S-15304

MODE F (SEE NOTE 2) — RX PRESS 0 PSIG

POSITION-○	16	38	39	$40_{A\&B}$	$41_{A\&B}$	$5_{A\&B}$	$6_{A\&B}$	$7_{A\&B}$	$17_{A\&B}$	$18_{A\&B}$	$8_{A\&B}$	$9_{A\&B}$	$10_{A\&B}$	11_A	11_B	$12_{A\&B}$	$13_{A\&B}$	$14_{A\&B}$	$15_{A\&B}$	16		$24_{A\&B}$	$25_{A\&B}$	
FLOW-GPM	—	15,400	15,400	7,700	←														→ 7,700	—		8,000	8,000	
PRESS-PSIA	14.7						X	X	X	X	X	X	X	X	X	X	X	X	X	14.7		X	X	
TEMP F	—	125	←						→ 125	117	←								→ 117	—		85	92.7	
MAX PRESS DROP-FEET	|←					•TDH=420•			•ΔP=24.2•											→|		•ΔP=23J•		

DUTY PER HX 30.8 × 10^6 BTU/HR (2 HX OPERATING)

MODE G (SEE NOTE 2 AND 13) — RX PRESS 0 PSID

POSITION-○	1	2_A	3_A	4_A	5_A	6_A	7_A	8_A	9_A	10_A	11_A	12_A	13_A	14_A	15_A	16
FLOW-GPM	—	10,400	←				→	10,400	←						→ 10,400	—
PRESS-PSIA	14.7					X	X	X	X	X	X	X	X	X	X	14.7
TEMP F	—	130	←												→ 130	—
MAX PRESS DROP-FEET	|←				•TDH=315•											→|

MODE H

POSITION-○	1	2_A	3_A	4_A	5_A	6_A	7_A	8_A	9_A	10_A	11_A	12_A	22_A	35_A	26_A	1
FLOW-GPM	—	9,600	←			→	9,600	←						→	9,600	—
PRESS-PSIA	14.7	X	X	X	X	X	X	X	X	X	X					14.7
TEMP F	—	AMB	←											→	AMB	—
MAX PRESS DROP-FEET	|←				•TDH=340•											→|

TYP. EITHER SIDE

RX PRESS 135 PSIG MODE J

POSITION-○	16	38	39	40_A	41_A	5_A	6_A	48_A	26_A	1		1	$2_{A\&C}$	$3_{A\&C}$	$4_{A\&C}$	$5_{A\&C}$	$6_{A\&C}$	6.2_A	48_A	26_A	1
FLOW-GPM	—	400	←					→	400	—		—	400	←		→	400	800	800	800	—
PRESS-PSIA	150	X	X	X	X	X			X	14.7		14.7	X	X	X	X				X	14.7
TEMP F	—	358	←					→	358	—		—	125	←					→	125	—
MAX PRESS DROP-FEET	|←					SOH=575/600				→|		|←				SOH=575/590				→|

TYP. EITHER SIDE

MODE A (SEE NOTE 13) — Rx PRESS 20 PSID ABOVE DRYWELL PRESS

POSITION-○	1	2_A	3_A	4_A				5_A	6_A	7_A	8_A	9_A	10_A	11_A						12_A	13_A	14_A	15_A	16
FLOW-GPM	—	9,600	←	→				←	→ 9,600	9,600	←			→ 9,600						←			→ 9,600	—
PRESS-PSIA	14.7	X	X	X				X																347
TEMP F	—	130/75	←	→				←						→						←			→ 130/75	—
MAX PRESS DROP-FEET	|←			→				•TDH=330•				•ΔP=7.7•		→						←		•ΔP=17•		→|

MODE B (SEE NOTE 13) — Rx PRESS 20 PSID ABOVE DRYWELL PRESS.

POSITION-○	1	$2_{A\&C}$	$3_{A\&C}$	$4_{A\&C}$	$5_{A\&C}$	$6_{A\&C}$	7_A	8_A	9_A	10_A	11_A		12_A	13_A	14_A	15_A	16
FLOW-GPM	—	8,700	←			→ 8,700	17,400	←			→		←			→ 17,400	—
PRESS-PSIA	14.7	X	X	X	X	X	X	X	X	X	X		X	X	X	X	347
TEMP F	—	130/75	←								→		←			→ 130/75	—
MAX PRESS DROP-FEET	|←					•TDH=370•					→		←				→|

MODE C-1

POSITION-○	1	$2_{B\&D}$	$3_{B\&D}$	$4_{B\&D}$	$5_{B\&D}$	$6_{B\&D}$	7_B	17_B	18_B	8_B	9_B	10_B	11_B	12_B	13_B	19	20_B	21	22_B	23_B	1		24_B	25_B
FLOW-GPM	—	5,775	←		→	5775	11,550	←						→ 11,550	10,950	10,950	10,950	—	600	600	—		8,000	8,000
PRESS-PSIA	14.7	X	X	X	X	X	X	X	X	X	X	X	X	X				14.7			14.7		X	X
TEMP F	—	165	←			→	165	155.3	←								→ 155.3	—	155.3	155.3	—		95	109
MAX PRESS DROP-FEET	|←				•TDH=475•													→|		→|			

DUTY PER HX 56.1×10^6 BTU/HR. (1 HX.OPERATING) SEE NOTE 4

TYP. EITHER SIDE

MODE C-2 (SEE NOTE 2)

POSITION-○	1	2_B	3_B	4_B	5_B	6_B	7_B	17_B	18_B	8_B	9_B	10_B	11_B	12_B	13_B	19	20_B	21	22_B	23_B	1		24_B	25_B
FLOW-GPM	—	7,700	←											→ 7,700	7,300	7,300	7,300	—	400	400	—		8,000	8,000
PRESS-PSIA	19.7					X	X	X	X	X	X	X	X	X	X	X	X	19.7	X	X	19.7		X	X
TEMP F	—	197	←				→	197	176.6	←							→ 176.6	—	176.6	176.6	—		95	114.6
MAX PRESS DROP-FEET	|←					TDH=420												→|		→|			

DUTY PER HX 78.5×10^6 BTU/HR (1 HX OPERATING)

TYP. EITHER SIDE

TABLE 1-VALVE POSITION CHART — SEE NOTE 7

	F004	F006	F052		F047	F048	F003	F017	F016	F050	F018	F021	F028	F027	F024	F023	F022	F019	F055	F011	F054	F026	F073	F075	F078	F068	STRAINER A	STRAINER B
MODE A	O					O		O	O	O																	50%P	CLEAR
MODE B	O					O		O	O	O																	50%P	—
MODE C1	O				O		O				O	O	O	O												T	—	50%P
MODE C2	O				O		O				T	O	O	T												T	—	50%P
MODE D2 (CONT'D)	O				O		O						O		T											T	CLEAR	CLEAR
MODE E		O			O	T-C	O	O-T	O	O																T	—	—
MODE F		O			O		O	T	O	O																T	—	—
MODE G	O					O		O	O	O																	—	50%P
MODE H	O					O							O		T												CLEAR	CLEAR
MODE J	O	O																									CLEAR	—

