TSR Compliance

Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Tank Farm Alarm Response Procedure

AY/AZ Farm

USQ # TF-17-0332-S, Rev. 0

<table>
<thead>
<tr>
<th>Rev/Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tbody>
<tr>
<td>H-2</td>
<td>03/22/2017</td>
<td>Update Procedure to Current Field Conditions</td>
<td>Remove reference to TO-060-01 and associated alarms. Updated “Immediate Actions” section for PI- #K1-1 alarms.</td>
</tr>
<tr>
<td>H-1</td>
<td>04/25/2016</td>
<td>Modify procedure to address LCO 3.1A</td>
<td>Summary: Pg. 6, 8, 13, 26, 28, 33, 35, 46, 48, 53, 55, 66, 68, 73, 75: Added informing the Shift Manager to evaluate entering time monitoring per LCO 3.1A</td>
</tr>
<tr>
<td>H-0</td>
<td>09/16/2015</td>
<td>Periodic Review</td>
<td>No changes identified. Footer updated.</td>
</tr>
<tr>
<td>G-2</td>
<td>09/15/2014</td>
<td>MCS update to modify screen names per TFC-ENG-SCR-55647</td>
<td>Engineering request to address changes to the MCS software. Added several new alarms and modified screen name to just a number.</td>
</tr>
<tr>
<td>G-1</td>
<td>07/18/2014</td>
<td>Reference Update</td>
<td>Update reference from TFC-OPS-OPER-C-56 to TF-REC-001</td>
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Type: REFERENCE  Document No.: ARP-T-251-00015  Rev/Mod: H-2  Release Date: 03/22/2017  Page: 1 of 73
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**RECORDS**

No records are generated during the performance of this procedure.
1.0 PURPOSE

1.1 This procedure provides guidance to nuclear chemical operators for responding to alarms associated with AY/AZ ventilation system MCS graphic screen 15.

2.0 OPERATION

NOTE - Procedure may identify Monitor and Control System as "MCS".

2.1 OPERATE MCS in accordance with procedure TO-060-356.

2.2 OPERATE AY/AZ ventilation system in accordance with procedure TO-060-350.

3.0 ENVIRONMENTAL COMPLIANCE

Tank farm ventilation systems and exhaust monitoring systems are regulated under Washington Administrative Code (WAC) Chapters 173-400, 173-401, 173-460 and 246-247 and applicable Notices of Construction (NOC) issued to ensure compliance with these regulations. To ensure reporting requirements are met, all planned and unplanned outages of tank farm ventilation and exhaust monitoring systems, including portable exhausters, must be immediately reported to the Shift Manager and Environmental in compliance with TFC-ESHQ-ENV_FS-C-01 and TF-REC-001.
### Respond to Monitor Control System Graphic #15 Primary Vent Alarms

**Facility:** AY/AZ Primary Ventilation

**Graphic:** 15

<table>
<thead>
<tr>
<th>Alarm #:</th>
<th>PDAH-AY1K1-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setpoint:</td>
<td>3.00 Inches WC</td>
</tr>
</tbody>
</table>

**Source:** PDS-AY101K1-1

**Alarm Class:** Equipment Status

**Alarm Description:** AY-101 Inlet Filter Differential Pressure is high

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

- MCS currently has no communications with inlet station valve MK-AY101K1-1.

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**Immediate Actions:**

1. **IF** high differential pressure is due to high flow as displayed on FI-AY1K1-2, **GO TO** applicable alarm response.

2. **FIELD CHECK** high differential pressure on local gauges PDI-AY1K103-1 and PDI-AY1K104-1 on inlet station.

3. **NOTIFY** Shift Manager of actions and findings.

---

**Possible Causes:**

1. Blockage of pre-filter AY101-K1-3-1.
2. Blockage of HEPA filter AY101-K1-4-1.
3. Instrument malfunction.
4. High flow through the inlet station.

---

**References:**

- **Drawings:** H-14-020106 Sht 1
- **Documents:** None.
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

**Graphic:** 15  
**Alarm #:** PI-AY1K1-1  
**Source:** PI-AY1K1-1  
**Setpoint:** -0.50 Inches WC

**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:** AY-101 Tank Pressure is high

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

- MCS currently has no communications with inlet station valve MK-AY101K1-1.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

**Immediate Actions:**

1. **CHECK** all tank pressures using MCS screen #15 Primary Vent.
2. **IF** high pressure condition is confined to AY-101, **CHECK** to see if maintenance or farm activities are causing the alarm.
3. **IF** other tank pressures are also increasing, **GO TO** graphic screens #16 Primary Cooling and #17 Primary Exhaust Trains AND **CHECK** Primary Ventilation system operation and parameters.
4. **ENSURE** position of AY-101 Recirc module dampers corresponds to operating mode. Refer to Graphic Screen 10 and procedure TO-060-351.
5. **CHECK** position of tank outlet valve MK-AY101K1-2 has not changed using MCS screen #15, Primary Vent.
6. **IF** inlet valve MK-AY101K1-1 is determined to not be fully CLOSED **REQUEST** an aging waste certified operator, **ENSURE** MK-AY101K1-1 is in MANUAL AND **CLOSE** valve, to re-establish tank pressure (-1.0 to -3.0 inches WC).
7. **IF** other parameters are in alarm, **RESPOND** per applicable alarm response procedure.
8. **NOTIFY** Shift Manager of actions and findings AND **REQUEST** Shift Manager evaluate entering Time Monitoring for LCO 3.1A (LCO 3.1)

(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

**Graphic:** 15

**Alarm #:** PI-AY1K1-1
**Setpoint:** -0.50 Inches WC

**Source:** PI-AY1K1-1

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Supplemental Actions:

[12] **IF** instrumentation malfunction is suspected **CHECK** associated local pressure indicators.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AY101K1-1 or MK-AY101K1-2 not positioned properly.

References:

**Drawings:**  H-14-020606 Sht 1, H-14-020107 Sht 7

**Documents:** RPP-16922, Environmental Specification Requirements
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TO-060-350, Start, Stop, and Operate AY/AZ Tank Ventilation Primary Exhaust System
TO-060-351, AY101 Recirc Module Operation
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AY1K1-1
HIGH-HIGH

Source: PI-AY1K1-1
Setpoint: -0.25 Inches WC

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: AY-101 Tank Pressure is very high

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. Reports to TMACS.

Immediate Actions:

[1] IF AY-101 HIGH-HIGH pressure is verified on PI-AY1K1-1 and AY-101 exhaust air flow is greater than 50 SCFM on FI-AY1K1-2, ENSURE all alarm response actions for alarm PI-AY1K1-1 HIGH, AY101 PRIMARY TANK PRESSURE (HIGH), have been completed.

