Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Tank Farm Alarm Response Procedure

POR394 WDS

USQ # TF-16-0456-S Rev. 1

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
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<tr>
<th>Rev/Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<td>A-2</td>
<td>03/30/2016</td>
<td>Differential Pressure Indication Requirements</td>
<td>Changed Alarm 3 (PDAH-001 Water Filter High Diff. Pressure PDIT-001) to include a new note and additional steps within Immediate Actions</td>
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<td>A-0</td>
<td>02/23/2016</td>
<td>New Equipment</td>
<td>New procedure based on ARP-T-331-00015</td>
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Figure 2 – Alarm Screen.................................................................................. 19

RECORDS

No records are generated during the performance of this procedure.
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid
Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI

Alarm Type: Software

Source: POR394-RW-TIT-004

Setpoint: 35 °F

Alarm Class: Equipment Status

Alarm Description: Water temperature in raw water TK-001 has decreased below 35 °F.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:

None.

Immediate Actions:

[2] NOTIFY OE.

Supplemental Actions:


Possible Causes:

1. Equipment failure.

References:

Drawings: H-14-110563, Sheet 9
          H-14-024306, Sheet 12

Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Software
Source: POR394-RW-TIT-004  Setpoint: 135 °F

Alarm Class: Equipment Status
Alarm Description: Water temperature in raw water TK-001 has increased to 135°F.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
1. System shutdown until alarm is cleared.

Immediate Actions:
[2] NOTIFY OE.

Supplemental Actions:

Possible Causes:
1. Recirculation of P-001 or P-002 for an extended period.
2. Equipment failure.

References:
Drawings: H-14-110563, Sheet 9
H-14-024306, Sheet 12
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Software
Source: POR394-RW-PDIT-001  Setpoint: 5 psid

Alarms

PDAH-001 WATER FILTER HIGH DIFF. PRESSURE (PDIT-001)

Alarm Class: Equipment Status
Alarm Description: Differential pressure across raw water filter (F-001) has increased to 5 psid.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.
- When alarm is cleared it may not activate, so monitoring of local indications should be performed.

Automatic Actions:
None.

Immediate Actions:

[2] NOTIFY OE.
[4] ENSURE valving is correct per TO-200-410.
[5] SWITCH to other filter basket strainer, when different pressure reaches 15.

Supplemental Actions:


Possible Causes:

1. Filter is plugged.
2. Valve closed.
3. Equipment failure.

References:

Drawings: H-14-110563, Sheet 1
H-14-024306, Sheet 12

Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Software
Source: POR394-RW-LIT-005  Setpoint: 75%

Alarm Class: Equipment Status
Alarm Description: Raw water tank TK-001 level has increased to 75%.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[2] NOTIFY OE.
[3] IF Alarm clears, EXIT this ARP.
[4] ENSURE valving is correct per TO-200-410.

Supplemental Actions:

Possible Causes:
1. Equipment failure.
2. Inlet bypass valve open.

References:
Drawings: H-14-110563, Sheet 4
          H-14-024306, Sheet 12
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI  Alarm Type: Software

Source: POR394-RW-LIT-005  Setpoint: 25%

Alarm Class: Equipment Status

Alarm Description: Raw water tank TK-001 level has decreased to 25%.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[2] NOTIFY OE.
[3] ENSURE valving is correct per TO-200-410.

Supplemental Actions:

Possible Causes:
1. Equipment failure.
2. Inlet valve closed.

References:
Drawings: H-14-110563, Sheet 4
H-14-024306, Sheet 12
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Switch

Source: POR394-RW-LSHH-003  Setpoint: 80%

Alarm Class: Equipment Status
Alarm Description: Raw water tank TK-001 level has increased high high level switch to 80%.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
1. Raw water supply shutoff valve, MOV-001 closes to prevent overflowing tank TK-001.

Immediate Actions:
[2] NOTIFY OE.
[3] ENSURE valve MOV-001 is CLOSED.
[4] ENSURE POR394-RW-V-011 is CLOSED.
[5] IF Alarm clears, EXIT this ARP.

Supplemental Actions:
[8] PERFORM investigation.

Possible Causes:
1. Equipment failure.
2. Inlet bypass valve open.

References:
Drawings: H-14-110563, Sheet 6
          H-14-024306, Sheet 12
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI
Alarm Type: Switch

Source: POR394-RW-LSLL-005
Setpoint: 20%

Alarm Class: Equipment Status
Alarm Description: Raw water tank TK-001 level has decreased below low low level switch 20%.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
1. System shutdown until alarm is cleared.

Immediate Actions:
[2] NOTIFY OE.
[4] ENSURE valving is correct per TO-200-410.

Supplemental Actions:

Possible Causes:
1. Equipment failure.
2. Inlet valve closed.

