Establish Raw Water Valve Lineup for AY/AZ Tank Ventilation Complex

Tank Farm Plant Operating Procedure

AY & AZ Farm Ventilation

USQ # GCX-2

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for establishing raw water supply to AY/AZ tank ventilation system for operation.

1.2 Scope

1.2.1 This procedure applies to equipment and instrumentation associated with AY/AZ tank ventilation system raw water system.

1.2.2 Sections (tasks) included in this procedure may be performed independently from the rest of this procedure at the direction of the Shift Manager.

2.0 INFORMATION

2.1 General Information

2.1.1 The AY/AZ tank ventilation system raw water (RW) system supplies to:

Fire Suppression System for:
- 702-AZ Building
- 701-AZ Building
- 271-AZ Control Room

AND downstream of 173-R raw water to:
- North hose bib station, located on north side of 241-AZ-702
- South hose bib station, located on south side on 241-AZ-702
- ECU-1, 241-AZ-701 (Diesel Generator Building Ventilation)
- AHU-1, 241-AZ-271 (Control Room Ventilation Humidifier)
- AY101, 102 & AZ101, 102 Evaporative Cooling Tower makeup
2.2 General Information (Cont.)

2.1.2 Raw water is used in AY/AZ tank ventilation system equipment as follows:

- Raw water is used in the evaporative cooling towers to cool glycol, which in turn cools tank exhaust in recirculation condensers.
- Raw water is periodically added to the cooling tower sump by automatic action of level control valves.
- Raw water is used to initially flush and fill cooling tower sumps if they have been drained.
- Raw water is used as the motive force by the primary cell sump jet pump.
- Raw water is used to flush the high-efficiency mist eliminator in the primary ventilation cell.
- Swamp Cooler in the 701-AZ Diesel Generator Building.
- Fire Protection System
- 241-AZ-271 AHV-1 Humidifier.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

All known hazards will be addressed in the pre-job safety meeting, along with personal protective equipment needed to perform desired activities.

3.2 Environmental

In accordance with State Water Discharge Permit, 4511, incidental discharges of water in the tank farm up to 60 gallons is not reportable. Contact the Production Operations Environmental field representative if the discharge is in excess of 60 gallons or it is intended the discharge will be in excess of 60 gallons.

4.0 PREREQUISITES

4.1 Performance Documents

The following procedures may be needed to perform this procedure:

- ARP-T-251-00003, ARP-T-251-00005 through ARP-T-251-00023 and ARP-T-251-00032, alarm response procedures for the 241-AZ 702 Ventilation System
- TO-060-356, Perform 702-AZ Exhauster Monitor and Control Operations
- TO-040-540, Water Surveillance and Usage

4.2 Field Preparations

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

4.2.1 **ENSURE** Shift Manager has approved the operation of raw water system.
5.0 PROCEDURE

5.1 Line Up Raw Water Valves

Pre-Start Checks

NOTE - The following pre-start checks need only be performed on initial system startup or if directed by Shift Manager when current system configuration is in question.

- Valves in the following table are located outside of 241-AZ-702.

5.1.1 **PERFORM** the following raw water valve lineup:

<table>
<thead>
<tr>
<th>VALVE</th>
<th>FUNCTION</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV-AZRW-14A</td>
<td>NORTH HOSE BIB</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-14B</td>
<td>SOUTH HOSE BIB</td>
<td>CLOSED</td>
</tr>
</tbody>
</table>

NOTE - Valves in the following table are located at applicable cooling tower pad.

5.1.2 **PERFORM** the following raw water valve lineup:

<table>
<thead>
<tr>
<th>VALVE</th>
<th>FUNCTION</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV-AY101RW-1</td>
<td>AY101-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZ101RW-1</td>
<td>AZ101-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZ102RW-1</td>
<td>AZ102-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AY101RW-2</td>
<td>AY101-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZ101RW-2</td>
<td>AZ101-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZ102RW-2</td>
<td>AZ102-EW-T-1 SUPPLY VALVE</td>
<td>CLOSED</td>
</tr>
</tbody>
</table>
5.1 Line Up Raw Water Valves (Cont.)

NOTE - The following raw water valves are located inside 241-AZ-701, diesel generator building, Room 101, except for HV-AZRW-15 and 173-R.

