Respond to Alarms at 241-SY B-Train Primary Exhauster

Tank Farm Alarm Response Procedure

USQ # TF-15-1209-S, Rev. 1

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<td>F-1</td>
<td>09/26/2017</td>
<td>Engineering and Operations request</td>
<td>Corrected set-points and terminology to align with VTP P&amp;ID.</td>
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<tr>
<td>F-0</td>
<td>07/23/2015</td>
<td>Periodic review comment resolution</td>
<td>Page 4/38/55 capitalized IF. Change AS directed to IF directed. Clarified step for confirming ventilation is lost throughout procedure. In alarm HEATER DELTA T LO deleted OTHERWISE CONTINUE. For alarm SY241-VTP-P-001 GLYCOL PUMP OFF modified step for restarting glycol pump.</td>
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<td>E-3</td>
<td>10/23/2013</td>
<td>Operations request to address PER WRPS-PER-2013-0961.16</td>
<td>Deleted &quot;IF directed by Shift Manager, &quot;</td>
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<td>E-2</td>
<td>08/14/2013</td>
<td>Incorporated TO-060-235 into TO-060-245</td>
<td>Deleted reference TO-060-235 since incorporated into TO-060-245 and modified title of TO-060-245.</td>
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RECORDS

No records are generated during the performance of this procedure.
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 1

Source: SY241-VTP-PDT-170  Setpoints: ≤ 0.2” W.C.

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

Alarm Description: Plenum DP Transmitter (VTP-PDT-170) indicates plenum low vacuum or a transmitter failure.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] CHECK status of the following annunciators:
   - Panel B-3 ANN-101 alarm 02 HIGH PRESSURE TANK 101 (LOW VACUUM) (WST-PAH-313)
   - Panel B-3 ANN-102 alarm 02 HIGH PRESSURE TANK 102 (LOW VACUUM) (WST-PAH-316)
   - Panel B-3 ANN-103 alarm 02 HIGH PRESSURE TANK 103 (LOW VACUUM) (WST-PAH-319)
[3.1] IF any of the above alarms are active, RESPOND per ARP-T-431-00101 and the corresponding High Pressure Tank alarm.
[4] IF primary exhaust has shut down, PERFORM the following:
[4.1] EVACUATE all personnel from SY Farm to a protected or upwind area.
[4.2] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.
[4.3] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[4.4] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 1
Source: SY241-VTP-PDT-170  Setpoints: ≤ 0.2” W.C.

Immediate Actions (Cont.):

[4.5] IF the 242-S Evaporator panel F alarm 4-2 HIGH RADIATION 241-SY PRIMARY EXH A TRAIN (VTP-RAH-624) or the 4-4 HIGH RADIATION 241-SY PRIMARY EXH B TRAIN (VTP-RAH-301C) is not in alarm AND IF directed by the Shift Manager, **RESTART** the exhaust system per TO-060-245.

[5] **CHECK** dome pressures on the following indicators:
   - SY01C-WST-PI-313C
   - SY02C-WST-PI-316C
   - SY03C-WST-PI-319C

Supplemental Actions:

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

[7] **NOTIFY** Shift Manager to evaluate the alarm and determine if any additional actions are required.

Possible Causes:

1. Primary Exhauster has shut down
2. Maintenance work on Pressure Alarm
3. Dome intrusive work
4. Open Risers, open pit drains and or missing sealing media on pit cover block(s), cracks, seams or penetrations that admit too much air to Pit(s)
5. Failure of Pressure Transmitter.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 2

Source: SY241-VTP-PDT-170  Setpoints: ≥ 6.0” W.C.

Alarm Class: Technical Safety Requirements (LCO 3.1, DST Primary Tank Ventilation Systems, LCO 3.4, DST Induced Gas Release Event Flammable Gas Control)
Alarm Description: Plenum DP Transmitter (VTP-PDT-170) indicates plenum high vacuum.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] CHECK exhauster is shut down.
[4] EVACUATE all personnel from SY Farm to a protected or upwind area.
[6] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[7] STOP waste disturbing activities in SY Farm.

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Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  Alarm #:  2  
Source: SY241-VTP-PDT-170  Setpoints:  ≥ 6.0” W.C.

Immediate Actions (Cont.):  

[8] CHECK status of the following annunciators:  
- Panel B-3 ANN-101 alarm 03 LOW PRESSURE TANK 101 (HIGH VACUUM) (WST-PAL-313)  
- Panel B-3 ANN-102 alarm 03 LOW PRESSURE TANK 102 (HIGH VACUUM) (WST-PAL-316)  
- Panel B-3 ANN-103 alarm 03 LOW PRESSURE TANK 103 (HIGH VACUUM) (WST-PAL-319)  
- Panel B-3 ANN-101 alarm 02 HIGH PRESSURE TANK 101 (LOW VACUUM) (WST-PAH-313)  
- Panel B-3 ANN-102 alarm 02 HIGH PRESSURE TANK 102 (LOW VACUUM) (WST-PAH-316)  
- Panel B-3 ANN-103 alarm 02 HIGH PRESSURE TANK 103 (LOW VACUUM) (WST-PAH-319)


[10] NOTIFY Shift Manager of findings.


