Respond to Monitor Control System Graphic #08 Evap AZ1 Alarms

Tank Farm Alarm Response Procedure

AY/AZ Farm

USQ # TF-17-0717-S, Rev. 1

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
<thead>
<tr>
<th>Rev-Md</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tr>
<td>I-3</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-2</td>
<td>06/12/2017</td>
<td>Update Procedure to Current Field Conditions</td>
<td>Removal of TO-060-358 due to inactivation of document and Supplemental Actions for Alarm LAL-AZ1-EWTK-1</td>
</tr>
<tr>
<td>I-1</td>
<td>08/30/2016</td>
<td>Request by electrical group</td>
<td>Added White Label program statement</td>
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<tr>
<td>I-0</td>
<td>05/21/2015</td>
<td>All changes are as a result of the periodic review process.</td>
<td>No Technical changes were made 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>
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GRAPHIC #08 EVAP AZ1 ALARM INDEX

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<td>3 .................AZ101EW-P-1A, Evap GLYCOL Pump 1A Status (OE) .................. Yellow .......... 5</td>
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<td>4 .................AZ101EW-P-1B, Evap GLYCOL Pump 1B Status (OE) .................. Yellow .......... 6</td>
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<td>5 .................AZ101EW-SP-1, Evap Water Spray Pump Status (OE) ............... Yellow .......... 7</td>
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<td>6 .................AZ101EW-T-1, Evap Water Tower Fan Status (Fault) ............... Yellow .......... 8</td>
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<td>12 ...............LALL-AZ1EWT-1, AZ101 Evap Tower Liquid Level (Low) ............. Yellow .......... 9</td>
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RECORDS

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

1.1 This attachment provides guidance to operators for responding to alarms associated with the AY/AZ ventilation system.

1.2 Section 3.0 provides guidance to operators for starting up the Monitor and Control System so that they may determine current alarm status if the system is not on line when they report to the control room.

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 IF system does not respond and appears to be locked, REFER to procedure TO-060-356, Perform 702-AZ Exhauster Monitor and Control System Operations for instructions on re-setting and re-booting system AND RETURN to this procedure.

3.2 OPERATE system in accordance with procedure TO-060-356.
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  
Alarm #: 1

Source: FI-AZ1-EWR-1  
Setpoint: 295 GPM

Alarm Class: Plant Stability
Alarm Description: AZ101 Evap Glycol Return 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.
- If system flow decreases to less than 100 gpm, the standby re-circulation pump will start if it is in the AUTO/STANDBY mode.

Immediate Actions:

[1] **THROTTLE OPEN** re-circulation pump outlet valve HV-AZ101EWS-1A2 to increase flow.

[2] **IF** opening HV-AZ101EWS-1A2 does NOT increase flow enough to clear the low flow alarm, **PERFORM** the following:
   [2.1] **SWITCH** to standby re-circulation pump.
   [2.2] **ADJUST** HV-AZ101EWS-1A2 to establish flow between 322 gpm and 332 gpm.

Supplemental Actions:

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

Possible Causes:

1. Problem with operational re-circulation pump.
2. Strainer AZ101-EW-F-1A or AZ101-EW-F-1B plugged on operating pump.

References:

Drawings: H-14-022507, Sht 1
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  
Alarm #: 2

Source: LSL-AZ101-EWTK-1  
Setpoint: Approx. 1 inch

Alarm Class: Equipment Status

Alarm Description: AZ101 Evap Glycol Exp 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 AND
CHECK sight glass on AZ101-EW-TK-1 for level indication.

[2] IF level is visible in the sight glass, MONITOR system periodically AND NOTIFICATION Manager of findings.

Supplemental Actions:

[3] NONE

Possible Causes:

1. Loss of glycol solution (50% Dow Frost Heat Transfer Fluid -Material Safety Data Sheet #019856) from system (leak).
2. Failure of level indicator.
3. Equipment failure.

References:

Drawings: H-14-022507, Sht 1
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 3

Source: AZ101-EW-P-1A  Setpoint: N/A

Alarm Class: Equipment Status  
Alarm Description: Evap Glycol Pump 1A Status (Fault)

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 AZ101EW-P-1A STOPS.
2. Pump AZ101EW-P-1B STARTS if in AUTO/STANDBY.

Immediate Actions:
[1] CHECK other associated alarms on annunciator panel.
[2] CHECK pump AZ101EW-P-1A has stopped and pump AZ101EW-P-1B is operating.
[3] IF pump AZ101EW-P-1B does not start automatically, START pump AZ101EW-P-1B as follows:
   [3.1] ENSURE pump starts and flow is normal.

