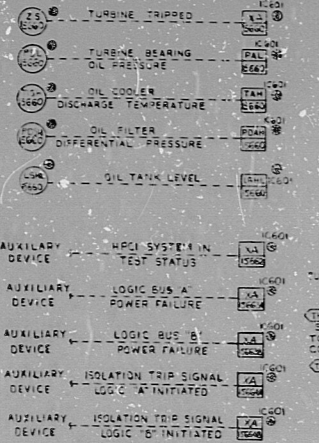


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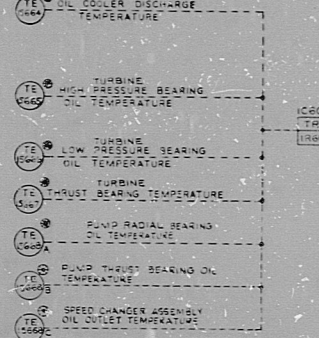
SIZE E

TURBINE SUPERVISORY INSTRUMENTATION

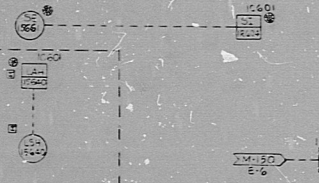
ALARMS



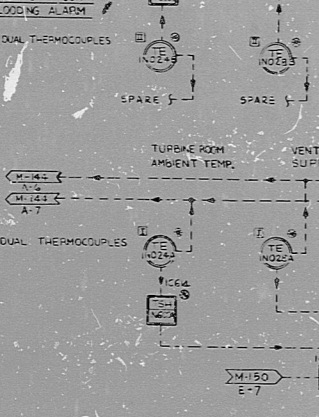
TEMPERATURE RECORDING



TURBINE SPEED



SEENOT 7



HPCI EQUIPMENT AREA LEAK DETECTION SYSTEM

(FOR DETAILED REQ. SEE REF. 16)

UNCONTROLLED DOCUMENT FOR REFERENCE ONLY

REF.	REFERENCE DRAWINGS	REV.	PL. NO.	BY NO.
1	NUCLEAR BOILER PUMP	M-141	E-106261	7/23/62
2	HPCI FUNCTIONAL CONTROL DIAGRAM	M-141	E-106261	7/23/62
3	HPCI P-215	M-141	E-106261	7/23/62
4	DEAD LEGS	M-141	E-106261	7/23/62
5	CORE SPRAY #2	M-141	E-106261	7/23/62
6	HPCI P-215	M-141	E-106261	7/23/62
7	STANDBY CONDENSATION PUMP	M-141	E-106261	7/23/62
8	LIQUID PARAMETER COLLECTION P-215	M-141	E-106261	7/23/62
9	CONDENSATE P-215	M-141	E-106261	7/23/62
10	CONDENSATE P-215 WATER STORAGE	M-141	E-106261	7/23/62
11	HPCI P-215 PUMP DIAGRAM	M-141	E-106261	7/23/62
12	HPCI P-215 PUMP DIAGRAM	M-141	E-106261	7/23/62
13	HPCI DESIGN SPECIFICATION DATA SHEET	M-141	E-106261	7/23/62
14	HPCI P-215	M-141	E-106261	7/23/62
15	NUCLEAR BOILER CLEAN UP P-215	M-141	E-106261	7/23/62
16	NUCLEAR COOLER LEAKAGE DESIGN SPEC.	M-141	E-106261	7/23/62
17	HPCI TURBINE SEAL PUMP DIAGRAM	M-141	E-106261	7/23/62
18	HPCI GOVERNOR CONTROL SYSTEM	M-141	E-106261	7/23/62
19	NUCLEAR BOILER VESSEL INSTR.	M-141	E-106261	7/23/62
20	HPCI AIR FLOW DIAGRAM	M-141	E-106261	7/23/62
21	HPCI TURBINE-PUMP	M-141	E-106261	7/23/62

NOTES

- AC POWER FOR HPCI INSTRUMENTS SHALL BE DERIVED FROM THE PLANT DC POWER SYSTEM, VIA AN INVERTER. THE DC SOURCE IS TO BE SEPARATE FROM THAT WHICH SUPPLIES THE ROCC SYSTEM.
- THE 0E MFL NUMBER FOR THIS SYSTEM IS E-41.
- THE BAROMETRIC CONDENSER AND VACUUM TANK SHALL BE LOCATED SO THAT ITS WATER LEVEL IS BELOW THE BOTTOM OF THE TURBINE EXHAUST.
- HPCI ISOLATION IS INITIATED BY ANY OF THE FOLLOWING EVENTS:
  - A. EQUIPMENT WHICH VENTILATES AN INLET & OUTLET HIGH DIFFERENTIAL TEMPERATURES.
  - B. EMERGENCY AREA COOLER INLET HIGH TEMPERATURE.
  - C. PIPE ROUTING AREA VENTILATING AIR INLET & OUTLET HIGH DIFFERENTIAL TEMPERATURE (TIME DELAY).
  - D. STEAM LINE HIGH PRESSURE DROP (STEAM LINE INLET).
  - E. HIGH TURBINE EXHAUST DIAPHRAGM PRESSURE.
  - F. HIGH FLOWING AREA HIGH TEMPERATURE (TIME DELAY).
  - G. MANUAL INITIATION OF ISOLATION FROM BUTTON.
  - H. LOW STEAM SUPPLY PRESSURE (REACTION PRESSURE).
- COMPLETE POINT IMPLEMENTATION LATER.
- MISCELLANEOUS VALVE NUMBERS USED ARE 156 FOR THRU 140 AND 156 TO THRU 150.
- ALL FLOODING LEVEL SWITCHES AND DETECTORS ARE SEPARATELY CALIBRATED.
- FOR ISOLATION, PIPING AND CAVITY DRAIN CHANGE SHALL BE LOCATED AS CLOSE AS PRACTICABLE TO THE HPCI TURBINE EXHAUST AND FLANGES IN REF. 14 SHALL BE LOCATED AS CLOSE AS PRACTICABLE TO BAROMETRIC CONDENSER EXHAUST.
- THE PIPE WORK WITH TAGGED CAPS IS TO BE CHANGED TO A SCHEDULE 40S AND AFTER PLUMBING.

PRC APERTURE CARD

REV.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED PER CHANGE LIST FOR AN INLET USER PER M-141 P-215	7/23/62		
2	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
3	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
4	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
5	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
6	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
7	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
8	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
9	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
10	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
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12	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
13	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
14	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
15	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
16	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
17	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
18	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
19	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
20	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
21	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
22	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
23	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
24	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
25	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
26	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
27	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
28	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
29	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		
30	REVISED PER CHANGE LIST AND PER M-141 P-215	7/23/62		

**PENNSYLVANIA POWER & LIGHT COMPANY**  
 ALLIANTON, PENNSYLVANIA  
 MICHIGANIA STEAM ELECTRIC STATION - UNIT 1, UNIT 2  
 BECHTEL - SAN FRANCISCO  
**P & L UNIT-1**  
**H.P.C.I. TURBINE-PUMP**  
 JOB NO. 8856 DRAWING NO. M-156 REV. 14  
 E-106261

8.5"

11"

8.5"

11"

17"

8.5"

11"

8.5"

11"

17"

30 X

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