[12] IF directed by Shift Manager, RESTART OR SHUTDOWN B-Train Primary Exhauster per TO-060-245.


Supplemental Actions:

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

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #:  2

Source: SY241-VTP-PDT-170  Setpoints:  ≥ 6.0” W.C.

Possible Causes:
1. Plenum valves closed.
2. Failure of Pressure Transmitter.

References:
Drawings:  H-14-104831, H-14-104180, H-14-104826, H-14-104166, H-14-030031,
           H-2-140002, H-2-37746, H-14-020131
Documents:  TO-060-245, Operate SY241 Primary Exhaust System
           RPP-16922, Environmental Specification Requirements
           OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
           TF-AOP-021, Response to Tank Farm Ventilation Upset
           HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  
Alarm #: 3

Source: SY241-VTP-PDT-177  
Setpoints: ≥1.4” W.C.  

Alarm Class: Equipment Status/Environmental Impact.

Alarm Description: Heater/Demister alarm (VTP-PDT-177) indicates high differential pressure.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
2. [2] CHECK active alarms area of panel view to determine if alarm condition is still active.

Supplemental Actions:

Possible Causes:
1. Maintenance work on Pressure Alarm.
2. Failure of Pressure Transmitter.
3. Demister plugged.

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust System
Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #:  4
Source: SY241-VTP-PDT-178  Setpoints:  ≥ 1.4” W.C.

Alarm Class: Equipment Status/Environmental Impact.
Alarm Description: Pre-Filter Differential Pressure alarm (VTP-PDT-178) indicates high differential pressure across FLT-001.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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. ACKNOWLEDGE alarm.
2. CHECK active alarms area of panel view to determine if alarm condition is still active.
3. NOTIFY Shift Manager of findings.
4. REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.

Supplemental Actions:
5. REQUEST initiation of Work Package to replace HEPA filter.

Possible Causes:
1. Pre-filter (SY241-VTP-FLT-001) has become plugged. An examination of historical data should show a gradual increase in dP over time.
2. Pre-filter (SY241-VTP-FLT-001) has become saturated with condensation. This is likely only if there is a problem with heater.
3. Vapor space conditions in one of the Tanks are misty enough that liquid droplets have escaped Demister and have collected on Pre-filter. This situation is suspected when dP rose very quickly during a transfer.
4. Transmitter failure.

References:
Documents:  None
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  
Alarm #: 5  
Source: SY241-VTP-PDT-180  
Setpoints: \( \leq 0.2" \) W.C.

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

Alarm Description: First HEPA Filter Differential Pressure Indicator (VTP-PDT-180) indicates low differential pressure across FLT-002.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.
[3] EVACUATE personnel from SY Farm to a protected or upwind area.
[5] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[6] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[7] CHECK status of the following annunciators:
   - Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)
   - Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)
   - Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).

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Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #:  5
Source: SY241-VTP-PDT-180  Setpoints: ≤ 0.2” W.C.

SY241-VTP-PDT-180 1ST HEPA FILTER DP LO

Immediate Actions (Cont.):

[8] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.
[8.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.
[9] CHECK panel view for alarm SY241-VTP-RA-301 BETA HI RAD.
[10] NOTIFY Shift Manager of findings.
[12] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.
[13] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:

[14] CONTINUE to monitor system parameters AND
NOTIFY Shift Manager of changing indications

Possible Causes:

1. The first (downstream) HEPA filter (SY241-VTP-FLT-002) of VTP B-TRAIN has had a gross breakthrough due to a spray leak, high temperature, or high pressure condition.
2. The second (downstream) HEPA filter (SY241-VTP-FLT-003) of VTP B-TRAIN has a low dP.
3. Transmitter failure.

References:

Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  Alarm #: 6  

Source: SY241-VTP-PDT-180  Setpoints: ≥ 4.5 W.C.  

Alarm Class: Equipment Status/Environmental Impact.  
Alarm Description: First HEPA Filter Differential Pressure Indicator (VTP-PDT-180) indicates high differential pressure across FLT-002.  

Automatic Actions:  
1. Clear rotating beacon (XA-101) is ILLUMINATED.  

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:  
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.  
[3] NOTIFY Shift Manager/OE.  
[4] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.  

Supplemental Actions:  

Possible Causes:  
1. The first (downstream) HEPA filter (SY241-VTP-FLT-002) of VTP B-TRAIN has become plugged. An examination of historical data should show a gradual increase in dP over time.  
2. The first (downstream) HEPA filter (SY241-VTP-FLT-002) has become saturated with condensation. This is likely only if there is a problem with heater.  
3. Transmitter failure.  

References:  
Documents: OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 7
Source: SY241-VTP-PDT-180  Setpoints: ≥ 5.4” W.C.


Alarm Description: First HEPA Filter Differential Pressure Indicator (VTP-PDT-180) indicates high differential pressure across FLT-002.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE all personnel from SY-Farm to a protected or upwind area.
[5] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[6] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[7] CHECK status of the following annunciators:
   - Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)
   - Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)
   - Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).

NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.

[8] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.

[8.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.

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Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107 Alarm #: 7
Source: SY241-VTP-PDT-180 Setpoints: ≥ 5.4” W.C.

Immediate Actions (Cont.):

[9] CHECK panel view for alarm SY241-VTP-RA-301 BETA HI RAD.
[12] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:

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

Possible Causes:

1. The first (downstream) HEPA filter (SY241-VTP-FLT-002) of VTP B-TRAIN has become plugged. An examination of historical data should show a gradual increase in dP over time.
2. The first (downstream) HEPA filter (SY241-VTP-FLT-002) has become saturated with condensation. This is likely only if there is a problem with heater.
3. Transmitter failure.

Possible Causes:

1. The first (downstream) HEPA filter (SY241-VTP-FLT-002) of VTP B-TRAIN has become plugged. An examination of historical data should show a gradual increase in dP over time.
2. The first (downstream) HEPA filter (SY241-VTP-FLT-002) has become saturated with condensation. This is likely only if there is a problem with heater.
3. Transmitter failure.

References:

Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 8

Source: SY241-VTP-PDT-180  Setpoints: Rate of dP change
\[
\geq 0.5 \text{” W.C. per minute}
\]


Alarm Description: 1st HEPA Filter FLT-002 has high rate of change (ROC) of differential pressure.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.

Possible Causes:
1. HEPA Filter(s) ruptured.
2. Transmitter failure.

References:
Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 9

Source: SY241-VTP-PDT-181  Setpoints: ≤ 0.2” W.C.


Alarm Description: First and Second HEPA Filter Differential Pressure alarm (VTP-PDT-181) indicates low differential pressure across FLT-002 and FLT-003.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE all personnel from SY Farm to a protected or upwind area.
[5] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[6] CHECK status of the following annunciators:
   - Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)
   - Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)
   - Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).

NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.

[7] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.

[7.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.

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Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  
Alarm #: 9

Source: SY241-VTP-PDT-181  
Setpoints: ≤ 0.2” W.C.

Immediate Actions (Cont.):

[8] CHECK panel view for alarm SY241-VTP-RA-301 BETA HI RAD.


[10] NOTIFY Shift Manager of findings.


[12] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.

[13] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:

[14] CONTINUE to monitor system parameters AND

NOTIFY Shift Manager of changing indications.

Possible Causes:

1. One or both of the HEPA filters (SY241-VTP-FLT-002 and SY241-VTP-FLT-003) of VTP B-TRAIN have had a gross breakthrough due to a spray leak, high temperature, or high pressure condition.

2. Transmitter failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System  
RPP-16922, Environmental Specification Requirements  
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks  
TF-AOP-021, Response to Tank Farm Ventilation Upset  
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 10

Source: SY241-VTP-PDT-181  Setpoints: ≥ 5.4” W.C.


Alarm Description: First and Second HEPA Filter Differential Pressure alarm (VTP-PDT-181) indicates very high differential pressure across FLT-002 and FLT-003.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE all personnel from SY Farm to a protected or upwind area.
[5] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[6] CHECK status of the following annunciators:
   • Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)
   • Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)
   • Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).

NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.

[7] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.
[7.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 10
Source: SY241-VTP-PDT-181  Setpoints: ≥ 5.4” W.C.

Immediate Actions (Cont.):

[8] CHECK panel view for alarm SY241-VTP-RA-301 BETA HI RAD.
[10] NOTIFY Shift Manager of findings.
[12] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.
[13] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:

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

Possible Causes:

1. One or both of the HEPA filters (SY241-VTP-FLT-002 and SY241-VTP-FLT-003) of VTP B-TRAIN have become plugged. An examination of historical data should show a gradual increase in dP over time.
2. One or both of the HEPA filters (SY241-VTP-FLT-002 and SY241-VTP-FLT-003) have become saturated with condensation. This is likely only if there is a problem with heater.
3. Transmitter failure.

References:

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  Alarm #: 11  
Source: SY241-VTP-PDT-182  Setpoints: ≤ 0.2” W.C.  
Alarm Description: Second HEPA Filter Differential Pressure Indicator (VTP-PDT-182) indicates low differential pressure across FLT-003.  

Automatic Actions:  
1. Primary Exhauster B-Train shuts down.  
2. Clear rotating beacon (XA-101) is ILLUMINATED.  

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:  
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.  
[3] EVACUATE all personnel from SY Farm to a protected or upwind area.  
[5] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.  
[6] CHECK status of the following annunciators:  
- Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)  
- Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)  
- Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).  

NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.  
[7] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.  
[7.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.  
[8] CHECK panel view SY241-VTP-RA-301 BETA HI RAD.  

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 11
Source: SY241-VTP-PDT-182  Setpoints: ≤ 0.2” W.C.

Immediate Actions (Cont.):

[10] NOTIFY Shift Manager of findings.
[12] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.
[13] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:

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

Possible Causes:

1. The second (downstream) HEPA filter (SY241-VTP-FLT-003) of VTP B-TRAIN has had a gross breakthrough due to a spray leak, high temperature, or high pressure condition.
2. The first (downstream) HEPA filter (SY241-VTP-FLT-002) of VTP B-TRAIN has a low dP.
3. Transmitter failure.