O-VALVE OPEN
T-VALVE THROTTLED
P-STRAINER PLUGGED
BLANK SPACE INDICATES VALVE IS CLOSED
T-C-VALVE THROTTLED TO CLOSED
O-T-VALVE OPENED TO THROTTED

TABLE 2-LIMITING LINE LOSSES

MODE A	6-15
MODE B	NONE
MODE C1	13-20-21 & 22-23-1
MODE C2	1-2-5
MODE D1	
MODE D2	
MODE D2 (CONT'D)	NONE
MODE E	19-44
MODE F	16-38-41
MODE G	1-2-5
MODE H	12-22-35-26-1
MODE J	6-48

H

MODE E (SEE NOTE 8) — RX PRESS 85 PSIG

POSITION-○	16	38	39	$40_{A\&B}$	$41_{A\&B}$	$5_{A\&B}$	$6_{A\&B}$	$7_{A\&B}$	$17_{A\&B}$	$18_{A\&B}$	$8_{A\&B}$	$11_{A\&B}$	$13_{A\&B}$	14_A	15_A	14_B	15_B	19			44	16	$24_{A\&B}$	$25_{A\&B}$
FLOW-GPM	—	15,400	15,400	7,700	←		→	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	—			—	—	8,000	8,000
PRESS-PSIA	100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					100		X
TEMP F	—	328	←					→	328	279.4	←							→			—		85	131.7
MAX PRESS DROP-FEET	|←					•TDH=420•													•ΔP=20•		•ΔP=20•	→		

DUTY PER HX 187×10^6 BTU/HR (2 HX OPERATING)

REV | DATE 4-1-87
REVISED PER ADIF 86-057 IN RESPONSE TO DCR 85-215 REV 0 BY SCS

E/S RHR SYS GENERAL ELECTRIC 729E623BA
PROCESS DIAGRAM RESIDUAL HEAT REMOVAL SYS.
FIRST MADE FOR EDWIN I. HATCH

FCF 238X128BA, E11-1020

MODES:

A ACCIDENT W/ RECIRC LINE BREAK IN SIDE II WITH ONE PUMP OPERATION AND STRAINER 50% PLUGGED. (20 PSID)

B ACCIDENT W/ RECIRC LINE BREAK IN SIDE II WITH TWO PUMP OPERATION AND STRAINER 50% PLUGGED (20 PSID).

C-1. POST ACCIDENT CONTAINMENT SPRAY W/ HEAT REJECTION WITH TWO-PUMP OPERATION AND STRAINER 50% PLUGGED. (NORMAL SUPPRESSION POOL TEMPERATURE)

C-2. POST ACCIDENT CONTAINMENT SPRAY W/ HEAT REJECTION WITH ONE-PUMP OPERATION AND STRAINER 50% PLUGGED. (PEAK SUPPRESSION POOL TEMPERATURE).

H
D-1. DELETED.
D-2. DELETED.

E. NORMAL SHUTDOWN AFTER BLOWDOWN TO MAIN CONDENSER (SEE NOTE 8).

F. CONTINUATION OF NORMAL SHUTDOWN FROM PLANT MODE E (0 PSIG) & FUNCTIONAL TEST FOLLOWING SHUTDOWN

G. ACCIDENT W/ RECIRC LINE BREAK IN SIDE II WITH STRAINER 50% PLUGGED AND ONE PUMP OPERATION, MAXIMUM RUNOUT CONDITIONS (0 PSID).

H. RHR. SYSTEM TEST DURING PLANT OPERATION

J. MINIMUM FLOW BYPASS MODE

NOTES

1 EMPTY DATA BLANKS ARE TO BE FILLED IN BY OTHERS (BASED ON HIS ARRGT'S) AND SUBMITTED TO BWRSD FOR REVIEW. IF SIDE I AND SIDE II ARE NOT SYMMETRICALLY ARRANGED, VALVES FOR BOTH SHALL BE SUBMITTED SEE SHEET 2

2 THE MINIMUM PUMP NPSH AVAILABLE DURING MODE C-2, E, OR G MUST BE 4 FEET GREATER THAN PUMP REQUIREMENTS. H ADEQUATE NPSH SHALL BE DETERMINED BASED ON POOL TEMPERATURE OF 207°F AND CONTAINMENT PRESSURE OF 4.2 PSIG. FOR MODE C2 AND 165°F AND CONTAINMENT PRESSURE OF 2.0 PSIG. FOR MODE G, AND THE SUCTION STRAINER BEING PLUGGED WITH THE MAXIMUM POST-ACCIDENT DEBRIS LOADS.

3 ELEVATIONS ARE NOT INCLUDED IN ΔP VALVES GIVEN ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINAL VALVES FOR THE EMPTY DATA BANKS.

4. DASHED LINES INDICATES FLOW DOES NOT PASS THROUGH THESE POINTS

5 SERVICE WATER CROSS-TIE SHALL BE SIZED TO FLOW 3200 GPM REF. SH 2 (J-11).

6. LINE SHALL BE SIZED BASED ON FLOW TO FUEL POOL SH 2 (B-9)

7 TABLE 1 INDICATES VALVE POSITIONS DURING VARIOUS MODES OF OPERATION

8 SHUTDOWN OPERATION (MODE E) MAY BE INITIATED AT A MAXIMUM REACTOR VESSEL PRESSURE OF 135 PSIG

9. DELETED.

H
10. DELETED.

11 THE WEIGHT OF WATER IN THE SHUTDOWN COOLING SUBSYSTEM PIPING, INCLUDING THE HEAT EXCHANGERS AND PUMPS, SHALL NOT EXCEED 225,000 LBS A 70°F TO PREVENT DILUTION OF STANDBY LIQUID CONTROL NEUTRON ABSORBER BELOW MINIMUM REQUIREMENTS.

12. VALVE F010 SHALL BE PERMANENTLY CLOSED (POWER DISCONNECTED) UNLESS THE REACTOR IS IN THE COLD SHUTDOWN CONDITION.

13 FLOWS SHOWN FOR MODE A AND B ARE THE MINIMUM ALLOWABLE (TRUE) FLOW. FOR MODE G IS THE MAXIMUM ALLOWABLE MEASURED FLOW.

