AREA MONITORED	TABLE NO 1 — AMBIENT TEMPERATURE — TE	RECORDED PT		ALARM GROUP	TABLE NO 2 — DIFFERENTIAL TEMPERATURE — TE INLET	TE OUTLET	RECORDED PT		ALARM GROUP
STEAM PIPE TUNNEL	N031A	R608	1	1	N029A	N030A	R611	1	1
DRYWELL AMBIENT	N017A	R608	2	2	----	----	----	---	---
DRYWELL AMBIENT	N017B	R608	3	2	----	----	----	---	---
DRYWELL AMBIENT	N017C	R608	4	2	----	----	----	---	---
DRYWELL AMBIENT	N017D	R608	5	2	----	----	----	---	---
RHR EQUIP AREA 1	N018A	R608	6	3	N027A	N023A	R611	2	3
RHR EQUIP AREA 2	N001A	R608	7	3	N002A	N003A	R611	3	3
	SPARE	R608	8	---	---	---	---	---	---
RCIC EQUIP AREA	N004A	R608	9	4	N005A	N006A	R611	4	4
RWCU HX ROOM	N034A	R608	10	5	N035A	N036A	R611	5	3
RWCU PUMP ROOM 1	N037A	R608	11	5	N038A	N039A	R611	6	2
RWCU PUMP ROOM 2	N040A	R608	12	5	N041A	N042A	R611	7	2
RWCU VALVE NEST RM	N043A	R608	13	5	N044A	N045A	R611	8	2
RWCU DEMIN ROOM 1	N046A	R608	14	5	N047A	N048A	R611	9	2
RWCU DEMIN ROOM 2	N049A	R608	15	5	N050A	N051A	R611	10	2
RWCU DEMIN VLV RM	N052A	R608	16	5	N053A	N054A	R611	11	2
RWCU DEMIN REC TANK	N055A	R608	17	5	N056A	N057A	R611	12	2
GUARD PIPE MAIN STEAM LINE "A"	N015A	R608	18	2					
GUARD PIPE MAIN STEAM LINE "B"	N015B	R608	19	2					
GUARD PIPE MAIN STEAM LINE "C"	N015C	R608	20	2					
GUARD PIPE MAIN STEAM LINE "D"	N015D	R608	21	2					
----------	SPARE	R608	22	---					
----------	SPARE	R608	23	---					
----------	SPARE	R608	24	---					

GE TYPE CR2940 SW PUSH BUTTON MOMENTARY

SWITCH DESIG	CONT	SH NO.
S7 (RESET)	1 - 2	9
	3 - 4	SP
	5 - 6	9
	7 - 8	SP
S8 (RESET)	1 - 2	9
	3 - 4	SP
	5 - 6	9
	7 - 8	SP

SWITCH DESIG	CONT	SH NO.
S10 (RESET)	1 - 2	9
	3 - 4	SP
	5 - 6	9
	7 - 8	SP

GE TYPE CR2940 SW PUSH BUTTON MOMENTARY

SWITCH DESIG	CONT	SH NO.
S13C TEST (35)	1-2	5
	3-4	SP
S13D TEST (35)	1-2	6
	3-4	SP

NORMAL — BYPASS

GE TYPE CR2940 SW MAINTAINED CONTACTS KEY REMOVABLE IN NORMAL POSITION

NORMAL / BYPASS

SWITCH DESIG	CONT	SH NO.
S1A	1 - 2	SP
	3 - 4	5
	5 - 6	SP
	7 - 8	15
S2A	1 - 2	5
	3 - 4	SP
	5 - 6	SP
	7 - 8	15
S4A	1-2	SP
	3-4	5
	5-6	5
	7-8	15

SWITCH DESIG	CONT	SH NO.
S1B	1 - 2	SP
	3 - 4	6
	5 - 6	SP
	7 - 8	15
S2B	1 - 2	6
	3 - 4	SP
	5 - 6	SP
	7 - 8	15
S4B	1-2	SP
	3-4	6
	5-6	6
	7-8	15

LOGIC PWR MON TEST — NORMAL — RCIC PWR MON TEST

GE TYPE CR2940 SPRING RETURN TO NORMAL

LOGIC PWR MON TEST / NORMAL / RCIC PWR MON TEST

SWITCH DESIG	CONT	SH NO.
S13A	1 - 2	SP
	3 - 4	5
	5 - 6	2
	7 - 8	SP

SWITCH DESIG	CONT	SH NO.
S13B	1 - 2	SP
	3 - 4	6
	5 - 6	3
	7 - 8	SP

LEGEND:

