] REFILL seal pot per TO-060-420.
   - [5.2] RESTART Primary ventilation per TO-060-420.

**Supplemental Actions:**

6. CONTINUE to monitor system parameters AND NOTIFY Shift Manager of changing indications.
7. INITIATE work order to troubleshoot and repair or replace degraded components.

(Continued on Next Page)
Panel: All TFMCS Stations  
Source: AP241-VTP-LT-480.  
Tag: APB-LI-480  
Message: Low Low

Possible Causes:
1. Evaporation not replenished by condensation.
2. Leaks in the seal pot and/or seal pot loop.
3. Instrument failure.

References:
Drawings: H-14-020103  
Documents: OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks  
TO-060-420, Operate AP-241 Primary Ventilation System  
TF-AOP-021, Response to Tank Farm Ventilation Upset  
RPP-16922, Environmental Specification Requirements  
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LT-480.
Tag: APB-LI-480
Message: High High

Skid Seal Pot Level (High High)

Setpoint: ≥ 96%

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Exhaust train seal pot level is too high for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:
[8] INITIATE work order to troubleshoot and repair or replace degraded components.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LT-480.
Tag: APB-LI-480
Message: High High
Setpoint: ≥ 96%

Possible Causes:
1. Seal pot system valves not aligned properly.
2. Obstruction or ice in seal pot piping.
3. Overfilled seal pot.
4. Instrument loop failure.
5. Seal pot level transmitter out of calibration.

References:
Drawings: H-14-020103
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

RED
Remote Immediate Stop

Panel: All TFMCS Stations
Source: AP241-VTP-HS-451,
Tag: APB-BKR-451_PCC
Message: Alarm

Setpoint: N/A

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: TFMCS immediate stop has been activated.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:

NOTE - This alarm will not be displayed on affected exhaust train due to immediate power loss to train DCS upon alarm activation. This alarm will be visible on TFMCS HMI’s or TFMCS HMI of other primary exhauster, if it is powered up.

[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
[2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:

[8] INITIATE work order to troubleshoot and repair or replace degraded components.

(Continued on Next Page)
Panel: All TFMCS Stations
Source: AP241-VTP-HS-451,
Tag: APB-BKR-451_PCC
Message: Alarm

Remote Immediate Stop

Setpoint: N/A

Possible Causes:

1. Immediate stop button on TFMCS pushed.
2. Immediate stop button on disconnect switch box pushed.

References:

Drawings: H-14-030101, Sht. 3
Documents: TO-060-420, Operate AP-241Primary Ventilation System
            TF-AOP-021, Response to Tank Farm Ventilation Upset
            RPP-16922, Environmental Specification Requirements
            HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements.
**Respond to B-Train Alarms at 241-AP VTP Exhaust Skid**

**Panel:** All TFMCS Stations  
**Source:** AP241-VTP-FE-651  
**Tag:** APB-FI-651  
**Message:** Low Low  

**Setpoint:** ≤ 700 ACFM+  
**Actual Volumetric Flow Rate (Low Low)**  

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)  

**Alarm Description:** Airflow through exhaust stack too low for continued operation.

---

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

---

**Automatic Actions:**

1. Active primary exhaust train shuts down.

---

**Immediate Actions:**

9. **EVACUATE** personnel from AP Farm to a protected or upwind area.
10. **ENSURE** primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   
   [10.1] **IF** exhauster has not shut down, **STOP** exhauster by initiating a shutdown per TO-060-420.

11. **NOTIFY** Shift Manager of alarms and actions AND **REQUEST** Shift Manager respond per TF-AOP-021.

12. **STOP** waste disturbing activities to AP Farm.

13. **CHECK** stack flow setpoints and adjust as necessary per TO-060-420.

14. **NOTIFY** Shift Manager/OE of actions and findings.

15. **IF** directed by Shift Manager/OE, **PERFORM** the following;
   
   [15.1] **RESTART** Primary ventilation per TO-060-420.
   
   [15.2] **CHECK** both inlet and outlet MOVs fully open during startup.
     
     • Inlet - AP241-VTP-MOV-452 and Outlet - AP241-VTP-MOV-461.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-FE-651
Tag: APB-FI-651
Message: Low Low

**Actual Volumetric Flow Rate**

Setpoint: \( \leq 700 \) ACFM

(Continued)

Supplemental Actions:

1. **CONTINUE** to monitor system parameters AND **NOTIFY** Shift Manager of changing indications.
2. **INITIATE** work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. Stack flow setpoints set too low.
2. Incorrect system valving.
3. Failed inlet or outlet MOV.
4. VFD failure.
5. Transmitter failure.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-FE-651.
Tag: APB-FI-651
Message: High High

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Airflow through exhaust stack too high for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:
[6] CHECK stack flow setpoints and adjust as necessary per TO-060-420.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-FE-651.
Tag: APB-FI-651
Message: High High

Setpoint: ≥ 2940 ACFM

Actual Volumetric Flow Rate (High High)

Possible Causes:
1. Stack flow setpoints set too high.
2. VFD failure.
3. Transmitter failure.

References:
Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
(# = Tank Number)

Source: AP101-WST-PDIT-111,
AP102-WST-PDIT-112,
AP103-WST-PDIT-113,
AP104-WST-PDIT-114,
AP105-WST-PDIT-115,
AP106-WST-PDIT-116,
AP107-WST-PDIT-117,
AP108-WST-PDIT-118
Tag: AP101-PDIT-111, AP102-PDIT-112,
AP103-PDIT-113, AP104-PDIT-114,
AP105-PDIT-115, AP106-PDIT-116,
AP107-PDIT-117, AP108-PDIT-118

Message: Low Low

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Tank vapor space pressure too low for continued operation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:

[1] IF active exhaust train shuts down, EVACUATE personnel from AP Farm to a protected or upwind area.

