

**PADUCAH GASEOUS DIFFUSION PLANT**  
Operations

**OPERATION OF THE C-335 SEAL EXHAUST AND WET AIR STATION**  
**CP4-OP-0216**  
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**Attachments:**

**C-335 VERIFICATION OF SEAL EXHAUST/WET AIR  
PUMP OIL LEVEL, CP4-OP-0216-F01.....23**

## 1.0 PURPOSE

To provide instructions for operation of the seal exhaust (SX)/wet air pump (WAP) station.

## 2.0 APPLICABILITY

Applies to Facility Operations personnel operating SX/WAPs in building C-335.

## 3.0 DEFINITIONS/ACRONYMS

### 3.1 Definitions

- A. \* — Corresponds to pump being used in the procedure (pump 1, 2, 3, etc.).
- B. **Essentially No Oil** — For the purpose of this procedure, a quantity of oil that is a thin film or residue on the inside walls with no more than a  $\frac{1}{2}$  inch accumulation in the bottom of the reservoir tube.
- C. **Seal Exhaust (SX) Pump** — Any seal exhaust, wet air, or combined seal exhaust/wet air station pump (refer to Appendix A, C-335 Seal Exhaust/Wet Air Station Diagram, for station diagram) used to evacuate air and nitrogen flowing through atmospheric and process seals.
- D. **Slugged Oil** — Oil that does not flow freely.
- E. **Wet Air Pump (WAP)** — Any seal exhaust, wet air, or combined seal exhaust/wet air station pump (refer to Appendix A for station diagram) used for the evacuation of systems that contain **up to 50 parts per million (ppm) UF<sub>6</sub>** at system pressure.

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### 3.2 Acronyms

None

## 4.0 REFERENCES

### 4.1 Use References

- A. CP4-SM-0053, “Cascade Chemical Trap Scans”
- B. CP4-OP-1121, “Cascade Valve and Leak Rating Operations”
- C. CP4-OP-1126, “Safety Sampling (Determination of UF<sub>6</sub>)”

- D. CP3-OP-0018, “Buggy Requirements and Use Determination”
- E. CP4-OP-0223, “Oil Testing and Flushing in the Seal Exhaust and Wet Air Pumps”
- F. CP3-NS-1034, “NCS Requirements for Sample Labeling and Handling”
- G. CP2-OP-0209, “Nuclear Criticality Safety Implementation Requirements for Handling and Storage of Fissile and Potentially Fissile Waste”
- H. CP2-HS-2003, “Respiratory Protection Program”

#### 4.2 Source References

- A. NCSA CAS-024, “Seal Exhaust/Wet Air Stations”
- B. NCSA GEN-008, “Transport, Handling, and Storage of Fissile/Potentially Fissile Material Samples”
- C. NCSA GEN-015, “The On-Site Generation, Handling, and Storage of Fissile/Potentially Fissile Material”
- D. NCSA GEN-001, “General Plant Limits for Activities Performed at PGDP”

### 5.0 PRECAUTIONS AND LIMITATIONS

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- 5.1 Waste generated within SX/WAP fissile control area (FCA) shall be handled/transported according to CP2-OP-0209, “Nuclear Criticality Safety Implementation Requirements for Handling and Storage of Fissile and Potentially Fissile Waste.”

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- 5.2 A **minimum 2-foot edge-to-edge** spacing shall be maintained between fissile/potentially fissile material/equipment/containers and installed SX/WAP components, unless **one** of the following exceptions apply:

- Spacing is **not** required between a single station component that is being removed and other installed components.
- Spacing is **not** required from station components that have been verified to be drained or emptied of their bulk alumina or oil.
- Spacing is **not** required between subcomponents and the installed station components they were removed from.
- Spacing is **not** required between a single AQ-NCS approved container and an installed component that is being drained into the container. The single

AQ-NCS approved container is limited to a **5.5-gallon** waste container, a **2.1-gallon** waste container, or a maximum **250mL** sample container.

**NOTE**

Poly bottles used to collect samples are handled according to CP3-NS-1034, "NCS Requirements for Sample Labeling and Handling."

