CRD TEMPERATURE INPUT (SEE SHT 2) NUMBERS FOR TEMP RECORDER C12 ROTS

59		2-21	3-15	4-9	5-2	5-18	6-12	7-6	
55		2-8	2-22	3-16	4-10	5-3	5-19	6-13	7-8	8-1	
51		1-18	2-9	3-1	3-17	4-11	5-4	5-20	6-14	7-9	8-2	8-15	
47		1-9	1-19	2-10	3-2	3-18	4-12	5-6	5-21	6-15	7-10	8-3	8-16	9-5	
43		1-2	1-10	1-20	2-11	3-4	3-19	4-13	5-7	5-22	6-16	7-11	8-4	8-17	9-6	9-15	
39		1-3	1-11	1-21	2-12	3-5	3-20	4-14	5-8	6-1	6-17	7-12	8-5	8-18	9-7	9-16	
35		1-4	1-12	1-22	2-13	3-6	3-21	4-15	5-9	6-2	6-18	7-13	8-6	8-19	9-8	9-17	
31		1-5	1-13	2-1	2-14	3-7	3-22	4-16	5-10	6-3	6-19	7-14	8-7	8-20	9-10	9-18	
27		1-6	1-14	2-3	2-15	3-9	4-1	4-17	5-11	6-4	6-20	7-15	8-9	8-21	9-11	9-19	
23		1-7	1-15	2-4	2-16	3-9	4-2	4-18	5-12	6-5	6-21	7-16	8-10	9-1	9-12	9-20	
19		1-8	1-16	2-5	2-17	3-10	4-3	4-19	5-13	6-7	7-1	7-17	8-11	9-2	9-13	9-21	
15		1-17	2-6	2-18	3-11	4-5	4-20	5-14	6-8	7-2	7-18	8-12	9-3	9-14			
11			2-7	2-19	3-12	4-6	4-21	5-15	6-9	7-3	7-19	8-13	9-4				
07			2-20	3-13	4-7	4-22	5-16	6-10	7-4	7-20	8-14						
03				3-14	4-8	5-1	5-17	6-11	7-5	7-21							
		02	06	10	14	18	22	26	30	34	38	42	46	50	54	58	

RECORDER INPUT BANK NO.	INPUT NUMBERS INCLUDED
1	1-2 THRU 1-22
2	2-1 & 2-3 THRU 2-22
3	3-1, 3-2 & 3-4 THRU 3-22
4	4-1, 4-2, 4-3 & 4-5 THRU 4-22
5	5-1 THRU 5-4 & 5-6 THRU 5-22
6	6-1 THRU 6-5 & 6-7 THRU 6-21
7	7-1 THRU 7-6 & 7-8 THRU 7-21
8	8-1 THRU 8-7 & 8-9 THRU 8-21
9	9-1 THRU 9-8 & 9-10 THRU 9-21

SYMBOLS DEFINITIONS

INVERTER = [a] → [Y = $\bar{a}$] = [Y=NOT a]

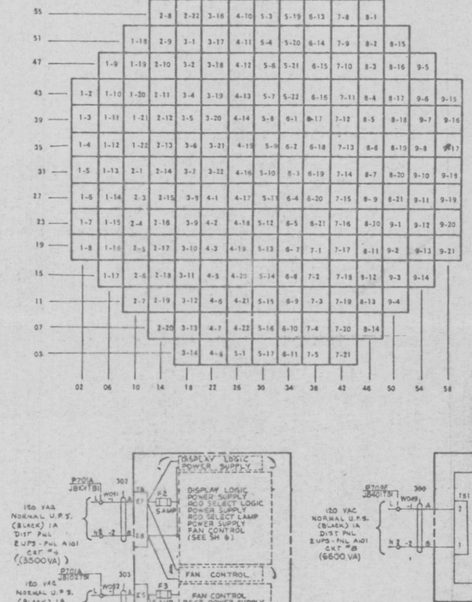
AND GATE = [a, b] → [Y = a · b] = [Y = a AND b]

OR GATE = [a, b] → [Y = a + b] = [Y = a OR b]

NAND GATE = [a, b] → [Y = $\overline{a \cdot b}$] = [Y = $\bar{a} + \bar{b}$] = [Y=NOT a OR NOT b]

NOR GATE = [a, b] → [Y = $\overline{a + b}$] = [Y = $\bar{a} \cdot \bar{b}$] = [Y=NOT a AND NOT b]

EXCLUSIVE OR GATE = [a, b] → [Y = $a \cdot \bar{b} + \bar{a} \cdot b$] = [Y=a AND NOT b OR a AND NOT a]



LEGEND:
MATCH NUMBER
ZONE
SHEET NUMBER
MATCH CIRCLE (LAST MATCH NUMBER, AU)
XXX INDICATES PUCC LINE CODE

GENERAL ELECTRIC 791E406TY

TITLE ELEM DIAG
REACTOR MANUAL CONTROL SYSTEM

FCF, 23SR239AF 01 (C12-1050)