[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.

[2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

[2.2] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.

[2.3] STOP waste disturbing activities to AP Farm.

[3] CHECK TFMCS alarm display for other tank Low Low pressure alarms active.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations


Tank AP# Pressure

<table>
<thead>
<tr>
<th>RED</th>
<th>Setpoint: ≤ -5.5 in. W.C.</th>
</tr>
</thead>
</table>

Message: Low Low

(Continued)

Immediate Actions (Cont.):

[4] CHECK history of all tank pressure transmitters on TFMCS:

[4.1] CLICK on tank pressure readings on TFMCS screen “AP Tank Farm” to display pressure history graph.

NOTE - During a high vacuum condition vacuum breaker should be open and should return to CLOSED position when the primary exhauster shuts down.

[5] CHECK the air inlets for obstructions AND REMOVE as necessary.

[6] CHECK if vacuum breaker is stuck CLOSED.

Supplemental Actions:

[7] IF directed by Shift Manager/OE, PERFORM the following:

[7.1] OPEN any isolated inlet station valves.

[7.2] RESTART primary exhaust system per TO-060-420.

[7.3] IF the above steps do not restore the tank pressure to the proper range, NOTIFY Shift Manager/OE.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

RED

Panel: All TFMCS Stations


Tank AP# Pressure

Setpoint: ≤ -5.5 in. W.C.

Message: Low Low

Supplemental Actions (Cont.):
[8] CONTINUE to monitor system parameters AND NOTIFY Shift Manager of changing indications.
[9] REPORT actions and findings to Shift Manager/OE.
[10] IF unable to correct the alarm condition, REQUEST the Shift Manager/OE to arrange for Vent and Balance to make the necessary adjustments.

Possible Causes:
1. Obstruction of air inlet (i.e., foreign object across inlet screen, frost/ice buildup on inlet, filter dirty).
2. Primary exhaust fan remained ON after backup fan started, with or without an open riser.
3. Vacuum or flow rates out of adjustment.
4. Vacuum breaker is stuck closed.

References:
Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations


**Setpoint:** ≤ -5.7 in. W.C.

**Message:** Low Low

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Low low pressure failed to stop exhauster; Runaway exhauster.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Skid breaker shunt trip is activated causing power to be removed from skid which in turn causes active primary exhaust train to shut down only from narrow band PDITs.

**Immediate Actions:**

[1] **EVACUATE** personnel from AP Farm to a protected or upwind area.

[2] **ENSURE** primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.

   [2.1] **IF** exhauster has not shut down, **STOP** exhauster by initiating a shutdown per TO-060-420.

   [2.2] **NOTIFY** Shift Manager of alarms and actions AND **REQUEST** Shift Manager respond per TF-AOP-021.

[3] **STOP** waste disturbing activities to AP Farm.

[4] **CHECK** TFMCS alarm display for other tank Low Low Low pressure alarms active.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations


Tank AP# Pressure (Low Low Low)

Setpoint: \( \leq -5.7 \text{ in. W.C.} \)

Message: Low Low Low

(Continued)

Immediate Actions (Cont.):

[5] CHECK history of all tank pressure transmitters on TFMCS:

[5.1] CLICK on tank pressure readings on TFMCS screen “AP Tank Farm” to display pressure history graph.

NOTE - During a high vacuum condition vacuum breaker should be open and should return to CLOSED position when the primary exhauster shuts down.

[6] CHECK the air inlets for obstructions AND REMOVE as necessary.

[7] CHECK if vacuum breaker is stuck CLOSED.

Supplemental Actions:

[8] IF directed by Shift Manager/OE, PERFORM the following;


[8.2] RESTART primary exhaust system per TO-060-420.

[8.3] IF the above steps do not restore the tank pressure to the proper range, NOTIFY Shift Manager/OE.


[10] REPORT actions and findings to Shift Manager/OE.

(Continued on Next Page)
Panel: All TFMCS Stations


Message: Low Low Low

Tank AP# Pressure
(Low Low Low)

Setpoint: ≤ -5.7 in. W.C.

Supplemental Actions (Cont.)

[11] IF unable to correct the alarm condition, REQUEST the Shift Manager/OE to arrange for Vent and Balance to make the necessary adjustments.

Possible Causes:

1. Obstruction of air inlet (i.e., foreign object across inlet screen, frost/ice buildup on inlet, filter dirty).
2. Primary exhaust fan remained ON after backup fan started, with or without an open riser.
3. Vacuum or flow rates out of adjustment.
4. Vacuum breaker is stuck shut.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

CAM Sample Flow (Message: Low Low)  YELLOW (TSR)

Panel: All TFMCS Stations
Source: AP241-VTP-FCV-656.
Tag: APB-FI-656
Message: Low Low

CAM Sample Flow

Setpoint: \( \leq 1.87 \text{ SCFM} \)

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Flow control valve indicates a very low CAM sample flow rate.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

1. A Low-Low alarm on both CAM and Record Sampler will cause, the running sample pump to stop and the standby sample pump to start.

Immediate Actions:

[1] CHECK CAM sample flow rate on TFMCS.
[3] IF directed by Shift Manager/OE, CHECK CAM sample valves are aligned per applicable valving table in TO-060-420.

Supplemental Actions:


Possible Causes:

1. CAM sample system valves not aligned properly.
2. Instrument failure.
3. CAM sample pump failure.
4. Control valve failure.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

YELLOW

CAM Sample Flow (High)

Panel: All TFMCS Stations

Source: AP241-VTP-FCV-656.

