Operate the 241-AW Annulus Ventilation System (VTA)

Tank Farm Plant Operating Procedure

Ventilation

USQ# TF-16-0691-S, Rev. 6

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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>
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<tr>
<td>K-6</td>
<td>09/12/2018</td>
<td>Changes from Periodic Review</td>
<td>Formatting updates. Update record section. Updated tables requiring initials to procedure standard (Steps 5.1.7 &amp; 5.1.8). Remove the warning in section 3.1. Updated &quot;SEG&quot; replaced with &quot;RC&quot; (Risk Classification). &quot;TVIS-AW-001&quot; changed to &quot;the AW farm TVIS RPF&quot;. Steps 5.2.19, 5.3.12, and 5.4.12 deleted the words &quot;CAM and&quot; Deleted Step 5.7.13, CAM is O/S.</td>
</tr>
<tr>
<td>K-5</td>
<td>09/06/2017</td>
<td>Operations request</td>
<td>Delete the 3 cabinet temperature readings from Data Sheet 1 on page 40.</td>
</tr>
<tr>
<td>K-4</td>
<td>04/11/2017</td>
<td>Change to TFC-PLN-167</td>
<td>Updated the White Label statements to match changes to TFC-PLN-167.</td>
</tr>
<tr>
<td>K-3</td>
<td>09/27/2016</td>
<td>Engineering request</td>
<td>Deleted Steps 5.3.13, 5.4.13, 5.8.10, and 5.9.10. Modified Note above step 5.11.1 and deleted Note and associated steps 5.11.3 and 5.11.4. Deleted Steps 5.11.11 and 5.11.12. Deleted Steps 5.12.7 and 5.13.7</td>
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<tr>
<td>K-2</td>
<td>08/18/2016</td>
<td>Operations request</td>
<td>Took all areas that required donning hazard category 0 PPE and modified to new wording to better clarify performance of the Steps. Added additional wording to Personnel Safety section and two warnings. Added White Label wording.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for startup, operation, shut down, and alarm response of the 241-AW Ventilation Tank Annulus (VTA) Exhauster System.

1.2 Scope

This procedure applies to 241-AW Tank Farm Annulus Exhauster System and associated components.

2.0 INFORMATION

2.1 Terms and Definitions

VTA - Ventilation Tank Annulus

ΔT - Equals the difference between Temperature Indicators

RC - Risk Classification.

EXAMPLE:

A TRAIN

(AW241-VTA-TI-702) – (AW241-VTA-TI-701) = ΔT

B TRAIN

(AW241-VTA-TI-802) – (AW241-VTA-TI-801) = ΔT
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

3.1.1 Operations performed under this procedure are controlled by TVIS-AW-001 and RC 1 or if performing procedure with no primary ventilation – RC 4. When primary ventilation is inoperable, respiratory protection in conjunction with IHT monitoring is required.

3.1.1.1 Minimum required respiratory protection and voluntary upgrade is identified in the AW Farm TVIS RPF.

3.1.1.2 Monitoring and/or sampling requirements will be specified in the Industrial Hygiene Sample plan (IHSP).

3.1.2 Personnel trained in the operation of breakers and disconnects will wear the following PPE as a minimum:

- Non-melting (untreated natural fiber) long-sleeved shirt
- Safety glasses
- Leather or insulating gloves
- Hearing protection.

3.1.3 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.

3.1.3.1 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).
3.2 Radiation and Contamination Control

3.2.1 When this procedure is worked in radiological areas, an approved radiological work permit (RWP) is required. If radiological conditions or work performed falls outside the scope of the RWP, all work activities must be discontinued until a new or revised RWP has been issued in accordance with TFC-ESHQ-RP_RWP-C-03, ALARA Work Planning.
3.3 Environmental Compliance

3.3.1 Report all planned and unplanned exhauster shutdowns, problems with abatement control equipment and required stack monitoring to the appropriate Shift Office to be evaluated for reporting purposes per procedure TF-REC-001, "Response to Environmental Condition."

3.3.2 Preventative Maintenance activities identified in Step 4.3.4 must be current and within their required periodicity of performance prior to performing an exhauster start-up after greater than 30-day shutdown. The exception to this requirement would be the performance of the aerosol testing of the HEPA filters. However total time operating should be minimized with the performance of the aerosol testing of the HEPA filters occurring as soon as the exhauster reaches normal operating conditions.

3.4 Limits

OPERATING SPECIFICATION DOCUMENT

OSD-T-151-00007, Operating Specifications for the Double-Shell Storage Tanks

RPP-11413, Ventilation System In-Service Requirements

RPP-16922, Environment Specification Requirements

4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:
- 2-way radio
- Container for seal pot water
- Farm access keys.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- TF-OPS-005, DST Daily CAM and Record Sampler Inspections
- TF-OR-DR-EV, EV Daily Rounds.
4.3 Field Preparations

The following conditions must be met before this procedure may commence:

NOTE - Steps in this section may be performed in any logical order or concurrently.

____ 4.3.1 **ENSURE** Shift Manager has verified all maintenance work is complete before attempting start-up.

____ 4.3.2 **ENSURE** Shift Manager has directed startup or shut down of 241-AW Annulus Ventilation system.

NOTE - TMACS operator maintains TMACS Exhauster Log.

4.3.3 **VERIFY** annulus exhaust system has not been off-line (out of service) for more than 30 days. (OSD-T-151-00007)

Last operated: ____________________________

________________________ / __________________________ / __________________________

Signature  Print (First & Last)  Date

Shift Manager /OE
4.3 Field Preparations (Cont.)

