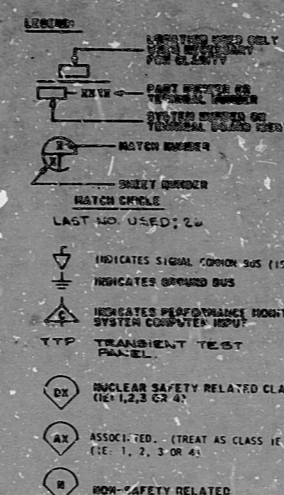


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LEGEND (CONT.)
* EXTERNAL WIRE MARK
* INTERNAL WIRE MARK
□ MCC TERMINAL (WITH PULL-OUT PROVISION)
◇ SWITCHGEAR TERMINAL
○ CONTAINMENT PENETRATION

H13-P001 ECCS BENCHBOARD
H13-P013 DIV. 2 AUX RELAY PANEL
H13-P039 DIV. 1 AUX RELAY PANEL
H13-P032 DIV. 1 LEAK DETECTION MON. PANEL
H13-P040 TRANSIENT TEST PANEL
H13-P043 DIV. 2 LEAK DETECTION MON. PANEL
H13-P004 R.V. LEVEL 4 PRESSURE INST. PANEL A
H13-P010 RHR INSTRUMENT PANEL A
H13-P021 RHR INSTRUMENT PANEL B
H13-P021 R.V. LEVEL 4 PRESSURE INST. PANEL B
H13-P025 R.V. INSTRUMENT PANEL C

NOTES CONTINUED:
31 FOR ANNUNCIATOR CIRCUITS, LINE CODES AND TERMINATIONS FOR THE ANNUNCIATOR LOGIC CABINET H13-P050 AND ANNUNCIATOR WINDOWS SEE BOP SYSTEM R61

NOTES:
1. THE OPERATING SEQUENCE AFTER LOW WATER LOSS, SIGNAL OR HIGH DRYWELL PRESSURE OR MANUAL INITIATION IS AS FOLLOWS:
CONVILDA A PLANT ON NORMAL AUXILIARY POWER
PUMP E12-C002A 5 SECONDS
PUMP E12-C002B 5 SECONDS
PUMP E12-C002C 0 SECONDS
SECTION B PLANT ON STANDBY DIESEL POWER
PUMP E12-L002A 5 SECONDS AFTER POWER AVAILABLE
PUMP E12-C002B 5 SECONDS AFTER POWER AVAILABLE
PUMP E12-C002C 0 SECONDS AFTER POWER AVAILABLE

PUMP, VALVE AND CONTROL TABULATION table with columns: REF DESIG, DEVICE, SWITCH, INDICATOR LAMPS (RED, GREEN, OTHER), MISC LOC, SH.

PUMP, VALVE AND CONTROL TABULATION table with columns: REF DESIG, DEVICE, SWITCH, INDICATOR LAMPS (RED, GREEN, OTHER), MISC LOC, SH.

PUMP, VALVE AND CONTROL TABULATION table with columns: REF DESIG, DEVICE, SWITCH, INDICATOR LAMPS (RED, GREEN, OTHER), MISC LOC, SH.

- REFERENCE DOCUMENTS:
1. B21-1010 NUCLEAR BOILER - P&ID
2. 1060224 TEST SWITCH ASSEMBLY
3. E21-1050 LOW PRESS. CORE SPRAY SYS - ELEM DIAG (E21A) B-208-060
4. E12-1010 RHR SYSTEM - P&ID
5. A22-4020 EJECT EQUIP SEPARATION FOR PROTECTION SYS
6. B21-1090 NUC STEAM SUPPLY SHUTOFF SYS - ELEM DIAG (B21A) B-208-013
7. E12-1030 RHR SYSTEM - P&ID
8. E31-1050 REACTOR CORE ISOL CLG SYS - ELEM DIAG (E31A) B-208-011
9. 1002770 NUCLEAR POWER PLANT PROTECTION SYSTEMS
10. A22-4010 SPECIAL WIRE & CABLE WIRE
11. B21-1060 AUTO DEPRESSURIZATION SYS - ELEM DIAG (B21C) B-208-011
12. C11-1050 ROD CONTROL AND INCOR SYSTEM - ELEM DIAG (C11A) B-208-020
13. E31-1050 LEAK DETECTION SYSTEM - ELEM DIAG (E31A) B-208-070
14. C31-1050 REMOTE SHUTDOWN SYSTEM - ELEM DIAG (C31A) B-208-039
15. B21-1030 NUCLEAR BOILER PRES INSTN SYS - ELEM DIAG (B21A) B-208-010
16. C04-4030 DISPLAY CONTROL SYSTEM S/D LISTING
17. H22-4050 LOCAL INSTRUMENT PANELS PERFORMANCE MONITORING SYSTEM
18. C91-4030 MOV & MCC STANDARDS
19. E21-1050 R.V. LEVEL 4 PRESSURE MONITOR
20. E21-1050 HIGH PRESS. CORE SPRAY SYS - ELEM DIAG (E21A)
21. E21-1020 REACTOR PROTECTION SYS - ELEM DIAG (E21A)
22. C11-1050 PNEUMATIC CONTROL SYS - ELEM DIAG (C11A)
23. C31-1050 DISPLAY CONTROL SYSTEM S/D LISTING
24. E21-1050 REMOTE SHUTDOWN SYSTEM - ELEM DIAG (E21A)
25. E21-1050 REMOTE SHUTDOWN SYSTEM - ELEM DIAG (E21A)