[2] IF AY-101 HIGH-HIGH pressure is verified on PI-AY1K1-1 and AY-101 exhaust air flow is less than 50 SCFM on FI-AY1K1-2, ENSURE tank farm low vacuum and flow alarm (evacuation horn) is sounding.

[3] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS graphic screen #15, Primary Vent.

[4] EVACUATE all personnel from tank farm to a protected or upwind area.


[5.1] REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A.

[6] IF a waste transfer is in progress and tank AY-101 is physically connected to transfer route REQUEST transfer MBD operator shut down transfer.

[7] AS directed by Shift Manager, STOP waste disturbing activities to the Tank Farm.

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Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY1K1-1
Source: PI-AY1K1-1  Setpoint: -0.25 Inches WC

Immediate Actions (Cont.)

[10] INSPECT primary tank pressure instrumentation to evaluate degree and duration of pressurization AND

REPORT actions and findings to Shift Manager.

Supplemental Actions:

[11] IF more than 12 hours have elapsed following inability to verify flow and pressure, SHUTDOWN 101-AY annulus ventilation system per TO-060-120.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AY101K1-1 or MK-AY101K1-2 not operating properly.

References:

Drawings: H-2-131062, H-2-131075 Sht 1
Documents: RPP-16922, Environmental Specification Requirements
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TO-060-120, Operate TK-241-AY-101 Annulus Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AY1K1-1  
LOW  
Source: PI-AY1K1-1  
Setpoint: -3.50 Inches WC

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: AY-101 Tank Pressure is low

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

- MCS currently has no communications with inlet station valve MK-AY101K1-1.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

Immediate Actions:

[12] CHECK low pressure (high vacuum) on PI-AY1K1-1 using MCS screen #15, Primary Vent.

[13] COMPARE narrow range pressure on PI-AY1K1-2 to wide range pressure on PI-AY1K1-2 using MCS screen #15, Primary Vent.

[14] IF other tanks on MCS screen #15 have low pressure (high vacuum), ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, MCS screen #17, Primary Exhaust Trains) is set at proper set point.

[15] IF pressures on PI-AY1K1-1 (narrow range) and PI-AY1K1-2 (wide range) both indicate low pressure (high vacuum) and all other tanks on MCS screen #15 do not have low pressure (high vacuum) CHECK flow rate on FI-AY1K1-2 is within normal range (50 to 550 SCFM).

[16] CHECK position of tank outlet valve MK-AY101K1-2 has not changed using MCS screen #15, Primary Vent.

[17] NOTIFY Shift Manager of actions and findings.

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15  

Alarm #: PI-AY1K1-1  
LOW

Source: PI-AY1K1-1  
Setpoint: -3.50 Inches WC

Supplemental Actions:

[18] IF directed by Shift Manager OPEN MK-AY101K1-1 at air inlet station
[19] IF directed by Shift Manager ADJUST valve MK-AY101K1-2 to bring AY-101 vacuum and/or flow into normal ranges.

Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AY101K1-1 or MK-AY101K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020606 Sht 1, H-14-020107 Sht 7
Documents: OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
            HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Source: PI-AY1K1-1

Alarm #: PI-AY1K1-1
LOW-LOW

Setpoint: -4.00 Inches WC

Alarm Description: AY101 Tank Pressure is very low

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 low-low pressure is verified on PI-AY1K1-1 using MCS screen #15, Primary Vent, ENSURE all alarm response actions for alarm AY101 PRIMARY TANK PRESSURE (LOW), have been completed.
[2] IF at any time pressure in tank AY-101 decreases to -5.5 inches WC or less, STOP running primary exhaust fan.

Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AY101K1-1 or MK-AY101K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020606 Sht 1, H-14-020107 Sht 7
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY1K1-2 HIGH

Source: PI-AY1K1-2  Setpoint: -0.50 Inches WC

Alarm Description: AY-101 Tank Pressure is HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AY1K1-2 HIGH-HIGH

Source: PI-AY1K1-2  
Setpoint: -0.25 Inches WC

Alarm Description: AY-101 Tank Pressure is HIGH HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:

None.

References:

None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AY1K1-2 LOW

Source: PI-AY1K1-2  
Setpoint: -3.50 Inches WC

Alarm Description: AY-101 Tank Pressure is LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY1K1-2 LOW-LOW

Source: PI-AY1K1-2  Setpoint: -4.00 Inches WC
Alarm Description: AY-101 Tank Pressure is LOW LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AY1K1-2
LOW

Source: FI-AY1K1-2
Setpoint: 50.0 SCFM

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: AY-101 Outlet Primary Vent Flow is low

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- If flow rate is less than approximately 60 SCFM, the instrument will read 0 (zero) SCFM. A reading of 0 SCFM does not necessarily imply zero flow.
- If a loss of flow indication occurs due to a planned activity, tank pressure may be used to verify tank ventilation.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF AY-101 exhaust air flow is less than 50 SCFM on FI-AY1K1-2 and PI-AY1K1-1 HIGH-HIGH alarm is not active, GO TO Step [3].

[2] IF AY-101 exhaust air flow is less than 50 SCFM on FI-AY1K1-2 and PI-AY1K1-1 HIGH-HIGH alarm is active, PERFORM the following:

[2.1] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS graphic screen #15, Primary Vent.

[2.2] EVACUATE all personnel from AY and AZ tank farms to a protected or upwind area.

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

[2.4] IF a waste transfer is in progress and tank AY-101 is physically connected to the transfer route REQUEST transfer MBD operator shut down transfer.

[2.5] AS directed by Shift Manager, STOP waste disturbing activities to the Tank Farm.

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Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: FI-AY1K1-2  
LOW

Source: FI-AY1K1-2  
Setpoint: 50.0 SCFM

(Continued)

Immediate Actions (Cont.)

[3] IF low flow exists on more than one tank, GO TO graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains AND
CHECK exhaust fan operation, system lineup, and differential pressures across equipment.

[4] IF other parameters are in alarm, RESPOND per applicable alarm response.

[5] IF there are no associated alarms on graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains, GO TO, Graphic Screen #15, Primary Vent AND
CHECK position of damper MK-AY101K1-2 has not changed.


Supplemental Actions:


Possible Causes:

1. Primary exhaust fan failure.
2. Primary fan pressure controller malfunction.
3. High differential pressures on the following equipment:
   Inlet station HEPA filter, recirc condenser, recirc moisture separator, primary condenser, HEME, or filtration train HEPA filters.
5. K1-1 pressure controller instrumentation malfunction.

References:

Drawings:  H-14-020106 Sht 1, H-14-020107 Sht 7
Documents:  RPP-16922, Environmental Specification Requirements  
            TF-AOP-021, Response to Tank Farm Ventilation Upset  
            HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AY1K1-2

Source: FI-AY1K1-2

Setpoint: 650.0 SCFM

Alarm Class: Equipment Status

Alarm Description: AY-101 Outlet Primary Vent Flow is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF high flow is verified on FI-AY1K1-2, CHECK position of damper MK-AY101K1-2 has not changed.