4.3.4 IF performing an exhauster start-up after a greater than 30 day shutdown, verify the following differential pressure gauges, and temperature gauges have been calibrated within the last 365 days and HEPA filters have been challenge (aerosol) tested within the last 365 days in accordance with RPP-16922, Section 2. (RPP-11413, RPP-16922)

<table>
<thead>
<tr>
<th>Vent Sub-System</th>
<th>Sub-System Equipment Id. Number (EIN)</th>
<th>PM Id</th>
<th>(✓ or OS) If Calibrations/Tests are current or Out of Service/Specifications ¹</th>
<th>(N/A) If Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW241 A-TRAIN DEMISTER</td>
<td>AW241-VTA-PDI-701</td>
<td>ET-008346</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AW241 B-TRAIN DEMISTER</td>
<td>AW241-VTA-PDI-801</td>
<td>ET-008333</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTA Exhauster A-Train dp &amp; Temperature Instrumentation</td>
<td>AW241-VTA-PDI-702</td>
<td>ET-008325</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-PDI-703</td>
<td>ET-008331</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-TI-701</td>
<td>ET-007948</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-TI-702</td>
<td>ET-008629</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTA A-Train Exhaust HEPA Filter Challenge Tests</td>
<td>AW241-VTA-FLT-701</td>
<td>ET-008708</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-FLT-702</td>
<td>ET-008707</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTA Exhauster B-Train dp &amp; Temperature Instrumentation</td>
<td>AW241-VTA-PDI-802</td>
<td>ET-008323</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-PDI-803</td>
<td>ET-008335</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-TI-801</td>
<td>ET-007949</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-TI-802</td>
<td>ET0-07950</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTA B-Train Exhaust HEPA Filter Challenge Tests</td>
<td>AW241-VTA-FLT-801</td>
<td>ET-008710</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AW241-VTA-FLT-802</td>
<td>ET-008709</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Special Instructions: ¹ With the exception of aerosol testing of filters (using a work package), DO NOT start exhauster until all required Calibrations/Tests are current.

_________________________/_________________________/__________________________
Signature                                      Print (First & Last)                                    Date
Shift Manager /OE
5.0 PROCEDURE

NOTE - After verification of applicable prerequisites in Section 4.3, sections of this procedure may be accomplished in any order at the direction of Shift Manager/OE. Steps within individual sections shall be accomplished sequentially unless otherwise specified or directed.

- Intake butterfly valves AW101-VTA-V-201 through AW106-VTA-V-206 are to be adjusted by direction of Shift Manager/OE.

- If this procedure is to be used for activities (e.g., maintenance) resulting in short term shutdown and startup, only Sections 5.10 and 5.11 need to be performed.

5.1 Initial Start Up Requirements for Annulus Systems (VTA)

5.1.1 START heat trace for stack sample lines on Circuit Breaker 5 of Distribution Panel AW296-EDS-DP-201C (located in Annulus Stack Cabinet).

5.1.2 CHECK the following equipment on VTA exhaust stack radiation CAM AW296-VTA-CAM-910 AND

ENSURE equipment is in satisfactory condition before proceeding:

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>REQUIRED CONDITION</th>
<th>SAT ☑</th>
<th>UNSAT ☒</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Paper</td>
<td>Installed in Sample Holder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Holder</td>
<td>Clamped Shut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power ON Lamp</td>
<td>ON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm Lamp</td>
<td>OFF (except low flow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicating Dial</td>
<td>Dial Reading &lt; 1,000 cpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubing</td>
<td>Intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Pump</td>
<td>Running</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.1.3 ENSURE record sampler on the VTA exhaust stack has filter paper.

5.1.4 ENSURE the following alarms are clear.

<table>
<thead>
<tr>
<th>Alarm Location</th>
<th>Alarm</th>
<th>Indication if OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>271-AW</td>
<td>ANN-202-9 (ANN-102)-9 Hi Rad Alarm Annulus Exh Stack VTA-RAH-910C</td>
<td>Annulus CAM Radiation Detection Element is Operating and is not detecting High Radiation</td>
</tr>
</tbody>
</table>
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5.1 Initial Start Up Requirements for Annulus Systems (VTA) (Cont.)

5.1.5 **ENSURE** the following openings are secured:

<table>
<thead>
<tr>
<th>Opening</th>
<th>Secured Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Access Doors</td>
<td>Shut</td>
</tr>
<tr>
<td>Bellows connections between fans and last HEPA compartment</td>
<td>Undamaged</td>
</tr>
<tr>
<td>Bellows connections between fans and VTA Stack</td>
<td>Undamaged</td>
</tr>
<tr>
<td>De-Entrainer Upper Spray Nozzle Valves AW241-VTA-V-701 and AW241-VTA-V-801</td>
<td>Shut</td>
</tr>
</tbody>
</table>

5.1.6 **ENSURE** all annulus inlet dampers are not closed. **(OSD-T-151-00007)**

<table>
<thead>
<tr>
<th>Equipment Nomenclature</th>
<th>Equipment Nomenclature</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW101-VTA-DMPR-201</td>
<td>AW104-VTA-DMPR-204</td>
</tr>
<tr>
<td>AW102-VTA-DMPR-202</td>
<td>AW105-VTA-DMPR-205</td>
</tr>
<tr>
<td>AW103-VTA-DMPR-203</td>
<td>AW106-VTA-DMPR-206</td>
</tr>
</tbody>
</table>

NOTE - Normal operating position during start-up is in the $\frac{1}{2}$ open or equal number of notch adjustments to approximately $\frac{1}{2}$ open.

5.1.7 **AS** directed by Shift Manager, **ENSURE** the following odd numbered tank Annulus intake butterfly valves are equally opened **AND**

**DOCUMENT** by Checking (✓) applicable valve position box, Initial and Date. **(OSD-T-151-00007)**

<table>
<thead>
<tr>
<th>Tank</th>
<th>Intake Valve</th>
<th>(✓) Valve Position</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-AW</td>
<td>AW101-VTA-V-201</td>
<td>* $\frac{1}{4}$</td>
<td>* $\frac{1}{2}$</td>
</tr>
<tr>
<td>103-AW</td>
<td>AW103-VTA-V-203</td>
<td>* $\frac{1}{4}$</td>
<td>* $\frac{1}{2}$</td>
</tr>
<tr>
<td>105-AW</td>
<td>AW105-VTA-V-205</td>
<td>* $\frac{1}{4}$</td>
<td>* $\frac{1}{2}$</td>
</tr>
</tbody>
</table>

* Butterfly valves may not have valve positions identified as $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ open.