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**5.3** A minimum **2-foot edge-to-edge** spacing shall be maintained between removed components/material that are fissile/potentially fissile. A removed component includes any part or sub-component, container, drain hose, rodding out tool, or other device that may have been in contact with oil, alumina, or other uranium bearing materials. Removed components may be stored or staged according to **one** of the following:

**5.3.1** Individual items may be stored or transported with minimum **2-foot edge-to-edge** spacing from all other fissile/potentially fissile equipment or material.

**5.3.2** Items may be stored in a "safe slab" configuration in which **no** item in the "safe slab" group is above **4.75-inches** from the floor. The "safe slab" group shall be maintained a minimum **2-foot edge-to-edge** from all other potentially fissile equipment or material.

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**5.3.3** Items may be stored or transported in an AQ-NCS approved container (slugged oil must be maintained in maximum 2.1-gallon container). The container shall be maintained a minimum **2-foot edge-to-edge** from all other potentially fissile equipment or material.

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**5.4** Items shall be tagged with a Potentially Fissile Material Tag, CP-22179, or tagged/labeled as waste according to CP2-OP-0209 **before** removal from the FCA.

**5.5** **Unless** prior approval has been obtained from Regulatory Compliance, recirculating cooling water (RCW) shall **not** be discharged to either the storm drains or the sanitary sewer.

**5.6** WAPS shall **not** be used on systems containing greater than **50 ppm** UF<sub>6</sub> at system pressure. **If** aligned to system with greater than **30 ppm** UF<sub>6</sub> at system pressure, enhanced monitoring shall be performed of WAPs for uranium break through (black oil).

**5.7** The pumps shall be operated within the following limits:

- Mist filter pressure limit is **1.8** psig. **If** pressure reaches **1.8** psig, notify FLM.

- Pump suction pressures shall **not** exceed **11.6 psia** for more than **15 minutes**
- Desired operating range is about **140°F** to **160°F**. Normal operating range is about **140°F** to **190°F**. Scale build-up in the water jackets will cause some pumps to operate at temperatures as high as **190°F**. If temperatures exceed **190°F**, actions should be taken to lower temperatures such as reducing suction pressure on the pump. Isolation or shutdown of the pump is shall be performed to prevent exceeding **200°F** unless directed otherwise by Facility Operations FLM.

**5.8** **When** isolating the cooling water, the inlet/supply shall be closed first and then close the outlet/return valve for the pump.

**5.9** **If** oil is degraded due to uranium contamination, (oil is dark or pump performance is poor), the system engineer should be contacted to evaluate trap media change out.

**5.10** SX/WAP(s) pump oil reservoir level shall **not** exceed **4.75 inches** as measured from the bottom edge of the front plate with the pump running on-stream.

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## **6.0 PREREQUISITES**

### **6.1 JHA Review**

Print and review Job Hazard Analysis (JHA) JHA-7347 FPDP-JHA-2014-General-01

### **6.2 System Prerequisites**

**6.2.1** **If** performing any of the following, confirm CAAS operable according to LCO 3.1.1 of the TSR:

- Changing pump oil that contains fissile material
- Using the WAP to evacuate fissile material

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#### **NOTE**

The pump gas ballast valves are positioned according to Facility Operations first-line manager (FLM) or system engineer recommendation.

**6.2.2** Ensure pump gas ballast valves are opened enough to prevent excessive oil build-up in the oil mist eliminator.

**6.2.3** Ensure Radiation Protection is notified of any oil changes

**6.2.4** **Before** placing equipment on-stream/returned to service, ensure all independent verifications of assays and NCSA verification forms are closed out, removed from the equipment binder, as applicable, and filed in the proper location.

## **7.0 TEST EQUIPMENT, TOOLS, AND SUPPLIES**

**7.1** AQ-NCS Fuch's Lubricants Renolin 200 or other engineering approved oil as directed by an approved test plan/procedure (Section **8.6** only)

**7.2** AQ-NCS approved **5.5 or 2.1-gallon** container (for draining/sampling activities only)

**7.3** Poly bottle/container (maximum size 250 ml)

**7.4** Hose/tube

**7.5** Rodding device

## **8.0 ACTION STEPS**

### **8.1 Pump Start-Up**

**NOTE**

Pump can be started from the normal power source only.