729E623BA | REV. NO. 8

LEGEND
RX PRESS - REACTOR VESSEL PRESSURE
SOH - SHUT OFF HEAD (PUMPS)
REFERENCE DOCUMENTS
1. RHR P&ID - - - - - - - - - E11-1010

REV 6 | DATE 7-18-86
REVISED TO INC ABN-86-229 SUPO IN RESP TO DCR 85-215 REV 0 (BY SCS)
(REVISIONS CONTINUED AT LEFT)

REV 5 | DATE 6-19-86
REVISED TO INC BECHTEL COMMENT OF GE ECN# NE-88564 BY SCS.

REV 4 | DATE 4-28-86
SCS REVISION PER GE ECN-NE-88564 AND BECHTEL CALC. HNP-1 MECH VOL. I NO. 51 REV. 2

HATCH 1
MPL # E11-1020
S-15304

BWRS SAN JOSE, CAL 729E623BA SH 2

CAD AutoCAD S15304

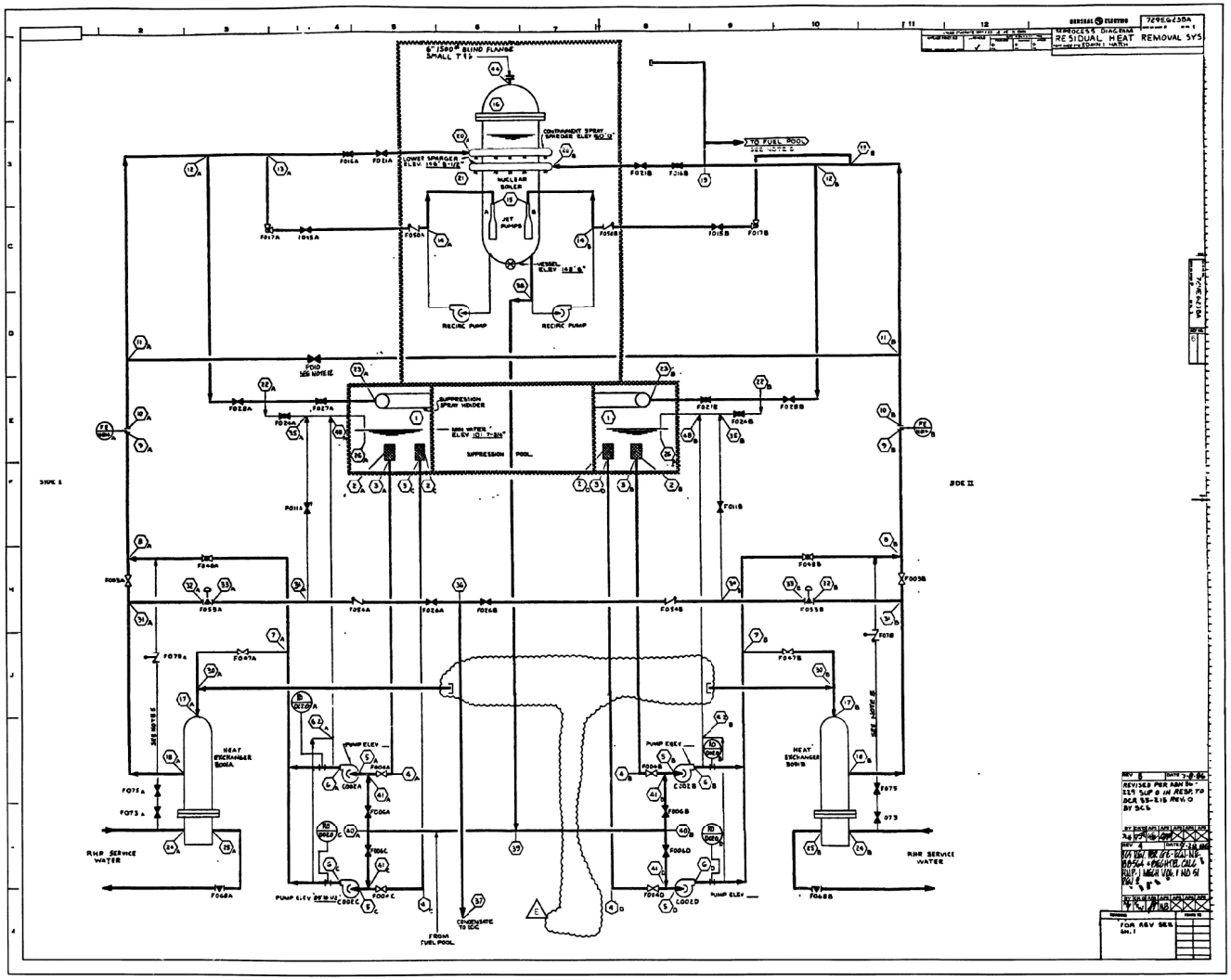
Southern Company Services, Inc. FOR
PLANT: HATCH
UNIT: 1
TITLE: PROCESS DIAGRAM RESIDUAL HEAT REMOVAL SYSTEM
VENDOR: GENERAL ELECTRIC | P.O.#: PEH-002
S-15304 H

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	H	DATE	10-27-99
REVISED PER REA HT-96660.			
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 10 BY SCS)			

BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
KB	HNB	WKK				

S-15305



CAD AutoCAD S15305

Southern Company Services, Inc.
FOR

PLANT: HATCH

UNIT: 1

TITLE: PROCESS DIAGRAM RESIDUAL HEAT REMOVAL SYS.