OVERALL REVISION 7

SUMMARY SHEET	REV
1	7
2	7
3	4
4	1
5	7
6	7
7	1
8	1
9	7
10	5
11	5
12	1
13	7
14	7
15	1
16	1
17	1
18	1
19	5
20	5
21	1

INDEX

SH NO.	DESCRIPTION
1	CRD TEMP CHART, SYMBOLS, NOTES & REF DWGS, POWER DISTRIBUTION
2	CABLE BLOCK DIAGRAM
3	TABULATION FOR CABLE BLOCK DIAGRAM
4	SYSTEM BLOCK DIAGRAM
5	POWER DISTRIBUTION
6	POWER DISTRIBUTION
7	SYSTEM TIMING DIAGRAM
8	SYSTEM VARIABLES AND DEFINITIONS
9	SYSTEM INPUTS (ROD SELECT)
10	ROD SELECT MODULE AND MTR CARD 1
11	ROD SELECT MODULE AND MTR CARD 2
12	MASTER CLOCK CIRCUIT
13	INPUT ISOLATOR 1
14	INPUT ISOLATOR 2
15	ACTIVITY CONTROL CARD 1
16	ACTIVITY CONTROL CARD 2
17	ROD MOTION TIMER FOR ACTIVITY CONTROL 1 & 2
18	ANALYZER CARD
19	BRANCH JUNCTION MODULE (LEFT)
20	BRANCH JUNCTION MODULE (RIGHT)
21	HYDRAULIC CONTROL UNIT INTERCONNECTION, CORE PATTERN
22	TRANSPONDER CARD
23	ANALYZER CARD
24	OUTPUT ISOLATOR
25	RWM OPERATOR PANEL
26	OUTPUT TO COMPUTER, ALARMS AND INDICATORS
27	RSCS, RIPS & SCRAM TIMING CONNECTIONS
28	FAULT MAP CARD
29	DISPLAY MEMORY MODULE
30	DISPLAY MEMORY MODULE
31	DISPLAY MEMORY CARDS
32	ROD DATA MEMORY CARD & FAN CONTROL CIRCUIT FOR CORE DISPLAY
33	SELF-TEST CIRCUIT
34	RSCS BLOCK DIAGRAM AND % POWER INPUTS

SH NO.	REV
22	1
23	1
24	7
25	6
26	7
27	8
28	1
29	1
30	1
31	8
32	7
33	1
34	5

NOTES:

1. LOCAL NOTES ARE INDICATED BY A NUMBER ENCLOSED IN A HEXAGON AND APPLY ONLY ON THE SHEET WHERE SHOWN.
2. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAGRAM ARE PREFIXED WITH C12A-.

REFERENCE DESIGNATIONS	NAME
FXX	FUSE
KXX	RELAY
SXX	SWITCH & BREAKER
TXX	TRANSFORMER
ZXX	SUB-ASSEMBLY
PSXX	POWER SUPPLY
JXX	JACK
PXX	PLUG
XXX	LINE CODE (SEE LEGEND)
JBXX	JUNCTION BOX
WXXX	CABLE

3. UNLESS OTHERWISE SHOWN, PANEL NO'S. ARE PREFIXED WITH H13-.
4. CONNECTIONS BETWEEN COMPONENTS ARE ENCLOSED IN METALLIC CONDUIT.
5. ALARMS TO BE RETRANSMITTED TO PLANT COMPUTER PER REFERENCE 23.

REFERENCE DOCUMENTS:

1.	C12-1050	CRD HYDRAULIC SYS PCD
2.	C12-1010	CRD HYDRAULIC SYS P&ID
3.	11C4739	POSITION INDICATOR PROBE ELEM DIAG
4.	731E157	SERVICE PLATFORM CONTROL SYS
5.	765E098	REFUELING PLATFORM
6.	C91-6050	PROCESS COMPUTER I/O LIST
7.	C51-1080	POWER RANGE NEUT MON SYS ELEM DIAG (C51B)
8.	C51-1070	START-UP RANGE NEUT MON SYS ELEM DIAG (C51A)
9.	C33-1050	FEEDWATER CONTROL SYS ELEM DIAG (C33A)
10.	C72-1050	REACTOR PROTECTION SYS ELEM DIAG (C72A)
11.	698E196AA	ROD DRIVE CONTROL CABINET ELEM DIAG
12.	828E426AA	ROD POSITION INFORMATION CABINET SCHEMATIC DIAG
13.	826E230AA	ROD SELECT MODULE SCHEMATIC DIAG
14.	826E203AA	ROD AND DETECTOR DISPLAY SCHEMATIC DIAG
15.	807E580Z	RWM OPERATOR PANEL SCHEMATIC DIAG
16.	183C1218AA	HCU BRANCH JUNCTION MODULE SCHEMATIC DIAG
17.	807E122AA	TRANSPONDER SCHEMATIC DIAG
18.	C12-1080	CRD HYDR SYS ELEM DIAG (C12B)
19.	M13-1060	PUCC CONNECTION DRAWING LIST
20.	M13-1040	POWER & UTILITY DISTR INTERCONNECTION ELEM DIAG
21.	846E342	ROD SEQUENCE CONTROL SYS PAGE SCHEMATIC DIAG
22.	164C8980	DISPLAY PANEL (RSCS) SCHEMATIC DIAG
23.	S & W LOOP DIAG. 12 AG-L COMPUTER E/O.	