In cases where butterfly valves are not identified by designators, valves should be opened the same number of notches to approximately $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ open position.

Signature / Print (First & Last) / Initials / Date
5.1 Initial Start Up Requirements for Annulus Systems (VTA) (Cont.)

NOTE - Normal operating position during start-up is in the $\frac{1}{2}$ open or equal number of notch adjustments to approximately $\frac{1}{2}$ open.

5.1.8 AS directed by Shift Manager, ENSURE the following even numbered tank annulus intake butterfly valves are equally opened AND DOCUMENT by checking (✓) applicable valve position box, Initial and Date. (OSD-T-151-00007)

<table>
<thead>
<tr>
<th>Tank</th>
<th>Intake Valve</th>
<th>(✓) Valve Position</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-AW</td>
<td>AW102-VTA-V-202</td>
<td>$\frac{1}{4}$</td>
<td>Initials</td>
</tr>
<tr>
<td>104-AW</td>
<td>AW104-VTA-V-204</td>
<td>$\frac{1}{2}$</td>
<td></td>
</tr>
<tr>
<td>106-AW</td>
<td>AW106-VTA-V-206</td>
<td>$\frac{3}{4}$</td>
<td></td>
</tr>
</tbody>
</table>

* Butterfly valves may not have valve positions identified as $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ open.
In cases where butterfly valves are not identified by designators, valves should be opened the same number of notches to approximately $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ open position.

Signature / Print (First & Last) / Initials / Date
5.1 Initial Start Up Requirements for Annulus Systems (VTA) (Cont.)

5.1.9 IF annulus ventilation “A-Train” heater circuit breaker AW241-EDS-BKR-208 (located in AW241-EDS-MCC-002) is not in the ON position AND

IF directed by Shift Manager, **PERFORM** the following:

5.1.9.1 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.1.9.2 **ENSURE** Annulus Ventilation “A-Train” Heater circuit breaker AW241-EDS-BKR-208 is in the ON position.

5.1.10 **ENSURE** heater controller AW241-VTA-TDC-709 (located in annulus stack cabinet) is set for $\Delta T = 10\, ^\circ F$ minimum and $12\, ^\circ F$ maximum,

**OR**

**ENSURE** adjustments as specified by engineering.
5.1 Initial Start Up Requirements for Annulus Systems (VTA) (Cont.)

5.1.11 IF annulus ventilation “B-Train” heater circuit breaker AW241-EDS-BKR-209 (located in AW241-EDS-MCC-002) is not in the ON position AND IF directed by Shift Manager, PERFORM the following:

5.1.11.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.1.11.2 ENSURE Annulus Ventilation “B-Train” Heater circuit breaker AW241-EDS-BKR-209 is in the ON position.

5.1.12 ENSURE heater controller AW241-VTA-TDC-809 (in annulus stack cam cabinet) is SET for ΔT = 10 °F minimum and maximum 12 °F,

OR

ENSURE adjustments as specified by engineering.

5.1.13 IF both annulus A-Train and annulus B-Train fans are to be started, GO TO Section 5.2.

5.1.14 IF only A-Train exhaust fan is being started, GO TO Section 5.3.

5.1.15 IF only B-Train exhaust fan is being started, GO TO Section 5.4.
5.2 Start Both Annulus A-Train and B-Train Exhaust Fans

5.2.1 IF ventilation has been down for 30 days or more, PRIOR to proceeding with this section, ENSURE Step 4.3.4 has been performed. ([RPP-11413, RPP-16922])

5.2.2 ENSURE crossover valve AW241-VTA-V-113 is CLOSED.

5.2.3 ENSURE annulus A-Train inlet butterfly valve AW241-VTA-V-115 is fully OPEN.

5.2.4 ENSURE annulus B-Train inlet butterfly valve AW241-VTA-V-114 is fully OPEN.

NOTE - Exhaust fans AW241-VTA-EF-003 (A-Train) and AW241-VTA-EF-004 (B-Train) may be started in either order per the applicable steps of this section.

Starting AW241-VTA-EF-003 A-Train Exhaust Fan

5.2.5 IF the A-Train Annulus Exhaust Fan circuit breaker AW241-EDS-BKR-204 (located at AW241-EDS-MCC-002) is not in the ON position, AND IF directed by the Shift Manager, PERFORM the following:

5.2.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.2.5.2 ENSURE A-Train Annulus Exhaust Fan AW241-EDS-BKR-204 circuit breaker is in the ON position.
5.2 Start Both Annulus A-Train and B-Train Exhaust Fans (Cont.)

WARNING
Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.2.6 ENSURE all non-essential personnel have cleared immediate area.

NOTE - A time-delay switch will hold starting circuit in energized position for 15 seconds to allow fan to build sufficient ΔP to hold fan's pressure switches in energized position.

5.2.7 PRESS AND HOLD the START button for Exhaust Fan VTA-EF-003 until red MOTOR RUN lamp illuminates and/or fan starts.

5.2.8 ENSURE switch at control panel AW241-VTA-CP-709 is ON to energize heater AW241-VTA-HTR-003.

5.2.9 ENSURE fan outlet damper has opened.

5.2.10 CHECK fan is running without vibration or excessive noise.

5.2.11 NOTIFY TMACS operator exhaust fan AW241-VTA-EF-003 has been started.
5.2 Start Both Annulus A-Train and B-Train Exhaust Fans (Cont.)