VENDOR: GENERAL ELECTRIC

P.O.#: PEH-002

S-15305 E

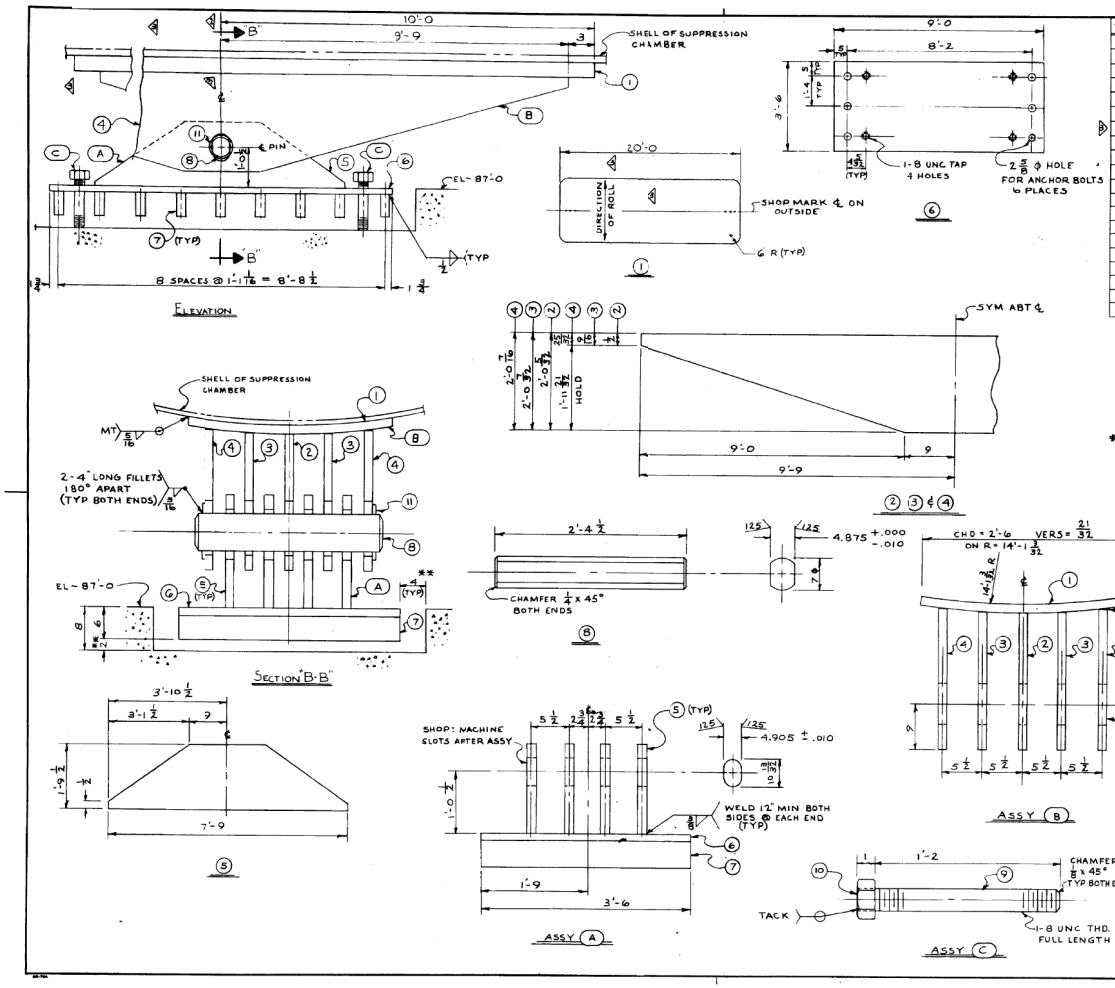
THIS DWG. PART OF VENDOR MANUAL N/A

TAB/SECT. N/A

PAGE N/A

FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
REVISED PER ABN 94-0031-002. (VENDOR REV. 7 BY SCS)	9-30-96	ARH	HEW	RKB				
SCANNED, VERIFIED BY: T.N. REVISED PER WCN 92-0007-004 (VENDOR REV. 6 BY SCS)	7-9-93	T.N.	DWS	LBH	WTB			



SHIP PC.	MARK	ASSM PC.	DESCRIPTION	LENGTH FT.	LENGTH IN.	SPEC.	
4	207-A		LOWER TIES ASSY				
	207-5	16	R. SKX 2 (CF 82.X 25'-0) C_{12}	SEE DWG C-3		SA516 GR 70	C15 11
	207-6	4	R 42 X2 (CF 111X 21'-0) S_{A} (207-6) S_{B} (207-5)	9	0	SA516 GR 70	C15 11
	207-7	36	R 4X2 (55X18'-2) C_{36} SEE DWG. C-3	3	6	SA516 GR 70	C15 11
4	207-8		UPPER TIES ASSY				
	207-1	4	R 240 X 1/2 (CF 63 1/2 X 20'-1) C_{1} ROLL	2	6 31/32	*	C15 8
	207-2	4	R. 5KX2 (CF 128 1/2 X 31'-7) C_{4} (207-2) ℄			SA516 GR 70	C15 8
			C_{16} (207-3) SEE DWG. C-3				
	207-3	8	R. 5KX 2 C/W (207-2) ℄ (207-4)			SA516 GR 70	C15 8
	207-4	8	R. 5KX2 (CF 128 1/2 X 31'-7) C_{8} (207-4) ℄			SA516 GR 70	C15 8
			C_{2} (207-3) SEE DWG. C-3				
16	207-C		LEVELING BOLT ASSY				
	207-9	16	1 ϕ ROD THD. FULL LENGTH	1'	3	A36	
	207-10	16	1-8 UNC. HEAVY HEX NUT			A307	
8	207-11		R 10 QDX 7/16 I.D. X 1/2			A283-C	
4	207-8		7 ϕ PIN PER 5K	2	4 1/2	A105 GR II	C15 17

* SA516 GR 70 TO SA 300 (M3504 B)

NOTES

(1) PLACE EARTHQUAKE TIES ON FOUNDATION BEFORE STARTING ERECTION OF SUPPRESSION CHAMBER SHELL. GROUTING TO BE DONE BY OTHERS. SEE DWG. F-1 FOR GROUTING INSTRUCTIONS.

(2) IN AREAS THAT ARE INACCESSIBLE TO MT EQUIPMENT, PT MAY BE SUBSTITUTED FOR MT.

** THIS AREA MUST BE COMPLETELY CLEAR OF REINFORCING RODS.

REVIEWED PER CORPORATE Q.A. PLAN RELEASED FOR USE
CERTIFIED BY R.E. Gamble Jr. DATE 8-8-69
UPDATED BY REV. 5 DATE 11-4-69

EDWIN I. HATCH NUCLEAR PLANT
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

CHICAGO BRIDGE & IRON COMPANY

EARTHQUAKE TIES

PURCHASER'S NO. DEH-154 CONTRACT NO. 69-4153
DRAWN BY J.N. DATE 7-7-69
CHECKED BY A.L.N. DATE 7-15-69
ENGINEERING COORDINATOR
DWG NO. 207 REV. 3

REV	DESCRIPTION	DATE	APP'D
1	CHG QUANTITY OF 207-8 FROM 4 TO 8 ADD 207-9 & 207-10	8-8-69	
2	CHG. ANCH. SHT. PC. MK. 207-C TO 207-9 & 207-10	8-15-69	
3	CHANGED MTL FOR PINS	11-4-69	

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C

6511 | 10-502 | S15329

TITLE: EARTHQUAKE TIES -A

JOB: EDWIN I. HATCH NUCLEAR PLANT-UNIT 1

MFR. CB&I | P. O. PEH-154 REQ. | CLASS 3-A-5

REV 3

"Revision 0 Reviewed by Southern Services, Inc. and returned without comment by letter dated 7-30-69 and signed by P. Fiedler

Micrographics 8-29-77

COORDINATING PRINT

FROM DATE

ROUTE	INITIAL	DATE
CIVIL		
STRUCT		
ARCH		
MECH		
LAYOUT		
ELEC		
PROJ. ENG		

VENDOR'S DRAWING REVIEW

1 ☐ No comment - Mfg. may proceed.