Tag: APB-FI-656

Setpoint: ≥ 2.13 SCFM

Message: High

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Flow control valve indicates a high CAM sample flow rate.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

None

Immediate Actions:

1. [CHECK] CAM sample flow rate on TFMCS.
2. [REQUEST] Shift Manager to notify Health Physics Technician to investigate problem.
3. [NOTIFY] Shift Manager of findings.
4. [IF] directed by Shift Manager/OE, [CHECK] CAM sample valves are aligned per applicable valving table in TO-060-420.
5. [IF] directed by Shift Manager/OE, [SWITCH] operating exhauster train per TO-060-420.

Supplemental Actions:

6. [INITIATE] work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. Instrument failure.
2. CAM sample pump problem.
3. Control valve failure.

References:

Drawings: H-14-020103

Documents: TO-060-420, Operate AP-241 Primary Ventilation System

RPP-16922, Environmental Specification Requirements

HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations

Source: AP241-VTP-FCV-655.

Tag: APB-FI-655

Message: Low Low

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Flow control valve indicates a very low Record sample flow rate.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

1. A Low-Low alarm on both CAM and Record Sampler will cause, the running sample pump to stop and the standby sample pump to start.

Immediate Actions:

[1] CHECK Record sample flow rate on TFMCS.


[3] IF directed by Shift Manager/OE, CHECK Record Sample valves are aligned per applicable valving table in TO-060-420.


Supplemental Actions:

[5] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. Record sample system valves not aligned properly.

2. Instrument failure.

3. Record sample pump failure.

4. Control valve failure.

References:

Drawings: H-14-020103

Documents: TO-060-420, Operate AP-241Primary Ventilation System

RPP-16922, Environmental Specification Requirements

HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
**Respond to B-Train Alarms at 241-AP VTP Exhaust Skid**

**Panel:** All TFMCS Stations  
**Source:** AP241-VTP-FCV-655.  
**Tag:** APB-FI-655  
**Setpoint:** ≥ 115% Proportional Flow  
**Message:** High  

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Flow control valve indicates a high Record sample flow rate.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

None

**Immediate Actions:**

1. **CHECK** Record sample flow rate on TFMCS.  
2. **REQUEST** Shift Manager to notify Health Physics Technician to investigate problem.  
3. **NOTIFY** Shift Manager of findings.  
4. **IF** directed by Shift Manager/OE, **CHECK** Record Sample valves are aligned per applicable valving table in TO-060-420.  
5. **IF** directed by Shift Manager/OE, **SWITCH** operating exhauster train per TO-060-420.

**Supplemental Actions:**

6. **INITIATE** work order to troubleshoot and repair or replace degraded components.

**Possible Causes:**

1. Instrument failure.  
2. Sample pump problem.  
3. Control valve failure (sticking).

**References:**

- **Drawings:** H-14-020103  
- **Documents:** TO-060-420, Operate AP-241Primary Ventilation System  
  RPP-16922, Environmental Specification Requirements  
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-XA-454.
Tag: APB-XA-454
Message: N/A
Setpoint: N/A

Alarm Class: Equipment Status (ES)
Alarm Description: On a CAM, this hardware alarm activates when the buzzer sounds for any of the CAM alarms on high radiation.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- This is not an HMI alarm

Automatic Actions:
None

Immediate Actions:
[1] IF CAM Hi-Hi Rad Alarm is also activated, **RESPOND** per “CAM Hi Hi radiation” P. 4.
[2] IF CAM Transmitter Failure Alarm is also activated, **RESPOND** per “CAM Transmitter Failure”.
[4] **NOTIFY** Shift Manager/OE of actions and findings.

Supplemental Actions:
[5] **INITIATE** work order to troubleshoot and repair or replace degraded components.

Possible Causes:
1. CAM activates on high radiation.
2. CAM transmitter failure.

References:
Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-SIC-010.
Tag: APB-EF-010
Message: Object Error (OE)
Setpoint: N/A

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: This alarm indicates that the VFD has an object error.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Selected primary exhaust train fails to start or shuts down.

Immediate Actions:

[1] NOTIFY Shift Manager/OE of actions and findings.
[2] IF necessary, RESET “Drive Fault” from the VFD,

OR

RESET “Drive Fault” from the HMI as follows:
[2.1] GO TO APB-EF-010 faceplate.
[2.2] EXPAND the fan faceplate by selecting
[2.3] CLICK on “Drive Details” tab.
[2.4] CLICK on “Reset Drive Fault” button.
[2.5] CLICK on Enter
[2.6] CONFIRM “Reset Drive Fault” button is no longer present.
[2.7] IF Drive Fault was successfully reset as indicated by “Reset Drive Fault” button no longer being present, ACKNOWLEDGE the Object Error alarm AND RESET the “A/E ObjErr” as follows:
[2.7.1] GO TO APB-EF-010 faceplate.
[2.7.2] IF needed, EXPAND the fan faceplate by selecting

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations

Source: AP241-VTP-SIC-010.
Tag: APB-EF-010
Message: Object Error (OE)

Setpoint: N/A

RED
Exhauster Fan
VFD
(Object Error)

Immediate Actions (Cont.):

[2.7.3] CLICK on “A/E Obj” tab.
[2.7.4] CLICK on “RESET”.
[2.7.5] CLICK on Enter.
[2.8] IF the Drive Fault is not successfully reset, NOTIFY Shift Manager AND PROCEED as directed.


Supplemental Actions:

[4] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. VFD fault/failure.
2. Software fault.

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Glycol Header Pressure (Low Low)

Panel: All TFMCS Stations
Source: AP241-VTP-PIT-471.
Tag: APB-PI-471
Message: Low Low

Setpoint: ≤ 3.0 psi

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Glycol system pressure too low for continued operation of the glycol system.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Glycol system shuts down (Heater and pump).