Supplemental Actions:

Possible Causes:
1. Low flow rate from FI-AZ1-EWR-1, below 100 gpm.
2. Pump failed (less than 2 amps).

References:
Drawings: H-14-022507, Sht 1
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 4
Source: AZ101-EW-P-1B  Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: Evap Glycol Pump 1B Status (Fault)

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 AZ101EW-P-1B STOPS.
2. Pump AZ101EW-P-1A STARTS if in AUTO/STANDBY.

Immediate Actions:
[1] CHECK other associated alarms on annunciator panel.
[2] CHECK pump AZ101EW-P-1B has stopped and pump AZ101EW-P-1A is operating.
[3] IF pump AZ101EW-P-1A does not start automatically, START pump AZ101EW-P-1A as follows:
   [3.1] ENSURE pump starts and flow is normal.

Supplemental Actions:

Possible Causes:
1. Low flow rate from FI-AZ1-EWR-1, below 100 gpm.
2. Pump failed (less than 2 amps).

References:
Drawings: H-14-022507, Sht 1
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 5
Source: AZ101-EW-SP-1  Setpoint: N/A

Alarm Class: Plant Stability
Alarm Description: Evap Water Spray Pump Status (Fault)

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. AZ101 cooling tower spray pump AZ101EW-SP-1 shut down.
2. Evaporative cooling tower fan is interlocked to shut down if the spray pump fails.

Immediate Actions:
[1] IF running in "dry" mode, DISREGARD this alarm.
[2] GO TO the AZ101 evaporative cooling tower AND CHECK the status of the spray pump.
[3] IF the spray pump is OFF, CHECK the status of the tower fan.

Supplemental Actions:
NOTE - The spray pump and the tower fan are interlocked to shut down on low-low cooling tower pan level. Therefore, if both the spray pump and the tower fan are off, the pan level may be too low.

[5] IF the spray pump and the tower fan are OFF AND IF it is suspected that a low-low level exists in the pan, GO TO alarm response for LALL-AZ1EWT-1 in this procedure.

Possible Causes:
1. Pump failure.
2. Low-Low cooling tower pan level.

References:
Drawings: H-14-022507, Sht 1
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 6
Source: AZ101-EW-T-1  Setpoint: N/A

Alarm Class: Plant Stability
Alarm Description: Evap Water Tower Fan Status (Fault)

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. Tower fan STOPS.

Immediate Actions:
[1] CHECK the status of the AZ101 evaporative cooling tower cooling fan on graphic screen 08.
[2] IF MONITOR CONTROL SYSTEM screen indicates the cooling fan is FAULTED, SHUT DOWN the cooling fan.

Supplemental Actions:

Possible Causes:
1. Fan failure.
2. Equipment failure.

References:
Drawings: H-14-022507, Sht 1
Respond to Monitor Control System Graphic #08 Evap AZ1 Alarms

Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 12

Source: LSL-AZ101-EWT-1  Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: AZ101 Evap Tower Liquid 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.

Automatic Actions:
1. Heater will shut off in sump.
2. Spray pump will shut off.

Immediate Actions:
[1] IF running in DRY mode, DISREGARD this alarm.
[2] IF running in “feed and bleed” mode, ENSURE that HV-AZ101EWT-1A1 is discharging at a rate of greater than or equal to 30 gph (0.5 gpm).
[4] ENSURE HS-AZ101EWSP-1A on fluid cooler control panel UIC-AZ101EWT-1 is in the OFF position.
[7] ENSURE HS-AZ101EWT-1A2 on fluid cooler control panel UIC-AZ101EWT-1 is in the OFF position.

Supplemental Actions:
[8] IF no leaks are found, PERFORM the following:
[8.1] OPEN tower access hatch AND
      OBSERVE water level.
[8.2] CLOSE AND SECURE access hatch.

(Continued on Next Page)
Facility: AZ-101 Evaporative Cooling Tower

Graphic: 08  Alarm #: 12  LALL-AZ1EWT-1
Source: LSL-AZ101-EWT-1  Setpoint: N/A

Supplemental Actions (Cont.):
[9] IF water level is low, ENSURE HS-AZ101-WP-1 on PAN RECIRC DISCONNECT AZ101-W-P-1 is in the STOP position.
[10] CHECK pan recirculation pump stops, as indicated by a lack of pressure on pressure indicator.

Possible Causes:
1. Tower leaking water faster than being supplied.
2. Instrument malfunction.
3. HV-AZ101RW-1 shut.
4. Raw water feed and bleed in progress.

References:
Drawings: H-14-022507, Sht 1