LINE CODES:
57,300-305 THIS SHEET
LAST LINE CODE: 450

PRC APERTURE CARD

D

THE 1405 MAY 25 1982

STONE & WEBSTER ENGINEERING CORPORATION
NINE MILE POINT NUCLEAR STATION - UNIT 2
NIAGARA MOHAWK POWER CORPORATION
J.O. 12177

MANUFACTURER'S DRAWING DATA FORM

✓	INSTRUCTIONS TO SUPPLIER (E2)	
✓	APPROVED	AS DEFINED IN SPECIFICATION
	APPROVED AS REVISED	
	RELEASED FOR FABRICATION	
	RELEASED FOR MATERIAL PURCHASE	
SUPPLIER TO RESUBMIT	QNTY	REVISED PRINTS
		REVISED MICROFILM APERTURE CARDS
		FOR REVIEW
		FOR RECORD
		NONE REQUIRED

NOTES:

NAME
RESP. ENG. E. EPSTEIN (E1)
RESP. DES. ENG. F. Roddy (E1)

✓	INSTRUCTIONS TO DESIGN (E1)	
	I-O	INFORMATION ONLY
	P-L	PRELIMINARY LAYOUT
	P-S	PRODUCTION STUDIES
✓	R&C	REVIEW AND COMMENT
	F-D	FINAL DETAILS
	NEW	NEW
✓	REV.	REVISED

DATE TO DESIGN (C) 7-21-82
REQUIRED RETURN DATE (E1) 8-11-82

(E1) ✓ FOR INFORMATION ONLY — RETURN TO SUPPLIER NOT REQUIRED

INSTRUCTIONS TO DESIGNER (E1): I-O P-L P-S R&C F-D NEW (REV)

DESIGN ENGINEER'S DATE STAMP (E2) OUT: NOTED JUL 23 1982

INITIALS OF SELECTED REVIEWERS NR

RESPONSIBLE ENGINEER'S DATE STAMP (E2) NOTED JUL 23 1982

DESIGN ENGINEER'S DATE STAMP (E) IN: NOTED JUL 23 1982

DESIGN GROUP ROUTING (D)

ROUTE ✓		REQUIRED PRINT	REQUIRED MAC	RVW *
	ARCHITECTURE			
	CIVIL			
	CONCRETE			
	STEEL		\	
	BUILDING SERVICE			
	INSTRUMENT			
1	MECHANICAL NOTED JUL 22 1982			F. J. SMITH
	PIPE SUPPORT			
	STRESS			
	MACHINE DESIGN/VESSEL			
	ELECTRICAL			
	LIGHTING NOTED JUL 23 1982			
2	MODEL SHOP (5 BLUE)			
	EXTENSION OFFICE			
	CONTROL			

SUPERSEDES S&W FILE NO. (E1) (25-34) (35-36)
3 20 01 07 2E 11 01 01 01 GIF
REMARKS (C) (LIMIT TO 62 CHARACTERS & BLANKS) (53-74)
5/25/82 T-1405

2 S&W EQUIP. I.D. CODE (E1) (25-30): 2RMCE
AREA DESIGNATION CODES (E1) (75-80): 30/1A
MFR'S. DWG. NO. (C) (LIMIT TO 24 CHARACTERS & BLANKS) (37-60): 791E406TY Rev. 7
MFR'S. NAME (C) (LIMIT TO 20 CHARACTERS & BLANKS) (61-80): G. E.

1 DATE REC'D (C): MONTH 07 DAY 21 (19) (25-30); DWG TYPE (E1): 2; MAX DAYS IN DESIGN (E1): 611 (32-33)
FUNCTIONAL TITLE (E1) (LIMIT TO 44 CHARACTERS & BLANKS) (37-80): ELEM. DIAG. SH. 1 REACTOR MAN. CONTROL SYS.

OUTPUT S&W FILE NO. (E1) (11-20): 20 01 07 2E 11 01 01 01 GIF (21-24)
JOB ORDER NO. 12177 00 (14-19)

(C) PROJECT CLERK
(D) RESP. DESIGN ENGINEER
(E1) RESP. ENGINEER-ON DWG RECEIPT
(E2) RESP. ENGINEER-AFTER DWG REVIEW
MAC - MICROFILM APERTURE CARD
* RVW-REVIEWER INITIALS

(M) ATTACH TO MFR'S. DRAWING