DUAL HEAT EXCHANGER SYS CONTROL WITH CONSTANT VOLUME PUMPS CONTROL DIAGRAM

SEQUENCE OF OPERATION

HOT WATER HEATING SYSTEM WITH DUAL HEAT EXCHANGERS AND CONSTANT VOLUME PUMPS

NOTE: ALL SETPOINTS AND TIME INTERVALS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATOR.

1. HOT WATER HEATING SYSTEM PUMPS P-01 AND P-02 ARE DEDICATED TO THEIR RESPECTIVE HX AND SHALL HAVE START/STOP CAPABILITY FROM THE DOC SYSTEM. ONE OF THE TWO HX'S WITH ITS DEDICATED PUMP SHALL BE ACTIVATED BY THE DOC TO OPERATE BASED ON OUTDOOR AIR TEMPERATURE. THE OTHER HX WITH DEDICATED PUMP WILL SERVE AS STANDBY.

2. DOC SHALL ALTERNATE THE HX AND PUMP OPERATION BASED ON MONTH. EVEN MONTHS THE EVEN NUMBERED HX WITH PUMP SHALL RUN AND ON ODD MONTHS THE ODD NUMBERED HX WITH PUMP SHALL RUN.

3. DOC SHALL MONITOR OPERATING STATUS OF EACH PUMP THROUGH CURRENT RELAY. UPON PUMP FAILURE, DOC SHALL ACTIVATE FAILURE ALARM AND AUTOMATICALLY START THE STANDBY HX AND PUMP.

4. UPON PUMP PROOF OF THE RESPECTIVE (ACTING) HX, DOC SHALL MODULATE HX 10 AND 20 CONTROL VALVES IN SEQUENCE TO MAINTAIN TERMINAL HEATING SUPPLY (THS) TEMP SETPOINT AS SENSORED BY THE HX SUPPLY TEMPERATURE SENSOR. WHEN THE OUTDOOR AIR TEMPERATURE IS 0 DEGREES F, THE SET POINT IS 180 DEGREES F AND WHEN THE OUTDOOR AIR TEMPERATURE IS 60 DEGREES F, THE SET POINT IS 120 DEGREES F.

5. WHEN CTRL PUMP P-01 AND P-02 ARE OFF, THE RESPECTIVE HX STEAM VALVES SHALL REMAIN CLOSED.

6. SAFETIES: UPON A CONTROLS FAILURE THE PUMPS WILL FAIL ON. THE STEAM CONTROL VALVES WILL FAIL CLOSED AND HARDWIRED HIGH TEMPERATURE SENSORS (TE-1 AND TE-2) WILL BE USED TO CLOSE THE STEAM VALVES WHEN 200 DEGREES F IS EXCEEDED. THERE SHALL ALSO BE A DOC POINT FOR REMOTE ALARMING AND MESSAGING LOCAL PILOT LIGHT INDICATION ON AUXILIARY PANEL.

ALARMING:

- SUPPLY WATER TEMPERATURE (101-105 DEGREES F)
- PUMP FAILURE
- HIGH TEMPERATURE LIMITS