[2] IF at any time pressure in tank AY-101 decreases to -5.5 inches WC. or less STOP the running exhaust fan.

[3] ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, MCS screen #17) is set at proper set point.

[4] CHECK for any intrusive work (cover blocks open, 12” riser access) that may be in progress.


Supplemental Actions:


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AY1K1-2

HIGH

Source: FI-AY1K1-2

Setpoint: 650.0 SCFM

YELLOW

FI-AY1K1-2

HIGH

(Continued)

Possible Causes:

1. MK-AY101K1-2 damper malfunction.
2. Instrument malfunction.
3. Maintenance PM.
4. Intrusive work.
5. Breach in the inlet station.
6. Incorrect set point for fan speed control.

References:

Drawings: H-14-020106 Sht 1, H-14-020107 Sht 7
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15    Alarm #: ZI-AY1K1-2 OE

Source: FI-AY1K1-2    Setpoint: -12.50%

Alarm Class: Equipment Status
Alarm Description: AY-101 Outlet Flow Damper position failure (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.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

Immediate Actions:
[1] IF valve position indicator ZI-AY1K1-2 valve position indicator has not changed position RESET object error alarm per procedure TO-060-350.

Supplemental Actions:

Possible Causes:
1. Lifted lead, broken wire, loss of power.
2. Position indicator (ZI) failure.
3. Maintenance PM.

References:
Drawings: H-14-020106 Sht 1
Documents: None
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PDAH-AY2K1-1
Setpoint: 3.00 Inches WC

Source: PDS-AY102K1-1

Alarm Class: Equipment Status
Alarm Description: AY-102 Inlet Filter Differential Pressure is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station valve MK-AY102K1-2.

Immediate Actions:
[1] IF high differential pressure is due to high flow as displayed on FI-AY2K1-2, GO TO applicable alarm response.
[2] FIELD CHECK high differential pressure on local gauges PDI-AY2K103-1 and PDI-AY2K104-1 on inlet station.

Possible Causes:
1. Blockage of pre-filter AY102-K1-3-1.
2. Blockage of HEPA filter AY102-K1-4-1.
3. Instrument malfunction.
4. High flow through the inlet station.

References:
Drawings: H-14-020106 Sht 2
Documents: None
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AY2K1-1  
HIGH  

Source: PI-AY2K1-1  
Setpoint: -0.50 Inches WC  

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: AY-102 Tank Pressure is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station valve MK-AY102K1-2.
- Recirc module valve MK-AY102K1-2 is administratively locked in current position.

Immediate Actions:

[1] CHECK all tank pressures using MCS screen #15, Primary Vent.
[2] IF high pressure condition is confined to AY-102, CHECK to see if maintenance or farm activities are causing the alarm.
[3] IF other tank pressures are also increasing, GO TO graphic screens #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK Primary Ventilation system operation and parameters.
[6] IF inlet valve MK-AY102K1-1 is determined to not be fully CLOSED, REQUEST an aging waste certified operator ENSURE MK-AY102K1-1 is in MANUAL AND CLOSE valve to re-establish tank pressure (-1.0 to - 3.0 inches WC).
[7] IF other parameters are in alarm, RESPOND per applicable alarm response procedure.
[8] NOTIFY Shift Manager of actions and findings AND REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A. (LCO 3.1)

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PI-AY2K1-1
Source: PI-AY2K1-1

Setpoint: -0.50 Inches WC

Supplemental Actions:

[9] IF instrumentation malfunction is suspected CHECK associated local pressure indicators.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AY102K1-1 or MK-AY102K1-2 not positioned properly.

References:

Drawings:
H-14-020606 Sht 2, H-14-020107 Sht 7

Documents:
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: AY/AZ Primary Ventilation

**Graphic: 15**

| Alarm #: PI-AY2K1-1 | HIGH-HIGH |

**Source:** PI-AY2K1-1  
**Setpoint:** -0.25 Inches WC

**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:** AY-102 Tank Pressure is very high

**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. Reports to TMACS.

**Immediate Actions:**

[1] **IF** AY-102 HIGH-HIGH pressure is verified on PI-AY2K1-1 and AY-102 exhaust air flow is greater than 50 SCFM on FI-AY2K1-2, **ENSURE** all alarm response actions for alarm PI-AY1K1-1 HIGH, AY102 PRIMARY TANK PRESSURE (HIGH), have been completed.

[2] **IF** AY-102 HIGH-HIGH pressure is verified on PI-AY2K1-1 and AY-102 exhaust air flow is less than 50 SCFM on FI-AY2K1-2, **ENSURE** tank farm low vacuum and flow alarm (evacuation horn) is sounding.

[3] **IF** tank farm low vacuum and flow alarm (evacuation horn) is not sounding, **MANUALLY ACTIVATE** alarm on MCS graphic screen #15, Primary Vent.

[4] **EVACUATE** all personnel from tank farm to a protected or upwind area.

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

[5.1] **REQUEST** Shift Manager evaluate entering Time Monitoring for LCO 3.1A.

[6] **IF** a waste transfer is in progress and tank AY-102 is physically connected to the transfer route, **REQUEST** transfer MBD operator shut down transfer.

[7] **AS** directed by Shift Manager, **STOP** waste disturbing activities to the Tank Farm.

[8] **CHECK** AY-102 pressure and flow control valves for indication of change.


(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AY2K1-1
HIGH-HIGH

Source: PI-AY2K1-1

Setpoint: -0.25 Inches WC

(Continued)

Immediate Actions: (Cont.)

[10] INSPECT primary tank pressure instrumentation to evaluate degree and duration of the
pressurization AND

REPORT actions and findings to Shift Manager.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AY102K1-1 or MK-AY102K1-2 not positioned properly.

References:

Drawings: H-14-020606 Sht 2, H-14-020107 Sht 7
Documents: 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: AY/AZ Primary Ventilation

Graphic: 15     Alarm #: PI-AY2K1-1

Source: PI-AY2K1-1     Setpoint: -3.50 Inches WC

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: AY-102 Tank Pressure is low

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station valve MK-AY102K1-1.
- Recirc module valve MK-AY102K1-2 is administratively locked in current position

Immediate Actions:

[1] CHECK low pressure (high vacuum) on PI-AY2K1-1 using MCS screen #15, Primary Vent.

[2] COMPARE narrow range pressure on PI-AY2K1-1 to wide range pressure on PI-AY2K1-2 using MCS screen #15, Primary Vent.

