# Tank Farm Alarm Response Procedure

## USQ # TF-17-1322-D, Rev. 0

### GRAPHIC #12 RECIRC AZ1 ALARM INDEX

<table>
<thead>
<tr>
<th>Alarm</th>
<th>Description</th>
<th>Color</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK-AZ101K-4-1</td>
<td>Re-circ. Fan Inlet Damper MK-AZ101K4-1 Object Error (OE)</td>
<td>Yellow</td>
<td>4</td>
</tr>
<tr>
<td>MK-AZ101K-4-2</td>
<td>Re-circ. Fan Outlet Damper MK-AZ101K4-2 Object Error (OE)</td>
<td>Yellow</td>
<td>5</td>
</tr>
<tr>
<td>MK-AZ101K-4-3</td>
<td>Return Damper MK-AZ101K4-3 Object Error (OE)</td>
<td>Yellow</td>
<td>6</td>
</tr>
<tr>
<td>MK-AZ101K-4-4</td>
<td>Bypass Damper MK-AZ101K4-4 Object Error (OE)</td>
<td>Yellow</td>
<td>7</td>
</tr>
<tr>
<td>AZ101K4-5-1</td>
<td>Re-circulation Fan Object Error (OE)</td>
<td>Yellow</td>
<td>8</td>
</tr>
<tr>
<td>PDI-AZ1-K45-1</td>
<td>HI, Recirc Fan AZ101K4-5-1 Diff. Pressure (HI)</td>
<td>Yellow</td>
<td>10</td>
</tr>
<tr>
<td>PDI-AZ1-K48-1</td>
<td>LO, Recirc Condenser AZ101K4-8-1 Diff. Pressure (LO)</td>
<td>Yellow</td>
<td>11</td>
</tr>
<tr>
<td>PDI-AZ1-K48-1</td>
<td>HI, Recirc Condenser AZ101K4-8-1 Diff. Pressure (HI)</td>
<td>Yellow</td>
<td>13</td>
</tr>
<tr>
<td>ZA-AZ1-K4-1A</td>
<td>AZ101 Tank Damper Lineup (Fault)</td>
<td>Yellow</td>
<td>14</td>
</tr>
</tbody>
</table>

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### 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>H-0</td>
<td>07/31/2013</td>
<td>All changes are as a result of the periodic review process.</td>
<td>Engineering request to address changes to the MCS software. Modified screen name to just a number.</td>
</tr>
<tr>
<td>I-0</td>
<td>11/04/2015</td>
<td>PCA to incorporate comments from Periodic Review</td>
<td>Added References and titles to Documents</td>
</tr>
<tr>
<td>I-1</td>
<td>08/31/2016</td>
<td>Electrical group request</td>
<td>Added White Label program statement.</td>
</tr>
<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>
</tbody>
</table>

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### Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Tank Farm Alarm Response Procedure  
AY/AZ Farm

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**Type** | **Document No.** | **Rev/Mod** | **Release Date** | **Page**
---|---|---|---|---
**REFERENCE** | **ARP-T-251-00012** | **I-2** | **09/20/2017** | **Page 1 of 14**
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms
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.

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 MCS system in accordance with procedure TO-060-356, Perform 702-AZ Exhauster Monitor and Control System Operations.
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: MK-AZ101K-4-1
Object Error

Source: MK-AZ101K4-1
Setpoint: N/A

Alarm Class: Equipment Status

Alarm Description: AZ101 Re-circ. Fan Inlet Damper MK-AZ101K4-1 Object Error (OE)

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] IF damper is in the correct position, RESET object error per TO-060-350.

[2] REQUEST operator to field check position of damper MK-AZ101K4-1 per operating mode.

<table>
<thead>
<tr>
<th>VALVE No.</th>
<th>MODE OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RECIRC</td>
</tr>
<tr>
<td>MK-AZ101K4-1</td>
<td>OPEN</td>
</tr>
</tbody>
</table>

[3] IF damper MK-AZ101K4-1 is not in the correct position, REPOSITION per the operating mode AND

RESET object error per TO-060-350.


Possible Causes:

1. Damper MK-AZ101K4-1 is not fully open or fully closed, but in some mid position.
2. Failed limit switch.
3. Instrument error

References:

Drawings: H-14-020107, Sht 1
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: MK-AZ101K-4-2
Object Error

Source: MK-AZ101K4-2
Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: AZ101 Re-circ. Fan Outlet Damper MK-AZ101K4-2 Object Error (OE)

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] IF damper is in the correct position, RESET object error per TO-060-350.

[2] REQUEST operator to field check position of damper MK-AZ101K4-2 per operating mode.