Unless given other approval by the Facility Operations FLM, a maximum of three WAPs shall be used when evacuating cells or auxiliary equipment.

**8.1.1** Ensure the following:

- A.** Manual valve on oil line to pump bearings is open, if installed.
- B.** Pump suction line vent to atmosphere is isolated.
- C.** SX/WAP discharge valve is open.
- D.** SX pump suction valve SE \* is closed.
- E.** WAP suction valve WA \* is closed.

- F. Cooling water flow is indicated through pump return line flow indicators. (See Section 8.9 for proper cooling water line-up)

**NOTE**

If it is suspected that the pump contains oil but there is no indication of oil in the sightglass, it is permissible to **briefly** cycle the pump to determine actual oil level.

- G. Oil level in pump is in **green** operating band (less than **4.25 in.**) or lower level if approved by Engineering.

**NOTE**

**Steps 8.1.4 and 8.1.5** shall be performed **immediately** after performing **Steps 8.1.2 and 8.1.3**.

- 8.1.2** Start pump.

**NOTE**

The pump oil solenoid valve is open if the ball in oil flow indicator bowl has risen when pump is running.

- 8.1.3** Observe ball in oil flow indicator bowl and **if** the ball has **not** risen, shut down pump **and** notify Facility Operations FLM.

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- 8.1.4** Ensure oil level in pump is in **green** operating band (less than **4.25-in.**) as corresponding to level indicator **and** document on C-335 Verification of Seal Exhaust/Wet Air Pump Oil Level, CP4-OP-0216-F01.

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- 8.1.5** Second operator independently verify oil level in pump is in **green** operating band (less than **4.25-in.**) as corresponding to level indicator and document on C-335 Verification of Seal Exhaust/Wet Air Pump Oil Level, CP4-OP-0216-F01.

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- 8.1.6** Ensure essentially no oil is contained in the pump oil overflow reservoir **and** complete applicable section of C-335 Verification of Seal Exhaust/Wet Air Pump Oil Level, CP4-OP-0216-F01.

## **8.2 Placing SX Pump On-Stream**

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- 8.2.1** Ensure Section **8.1** has been completed.
- 8.2.2** **If** pump is being placed on-stream after trap media replacement, ensure an initial trap survey has been completed according to CP4-SM-0053, “Cascade Chemical Trap Scans.”
- 8.2.3** Open SX pump suction valve SE \*.

**NOTE**

Oil level will change depending on the suction pressure.

- 8.2.4** Ensure oil level in pump is in **green** operating band (less than **4.25-in.**) as corresponding to the level indicator.
- 8.2.5** Confirm pump is pulling on seal exhaust header from the seal exhaust chart recorder in ACR or from local PI.
- 8.2.6** **If** pump does **not** appear to be pulling on seal exhaust header, isolate pump **and** inform Facility Operations FLM.
- 8.2.7** Regulate water flow with pump inlet water valve to maintain temperature of oil in reservoir less than **190°F** (140° F to 160°F is desirable).

**8.3 Placing WAP On-Stream**

- 8.3.1** **If** pump is being placed on-stream after trap media replacement, ensure an initial trap survey has been completed according to CP4-SM-0053, “Cascade Chemical Trap Scans.”

**CAUTION**

Steps **8.3.2** and **8.3.3** will prevent a “slug” of UF<sub>6</sub> from breaking through the alumina trap which could contaminate the pump oil.

- 8.3.2** Ensure all valves that connect the system to be evacuated to other systems are closed.
- 8.3.3** Confirm freezer/sublimator vent valves that would allow UF<sub>6</sub> gas to enter the system are closed, if applicable.
- 8.3.4** Ensure applicable WAP suction valve(s) is closed.

**NOTE**

Steps **8.3.5** through **8.3.9** may be performed in conjunction with Steps **8.3.10** through **8.3.13**.