Starting AW241-VTA-EF-004 B-Train Exhaust Fan

5.2.12 IF B-Train Annulus Exhaust Fan circuit breaker AW241-EDS-BKR-205 (located at AW241-EDS-MCC-002) is not in the ON position AND IF directed by the Shift Manager, PERFORM the following:

5.2.12.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.2.12.2 ENSURE B Train Annulus Exhaust Fan AW241-EDS-BKR-205 circuit breaker is in the ON position.

WARNING

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.2.13 ENSURE all non-essential personnel have cleared immediate area.

NOTE - A time-delay switch will hold starting circuit in the energized position for 15 seconds to allow fan to build sufficient ΔP to hold fan's pressure switches in energized position.

5.2.14 PRESS AND HOLD the start button for exhaust fan VTA-EF-004 until red MOTOR RUN lamp illuminates and/or fan starts.

5.2.15 ENSURE switch at control panel AW241-VTA-CP-809 is ON to energize heater AW241-VTA-HTR-004.
Operate the 241-AW Annulus Ventilation System (VTA)

5.2 Start Both Annulus A-Train and B-Train Exhaust Fans (Cont.)

5.2.16 ENSURE fan outlet damper has opened.

5.2.17 CHECK fan is running without vibration or excessive noise.

5.2.18 NOTIFY TMACS operator exhaust fan AW241-VTA-EF-004 has been STARTED.

Post Start Activities

5.2.19 REQUEST TF-OPS-005 to be performed for Record Sampler.

5.2.20 COMPLETE Data Sheet 1 thirty minutes (30) after start-up AND

ENSURE all operating data is within acceptable ranges.

5.2.20.1 IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.

NOTE - Operation of the VTA fan radial inlet dampers is very slow. It will take 2-5 minutes for the inlet damper to reposition.

- Steps 5.2.21 and 5.2.22 are only required to trim Annulus flows allowing correct operation of VTA fan radial inlet dampers and will only be performed with concurrence from engineering.

5.2.21 IF directed by Shift Manager, ADJUST dampers to equal setpoints on odd-numbered tank valves AW101-VTA-V-201, AW103-VTA-V-203 and AW105-VTA-V-205 until A-Train fan radial inlet damper is between $\frac{1}{2}$ and $\frac{3}{4}$ open. (OSD-T-151-00007)

5.2.22 IF directed by Shift Manager, ADJUST dampers to equal setpoints on even numbered tank valves AW102-VTA-V-202, AW104-VTA-V-204, and AW106-VTA-V-206 until B-Train fan radial inlet damper is between $\frac{1}{2}$ and $\frac{3}{4}$ open.
5.3 Start A-Train Exhaust Fan to Ventilate all 6 Annulus Tanks

5.3.1 IF ventilation has been down for 30 days or more, PRIOR to proceeding with this section, ENSURE Step 4.3.4 has been performed. (RPP-11413, RPP-16922)

5.3.2 ENSURE crossover valve, AW241-VTA-V-113 is open.

5.3.3 ENSURE Annulus B-Train inlet butterfly valve AW241-VTA-V-114 is closed.

NOTE - Valve AW241-VTA-V-115 should not be greater than \( \frac{1}{4} \) open at start-up to prevent fan motor over current and fan shutdown from excessive airflow.

5.3.4 ENSURE Annulus A-Train inlet butterfly valve AW241-VTA-V-115 is POSITIONED to \( \frac{1}{4} \) OPEN.

5.3.5 IF Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position AND IF directed by the Shift Manager, PERFORM the following:

5.3.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.3.5.2 ENSURE Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 is in the ON position.

**WARNING**

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.3.6 CLEAR all non-essential personnel from immediate area.
5.3 Start A-Train Exhaust Fan to Ventilate all 6 Annulus Tanks (Cont.)

NOTE - A time-delay switch will hold the starting circuit in the energized position for 15 seconds to allow the fan to build sufficient ΔP to hold fan's pressure switches in energized position.

5.3.7 PRESS AND HOLD the START button for exhaust fan VTA-EF-003 until the red MOTOR RUN lamp illuminates and/or fan starts.

5.3.8 ENSURE switch at control panel AW241-VTA-CP-709 is ON to energize heater AW241-VTA-HTR-003.

5.3.9 ENSURE fan outlet damper has opened.

5.3.10 CHECK fan is running without vibration or excessive noise.

5.3.11 NOTIFY TMACS operator exhaust fan AW241-VTA-EF-003 has been STARTED.

5.3.12 REQUEST TF-OPS-005 to be performed for Record Sampler.

5.3.13 COMPLETE Data Sheet 1 thirty minutes (30) after start-up AND ENSURE all operating data is within acceptable ranges.

5.3.13.1 IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.
5.4 Start B-Train Exhaust Fan to Ventilate all 6 Annulus Tanks

5.4.1 IF ventilation has been down for 30 days or more, PRIOR to proceeding with this section, ENSURE Step 4.3.4 has been performed. (RPP-11413, RPP-16922)

5.4.2 ENSURE crossover valve AW241-VTA-V-113 is open.

5.4.3 ENSURE Annulus A-Train inlet butterfly valve AW241-VTA-V-115 is closed.

NOTE - Valve AW241-VTA-V-114 should not be greater than \( \frac{1}{4} \) open at start-up to prevent fan motor over current and fan shutdown from excessive airflow.

5.4.4 ENSURE Annulus B-Train inlet butterfly valve AW241-VTA-V-114 is positioned to \( \frac{3}{4} \) OPEN.

5.4.5 IF Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position AND IF directed by the Shift Manager, PERFORM the following:

5.4.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.4.5.2 ENSURE Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 is in the ON position.

WARNING

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.4.6 CLEAR all non-essential personnel from immediate area.
5.4 Start B-Train Exhaust Fan to Ventilate all 6 Annulus Tanks (Cont.)