<table>
<thead>
<tr>
<th>VALVE No.</th>
<th>MODE OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RECIRC</td>
</tr>
<tr>
<td>MK-AZ101K4-2</td>
<td>OPEN</td>
</tr>
</tbody>
</table>

[3] IF damper MK-AZ101K4-2 is not in the correct position, RE-POSITION per the operating mode AND

RESET object error per TO-060-350.


Possible Causes:

1. Damper MK-AZ101K4-2 is not fully open or fully closed, but in some mid position.
2. Failed limit switch.
3. Instrument error.

References:

Drawings: H-14-020107, Sht 1
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: MK-AZ101K-4-3
Object Error

Source: MK-AZ101K4-3

Setpoint: N/A

Alarm Class: Equipment Status

Alarm Description: AZ101 Return Damper MK-AZ101K4-3 Object Error (OE)

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] IF damper is in the correct position, RESET object error per TO-060-350.
[2] REQUEST operator to field check position of damper MK-AZ101K4-3 per operating mode.

<table>
<thead>
<tr>
<th>VALVE No.</th>
<th>MODE OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK-AZ101K4-3</td>
<td>RECIRC OPEN</td>
</tr>
<tr>
<td></td>
<td>BYPASS CLOSED</td>
</tr>
<tr>
<td></td>
<td>HI HEAT CLOSED</td>
</tr>
</tbody>
</table>

[3] IF damper MK-AZ101K4-3 is not in the correct position, RE-POSITION per the operating mode AND

RESET object error per TO-060-350.


Possible Causes:

1. Damper MK-AZ101K4-3 is not fully open or fully closed, but in some mid position.
2. Failed limit switch.
3. Instrument error.

References:

Drawings: H-14-020107, Sht 1

Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: MK-AZ101K-4-4
Object Error

Source: MK-AZ101K4-4

Setpoint: N/A

Alarm Class: Equipment Status

Alarm Description: AZ101 Bypass Damper MK-AZ101K4-4 Object Error (OE)

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] IF damper is in the correct position, RESET object error per TO-060-350.
[2] REQUEST operator to field check position of damper MK-AZ101K4-4 per operating mode.

<table>
<thead>
<tr>
<th>VALVE No.</th>
<th>MODE OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RECIRC</td>
</tr>
<tr>
<td>MK-AZ101K4-4</td>
<td>CLOSED</td>
</tr>
</tbody>
</table>

[3] IF damper MK-AZ101K4-4 is not in the correct position, RE-POSITION per the operating mode AND

RESET object error per TO-060-350.


Possible Causes:

1. Damper MK-AZ101K4-4 is not fully open or fully closed, but in some mid position.
2. Failed limit switch.
3. Instrument error.

References:

Drawings: H-14-020107, Sht 1
Documents: TO-060-350, Start, Stop and Operate AY/AZ Tank Ventilation Primary Exhaust System
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: AZ101K4-5-1
Object Error

Source: AZ101K4-5-1
Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: AZ101K4-5-1 Re-circulation Fan Object Error (OE)

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. AZ101K4-5-1 fan will shut down.

Immediate Actions:

[1] IF re-circulation fan AZ101K4-5-1 is shut down, FIELD CHECK status of power supply breaker and disconnect switch (located on recirc module outside wall).

[2] IF breaker or disconnect switch is found to be tripped, DO NOT reenergize re-circulation fan.

[3] IF re-circulation fan AZ101K4-5-1 is not shut down, but is in alarm condition, PERFORM the following:

[3.1] CHECK AZ101K4-5-1 motor for excessive current using II-AZ1K45-1.

[3.2] CHECK re-circulation fan AZ101K4-5-1 for high differential pressure using PDI-AZ1K45-1.

[3.3] CHECK condenser for high or low differential pressure using PDI-AZ1K48-1.

Supplemental Actions:

[4] CHECK recirc module damper line-up is correct for mode of operation.

[5] CHECK flow on FI-AZ1K1-2 is in a normal operating range.


(Continued on Next Page)
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: AZ101K4-5-1
Object Error

Source: AY101K4-5-1

Setpoint: N/A

Possible Causes:
1. Re-circulation Fan AZ101K4-5-1 breaker tripped.
2. Re-circulation Fan AZ101K4-5-1 mechanically failed.
3. Instrument error.
4. Plugged line.
5. High or low differential pressure on PDI-AZ1K48-1, indicating little or no flow through re-circulation loop.

