Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Tank Farm Alarm Response Procedure 242-A Evaporator

USQ # EV-18-1370-D, Rev. 0

CHANGE HISTORY (≤ LAST 5 Rev-Mods)

<table>
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<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
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<th>Summary of Changes</th>
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| I-2     | 08/29/2018   | Operations request | Updated Records Section
|         |              |                 | Added statement to each alarm IF the facility is NOT OPERATING, EXIT this Alarm Response Procedure. |
| I-1     | 04/17/2017   | 242-A Rad Monitor Upgrade Project | Struck out RSH-CA1-1 E-C-1 CONDENSER PC RAD HIGH RED Alarm (pages 2-5) |
| I-0     | 05/25/2016   | Periodic review   | No changes identified. |
| H-1     | 01/14/2015   | Operations request | Corrected identification, clarified step and deleted step. |

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<td>PIC-CA1-7</td>
<td>(HIGH-HIGH)…EVAPORATOR ABSOLUTE PRESSURE</td>
<td>RED</td>
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<tr>
<td>PIC-CA1-7</td>
<td>(HIGH)…………..EVAPORATOR ABSOLUTE PRESSURE</td>
<td>YELLOW</td>
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<td>TIC-EC1-2</td>
<td>………………………E-C-1 PC OUTLET TEMP HIGH</td>
<td>WHITE</td>
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<td>FIC-EC3-1</td>
<td>………………………E-C-3 CONDENSER URW FLOW CONTROLR LOW</td>
<td>WHITE</td>
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<tr>
<td>PI-EC1-5</td>
<td>………………………E-C-1 RW INLET PRESSURE HIGH</td>
<td>WHITE</td>
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RECORDS

No records are generated during the performance of this procedure.
Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

| Facility: | 242-A Evaporator |
| Graphic: | 16 |
| Alarm #: | N/A |
| Panel: | N/A |
| Source: | PIC-CA1-7 |
| Setpoint: | 170 torr |

**Alarm Class:** Equipment Status  
**Alarm Description:** EVAPORATOR ABSOLUTE PRESSURE (HIGH-HIGH) (G16, F14)

### Automatic Actions:
1. Activates Interlock 56.
2. Opens HV-CA1-20 to provide open purge air.

### Immediate Actions:
1. **IF** the Facility is NOT OPERATING, **EXIT** this Alarm Response Procedure.
2. **NOTIFY** Shift Manager.
3. **IF** intentionally re-circulating without vacuum, **DISREGARD** alarm AND **EXIT** this ARP.
4. **IF** an unplanned decrease of vacuum of >170 torr occurs, **PERFORM** the following:
   4.1 **REQUEST** engineering/maintenance to trouble shoot cause.

### Probable Causes:
1. Intentional recirculation without vacuum.
3. Equipment Failure.

### References:
- **Drawings:** H-2-98988, Sheet 1
- **Documents:** None
Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Facility: 242-A Evaporator

Graphic: 16  Alarm #: N/A
Panel: N/A
Source: PIC-CA1-7  Setpoint: 100 torr

Alarm Class: Equipment Status

Alarm Description: EVAPORATOR ABSOLUTE PRESSURE (HIGH) (G16/10, F14/8)

Automatic Actions:
None

Immediate Actions:
[1] IF the Facility is NOT OPERATING, EXIT this Alarm Response Procedure.
[3] IF intentionally re-circulating without vacuum, DISREGARD alarm AND EXIT this ARP.
[4] IF an unplanned decrease of vacuum of >100 torr occurs, PERFORM the following:
   [4.1] REQUEST engineering/maintenance to trouble shoot cause.

Probable Causes:
1. Intentional recirculation without vacuum.
3. Equipment Failure.

References:
Drawings: H-2-98988, Sheet 1
Documents: None
Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Facility: 242-A Evaporator

Graphic: 16  Alarm #: N/A
Panel: N/A
Source: TE-EC1-2  Setpoint: 110 °F

Alarm Class: Equipment Status

Alarm Description: E-C-1 PC OUTLET TEMP (HIGH) (F14/2); high temperature detected in Process Condensate exiting the E-C-1 condenser.

Automatic Actions:
None

Immediate Actions:

[1] IF the Evaporator is not OPERATING, EXIT this Alarm Response Procedure.


[3] CHECK with Water Utilities to determine if there is a loss of water.

[3.1] IF a loss of raw water supply pressure has occurred, EXIT this ARP AND GO TO TF-AOP-EVAP-003, Response to 242-A Evaporator Loss of Raw Water System.

[4] CHECK TIC-EC1-2 E-C-1 PC OUTLET TEMP Current Trend trace for recent temperature changes by performing the following:

[4.1] PRESS CURR TREND, 19 AND ENTER.

[4.2] CHECK TIC-EC1-2 Current Trend trace for recent temperature increases.

[5] IF TIC-EC1-2 reads greater than 110 °F, SET FIC-EC1-1 (G17/5, F14/2) E-C-1 CONDENSER URW FLOW CONTROLR to MANUAL mode to increase cooling water flow through E-C-1 Condenser.

[5.1] SLOWLY increase FIC-EC1-1 output to raise flow.

[5.2] MONITOR TIC-EC1-2 (G16/8, F14/2) E-C-1 PC OUTLET TEMP for approximately 10 minutes.

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Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Facility: 242-A Evaporator
Graphic: 16  Alarm #: N/A
Panel: N/A  Setpoint: 110 °F
Source: TE-EC1-2

Immediate Actions (Cont.):

[6] IF TIC-EC1-2 temperature does not stabilize at less than 105 °F, REPEAT Steps [5.1] and [5.2] until TIC-EC1-2 temperature stabilizes at less than 105 °F.