- 8.3.5** If evacuating a cell or auxiliary system, ensure evacuation route is aligned from system to be evacuated up to valve **3DE-W**.
- If using pumps to evacuate another building's seal exhaust system, only the evacuation route is to be aligned.
- 8.3.6** Ensure leak rate according to CP4-OP-1121, "Cascade Valve and Leak Rating Operations," is performed.
- 8.3.7** Ensure system to be evacuated and evacuation route is sampled according to CP4-OP-1126, "Safety Sampling (Determination of UF<sub>6</sub>)" within **48** hours of evacuation.
- If using pumps to evacuate another building's seal exhaust system, only the evacuation route is to be sampled.
  - **Exception:** If a WAP has been used to evacuate the system within **48 hours prior to** system isolation, a safety sample does **not** need to be obtained **unless** changing conditions could have affected the UF<sub>6</sub> concentration in the affected building headers/system to be evacuated.
- 8.3.8** If safety sample results are greater than **50 ppm** UF<sub>6</sub> at system pressure, ensure pumps are **not** used **and** exit this procedure.
- 8.3.9** If aligned to system with greater than **30 ppm** UF<sub>6</sub> at system pressure, perform enhanced monitoring of WAPs for uranium break through (black oil).
- 8.3.10** Ensure Section **8.1** has been completed.
- 8.3.11** Ensure wet air suction valve controller is closed.

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**NOTE**

Unless given other approval by the Facility Operations FLM, a maximum of three WAPs shall be used when evacuating cells or auxiliary equipment or evacuating another building's seal exhaust system.

- 8.3.12** Open WAP suction valve WA \*.

- 8.3.13** Ensure oil level in pump is in **green** operating band (less than **4.25-in.**) as corresponding to the level indicator.
- 8.3.14** Open valve **3DE-W**.
- 8.3.15** If evacuating a cell, throttle open wet air suction valve controller to obtain suggested pull down rate listed in Table 1, Pull down rates for wet air pumps.

**Table 1. Pull down rates for wet air pumps.**

	psia/hr/pump				
	≤ 10 ppm <sup>‡</sup>	> 10 to ≤ 20	> 20 to ≤ 30	> 30 to ≤ 40	> 40 to ≤ 50
“000”	0.8	0.4	0.27	0.2	0.16
“00”	1.5	0.75	0.5	0.38	0.3
“C-310”	5.0	2.5	1.67	1.25	1.0

<sup>‡</sup>The actual cell UF<sub>6</sub> concentration is used to determine pull down rates.

- 8.3.16** If evacuating an auxiliary system, slowly open wet air suction valve controller **until** fully open, staying within pump operating parameters of **Step 5.7**.

**NOTE**

The inlet pressure to the wet air pumps should be maintained **at or below** 2 psia to avoid overheating of the pumps.

- 8.3.17** If using pumps to maintain another building’s seal exhaust system, coordinate the following with other building:
- A.** **Slowly** open wet air suction valve controller **until** fully open or as directed by Facility Operations FLM, staying within pump operating parameters of **Step 5.7**.
  - B.** **When** wet air suction valve controller is fully open or as directed by Facility Operations FLM, **slowly** open the isolation valve tying the other building’s seal exhaust system to the wet air pump suction.
  - C.** Notify the Facility Operator in the other building to close their seal exhaust header isolation valve to seal exhaust station **while** watching their seal exhaust header pressure.

- 8.3.18** Ensure pump is evacuating appropriate header by checking appropriate PI.
- 8.3.19** Regulate water flow with pump inlet water valve to maintain temperature of oil in reservoir less than **190°F** (140° F to 160°F is desirable).
- 8.3.20** If task to be performed requires stopping before complete evacuation, isolate as directed by Facility Operations FLM.
- 8.3.21** If evacuation is complete, perform the following:
- A.** Isolate at equipment evacuation valve
  - B.** Evacuate headers to less than **0.50 psia** or as directed by Facility Operations FLM
  - C.** Isolate headers
  - D.** Close the following:
    - Wet air suction control valve
    - 3DE-W

#### **8.4 Pump Isolation**

- 8.4.1** If SX pump, close SX pump suction valve SE \*
- 8.4.2** If WAP, close WAP suction valve WA \*.

