RESPOND TO MONITOR CONTROL SYSTEM GRAPHIC #14 CHILLER ALARMS

Tank Farm Alarm Response Procedure

AY/AZ Farm

USQ # TF-17-1331-D, 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>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td>09/20/2017</td>
<td>Change to TFC-PLN-167</td>
<td>Inconsequential Change to update the White Label statement to latest changes to TFC-PLN-167.</td>
</tr>
<tr>
<td>I-1</td>
<td>08/30/2016</td>
<td>Requested by electrical group</td>
<td>Added White Label program statement.</td>
</tr>
<tr>
<td>I-0</td>
<td>08/12/2015</td>
<td>Periodic review</td>
<td>No changes identified during this periodic review.</td>
</tr>
<tr>
<td>H-1</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. Modified screen name to just a number.</td>
</tr>
<tr>
<td>H-0</td>
<td>08/28/2013</td>
<td>All changes are as a result of the periodic review process.</td>
<td>No changes were made during this periodic review.</td>
</tr>
</tbody>
</table>

GRAPHIC #14 CHILLER ALARM INDEX

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Description</th>
<th>Color</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI-AZCWR-1</td>
<td>Cooling Water Cool System Flow (Low)</td>
<td>Yellow</td>
<td>3</td>
</tr>
<tr>
<td>LAL-AZ-CWTK-1</td>
<td>Cooling Water Expansion Tank Level (Low)</td>
<td>Yellow</td>
<td>5</td>
</tr>
<tr>
<td>AZ-CW-P-1A</td>
<td>Cooling Water Pump 1A (Object Error)</td>
<td>Yellow</td>
<td>7</td>
</tr>
<tr>
<td>AZ-CW-P-1B</td>
<td>Cooling Water Pump 1B (Object Error)</td>
<td>Yellow</td>
<td>8</td>
</tr>
<tr>
<td>XA-AZCWR-1A</td>
<td>PV Chiller Fault (Alarm)</td>
<td>Yellow</td>
<td>9</td>
</tr>
</tbody>
</table>

RECORDS

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

1.1 This attachment provides guidance to Nuclear Chemical operators for responding to alarms associated with the AY/AZ ventilation system on the Monitor and Control System (MCS) Graphic Screen 14.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Personnel Safety

2.1.1 Non-electrical worker accessing electrical enclosures must ensure the following:

- The enclosure must have a white label indicating that it has been evaluated.
- The work activity within the enclosure does not involve:
  - Reaching around or moving electrical equipment
  - Contacting electrical connectors/connections
  - By-passing protective shielding/barriers.

2.1.1.1 Stop and notify management if these conditions cannot be met, or if discrepancies exist (e.g. conflicting or missing labels, missing or damaged protective barriers).

3.0 OPERATION

3.1 OPERATE the Monitor and Control System in accordance with procedure TO-060-356, Perform 702-AZ Exhauster Monitor and Control Operations.

3.2 RESET Priority Command Interlocks, Object Errors, and Duty/Standby faceplate Latch Failures per procedure TO-060-350 as needed during the use of this ARP.
Facility: AY/AZ Primary Ventilation

Graphic: 14  
Alarm #: FI-AZCWR-1 LOW

Source: FI-AZCWR-1  
Setpoint: 100 gpm

Alarm Class: Plant Stability  
Alarm Description: Cooling Water Cool System Flow (Low)

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. Switches to Standby re-circulation pump if DUTY/STANDBY faceplate is ON.
2. If alarm is active for 30 seconds, the chiller shuts down.

Immediate Actions:

[2] CHECK to see if standby re-circulation pump (AZ-CW-P-1A or AZ-CW-P-1B) has started.
[3] IF flow is within normal range (100-120 gpm), NOTIFY Shift Manager of findings.
[4] IF low flow is verified (<100), and standby re-circulation pump did not start, START standby re-circulation pump (AZ-CW-P-1A or AZ-CW-P-1B).
[8] IF flow does not return to normal range, THROTTLE OPEN HV-AZCWS-1A2 to restore flow to normal range of 100-120 gpm.

Supplemental Actions:

[9] IF Chiller shuts down, and an operating re-circulation pump is available, RESTART chiller per procedure TO-060-350
[10] NOTIFY Shift Manager of actions and findings.

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

Graphic: 14  Alarm #: FI-AZCWR-1 LOW

Source: FI-AZCWR-1  Setpoint: 100 gpm

Possible Causes:

1. Strainers AZ-CW-F-1A or AZ-CW-F-1B are at least partially plugged.
2. Re-circulation pump failure.
3. Instrument malfunction.