NOTE - A time-delay switch will hold the starting circuit in the energized position for 15 seconds to allow the fan to build sufficient ΔP to hold fan's pressure switches in energized position.

5.4.7 PRESS AND HOLD the START button for exhaust fan VTA-EF-004 until red MOTOR RUN lamp illuminates and/or fan starts.

5.4.8 ENSURE switch at control panel AW241-VTA-CP-809 is ON to energize heater AW241-VTA-HTR-004.

5.4.9 ENSURE fan outlet damper has opened.

5.4.10 CHECK fan is running without vibration or excessive noise.

5.4.11 NOTIFY TMACS operator exhaust fan AW241-VTA-EF-004 has been STARTED.

5.4.12 REQUEST TF-OPS-005 to be performed for Record Sampler.

5.4.13 COMPLETE Data Sheet 1 thirty minutes (30) after start-up AND ENSURE all operating data is within acceptable ranges.

5.4.13.1 IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.
5.5 Start A-Train Exhaust Fan when B-Train Exhaust Fan is Operating

5.5.1 ENSURE Annulus B-Train inlet butterfly valve AW241-VTA-V-114 is fully open.

5.5.2 ENSURE crossover valve AW241-VTA-V-113 is closed.

5.5.3 OPEN Annulus A-Train inlet butterfly valve AW241-VTA-V-115.

5.5.4 IF Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position AND

IF directed by the Shift Manager, PERFORM the following:

5.5.4.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.5.4.2 ENSURE Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 is in the ON position.

5.5.5 IF Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position AND

IF directed by the Shift Manager, PERFORM the following:

5.5.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.5.5.2 ENSURE Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 is in the ON position.
5.5 Start A-Train Exhaust Fan when B-Train Exhaust Fan is Operating (Cont.)

5.5.6 **ENSURE** heater controller AW241-VTA-TDC-709 (in Annulus Stack Cabinet) is SET for $\Delta T = 10 \, ^\circ\text{F}$ minimum and $12 \, ^\circ\text{F}$ maximum unless otherwise specified.

**WARNING**

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.5.7 **CLEAR** all non-essential personnel from immediate area.

**NOTE** - A time-delay switch will hold the starting circuit in the energized position for 15 seconds to allow the fan to build sufficient $\Delta P$ to hold fan's pressure switches in energized position.

5.5.8 **PRESS AND HOLD** the START button for the VTA-EF-003 EXHAUST FAN until the red MOTOR RUN lamp illuminates and/or fan starts.

5.5.9 **ENSURE** switch at control panel AW241-VTA-CP-709 is ON to energize heater AW241-VTA-HTR-003.

5.5.10 **ENSURE** the fan outlet damper has opened.

5.5.11 **CHECK** the fan is running without vibration or excessive noise.

5.5.12 **NOTIFY** TMACS operator exhaust fan AW241-VTA-EF-003 has been STARTED.

5.5.13 **COMPLETE** Data Sheet 1 thirty minutes (30) after start-up AND

**ENSURE** all operating data is within acceptable ranges.

5.5.13.1 **IMMEDIATELY NOTIFY** Shift Manager if any data is not within specified range.
5.6 Start B-Train Exhaust Fan when A-Train Exhaust Fan is Operating

5.6.1 **ENSURE** Annulus A-Train inlet butterfly valve AW241-VTA-V-115 is fully OPEN.

5.6.2 **ENSURE** crossover valve AW241-VTA-V-113 is closed.

5.6.3 **OPEN** Annulus B-Train inlet butterfly valve AW241-VTA-V-114.

5.6.4 **IF** the Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position **AND**

**IF** directed by the Shift Manager, **PERFORM** the following:

5.6.4.1 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1)

5.6.4.2 **ENSURE** the Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 is in the ON position.

5.6.5 **IF** the Annulus B-Train Ventilation heater circuit breaker, AW241-EDS-BKR-209 (located in AW241-EDS-MCC-002 cabinet) is not in the ON position **AND**

**IF** directed by the Shift Manager, **PERFORM** the following:

5.6.5.1 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.6.5.2 **ENSURE** the Annulus B-Train Ventilation heater circuit breaker, AW241-EDS-BKR-209 is in the ON position.
5.6 Start B-Train Exhaust Fan when A-Train Exhaust Fan is Operating (Cont.)

5.6.6 ENSURE heater controller AW241-VTA-TDC-809 Annulus Stack Cam Cabinet is SET for $\Delta T = 10 \degree F$ minimum and $12 \degree F$ maximum unless otherwise specified.

**WARNING**

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.6.7 CLEAR all non-essential personnel from immediate area.

NOTE - A time-delay switch will hold the starting circuit in the energized position for 15 seconds to allow the fan to build sufficient $\Delta P$ to hold fan's pressure switches in energized position.

5.6.8 PRESS AND HOLD the START button for the VTA-EF-004 EXHAUST FAN until the red MOTOR RUN lamp illuminates and/or fan starts.

5.6.9 ENSURE switch at control panel AW241-VTA-CP-809 is ON to energize heater AW241-VTA-HTR-004.

5.6.10 ENSURE fan outlet damper has opened.

5.6.11 CHECK fan is running without vibration or excessive noise.

5.6.12 NOTIFY TMACS operator exhaust fan AW241-VTA-EF-004 has been started.

5.6.13 COMPLETE Data Sheet 1 thirty minutes (30) after start-up AND

ENSURE all operating data is within acceptable ranges.

5.6.13.1 IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.
5.7 Shut Down Annulus System (VTA)

NOTE - The A-Train and B-Train Annulus Ventilation systems may shut down automatically due to equipment failure. They may also be shut down manually for maintenance.