2 ☐ Comments as noted - Make changes and resubmit drawing per comments.

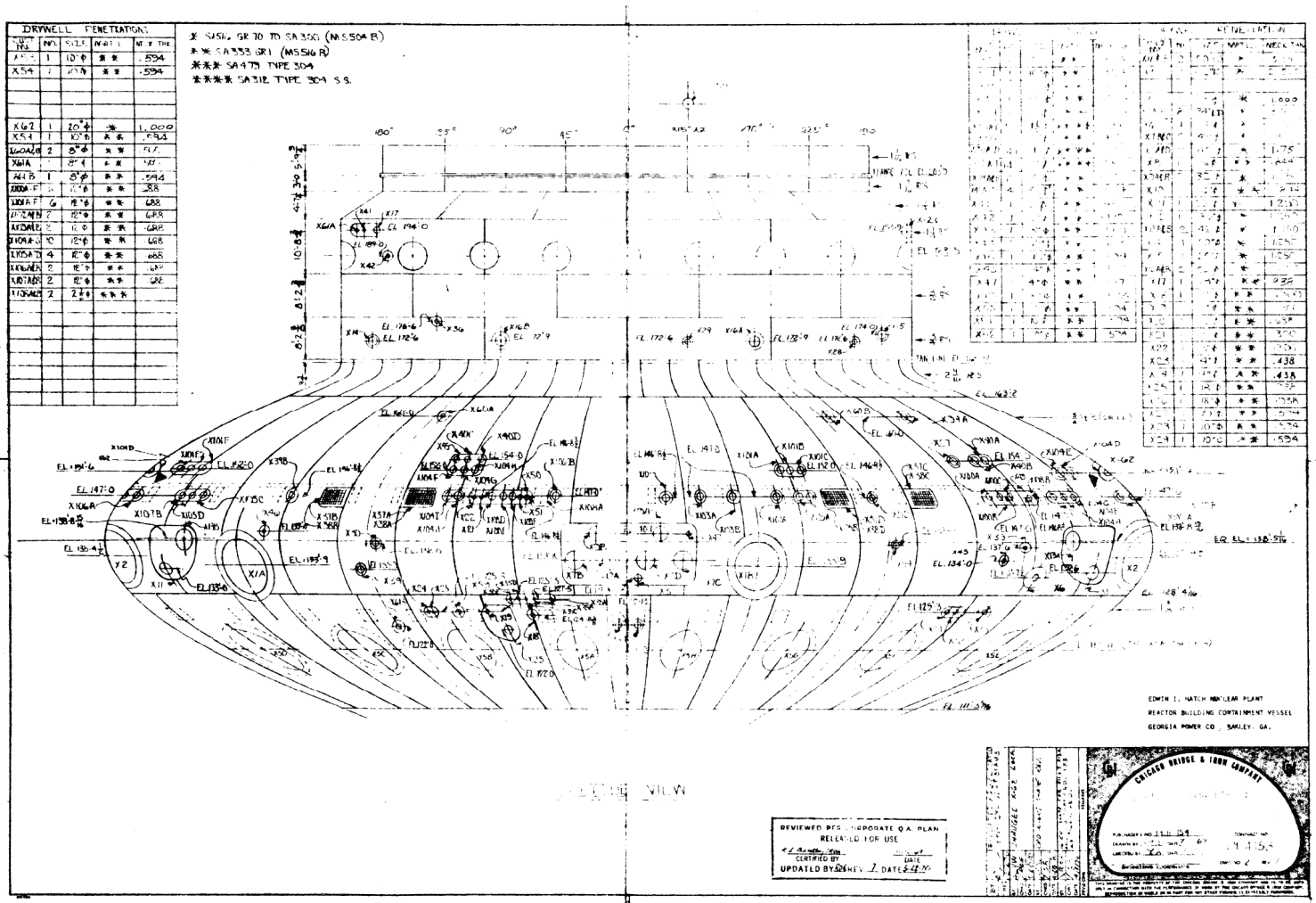
3 ☒ Review not required - Mfg. may proceed.

Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.

By R.M.L. R.M.L. BECHTEL Date 11-19-69

JOB NO. 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P. O. BOX 607 GAITHERSBURG, MD.



TITLE 6511 10-5023-134-1F

JOB

EDWIN I. HATCH NUCLEAR PLANT UNIT 1

MFR CBI

PO FEH-154

REQ

CLASS I-A-5

services,

letter dated

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VENDOR DRAWING REVIEW

JOB NO. 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P.O. BOX 527 GAITHERSBURG, MD

S/54227

DWG # 5

6511 10-502 S15520B

TITLE: SUPPRESSION CHAMBER PENET. SCH. AND ORIENTATION

JOB: EDWIN I. HATCH NUCLEAR PLANT-UNIT 1

MFR. CB&I

P.O. PEH-154

REQ.

CLASS 3-A-5

*Revision 3 [illegible] reviewed by Southern Services, Inc. and returned with comment by letter dated [illegible] and signed [illegible]

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FROM		DATE
ROUTE	INITIAL	DATE
CIVIL		
STRUCT		
ARCH		
MECH		
LAYOUT		
ELEC		
PROJ ENG		

VENDOR'S DRAWING REVIEW

1 [x] No comment - Mfg may proceed.

2 [ ] Comments as noted - Make changes and resubmit drawing per comments.

3 [ ] Review not required - Mfg may proceed.

Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.