5.1.3 ENSURE the following valve lineup in order given:

<table>
<thead>
<tr>
<th>VALVE</th>
<th>FUNCTION</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>173-R</td>
<td>Below grade between 241-AZ-701 and 702 (Need reach rod to operate)</td>
<td>OPEN *</td>
</tr>
<tr>
<td>HV-AZRW-2</td>
<td>2&quot; STRAINER INLET IN NORTH EAST ROOM OF 241-AZ-701</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-3</td>
<td>1/2&quot; INLET TO PI-AZRW-1A</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-4</td>
<td>1/4&quot; INLET TO PDIT-AZRWF-1</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-5</td>
<td>1/4&quot; OUTLET FROM PDIT-AZRWF-1</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-BP-1A</td>
<td>2&quot; INLET TO AZ-RW-BP-1 BACKFLOW PREVENTER</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-BP-1B</td>
<td>2&quot; OUTLET FROM AZ-RW-BP-1 BACKFLOW PREVENTER</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-6</td>
<td>1/2&quot; SWAMP COOLER ISOLATION VALVE</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-6A</td>
<td>1/2&quot; SWAMP COOLER CHEMICAL ADDITION PORT</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-7</td>
<td>1/2&quot; INLET TO PI-AZRW-1B</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-8</td>
<td>2&quot; INLET TO FT-AZRW-1</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-9</td>
<td>2&quot; OUTLET FROM FT-AZRW-1</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-10</td>
<td>2&quot; BYPASS AROUND FT-AZRW-1</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-11</td>
<td>1 1/2&quot; SUPPLY TO AY-101 &amp; 102 COOLING TOWERS</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-12</td>
<td>1 1/2&quot; SUPPLY TO AZ-101 &amp; 102 COOLING TOWERS</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-13A</td>
<td>1&quot; SUPPLY TO SOUTH HOSE BIB (HV-AZRW-14A)</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-13B</td>
<td>1&quot; SUPPLY TO NORTH HOSE BIB (HV-AZRW-14B)</td>
<td>CLOSED</td>
</tr>
<tr>
<td>HV-AZRW-BP-2A</td>
<td>2&quot; INLET TO AZ-RW-BP-2 BACKFLOW PREVENTER</td>
<td>OPEN</td>
</tr>
<tr>
<td>HV-AZRW-15</td>
<td>1/2&quot; AHU-1 ISOLATION VALVE (271-AZ CONTROL ROOM HUMIDIFIER)</td>
<td>OPEN</td>
</tr>
</tbody>
</table>

* Position verification required only if lineup is following maintenance on raw water system, and valve position has been changed.
5.2 **Place Raw Water System in Service**

5.2.1 **INSPECT** system piping for leaks.

5.2.2 **MONITOR** system pressure on PI-AZRW-1B.

5.2.2.1 **IF** system pressure is below 30 psig or above 60 psig, **REQUEST** Shift Manager to determine if work is to be initiated to SET/ADJUST pressure control valve PCV-AZRW-1 to 50 psig.

5.2.3 **MONITOR** system pressure on Monitor and Control System graphic screen 05.

5.2.4 **NOTIFY** Shift Manager of any leaks or abnormal pressures.

5.2.5 **LOG** water usage at control room.

5.3 **Line Up RW to AY-101 Evaporative Cooling Tower**

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

5.3.1.1 **CONFIRM** RW system is in service per Section 5.2.

5.3.1.2 **IF** RW system is not in service, **CONTACT** Shift Manager.

5.3.1.3 **OPEN** valve HV-AY101RW-1 on cooling tower pad.

5.3.1.4 **OPEN** valve HV-AY101RW-2 on cooling tower pad.
5.4 Line Up RW to AZ-101 Evaporative Cooling Tower

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

5.4.1.1 **CONFIRM** RW system is in service per Section 5.2.

5.4.1.2 **IF** RW system is not in service, **CONTACT** Shift Manager.

5.4.1.3 **OPEN** valve HV-AZ101RW-1 on cooling tower pad.

5.4.1.4 **OPEN** valve HV-AZ101RW-2 on cooling tower pad.

5.5 Line Up RW to AZ-102 Evaporative Cooling Tower

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

5.5.1.1 **CONFIRM** RW system is in service per Section 5.2.

5.5.1.2 **IF** RW system is not in service, **CONTACT** Shift Manager.

5.5.1.3 **OPEN** valve HV-AZ102RW-1 on cooling tower pad.

5.5.1.4 **OPEN** valve HV-AZ102RW-2 on cooling tower pad.
5.6 Line Up RW to Hose Bib North Side of Primary Vent Building

5.6.1 IF directed by Shift Manager, PERFORM the following:

5.6.1.1 CONFIRM RW system is in service per Section 5.2.
5.6.1.2 IF RW system is not in service, CONTACT Shift Manager.
5.6.1.3 CONFIRM valve HV-AZRW-14A is CLOSED.
5.6.1.4 OPEN valve HV-AZRW-13A.
5.6.1.5 IF water meter is required, ENSURE water meter is hooked up to hose bib AND RECORD water meter reading per procedure TO-040-540, Data Sheet 2.
5.6.1.6 OPEN valve HV-AZRW-14A.