- LOCATION USED ONLY WHEN NECESSARY FOR CLARITY
- XXXX — PART OF NUMBER OR TERMINAL NUMBER
- SYSTEM NUMBER OR TERMINAL BOARD IDENT
- MATCH NUMBER
- SHEET NUMBER
- MATCH CIRCLE (LAST NO. USED: 34)
- XXX INDICATES PGCC LINE CODES LAST LINE CODE USED 228
- INDICATES PANEL POWER GROUND BUS
- INDICATES SIGNAL COMMON ISOLATION BUS
- (C) INDICATES PERFORMANCE MONITORING SYSTEM COMPUTER INPUT
- (DX) CLASS IE, X = DIV 1, 2, 3 OR 4 NUCLEAR SAFETY RELATED
- (AX) ASSOCIATED TO CLASS IE, X = DIV 1, 2, 3 OR 4
- (N) NON-CLASS IE

REFERENCE DOCUMENTS:

1. E12-1050 RESIDUAL HEAT REMOVAL SYS ELEM DIAG (E12A).
2. G41-1050 FUEL POOL CLG & CLNUP SYS ELEM DIAG (G41A).
3. E51-1050 REAC CORE ISLN CLG SYSTEM ELEM DIAG (E51A).
4. A62-4010 SPECIAL WIRE & CABLE SPECS.
5. E31-1010 LEAK DETECTION SYSTEM IED.
6. B21-1050 NUC ST SUPPLY SHUTOFF SYS ELEM DIAG (B21H).
7. BY AE RADWASTE SUMP SYSTEM ELEM DIAG.
8. G33-1050 REACTOR WTR CLEAN-UP SYS ELEM DIAG (G33A).
9. [illegible]-4030 PROCESS COMPUTER-I/O LISTING.
10. A62-4050 ELECTRICAL SEPARATION SPEC.
11. C51-1070 START-UP RANGE NEUTRON MON SYS ELEM DIAG. (C51A)
13. B33-1030 REACTOR RECIRC SYS. ELEM. DIAG. (B33A)
14. C41-1050 STANDBY LIQUID CONTROL SYS. ELEM. DIAG. (C41A)
15. 163C1406 GAS SAMPLING CONTROL SCHEM. DIAG.
16. 195B9577 AIR PARTICULATE SAMPLE PANEL SCHEM. DIAG.
17. C11-1060 CONTROL ROD DRIVE HYD SYS (ELEM DIAG)(C11A)
18. C61-1050 REMOTE SHUTDOWN SYS (ELEM DIAG) (C61A)
19. H13-2010 CONTROL ROOM — INTERFACE CONTROL

NOTES:

1. SHIELDED TWISTED PAIR 16 AWG COPPER CONSTANTAN EXTENSION WIRE TYPE TX. TOTAL COVERAGE SHIELD TO BE TIN-COATED COPPER, 36 AWG, 90 MIN. OPTICAL COVERAGE WITH OVERALL TEFZEL OR EQUIVALENT INSULATION MATCHED AND (16) CALIBRATED TO ANSI STANDARD MC96.1 1975.
2. ROUTE ALL THERMOCOUPLES SEPARATELY FROM POWER CABLES.
3. DUAL TYPE THERMOCOUPLE, UNGROUNDED.
4. CONNECT THERMOCOUPLE OR WIRE DIRECT TO INSTRUMENT.
5. INTRA-PANEL PROCESS INSTRUMENTATION (4-20MA) SIGNAL LEADS SHALL BE BUNDLED AND ROUTED SEPARATELY FROM AC & DC POWER WIRING.
6. THERMOCOUPLE AND GROUND WIRING NOT RUNNING DIRECT TO AN INSTRUMENT TO BE CONNECTED TO TERMINAL BOARD.
7. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON DIAGRAM ARE PREFIXED WITH 1E31A-

REF DESIG	NAME
SRUX	SIGNAL RESISTOR UNIT
RXX	RESISTOR
FXX	FUSE
KXX	RELAY
SXX	SWITCH
ZXX	FISSION PRODUCT MONITOR CASE
JBXX	JUNCTION BOX
ATXX	ISOLATOR
XXX	LINE CODE
MX	METER

