Respond to Alarms at TFSPS Annunciator Panels

Tank Farm Alarm Response Procedure

<table>
<thead>
<tr>
<th>Alarm Description</th>
<th>Color</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annulus High Level (ANN-001)</td>
<td>YELLOW</td>
<td>3</td>
</tr>
<tr>
<td>Annulus High Level (ANN-002)</td>
<td>YELLOW</td>
<td>5</td>
</tr>
<tr>
<td>Annulus High Level (ANN-003)</td>
<td>YELLOW</td>
<td>7</td>
</tr>
<tr>
<td>Annulus High Level (ANN-004)</td>
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<td>9</td>
</tr>
<tr>
<td>Annulus High Level (ANN-005)</td>
<td>YELLOW</td>
<td>11</td>
</tr>
<tr>
<td>Low Temperature (ANN-001)</td>
<td>RED</td>
<td>13</td>
</tr>
<tr>
<td>Low Temperature (ANN-002)</td>
<td>RED</td>
<td>15</td>
</tr>
<tr>
<td>Low Temperature (ANN-003)</td>
<td>RED</td>
<td>16</td>
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<tr>
<td>Low Temperature (ANN-004)</td>
<td>RED</td>
<td>17</td>
</tr>
<tr>
<td>Route Set Alarm</td>
<td>RED</td>
<td>18</td>
</tr>
<tr>
<td>Freeze Fault Alarm</td>
<td>WHITE</td>
<td>20</td>
</tr>
</tbody>
</table>

RECORDS

The performance of this procedure generates no records.
1.0 PURPOSE

This attachment provides guidance to operators for responding to alarms associated with the Tank Farm Safety Programmable System (TFSPS) Annunciator Panels located in the 274AW Central Control Room.

2.0 OPERATION

2.1 ACKNOWLEDGE TFSPS alarms by pressing the Acknowledge (ACK) button in the lower right hand corner of the relevant annunciator panel.

<table>
<thead>
<tr>
<th>Button</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAMP TEST</td>
<td>Starts the Lamp test on the Annunciator Panel</td>
</tr>
<tr>
<td>ACK</td>
<td>Acknowledges the alarm condition.</td>
</tr>
<tr>
<td>RESET</td>
<td>Resets</td>
</tr>
<tr>
<td>MUTE</td>
<td>Alarm sound is turned off.</td>
</tr>
</tbody>
</table>
Panel: 274AW-TFSPS-ANN-001
Setpoint: <15 in.
Alarm Class: Technical Safety Requirement
Alarm Description: Annulus High Level

YELLOW

1-1
ANI01-WSTA-LAH-001
Annulus High Level
241-AN-101

2-1
ANI02-WSTA-LAH-002
Annulus High Level
241-AN-102

3-1
ANI03-WSTA-LAH-003
Annulus High Level
241-AN-103

4-1
ANI04-WSTA-LAH-004
Annulus High Level
241-AN-104

1-2
ANI05-WSTA-LAH-005
Annulus High Level
241-AN-105

2-2
ANI06-WSTA-LAH-006
Annulus High Level
241-AN-106

3-2
ANI07-WSTA-LAH-007
Annulus High Level
241-AN-107

Source: ANI01-WSTA-LSH-001, ANI02-WSTA-LSH-002, ANI03-WSTA-LSH-003, ANI04-WSTA-LSH-004, ANI05-WSTA-LSH-005, ANI06-WSTA-LSH-006, ANI07-WSTA-LSH-007

(Continued on Next Page)
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 by pressing the ACK button.
[2] **ATTEMPT to RESET** alarm by pressing the Reset button.
[3] **IF** alarm clears, **EXIT** this ARP.
[4] **IF** tank is on sending or receiving end of a DST transfer procedure, **REQUEST** the transfer pump is shut down.
[5] **NOTIFY** Shift Manager/OE.
[6] **REQUEST** Shift Manager enter LCO 3.11 Condition A.

Supplemental Actions:

[7] **PERFORM** local surveillance of DST annulus high level alarm per TO-040-800.
[8] **IF** the ANN-001 High Level alarm is inoperable due to loss of power or communication, or instrument failure, **REQUEST** maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm

1. Liquid detected in the annulus.
2. System is inoperable due to loss of power, loss of communication, or instrument failure. It is possible to have field indication operable but communication or Central Control Room problems that cause alarm conditions.

