Respond to Monitor Control System Graphic #21 Building Stack Alarms

Tank Farm Alarm Response Procedure

USQ # TF-17-1762-S, Rev. 0

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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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<tr>
<td>I-1</td>
<td>12/05/2017</td>
<td>Make consistent with field conditions (ECN-713412), WRPS-PER-2016-0195</td>
<td>Updated procedure to disconnect CAM nuisance alarms and updated white label program.</td>
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<tr>
<td>I-0</td>
<td>10/03/2016</td>
<td>Periodic review comment resolution.</td>
<td>Added the White Label Program statement.</td>
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<tr>
<td>H-0</td>
<td>07/22/2014</td>
<td>Periodic review</td>
<td>No comments generated. Updated Rev/Mod, release date and Next due date.</td>
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<tr>
<td>G-1</td>
<td>05/02/2013</td>
<td>Global Change per ARP-T-251-0003 G-1. Inconsequential change to change procedure use type to Reference.</td>
<td>Change procedure use type in the footer to Reference.</td>
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<tr>
<td>G-0</td>
<td>07/30/2012</td>
<td>Periodic review comment incorporation</td>
<td>RAH-702K3-1: Modified Setpoint to proper settings. Modified warnings to make compatible with Standard one requirements.</td>
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GRAPHIC #21 BUILDING STACK ALARM INDEX

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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 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.
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 1

Source: FI-702K3-1  Setpoint: 0.30 scfm

Alarm Class: Environmental Impact

Alarm Description: FI-702K3-1, Building Stack Monitor BETA/GAMMA 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.

Immediate Actions:

[1] CHECK that one of the two Building Stack Exhaust Fans (AZ702-K3-5-1A or AZ702-K3-5-1B) is running using MONITOR CONTROL SYSTEM Graphic #20.

[2] IF a building exhaust fan is not running, PERFORM the following:
   [2.1] NOTIFY Shift Manager.
   [2.2] REQUEST Stationary Operating Engineer to start one of the exhaust fans per TO-060-357 AND RETURN to this ARP.

[3] CHECK that flow returns to normal (greater than 0.30 scfm).


Possible Causes:

1. Instrument failure or malfunction.
2. If the Building Exhaust fans AZ702-K3-5-1A or AZ702-K3-5-1B are not running, the Beta/Gamma monitor sampling pump will shut down.
3. Ongoing maintenance PM.

References:

Drawings: H-14-021307, Sheet 3
Documents: TO-060-357, Start, Stop, and Operate 241-AZ-702 Building Ventilation System
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 2

Source: FI-702K3-2  Setpoint: 0.30 scfm

Alarm Class: Environmental Impact

Alarm Description: FI-702K3-2 Building Stack Monitor RECORD 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.

Immediate Actions:

[1] CHECK that one of the two Building Stack Exhaust Fans (AZ702-K3-5-1A or AZ702-K3-5-1B) is running using MONITOR CONTROL SYSTEM Graphic #20.

[2] IF a Building Exhaust fan is not running, REQUEST Stationary Operating Engineer to start one of the exhaust fans per TO-060-357 AND RETURN to this ARP.

[2.1] CHECK that flow returns to normal (greater than 0.30 scfm).

[2.2] NOTIFY Shift Manager.


Possible Causes:

1. Instrument failure or malfunction
2. If the Building Exhaust fans AZ702-K3-5-1A or AZ702-K3-5-1B are not running, the record monitor sampling pump will shut down.
3. Ongoing maintenance PM
4. Record Sampler filter paper plugged

References:

Drawings: H-14-021307, Sheet 3

Documents: TO-060-357, Start, Stop and Operate 241-AZ-702 Building Ventilation System
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 3

Source: FI-702K3-3  Setpoint: 700 scfm

Alarm Class: Equipment Status
Alarm Description: FI-702K3-3, Building Stack 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.
- This alarm could be the result of a variety of component failures/malfunctions associated with the building supply/exhaust train that is in service at the time of the alarm

Automatic Actions:
1. Switch to backup exhaust fan if the fan is in Auto mode.

Immediate Actions:
[1] CHECK the running exhaust train for additional alarms using Graphic Screen #20.
[1.1] IF additional alarms are found, GO TO ARP-T-251-00020.
[2] CHECK the building ventilation supply system for additional alarms using Graphic Screen #19.
[2.1] IF additional alarms are found, GO TO ARP-T-251-00019.

Possible Causes:
1. The Building Exhaust Pre-Filter or HEPA Filter system is becoming plugged.
2. Flow Instrument has failed.
3. Exhaust Fan AZ702-K3-5-1A or AZ702-K3-5-1B have failed.
4. Ongoing maintenance PM.
5. A/C Unit AZ702-K2-6-1 has failed (supply fan).

References:
Drawings: H-14-021307, Sheet 3
Documents: ARP-T-251-00020, Respond to Monitor Control System Graphic #20 Building Exhaust Alarms
ARP-T-251-00019, Respond to Monitor Control System Graphic #19 Building Vent Supply Alarms
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 4

Source: FI-702K3-3  Setpoint: 1000 scfm

Alarm Class: Equipment Status

Alarm Description: FAH-702K3-3, HI. Building Stack Flow (HIGH)

NOTE - Alarm Response Procedures are not designed for, nor intended to be applied to, "expected" alarms generated by approved work activities or procedures.
- This alarm could be the result of a variety of component failures/malfunctions associated with the building supply/exhaust train that is in service at the time of the alarm.

Immediate Actions:

[1] CHECK the running exhaust train for additional alarms using Graphic Screen #20.
   [1.1] IF additional alarms are found, GO TO ARP-T-251-020.

[2] CHECK the building ventilation supply system for additional alarms using Graphic Screen #19.
   [2.1] IF additional alarms are found, GO TO ARP-T-251-019.