[3] IF other tanks on MCS screen #15 have low pressure (high vacuum) ENSURE primary exhaust fan pressure controller (PC-AZK1-1A or 1B, MCS screen #17, Primary Exhaust Trains) is set at the proper set point.

[4] IF pressures on PI-AY2K1-1 (narrow range) and PI-AY2K1-2 (wide range) both indicate low pressure (high vacuum) and all other tanks on MCS screen #15 do not have low pressure (high vacuum) CHECK flow rate on FI-AY2K1-2 is within normal range (50 to 550 SCFM).


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY2K1-1
            LOW

Source: PI-AY2K1-1  Setpoint: -3.50 Inches WC

Supplemental Actions:

[8] IF directed by Shift Manager, ADJUST valve MK-AY102K1-2 to bring AY-102 vacuum and/or flow into normal range.

Possible Causes:
1. Blockage of air inlets, freezing fog, or rain.
2. MK-AY102K1-1 or MK-AY102K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:
Drawings: H-14-020606 Sht 2, H-14-020107 Sht 7
Documents: OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
            HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AY2K1-1
LOW-LOW

Source: PI-AY2K1-1
Setpoint: -4.00 Inches WC

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: AY-102 Tank Pressure is very low

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 low-low pressure is verified on PI-AY2K1-1 using MCS screen #15, Primary Vent, ENSURE all alarm response actions for alarm AY102 Primary Tank Pressure (LOW), have been completed.

[2] IF at any time pressure in tank AY-102 decreases to -5.5 inches WC or less STOP running primary exhaust fan.


Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AY102K1-1 or MK-AY102K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020606 Sht 2, H-14-020107 Sht 7
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AY2K1-2 HIGH

Source: PI-AY2K1-2  
Setpoint: -0.50 Inches WC

Alarm Description: AY-102 Tank Pressure is HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PI-AY2K1-2 HIGH-HIGH
Source: PI-AY2K1-2
Setpoint: -0.25 Inches WC
Alarm Description: AY-102 Tank Pressure is HIGH HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY2K1-2 LOW

Source: PI-AY2K1-2  Setpoint: -3.50 Inches WC

Alarm Description: AY-102 Tank Pressure is LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AY2K1-2 LOW-LOW

Source: PI-AY2K1-2  Setpoint: -4.00 Inches WC

Alarm Description: AY-102 Tank Pressure is LOW LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15
Source: FI-AY2K1-2

Alarm #: FI-AY2K1-2
Setpoint: 50.0 SCFM

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: AY-102 Outlet Primary Vent Flow is low

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

- If flow rate is less than approximately 60 SCFM, the instrument will read 0 (zero) SCFM. A reading of 0 SCFM does not necessarily imply zero flow.
- If a loss of flow indication occurs due to a planned activity, tank pressure may be used to verify tank ventilation.
- Recirc module valve MK-AY101K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF AY-102 exhaust air flow is less than 50 SCFM on FI-AY2K1-2 and PI-AY2K1-1 HIGH-HIGH alarm is not active, GO TO step [3].

[2] IF AY-102 exhaust air flow is less than 50 SCFM on FI-AY2K1-2 and PI-AY2K1-1 HIGH-HIGH alarm is active, PERFORM the following:

[2.1] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS Graphic screen #15, Primary Vent.

[2.2] EVACUATE all personnel from AY and AZ tank farms to a protected or upwind area.

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

[2.4] IF a waste transfer is in progress and tank AY-102 is physically connected to the transfer route REQUEST transfer MBD operator shut down transfer.

[2.5] AS directed by Shift Manager, STOP waste disturbing activities to the Tank Farm.

(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15

Yellow
FI-A2YK1-2
LOW

Source: FI-A2YK1-2
Setpoint: 50.0 SCFM

Immediate Actions (Cont.)

[3] IF low flow exists on more than one tank, GO TO graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK exhaust fan operation, system lineup, and differential pressures across equipment.

[4] IF other parameters are in alarm, RESPOND per applicable alarm response.

[5] IF there are no associated alarms on graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains, GO TO Graphic Screen #15, Primary Vent AND CHECK position of damper MK-AY102K1-2 has not changed.


Supplemental Actions:


Possible Causes:

1. Primary exhaust fan failure.
2. Primary fan pressure controller malfunction.
3. High differential pressures on the following equipment: Inlet station HEPA filter, recirc condenser, recirc moisture separator, primary condenser, HEME, or filtration train HEPA filters.
5. K1-1 pressure controller instrumentation malfunction.

References:

Drawings: H-14-020106 Sht 2, H-14-020107 Sht 7
Documents: RPP-16922, Environmental Specification Requirements
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: FI-A2YK1-2
          HIGH

Source: FI-A2YK1-2  Setpoint: 650.0 SCFM

Alarm Class: Equipment Status
Alarm Description: AY-102 Primary Vent Flow is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- Recirc module valve MK-AY102K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF high flow is verified on FI-A2YK1-2, CHECK position of damper MK-A2Y102K1-2 has not changed.

[2] IF at any time pressure in tank AY-102 decreases to -5.5 inches WC. or less STOP the running primary exhaust fan.

[3] ENSURE primary exhaust fan pressure controller (PI-A2ZK1-1A or 1B, MCS screen #17) is set at proper set point.

[4] CHECK for any intrusive work (cover blocks open, 12” riser access) that may be in progress.


Supplemental Actions:


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AY2K1-2
HIGH

Source: FI-AY2K1-2

Setpoint: 650.0 SCFM

(Continued)

Possible Causes:

1. MK-AY102K1-2 damper malfunction.
2. Instrument malfunction.
3. Maintenance PM.
4. Intrusive work.
5. Breach in the inlet station.
6. Incorrect set point for fan speed control.

References:

Drawings: H-14-020106 Sht 2, H-14-020107 Sht 7
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: ZI-AY2K1-2 OE

Source: ZI-AY2K1-2

Setpoint: -12.50%

Alarm Class: Equipment Status

Alarm Description: AY-102 Outlet Flow Damper position failure (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.

- Recirc module valve MK-AY102K1-2 is administratively locked in current position.

Immediate Actions:


Supplemental Actions:


Possible Causes:

1. Lifted lead, broken wire, loss of power.
2. Position indicator (ZI) failure.
3. Maintenance PM.

References:

Drawings: H-14-020106 Sht 2
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PDAH-AZ1K1-1

Setpoint: 3.00 Inches WC

Alarm Class: Equipment Status

Alarm Description: AZ-101 Inlet Filter Differential Pressure is high

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

- MCS currently has no communications with inlet station valve MK-AZ101K1-1.

Immediate Actions:

[1] IF high differential pressure is due to high flow as displayed on FI-AZ1K1-2, GO TO applicable alarm response.

[2] FIELD CHECK high differential pressure on local gauges PDI-AZ1K103-1 and PDI-AZ1K104-1 on inlet station.