#### **8.5 Pump Shutdown**

- 8.5.1** If SX pump, ensure SX pump suction valve SE \* is closed.
- 8.5.2** If WAP, ensure WAP suction valve WA \* is closed.

#### **NOTE**

**When** suction line is vented to atmosphere, the suction line PI may not show a pressure increase. Opening this valve avoids pulling oil into the alumina trap.

- 8.5.3** Open suction line vent to atmosphere.
- 8.5.4** Shut down pump.

**NOTE**

**When** the pump is stopped, the oil solenoid valve should close automatically and the oil flow indicator should indicate no oil flow.

- 8.5.5** Check pump oil flow indicator.
- 8.5.6** If oil flow has **not** stopped:
- A.** Close manual valve on oil line to pump bearings, if installed.
  - B.** Report solenoid valve failure to Facility Operations FLM.
- 8.5.7** **When** pump pressure reaches atmospheric pressure or **2 minutes** have elapsed, close suction line vent to atmosphere.
- 8.5.8** Ensure cooling water flow remains aligned through pump **except** for maintenance activity.

**8.6 Oil Filling**

- 8.6.1** If filling pump with other engineering approved oil (not AQ-NCS Fuch's Lubricants Renolin 200), complete adding oil according to CP4-OP-0223, "Oil Testing and Flushing in the Seal Exhaust and Wet Air Pumps."

**WARNING**

Placing oil fill barrel inside SX/WA FCA will result in an NCSA violation.

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- 8.6.2** Ensure oil barrel is **not** inside SX/WA station.
- 8.6.3** Ensure SX/WAP is shut down according to **Section 8.5**.
- 8.6.4** Ensure main oil drain valve on SX/WA pump is closed.
- 8.6.5** Record hour meter reading, where equipped, on CP4-OP-0216-F01.

**NOTE**

If oil has accumulated in the clear portion of the oil mist filter drain line, it is permissible to **briefly** cycle (**not** to exceed **10 seconds**) the pump, with the gas ballast valves open, to remove oil from the drain line **before** filling pump.

When pumps are shut down, the solenoid valves can stick and allow oil to drain to the crankcase from the reservoir.

**8.6.6** If the oil flow “bubbler” is filled with oil **or** it is possible that oil could have accumulated in the crankcase **or** oil is in clear portion of the drain line, **briefly** cycle the pump (**not** to exceed **10 seconds**) to ensure oil is removed from the crankcase and the solenoid valve is holding (oil flow bubbler is clear of oil) **before** filling.

**8.6.7** If oil level equals or exceeds **4.25 inches**, immediately drain to less than **4.25 inches**.

**8.6.8** Independently verify the oil drain line from the 8" Oil Mist Eliminators is not plugged by ensuring that oil is not accumulating in the clear portion of the drain line piping based on visual indications and document on CP4-OP-0216-F01.

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**NOTE**

Oil will overflow at **4.25 inches**.

**8.6.9** Using flashlight, check both overflow line bulls-eyes for plugging (i.e., sludge buildup) of overflow line at the following points:

- Pump access hole/tap in cover plate
- Entrance to oil overflow line attached to reservoir

**8.6.10** If overflow line is plugged, notify FLM and PSS.

**8.6.11** If using the installed oil transfer pumps, complete the following steps:

- A. Ensure the following valves are closed for the applicable filter:
  - Oil filter inlet valve.
  - Oil filter outlet valve.
- B. Ensure oil filter bypass valve is open.

**8.6.12** Align oil to pump being filled and fill pump until oil level is in the **green** operating range (less than **4.25 in.**) of level indicator.

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- If fill barrel is/becomes empty, ensure green AQ-NCS tag is removed **and** replace with a sealed Renolin 200 drum or Renolin 200 drum approved by Engineering.

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**8.6.13** If oil level equals or exceeds **4.25 inches**, immediately drain to less than **4.25 inches**.

