Response To Loss Of Compressed Air

Tank Farm Abnormal Operating Procedure

Changes “Other Than Inconsequential” Require These Additional Reviews:

Radiological Controls: Jerry Kurtz
Safety Basis Compliance Officer

USQ # TF-18-1416-S, Rev. 0

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>10/09/2018</td>
<td>TF Automation/DSA Changes</td>
<td>Deleted reference to LCO 3.6 and modified Table 3.</td>
</tr>
<tr>
<td>G-0</td>
<td>11/15/2016</td>
<td>Periodic review</td>
<td>No changes identified.</td>
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<tr>
<td>F-0</td>
<td>01/21/2015</td>
<td>Periodic review corrections</td>
<td>Reformatted Step 3.2.1 to comply with Writers Standard. Modified Step 4.1.1 to specify conditional requirement. Corrected the location of portable air compressor in Table 2.</td>
</tr>
<tr>
<td>E-3</td>
<td>09/16/2014</td>
<td>Operations request</td>
<td>Changed how you send SOEN messages to standardize the process</td>
</tr>
<tr>
<td>E-2</td>
<td>01/10/2014</td>
<td>Operations request to address WRPS-PER-2013-2143.</td>
<td>Modified NOTE above Step 4.1 to delete ability to omit any steps performed in Section 4.1</td>
</tr>
</tbody>
</table>
1.0 AFFECTED PERSONNEL, FACILITIES, EQUIPMENT, OR AREAS

This procedure applies to compressed air equipment and lines in 200 East Area, 200 West Area, and 600 Area (Except 242-A Evaporator [See TF-AOP-EVAP-006]). This procedure does not apply to WRPS personnel and subcontractors doing work at the 222-S Laboratory Complex.

2.0 ENTRY CONDITIONS

2.1.1 Personnel report there is a loss of compressed air supplying Tank Farms (See Table 2 for a list of East Area compressors and Table 3 for West Area compressors).

2.1.2 Operator rounds indicate a steady loss of air pressure supplying Tank Farms.

2.1.3 Alarm conditions exist indicating a loss of compressed air.

2.1.4 Tank Farm LOW pressure (HIGH vacuum) alarm in 241-AW Farm.
3.0 ACTIONS

NOTE - Compressed air supplies the following major equipment and/or operations:

- Instrument air
- Dip Tubes (used for level detection and Double Contained Receiver Tanks [DCRTs] ventilation air inlet supply, and leak detection pits)
- Air lift circulators
- Diaphragm operated valves (DOVs)
- Purge air (in-tank cameras, manual tape flake boxes, miscellaneous instrumentation).

3.1 Automatic Actions

3.1.1 Alarms associated with affected air compressor (See Table 1) may be initiated.

3.2 Immediate Actions

NOTE - Loss of instrument air to 241-AW Tank Farm will cause tank pressure-monitoring instrument to fail and prevent detection of a tank HIGH pressure LOW vacuum pressurization event if it should occur.

3.2.1 IF instrument air is lost in 241-AW Tank Farm, CONTACT 242-A AND REQUEST evaluation of Loss of Compressed Air.

3.2.1.1 EVALUATE restricting access to applicable farm(s) until air supply is restored,

OR

STATION an operator in instrument building or farm to monitor primary tank ventilation system and magnahelic tank pressure instrument to ensure detection of a tank over pressurization event.

3.2.2 ANNOUNCE entering TF-AOP-002 over Tank Farm radio channel(s) AND SEND SOEN message that includes the following:

- Entry into TF-AOP-002
- Event and location
- Required actions for affected personnel/protective actions as applicable
- Access approval and authority as applicable.
3.2 Immediate Actions (Cont.)

3.2.3 IF a standby air compressor is available, DIRECT Stationary Operating Engineer (SOE) to start standby air compressor per appropriate operating procedure,

OR

IF previously running air compressor indicates no abnormalities, CONSIDER directing SOE to RESTART air compressor per appropriate operating procedure.

3.2.4 DIRECT SOE to investigate compressed air system to determine reason for loss of, or decrease in, air pressure. Items to look for include, but are not limited to the following:
- Improperly operating air compressor (leaking gaskets, loss of electrical power, frozen compressor, etc.)
- Leaks or breaks in air lines including lifted relief valves that may not have reset
- Failed, or improperly set, pressure reducers or pressure regulators
- Improper valve line-ups
- Plugged, pinched, or crimped air lines
- Cool weather causing air lines to freeze.