Immediate Actions:
[1] CHECK glycol level AND
   IF level is low, REFILL per TO-060-420.
[2] CHECK valve line-up per TO-060-420 is correct.
[6] IF Glycol Header Pressure (Low Low) alarm is still active AND
   IF directed by Shift Manager/OE, SWITCH primary exhaust trains per TO-060-420.

Supplemental Actions:
[7] IF valve line-up is correct and Low Low alarm is still active, INITIATE work order to troubleshoot and repair or replace degraded components as applicable.

Possible Causes:
1. Incorrect valve line-up.
2. Failing glycol pump.
3. Leaking glycol system components.
4. Low glycol tank level.
5. Faulty transmitter calibration.
6. Transmitter failure.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-PIT-471.
Tag: APB-PI-471
Message: Low Low

YELLOW

Glycol Header Pressure
(Low Low)

Setpoint: \( \leq 3.0 \text{ psi} \)

(Continued)

References:

Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-PIT-471.

**Tag:** APB-PI-471  
**Message:** High High  
**Setpoint:** \( \geq 20.0 \text{ psi} \)

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Glycol system pressure too high for continued operation of the glycol system.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Glycol system shuts down (Heater and pump).

**Immediate Actions:**

1. **CHECK** valve line-up per TO-060-420 is correct.
2. **RESTART** glycol system per TO-060-420.
3. **NOTIFY** Shift Manager/OE of actions and findings.
4. **IF** Glycol Header Pressure (High High) pressure alarm is still active **AND**  
   **IF** directed by Shift Manager/OE, **SWITCH** primary exhaust trains per TO-060-420.

**Supplemental Actions:**

5. **IF** valve line-up is correct and High High pressure alarm returns, **INITIATE** work order to troubleshoot and repair or replace degraded components.

**Possible Causes:**

1. Incorrect valve line-up.
2. Plugged glycol system components.
3. Transmitter failure.

**References:**

- **Drawings:** H-14-020103
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System  
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LIT-470.
Tag: APB-LI-470
Message: Low Low

Glycol Tank Level
(Low Low)


Setpoint: \( \leq 20\% \)

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Glycol tank level too low for continued operation of the glycol system.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

1. Glycol system shutdown (heater and pump).

Immediate Actions:


[3] CONFIRM glycol level LI-470 on TFMCS screen “Exhauster ‘B’” is 20% or lower.


[5] IF directed by Shift Manager/ OE; PERFORM the following:

[5.1] FILL glycol system to a safe level per TO-060-420.

[5.2] RESTART glycol system per TO-060-420.

[6] IF Glycol Tank Level Low Low Level Alarm is still active AND

IF directed by Shift Manager/ OE, SWITCH primary exhaust trains per TO-060-420.

Supplemental Actions:

[7] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. Actual glycol level low.
2. Leaking glycol system.
3. Faulty transmitter calibration.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-LIT-470.

**Tag:** APB-LI-470

**Message:** Low Low

**Setpoint:** ≤ 20%

**YELLOW**

Glycol Tank Level (Low Low)

(Continued)

**References:**

- **Drawings:** H-14-020103
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System
  
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Glycol Heater Outlet Temperature (High-High)

**YELLOW**

**Setpoint:** ≥ 209 °F

**Panel:** All TFMCS Stations

**Source:** AP241-VTP-TE-472.

**Tag:** APB-TI-472

**Message:** High High

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** Glycol tank temperature too high for continued operation of the glycol system.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Glycol heater shutdown.

**Immediate Actions:**


[6] IF Glycol Heater Outlet Temperature High alarm is still active or returns,

    **OR**

    IF directed by Shift Manager/OE, SWITCH primary exhaust trains per TO-060-420.

**Supplemental Actions:**


[8] INITIATE work order to troubleshoot and repair or replace degraded components.

**Possible Causes:**

1. Electrical fault in heating system.

2. Faulty transmitter calibration.

**References:**

- **Drawings:** H-14-020103
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System, HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-TE-472. Glycol Heater Outlet Temperature
Tag: APB-TI-472_TransFail
Message: Alarm

Setpoint: N/A

YELLOW

Glycol Heater Transmitter Fail

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Glycol tank temperature too high for continued operation of the glycol system.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Glycol heater shutdown

Immediate Actions:
[6] IF Glycol Heater Outlet Temperature (High-High) alarm is still active or returns,

OR
IF directed by Shift Manager/OE, SWITCH primary exhaust trains per TO-060-420.

Supplemental Actions:
[8] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:
1. Electrical fault in heating system.
2. Faulty transmitter calibration.

References:
Drawings: H-14-020103
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** Temperature difference between AP241-VTP-TE-453 and TE-455 (TDI-008)

**Tag:** APB-TDI-008

**Message:** Low

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

**Alarm Description:** The differential temperature across the heat exchanger is too low.

**Heater Temp Differential (Low)**

- **Setpoint:** ≤ 16 °F

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

- When exhauster is started, TDI-008 alarm is enabled after two minutes and will be in alarm until heat exchanger differential temperature is > 16 °F.

**Automatic Actions:**

None

**Immediate Actions:**

1. **CHECK** glycol system is operating normally.
2. **CHECK** the temperature difference on TFMCS screen, TDI-008 for operating exhauster is ≥ 16 °F.
3. **NOTIFY** Shift Manager/OE of actions and findings.
4. **IF** directed by Shift Manager/OE, **SWITCH** exhausters per TO-060-420.

**Supplemental Actions:**

5. **INITIATE** work order to troubleshoot and repair or replace degraded components.