Possible Causes:

1. Blockage of pre-filter AZ101-K1-3-1.
2. Blockage of HEPA filter AZ101-K1-4-1.
3. Instrument malfunction.
4. High flow through the inlet station.

References:

Drawings: H-14-020107 Sht 1
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ1K1-1

HIGH

Source: PI-AZ1K1-1

Setpoint: -0.50 Inches WC

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: AZ-101 Tank Pressure is high

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

- MCS currently has no communications with inlet station valve MK-AZ101K1-1.
- Recirc module valve MK-AZ101K1-2 is administratively locked in current position.

Immediate Actions:

[1] CHECK all tank pressures using MCS screen #15, Primary Vent.

[2] IF high pressure condition is confined to AZ-101 CHECK to see if maintenance or farm activities are causing the alarm.

[3] IF other tank pressures are also increasing, GO TO graphic screens #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK Primary Ventilation system operation and parameters.

[4] ENSURE position of AZ-101 Recirc module dampers corresponds to operating mode. Refer to Graphic Screen 12 and procedure TO-060-353.


[6] IF inlet valve MK-AZ101K1-1 is determined to not be fully CLOSED REQUEST an aging waste certified operator ENSURE MK-AZ101K1-1 is in MANUAL AND CLOSE valve, to re-establish tank pressure (1.0 to 3.0 inches WC).

[7] IF other parameters are in alarm, RESPOND per applicable alarm response procedure.

[8] NOTIFY Shift Manager of actions and findings AND REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A. (LCO 3.1)

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ1K1-1 HIGH

Source: PI-AZ1K1-1

Setpoint: -0.50 Inches WC

(Continued)

Supplemental Actions:

[9] IF pressure instrumentation malfunction is suspected CHECK associated local pressure indicators.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AZ101K1-1 or MK-AZ101K1-2 not positioned properly.

References:

Drawings: H-14-020607 Sht 1, H-14-020107 Sht 7
Documents: 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 Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PI-AZ1K1-1 HIGH-HIGH

Source: PI-AZ1K1-1
Setpoint: -0.25 Inches WC

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: AZ-101 Tank Pressure is very high

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. Reports to TMACS.

Immediate Actions:
[1] IF AZ-101 HIGH-HIGH pressure is verified on PI-AZ1K1-1 and AZ-101 exhaust air flow is greater than 50 SCFM on FI-AZ1K1-2, ENSURE all alarm response actions for alarm PI-AZ1K1-1 HIGH, AZ101 PRIMARY TANK PRESSURE (HIGH), have been completed.
[2] IF AZ-101 HIGH-HIGH pressure is verified on PI-AZ1K1-1 and AZ-101 exhaust air flow is less than 50 SCFM on FI-AZ1K1-2, ENSURE tank farm low vacuum and flow alarm (evacuation horn) is sounding.
[3] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS graphic screen #15, Primary Vent.
[4] EVACUATE all personnel from tank farm to a protected or upwind area.
[5.1] REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A (LCO 3.1)
[6] IF a waste transfer is in progress and tank AZ-101 is physically connected to the transfer route, REQUEST transfer MBD operator shut down transfer.
[7] AS directed by Shift Manager, STOP waste disturbing activities to the Tank Farm.

(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

**Graphic:** 15

**Alarm #:** PI-AZ1K1-1

**Source:** PI-AZ1K1-1

**Setpoint:** -0.25 Inches WC

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**Immediate Actions (Cont.):**

[10] **INSPECT** primary tank pressure instrumentation to evaluate degree and duration of pressurization **AND**

**REPORT** actions and findings to Shift Manager.

---

**Supplemental Actions:**

[11] **IF** more than 12 hours have elapsed following inability to verify flow and pressure,

**SHUTDOWN** AZ annulus ventilation system per TO-060-140.

---

**Possible Causes:**

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AZ101K1-1 or MK-AZ101K1-2 not positioned properly.

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**References:**

**Drawings:** H-14-020607 Sht 1, H-14-020107 Sht 7

**Documents:** RPP-16922, Environmental Specification Requirements
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TO-060-140, Operate 241-AZ Annulus Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation  

Graphic: 15  

Yellow  

Alarm #: PI-AZ1K1-1  

LOW  

Source: PI-AZ1K1-1  

Setpoint: -3.50 Inches WC  

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: AZ-101 Tank Pressure is low  

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

- MCS currently has no communications with inlet station valve MK-AZ101K1-1.  
- Recirc module valve MK-AZ101K1-2 is administratively locked in current position.  

Immediate Actions:  

[1] CHECK low pressure (high vacuum) on PI-AZ1K1-1 using MCS screen #15, Primary Vent.  

[2] COMPARE narrow range pressure on PI-AZ1K1-1 to wide range pressure on PI-AZ1K1-2 using MCS screen #15, Primary Vent.  

[3] IF other tanks on MCS screen #15 have low pressure (high vacuum), ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, screen #17, Primary Exhaust Trains) is set at the proper set point.  

[4] IF pressures on PI-AZ1K1-1 (narrow range) and PI-AZ1K1-2 (wide range) both indicate low pressure (high vacuum) and all other tanks on MCS screen #15 do not have low pressure (high vacuum) CHECK flow rate on FI-AZ1K1-2 is within normal range (50 to 550 SCFM).  


(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ1K1-1 LOW

Source: PI-AZ1K1-1

Setpoint: -3.50 Inches WC

YELLOW

PI-AZ1K1-1 LOW

(Continued)

Supplemental Actions:

[7] IF directed by Shift Manager OPEN MK-AZ101K1-1 at air inlet station

[8] IF directed by Shift Manager ADJUST valve MK-AZ101K1-2 to bring AZ-101 vacuum and/or flow into normal ranges.

Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AZ101K1-1 or MK-AZ101K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020607 Sht 1, H-14-020107 Sht 7

OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks

HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Alarm #: PI-AZ1K1-1
LOW-LOW

Source: PI-AZ1K1-1
Setpoint: -4.00 Inches WC

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: AZ-101 Tank Pressure is very low

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 low-low pressure is verified on PI-AZ1K1-1 using MCS screen #15, Primary Vent, ENSURE all alarm response actions for alarm PI-AZ1K1-1 HIGH, AZ101 PRIMARY TANK PRESSURE (LOW), have been completed.

[2] IF at any time pressure in tank AZ-101 decreases to -5.5 inches WC or less, STOP running primary exhaust fan.


Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AZ101K1-1 or MK-AZ101K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020607 Sht 1, H-14-020107 Sht 7
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ1K1-2 HIGH

Source: PI-AZ1K1-2

Setpoint: -0.50 Inches WC

Alarm Description: AZ-101 Tank Pressure is HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AZ1K1-2 HIGH-HIGH

Source: PI-AZ1K1-2  
Setpoint: -0.25 Inches WC

Alarm Description: AZ-101 Tank Pressure is HIGH HIGH

NOTE - No response action are required for this alarm.