8. SEE FIG. 1, SH. 2 FOR POWER DISTRIBUTION.
9. SEE FIG. 2, SH. 3 FOR POWER DISTRIBUTION.
10. ALL RECORDER & TEMPERATURE ELEMENTS ARE PREFIXED WITH E31-.
11. MODULES PLUG INTO INSTRUMENT POWER CONNECTION UNIT NUMBER 1.
12. SEE FIG 4, SH. 3 FOR POWER DISTRIBUTION.
13. SEE FIG. 5, SH. 3 FOR POWER DISTRIBUTION.
14. MODULES PLUG INTO INSTRUMENT POWER CONNECTION UNIT NUMBER 2.
15. SEE FIG. 3, SH. 2 FOR POWER DISTRIBUTION.
16. CHROMEL - CONSTANTAN THERMOCOUPLES AND EXTENTION WIRE TYPE EX SHALL BE USED WHEN SPECIFIED BY CUSTOMERS.
17. REMOVED.
18. REMOVED.
19. JB SUPPLIED FOR POWER GENERATION CONTROL COMPLEX (PGCC) PLANTS ONLY. SEE H13-2010 CONTROL ROOM INTERFACE CONTROL DOCUMENT (ICD) FOR JUNCTION BOX LOCATION.
20. TYPICAL CONTACTS REQUIRED FROM THE AE SUPPLIED RADWASTE SUMP SYS. RADWASTE SUMP SYSTEMS MAY DIFFER IN NOMENCLATURE AND IDENT BUT MUST SUPPLY THE SAME FUNCTION.
21. ANNUNCIATOR TO ALARM ON OPEN CONTACT.
22. THIS POWER MONITOR AND TEST FUNCTION MUST BE WIRED FURTHEST FROM THIS POWER SOURCE IN ORDER TO FULFILL ITS MONITORING FUNCTION.
23. THESE SIGNAL LINES MAY BE ROUTED IN THE SAME CONDUIT.
24. FOR EQUIPMENT SUPPLY REFER TO SYSTEM MPL.
25. EQUIPMENT INTERFACE VALID FOR H13-P632 MOUNTING ONLY. PER CUSTOMER REQUEST, THIS EQUIPMENT WILL BE PART OF GROUP SHIPMENT E31-5110 FOR CUSTOMER PANEL MOUNTING.
26. FOR NUCLENET CUSTOMERS ONLY.
27. REMOVED
28. POWER TO BE DISCONNECTED ON LOCAL SIGNAL.
29. REMOVED
30. INTERFACE VALID FOR GE SUPPLIED SYSTEMS ONLY.
31. FOR RELAY PLANTS ONLY.
32. FOR MORE SENSITIVE SUMP MONITOR SUBSYSTEM CUSTOMERS ONLY. REFER TO SYSTEM MPL.
33. REMOVED
34. FOR FISSION PRODUCT RADIATION MONITORING SUBSYSTEM CUSTOMERS ONLY. REFER TO SYSTEM MPL.
35. EQUIPMENT SUPPLIED AS PART OF H13-P671 OR H13-P672
36. ALPHABETICAL WIRE MARKS ARE PREFIXED BY: SUB SYSTEM, SHEET & LINE NO (EX E31A0601A)
37. POTENTIAL WIRE MARKS ARE PREFIXED BY: SUB SYSTEM NO., & LINE NO (EX E31A02X1)
38. FOR GRAPHIC STANDARDS REFER TO DWG B-208-001
39. FOR ANNUNCIATOR CIRCUITS, LINE CODES AND TERMINATIONS FOR THE ANNUNCIATOR LOGIC CABINET 1H13-P630 AND ANNUNCIATOR WINDOWS SEE BOP SYSTEM R61

LINE CODES: NONE THIS SHEET

PRC APERTURE CARD

GENERAL ELECTRIC — ELEM DIAG — LEAK DETECTION SYSTEM — FIRST MADE FOR STANDARD PLANT IBNSO8B01 — 851E602CA SH.1 REV5

REV	MADE	CHKD	APPROVALS		DATE	DESCRIPTION
B	YZ	TAM	DEG	RAM	3/19/82	REVISED AS PER GE DWG REV5
A	YZ	RMJ	DEG	RAM	10-1-80	ADDED NOTE 39

DATE	RELEASED FOR	ENGR.
3/6/78	CONSTRUCTION	JRS
	PRELIMINARY	

GILBERT ASSOCIATES, INC. ENGINEERS AND CONSULTANTS — READING PA

WORK ORDER	MADE	CHKD.	DR. APP.	ENG. APR.	DATE
044549-000	JGS	RAM	DEG	JRS	3/6/78

THE CLEVELAND ELECTRIC ILLUMINATING CO.

PERRY NUCLEAR POWER PLANT — UNIT 1

ELECTRICAL-ELEMENTARY DIAGRAM

LEAK DETECTION SYSTEM
NOTES, REFERENCES,
SWITCH DEVELOPMENTS, TABULATIONS

DRAWING NUMBER			SYSTEM	SH. NO.	REV.
04	4549	B-208-070	E31	A01	B

ELEM DIAG 1E31A NOTES REFS SW DEVL

RIDS

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