References:

Documents: RPP-RPT-57267
Respond to Alarms at TFSPS Annunciator Panels

Panel: 274AW-TFSPS-ANN-002
Setpoint: <15 in.
Alarm Class: Technical Safety Requirement
Alarm Description: Annulus High Level

YELLOW


(Continued on Next Page)
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 by pressing the ACK button.
2. **ATTEMPT** to **RESET** alarm by pressing the Reset button.
3. **IF** alarm clears, **EXIT** this ARP.
4. **IF** tank is on sending or receiving end of a DST transfer procedure, **REQUEST** the transfer pump is shut down.
5. **NOTIFY** Shift Manager/OE.
6. **REQUEST** Shift Manager enter LCO 3.11 Condition A.

Supplemental Actions:

7. **PERFORM** local surveillance of DST annulus high level alarm per TO-040-800.
8. **IF** the ANN-002 High Level alarm is inoperable due to loss of power or communication, or instrument failure, **REQUEST** maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Liquid detected in the annulus.
2. System is inoperable due to loss of power, loss of communication, or instrument failure. It is possible to have field indication operable but communication or Central Control Room problems that cause alarm conditions.

References:

Documents: RPP-RPT-57267
Panel: 274AW-TFSPS-ANN-003  
Setpoint: <15 in.  
Alarm Class: Technical Safety Requirement  
Alarm Description: Annulus High Level

### YELLOW

<table>
<thead>
<tr>
<th>9-1</th>
<th>10-1</th>
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<tbody>
<tr>
<td>AW101-WSTA-LAH-001</td>
<td>AW102-WSTA-LAH-002</td>
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<tr>
<td>Annulus High Level</td>
<td>Annulus High Level</td>
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<tr>
<td>241-AW-101</td>
<td>241-AW-102</td>
</tr>
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<th>11-1</th>
<th>9-2</th>
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<tbody>
<tr>
<td>AW103-WSTA-LAH-003</td>
<td>AW104-WSTA-LAH-004</td>
</tr>
<tr>
<td>Annulus High Level</td>
<td>Annulus High Level</td>
</tr>
<tr>
<td>241-AW-103</td>
<td>241-AW-104</td>
</tr>
</tbody>
</table>

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<th>10-2</th>
<th>11-2</th>
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</thead>
<tbody>
<tr>
<td>AW105-WSTA-LAH-005</td>
<td>AW106-WSTA-LAH-006</td>
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<tr>
<td>Annulus High Level</td>
<td>Annulus High Level</td>
</tr>
<tr>
<td>241-AW-105</td>
<td>241-AW-106</td>
</tr>
</tbody>
</table>


(Continued on Next Page)
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 by pressing the ACK button.
[2] **ATTEMPT** to **RESET** alarm by pressing the Reset button.
[3] **IF** alarm clears, **EXIT** this ARP.
[4] **IF** tank is on sending or receiving end of a DST transfer procedure, **REQUEST** the transfer pump is shut down.
[5] **NOTIFY** Shift Manager/OE.
[6] **REQUEST** Shift Manager enter LCO 3.11 Condition A.

Supplemental Actions:

[7] **PERFORM** local surveillance of DST annulus high level alarm per TO-040-800.
[8] **IF** the ANN-003 High Level alarm is inoperable due to loss of power or communication, or instrument failure, **REQUEST** maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm

1. Liquid detected in the annulus.
2. System is inoperable due to loss of power, loss of communication, or instrument failure. It is possible to have field indication operable but communication or Central Control Room problems that cause alarm conditions.

References:

Documents: RPP-RPT-57267
Respond to Alarms at TFSPS Annunciator Panels

**Panel:** 274AW-TFSPS-ANN-004  
**Setpoint:** <15 in.  
**Alarm Class:** Technical Safety Requirement  
**Alarm Description:** Annulus High Level

**YELLOW**

12-1  
AY101-WSTA-LAH-001  
Annulus High Level  
241-AY-101

12-2  
AZ101-WSTA-LAH-001  
Annulus High Level  
241-AZ-101

13-2  
AZ102-WSTA-LAH-002  
Annulus High Level  
241-AZ-102

**Source:** AY101-WSTA-LSH-001, AZ101-WSTA-LSH-002, AZ102-WSTA-LSH-002.

(Continued on Next Page)
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 by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF tank is on sending or receiving end of a DST transfer procedure, REQUEST the transfer pump is shut down.
[5] NOTIFY Shift Manager/OE.
[6] REQUEST Shift Manager enter LCO 3.11 Condition A.

Supplemental Actions:

[7] PERFORM local surveillance of DST annulus high level alarm per TO-040-800.
[8] IF the ANN-004 High Level alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm

1. Liquid detected in the annulus.
2. System is inoperable due to loss of power, loss of communication, or instrument failure. It is possible to have field indication operable but communication or Central Control Room problems that cause alarm conditions.