References:
Drawings: H-14-020107, Sht 1
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12
Alarm #: PDI-AZ1-K45-1 HIGH

Source: PDI-AZ1K45-1
Setpoint: 24.00 Inches. WC

Alarm Class: Plant Stability
Alarm Description: Recirc Fan AZ101K4-5-1 Diff. Pressure HIGH

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] STOP Recirc Fan AZ101-K4-5-1
[2] CHECK that system is in “RECIRC” or “HIGH HEAT” mode.
[3] CHECK that dampers MK-AZ101K4-1 and MK-AZ101K4-2 are OPEN.
[4] ENSURE PDI-AZ1K48-1 is not in alarm state.

Supplemental Actions:
[6] IF directed by Shift Manager, START Recirc Fan AZ101-K4-5-1

Possible Causes:
1. Re-circulation fan AZ101K4-5-1 discharge damper MK-AZ101K4-2 closed.
2. Re-circulation fan AZ101K4-5-1 inlet damper MK-AZ101K4-1 closed.
3. Differential pressure instrument isolation valves closed.
4. Differential pressure instrument tubing plugged or damaged.
5. Instrument error.
6. Condenser or moisture separator plugged.

References:
Drawings: H-14-020107, Sht 1
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: PDI-AZ1-K48-1 LOW

Source: PDI-AZ1K48-1

Setpoint: 0.00 Inches WC

Alarm Class: Plant Stability

Alarm Description: Recirc Condenser AZ101K4-8-1 Diff. Pressure 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. The AZ101 re-circulation fan AZ101K4-5-1 will shut down on interlock.

Immediate Actions:

[1] ENSURE re-circulation fan AZ101-K4-5-1 is shutdown.

[2] ENSURE proper damper alignment for the current operation mode per TO-060-353.


Supplemental Actions:

[5] IF directed by Shift Manager, PERFORM the following:

[5.1] CHECK locally that there is no breach in system.

[5.2] CHECK that there are no equipment malfunctions.

Possible Causes:

1. Breach in condenser AZ101K4-8-1.
2. Fan AZ101K4-5-1 failure.
3. Equipment associated with PDI-AZ1K48-1 obstructed.
4. Improper damper configuration.
5. Maintenance or PM.

(Continued on Next Page)
Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12

Alarm #: PDI-AZ1-K48-1 LOW

Source: PDI-AZ1K48-1

Setpoint: 0.00 Inches WC

Alarm Class: Plant Stability

Alarm Description: Recirc Condenser AZ101K4-8-1 Diff. Pressure LOW

References:

Drawings: H-2-131064
Documents: TO-060-353, AZ101 Recirculation Module Operation
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12   Alarm #: PDI-AZ1-K48-1 HIGH

Source: PDI-AZ1K48-1   Setpoint: 18.00 Inches WC

Alarm Class: Plant Stability   Alarm Description: Recirc Condenser AZ101K4-8-1 Diff. Pressure HIGH

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:


Supplemental Actions:


Possible Causes:

1. Condenser shell blockage.
2. High flow through AZ101K4-8-1.
3. Differential pressure instrument isolation valves closed.
4. Differential pressure instrument tubing plugged or damaged.

References:

Drawings: H-14-020107, Sht 1
Documents: TO-060-353, AZ101 Recirculation Module Operation
Respond to Monitor Control System Graphic #12 Recirc AZ1 Alarms

Facility: AY/AZ Primary Ventilation/401-AZ Recirc Bldg

Graphic: 12  Alarm #: ZA-AZ1-K4-1A

Source: Numerous Dampers  Setpoint: N/A

Alarm Class: Plant Stability  Alarm Description: AZ101 Tank Recirc Module Damper Lineup Fault

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] COMPARE position of AZ101 recirc module dampers on MCS Screen 12 to current operating mode per TO-060-353.

[2] IF dampers on MCS do not correspond to current operating mode, REQUEST operator to FIELD CHECK position of dampers per operating mode.

<table>
<thead>
<tr>
<th>VALVE No.</th>
<th>MODE OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RECIRC</td>
</tr>
<tr>
<td>MK-AZ101K4-1</td>
<td>OPEN</td>
</tr>
<tr>
<td>MK-AZ101K4-2</td>
<td>OPEN</td>
</tr>
<tr>
<td>MK-AZ101K4-3</td>
<td>OPEN</td>
</tr>
<tr>
<td>MK-AZ101K4-4</td>
<td>CLOSED</td>
</tr>
</tbody>
</table>


Possible Causes:

1. Damper out of specified lineup position for mode required selected.
2. Re-circulation fan failure.
3. Failed limit switch.
4. Instrument error.

References:

Drawings: H-14-020107, Sht 1
Documents: TO-060-353, AZ101 Recirculation Module Operation