References:
Drawings: H-14-110563, Sheet 5
H-14-024306, Sheet 12
Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI    Alarm Type: Software

Source: POR394-RW-FIT-015    Setpoint: 0 gpm

Alarm Class: Equipment Status
Alarm Description: Raw Water TK-001 discharge flow has decreased to 0 gpm.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:

[2] NOTIFY OE.
[4] ENSURE valving is correct per TO-200-410.

Supplemental Actions:


Possible Causes:

1. Discharge flow setpoints are set too low.
2. Incorrect system valving.
3. Failed inlet or outlet MOV.
4. VFD failure.
5. Transmitter failure.

References:

Drawings:
H-14-110563, Sheet 10
H-14-024306, Sheet 12

Documents:
TO-200-410, Operate POR394-RW-RWDD-001 Raw Water Distribution Skid.
Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI  

Alarm Type: Software

Source: POR394-RW-PIT-010  
Setpoint: 50 psi

Alarm Class: Equipment Status

Alarm Description: Raw Water TK-001 discharge pressure has decreased below 50 psi.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:

[2] NOTIFY OE.
[4] ENSURE valving is correct per TO-200-410.

Supplemental Actions:


Possible Causes:

1. Discharge flow setpoints are too low.
2. Incorrect system valving.
3. Failed inlet or outlet MOV.
4. VFD failure.
5. Transmitter failure.

References:

Drawings: H-14-110563, Sheet 8
           H-14-024306, Sheet 12

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI  

Alarm Type: Software

Source: POR394-RW-MOV-001  

Setpoint: N/A

Alarm Class: Equipment Status

Alarm Description: Inlet valve MOV-001 has failed to close.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:

None.

Immediate Actions:


[3] NOTIFY Shift Manager/OE.


Supplemental Actions:


Possible Causes:

1. Failed inlet or outlet MOV.

2. Transmitter failure.

References:

Drawings: H-14-110563, Sheet 2

H-14-024306, Sheet 12

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid

Panel: HMI  Alarm Type: Software

Source: POR394-RW-MOV-001  Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: Inlet valve MOV-001 has failed to open.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[2] NOTIFY Shift Manager/OE.

Supplemental Actions:

Possible Causes:
1. Failed inlet or outlet MOV.
2. Transmitter failure.

References:
Drawings: H-14-110563, Sheet 2
H-14-024306, Sheet 12
**Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid**

**Facility:** POR394-RW-RWDD-001 Raw Water Distribution Skid  
**Panel:** HMI  
**Alarm Type:** Software  
**MOV-002 FAIL TO CLOSE**

**Source:** POR394-RW-MOV-002  
**Setpoint:** N/A

**Alarm Class:** Equipment Status  
**Alarm Description:** Outlet valve MOV-002 has failed to close.

**NOTE** - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

**Automatic Actions:**

None.

**Immediate Actions:**

1. [SHUT OFF] Pump-002.
2. [NOTIFY] Shift Manager/OE.

**Supplemental Actions:**

4. [INITIATE] repairs.

**Possible Causes:**

1. Failed inlet or outlet MOV.
2. Transmitter failure.

**References:**

**Drawings:**
- H-14-110563, Sheet 3
- H-14-024306, Sheet 12

**Documents:**
- TO-200-410, Operate POR394-RW-RWDD-001 Raw Water Distribution Skid.
Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  
Alarm Type: Software

Source: POR394-RW-MOV-002  
Setpoint: N/A

Alarm Class: Equipment Status  
Alarm Description: Outlet valve MOV-002 has failed to open.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[2] NOTIFY Shift Manager/OE.

Supplemental Actions:

Possible Causes:
1. Failed inlet or outlet MOV.
2. Transmitter failure.

References:
Drawings: H-14-110563, Sheet 3  
H-14-024306, Sheet 12
Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Software
Source: POR394-RW-VFD-001  Setpoint: N/A

VFD-001 FAULT

Alarm Class: Equipment Status
Alarm Description: VFD-001 software diagnostics indicates VFD failure.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[1] NOTIFY Shift Manager/OE.

Supplemental Actions:

Possible Causes:
1. VFD parameters have been modified.
2. VFD failed.

References:
Drawings: H-14-024306, Sheet 12
Respond to Alarms at POR394-RW-RWDD-001 Raw Water Distribution Skid

Facility: POR394-RW-RWDD-001 Raw Water Distribution Skid
Panel: HMI  Alarm Type: Software
Source: POR394-RW-VFD-002  Setpoint: N/A

Alarm Class: Equipment Status
Alarm Description: VFD-002 software diagnostics indicates VFD failure.

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to expected alarms.

Automatic Actions:
None.

Immediate Actions:
[1] NOTIFY Shift Manager/OE

Supplemental Actions:

Possible Causes:
1. VFD parameters have been modified.
2. VFD failed.

References:
Drawings: H-14-024306, Sheet 12
Figure 1 – P& ID Screen
Figure 2 – Alarm Screen 1