References:

Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 12

Source: SY241-VTP-PDT-182  Setpoints: ≥ 3.2” W.C.

Alarm Class: Equipment Status/Environmental Impact
Alarm Description: Second HEPA Filter Differential Pressure alarm (VTP-PDT-182) indicates high differential pressure across FLT-003.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] NOTIFY Shift Manager/OE.
[4] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.

Supplemental Actions:

Possible Causes:
1. The second (downstream) HEPA filter (SY241-VTP-FLT-003) of VTP B-TRAIN has become plugged. An examination of historical data should show a gradual increase in dP over time.
2. The second (downstream) HEPA filter (SY241-VTP-FLT-003) has become saturated with condensation. This is likely only if there is a problem with heater.
3. Transmitter failure.

References:
Documents: OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 13

Source: SY241-VTP-PDT-182  Setpoints: ≥ 3.7” W.C.

Alarm Description: Second HEPA Filter Differential Pressure alarm (VTP-PDT-182) indicates very high differential pressure across FLT-003.

Automatic Actions:
1. Primary Exhauster B-Train fan shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE all personnel from SY Farm to a protected or upwind area.
[5] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[6] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[7] CHECK status of the following annunciators:
   • Panel B-3 ANN-101 alarm 02 High Pressure TANK 101 (LOW VACUUM) (WST-PAH-313)
   • Panel B-3 ANN-102 alarm 02 High Pressure TANK 102 (LOW VACUUM) (WST-PAH-316)
   • Panel B-3 ANN-103 alarm 02 High Pressure TANK 103 (LOW VACUUM) (WST-PAH-319).

NOTE - A pressure reading of approximately 0 inches WG on SY-271 strip charts indicates Primary Ventilation System is OFF.
[8] CONFIRM Primary Ventilation has been lost by checking tank pressures using TFMCS HMI located in 252S.
[8.1] IF TFMCS HMI located in 252S is not available, CONTACT TMACS to obtain tank pressures.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 13

Source: SY241-VTP-PDT-182  Setpoints: ≥ 3.7” W.C.

Immediate Actions (Cont.):

[9] CHECK panel view for alarm SY241-VTP-RA-301 BETA HI RAD.
[11] NOTIFY Shift Manager of findings,
[12] NOTIFY Environmental On-Call of exhauster shutdown.
[13] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.
[14] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:


Possible Causes:

1. The second (downstream) HEPA filter (SY241-VTP-FLT-003) of VTP B-TRAIN has become plugged. An examination of historical data should show a gradual increase in dP over time.
2. The second (downstream) HEPA filter (SY241-VTP-FLT-003) has become saturated with condensation. This is likely only if there is a problem with heater.
3. Transmitter failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System
RPP-16922, Environmental Specification Requirements
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  
Alarm #: 14  
Source: SY241-VTP-PDT-182  
Setpoints: Rate of dP change ≥ 0.5" W.C  

Alarm Description: 2nd HEPA Filter FLT-003 has high rate of change (ROC) of differential pressure.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.

Possible Causes:
1. HEPA Filter(s) ruptured.
2. Transmitter failure.

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust System 
RPP-16922, Environmental Specification Requirements 
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 15

Source: SY241-VTP-FT-184  Setpoints: \( \leq 950 \text{ cfm} \)

**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:** Stack Flow Transmitter (VTP-FT-184) indicates low flow through the stack.

**Automatic Actions:**
1. Primary Exhauster B-Train shuts down after approximately 60 seconds delay.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

**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:**

2. [2] CHECK active alarms area of panel view to determine if alarm condition is still active.
   - [3.1] IF Exhauster has shut down, PERFORM the following:
     1. [3.1.1] EVACUATE all personnel from SY Farm to a protected or upwind area.
     2. [3.1.2] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.
     3. [3.1.3] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
5. [5] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.

**Supplemental Actions:**


(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107 Alarm #: 15

Source: SY241-VTP-FT-184 Setpoints: ≤ 950 cfm

Possible Causes:
1. Plenum valve(s) closed.
2. Variable Frequency Drive failure.
3. Primary Exhauster has shut down.
4. Transmitter failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 16

Source: SY241-VTP-FT-184  Setpoints: ≥ 1050 cfm


Alarm Description: Stack Flow Indicator (VTP-FT-184) indicates high flow through the stack.

Automatic Actions:
1. Primary Exhauster B-Train shuts down after approximately 60 seconds delay
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] CHECK Primary Exhauster B-Train exhaust fan is shutdown.
[4] EVACUATE all personnel from SY Farm to a protected or upwind area.
[6] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[7] IF directed by Shift Manager, SHUTDOWN B-Train Primary Exhauster per TO-060-245 AND START Primary Exhauster A-Train per TO-060-245.
[8] NOTIFY Environmental On-Call of exhauster shutdown.