Possible Causes:

None.

References:

None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: PI-AZ1K1-2 LOW

Source: PI-AZ1K1-2  Setpoint: -3.50 Inches WC

Alarm Description: AZ-101 Tank Pressure is LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

**Graphic: 15**  
**Alarm #: PI-AZ1K1-2 LOW-LOW**

**Source:** PI-AZ1K1-2  
**Setpoint:** -4.00 Inches WC

**Alarm Description:** AZ-101 Tank Pressure is LOW LOW

NOTE - No response actions are required for this alarm.

**Possible Causes:**

None.

**References:**

None.
TSR Compliance

Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ1K1-2

LOW

Source: FI-AZ1K1-2

Setpoint: 50.0 SCFM

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: AZ-101 Outlet Primary Vent Flow is low

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

- If flow rate is less than approximately 60 SCFM, the instrument will read 0 (zero) SCFM. A reading of 0 SCFM does not necessarily imply zero flow.
- If a loss of flow indication occurs due to a planned activity, tank pressure may be used to verify tank ventilation.
- Recirc module valve MK-AZ101K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF AZ-101 exhaust air flow is less than 50 SCFM on FI-AZ1K1-2 and PI-AZ1K1-1 HIGH-HIGH alarm is not active, GO TO step[3].

[2] IF AZ-101 exhaust air flow is less than 50 SCFM on FI-AZ1K1-2 and PI-AZ1K1-1 HIGH-HIGH alarm is active, PERFORM the following:

[2.1] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS graphic screen #15, Primary Vent.

[2.2] EVACUATE all personnel from AY and AZ tank farms to a protected or upwind area.

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

[2.4] IF a waste transfer is in progress and tank AZ-101 is physically connected to transfer route REQUEST transfer MBD operator shut down transfer.

[2.5] AS directed by Shift Manager, STOP waste disturbing activities to the tank farm.

[3] IF low flow exists on more than one tank, GO TO graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK exhaust fan operation, system lineup, and differential pressures across equipment.

(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: FI-AZ1K1-2  
LOW

Source: FI-AZ1K1-2  
Setpoint: 50.0 SCFM

YELLOW

FI-AZ1K1-2  
LOW

Immediate Actions (Cont.):

[4] IF other parameters are in alarm, RESPOND per applicable alarm response.

[5] IF there are no associated alarms on graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains, GO TO Graphic Screen #15, Primary Vent AND CHECK position of damper MK-AZ101K1-2 has not changed.


Supplemental Actions:


Possible Causes:

1. Primary exhaust fan failure.
2. Primary fan pressure controller malfunction.
3. High differential pressures on the following equipment: Inlet station HEPA filter, recirc condenser, recirc moisture separator, primary condenser, HEME, or filtration train HEPA filters.
5. K1-1 pressure controller instrumentation malfunction.

References:

Drawings: H-14-020107 Sht 1, H-14-020107 Sht 7
Documents: RPP-16922, Environmental Specification Requirements  
TF-AOP-021, Response to Tank Farm Ventilation Upset  
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ1K1-2
  HIGH

Source: FI-AZ1K1-2

Setpoint: 650.0 SCFM

Alarm Class: Equipment Status

Alarm Description: AZ-101 Primary Vent Flow is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
  - Recirc module valve MK-AZ101K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF high flow is verified on FI-AZ1K1-2, CHECK position of damper MK-AZ101K1-2 has not changed.

[2] IF at any time pressure in tank AZ-101 decreases to -5.5 inches WC. or less STOP the running exhaust fan.

[3] ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, MCS screen #17) is set at proper set point.

[4] CHECK for any intrusive work (cover blocks open, 12" riser access) that may be in progress.


Supplemental Actions:


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ1K1-2
  HIGH

Source: FI-AZ1K1-2
Setpoint: 650.0 SCFM

Possible Causes:
1. Damper malfunction.
2. Instrument malfunction.
3. Maintenance PM.
4. Intrusive work.
5. Breach in the inlet station.
6. Incorrect set point for fan speed control.

References:
Drawings: H-14-020107 Sht 1, H-14-020107 Sht 7
Documents: None
Facility: AY/AZ Primary Ventilation

**Graphic: 15**

**Alarm #: ZI-AZ1K1-2 OE**

**Source:** FI-AZ1K1-2  
**Setpoint:** -12.50%

**Alarm Class:** Equipment Status  
**Alarm Description:** AZ-101 Flow Damper position failure (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.  
- Recirc module valve MK-AZ101K1-2 is administratively locked in current position.

**Immediate Actions:**

[1] IF valve position indicator ZI-AZ1K1-2 has not changed position **RESET** object error alarm per procedure TO-060-350.  
[2] **NOTIFY** Shift Manager of actions and findings.

**Supplemental Actions:**


**Possible Causes:**

1. Lifted lead, broken wire, loss of power.  
2. Position indicator (ZI) failure.  
3. Maintenance PM.

**References:**

Drawings: H-14-020107 Sht 1  
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PDAH-AZ2K1-1
  HIGH

Source: PDS-AZ102K1-1

Setpoint: 3.00 Inches WC

Alarm Class: Equipment Status

Alarm Description: AZ-102 Inlet Filter Differential Pressure is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station

Immediate Actions:

[1] IF high differential pressure is due to high flow as displayed on FI-AZ2K1-2, GO TO applicable alarm response.


Possible Causes:

1. Blockage of pre-filter AZ102-K1-3-1.
2. Blockage of HEPA filter AZ102-K1-4-1.
3. Instrument malfunction.
4. High flow through the inlet station.

References:

Drawings: H-14-020107 Sht 2
Documents: None
Facility: AY/AZ Primary Ventilation

Graphic: 15    Alarm #: PI-AZ2K1-1 HIGH

Source: PDS-AZ102K1-1    Setpoint: -0.50 Inches WC

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: AZ-102 Tank Pressure is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station valve MK-AZ102K1-1.
- Recirc module valve MK-AZ102K1-2 is administratively locked in current position.

Immediate Actions:

[1] CHECK all tank pressures using MCS screen #15, Primary Vent.
[2] IF high pressure condition is confined to AZ-102 CHECK to see if maintenance or farm activities are causing the alarm.
[3] IF other tank pressures are also increasing, GO TO graphic screens #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK Primary Ventilation system operation and parameters.
[6] IF inlet valve MK-AZ102K1-1 is determined to not be fully CLOSED, REQUEST aging waste certified operator ENSURE MK-AZ102K1-1 is in MANUAL AND CLOSE valve, to re-establish tank pressure (-1.0 to -3.0 in. WC).
[7] IF other parameters are in alarm, RESPOND per applicable alarm response procedure.
[8] NOTIFY Shift Manager of actions and findings AND REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A. (LCO 3.1)

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AZ2K1-1 HIGH

Source: PDS-AZ102K1-1  
Setpoint: -0.50 Inches WC

Supplemental Actions:

[9] IF pressure instrumentation malfunction is suspected CHECK associated local pressure indicators.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AZ102K1-1 or MK-AZ102K1-2 not positioned properly.

