TSR Compliance

Respond to Panel ANN-103 Alarms at 271-AW

Tank Farm Alarm Response Procedure

USQ # TF-19-0010-S, Rev. 0

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
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<tr>
<td></td>
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<td></td>
<td>[5] IF directed by the Shift Manager/OE, PERFORM any/all of the following.</td>
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<tr>
<td></td>
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<td></td>
<td>[8] CHECK air inlet station opening for obstructions AND REMOVE. Added ENSURE AW-103 inlet station 12&quot; isolation valve (AW103-VTP-V-203) is OPEN</td>
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<td>[10] IF the above steps do not restore tank pressure to proper range, NOTIFY Shift Manager AND IF directed, PERFORM the following:</td>
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<td>OPEN 3&quot; bypass line valve (AW103-VTP-V-209) on Tank 241-AW-103.</td>
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<td>CLOSE corresponding inlet filter station 12&quot; butterfly valve (AW103-VTP-V-203) for tank 241-AW-103.</td>
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<td>2. OR Both Primary A and B Train exhaust fans were being operated for a job involving another tank. Add new immediate action with substeps</td>
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<td></td>
<td>1. IF directed by the Shift Manager/OE, PERFORM any/all of the following:</td>
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<tr>
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<td></td>
<td>1. MONITOR tank pressure on TFMCS.</td>
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<td>2. ADJUST exhauster stack flow set point per TO-060-107.</td>
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<td>3. REMOVE any ice buildup or obstructions from AW-103 inlet station.</td>
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<td>4. REMOVE tape from valve pits</td>
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<tr>
<td>I-2</td>
<td>10/09/2018</td>
<td>Operations request and TF Automation / DSA changes</td>
<td>Removed/Replaced references to LCO 3.5. Removed steps that CHECK managheic pressure gauge.</td>
</tr>
<tr>
<td>I-1</td>
<td>08/30/2017</td>
<td>WRPS-PER-17-1176</td>
<td>Changes to address PER-17-1176 -Modified alarm response steps for Annulus Leak Detected.</td>
</tr>
<tr>
<td>I-0</td>
<td>05/26/2016</td>
<td>Periodic review.</td>
<td>No changes identified during the periodic review.</td>
</tr>
<tr>
<td>H-0</td>
<td>06/09/2014</td>
<td>Periodic review.</td>
<td>Add possible cause for Hi Level LD Pit 03C. Add reference documents as identified. Add immediate actions to HI Pressure Tank 103 and delete possible cause. Add immediate actions to Low Pressure Tank 103. Remove Setpoint variance for Annulus Leak Detected Tank 103 for WSTA-LDA-153.</td>
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<td>Hi Pressure Tank 103 (Low Vacuum) (WST-PAH-113)</td>
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<td>03</td>
<td>Low Pressure Tank 103 (Hi Vacuum) (WST-PAL-113)</td>
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Type | Document No. | Rev/Mod | Release Date | Page |
-----|--------------|---------|--------------|------|
REFERENCE | ARP-T-231-00103 | I-3     | 01/03/2019   | 1 of 12 |
Respond to Panel ANN-103 Alarms at 271-AW

RECORDS
No records are generated during the performance of this procedure.
Respond to Panel ANN-103 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-103  Alarm #: 01
Source: AW03C-WSTA-WFT-133  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:

[1] CHECK status of following annunciators:
   - Panel ANN-103, alarm #04, ANNULUS LEAK DETECTED TANK 103, (WSTA-LDA-153).


Supplemental Actions:


   [6.1] IF annulus leak detectors show increased level in the annulus, PERFORM the following.
      [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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Respond to Panel ANN-103 Alarms at 271-AW

Panel: ANN-103  Alarm #: 01
Source: AW03C-WSTA-WFT-133  Setpoint: 37 inches above pit floor

HI LEVEL LEAK DETECTOR PIT 03C (WSTA-WFA-133)
01
(Continued)

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:

Drawings:  
Documents:  
Facility: 241-AW-271 Building

Panel: ANN-103  Alarm #: 02

Source: AW03C-WST-PT-113  Setpoint: - 0.5 inches WG


tank 103 (low vacuum)

HI PRESSURE TANK 103 (LOW VACUUM) (WST-PAH-113)

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

Alarm Description: Tank 241-AW-103 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.