Supplemental Actions:

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 16
Source: SY241-VTP-FT-184  Setpoints: $\geq 1050$ cfm

Possible Causes:
1. Variable Frequency Drive failure.
2. Transmitter failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 17

Source: SY241-VTP-FCV-301  Setpoints: \( \leq 0.75 \text{ cfm} \)


Alarm Description: Flow control valve (VTP-FCV-301) indicates a low record sample flow.

Automatic Actions:

1. Running vacuum pump P-301 or P-302 switches to standby pump.
2. Clear rotating beacon (XA-101) is ILLUMINATED.
3. Primary Exhauster B-Train shuts down if flow is not restored after pumps switch.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] IF primary exhaust shuts down, PERFORM the following:
   [3.1] EVACUATE all personnel from SY Farm to a protected or upwind area.
   [3.2] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.
   [3.3] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[4] REQUEST Shift Manager to notify Health Physics Technician to investigate problem AND PRESS SAMPLE TOTALIZER FLOW push button SY241-VTP-PB-104 on SY241-VTP-CP-105 to observe record sample flow rate on panel view.
[5] NOTIFY Shift Manager of findings AND REQUEST Shift Manager evaluate need to notify Environmental.
[6] IF directed by Shift Manager, ENSURE exhauster valves are aligned per applicable valving table in TO-060-245.
[7] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 17

Source: SY241-VTP-FCV-301  Setpoints: \( \leq 0.75 \text{ cfm} \)

Supplemental Actions:

[8] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.
[10] REQUEST initiation of Work Package to troubleshoot and repair record sample system if required.

Possible Causes:

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

References:


Documents:  TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 18

Source: SY241-VTP-FCV-301  Setpoints: ≥ 1.25 cfm


Alarm Description: Flow control valve (VTP-FCV-301) indicates a high record sample flow.

Automatic Actions:

1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] REQUEST Shift Manager to NOTIFY Health Physics Technician to investigate problem AND PRESS SAMPLE TOTALIZER FLOW push button SY241-VTP-PB-104 on SY241-VTP-CP-105 to observe record sample flow rate on panel view.
[4] NOTIFY Shift Manager of findings AND REQUEST Shift Manager evaluate need to notify Environmental.
[5] IF directed by Shift Manager, SHUT DOWN Primary Exhauster B-Train per TO-060-245.

Supplemental Actions:


(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107 Alarm #: 18

Source: SY241-VTP-FCV-301 Setpoints: ≥ 1.25 cfm

Possible Causes:
1. Instrument failure.
2. Record sample pump problem.
3. Control valve failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System
RPP-16922, Environmental Specification Requirements
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107 Alarm #: 19

Source: SY241-VTP-FCV-302 Setpoints: \( \leq 0.75 \text{ cfm} \)


Alarm Description: Flow control valve (VTP-FCV-302) indicates a low CAM sample flow.

Automatic Actions:
1. Running vacuum pump P-301 or P-302 switches to standby pump.
2. Clear rotating beacon (XA-101) is ILLUMINATED.
3. Primary Exhauster B-Train shuts down if flow is not restored after pump switch.

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:

2. [2] CHECK active alarms area of panel view to determine if alarm condition is still active.
3. [3] IF primary exhaust shuts down, PERFORM the following:
   3.1 [3.1] EVACUATE all personnel from SY Farm to a protected or upwind area.
   3.2 [3.2] NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.
   3.3 [3.3] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
4. [4] REQUEST Shift Manager to NOTIFY Health Physics Technician to investigate problem AND PRESS SAMPLE TOTALIZER FLOW push button SY241-VTP-PB-104 on SY241-VTP-CP-105 to observe CAM sample flow rate on panel view.
6. [6] IF directed by Shift Manager, ENSURE exhauster valves are aligned per applicable valving table in TO-060-245.
7. [7] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 19

Source: SY241-VTP-FCV-302  Setpoints: \( \leq 0.75 \text{ cfm} \)

Supplemental Actions:

[8] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.
[10] REQUEST initiation of Work Package to troubleshoot and repair record sample system if required.

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-14-104831, H-14-104180, H-14-104826, H-14-104166, H-14-030031,
           H-2-140002, H-2-37746, H-14-020131

Documents:  TO-060-245, Operate SY241 Primary Exhaust System
            TF-AOP-021, Response to Tank Farm Ventilation Upset
            HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements
Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 20

Source: SY241-VTP-FCV-302  Setpoints: ≥ 1.25 cfm


Alarm Description: Flow control valve (VTP-FCV-302) indicates a high CAM sample flow.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] REQUEST Shift Manager to NOTIFY Health Physics Technician to investigate problem AND PRESS SAMPLE TOTALIZER FLOW push button SY241-VTP-PB-104 on SY241-VTP-CP-105 to observe CAM sample flow rate on panel view.
[5] IF directed by Shift Manager, SHUT DOWN Primary Exhauster B-Train per TO-060-245.
   [5.1] NOTIFY Environmental On-Call of exhauster shutdown.