NOTE - FIC-EA1-1 output should not be lowered by more than 3% at one time.

[7] IF TIC-EC1-2 temperature does not stabilize at less than 105 °F and FIC-EC1-1 Output reaches 100%, DECREASE steam to boiler by performing the following:

[7.1] SELECT FIC-EA1-1 (G 13/8, F12/6) and slowly lower reboiler steam flow.

[7.2] ALLOW FI-EC1-2, PIC-CA1-7, TI-CA1-6 and TI-EA1-7 readings to stabilize.

[7.3] REPEAT Steps [7.1] through [7.2] until TIC-EC1-2 temperature stabilizes at less than 105 °F.

[8] NOTIFY Shift Manager of actions taken and/or possible instrument trouble.

Possible Causes:

1. Excessive process condensate temperature.
2. Low raw water pressure.
3. Ongoing maintenance PM.

References:

Drawings: H-2-98990, Sheet 1, Zone D-6
Documents: TF-AOP-EVAP-003, Response to 242-A Evaporator Loss of Raw Water System
Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Facility: 242-A Evaporator

Graphic: 16  Alarm #: N/A
Panel: N/A
Source: FT-EC3-1  Setpoint: 50 gpm

Alarm Class: Equipment Status
Alarm Description: E-C-3 CONDENSR URW FLOW CONTROLR (LOW) (F14/4); low URW flow through E-C-3 Condenser has been detected.

Automatic Actions:
None

Immediate Actions:

[1] IF the Evaporator is not OPERATING, NOTIFY Shift Manager AND EXIT this procedure. (No further actions are required.)


[3] IF PI-RW-2 shows pressure and PI-RW-1 does not show pressure and backup raw water strainer bank is available, PERFORM the following:
   [3.1] PLACE backup raw water strainer bank in service per TO-600-130.
   [3.2] ISOLATE primary raw water strainer bank per TO-600-130.

[4] CHECK with Water Utilities to determine if there is a loss of water.
   [4.1] IF a loss of raw water supply pressure has occurred, EXIT this ARP AND GO TO TF-AOP-EVAP-003, Response to 242-A Evaporator Loss of Raw Water System.

[5] SET FIC-EC3-1 (G16/9, F14) E-C-3 CONDENSR URW FLOW CONTROLR to AUTO mode.
   [5.1] CHECK that FIC-EC3-1 changes to AUTO mode.

[6] IF FIC-EC3-1 (G16/9, F14) setpoint is not 125, PERFORM the following:
   [6.1] PRESS SETPOINT, 125, and ENTER.
   [6.2] CHECK that FIC-EC3-1 setpoint changes to 125.

[7] MONITOR FIC-EC3-1 (G16/9, F14) until flow stabilizes at 122 to 128 gpm.

[8] IF FIC-EC3-1 flow does not stabilize at 122 to 128 gpm, NOTIFY Shift Manager of the condition.

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Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

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<th>Panel: N/A</th>
<th>Source: FT-EC3-1 Setpoint: 50 gpm</th>
</tr>
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</table>

**Possible Causes:**

1. Low used raw water flow from E-C-3.
2. Ongoing maintenance PM.
3. Loss of raw water supply.

**References:**

- **Drawings:** H-2-98999, Zones B-3 and B-7
- **Documents:** TF-AOP-EVAP-003, Response to 242-A Evaporator Loss of Raw Water System TO-600-130, Operate 242-A-81 Raw Water Strainer System
### Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

**Facility:** 242-A Evaporator  
**Graphic:** 16  
**Alarm #:** N/A  
**Panel:** N/A  
**Source:** PT-EC1-5  
**Setpoint:** 95 psig

**Alarm Class:** Equipment Status  
**Alarm Description:** E-C-1 RW INLET PRESSURE (HIGH) (F15); pressure in 12” RW header to E-C-1 is high.

**Automatic Actions:**  
None

**Immediate Actions:**

- **[1]** IF the Evaporator is NOT OPERATING, NOTIFY Shift Manager AND EXIT this procedure. (No further actions are required.)
- **[2]** CHECK PI-RW-1 F-RW-1&2 FILTER DNSTREAM PRESSURE and PI-RW-2 F-RW-1&2 FILTER UPSTREAM PRESSURE Current Trend traces for recent raw water pressure changes by performing the following:
  - [2.1] PRESS CURR TREND, 17, and ENTER.  
- **[3]** IF PI-RW-1 shows a pressure increase and PI-RW-2 does not show a pressure increase, DIRECT Maintenance to adjust raw water pressure control valves PCV-RW-1 or PCV-RW-2.
- **[4]** IF PI-RW-2 shows pressure and PI-RW-1 does not show pressure and backup raw water strainer bank is available, PERFORM the following:
  - [4.1] PLACE backup raw water strainer bank in service per TO-600-130.  
  - [4.2] ISOLATE primary raw water strainer bank per TO-600-130.
- **[5]** NOTIFY Shift Manager.

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Respond to E-C-1 Graphic #16 Alarms at the 242-A Evaporator

Facility: 242-A Evaporator
Graphic: 16  Alarm #: N/A
Panel: N/A
Source: PT-EC1-5  Setpoint: 95 psig

(Continued)

Possible Causes:
1. Failure of one of the following raw water pressure control valves:
   - PCV-RW-1
   - PCV-RW-2
   - PCV-RW-1A
   - PCV-RW-2A.
2. Ongoing maintenance PM.
3. Instrument malfunction.

References:
Drawings: H-2-98991, Zones C-7 and D-7, H-2-98999, Zone B-8
Documents: TO-600-130, Operate 242-A-81 Raw Water Strainer System