5.7.1 NOTIFY Tank Monitor and Control System Operator and Shift Manager the Annulus exhauster systems will be shut down. (OSD-T-151-00007)

5.7.2 PRESS Annulus VTA-EF-003 EXHAUST FAN STOP (AW241-EDS-MCC-002 cabinet).

5.7.3 ENSURE red MOTOR RUN light for the Annulus A-Train exhaust fan is OFF and/or motor stops.

5.7.4 IF Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND IF directed by the Shift Manager, PERFORM the following:

5.7.4.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.7.4.2 ENSURE circuit breaker AW241-EDS-BKR-204 is in the OFF position.

5.7.5 IF Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND IF directed by the Shift Manager, PERFORM the following:

5.7.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.7.5.2 ENSURE Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 is in the OFF position.
5.7 Shut Down Annulus System (VTA) (Cont.)

5.7.6 PRESS Annulus VTA-EF-004 EXHAUST FAN STOP button in the AW241-EDS-MCC-002 cabinet.

5.7.7 ENSURE red MOTOR RUN light for the VTA-EF-004 exhaust fan is OFF and/or fan stops.

5.7.8 IF Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND

IF directed by the Shift Manager, PERFORM the following:

5.7.8.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.7.8.2 ENSURE Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 is in the OFF position.

5.7.9 IF Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND

IF directed by the Shift Manager, PERFORM the following:

5.7.9.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.7.9.2 ENSURE Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 is in the OFF position.
Operate the 241-AW Annulus Ventilation System (VTA)

5.7  **Shut Down Annulus System (VTA) (Cont.)**

5.7.10  IF directed by Shift Manager, **ENSURE** Annulus B-Train inlet butterfly valve AW241-VTA-V-114 is closed.

5.7.11  IF directed by Shift Manager, **ENSURE** Annulus A-Train valve inlet butterfly valve AW241-VTA-V-115 is closed.

5.7.12  IF directed by Shift Manager, **ENSURE** crossover valve AW241-VTA-V-113 is closed.

5.7.13  **NOTIFY** TMACS operator exhaust fans AW241-VTA-EF-003 and AW241-VTA-EF-004 have been shut down.

5.7.14  **REQUEST** Shift Manager notify Environmental On-Call 241 AW fan(s) have been shut down.
Operate the 241-AW Annulus Ventilation System (VTA)

5.8 Shut Down A-Train when B-Train is Operating

5.8.1 PRESS Annulus VTA-EF-003 EXHAUST FAN STOP (AW241-EDS-MCC-002 cabinet).

5.8.2 ENSURE the red MOTOR RUN light for the VTA-EF-003 exhaust fan is off.

5.8.3 IF Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND

IF directed by the Shift Manager, PERFORM the following:

5.8.3.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.8.3.2 ENSURE Annulus A-Train Exhaust Fan circuit breaker AW241-EDS-BKR-204 is in the OFF Position.

5.8.4 IF Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND

IF directed by the Shift Manager, PERFORM the following:

5.8.4.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.8.4.2 ENSURE Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 is in the OFF position.
### Operate the 241-AW Annulus Ventilation System (VTA)

#### 5.8 Shut Down A-Train when B-Train is Operating (Cont.)

- **5.8.5** ENSURE Annulus A-Train outlet damper is closed.
- **5.8.6** CLOSE Annulus A-Train inlet butterfly valve AW241-VTA-V-115.
- **5.8.7** POSITION to ¼ OPEN Annulus B-Train inlet butterfly valve AW241-VTA-V-114.
- **5.8.8** SLOWLY OPEN crossover valve AW241-VTA-V-113.
- **5.8.9** NOTIFY TMACS operator exhaust fan AW241-VTA-EF-003 Annulus A-Train has been shut down.
- **5.8.10** COMPLETE Data Sheet 1 thirty minutes (30) after shut down of A-Train AND ENSURE all operating data is within acceptable ranges.

- **5.8.10.1** IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.
5.9 Shut Down B-Train when A-Train is Operating

5.9.1 PRESS Annulus VTA-EF-004 EXHAUST FAN STOP button (AW241-EDS-MCC-002 cabinet).

5.9.2 ENSURE the red MOTOR RUN light for the VTA-EF-004 exhaust fan is OFF and/or fan stops.

5.9.3 IF Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND IF directed by the Shift Manager, PERFORM the following steps:

5.9.3.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.9.3.2 ENSURE Annulus B-Train Exhaust Fan circuit breaker AW241-EDS-BKR-205 is in the OFF Position.

5.9.4 IF Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND IF directed by the Shift Manager, PERFORM the following steps:

5.9.4.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.9.4.2 ENSURE Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 is in the OFF position.
5.9  Shut Down B-Train when A-Train is Operating (Cont.)

5.9.5  **ENSURE** Annulus B-Train outlet damper is closed.

5.9.6  **CLOSE** Annulus B-Train inlet butterfly valve AW241-VTA-V-114.

5.9.7  **POSITION** to ¼ OPEN Annulus A-Train inlet butterfly valve AW241-VTA-V-115.

5.9.8  **SLOWLY OPEN** crossover valve AW241-VTA-V-113.

5.9.9  **NOTIFY** TMACS operator exhaust fan AW241-VTA-EF-004 has been SHUT DOWN.

5.9.10  **COMPLETE** Data Sheet 1 thirty minutes (30) after shut down of B-Train
AND

**ENSURE** all operating data is within acceptable ranges.

5.9.10.1  **IMMEDIATELY NOTIFY** Shift Manager if any data is not within specified range.
5.10 Short Term Shutdown of Annulus Fan(s)

5.10.1 NOTIFY Shift Manager and TMACS Operator, 241-AW Annulus Fan(s) will be shut down. (OSD-T-151-00007)

5.10.2 PRESS STOP button of fan(s) being shut down.

5.10.3 ENSURE red MOTOR RUN light for the operating exhaust fan is OFF, and/or motor stops.

5.10.4 REQUEST Shift Manager notify Environmental Compliance 241-AW fan(s) have been shut down.

5.10.5 ENSURE outlet damper of each shut down annulus fan, AW241-VTA-EF-003 (A-Train) and/or AW241-VTA-EF-004 (B-Train), has closed.
5.11 Re-Start After Short Term Shutdown of Annulus Fan(s)

NOTE - This section is intended for re-start of the same fan(s) that were previously operating after maintenance or other short-term activities, and will be used in conjunction with section 5.10.