Supplemental Actions:

(Continued on Next Page)
Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 20

Source: SY241-VTP-FCV-302  Setpoints: ≥ 1.25 cfm

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

References:
- Documents: TO-060-245, Operate SY241 Primary Exhaust System, HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

**Facility:** 241-SY Tank Farm  
**Panel:** SY241-VTP-ENCL-107  
**Alarm #:** 21  
**Source:** SY241-VTP-RA-301  
**Setpoints:** N/A  
**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:** Beta CAM (VTP-RA-301) indicates instrument failure.

### Automatic Actions:
1. Primary Exhauster B-Train fan shuts down.  
2. Warning bell sounds.  
3. Clear rotating beacon (XA-101) is ILLUMINATED.  
4. Red rotating beacon (XA-301) is ILLUMINATED.  
5. Vacuum pumps shutdown.

### Immediate Actions:

1. **[1]** ACKNOWLEDGE alarm.  
2. **[2]** CHECK active alarms area of panel view to determine if alarm condition is still active.  
3. **[3]** EVACUATE all personnel from SY Farm to a protected or upwind area.  
4. **[4]** NOTIFY Shift Manager of alarms and actions AND REQUEST Shift Manager respond per TF-AOP-021.  
5. **[5]** IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.  
6. **[6]** CHECK panel view for the following alarms:  
   - SY241-VTP-FT-184 (INTERLOCK ON / FAN SHUTDOWN) STACK FLOW LO  
   - SY241-VTP-FCV-302 CAM SAMPLE FLOW LOW.  
7. **[7]** IF the 242-S Evaporator panel F alarm 4-2 HIGH RADIATION 241-SY PRIMARY EXH A TRAIN (VTP-RAH-624) or the 4-4 HIGH RADIATION 241-SY PRIMARY EXH B TRAIN (VTP-RAH-301C) is not in alarm AND IF directed by the Shift Manager, **RESTART** the exhaust system per TO-060-245.

### Supplemental Actions:

8. **[8]** CONTINUE to monitor system parameters AND NOTIFY Shift Manager of changing indications.

(Continued on Next Page)
TSR Compliance

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 21

Source: SY241-VTP-RA-301  Setpoints: N/A

Possible Causes:
1. CAM failure.
2. Instrument malfunction.
3. Loss of power to CAM.
4. Setpoint out of adjustment.

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

SY241-VTP-RA-301
BETA CAM FAIL
(Continued)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 22

Source: SY241-VTP-RA-301  Setpoints: ≥ 3000 cpm Beta


Alarm Description: Beta CAM (VTP-RA-301) indicates high level of radiation at stack.

Automatic Actions:
1. Primary Exhauster B-Train fan shuts down.
2. Warning bell sounds.
3. Clear rotating beacon (XA-101) is ILLUMINATED.
4. Red rotating beacon (XA-301) is ILLUMINATED.
5. Vacuum pumps shutdown.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE personnel in SY-Farm to a protected or upwind location.
[4] ENSURE primary ventilation is shut down.
[6] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[7] CHECK status of the following annunciators in 241-SY-271:
   - Panel B-3 ANN-101 alarm 02 HIGH PRESSURE TANK 101 (LOW VACUUM) (WST-PAH-313)
   - Panel B-3 ANN-102 alarm 02 HIGH PRESSURE TANK 102 (LOW VACUUM) (WST-PAH-316)
   - Panel B-3 ANN-103 alarm 02 HIGH PRESSURE TANK 103 (LOW VACUUM) (WST-PAH-319).

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107   Alarm #:  22
Source: SY241-VTP-RA-301   Setpoints:  ≥ 3000 cpm Beta

Immediate Actions (Cont.):

[8] CHECK panel view for the following alarms:
   - SY241-VTP-PDT-180 (INTERLOCK ON / FAN SHUTDOWN) 1ST HEPA FILTER DP LO
   - SY241-VTP-PDT-182 (INTERLOCK ON / FAN SHUTDOWN) 2ND HEPA FILTER DP LO
   - SY241-VTP-PDT-181 (INTERLOCK ON / FAN SHUTDOWN) 1ST & 2ND HEPA FILTERS DP LO
   - SY241-VTP-PDT-180 (INTERLOCK ON / FAN SHUTDOWN) 1ST HEPA FILTER DP ROC
   - SY241-VTP-PDT-182 (INTERLOCK ON / FAN SHUTDOWN) 2ND HEPA FILTER DP ROC
   - SY241-VTP-PDT-181 (INTERLOCK ON / FAN SHUTDOWN) 1ST & 2ND HEPA FILTERS DP ROC.

[9] IF radiological survey results are negative and when directed by Shift Manager/OE, RESTART primary exhaust system per the following:
   [9.1] REQUEST Health Physics Technician reset CAM alarm.
   [9.2] RESTART primary exhaust system per TO-060-245.

Supplemental Actions:

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

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 CAM alarm setpoint.
3. Breakthrough of primary and secondary HEPA filters.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 22

Source: SY241-VTP-RA-301  Setpoints: ≥ 3000 cpm Beta

SY241-VTP-RA-301
BETA HI RAD

(Continued)

References:


Documents:  TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 23

Source: SY241-VTP-TE-179  Setpoints: ≥ 140°F


Alarm Description: Heater temperature element (VTP-TE-179) indicates high heater temperature.