References:

Documents: RPP-RPT-57267
Panel: 274AW-TFSPS-ANN-005
Setpoint: <15 in.
Alarm Class: Technical Safety Requirement
Alarm Description: Annulus High Level

YELLOW

14-1
SY101-WSTA-LAH-001
Annulus High Level
241-SY-101

15-1
SY102-WSTA-LAH-002
Annulus High Level
241-SY-102

14-2
SY103-WSTA-LAH-003
Annulus High Level
241-SY-103


(Continued on Next Page)
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 by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF tank is on sending or receiving end of a DST transfer procedure, REQUEST the transfer pump is shut down.
[5] NOTIFY Shift Manager/OE.
[6] REQUEST Shift Manager enter LCO 3.11 Condition A.

Supplemental Actions:

[7] PERFORM local surveillance of DST annulus high level alarm per TO-040-800.
[8] IF the ANN-005 High Level alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm

1. Liquid detected in the annulus.
2. System is inoperable due to loss of power, loss of communication, or instrument failure. It is possible to have field indication operable but communication or Central Control Room problems that cause alarm conditions.

References:

Documents: RPP-RPT-57267
Respond to Alarms at TFSPS Annunciator Panels

Panel: 274AW-TFSPS-ANN-001  
Setpoint: 50°F  
Alarm Class: Technical Safety Requirement  
Alarm Description: Temperature detected at the indicated location by at least one of Temperature Monitoring Tree thermocouple is below 50 °F AND that location is included in the active selected route.

RED

1-10  
ANVPA-WT-TAL-201  
Low Temp  
Pit AN-VPA

2-10  
ANVPB-WT-TAL-203  
Low Temp  
Pit AN-VPB

Source: ANVPA-WT-TE-201A, 201B, 201C; ANVPB-WT-TE-203A, 203B, 203C

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures. If the Set Route switch 274AW-TFSPS-SW-001 has just been operated, the alarms for all locations selected on the TFMCS HMI will activate and the ARP is not applicable.

Immediate Actions:

1. ACKNOWLEDGE alarm by pressing the ACK button.
2. ATTEMPT to RESET alarm by pressing the Reset button.
3. IF alarm clears, EXIT this ARP.
4. IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.
5. NOTIFY Shift Manager or OE of actions taken.
6. REQUEST Shift Manager evaluate compliance with LCO 3.10.

Supplemental Actions:

7. INITIATE work order to troubleshoot/repair or replace degraded components.
8. IF the ANN-001 Low Temperature alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Pit temperature below 50 °F.
2. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:

Documents: RPP-RPT-57269
Respond to Alarms at TFSPS Annunciator Panels

Panel: 274AW-TFSPS-ANN-002
Setpoint: 39°
Alarm Class: Technical Safety Requirement

Alarm Description: Temperature detected at the indicated location by Encasement temperature monitoring thermocouple is below 39 °F AND that location is included in the active selected route.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
If the Set Route switch 274AW-TFSPS-SW-001 has just been operated, the alarms for all locations selected on the TFMCS HMI will activate and the ARP is not applicable.

Immediate Actions:
[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:
[7] INITIATE work order to troubleshoot/repair or replace degraded components.
[8] IF the Low Temp Encasement alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.

Possible Causes:
NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Encasement temperature below 39 °F.
2. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:
Documents: RPP-RPT-57269
Panel: 274AW-TFSPS-ANN-002
Setpoint: 50°
Alarm Class: Technical Safety Requirement
Alarm Description: Temperature detected at the indicated location by at least one of Temperature Monitoring Tree thermocouple is below 50 °F AND that location is included in the active selected route.

RED

<table>
<thead>
<tr>
<th>7-10</th>
<th>8-10</th>
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</thead>
<tbody>
<tr>
<td>AP02D-WT-TAL-209</td>
<td>APVP-WT-TAL-211</td>
</tr>
<tr>
<td>Low Temp</td>
<td>Low Temp</td>
</tr>
<tr>
<td>Pit AP-02D</td>
<td>Pit AP-VP</td>
</tr>
</tbody>
</table>

Source: AP02D-WT-TE-209A, 209B, 209C; APVP-WT-TE-211A, 211B, 211C

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
If the Set Route switch 274AW-TFSPS-SW-001 has just been operated, the alarms for all locations selected on the TFMCS HMI will activate and the ARP is not applicable.