PGCS TERMINATION CABINETS
NOTES:
1. RED ON FOR PUMP RUNNING
GREEN ON FOR PUMP STOPPED
PUMP MOTORS SHALL BE PROTECTED WITH OVERLOAD TAPPS. OVERLOAD RELAYS TO BE APPLIED SO AS TO MAINTAIN POWER ON MOTOR AS LONG AS POSSIBLE WITHOUT IMMEDIATE DAMAGE TO MOTORS OR HARM TO POWER SYSTEM.
2. VALVE CIRCUITS ARE BASED ON LIMITSWITCH TYPE SHB CONTROLS.
3. ACTIVITY POWER FOR VALVES IN EACH SYSTEM SHALL ORIGINATE FROM THE SAME BUS SUPPLYING PUMP POWER.
4. RED ON FOR OPEN POSITION
RED & GREEN ON FOR INTERMEDIATE POSITION
GREEN ON FOR CLOSED POSITION
5. VALVE CIRCUITS ARE BASED ON LIMITSWITCH TYPE SHB CONTROLS.
6. ACTIVITY POWER FOR VALVES IN EACH SYSTEM SHALL ORIGINATE FROM THE SAME BUS SUPPLYING PUMP POWER.
7. PUMPS
A) RED ON FOR PUMP RUNNING
GREEN ON FOR PUMP STOPPED
B) PUMP MOTORS SHALL BE PROTECTED WITH OVERLOAD TAPPS. OVERLOAD RELAYS TO BE APPLIED SO AS TO MAINTAIN POWER ON MOTOR AS LONG AS POSSIBLE WITHOUT IMMEDIATE DAMAGE TO MOTORS OR HARM TO POWER SYSTEM.
8. INC. LIGHTS ARE SUPPLIED WITH PANEL. SEE PD164C 5859 AND HOLDER 2048 6586
9. SEE FIG. 16 SH 6 FOR POWER DISTRIBUTION
10. REMOVED
11. PINS 1, 2, 3, 6 & H ARE JUMPERED AT TEST PLUG JRY 2.
12. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAGRAM ARE PREFIXED WITH E12A:
REFERENCE DESIGNATION NAME REFERENCE DESIGNATION NAME
FXK FUSE PSXX POWER SUPPLY
JXX JUNCTION BOX
SXX SWITCH DAKXX DIODE
JXX JACK JXX JUNCTION BOX
SRU SIGNAL RESISTOR W/ TAP CRXX CRACK
RXX RESISTOR
DLXX DIODE
IND LIGHT IND LIGHT
13. INTRA-PANEL PROCESS INSTRUMENTATION ON (4 TO 20MA & 1 TO 5V) SIGNAL LEADS SHALL BE BUNDLED AND ROUTED SEPARATELY FROM AC AND DC POWER WIRING.
14. SEE FIG. 1, SH 5 FOR POWER DISTRIBUTION.
15. SEE FIG. 2, SH 5 FOR POWER DISTRIBUTION.
16. SEE FIG. 3, SH 5 FOR POWER DISTRIBUTION.
17. SEE FIG. 4, SH 5 FOR POWER DISTRIBUTION.
18. SEE FIG. 5, SH 5 FOR POWER DISTRIBUTION.
19. SEE FIG. 6, SH 6 FOR POWER DISTRIBUTION.
20. LAMPS TO BE LOCATED BELOW RHR ANNUNCIATOR.
21. LOADS SHOWN ON POWER DISTRIBUTION CIRCUITS ARE ESTIMATED AND NOT MEASURED QUANTITIES. AC LOADS BASED ON 60HZ.
22. ALPHABETICAL WIREMARKS ARE PREFIXED BY SUBSYSTEM NO. SHEET NO. AND LINE NO. (EX. E12A0421A)
23. FOR LIGHTS SEE DNG 851603. THESE LIGHTS ARE SUPPLIED WITH INTEGRAL TEST SWITCH. (120 VOLTS NEAR LAMPS)
24. POTENTIAL WIREMARKS ARE PREFIXED BY SUBSYSTEM NO. AND SHEET NO. (EX. E12A0421A).
25. SEE INDIVIDUAL VALVE CIRCUITS (BACK SHTS) FOR APPLICATION TO REF. 19.
26. THESE ANN. TO BE OPEN TO ALARM TYPE.
27. SEE BOP R61 ANN SYS FOR LINE CODES.
28. SEE REF. 14 FOR REMOTE SHUTDOWN REQUIREMENTS.
29. INDIVIDUAL GROUND WIRES TO BE RUN FROM TERMINALS 3 AND 4 TO COMMON BUS BAR. TERMINALS 1, 2, 5, 6 & 7 FOR EACH TERMINAL BOARD ARE PROVIDED.
30. SEE FIG. 15, SH 6 FOR POWER DISTRIBUTION.
31. DEVICE DESIGNATIONS ARE PREFIXED BY UNIT & SYSTEM NO. (EX. E12A0421A) EXCEPT AS NOTED (SEE NOTE 2).
32. SEE REF. 10 SH 10 VALVE VOLTAGE CIRCUIT.
33. SEE REF. 10 SH 10 VALVE VOLTAGE CIRCUIT.
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100. SEE REF. 10 SH 10 VALVE VOLTAGE CIRCUIT.

PRO APERTURE CARD

NUCLEAR SAFETY RELATED
THE CLEVELAND ELECTRIC ILLUMINATING CO.

Revision table with columns: REV, MADE, CHKD, APPROVALS, DATE, and drawing information: 04454E-000, 0414940 B-208-055, E12, A01, D.

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