Automatic Actions:
1. Heater shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] CONFIRM field reading for SY241-VTP-TI-179 is at or above 140°F.
[5] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[6] IF directed by Shift Manager, SHUT DOWN Primary Exhauster B-Train per TO-060-245.
[7] IF directed by Shift Manager, START Primary Exhauster A-Train per TO-060-245.

Supplemental Actions:
[8] REQUEST initiation of Work Package to troubleshoot and repair heater system.

Possible Causes:
1. Thermostat failure (TS-206).
2. Thermocouple failure on heater.
3. Contact failure (CON-206).
4. Instrument loop failure.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 23

Source: SY241-VTP-TE-179  Setpoints: ≥ 140°F

SY241-VTP-TE-179 HEATER TEMP HI

(Continued)

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 24

Source: SY241-VTP-TE-179  Setpoints: < 40°F


Alarm Description: Heater temperature element (VTP-TE-179) indicates low heater temperature.

Automatic Actions:

1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] CONFIRM field reading for SY241-VTP-TI-179 is at or below 40°F.
[5] IF alarm SY241-VTP-LT-205 (INTERLOCK ON / HEATER OFF) GLYCOL LEVEL LO is active on panel view, RESPOND per alarm GLYCOL LEVEL LO, page 52.
[6] IF alarm SY241-VTP-P-001 GLYCOL PUMP OFF is active on panel view, RESPOND per alarm GLYCOL PUMP OFF, page 53.
[8] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.
[9] REQUEST Shift Manager to NOTIFY Maintenance of need to adjust heater thermostat.
[10] IF directed by Shift Manager, SHUT DOWN Primary Exhauster B-Train per TO-060-245.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 24

Source: SY241-VTP-TE-179  Setpoints: < 40°F

SY241-VTP-TE-179
HEATER TEMP LO

Supplemental Actions:

[12] REQUEST initiation of Work Package to troubleshoot and repair heater system if required.


Possible Causes:

1. Thermostat is set too low.
2. Glycol level low.
3. Glycol pump off.

References:


Documents:  TO-060-245, Operate SY241 Primary Exhaust System  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 25

Source: SY241-VTP-TE-179  Setpoints: dT ≤ 20 °F

HEATER DELTA T LO < 20 DEG F


Alarm Description: Heater alarm (SY241-VTP-TE-179) indicates low differential temperature.

Automatic Actions:

1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[4] IF directed by Shift Manager, SHUT DOWN Primary Exhauster B-Train per TO-060-245.
[5] REQUEST Shift Manager notify Environmental On-Call for exhauster conditions as noted in Environmental Notifications procedure, TFC-ESHQ-ENV_FS-C-01.

Supplemental Actions:

[7] REQUEST Shift Manager to NOTIFY Maintenance of need to adjust thermostat.
[8] REQUEST initiation of Work Package to troubleshoot and repair heater system if required.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 25
Source: SY241-VTP-TE-179  Setpoints: \(dT \leq 20 \, ^\circ\text{F}\)

Possible Causes:
1. Thermostat is set too low.
2. Glycol level low.
3. Glycol pump off.

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
Panel: SY241-VTP-ENCL-107  
Alarm #: 26

Source: SY241-VTP-LT-185  
Setpoints: ≥ 80% Volume

Alarm Description: Sealpot level alarm (VTP-LT-185) indicates a high level in the sealpot.

Automatic Actions:
1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

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:

[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[3] EVACUATE all personnel from SY Farm to a protected or upwind area.
[5] IF directed by Shift Manager, STOP waste disturbing activities in SY Farm.
[6] CONFIRM field reading for SY241-VTP-LI-185 is at or above 80% volume.
[7] INVESTIGATE cause of high level at seal pot.
   [7.1] IF demister is being flushed, terminate operation.
   [7.2] IF freezing conditions exist, check status of heat trace.
[8] IF directed by Shift Manager, ENSURE exhauster valves are aligned per applicable valving table in TO-060-245.
[9] IF directed by Shift Manager, RESTART OR SHUTDOWN Primary Exhauster B-Train per TO-060-245.
[10] CHECK following indicators for an increase in differential pressure:
   - SY241-VTP-PDI-180
   - SY241-VTP-PDI-181
   - SY241-VTP-PDI-182.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 26

Source: SY241-VTP-LT-185  Setpoints: ≥ 80% Volume

SY241-VTP-LT-185 SEALPOT LEVEL HI

(Continued)

Supplemental Actions:

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


Possible Causes:

1. Sealpot system valves not aligned properly.
2. Obstruction or ice in sealpot piping.
3. Overfilled sealpot.
4. Instrument loop failure.

References:


Documents:  TO-060-245, Operate SY241 Primary Exhaust 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 Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107 Alarm #: 27
Source: SY241-VTP-LT-185 Setpoints: < 25% Volume
Alarm Class: Equipment Status.
Alarm Description: Sealpot level alarm (VTP-LT-185) indicates a low level in the sealpot. Bypass of the filtration system is possible if the sealpot level is too low.

Automatic Actions:
1. Clear rotating beacon (XA-101) is ILLUMINATED.