Immediate Actions:
[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:
[7] IF the Low Temperature alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.
[8] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Pit temperature below 50 °F.
2. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:
Documents: RPP-RPT-57269
Respond to Alarms at TFSPS Annunciator Panels

Panel: 274AW-TFPS-ANN-003
Setpoint: 50°
Alarm Class: Technical Safety Requirement
Alarm Description: Temperature detected at the indicated location by at least one of Temperature Monitoring Tree thermocouple is below 50 °F AND that location is included in the active selected route.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
If the Set Route switch 274AW-TFPS-SW-001 has just been operated, the alarms for all locations selected on the TFMCS HMI will activate and the ARP is not applicable.

Immediate Actions:
[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:
[7] IF the Low Temperature alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.
[8] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Pit temperature below 50 °F.
2. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:
Documents: RPP-RPT-57269
Respond to Alarms at TFSPS Annunciator Panels

Panel: 274AW-TFSPS-ANN-004
Setpoint: 50°F
Alarm Class: Technical Safety Requirement
Alarm Description: Temperature detected at the indicated location by at least one of Temperature Monitoring Tree thermocouple is below 50 °F AND that location is included in the active selected route.

RED

12-10
AY01A-WT-TAL-223
Low Temp
Pit AY-01A

12-9
AZ01A-WT-TAL-227
Low Temp
Pit AZ-01A

13-9
AZ02A-WT-TAL-229
Low Temp
Pit AZ-02A

12-8
AZVP-WT-TAL-231
Low Temp
Pit AZ-VP

AZ02A-WT-TE-229A, 229B, 229C; AZVP-WT-TE-231A, 231B, 231C

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
If the Set Route switch 274AW-TFSPS-SW-001 has just been operated, the alarms for all locations selected on the TFMCS HMI will activate and the ARP is not applicable.

Immediate Actions:
[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:
[7] IF the Low Temperature alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.
[8] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:
NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. Pit temperature below 50 °F.
2. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:
Documents: RPP-RPT-57269
Respond to Alarms at TFSPS Annunciator Panels


Setpoint: N/A

Alarm Class: Technical Safety Requirement

Alarm Description: A change has been detected in the list of locations that have been selected for monitoring.

RED

<table>
<thead>
<tr>
<th>3-12 Route Set Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-12 Route Set Alarm</td>
</tr>
<tr>
<td>10-12 Route Set Alarm</td>
</tr>
<tr>
<td>12-12 Route Set Alarm</td>
</tr>
<tr>
<td>14-12 Route Set Alarm</td>
</tr>
</tbody>
</table>

Source: TFSPS PLCs

(Continued on Next Page)
NOTE -  Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures. If the Set Route switch 274AW-TFSPS-SW-001 has just been operated, these alarms will all activate and the ARP is not applicable.

Immediate Actions:

[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:

[7] IF the Route Set alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.

Possible Causes:

1. Inadvertent operation of the Set Route switch.
2. The Set Route switch failure.
3. Input module or Safety Controller failure.

References:

Documents:  RPP-RPT-57269
Respond to Alarms at TFSPS Annunciator Panels

Setpoint: N/A
Alarm Class: Technical Safety Requirement
Alarm Description: A problem other than low temperature has been detected.

WHITE

| 3-11 | 2506E2-TFSPS-YA-001 | AN Freeze Protection Fault |
| 7-11 | 2506E2-TFSPS-YA-002 | AP Freeze Protection Fault |
| 10-11 | 2506E2-TFSPS-YA-003 | AW Freeze Protection Fault |
| 12-11 | 2506E2-TFSPS-YA-004 | AY/AZ Freeze Protection Fault |
| 14-11 | 2506E2-TFSPS-YA-005 | SY Freeze Protection Fault |

Source: TFSPS PLCs

(Continued on Next Page)
Immediate Actions:

[1] ACKNOWLEDGE alarm by pressing the ACK button.
[2] ATTEMPT to RESET alarm by pressing the Reset button.
[3] IF alarm clears, EXIT this ARP.
[4] IF directed by an ongoing transfer procedure, ENSURE the transfer pump is shut down.

Supplemental Actions:

[7] IF the Freeze Fault alarm is inoperable due to loss of power or communication, or instrument failure, REQUEST maintenance assistance.
[8] INITIATE work order to troubleshoot/repair or replace degraded components.

Possible Causes:

NOTE – Alarm condition must exist for more than 30 minutes to activate the alarm
1. System is inoperable due to loss of power, loss of communication, or instrument failure.

References:

Documents: RPP-RPT-57269