Respond to Panel ANN-105 Alarms at 271-AW

Tank Farm Alarm Response Procedure

USQ # TF-19-0018-D, Rev. 0

241-AW-271 Building Alarm Index

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RECORDS

No records are generated during the performance of this procedure.
Facility: 241-AW-271 Building

Panel: ANN-105  Alarm #: 01

Source: AW05C-WSTA-WFT-135  Setpoint: 37 inches above pit floor

Alarm Class: Area Status

Alarm Description: Liquid level in the leak detection pit has increased to alarm setpoint.

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:

   - Panel ANN-105, alarm 04 ANNULUS LEAK DETECTED TANK 105, (WSTA-LDA-155).


Supplemental Actions:


   [6.1] IF annulus leak detectors show increased level in the annulus.
      [6.1.1] Shift Manager EVALUATE TF-AOP-005 entry criteria.
      [6.1.2] Shift Manager NOTIFY maintenance to perform leak detection verification per 6-LDD-485.

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Facility: 241-AW-271 Building

Panel: ANN-105
Alarm #: 01

Source: AW05C-WSTA-WFT-135
Setpoint: 37 inches above pit floor

Possible Causes:
1. Condensate, rainwater, or snowmelt has accumulated in the pit.
2. A waste leak from the primary tank to the annulus and then from the annulus to the leak detection pit.
3. A dip tube in the pit is plugged or has a purge air problem.

References:


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Facility: 241-AW-271 Building

Panel: ANN-105  Alarm #: 02
Source: AW05C-WST-PT-115  Setpoint: - 0.5 inches WG

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

Alarm Description: Tank 241-AW-105 vapor space has an increasing pressure (Low Vacuum).

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. Activates audible warning alarm, “AW TANKS HI PRESSURE”, to notify farm occupants of pressurization.

Immediate Actions:
[1] EVACUATE personnel from AW Farm to a protected or upwind area.
[3] CHECK AW Farm tank pressures on TFMCS.
[4] CHECK primary exhaust train is running AND IF exhauster has shut down, NOTIFY Shift Manager of alarms and actions.

Supplemental Actions:

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Facility: 241-AW-271 Building

Panel: ANN-105 Alarm #: 02
Source: AW05C-WST-PT-115 Setpoint: - 0.5 inches WG

Possible Causes:

1. Loss of primary ventilation.
2. Hot waste entering tank during transfer raises the pressure through evaporation.
3. Open riser, open pit drain, and/or missing sealing media on pit cover block seams/penetrations, admits too much air.
4. Failure of pressure transmitter or pressure alarm switch.
5. Gas release event if accompanied by level and temperature anomalies.
6. Plugged HEPA filters.
7. Failed closed exhaust damper duct valve.

References:

Drawings: H-14-020602.
Documents: OSD-T-151-00007, Operating Specifications for Double Shell Storage Tanks
TF-AOP-021, Response to Tank Farm Ventilation Upset
TO-060-107, Operate AW Tank Farm Primary Ventilation System (VTP)
HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements.
Respond to Panel ANN-105 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-105  
Alarm #: 03

Source: AW05C-WST-PT-115  
Setpoint: - 3.5 inches WG

Alarm Class: Plant Stability

Alarm Description: Low Pressure Tank 241-AW-105 (Hi Vacuum).

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

- Loss of instrument/compressed air will cause the tank pressure charts to fail to the low pressure (HI VACUUM) position.

Immediate Actions:

[1] CHECK status of compressed air system AND
   IF compressed air system was down, RECOMMEND to Shift Manager response per TF-AOP-002.

[2] CHECK status of the following annunciators:
   • Panels ANN-102 through ANN-106 alarm 03, LOW PRESSURE TANK 10X, (HI VACUUM), (WST-PAL-11X).

[3] CHECK tank pressure strip chart recorder, located on alarm panel just below alarm windows, AW271-WST-PR-115 (red colored trace), in 271-AW.

[4] CHECK AW Farm tank pressures on TFMCS.

[5] IF directed by the Shift Manager/OE, PERFORM any/all of the following:
   [5.1] MONITOR tank pressure on TFMCS.
   [5.2] ADJUST exhauster stack flow set point per TO-060-107.
   [5.3] REMOVE any ice buildup or obstructions from AW-105 inlet station.
   [5.4] REMOVE tape from valve pits.