**Possible Causes:**

1. Glycol system malfunction.
2. Faulty transmitter calibration.

**References:**

- **Drawings:** H-14-020103
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Heat Exchanger Output Temp
(High High)

Panel: All TFMCS Stations
Source: AP241-VTP-TE-455.
Tag: APB-TI-455
Message: High High

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)

Alarm Description: Heater temperature too high for continued operation of the heating system and HEPAs

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Glycol heater shutdown.

Immediate Actions:
[6] IF Heat Exchanger Outlet Temperature (High High) alarm is still active or returns,
    OR
    IF directed by Shift Manager/OE, SWITCH primary exhaust trains per TO-060-420.

Supplemental Actions:
[8] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:
1. Electrical fault in heating system.
2. Faulty transmitter calibration.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**YELLOW**

Heat Exchanger Output Temp (High High)

**Panel:** All TFMCS Stations  
**Source:** AP241-VTP-TE-455.  
**Tag:** APB-TI-455  
**Message:** High High  

**Setpoint:** ≥ 165 °F  

(Continued)

**References:**  
**Drawings:** H-14-020103  
**Documents:** TO-060-420, Operate AP-241 Primary Ventilation System  
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LIT-480.
Tag: APB-LI-480
Message: Low

Alarm Class: Equipment Status (ES)
Alarm Description: Exhaust train seal pot level is too low.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions: None

Immediate Actions:

[1] CHECK operating exhauster seal pot level (AP241-VTP-LI-480) on TFMCS is between 20% and 30%.
[1.1] IF exhauster seal pot level is ≤ 20%, RESPOND per Skid Seal Pot Level (Low Low) alarm.
[4] IF directed by Shift Manager/OE; PERFORM the following:
[4.1] REFILL operating exhauster seal pot per TO-060-420.
[4.2] SWITCH to other primary exhaust train per TO-060-420.

Supplemental Actions:

[5] INITIATE work order to troubleshoot and repair or replace degraded components.

Possible Causes:

1. Evaporation not replenished by condensation.
2. Leaks in the seal pot and/or seal pot loop.
3. Instrument failure.

References:

Drawings: H-14-020103
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations


**Setpoint:** ≤ -3.5 in. W.C.


**Message:** Low

**Alarm Class:** Equipment Status (ES)

**Alarm Description:** Tank vapor space pressure becoming too low for continued operation (exhauster software allows the exhauster to continue to run in this condition)

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

- None

**Immediate Actions:**

1. **CHECK** appropriate tank pressure on TFMCS is between - 5.5 and - 3.5 in. W.C.
   - **[1] IF** tank pressure is ≤ -5.5 in. W.C., **RESPOND** per “Tank # PDI (Low Low)” alarm.

2. **CHECK** TFMCS alarm display to determine if other tank low pressure alarms are active.

3. **CHECK** history of all tank pressure transmitters on TFMCS:
   - **[3.1] NAVIGATE** to “AP Farm - Tank Pressure Transmitters”.
   - **[3.2] CLICK** on tank pressure readings on TFMCS screen “AP Tank Farm” to display pressure history graph.
   - **[3.3] CLICK** on faceplate graph icon to display pressure graph.

4. **NOTIFY** Shift Manager/OE of actions and findings.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations


Message: Low

Immediate Actions (Cont.):

NOTE - During a high vacuum condition vacuum breaker should be open. Vacuum breakers should be either open or fully closed and should not cycle during normal operation.

[5] CHECK the air inlets for obstructions AND REMOVE as necessary.

[6] IF directed by Shift Manager/OE, PERFORM the following:
   
   
   [6.2] CHECK if vacuum breaker is stuck CLOSED.
   
   [6.3] IF directed by Shift Manager, CHECK stack flow set points and adjust per TO-060-420.
   
   [6.4] IF the above steps do not restore the tank pressure to the proper range, NOTIFY Shift Manager/OE.

Supplemental Actions:

[7] IF unable to correct the alarm condition, REQUEST the Shift Manager/OE to arrange for Vent and Balance to make the necessary adjustments.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**YELLOW**

<table>
<thead>
<tr>
<th>Tank AP# Pressure</th>
<th>(Low)</th>
</tr>
</thead>
</table>

**Setpoint:** ≤ -3.5 in. W.C.

**Panel:** All TFMCS Stations  

**Message:** Low

<table>
<thead>
<tr>
<th>Possible Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obstruction of air inlet (i.e., foreign object across inlet screen, frost/ice buildup on inlet, filter dirty).</td>
</tr>
<tr>
<td>2. Primary exhaust fan remained ON after backup fan started, with or without an open riser.</td>
</tr>
<tr>
<td>3. Vacuum or flow rates out of adjustment.</td>
</tr>
<tr>
<td>4. Vacuum breaker is stuck shut.</td>
</tr>
</tbody>
</table>

**References:**

| Drawings | H-14-020103 |
| Documents | TO-060-420, Operate AP-241 Primary Ventilation System. |
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-P-471
Tag: APB-YS-471
Message: Object Error

Alarm Class: Equipment Status (ES)
Alarm Description: Glycol pump is Not Reporting

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Glycol pump will stop.

Immediate Actions:
[1] ACKNOWLEDGE alarm AND IF alarm clears, EXIT this ARP.
[2] IF the equipment has the letters “OE” next to it, NOTIFY Shift Manager.
[3] IF directed by Shift Manager/OE, SWITCH Primary ventilation to B-Train per TO-060-420.

Supplemental Actions:
[4] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Equipment Failure.
2. Equipment Disconnected.

References:
Drawings: H-14-020103, Sheet 12
Documents: TO-060-420, Operate AP-241Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-HTR-472
Tag: APB-YS-472
Message: Object Error

Alarm Class: Equipment Status (ES)
Alarm Description: Glycol Heater is Not Reporting

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Glycol heater will stop.