References:

Drawings:  
H-14-020607 Sht 2, H-14-020107 Sht 7

Documents:  
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
RPP-16922, Environmental Specification Requirements
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ2K1-1
HIGH-HIGH

Source: PI-AZ2K1-1
Setpoint: -0.25 Inches WC

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: AZ-102 Tank Pressure is very high

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. Reports to TMACS.

Immediate Actions:

[1] IF AZ-102 HIGH-HIGH pressure is verified on PI-AZ2K1-1 and AZ-102 exhaust air flow is greater than 50 SCFM on FI-AZ2K1-2, ENSURE all alarm response actions for alarm PI-AZ2K1-1 HIGH, AZ102 PRIMARY TANK PRESSURE (HIGH), have been completed.

[2] IF AZ-102 HIGH-HIGH pressure is verified on PI-AZ2K1-1 and AZ-102 exhaust air flow is less than 50 SCFM on FI-AZ2K1-2, ENSURE tank farm low vacuum and flow alarm (evacuation horn) is sounding.

[3] IF tank farm low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS graphic screen #15, Primary Vent.

[4] EVACUATE all personnel from tank farm to a protected or upwind area.


[5.1] REQUEST Shift Manager evaluate entering Time Monitoring for LCO 3.1A. (LCO 3.1)

[6] IF a waste transfer is in progress and tank AZ-102 is physically connected to transfer route REQUEST transfer MBD operator shut down transfer.

[7] AS directed by Shift Manager, STOP waste disturbing activities to the Tank Farm.


(Continued on Next Page)
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PI-AZ2K1-1 HIGH-HIGH

Source: PI-AZ2K1-1
Setpoint: -0.25 Inches WC

(Continued)

Immediate Actions (Cont.):

[10] INSPECT primary tank pressure instrumentation to evaluate degree and duration of pressurization AND REPORT actions and findings to Shift Manager.

Supplemental Actions:

[11] IF more than 12 hours have elapsed following inability to verify flow and pressure, SHUTDOWN AZ annulus ventilation system per TO-060-140.

Possible Causes:

1. Loss of tank ventilation.
2. Open riser or valve pit.
3. Instrument malfunction.
4. Maintenance activities.
5. MK-AZ102K1-1 or MK-AZ102K1-2 not positioned properly.

References:

Drawings: H-14-020607 Sht 2, H-14-020107 Sht 7
Documents: RPP-16922, Environmental Specification Requirements
OSD-T-151-00007, Operating Specifications for the Double Shell Storage Tanks
TO-060-140, Operate 241-AZ Annulus Ventilation System
TF-AOP-021, Response to Tank Farm Ventilation Upset
HNF-SD-WM- TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ2K1-1
LOW

Source: PI-AZ2K1-1
Setpoint: -3.50 Inches WC

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: AZ-102 Tank Pressure is low

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- MCS currently has no communications with inlet station valve MK-AZ102K1-1.
- Recirc module valve MK-AZ102K1-2 is administratively locked in current position.

Immediate Actions:

[1] CHECK low pressure (high vacuum) on PI-AZ2K1-1 using MCS screen #15, Primary Vent.
[2] COMPARE narrow range pressure on PI-AZ2K1-1 to wide range pressure on PI-AZ2K1-2 using MCS screen #15, Primary Vent.
[3] IF other tanks on MCS screen #15 have low pressure (high vacuum), ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, screen #17, Primary Exhaust Trains) is set at the proper set point.
[4] IF pressures on PI-AZ2K1-1 (narrow range) and PI-AZ2K1-2 (wide range) both indicate low pressure (high vacuum) and all other tanks on MCS screen #15 do not have low pressure (high vacuum) CHECK flow rate on FI-AZ2K1-2 is within normal range (50 to 550 SCFM).

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ2K1-1
LOW

Source: PI-AZ2K1-1
Setpoint: -3.50 Inches WC

YELLOW

PI-AZ2K1-1
LOW

(Continued)

Supplemental Actions:

[7] IF requested by Shift Manager OPEN MK-AZ102K1-1 at air inlet station

[8] IF requested by Shift Manager ADJUST valve MK-AZ102K1-2 to bring AZ-102 vacuum and/or flow into normal ranges.

Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AZ102K1-1 or MK-AZ102K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020607 Sht 2, H-14-020107 Sht 7
Facility: AY/AZ Primary Ventilation

Graphic: 15
Alarm #: PI-AZ2K1-1
LOW-LOW

Source: PI-AZ2K1-1
Setpoint: -4.00 Inches WC

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: AZ-102 Tank Pressure is very low

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 AZ-102 low-low pressure is verified on PI-AZ2K1-1 using MCS screen #15, Primary Vent, ENSURE all alarm response actions for alarm, AZ102 PRIMARY TANK PRESSURE (LOW), have been completed.

[2] IF at any time pressure in tank AZ-102 decreases to -5.5 inches WC or less, STOP running primary exhaust fan.


Possible Causes:

1. Blockage of air inlets, freezing fog, or rain.
2. MK-AZ102K1-1 or MK-AZ102K1-2 malfunction.
3. Instrument malfunction.
4. Maintenance activities.
5. Incorrect set point for fan speed control.

References:

Drawings: H-14-020607 Sht 2, H-14-020107 Sht 7
Facility: AY/AZ Primary Ventilation

Graphic: 15                    Alarm #: PI-AZ2K1-2 HIGH

Source: PDS-AZ102K1-2          Setpoint: -0.50 Inches WC

Alarm Description: AZ-102 Tank Pressure is HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:

None.

References:

None.
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: PI-AZ2K1-2 HIGH-HIGH

Source: PI-AZ2K1-2

Setpoint: -0.25 Inches WC

Alarm Description: AZ-102 Tank Pressure is HIGH HIGH

NOTE - No response actions are required for this alarm.

Possible Causes:

None.

References:

None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AZ2K1-2 LOW

Source: PI-AZ2K1-2  
Setpoint: -3.50 Inches WC

Alarm Description: AZ-102 Tank Pressure is LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Facility: AY/AZ Primary Ventilation

Graphic: 15  
Alarm #: PI-AZ2K1-2 LOW-LOW

Source: PI-AZ2K1-2  
Setpoint: -4.00 Inches WC

Alarm Description: AZ-102 Tank Pressure is LOW LOW

NOTE - No response actions are required for this alarm.