**8.6.14** Close oil supply valves and replace caps/plugs as necessary.

## 8.7 Oil Draining Requirements

**8.7.1** Ensure pump is shut down according to Section **8.5**.

### NOTE

A flexible hose/tube/rodding device may be used to drain oil from the SX/WA pump. Step **5.3** provides spacing controls for these items.

Four types of flushing fluids have been approved for use in SX/WAPs. When disposing of the fluids after draining, the following categorizations of these fluids should be noted and handled accordingly:

- Paratherm SC or SC.1 System Cleaner - non-hazardous
- Kerosene - non-hazardous
- Transmission fluid - non-hazardous
- Mineral spirits - hazardous

Normally this section is used to drain oil but flushing fluids can be drained in conjunction with CP4-OP-0223.

**8.7.2** Prior to draining oil, contact Industrial Hygiene to perform HF monitoring.

- Don full-face respirator with HF/P-100 or equivalent according to CP2-HS-2003, "Respiratory Protection Program."

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**8.7.3** Drain oil through oil main drain valve into an AQ-NCS approved container (**5.5 or 2.1-gallons**) and handle according to CP2-OP-0209, "Nuclear Criticality Safety Implementation Requirements for Handling and Storage of Fissile and Potentially Fissile Waste."

- If oil is **not** coming out of drain, unplug drain line with a rodding device.

**NOTE**

A maximum of one AQ-NCS approved 5.5 - gallon container, or 2.1-gallon container, or maximum sized 250 mL sample container, may be placed against an installed item being drained or emptied with no spacing.

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**8.7.4** If unable to drain oil from the main drain valve, drain oil from the sample valve as follows:

- A.** Use flexible hose/tube to drain oil into the AQ-NCS approved **5.5 gallon** maximum capacity container.

**OR**

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- B.** Drain directly into a poly bottle [maximum size **250 ml** (hose not required)] and transfer into the AQ/NCS approved **5.5 gallon** maximum capacity container that is spaced a minimum **2-foot edge-to-edge** from the pump being drained and from all other fissile/potentially fissile material.

**8.7.5** If oil is dark in color **and** does **not** flow freely, notify Facility Operations FLM that back plate should be removed and reservoir cleaned. (The back plate does not have to be removed **if** the oil does **not** meet **both** of the stated conditions.)

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**8.7.6** Once oil is drained into approved container, establish a **minimum 2-foot edge-to-edge** spacing of the container from the pump and maintain this spacing from waste containers/vacuum cleaners/equipment.

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- Tag container with Potentially Fissile Material Tag, CP-22179, **OR** tag/label as waste according to CP2-OP-0209.

**8.7.7** Follow Radiation Protection guidelines to prevent spread of contamination as used pump oil is potentially radioactively contaminated.

**8.7.8** Move container of drained oil outside of FCA.

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**8.7.9** If an oil drain hose/rodding device was used to aid in draining the oil, store the items, until needed for reuse, according to **one** of the following options. Tag each with a Potentially Fissile Material Tag, CP-22179, **before** removal from the FCA.

- A. Store the drain hose and rod, as applicable, as separate fissile items and maintain minimum **2-foot- edge-to-edge** spacing between them and from all other fissile/potentially fissile equipment/components.
- B. Store the drain hose and rod together in a “safe slab” ensuring the entire hose and rod are less than **4.75 inches** from the floor. Maintain minimum **2-foot edge-to-edge** spacing from all other fissile/potentially fissile equipment/components.
- C. Place the hose and/or rod into an AQ-NCS approved container and handle according to CP2-OP-0209.

**8.7.10** If pump will be immediately refilled with oil, fill pump with oil according to Section **8.6**.

## **8.8 Oil Sampling**

### **NOTE**

Any container to collect oil directly from the sample valve shall not exceed **250 ml**.

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**8.8.1** If using sample valve to obtain oil samples, **before** collecting the samples, drain enough oil (about ½ cup) by **one** of the following methods to ensure representative sample will be taken from oil:

- A. Use flexible hose/tube to drain oil into the AQ-NCS approved **5.5-gallon** maximum capacity container.