5.7 Line Up RW to Hose Bib South Side of Primary Vent Building

5.7.1 IF directed by Shift Manager, PERFORM the following:

5.7.1.1 CONFIRM RW system is in service per Section 5.2.
5.7.1.2 IF RW system is not in service, CONTACT Shift Manager.
5.7.1.3 CONFIRM valve HV-AZRW-14B is CLOSED.
5.7.1.4 OPEN valve HV-AZRW-13B.
5.7.1.5 IF water meter is required, CONNECT water meter to hose bib AND RECORD water meter reading per procedure TO-040-540, Data Sheet 2.
5.7.1.6 OPEN valve HV-AZRW-14B.
5.8 Line Up RW to ECU-1, 241-AZ-701 (Swamp Cooler)

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

5.8.1.1 **CONFIRM** RW system is in service per Section 5.2.

5.8.1.2 **IF** RW system is not in service, **CONTACT** Shift Manager.

5.8.1.3 **CONFIRM** chemical addition valve HV-AZRW-6A is CLOSED.

5.8.1.4 **SLOWLY OPEN** valve HV-AZRW-6.

5.9 Line Up RW to AHU-1 (241-AZ-271 Humidifier)

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

5.9.1.1 **CONFIRM** RW system is in service per Section 5.2.

5.9.1.2 **IF** RW system is not in service, **CONTACT** Shift Manager.

5.9.1.3 **OPEN** valve HV-AZRW-15.

5.10 Secure RW to AY-101 Evaporator Cooling Tower

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

5.10.1.1 **IF** the cooling tower is operating, **ENSURE** cooling tower is configured for DRY MODE operation.

5.10.1.2 **ENSURE** pan recirculation pump is OFF.

5.10.1.3 **ENSURE** tower spray pump is OFF.

5.10.1.4 **CLOSE** valve HV-AY101-RW-1 on cooling tower pad.

5.10.1.5 **CLOSE** valve HV-AY101-RW-2 on cooling tower pad.
Establish Raw Water Valve Lineup for AY/AZ Tank Ventilation Complex

5.11 Secure RW to AZ-101 Evaporator Cooling Tower

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

5.11.1.1 **IF** the cooling tower is operating, **ENSURE** cooling tower is configured for DRY MODE operation.

5.11.1.2 **ENSURE** pan recirculation pump is OFF.

5.11.1.3 **ENSURE** tower spray pump is OFF.

5.11.1.4 **CLOSE** valve HV-AZ101RW-1 on cooling tower pad.

5.11.1.5 **CLOSE** valve HV-AZ101RW-2 on cooling tower pad.

5.12 Secure RW to AZ-102 Evaporator Cooling Tower

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

5.12.1.1 **IF** the cooling tower is operating, **ENSURE** cooling tower is configured for DRY MODE operation.

5.12.1.2 **ENSURE** pan recirculation pump is OFF.

5.12.1.3 **ENSURE** tower spray pump is OFF.

5.12.1.4 **CLOSE** valve HV-AZ102RW-1 on cooling tower pad.

5.12.1.5 **CLOSE** valve HV-AZ102RW-2 on cooling tower pad.
5.13 Secure RW to North Hose Bib

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

5.13.1.1 **CLOSE** valve HV-AZRW-14A.

5.13.1.2 **IF** water meter was used, **RECORD** final water meter reading per procedure TO-040-540 **AND**

**DISCONNECT** water meter from hose bib.

5.13.1.3 **CLOSE** valve HV-AZRW-13A.

5.14 Secure RW to South Hose Bib

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

5.14.1.1 **CLOSE** valve HV-AZRW-14B.

5.14.1.2 **IF** water meter was used, **RECORD** final water meter reading per procedure TO-040-540 **AND**

**DISCONNECT** water meter from hose bib.

5.14.1.3 **CLOSE** valve HV-AZRW-13B.

5.15 Secure RW to ECU-1 241-AZ-702 (Swamp Cooler)

5.15.1 IF directed by Shift Manager, **CLOSE** valve HV-AZRW-6.

5.16 Secure RW to AHU-1 (241-AZ-271 Humidifier)

5.16.1 IF directed by Shift Manager, **CLOSE** valve HV-AZRW-15.

5.17 Records

No records are generated during the performance of this procedure.
Establish Raw Water Valve Lineup for AY/AZ Tank Ventilation Complex

Figure 1 - Raw Water System