

INPUT/OUTPUT SUMMARY TABLE - STEAM SYSTEM

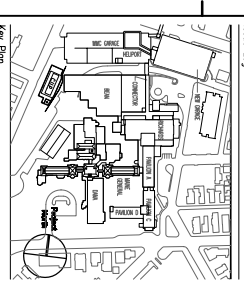
DESCRIPTION	POINT CONTROL		SIGNALS		OPERATIONS		ALARMS		FUNCTIONS	
	ANALOG	BI-MANUAL	ANALOG	BI-MANUAL	ANALOG	BI-MANUAL	ANALOG	BI-MANUAL	ANALOG	BI-MANUAL
1. VFD DRIVE STATUS										
2. DIFFERENTIAL PRESSURE										
3. BOILER MANAGEMENT GATEWAY										
4. WATER TEMPERATURE										
5. CONDENSATE WATER FLOW (GPM)										
6. STEAM PRESSURE										
7. FC-312 DATA LINK										
8. STEAM FLOW (GPM)										
9. STEAM HEADER PRESSURE										
10. FLOW SWITCH										
11. SMOKER CLOSURE										
12. CURRENT SENSOR/STATUS										
13. END SWITCH										
14. SMOKE DETECTION										
15. MODULATING ACTUATOR										
16. E/P TRANSDUCER										
17. VFD SPEED OUTPUT										
18. CONTROL RELAY										
19. SMOKE										
20. START/STOP										
21. SMOKE CHAMBER MOD.										
22. SMOKE INTERLOCK										
23. ACTUATOR										
24. MERCURY RELAY										
25. FEEDBACK SVX										
26. HIGH LIMIT										
27. LOW LIMIT										
28. RUN TIME										
29. MAINTENANCE MESSAGE										
30. SAFETY SHUTDOWN										
31. HIGH WATER ALARM										
32. SCHEDULED START/STOP										
33. TEMPERATURE SENSING RELAY										
34. OPTIMIZED START (ADAPT.)										
35. DEMAND LIMITING										
36. DUTY CYCLE										
37. VENTILATION RELAY										
38. CONDENSER COOLE (D.B.)										
39. STM. PRESS. OCC./ANALOG. RESET										
40. SMOKE										
41. REMOTE READ/PRESET										
42. TENANT OVERRIDE										
43. COOL DOWN										
44. POINT LOCKOUT										
45. TEND LOG										

HIGH PRESSURE STEAM SYSTEM CONTROL SEQUENCES

1. THE STEAM BOILERS B-1, B-2, AND B-3 SHALL BE PROVIDED WITH ALL OPERATING AND SAFETY CONTROLS AS SPECIFIED AND DESCRIBED BY THE P&ID.
2. THE STEAM BOILERS (B-1, B-2, & B-3) SHALL BE STARTED/STOPPED AND LOAD-LOAD ALTERED THROUGH THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE THE FLOW TO MAINTAIN THE BOILER WATER LEVEL. THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
3. THE STEAM BOILERS (B-1, B-2, & B-3) SHALL BE STOPPED/STARTED THROUGH THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
4. IF ANY BOILER FEED PUMP (BFP-1, BFP-2, AND BFP-3) FAILS TO START WHEN COMMANDED TO RUN WITH ITS RESPECTIVE BOILER, THEN THE STEAMER PUMP (B-1, B-2, & B-3) SHALL BE COMMANDED TO OPERATE. AN ALARM TO CORRECT TO 100 PSIG (1.0 PSI PER MINUTE (L/MIN)) PROVIDE AN INTERLOCK DURING STARTUP OPERATIONS. THE STEAM SYSTEM SHALL BE STOPPED/STARTED THROUGH THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
5. WHENEVER OTHER BOILERS B-1, B-2, OR B-3 FAIL TO OPERATE WHEN COMMANDED BY THE BOILER SYSTEM, THE ALARM SHALL BE SENT TO THE OCC/DMS SYSTEM.
6. DURING THE AUTOMATIC FEEDING OPERATIONS BY THE BOILER SYSTEM, THE OCC/DMS SHALL MONITOR THE STEAM SYSTEM OPERATING PRESSURE FROM 1.0 PSIG (0.07 BAR) TO 80 PSIG (5.5 BAR) AND 4.00 PM TO 4.00 AM. STEAM OVER A 1.0 PSI PER MINUTE (L/MIN) ALARM TO CORRECT TO 100 PSIG (1.0 PSI PER MINUTE (L/MIN)) PROVIDE AN INTERLOCK DURING STARTUP OPERATIONS. THE STEAM SYSTEM SHALL BE STOPPED/STARTED THROUGH THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
7. WHENEVER OTHER BOILERS B-1, B-2, OR B-3 FAIL TO OPERATE WHEN COMMANDED BY THE BOILER SYSTEM, THE ALARM SHALL BE SENT TO THE OCC/DMS SYSTEM.
8. THE BOILER FEED PUMP (BFP-1, BFP-2, AND BFP-3) SHALL OPERATE FROM THEIR OWN CONTROL PANEL. THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE THE FLOW TO MAINTAIN THE BOILER WATER LEVEL. THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
9. CONDENSATE PUMPS: THE DIRECT CONDENSATE PUMPS (CP-1) AND (CP-2) SHALL OPERATE FROM THEIR OWN CONTROL PANEL. THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE THE FLOW TO MAINTAIN THE BOILER WATER LEVEL. THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.
10. THE STEAM SYSTEM OPERATING PRESSURE SHALL BE MONITORED BY THE OCC/DMS SYSTEM. THE OCC/DMS SYSTEM SHALL ALSO BE SENT TO THE OCC/DMS SYSTEM. THE OCC/DMS SHALL MONITOR THE STEAM SYSTEM OPERATING PRESSURE FROM 1.0 PSIG (0.07 BAR) TO 80 PSIG (5.5 BAR) AND 4.00 PM TO 4.00 AM. STEAM OVER A 1.0 PSI PER MINUTE (L/MIN) ALARM TO CORRECT TO 100 PSIG (1.0 PSI PER MINUTE (L/MIN)) PROVIDE AN INTERLOCK DURING STARTUP OPERATIONS. THE STEAM SYSTEM SHALL BE STOPPED/STARTED THROUGH THE CITY WATER MAKE-UP CONTROL (V-2) SHALL MODULATE OPEN AND CLOSE TO PREVENT OVERFLOW OR LOW LEVEL.

NOTES: 1. ALL TEMPERATURE SENSORS, PRESSURE SENSORS, AND ALL CONTROL SETPOINTS SHALL BE ADJUSTABLE(AJ).
 2. PROVIDE E/P TRANSDUCERS FOR ALL MODULATING PNEUMATIC CONTROL VALVES.
 3. REFER TO P&ID-1 & P&ID-2 CONTROL SEQUENCE FOR STEAM PUMPDOWN SH-1, ASH-2.

ISSUE DATE: 09/24/24
 FOR PERMIT ONLY - NOT FOR CONSTRUCTION



MECHANICAL CENTRAL UTILITY PLANT STEAM SYSTEM CONTROLS

Maine Medical Center
 Central Utility Plant
 Portland, Maine

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