**OR**

- B. Drain directly into poly bottle [(**maximum size 250 ml**)(hose **not** required)] **and** transfer into the AQ-NCS approved **5.5-gallon** maximum capacity container that is spaced a minimum of **2-foot edge-to-edge** from the pump being drained and from all other fissile/potentially fissile material.

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**NOTE**

A flexible hose/tube may be used to drain oil from the SX/WA pump. (Step 5.3 provides spacing controls for hose/tube.)

NCSA  
GEN-

**8.8.2** If using main drain valve to obtain oil samples, **before** collecting the samples, drain enough oil (about ½ cup) to ensure representative sample will be taken from oil reservoir through oil main drain valve into an AQ-NCS approved container **(5.5 or 2.1-gallons)** and handle according to CP2-OP-0209, “Nuclear Criticality Safety Implementation Requirements for Handling and Storage of Fissile and Potentially Fissile Waste.”

NCSA  
CAS-024

**8.8.3** Once oil is drained into approved container, establish a minimum **2-foot edge-to-edge** spacing of the container from the pump and maintain this spacing from waste containers/vacuum cleaners/equipment.

**8.8.4** Obtain oil samples according to CP3-NS-1034, “NCS Requirements for Sample Labeling and Handling.”

## **8.9 Cooling Water Line-up**

**8.9.1** If using RCW for pump cooling, ensure the following:

- A. Sanitary water supply valve is closed.
- B. Sanitary water inlet block valve is closed.
- C. Sanitary water return valve is sealed closed.
- D. Return water block valves to RCW water return header are open.
- E. RCW inlet block valve is open.
- F. Pump inlet water valve is open.
- G. RCW supply valve open.

**8.9.2** If using sanitary water for pump cooling, ensure the following:

- A. RCW inlet block valve is closed.
- B. Return water block valves to RCW water return header are closed.
- C. Sanitary water return line is directed to drain.
- D. Sanitary water drain valve is open.
- E. Pump inlet water valve is open.
- F. Sanitary water inlet block valve is open.

**G.** Sanitary supply valve open.

**NOTE**

The sanitary water supply valve is throttled opened enough to maintain cooling of oil in reservoir and to prevent overflowing at backflow preventer.

**H.** Sanitary water supply valve is throttled open.

**8.9.3** If flow is **not** indicated through pump return line flow indicator, notify Facility Operations FLM.

## **9.0 ACCEPTANCE CRITERIA**

None

## **10.0 POST-PERFORMANCE WORK ACTIVITIES**

None

## **11.0 RECORDS**

### **11.1 Quality**

The following quality assurance records are generated by this procedure:

C-335 Verification of Seal Exhaust/Wet Air Pump Oil Level, CP4-OP-0216-F01

### **11.2 Nonquality**

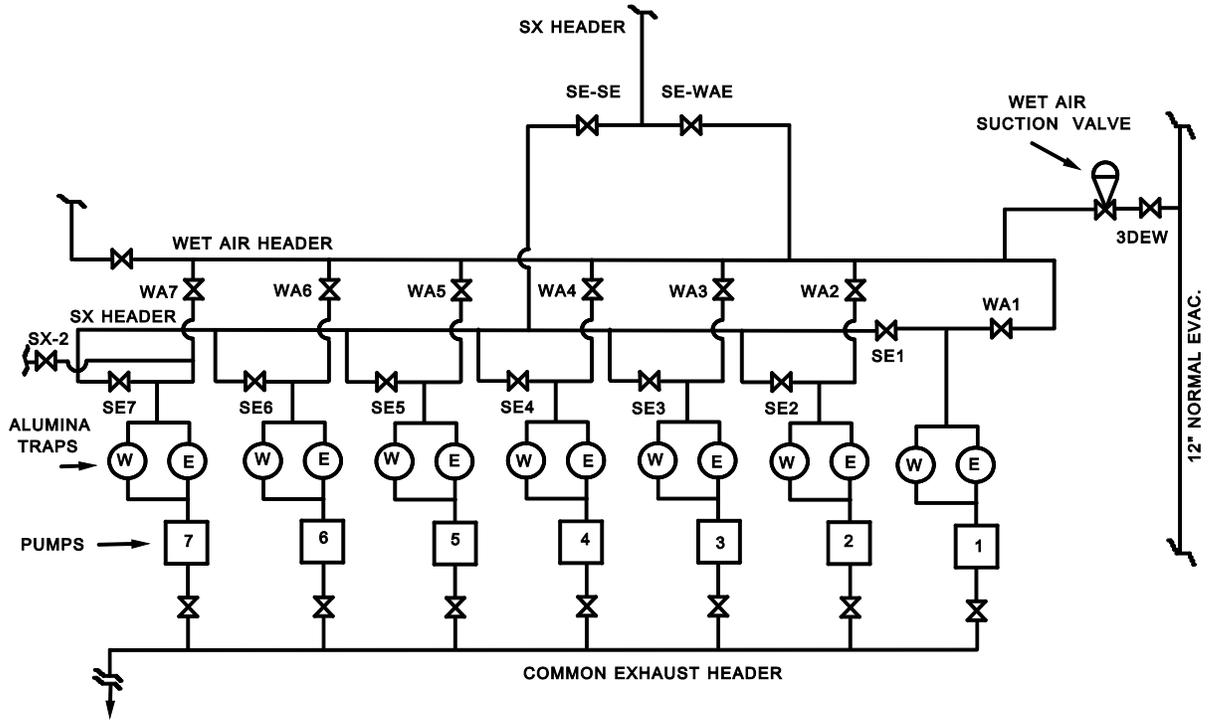
None

### **11.3 Requirements**

Quality records generated by this procedure shall be maintained and processed according to CP3-RD-0010, "Records Management Process."

### Appendix A C-335 SEAL EXHAUST/WET AIR STATION DIAGRAM

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**Appendix B**  
**POWER SUPPLY LOCATIONS FOR CIRCUIT BREAKERS**

Pump Number	Normal Breakers	Pump Number	Normal Breakers
1	Auxiliary Substation 52A2	2	Auxiliary Substation 52A4
3	Auxiliary Substation 52A1	4	Auxiliary Substation 53A2
5	Auxiliary Substation 53A4	6	Auxiliary Substation 53A3
7	Auxiliary Substation 53A1		

**C-335 VERIFICATION OF SEAL EXHAUST/WET AIR PUMP OIL LEVEL**

Building: _____	Date: _____	Shift: _____
<p>★ INDEPENDENT VERIFICATION OF NO OIL ACCUMULATION IN THE CLEAR SECTION OF THE 8" OIL MIST ELIMINATOR DRAIN LINES PRIOR TO FILLING PUMP WITH OIL Place a check (✓), pump number, or value where indicated</p> <p>Pump Number: _____</p> <p>No Oil Accumulation <input type="checkbox"/> 1st Operator: _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> </div> </p> <p>No Oil Accumulation <input type="checkbox"/> 2nd Operator: _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> </div> </p> <p>Hour Meter Reading (Where Equipped) _____</p>		
<p>★ VERIFICATION OF ESSENTIALLY NO OIL IN THE OVERFLOW RESERVOIR - PUMP RUNNING OFF-STREAM Place a check (✓) or pump number where indicated</p> <p>Pump Number: _____</p> <p>Pump Running <input type="checkbox"/></p> <p>Suction Valve Closed <input type="checkbox"/></p> <p>Operator: _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> </div> </p>		
<p>★ IMMEDIATELY AFTER START-UP, PROPER LEVEL VERIFICATION - &lt;4.25 INCH DEPTH AS MEASURED FROM THE BOTTOM EDGE OF THE FRONT PLATE <b>green</b> band.</p> <p>Record Pump Number: _____</p> <p>Performing Operator: _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> </div> </p> <p>Verifying Operator: _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> </div> </p>		
<p>REMARKS: _____</p> <p>_____</p> <p>_____</p> <p>_____</p>		
<p>★ Denotes NCSA CAS-024 Requirement</p>		
<p>First Line Manager</p> <p>_____ / _____ / _____  <div style="display: flex; justify-content: space-around; width: 100%; margin-top: -10px;"> <span>Signature</span> <span>Badge</span> <span>Date</span> </div> </p>		