Immediate Actions:
[1] ACKNOWLEDGE alarm AND IF alarm clears, EXIT this ARP.
[2] IF the equipment has the letters “OE” next to it, NOTIFY Shift Manager.
[3] IF directed by Shift Manager/OE, SWITCH Primary ventilation to B-Train per TO-060-420.

Supplemental Actions:
[4] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Equipment Failure.
2. Equipment Disconnected.

References:
Drawings: H-14-020103, Sheet 12
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
# Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** Automatic Crossover sequence

**Tag:** N/A

**Message:** CROSSOVER - Failed

**Alarm Class:** Equipment Status (ES)

**Alarm Description:** Crossover sequence failed to stop the train to be shutdown

**Setpoint:** N/A

**NOTE:** Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

## Automatic Actions:

None

## Immediate Actions:

1. **ENSURE** exhauster identified to be shutdown is shutdown per TO-060-420.
2. **ACKNOWLEDGE** alarm AND
   - **IF** alarm clears, **EXIT** this ARP.
3. **IF** both exhausters continue to run, **NOTIFY** Shift Manager.

## Supplemental Actions:

4. **INITIATE** work order to troubleshoot/repair or replace degraded components.

## Possible Causes:

1. Equipment in manual mode.
2. Shorted wiring.
3. Software.

## References:

- **Drawings:** None
- **Documents:** TO-060-420, Operate AP-241Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: Automatic Crossover sequence
Tag: N/A
Message: CROSSOVER - Failed
Alarm Class: Equipment Status (ES)
Alarm Description: During crossover the train to be shutdown, shutdown prematurely.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
None

Immediate Actions:
[1] **ENSURE** exhauster identified to be shutdown is shutdown per TO-060-420.
[2] **ACKNOWLEDGE** alarm AND
   IF alarm clears, **EXIT** this ARP.
[3] **IF both** exhausters shut down, **NOTIFY** Shift Manager of alarms and actions.
   [3.1] **ENSURE** primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [3.2] **IF** exhauster has not shut down, **STOP** exhauster by initiating a shutdown per TO-060-420.
   [3.3] **REQUEST** Shift Manager respond per TF-AOP-021.
   [3.4] **STOP** waste disturbing activities to AP Farm.
   [3.5] **IF** directed by Shift Manager/OE, **RESTART** Primary ventilation per TO-060-420.

Supplemental Actions:
[4] **INITIATE** work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Equipment in manual mode.
2. Shorted wiring.
3. Software.

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: Automatic Crossover sequence
Tag: N/A
Message: CROSSOVER - Failed

Setpoint: N/A

RED
CROSSOVER - Warning, this train stopped abnormally

(Continued)

References:
Drawings: None
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

RED

CROSSOVER - Failed, other train failed to run

Panel: All TFMCS Stations
Source: Automatic Crossover sequence
Tag: N/A
Message: CROSSOVER - Failed
Setpoint: N/A
Alarm Class: Equipment Status (ES)
Alarm Description: During crossover the standby train failed to continue to run and original running train continues to run.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
None

Immediate Actions:
[1] ENSURE exhauster that failed to continue to run is shutdown per TO-060-420.
[2] ACKNOWLEDGE alarm AND IF alarm clears, EXIT this ARP.

Supplemental Actions:
[3] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Equipment in manual mode.
2. Shorted wiring.
3. Software.

References:
Drawings: None
Documents: TO-060-420, Operate AP-241Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Setpoint: N/A
Tag: APB-Transmitter-Fail
Message: Alarm

Alarm Class: Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)
Alarm Description: HEPA filters, stack flow, stack temperature or seal pot level transmitter not reporting.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected upwind area.
[2] IF exhauster is not shutdown, SHUTDOWN exhauster per TO-060-420.

Supplemental Actions:

Possible Causes:
1. Transmitter failed.
2. Loss of 24VDC to Transmitter (including fuse).

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Message: Alarm

Setpoint: N/A

References:
Drawings: H-14-020102
Documents: TO-060-420, Operate AP-241 Primary Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

**Panel:** All TFMCS Stations

**Source:** De-Entrainer valves out of alignment

**Tag:** APB-DeEnt_NotOneSet

**Message:** Alarm

**Alarm Class:** Equipment Status (ES)

**Alarm Description:** De-Entrainer not only one set

**Setpoint:** N/A

**RED**

**De-Entrainer Not Only One Set Opened**

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

- This is an expected alarm when both de-entrainers are in operation.

**Automatic Actions:**

None

**Immediate Actions:**

1. **ACKNOWLEDGE** alarm AND
   
   IF alarm clears, **EXIT** this ARP.

2. **IF** alarm is still active, **NOTIFY** Shift Manager of findings.

**Supplemental Actions:**

3. **ENSURE** valve alignment per TO-060-420.

4. **INITIATE** work order to troubleshoot/repair or replace degraded components.

**Possible Causes:**

1. Valve position sensor faulty.
2. Valve position sensor requires adjustment.
3. Loss of 24VDC to valve position sensor contacts.
4. Valves in field not properly configured.

**References:**

- **Drawings:** None
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System.
**Respond to B-Train Alarms at 241-AP VTP Exhaust Skid**

**Panel:** All TFMCS Stations

**Source:** ABB communication equipment

CI801 or the CI854 failure

**Tag:** APB_HW_Failure

**Message:** Alarm

**Alarm Class:** Technical Safety Requirement (LCO 3.1, DST Primary Tank Ventilation Systems, and LCO 3.4, DST Induced Gas Release Event Flammable Gas Control).