3.2.5 AFTER compressed air system is returned to service, DIRECT a Nuclear Chemical Operator (NCO) to check and adjust as necessary per procedure, any equipment supplied by restored air system (e.g., dip tube flow rates, etc.).

3.3 Follow on Actions

3.3.1 IF repairs are required, NOTIFY appropriate maintenance manager, and initiate a work request to fix failed system or equipment.

3.3.2 IF system or component fails regularly, NOTIFY appropriate maintenance manager and request Engineering check for, and correct as necessary, inadequate designs, suspect or inadequate parts, or improper installation of system or components.
4.0 EXIT CRITERIA

NOTE - Actual steps taken for restoration are dependent on specific situations and facility configuration at time of event. The following steps are general guidance and may be performed concurrently or in any order at the discretion of Shift Manager to fit situation.

4.1.1 DIRECT SOE to return affected main air compressor to service AND

IF stand-by compressor(s) were put into service during the performance of this procedure, PLACE stand-by compressor in STAND-BY mode in accordance with applicable operating procedures.

4.1.2 DIRECT NCO to check equipment supplied by compressed air system has been returned to normal operating status per applicable operating procedures.

4.1.3 ANNOUNCE exiting TF-AOP-002 over tank farm radio channel(s) AND

SEND SOEN message.

5.0 RECORDS

No records are generated during the performance of this procedure.
# Response To Loss Of Compressed Air

## Table 1 - Possible Alarms from Loss of Air

<table>
<thead>
<tr>
<th>ALARM</th>
<th>Location</th>
<th>Description</th>
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<tbody>
<tr>
<td>PAL-3100A</td>
<td>6241-A Diversion Box PCU-2(04DIVBOX)</td>
<td>Low compressor (SA-CMP-3101A) pressure</td>
</tr>
<tr>
<td>Compressor Pressure Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAL-3100B</td>
<td>6241-V Vent Station PCU-3 (09VENTSN)</td>
<td>Low compressor (SA-CMP-3101B) pressure</td>
</tr>
<tr>
<td>Compressor Pressure Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1 - Possible Alarms from Loss of Air (Cont.)

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<tr>
<th>ALARM</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Pressure Tank 101 (High Vacuum) (WST-PAL-121)</td>
<td>241-AW-271 ANN-101 ALARM #: 03</td>
<td>Tank 101-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
<tr>
<td>Low Pressure Tank 102 (High Vacuum) (WST-PAL-112)</td>
<td>241-AW-271 ANN-102 ALARM #: 03</td>
<td>Tank 102-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
<tr>
<td>Low Pressure Tank 103 (High Vacuum) (WST-PAL-113)</td>
<td>241-AW-271 ANN-103 ALARM #: 03</td>
<td>Tank 103-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
<tr>
<td>Low Pressure Tank 104 (High Vacuum) (WST-PAL-114)</td>
<td>241-AW-271 ANN-104 ALARM #: 03</td>
<td>Tank 104-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
<tr>
<td>Low Pressure Tank 105 (High Vacuum) (WST-PAL-115)</td>
<td>241-AW-271 ANN-105 ALARM #: 03</td>
<td>Tank 105-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
<tr>
<td>Low Pressure Tank 106 (High Vacuum) (WST-PAL-116)</td>
<td>241-AW-271 ANN-106 ALARM #: 03</td>
<td>Tank 106-AW vapor space has increasing vacuum (may indicate instrument failed on loss of air)</td>
</tr>
</tbody>
</table>
### Response To Loss Of Compressed Air

#### Table 2 - East Area Air Compressors

<table>
<thead>
<tr>
<th>Air Compressor Nomenclature</th>
<th>Location</th>
<th>Major Loads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable</td>
<td>204-AR Mechanical Room</td>
<td>1. Instrument Air</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Weight Factor Instrumentation and Rotometers for tank levels</td>
</tr>
</tbody>
</table>

### Response To Loss Of Compressed Air

#### Table 3 - West Area Air Compressors

<table>
<thead>
<tr>
<th>Air Compressor Nomenclature</th>
<th>Location</th>
<th>Major Loads</th>
</tr>
</thead>
</table>
| 244-S Compressor            | 244-S Instrument Building | 1. Instrument Air  
2. Weight Factor Instrumentation and Rotometers for tank level and ventilation |
| SA-CMP-3101A                | 6241-A Cross Site Transfer Diversion Box | 1. Pump Seal for Pumps P-3125A and P-3125B  
2. Piston operated valves for Diversion Box |
| SA-CMP-3101B                | 6241-V Cross Site Transfer Vent Station | 1. Piston operated valves for Vent Station |