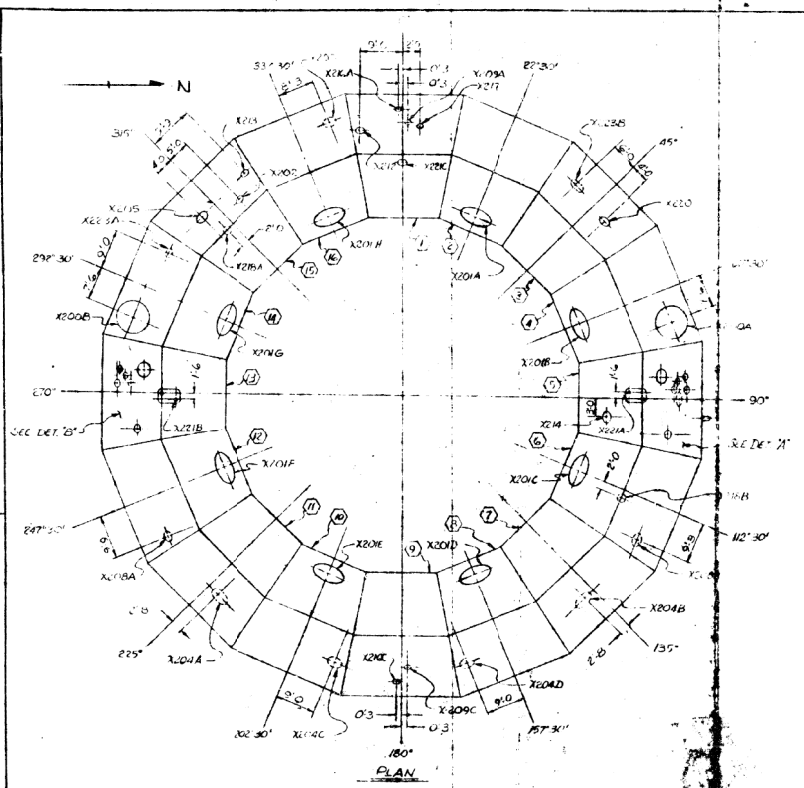
By [illegible] Date [illegible]

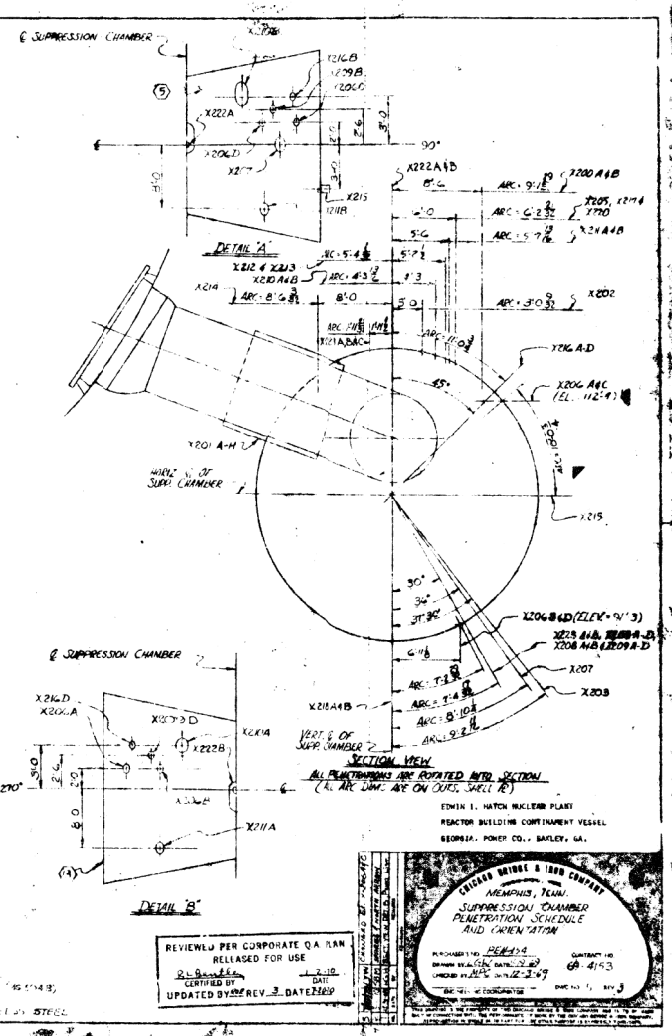
BECHTEL

JOB NO. 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P. O. BOX 607 GAITHERSBURG, MD.

S15520B





LIST OF SUPPRESSION CHAMBER PENETRATIONS

PEN. MARK	SIZE	NO. REQ'D	MECH. THK.	MAT'L	SPARES
X-201A-H	16	8	1.750	*	
X-203	4	1	0.432	**	
X-204A-D	14	4	1.250	*	
X-205	20	1	1.250	*	
X-206A-D	1	4	0.179	***	
X-207	16	1	0.843	**	
X-208A&C	16	2	0.843	**	
X-209A-D	1	4	0.179	***	
X-210A&B	16	2	0.843	**	
X-211A&B	6	2	0.432	**	
X-212	18	1	0.500	**	
X-213	6	1	0.280	**	
X-214	24	1	.250	*	
X-215	2	1	0.218	**	
X-216A-D	1	4	0.179	***	
X-217	1	1	0.179	***	
X-218A&B	8	2	0.500	**	
X-220	80	1	1.250	*	
X-221A&B	18	3	0.500	**	
X-222A&B	8	2	0.500	**	
X-223 A&B	10	2	0.593	**	
X-207	12	1	0.687	**	

* 2.25 OR TO 3.0 GA 304 STAINLESS STEEL
** 304 OR 316 STAINLESS STEEL
*** TYPE 304 STAINLESS STEEL

REVIEWED PER CORPORATE Q.A. PLAN RELEASED FOR USE
CERTIFIED BY [illegible] DATE 2-10
UPDATED BY REV. 3 DATE 2-3-69

CHICAGO BRIDGE & IRON COMPANY
MEMPHIS, TENN.
SUPPRESSION CHAMBER PENETRATION SCHEDULE AND ORIENTATION
PURCHASER PEH-154 CONTRACT NO. 69-4153
DRAWN BY GK DATE 2-3-69
CHECKED BY MS DATE 2-3-69
BECHTEL CORPORATION DWG NO. 1 REV. 3

EDWIN I. HATCH NUCLEAR PLANT
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

