

5.0 ALARM/ANNUNCIATOR RESPONSES

5.1 Summary of Alarm/Annunciator Responses

1. Chilled Water Supply High/High-High Temperature
2. Chilled Water Minimum Flow Bypass Valve Open
3. Chilled Water Pump Trip
4. Heat Exchanger Sequence Failed
5. Chilled Water Supply Pressure High/High-High

Alarm Title: CHW-S Temp High Alarm CHW-S Temp Hi-Hi Alarm	
Initiating Device:	Setpoint: High 50°F High-High 55°F
A. Possible Cause(s) of Alarm <ol style="list-style-type: none">1. Operating chiller tripped.2. Open chilled water valve on inactive Chiller or Heat Exchanger3. Insufficient cooling equipment on line4. Condenser water supply temperature too high.5. Fouled Heat Exchanger – poor heat transfer.6. Malfunctioning temperature transmitter.7. Malfunctioning or tripped Condenser Water Pump.8. Malfunctioning or tripped Condenser Water Valve.	
B. Consequences of Alarm <ol style="list-style-type: none">1. Significantly reduced cooling capacity	
C. Immediate Operator Action <ol style="list-style-type: none">1. Verify the alarm.2. Check valve positions and flow readings.3. Place another Chiller on line.4. Check Compressed Air pressure.5. Verify condenser water temperature and flow is normal.6. Verify that Cooling Tower fans are powered, and running.	
D. Follow-up Operator Action <ol style="list-style-type: none">1. Replace/recalibrate temperature transmitter if required.2. Clean Heat Exchanger if required.3. Notify the Shift Supervisor.4. Log issue in the plant log.	

Alarm Title: Chilled Water EOL Bypass Valve Open	
Initiating Device: FV-CHW-03A	Setpoint: <900 gpm
A. Possible Cause(s) of Alarm 1. Insufficient Chilled Water flow.	
B. Consequences of Alarm 1. Potential for Chiller compressor surging and trip.	
C. Immediate Operator Action 1. Verify the alarm. 2. Verify the EOL Bypass Valve should be open (verify that lowest Chiller flow is less than 900 gpm). 3. Check Chilled Water system for low flow. 4. Start another Chilled Water Pump. 5. Refer to Chiller Module OP in the event of Chiller surging.	
D. Follow-up Operator Action 1. Monitor Bypass Valve to ensure proper operation. 2. Notify the Shift Supervisor. 3. Log issue in the plant log.	

Alarm Title: CHW PUMP CWP-x Run Fault-Tripped (x = pump number)	
Initiating Device: Pump Circuit Breaker	Setpoint: N/A
A. Possible Cause(s) of Alarm 1. Fault overload.	
B. Consequences of Alarm 1. Low Chilled Water Supply Pressure/Flow. 2. Potential for Chiller Trip on high evaporator pressure/low flow. 3. Loss of Chilled Water.	
C. Immediate Operator Action 1. Verify the alarm. 2. Verify that next available Chilled Water Pump starts. 3. Locally verify cause of pump trip (motor overload, bearing temperature, etc.). 4. Locally verify VFD status on local control panel.	
D. Follow-up Operator Action 1. Reset the breaker <u>One Time Only</u> for the tripped Chilled Water Pump. If it trips again, submit request for maintenance to repair cause. 2. Notify the Shift Supervisor. 3. Log issue in the plant log.	

Alarm Title: Heat Exchanger X Sequence Failed (X = Heat Exchanger number)	
Initiating Device: various	Setpoint: N/A
A. Possible Cause(s) of Alarm <ol style="list-style-type: none">1. Glycol Water Pump didn't start.2. Glycol Water Valve didn't open.3. Glycol Supply above maximum temperature setpoint, 45°F.4. Chilled Water Return Valve (TV-HX1/2/3-06) failed to open.	
B. Consequences of Alarm <ol style="list-style-type: none">1. Reduction or loss of cooling to UPMC loads.	
C. Immediate Operator Action <ol style="list-style-type: none">1. Verify the alarm.2. Verify cause of Heat Exchanger sequence failure3. Verify position of all Heat Exchanger valves4. Attempt to start another Heat Exchanger or Chiller.	
D. Follow-up Operator Action <ol style="list-style-type: none">1. Submit maintenance request for any failed component(s).2. Notify the Shift Supervisor.3. Log issue in the plant log.	

Alarm Title: CHW-S Pressure High Alarm	
Initiating Device: PIC-CH1/2/3-02	Setpoint: 110 psig
A. Possible Cause(s) of Alarm <ol style="list-style-type: none">1. Low Building load.2. Bypass valve did not open.3. Chilled Water Pumps operating in AUTO (in ICS), MANUAL, or Automation not working.4. Too many Chilled Water Pumps running.5. Makeup regulator failure caused pressure to spike.6. Improper valve lineup.	
B. Consequences of Alarm <ol style="list-style-type: none">1. N/A	
C. Immediate Operator Action <ol style="list-style-type: none">1. Verify the alarm.2. Verify site supply and return pressure.3. Check Makeup Water Regulator.4. Remove one Chilled Water Pump from service.5. Verify valve lineup.6. Verify Chiller does not surge – refer to Chiller Module OP.7. Verify Bypass Valve opens.	
D. Follow-up Operator Action <ol style="list-style-type: none">1. If parameters do not return to normal, perform full system valve lineup.2. Notify the Shift Supervisor.3. Log issue in the plant log.	