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:
[2] CHECK active alarms area of panel view to determine if alarm condition is still active.
[4] CONFIRM field reading for SY241-VTP-LI-185 is at or below 25% volume.
[6] IF directed by Shift Manager, REFILL sealpot per TO-060-245.

Supplemental Actions:
[8] CONTINUE to monitor system parameters AND NOTIFY Shift Manager of changing indications.

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

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust System
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 28

Source: SY241-VTP-LT-205  Setpoints: ≤ 50%

**SY241-VTP-LT-205**

**GLYCOL LEVEL LO**

**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:** Glycol level alarm (VTP-LT-205) indicates low glycol level.

**Automatic Actions:**
1. Glycol pump shuts down.
2. Heater shuts down.
3. Clear rotating beacon (XA-101) is ILLUMINATED.

**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] **CONFIRM** field readings for SY241-VTP-LI-205 and the glycol tank sight glass are at or below 50%.

[2] **NOTIFY** Shift Manager of findings.

**Supplemental Actions:**

[3] **IF** directed by Shift Manager, **INITIATE** Work Package to hydro test heater core.

**Possible Causes:**
1. Natural evaporation or demineralized water.
2. Rupture/leak in glycol system.
3. Instrument loop failure.

**References:**

**Drawings:**  H-14-104831, H-14-104180, H-14-104826, H-14-104166, H-14-030031, H-2-140002, H-2-37746, H-14-020131

**Documents:**  HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 29

Source: SY241-VTP-P-001  Setpoints: N/A

**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:** Glycol pump (VTP-P-001) indicates pump is off.

**Automatic Actions:**
1. Heater shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

**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. **ENSURE** glycol pump switch SY241-VTP-HS-102 on SY241-VTP-CP-105 is in “ON” position.
2. **NOTIFY** Shift Manager of findings.
3. **IF** alarm SY241-VTP-LT-205 (INTERLOCK ON / HEATER OFF) GLYCOL LEVEL LO is active on panel view, **RESPOND** per alarm GLYCOL LEVEL LO, page 52.
4. **IF** directed by Shift Manager, **ATTEMPT** to restart glycol pump by cycling SY241-VTP-HS-102 on SY241-VTP-CP-105 as follows:
   4.1 **POSITION** SY241-VTP-HS-102 to “OFF”.
   4.2 **POSITION** SY241-VTP-HS-102 to “ON”.
5. **IF** directed by Shift Manager, **SHUT DOWN** Primary Exhauster B-Train per TO-060-245.
6. **IF** directed by Shift Manager, **START** Primary Exhauster A-Train per TO-060-245.

**Supplemental Actions:**

7. **REQUEST** initiation of Work Package to troubleshoot and repair glycol pump if required.

(Continued on Next Page)
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm

Panel: SY241-VTP-ENCL-107  Alarm #: 29

Source: SY241-VTP-P-001  Setpoints: N/A

SY241-VTP-P-001
GLYCOL PUMP OFF

(Continued)

Possible Causes:

1. Glycol pump switch SY241-VTP-HS-102 is in “OFF” position.
2. Glycol level low.
3. Glycol pump failure.
4. Heater core or piping leaks.
5. Power failure.

References:


Documents: TO-060-245, Operate SY241 Primary Exhaust System
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Respond to Alarms at 241-SY B-Train Primary Exhauster

Facility: 241-SY Tank Farm  
**Panel:** SY241-VTP-ENCL-107  **Alarm #:** 30

**Source:** SY241-VTP-LT-185  **Setpoints:** < 20% Volume


Alarm Description: Sealpot level alarm (VTP-LT-185) indicates a low level in the sealpot. Bypass of the filtration system is possible if the sealpot level is too low.

**Automatic Actions:**

1. Primary Exhauster B-Train shuts down.
2. Clear rotating beacon (XA-101) is ILLUMINATED.

**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. **EVACUATE** all personnel from SY Farm to a protected or upwind area.
2. **NOTIFY** Shift Manager of alarms and actions **AND**  
   **REQUEST** Shift Manager respond per TF-AOP-021.
3. **IF** directed by Shift Manager, **STOP** waste disturbing activities in SY Farm.
4. **CONFIRM** field reading for SY241 VTP LI 185 is at or below 25% volume.
5. **IF** panel view scrolls alarm SY241-VTP-RA-301 BETA HI RAD, **RESPOND** per alarm SY241-VTP-RA-301, Page 40.
6. **IF** directed by Shift Manager, **REFILL** sealpot per TO-060-245.
7. **IF** directed by the Shift Manager, **RESTART** the exhaust system per TO-060-245 or TO-060-245.
8. **CHECK** for leaks.

**Supplemental Actions:**

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

(Continued on Next Page)
Facility: 241-SY Tank Farm
Panel: SY241-VTP-ENCL-107  Alarm #: 30
Source: SY241-VTP-LT-185  Setpoints: < 20% Volume

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

References:
Documents: TO-060-245, Operate SY241 Primary Exhaust 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
Figure 1 – Panel View Alarm Panel (ENCL-107)