NOTE - The port controller should float freely. During a high vacuum condition the vacuum breaker should open.

[6] CHECK port controller (AW105-VTP-FC-205) for binding.

[7] ENSURE AW-105 inlet station 12” isolation valve (AW105-VTP-V-205) is OPEN.

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Respond to Panel ANN-105 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-105  Alarm #: 03

Source: AW05C-WST-PT-115  Setpoint: - 3.5 inches WG

LOW PRESSURE TANK 105 (HI VACUUM) (WST-PAL-115) 03

(Continued)

Supplemental Actions:

[8] NOTIFY Shift Manager of actions and findings.

Possible Causes:

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

References:

Drawings: H-14-020102 and H-14-020602.

Documents: OSD-T-151-00007, Operating Specifications for Double Shell Storage Tanks TO-060-107, Operate AW Tank Farm Primary Ventilation System (VTP) TF-AOP-002, Response to Loss of Compressed Air.
Facility: 241-AW-271 Building
Panel: ANN-105  Alarm #: 04

Source: AW105-WSTA-LDT-151  Setpoint: 0.25 inches above the annulus bottom
AW105-WSTA-LDT-152
AW105-WSTA-LDT-153

Alarm Class: Environmental

Alarm Description: One or more of the three leak detectors in the tank 241-AW-105 annulus is in alarm status. This is a common alarm, annunciating when any one of the three leak detectors in the annulus reaches the setpoint.

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

Automatic Actions:
None.

Immediate Actions:

[2] IF a transfer is in progress into or out of 241-AW-105, REQUEST MBD Operator shut down transfer.
[3] CHECK annulus Enrafs AW105-WSTA-LDT-151, AW105-WSTA-LDT-152, AW105-WSTA-LDT-153 for the following:
   • Enraf local alarms.(HA indication will be in display for an alarm condition)
   • Enraf level readings.
[5.1] IF annulus leak detectors show increased level in the annulus.
   [5.1.1] Shift Manager EVALUATE TF-AOP-005 entry criteria.
   [5.1.2] Shift Manager NOTIFY maintenance to perform leak detection verification per 6-LDD-485.

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Respond to Panel ANN-105 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-105  Alarm #: 04
Source: AW105-WSTA-LDT-151
AW105-WSTA-LDT-152
AW105-WSTA-LDT-153
Setpoint: 0.25 inches above the annulus bottom

ANNULUS LEAK DETECTED TANK 105 (WSTA-LDA-155) 04

(Continued)

Supplemental Actions:


Possible Causes:

1. Waste leaking from primary tank to annulus.
2. Condensate, rainwater, snowmelt, or other water has entered the annulus from outside.
3. Time delay relay or control relay fails.
5. Enraf performed a reset due to loss of power.

References:

Facility: 241-AW-271 Building

**Panel:** ANN-105  **Alarm #:** 09

**Source:** CAS-2-2-1  **Setpoint:** N/A

**Alarm Class:** Plant Stability

**Alarm Description:** Heater Failure A Train Annulus Exhaust.

**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] NOTIFY Shift Manager.

**Supplemental Actions:**
- [2] REQUEST Shift Manager EVALUATE need to notify Environmental.

**Possible Causes:**
1. The wiring or some other component associated with the heater is not functioning.

**References:**
Facility: 241-AW-271 Building

Panels: ANN-105

Alarm #: 10

Source: CAS-2-2-2

Setpoint: N/A

Alarm Class: Plant Stability

Alarm Description: Heater Failure B Train Annulus Exhaust.

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] NOTIFY Shift Manager.

Supplemental Actions:

[2] REQUEST Shift Manager EVALUATE need to notify Environmental.

Possible Causes:

1. The wiring or some other component associated with the heater is not functioning.

References:

Respond to Panel ANN-105 Alarms at 271-AW

Figure 1 – 241-AW-271 Instrument Building Alarm Panel ANN-105

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<td>ANNULUS LEAK DETECTED TANK 105 (WSTA-LDA-155)</td>
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<td>HTR FAILURE A TRAIN ANNULUS EXH (VTA-XA-709)</td>
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