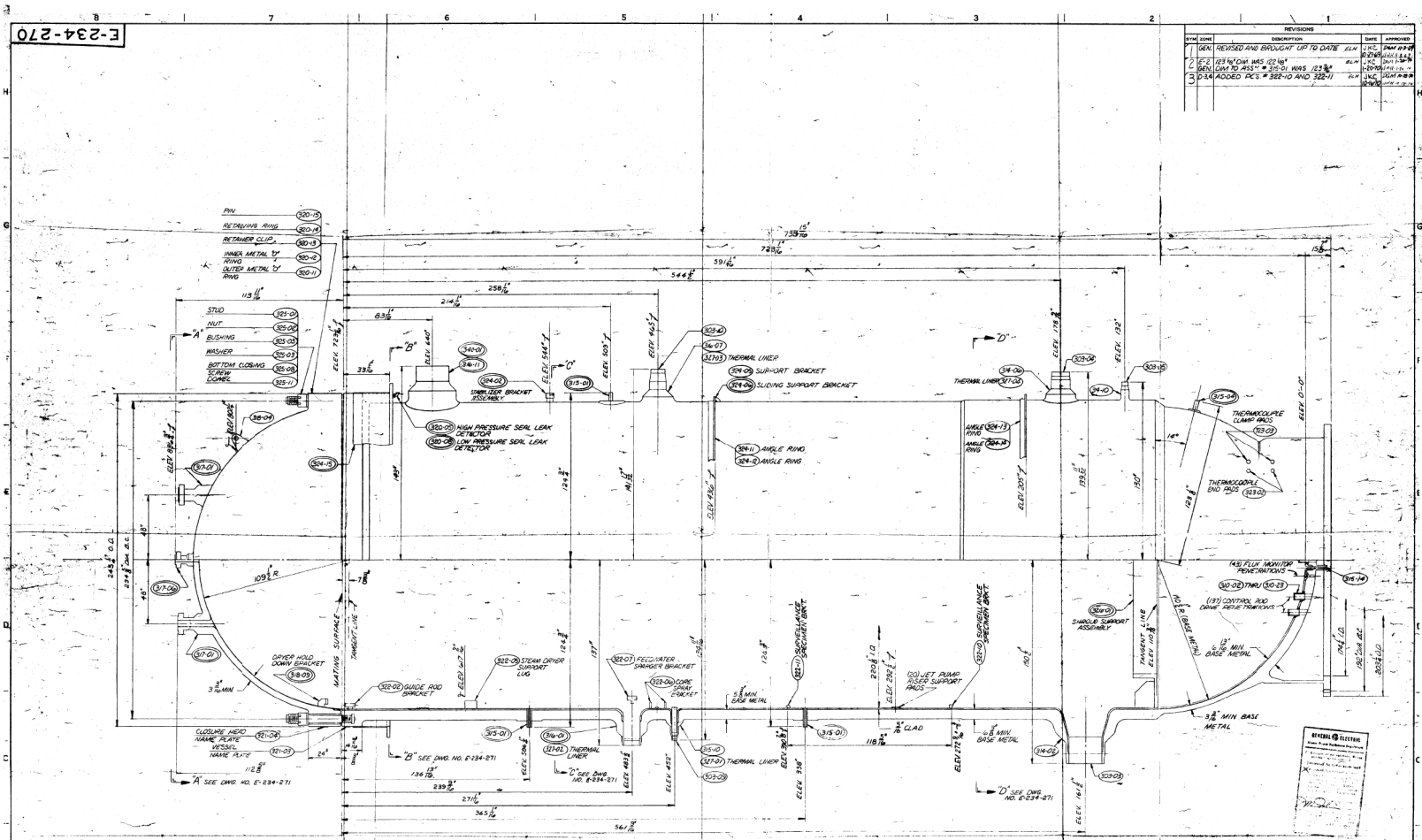
KU-ABOO1
G511 C-502 S15234
RPV General Arrangement
GE P.O. PEH-2
S1552

RECORD SET
RETURN PROMPTLY

COORDINATING PRINT
ROUTE INITIAL DATE

VENDORS DRAWING REVIEW
JOB NO. 6511 SEE ITEM AS INDICATED

E-234-270



S15523B

NOZZLE SCHEDULE

ASSY OR PC #	QUANTITY	SERVICE (NAME)
314-02	2	RECIRCULATION OUTLET NOZZLE
314-06	10	RECIRCULATION INLET NOZZLE
314-10	2	JET PUMP INSTRUMENTATION NOZZLE
315-01	6	INSTRUMENTATION NOZZLE
315-10	1	C.R.D. HTG. SYSTEM RETURN NOZZLE
316-24	1	CORE DIFFERENTIAL PRESSURE NOZZLE
316-07	2	CORE SPRAY NOZZLE
316-01	4	FEEDWATER NOZZLE
316-11	3	STEAM OUTLET NOZZLE
340-01	1	STEAM OUTLET NOZZLE
315-16	1	DRAIN NOZZLE
317-01	8	INSTRUMENTATION NOZZLE
317-06	1	VENT NOZZLE

DESIGN INFORMATION

DESIGN PRESSURE	1250 PSI.G.
DESIGN TEMPERATURE	575°F
NORMAL OPERATING PRESSURE	1005 PSIG
NORMAL OPERATING TEMPERATURE	546°F

WEIGHTS (CALCULATED)

WEIGHT OF VESSEL	1,406,977 LBS
WEIGHT OF HEAD	119,631 LBS
STUDS, NUTS & WASHERS	94,048 LBS
TOTAL	1,180,696 LBS

GENERAL NOTES

1. ALL DIMENSIONS AND ANGLES ARE REFERENCE AND ARE NOT TO BE USED FOR FABRICATION. SEE FABRICATION DRAWINGS FOR WORKING DIMENSIONS & TOLERANCES.
2. ALL FABRICATION SHALL BE IN ACCORDANCE WITH ASME CODE SECTION III.

CONTRACT	REF. DWG. #1 DRAWING PLAN LIST	REF. DWG. #2 STANDARD NOTES	REF. DWG. #3 MATERIAL NOTES	REF. DWG. #4 MTP SPECIFICATIONS
3167	B-130-483	A-230-161	A-230-162	A-230-163

This Drawing is the Property of COMBUSTION ENGINEERING, INC. WINDSOR, CONN. AND IS NOT TO BE REPRODUCED, OR USED, IN WHOLE OR IN PART, FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF COMBUSTION ENGINEERING, INC.

GEOMETRIC TOLERANCES FOR MACHINED SURFACES
UNLESS SPECIFIED ON FACE OF DRAWING

SYM	GEOMETRY	TOL	SYM	GEOMETRY	TOL
▱	FLATNESS	.00?/IN.	⌭	ANGULARITY	SEE DWG.
—	STRAIGHTNESS	.00?/IN.	⌀	RUNOUT	SEE DWG.
○	ROUNDNESS	SEE DWG.	⌖	POSITION	SEE DWG.
⌭	CYLINDRICITY	SEE DWG.	◎	CONCENTRICITY	SEE DWG.
⌓	PROFILE OF LINE	SEE DWG.	⌯	SYMMETRY	SEE DWG.
⌓	PROFILE OF SURFACE	SEE DWG.			
//	PARALLELISM	.00?/IN.			
⊥	PERPENDICULARITY	.00?/IN.			

ALL DIMENSIONS APPLY AT REFERENCE TEMP. OF 68° F.
FINISH UNLESS NOTED
TOLERANCE ON:
FRACTIONS
DECIMALS
ANGLES
UNLESS NOTED

CONTRACT: 3167

ASSY NO.	PC NO.	NO. REQD.	NOMENCLATURE	MATERIAL	MATERIAL SPEC.