**Alarm Description:** I/O communication module failure

**Setpoint:** N/A

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

**Automatic Actions:**

1. Active primary exhaust train shuts down.

**Immediate Actions:**

1. IF exhauster is still running, INITIATE exhauster shutdown sequence per TO-060-420.
2. ACKNOWLEDGE alarm AND
   IF alarm clears, EXIT this ARP.
3. IF alarm is still active, NOTIFY Shift Manager of findings.

**Supplemental Actions:**

4. INITIATE work order to troubleshoot/repair or replace degraded components.

**Possible Causes:**

1. Faulty ProfiBus communication cabling.
2. Faulty ProfiBus connections.
3. CI801 or the CI854 cards have failed.

**References:**

- **Drawings:** None
- **Documents:** TO-060-420, Operate AP-241 Primary Ventilation System
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: CI860 failure
Tag: APB_DstPDI_CommFail
Message: Alarm
Setpoint: N/A

AP Farm DST PDI Comm Failure

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
1. Active primary exhaust train shuts down.

Immediate Actions:
[1] EVACUATE personnel from AP Farm to a protected or upwind area.
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.
   [2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.

Supplemental Actions:
[6] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Faulty CI860 card.
2. Loss of power to controller card.

References:
- Drawings: None
- Documents: TO-060-420, Operate AP-241 Primary Ventilation System
  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Panel:  All TFMCS Stations  
Source: ABB Comm Equipment CI840  
Node 2, CI854  
AP101-WST-PDIT-111,  
AP102-WST-PDIT-112,  
AP103-WST-PDIT-113,  
AP104-WST-PDIT-114,  
AP105-WST-PDIT-115,  
AP106-WST-PDIT-116,  
AP107-WST-PDIT-117,  
AP108-WST-PDIT-118  
Setpoint: N/A

Tag: APA_DstPDI_HW_Fail  
APB_DstPDI_HW_Fail

Message: Alarm  

Alarm Description: All narrow range tank pressure transmitters are not reporting.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.  
- For AP DST PDI field devices, prior to shutting down the exhauster all of the PDIs will have an object error alarm. 30 seconds later the train will shut down and the tag will be APA_DstPDI_HW_Fail.

Automatic Actions:  
1. Active primary exhaust train shuts down.

Immediate Actions:  
[1] EVACUATE personnel from AP Farm to a protected or upwind area.  
[2] ENSURE primary exhaust system is shut down by noting on remote TFMCS screen that stack flow drops to approximately 0 SCFM.  
[2.1] IF exhauster has not shut down, STOP exhauster by initiating a shutdown per TO-060-420.  

(Continued on Next Page)
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: ABB Comm Equipment CI840
Node 2, CI854
AP101-WST-PDIT-111,
AP102-WST-PDIT-112,
AP103-WST-PDIT-113,
AP104-WST-PDIT-114,
AP105-WST-PDIT-115,
AP106-WST-PDIT-116,
AP107-WST-PDIT-117,
AP108-WST-PDIT-118
Tag: APA_DstPDI_HW_Fail
,APB_DstPDI_HW_Fail
Message: Alarm

Setpoint: N/A

(Continued)

Supplemental Actions:

[6] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:

1. Network communication failure.
2. Loss of power to controller card.

References:

Drawings: None
Documents: TO-060-420, Operate AP-241Primary Ventilation System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: De-Entrainer valves out of alignment
Tag: APB_DeEnt_CommFail
Message: Alarm
Alarm Class: Equipment Status (ES)
Alarm Description: De-Entrainer not communicating with B-Train

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- This alarm when active will not shut the exhauster down but can prevent it from starting.

Automatic Actions:
None

Immediate Actions:
[1] ACKNOWLEDGE alarm AND IF alarm clears, EXIT this ARP.
[2] IF alarm is still active, NOTIFY Shift Manager of findings.

Supplemental Actions:
[5] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Loss of communication with De-Entrainer Controller.

References:
Drawings: None
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LDA-270
Tag: APC-LDA-270
Message: Alarm
Alarm Class: Equipment Status (ES)
Alarm Description: Leak Detected for De-Entrainer Seal Pot SP-270

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
None

Immediate Actions:
[1] ACKNOWLEDGE alarm AND IF alarm clears, EXIT this ARP.
[2] IF alarm is still active, NOTIFY Shift Manager of findings.

Supplemental Actions:
[3] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.
[4] REQUEST Shift Manager evaluate the need to notify Environmental.
[5] IF component or system failure is suspected, INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Broken line/seal pot.
2. Condensate, rainwater, snowmelt, or other water has entered from outside.

References:
Drawings: None
Documents: TO-060-420, Operate AP-241Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

De-Entrainer Seal Pot SP-270 Leak Detector Failure

Panel: All TFMCS Stations
Source: AP241-VTP-LDA-270
Tag: APC-LDA-270
Message: Alarm
Alarm Class: Equipment Status (ES)
Alarm Description: De-Entrainer Seal Pot SP-270 Leak Detector Failure

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

None

Immediate Actions:

[1] ACKNOWLEDGE alarm AND
IF alarm clears, EXIT this ARP.
[2] IF alarm is still active, NOTIFY Shift Manager of findings.

Supplemental Actions:

[3] IF component or system failure is suspected, INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:

1. Communication failed.
2. Battery failure.

References:

Drawings: None
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LDA-480
Tag: APB-LDA-480
Setpoint: N/A

Leak Detected
Seal Pot SP-480

Message: Alarm
Alarm Class: Equipment Status (ES)
Alarm Description: Leak Detected Train B Seal Pot SP-480

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:
None

Immediate Actions:
[1] ACKNOWLEDGE alarm AND
   IF alarm clears, EXIT this ARP.
[2] IF alarm is still active, NOTIFY Shift Manager of findings.