References:

Drawings: H-14-022507, Sheet 3
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation

Graphic: 14  Alarm #: LAL-AZ-CWTK-1 LOW

Source: LAL-AZ-CWTK-1  Setpoint: N/A

Alarm Class: Equipment Status

Alarm Description: Cooling Water Glycol Expansion Tank Level 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] CHECK system for leaks locally.

NOTE - Slight “weeping” from the re-circulation pump seals is not generally considered a substantial leak.

[4] IF substantial visible leaks from the glycol system for the chiller are observed, PERFORM the following:

[4.1] SHUT DOWN chiller per procedure TO-060-350 AND RETURN to this alarm response procedure.

[4.2] ISOLATE glycol system by closing the following valves:

• HV-AZCWS-1A2
• HV-AZCWR-1.

Supplemental Actions:


(Continued on Next Page)
Respond to Monitor Control System Graphic #14 Chiller Alarms

Graphic: 14  Alarm #: LAL-AZ-CWTK-1 LOW
Source: LAL-AZ-CWTK-1  Setpoint: N/A

Possible Causes:

1. Tube leak in condenser AZ-K1-8-1.
2. Re-circulation pump seal leak at AZ-CW-P-1A or AZ-CW-P-1B.
3. Valve HV-AZ-CWTK-1A1 or HV-AZ-CWTK-1A2 closed.
4. Leakage into chiller AZ-CW-R-1 cooler.
5. Failure of level indicator.

References:

Drawings:  H-14-022507, Sheet 3
Documents:  TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation

Graphic: 14  
Alarm #: AZ CW-P 1A Object Error

Source: AZ-CW-P-1A  
Setpoint: N/A

Alarm Class: Plant Stability  
Alarm Description: Cooling Water Glycol Pump 1A (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.

Automatic Actions:
1. Pump AZ-CW-P-1A stops.
2. Pump AZ CW-P-1B starts if available and if DUTY/STANDBY Faceplate is ON.

Immediate Actions:
[1] CHECK status of chiller equipment on MCS graphic 14 (#14).
[2] CHECK that pump AZ-CW-P-1A has stopped and pump AZ-CW-P-1B is operating.
[3] IF pump AZ-CW-P-1B does not start automatically, START pump AZ-CW-P-1B AND ENSURE pump starts and flow is normal (100-120 gpm) on FI-AZCWR-1.

Supplemental Actions:
[5] RESET Object Error on pump AZ-CW-P-1A per procedure TO-060-350

Possible Causes:
1. Low flow in the cooling system.
2. Re-circulation pump tripped.
3. Instrument malfunction.
4. Pump interlock not operating.

References:
Drawings: H-14-022507, Sheet 3
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation

Graphic: 14

Alarm #: AZ CW-P 1B Object Error

Source: AZ-CW-P-1B

Setpoint: N/A

Alarm Class: Plant Stability

Alarm Description: Cooling Water Pump 1B (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.

Automatic Actions:

1. Pump AZ-CW-P-1B stops.
2. Pump AZ-CW-P-1A starts if available and if DUTY/STANDBY Faceplate is ON.

Immediate Actions:

[1] CHECK status of chiller equipment on MCS graphic 14 (#14).
[2] CHECK that pump AZ-CW-P-1B has stopped and pump AZ-CW-P-1A is operating.
[3] IF pump AZ-CW-P-1A does not start automatically, START pump AZ-CW-P-1A AND ENSURE pump starts and flow is normal (100-120 gpm) on FI-AZCWR-1.
[4] IF chiller has shutdown, RESTART chiller per procedure TO-060-350

Supplemental Actions:


Possible Causes:

1. Low flow in the cooling system.
2. Re-circulation pump tripped.
3. Instrument malfunction.
4. Pump interlock not operating.

References:

Drawings: H-14-022507, Sheet 3
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation

Graphic: 14  Alarm #: XA-AZ-CWR-1A Alarm

Source: AZ-CW-R-1  Setpoint: N/A

Alarm Class: Plant Stability  Alarm Description: PV Chiller Fault Alarm

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] GO TO chiller local panel AZ-CW-R-1 air cooled chiller control panel AND CHECK for alarms.


Possible Causes:

1. Malfunction of chiller instruments or equipment.

References:

Drawings: H-14-022507, Sheet 3

Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System