Bureacratic Affairs Building 1st Floor Hot Water System

Point		Sensor			Features									Notes
Name (Note 6)	Description and Service	Type	Reference Spec Paragraph	Accuracy	Alarms				Trending							
					Limit		Warning		Samples[1]	Commissioning[5]			Operating[5]			
					Hi	Lo	Hi	Lo		Time[2]	Local[3]	Archive[4]	Time[2]	Local[3]	Archive[4]	
Analog Inputs																
STHX-1-LWT	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp.	1,000 Ω Pt RTD with close coupled transmitter and thermometer well	25 35 00	0.75% of span for sensor + transmitter	Note 7				60	1 min.	X	X	1 min.	X	X	Note 8
SYSTM-OAT	System Outdoor Air Temperature	Single point 1,000 Ω Pt RTD with close coupled transmitter	25 35 00	0.75% of span for sensor + transmitter	None				12	5 min.	X	X	5 min.	X	X	
STHX-1-EWT	Shell and Tube Heat Exchanger -1 Entering Wtr. Temp.	1,000 Ω Pt RTD with close coupled transmitter and thermometer well	25 35 00	0.75% of span for sensor + transmitter	Note 7				60	1 min.	X	X	1 min.	X	X	Note 8
Analog Outputs (All analog outputs to include local override capability and status indication at the controller)																
STHX-1-STMVLV-CMD	Shell and Tube Heat Exchanger -1 Steam Valve Command	4-20 ma actuator	25 35 13	N/A	N/A	N/A	N/A	N/A	60	1 min.	X	X	1 min.	X	X	
Digital Inputs																
HWPMP-1-DPSW	Hot Water Pump -1 Differential Pressure Switch	Penn model P74FA-5 differential pressure switch	25 35 16 2.04	N/A	Note 7				10	COV	X	X	COV	X	X	
HWPMP-2-DPSW	Hot Water Pump -2 Differential Pressure Switch	Penn model P74FA-5 differential pressure switch	25 35 16 2.04	N/A	Note 7				10	COV	X	X	COV	X	X	
Virtual Points																
STHX-1-LWT-SP	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Set Point	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-PG	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Proportional Gain	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-IG	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Integral Gain	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-DG	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Derivative Gain	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-OFF	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Loop Off Value	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	Note 9
STHX-1-OAT-RSTILO-SP	Shell and Tube Heat Exchanger -1 Outdoor Air Temperature Reset Sche	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-OAT-RSTIHI-SP	Shell and Tube Heat Exchanger -1 Outdoor Air Temperature Reset Sche	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-RSTILO-SP	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Reset Schedule I	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-RSTIHI-SP	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Reset Schedule I	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-LWT-UNOCC-SP	Shell and Tube Heat Exchanger -1 Leaving Wtr. Temp. Unoccupied Set P	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	
STHX-1-CLS-SP	Shell and Tube Heat Exchanger -1 Close Set Point	N/A	25 35 00	N/A	Note 7				10	COV	X	X	COV	X	X	

Notes:

1. Samples indicates the minimum number of data samples that must be held in the local controller if it is trending the point.
2. Time indicates the required sampling time for the trending function.
3. A check in the local column indicates that the trending only needs to be running in the local controller and the most recent value can write over the last value when the trend buffer fills up.
4. A check in the archive column indicates that the trend data must be archived to the system hard disc when trend buffer fills up so that a continuous trend record is maintained.
5. Commissioning trending requirements only need to be implemented during the start-up and warranty year. After the start-up and warranty process, the control contractor should set the trending parameters to the operating requirements listed if they differ from the commissioning requirements.
6. Point numbers are based on the Owner's point naming convention which is included in the specification. Point names will be verified during the submittal process in the control system integration and coordination meeting.
7. To be determined during the Control System Integration and Coordination Meeting
8. Furnish two wells for installation adjacent to each other by the mechanical contractor. One well is for the sensor and one is for calibration purposes. See the spec and detail.
9. The design intent is that the control loop is a PI loop with derivative added only if tuning in the field indicates that it is necessary to manage the response to a step change or reduce the settling time. Coordinate with the control system designer and Owner proir to adding derviative gain, but provide the point so it is there if needed.