Supplemental Actions:
[5] REQUEST Shift Manager evaluate the need to notify Environmental.
[6] IF component or system failure is suspected, INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
1. Broken line/seal pot.
2. Condensate, rainwater, snowmelt, or other water has entered from outside.

References:
Drawings: None
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
Respond to B-Train Alarms at 241-AP VTP Exhaust Skid

Panel: All TFMCS Stations
Source: AP241-VTP-LDA-480
Tag: APB-LDA-480
Setpoint: N/A
Message: Alarm

Alarm Class: Equipment Status (ES)
Alarm Description: Train B Seal Pot SP-480 Leak Detector Failure

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.

Automatic Actions:

None

Immediate Actions:

[1] Acknowledge alarm AND
IF alarm clears, EXIT this ARP.

[2] IF alarm is still active, NOTIFY Shift Manager of findings.

Supplemental Actions:

[3] IF component or system failure is suspected, INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:

1. Communication failed.
2. Battery failure.

References:

Drawings: None
Documents: TO-060-420, Operate AP-241 Primary Ventilation System.
### Table 1 - Inlet Station Components

<table>
<thead>
<tr>
<th>EQUIPMENT NUMBER</th>
<th>TANK</th>
<th>INLET FILTER STATION 4'' ISOLATION BUTTERFLY VALVE</th>
<th>INLET STATION VACUUM CONTROLLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP101-VTP-FLT-001</td>
<td>241-AP-101</td>
<td>AP101-VTP-V-001</td>
<td>AP101-VTP-DMPR-001</td>
</tr>
<tr>
<td>AP103-VTP-FLT-003</td>
<td>241-AP-103</td>
<td>AP103-VTP-V-003</td>
<td>AP103-VTP-DMPR-003</td>
</tr>
<tr>
<td>AP104-VTP-FLT-004</td>
<td>241-AP-104</td>
<td>AP104-VTP-V-004</td>
<td>AP104-VTP-DMPR-004</td>
</tr>
<tr>
<td>AP105-VTP-FLT-005</td>
<td>241-AP-105</td>
<td>AP105-VTP-V-005</td>
<td>AP105-VTP-DMPR-005</td>
</tr>
<tr>
<td>AP107-VTP-FLT-007</td>
<td>241-AP-107</td>
<td>AP107-VTP-V-007</td>
<td>AP107-VTP-DMPR-007</td>
</tr>
</tbody>
</table>
### Table 2 - System Alarm Table for ABB Services

<table>
<thead>
<tr>
<th>ALARM (Object Name)</th>
<th>CONDITION</th>
<th>MESSAGE</th>
<th>ALARM MEANING/ACTION</th>
</tr>
</thead>
</table>
| Various             | Inoperative | Service Provider Not in Operational Status | MEANING: An ABB Service has shut down on either the Primary or Secondary Server. Since the Servers are redundant, failure of the Primary will shift control to the Secondary server.  
ACTION: CHECK the System Status Viewer to determine which Service has shut down AND CONTACT Engineering for direction.  
IF both Primary and Secondary services show Red X’s, the TFMCS is NOT operational, SHUT DOWN any transfers AND REQUEST Shift Manager contact Engineering for assistance. |
| Various TFMCS HMI, Server, or Controller Names | Network Connection | Primary Connection Lost | MEANING: The primary network connection to the device has been lost.  
NOTE - The secondary connection will take over automatically.  
ACTION: CHECK the Farm graphics where the affected device is located AND CONFIRM no red X’s are present. |
|                     |           | Secondary Connection Lost | MEANING: The secondary network connection has been lost.  
NOTE - If the primary connection is active, it will take over automatically.  
ACTION: IF both the Primary and Secondary are lost, CHECK the Farm graphics where the device is located AND CONFIRM no red X’s are present. |
|                     |           | Network Connection Lost | MEANING: Both network connections to the device or Farm have been lost.  
NOTE - If red X’s are present, network connection has been lost to this device or Farm.  
ACTION: CHECK the Farm graphics to confirm no red X’s are present.  
IF red X’s are present, REQUEST Shift Manager contact Engineering for assistance. |

(Continued on Next Page)
### Table 2 - System Alarm Table for ABB Services (Cont.)

<table>
<thead>
<tr>
<th>ALARM (Object Name)</th>
<th>CONDITION</th>
<th>MESSAGE</th>
<th>ALARM MEANING/ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various Controllers (PLCs) and ABB card names.</td>
<td>HW Error</td>
<td>Channel Error</td>
<td><strong>MEANING:</strong> An input or output field device has lost connection to the ABB card. <strong>ACTION:</strong> CHECK the Farm graphics to confirm no red X’s are present. IF red X’s are present, IDENTIFY the instrument that has lost connection AND REQUEST Shift Manager contact Engineering for assistance.</td>
</tr>
<tr>
<td>Underflow</td>
<td></td>
<td><strong>MEANING:</strong> An input field device is reporting less than the lower limit to the ABB card. The device may have been disconnected or turned off. <strong>ACTION:</strong> CHECK the Farm graphics to confirm no red X’s are present. IF red X’s are present, IDENTIFY the instrument that is reporting the Underflow AND REQUEST Shift Manager contact Engineering for assistance.</td>
<td></td>
</tr>
<tr>
<td>Overflow</td>
<td></td>
<td><strong>MEANING:</strong> An input field device is reporting more than the upper limit to the ABB card due to an instrument malfunction. <strong>ACTION:</strong> CHECK the Farm graphics to confirm no red X’s are present. IF red X’s are present, IDENTIFY the instrument that is reporting the Overflow AND REQUEST Shift Manager contact Engineering for assistance.</td>
<td></td>
</tr>
</tbody>
</table>