Possible Causes:

1. The Building Ventilation Supply/Exhaust system malfunction.
2. Flow Instrument has failed.
3. Ongoing maintenance PM.
4. Mechanical failure of the linkage actuator for the Variable Input Vanes.

References:

Drawings: H-14-021307,Sheet 3

Documents: ARP-T-251-020, Respond to Monitor Control System Graphic #20 Building Exhaust Alarms
ARP-T-251-019, Respond to Monitor Control System Graphic #19 Building Vent Supply Alarms
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 5  

Setpoint: Slow - 300 dpm/ft$^3$
Fast - 7000 dpm/ft$^3$
Beta NCR - 3000 cpm

Source: RAH-702K3-1

Alarm Class: Environmental Impact

Alarm Description: RAH-702K3-1, SLOW, FAST, BETA Net Count Rate. Building Stack Radiation

Slow: Radioactive particulate concentration of sample stream has exceeded 300 dpm/ft$^3$ over a 60 minute time interval.

Fast: Radioactive particulate concentration of sample stream has exceeded 7000 dpm/ft$^3$ over a 60 second interval.

BETA Net Count Rate: Radioactive particulate count rate has exceeded setpoint of 3000 cpm.

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. Building exhaust will switch to backup HEPA train, IF backup train is in STBY.
2. The red strobe light and the alarm horn will be on in the Monitor Room.

Immediate Actions:

NOTE - All three alarms invoke the same response in the Building Trains.

- This alarm could indicate that extremely high levels of radiation are being detected in the 702-AZ Building Exhaust Stack and the potential for high airborne radiation levels in the general area outside of 702 AZ.

[1] NOTIFY Shift Manager of alarm (Shift Manager will direct personnel downwind of the stack exhaust to take cover, as necessary).

[2] REQUEST Health Physics Technician and Stationary Operating Engineer and Nuclear Process Operator to INVESTIGATE alarm by responding in personnel protective clothing and a full face mask prior to entering the affected area (Shift Manager determines the affected area).

[3] ENSURE the building exhaust system has switched to the Standby Exhaust Train.

NOTE - When reading RI-702K3-1A (CAM DPM), a value of 3-15 DPM is expected during normal operation.


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Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21 Alarm #: 5

Source: RAH-702K3-1

Setpoint: Slow - 300 dpm/ft³
          Fast - 7000 dpm/ft³
          Beta NCR - 3000 cpm

Immediate Actions (Cont.):

[5] TREND RI-702K3-1A to determine if counts are increasing.

[6] REQUEST Health Physics Technician to perform the following:
   [6.1] ENTER Building 702-AZ
   [6.2] CHANGE record sampler filter paper.
   [6.3] EVALUATE system response.

[7] NOTIFY Shift Manager of actions, findings and system status.

Possible Causes:

1. Background radiation level spike.
2. Ongoing maintenance PM.
3. Instrument malfunction or failure.
4. Building exhaust train HEPA Filters AZ702-K3-4-1A or AZ702-K3-4-1B breached.
5. Radon.

References:

Drawings: H-14-021307, Sheet 3
Documents: None
Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 6

Source: RAX-702K3-1  Setpoint: N/A

Alarm Class: Environmental Impact

Alarm Description: RAX-702K3-1, FAIL Building Stack Radiation Monitor Failure or Non-Isokinetic Sampling Condition.

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 alarm horn will be on in the Monitor Room.

Immediate Actions:

[1] REQUEST HPT check the following:

NOTE - IF CM-1 LED DO1 or DO2 is ON, a NON-ISOKINETIC sampling condition exists. DO1 indicates non-isokinetic Record Sampler Flow. DO2 indicates non-isokinetic Beta/Gamma Sampler Flow.

[1.1] IF CM-1 LED DO1 or DO2 is ON, CHECK the building radiation monitoring system filter paper for blockage AND

ACKNOWLEDGE local alarm.

[1.2] NOTIFY Shift Manager of findings.

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**Facility:** 702-AZ Building Stack

**Graphic:** 21  
**Alarm #:** 6  
**Source:** RAX-702K3-1  
**Setpoint:** N/A

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**Possible Causes:**

1. Failed beta/gamma monitor.
2. Loss of vacuum pump.
4. Ongoing maintenance PM.
5. Loss of power.
6. Non-isokinetic sampling condition due to plugging of the Record Sampler or Beta/Gamma Sampler filter paper.

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**References:**

Drawings: H-14-021307, Sheet 3
Respond to Monitor Control System Graphic #21 Building Stack Alarms

Facility: 702-AZ Building Stack

Graphic: 21  Alarm #: 7

Source: RAX-702K3-1A  Setpoint: -0.63 decades

Alarm Class: Environmental Impact

Alarm Description: RI-702K3-1A, Building Stack Radiation Logarithmic Input (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. This alarm is indicative of a loss of communications between the Beta/Gamma Continuous Air Monitor (CAM) and the Remote Control Module (RCM). Therefore, there will be no MCS readout for RI-702-K3 (dpm/ft³).

Immediate Actions:


NOTE - The dpm/ft³ indication on screen #21 will not show a counts reading for RI-702-K3-1, and "-0.63 decades" will appear on the screen in its place.

[2] IF "-0.63 decades" appears on screen #21, REQUEST Health Physics Technician to check the building radiation monitoring system for proper operation AND ACKNOWLEDGE local alarms.


Possible Causes:

1. Broken wire or lifted lead.
2. Transmitter power supply failure.
3. Loss of power to CAM cabinet.
4. Maintenance or PM.
5. If other data points appear to be affected, this could be a possible RCM failure at the Local Control Unit (LCU).
6. Instrument malfunction or failure.

References:

Drawings: H-14-021307, Sheet 3