5.11.1 IF ventilation has been down for 30 days or more, ENSURE Step 4.3.4 has been performed prior to proceeding with this section. (RPP-11413, RPP-16922)

5.11.2 NOTIFY Shift Manager, and TMACS 241-AW Annulus fan(s) will be started.

**WARNING**

Switching or starting fans that have been down for an extended period, may cause condensate to be blown out of the stack potentially causing personnel contamination.

5.11.3 CLEAR all non-essential personnel from immediate area.

NOTE Steps 5.11.4 and 5.11.5 may be worked in any logical order.

5.11.4 IF starting exhaust fan VTA-EF-003, PRESS AND HOLD fan START button until red MOTOR RUN lamp illuminates and/or fan starts.

5.11.4.1 ENSURE switch at control panel AW241-VTA-CP-709 is ON to energize heater AW241-VTA-HTR-003.

5.11.5 IF starting exhaust fan VTA-EF-004, PRESS AND HOLD the START button until red MOTOR RUN lamp illuminates and/or fan starts.

5.11.5.1 ENSURE switch at control panel AW241-VTA-CP-809 is ON to energize heater AW241-VTA-HTR-004.
5.11 Re-Start After Short Term Shutdown of Annulus Fan(s) (Cont.)

5.11.6 **ENSURE** outlet damper of each running annulus fan AW241-VTA-EF-003 (A-Train) and/or AW241-VTA-EF-004 (B-Train) has OPENED.

5.11.7 **CHECK** that fan(s) are running without vibration or excessive noise.

5.11.8 **NOTIFY** Shift Manager and TMACS operator 241-AW Annulus Fan(s) are running.

5.11.9 **COMPLETE** Data Sheet 1 thirty minutes (30) after start-up AND **ENSURE** all operating data is within acceptable ranges.

5.11.9.1 **IMMEDIATELY NOTIFY** Shift Manager if any data is not within specified range.
Operate the 241-AW Annulus Ventilation System (VTA)

5.12 Align VTA System after Annulus A-Train Automatic Shutdown With B-Train Operating

5.12.1 Ensure red MOTOR RUN light for VTA-EF-003 exhaust fan is OFF (AW241-EDS-MCC-002 cabinet).

5.12.2 If Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position and

If directed by the Shift Manager, perform the following steps:

5.12.2.1 Ensure personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.12.2.2 Ensure Annulus A-Train Ventilation heater circuit breaker AW241-EDS-BKR-208 is in the OFF position.

5.12.3 Ensure Annulus A-Train outlet damper is closed.


5.12.5 Position to ¼ Open Annulus B-Train inlet butterfly valve AW241-VTA-V-114.


5.12.7 Complete Data Sheet 1 thirty minutes (30) after valve alignment and

Ensure all operating data is within acceptable ranges.

5.12.7.1 Immediately notify Shift Manager if any data is not within specified range.
Align VTA System after Annulus B-Train Automatic Shutdown With A-Train Operating

5.13.1 ENSURE red MOTOR RUN light for VTA-EF-004 fan exhaust fan is OFF (AW241-EDS-MCC-002 cabinet).

5.13.2 IF Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 (located in AW241-EDS-MCC-002 cabinet) is not in the OFF position AND

IF directed by the Shift Manager, PERFORM the following steps:

5.13.2.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.13.2.2 ENSURE Annulus B-Train Ventilation heater circuit breaker AW241-EDS-BKR-209 is in the OFF position.

5.13.3 ENSURE the Annulus B-Train outlet damper is closed.

5.13.4 CLOSE Annulus B-Train inlet butterfly valve AW241-VTA-V-114.

5.13.5 POSITION to \( \frac{1}{4} \) OPEN Annulus A-Train inlet butterfly valve AW241-VTA-V-115.

5.13.6 OPEN crossover valve AW241-VTA-V-113.

5.13.7 COMPLETE Data Sheet 1 thirty minutes (30) after valve alignment AND

ENSURE all operating data is within acceptable ranges.

5.13.7.1 IMMEDIATELY NOTIFY Shift Manager if any data is not within specified range.
5.14 Restoration
None.
5.15 Records

5.15.1 **PERFORM** the following for records identified within this procedure.

5.15.1.1 **RECORD** the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.15.1.2 **SUBMIT** the package for verification of completed records.

<table>
<thead>
<tr>
<th>Records Submittal Checklist</th>
<th>Number of times completed</th>
<th>N/A (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.3 Field Preparations</strong></td>
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<td></td>
</tr>
<tr>
<td>Step 4.3.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4.3.4</td>
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</tr>
<tr>
<td><strong>5.1 Initial Start Up Requirements for Annulus Systems (VTA)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Step 5.1.2</td>
<td></td>
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<td>Step 5.1.7</td>
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<td>Step 5.1.8</td>
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<tr>
<td><strong>Data Sheets</strong></td>
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<tr>
<td>Data Sheet 1 - 241-AW Annulus Ventilation</td>
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<tr>
<td>FWS/OE/Shift Manager <strong>SEND</strong> the completed records to the Central Shift Office for records retention.</td>
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________________________ / _______________________ / __________
Signature                  Print (First and Last)          Date
FWS/OE/Shift Manager

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
## Operate the 241-AW Annulus Ventilation System (VTA)