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 exhaueter has shut down, NOTIFY Shift Manager of alarms and actions.

Supplemental Actions:


(Continued on Next Page)
Respond to Panel ANN-103 Alarms at 271-AW

Facility: 241-AW-271 Building

**Panel:** ANN-103  **Alarm #:** 02

**Source:** AW03C-WST-PT-113  **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 even.
6. Plugged HEPA filters.
7. Failed closed exhaust damper duct valve.

### References:

- **Drawings:** H-14-020602.
- **Documents:** OSD-T-151-00007, Operating Specifications for the 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-103 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-103  Alarm #: 03
Source: AW03C-WST-PT-113  Setpoint: - 3.5 inches WG

Alarm Class:  Plant Stability

Alarm Description:  Low Pressure Tank 241-AW-103 (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 (high vacuum) position.

Immediate Actions:

1. CHECK status of the 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-101, ANN-102 and ANN-104 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-113 (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-103 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 AW103-VTP-FC-203 for binding.

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Respond to Panel ANN-103 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-103  Alarm #: 03
Source: AW03C-WST-PT-113  Setpoint: - 3.5 inches WG

Immediate Actions (Cont.):

[7] ENSURE AW-103 inlet station 12” isolation valve (AW103-VTP-V-203) is OPEN.

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.

(Continued on Next Page)
Facility: 241-AW-271 Building

Panel: ANN-103  Alarm #: 03

Source: AW03C-WST-PT-113  Setpoint: - 3.5 inches WG

LOW PRESSURE TANK 103 (HI VACUUM) (WST-PAL-113)

03

(Continued)

References:

Drawings:  H-14-020102 and H-14-020602.
Respond to Panel ANN-103 Alarms at 271-AW

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

**Panel:** ANN-103

**Alarm #:** 04

**Source:** AW103-WSTA-LDT-151
AW103-WSTA-LDT-152
AW103-WSTA-LDT-153

**Setpoint:** 0.25 inches above the annulus bottom

**Alarm Class:** Environmental

**Alarm Description:** One or more of the three leak detectors in the tank 241-AW-103 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:**

1. **ACKNOWLEDGE** alarm.
2. **IF** a transfer is in progress into or out of 241-AW-103, **REQUEST** MBD Operator shut down transfer.
3. **CHECK** Annulus Enraf’s AW103-WSTA-LDT-151, AW103-WSTA-LDT-152, AW103-WSTA-LDT-153 for the following:
   - Enraf local alarms (HA indication will be in display for an alarm condition)
   - Enraf level readings.
4. **CHECK** associated primary tank level Enraf AW103-WST-LIT-106 for any change.
5. **NOTIFY** Shift Manager of alarm, actions and findings.
   1. **IF** annulus leak detectors show increased level in the annulus, **PERFORM** the following:
      1. **EVALUATE** TF-AOP-005 entry criteria.
      2. **NOTIFY** maintenance to perform leak detection verification per 6-LDD-485.

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Respond to Panel ANN-103 Alarms at 271-AW

Facility: 241-AW-271 Building

Panel: ANN-103

Alarm #: 04

Source: AW103-WSTA-LDT-151
AW103-WSTA-LDT-152
AW103-WSTA-LDT-153

Setpoint: 0.25 inches inches above the annulus bottom

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:

Documents: RPP-16922, Environmental Specification Requirements
OSD-T-151-00031, Operating Specifications for Tank Farm Leak Detection and Single Shell Tank Intrusion Detection, Table 3-1
TF-AOP-005, Response to Unexpected Tank Temperature or Flammable Gas Increase or Level Change
Respond to Panel ANN-103 Alarms at 271-AW

Figure 1: 241-AW-271 Instrument Building Alarm Panel ANN-103

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