Possible Causes:
None.

References:
None.
Respond to Monitor Control System Graphic #15 Primary Vent Alarms

Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ2K1-2
LOW

Source: FI-AZ2K1-2

Setpoint: 50.0 SCFM

YELLOW

FI-AZ2K1-2
LOW

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: AZ-102 Outlet Primary Vent Flow is low

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

- If flow rate is less than approximately 60 SCFM, the instrument will read 0 (zero) SCFM. A reading of 0 SCFM does not necessarily imply zero flow.

- If a loss of flow indication occurs due to a planned activity, tank pressure may be used to verify tank ventilation.

- Recirc module valve MK-AZ102K1-2 is administratively locked in current position

Immediate Actions:

[1] IF AZ-102 exhaust air flow is less than 50 SCFM on FI-AZ2K1-2 and PI-AZ2K1-1 HIGH-HIGH alarm is not active, GO TO Step [3].

[2] IF AZ-102 exhaust air flow is less than 50 SCFM on FI-AZ2K1-2 and PI-AZ2K1-1 HIGH-HIGH alarm is active, PERFORM the following:

[2.1] IF low vacuum and flow alarm (evacuation horn) is not sounding, MANUALLY ACTIVATE alarm on MCS Graphic screen #15, Primary Vent.

[2.2] EVACUATE all personnel from AY and AZ tank farms to a protected or upwind area.

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

[2.4] IF a waste transfer is in progress and tank AZ-102 is physically connected to transfer route REQUEST transfer MBD operator shut down transfer.

[2.5] AS directed by Shift Manager, STOP waste disturbing activities to the tank farm.

[3] IF low flow exists on more than one tank, GO TO graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains AND CHECK exhaust fan operation, system lineup, and differential pressures across equipment.

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ2K1-2
LOW

Source: FI-AZ2K1-2

Setpoint: 50.0 SCFM

Immediate Actions (Cont.):

[4] IF other parameters are in alarm, RESPOND per applicable alarm response.

[5] IF there are no associated alarms on graphic screen #16, Primary Cooling and #17, Primary Exhaust Trains, GO TO Graphic Screen #15, Primary Vent AND CHECK position of damper MK-AZ102K1-2 has not changed.


Supplemental Actions:


Possible Causes:

1. Primary exhaust fan failure.
2. Primary fan pressure controller malfunction.
3. High differential pressures on the following equipment:
   Inlet station HEPA filter, recirc condenser, recirc moisture separator, primary condenser, HEME, or filtration train HEPA filters.
5. K1-1 pressure controller instrumentation malfunction.

References:

Drawings: H-14-020107 Sht 2, H-14-020107 Sht 7
Documents: RPP-16922, Environmental Specification Requirements
           TF-AOP-021, Response to Tank Farm Ventilation Upset
           HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
Facility: AY/AZ Primary Ventilation  

Graphic: 15  

Alarm #: FI-AZ2K1-2  
High

Source: FI-AZ2K1-2  
Setpoint: 650.0 SCFM

Alarm Class: Equipment Status
Alarm Description: AZ-102 Outlet Primary Vent Flow is high

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- Recirc module valve MK-AZ102K1-2 is administratively locked in current position.

Immediate Actions:

[1] IF high flow is verified on FI-AZ2K1-2, CHECK position of damper MK-AZ102K1-2 has not changed.

[2] IF at any time pressure in tank AZ-102 decreases to -5.5 inches WC or less STOP the running exhaust fan.

[3] ENSURE primary exhaust fan pressure controller (PI-AZK1-1A or 1B, MCS screen #17) is set at proper set point.

[4] CHECK for any intrusive work (cover blocks open, 12" riser access) that may be in progress.


Supplemental Actions:


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: FI-AZ2K1-2
HIGH

Source: FI-AZ2K1-2
Setpoint: 650.0 SCFM

Possible Causes:
1. Damper malfunction.
2. Instrument malfunction.
3. Maintenance PM.
4. Intrusive work.
5. Breach in the inlet station.
6. Incorrect set point for fan speed control.

References:
Drawings: H-14-020107 Sht 2, H-14-020107 Sht 7
Document: None
Facility: AY/AZ Primary Ventilation

Graphic: 15  Alarm #: ZI-AZ2K1-2 OE

Source: ZI-AZ2K1-2  Setpoint: -12.50%

Alarm Class: Equipment Status
Alarm Description: AY-102 Flow Damper position failure (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.
- Recirc module valve MK-AZ102K1-2 is administratively locked in current position.

Immediate Actions:


Supplemental Actions:


Possible Causes:
1. Lifted lead, broken wire, loss of power.
2. Position indicator (ZI) failure.
3. Maintenance PM.

References:
Drawings: H-14-020107 Sht 2
Documents: None
Facility: AY/AZ Primary Ventilation

**Alarm #: LOW VACUUM AND FLOW ALARM YS-AZK1-2-1A**

Graphic: 15

Source: YS-AZ-K1-2

**Setpoint:** Vacuum < -0.25 IN.WC and Flow < 50 CFM for any tank

**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:** A low flow and a low vacuum condition exists for any AY or AZ tank.

**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. The AY/AZ low vacuum and flow alarm (evacuation horn) automatically sounds if configured for AUTO operation on the MCS.

**Immediate Actions:**

[1] **IF** any tank's vacuum is less than –0.25 inches WC and that tank's exhaust air flow is less than 50 CFM, **ENSURE** tank farm low vacuum and flow alarm (evacuation horn) is sounding.

[2] **IF** tank farm low vacuum and flow alarm (evacuation horn) is not sounding, **MANUALLY ACTIVATE** alarm on MCS graphic screen #15, Primary Vent.

[3] **EVACUATE** all personnel from tank farm to a protected or upwind area.

[4] **IF** a waste transfer is in progress and any AY/AZ tank is physically connected to transfer route **REQUEST** transfer MBD operator shut down transfer.

[5] **INSPECT** primary tank pressure instrumentation to evaluate degree and duration of the pressurization.

[6] **REPORT** actions and findings to Shift Manager **AND REQUEST** Shift Manager respond per TF-AOP-021.

[7] **AS** directed by Shift Manager, **STOP** waste disturbing activities to the Tank Farm.

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation

Graphic: 15

Alarm #: LOW VACUUM AND FLOW ALARM YS-AZK1-2-1A

Setpoint:

Source: YS-AZ-K1-2

LOW VACUUM AND FLOW ALARM
YS-AZK1-2-1A

Vacuum < -0.25 IN.WC
and Flow < 50 CFM for any tank

Possible Causes:
1. Lifted lead, broken wire, loss of power.
2. Loss of Ventilation.
3. Maintenance PM.

References:

Drawings: None

Documents: 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