### Data Sheet 1 - 241-AW Annulus Ventilation

<table>
<thead>
<tr>
<th>Component Number/Condition</th>
<th>Normal Range</th>
<th>Limit (Basis)</th>
<th>Equipment Operational Data/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW241-VTA-EF-004 (Fan running)</td>
<td>ON/OFF</td>
<td>(OSD-7) (RPP-16922)</td>
<td></td>
</tr>
<tr>
<td>AW241-VTA-PDI-802 (1st HEPA filter)</td>
<td>0.3” WG to 5.7” WG</td>
<td>0.1” WG to 5.9” WG (RPP-11413) (RPP-16922)</td>
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</tr>
<tr>
<td>AW241-VTA-PDI-803 (2nd HEPA filter)</td>
<td>0.3” WG to 3.8” WG</td>
<td>0.1” WG to 4.0” WG (RPP-11413) (RPP-16922)</td>
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</tr>
<tr>
<td>PDI-802 + PDI-803</td>
<td>0.6” WG to 5.7”WG</td>
<td>0.1” WG to 5.9” WG (RPP-11413) (RPP-16922)</td>
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</tr>
<tr>
<td>AW241-VTA-EF-003 (Fan running)</td>
<td>ON/OFF</td>
<td>(OSD-7) (RPP-16922)</td>
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</tr>
<tr>
<td>AW241-VTA-PDI-702 (1st HEPA)</td>
<td>0.3” WG to 5.7” WG</td>
<td>0.1” WG to 5.9” WG (RPP-11413) (RPP-16922)</td>
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</tr>
<tr>
<td>AW241-VTA-PDI-703 (2nd HEPA)</td>
<td>0.3” WG to 3.8” WG</td>
<td>0.1” WG to 4.0” WG (RPP-11413) (RPP-16922)</td>
<td></td>
</tr>
<tr>
<td>PDI-702 + PDI-703</td>
<td>0.6” WG to 5.7”WG</td>
<td>0.1” WG to 5.9” WG (RPP-11413) (RPP-16922)</td>
<td></td>
</tr>
<tr>
<td>AW241-VTA-PDI-801 (De-entrainer DP)</td>
<td>0.0” WG to 1.0” WG</td>
<td>(ES)</td>
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</tr>
<tr>
<td>AW241-VTA-TI-802 (Heater outlet temperature)</td>
<td>45 °F to 170 °F</td>
<td>200 °F (RPP-11413) (RPP-16922)</td>
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<tr>
<td>AW241-VTA-TI-801 (Heater inlet temperature)</td>
<td>35 °F to 150 °F</td>
<td>(RPP-16922)</td>
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<tr>
<td>TI-802 - TI-801 (Heater delta T)</td>
<td>8 °F to 30 °F</td>
<td>(RPP-16922)</td>
<td></td>
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<tr>
<td>AW241-VTA-PDI-701 (De-entrainer DP)</td>
<td>0.0” WG to 1.0” WG</td>
<td>(ES)</td>
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<tr>
<td>AW241-VTA-TI-702 (Heater outlet temperature)</td>
<td>45 °F to 170 °F</td>
<td>200 °F (RPP-11413) (RPP-16922)</td>
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<tr>
<td>AW241-VTA-TI-701 (Heater inlet temperature)</td>
<td>35 °F to 150 °F</td>
<td>(RPP-16922)</td>
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<tr>
<td>TI-702 - TI-701 (Heater delta T)</td>
<td>8 °F to 30 °F</td>
<td>(RPP-16922)</td>
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(Continued on Next Page)
## Operate the 241-AW Annulus Ventilation System (VTA)

### Data Sheet 1 - 241-AW Annulus Ventilation (Cont.)

<table>
<thead>
<tr>
<th>Component Number/Condition</th>
<th>Normal Range</th>
<th>Limit (Basis)</th>
<th>Equipment Operational Data/Status</th>
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<tr>
<td>241-AW-901</td>
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<tr>
<td>AW901-VTA-PI-101 (TK-101 annulus exhaust vacuum)</td>
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<td>-6.0” WG (OSD-7)</td>
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<tr>
<td>AW901-VTA-PI-103 (TK-103 annulus exhaust vacuum)</td>
<td>1.0” WG to 5.0” WG</td>
<td>-6.0” WG (OSD-7)</td>
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<td>241-AW-902</td>
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<tr>
<td>AW902-VTA-PI-105 (TK-105 annulus exhaust vacuum)</td>
<td>1.0” WG to 5.0” WG</td>
<td>-6.0” WG (OSD-7)</td>
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<tr>
<td>AW902-VTA-PI-106 (TK-106 annulus exhaust vacuum)</td>
<td>1.0” WG to 5.0” WG</td>
<td>-6.0” WG (OSD-7)</td>
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<tr>
<td>241-AW-903</td>
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<tr>
<td>AW903-VTA-PI-102 (TK-102 annulus exhaust vacuum)</td>
<td>1.0” WG to 5.0” WG</td>
<td>-6.0” WG (OSD-7)</td>
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<tr>
<td>AW903-VTA-PI-104 (TK-104 annulus exhaust vacuum)</td>
<td>1.0” WG to 5.0” WG</td>
<td>-6.0” WG (OSD-7)</td>
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### VTA Data Collected

<table>
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<tr>
<th>Time:</th>
<th>Date:</th>
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<th>Performed by:</th>
<th>Signature</th>
<th>Print (First &amp; Last)</th>
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<td>SM/OE Reviewed by:</td>
<td>Signature</td>
<td>Print (First &amp; Last)</td>
<td>Date</td>
</tr>
</tbody>
</table>
Operate the 241-AW Annulus Ventilation System (VTA)

Figure 1 - VTA Equipment Arrangement

All following I.D. numbers are prefixed by AW241-VTA.
Operate the 241-AW Annulus Ventilation System (VTA)

Figure 2 - 241-AW Annulus Ventilation Schematic