LIST OF MATERIAL — QUANTITIES FOR

DR'N BY: JKC
DATE: 5-15-68
CH'D. BY: ELH
DATE: 8-15-68
APP'D. BY: D. Hawkins
DATE: 8-15-68
1ST MFGS ENGR: Don Mosley
DATE: OCT 9 1968

APPROVED DATE

COMBUSTION ENGINEERING, INC.
CHATTANOOGA DIVISION

GENERAL ARRANGEMENT
ELEVATION
FOR:
218" I.D. BWR

SIZE E | 234-270 | REV. 3
SCALE 1/4"=1'-0" WEIGHT SHEET

1983-115-4

E-234-271

B11-A001 E-234-271
6511-01 10-502 S15524A

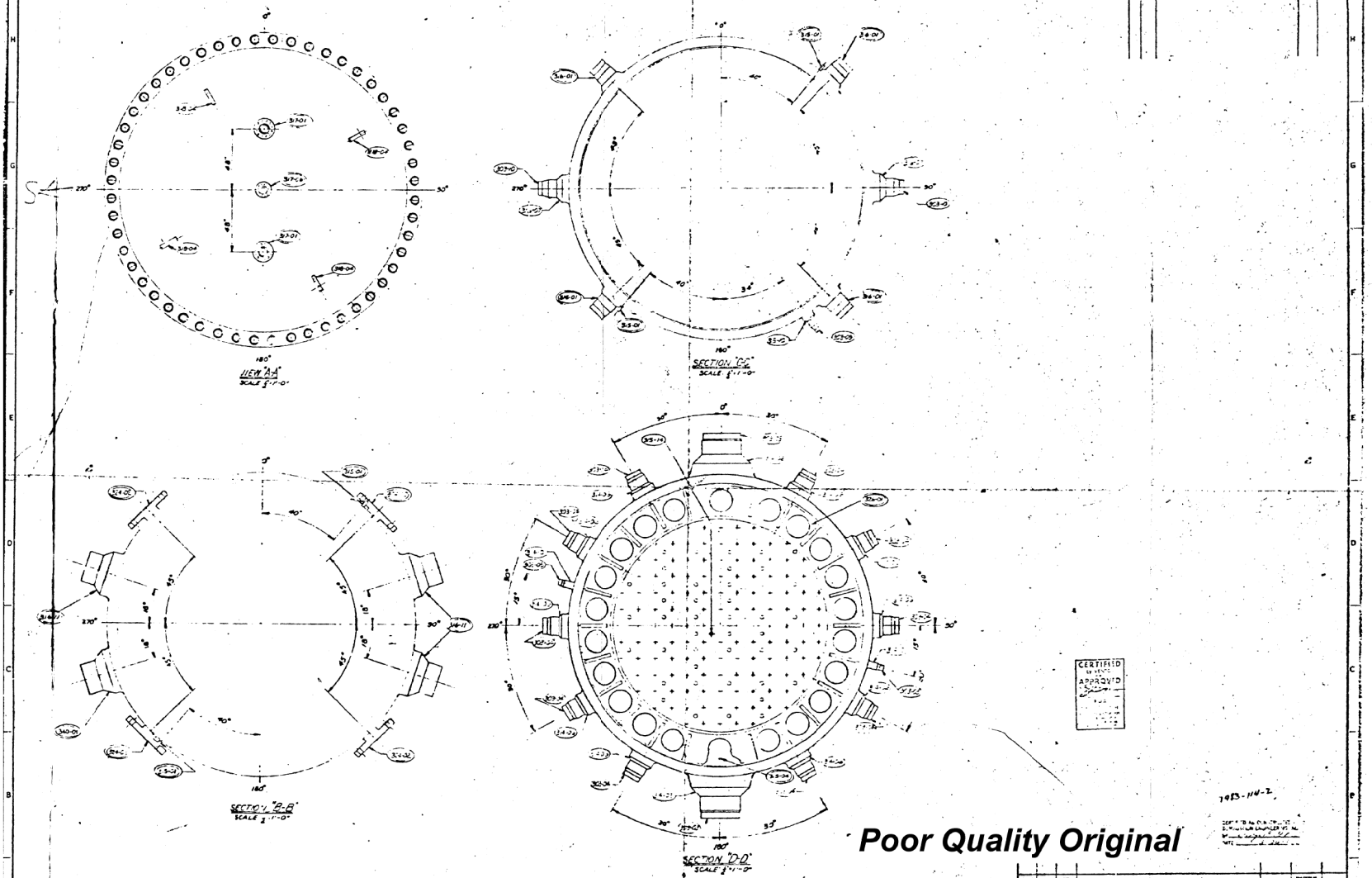
RPU GEN. ARRGT - PLAN

EDWIN I. HATCH NUCLEAR PLANT-UNIT 1

CE PEH-2

Forms 3-A-1

Revision Certified



VENDOR'S DRAWING REVIEW

1 [X] No comment - Mfg may proceed.

2 [ ] Comments as noted. Make changes and resubmit ... for comments

3 [ ] Take no exception ... Mfg may proceed

By E A Ray, 3-14-72

JOB NO. 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P.O. BOX 617 GAITHERSBURG, MD.

CERTIFIED BY VENDOR
APPROVED

Poor Quality Original

GENERAL NOTES

1. SEE CAD # E-234-272 FOR LOCATIONS WHERE SECTIONS ARE TAKEN.
2. ALL DIMENSIONS & ANGLES ARE REFERENCE AND ARE NOT TO BE USED FOR FABRICATION. SEE FABRICATION DRAWINGS FOR WORKING DIMENSIONS AND TOLERANCE.

CONTRACT	FEE DWG #1 DRAWING PLAN LIST	FEE DWG #2 STANDARD NOTES	FEE DWG #3 MATERIAL NOTES	FEE DWG #4 LIST OF SPECIFICATIONS
3167	2230-483	4-230-2	4-230-2	2-230-22

COMBUSTION ENGINEERING, INC. WINDSOR, CONN.

SUBMITTED TOLERANCES FOR MACHINED SURFACES UNLESS SPECIFIED IN PIECE OR DRAWING

1	1	1	1	125
2	2	2	2	125
3	3	3	3	125
4	4	4	4	125
5	5	5	5	125
6	6	6	6	125
7	7	7	7	125
8	8	8	8	125

LIST OF MATERIAL QUANTITIES FOR

ITEM NO.	PIECE NO.	SUB NO.	NOMENCLATURE	MATERIAL	MATERIAL SPEC.

ALL DIMENSIONS APPLY AT REFERENCE TEMP OF 70°F

FINISH UNLESS NOTED

TOLERANCE ON: FRACTIONS DECIMALS ANGLES UNLESS NOTED

CONTRACT 3167

DWN BY E.S. CLEVENGER DATE 3-28-72
CHD DATE
APPD DATE
DATE
STRESS CHKD DATE
DATE

COMBUSTION ENGINEERING, INC. CHATTANOOGA DIVISION

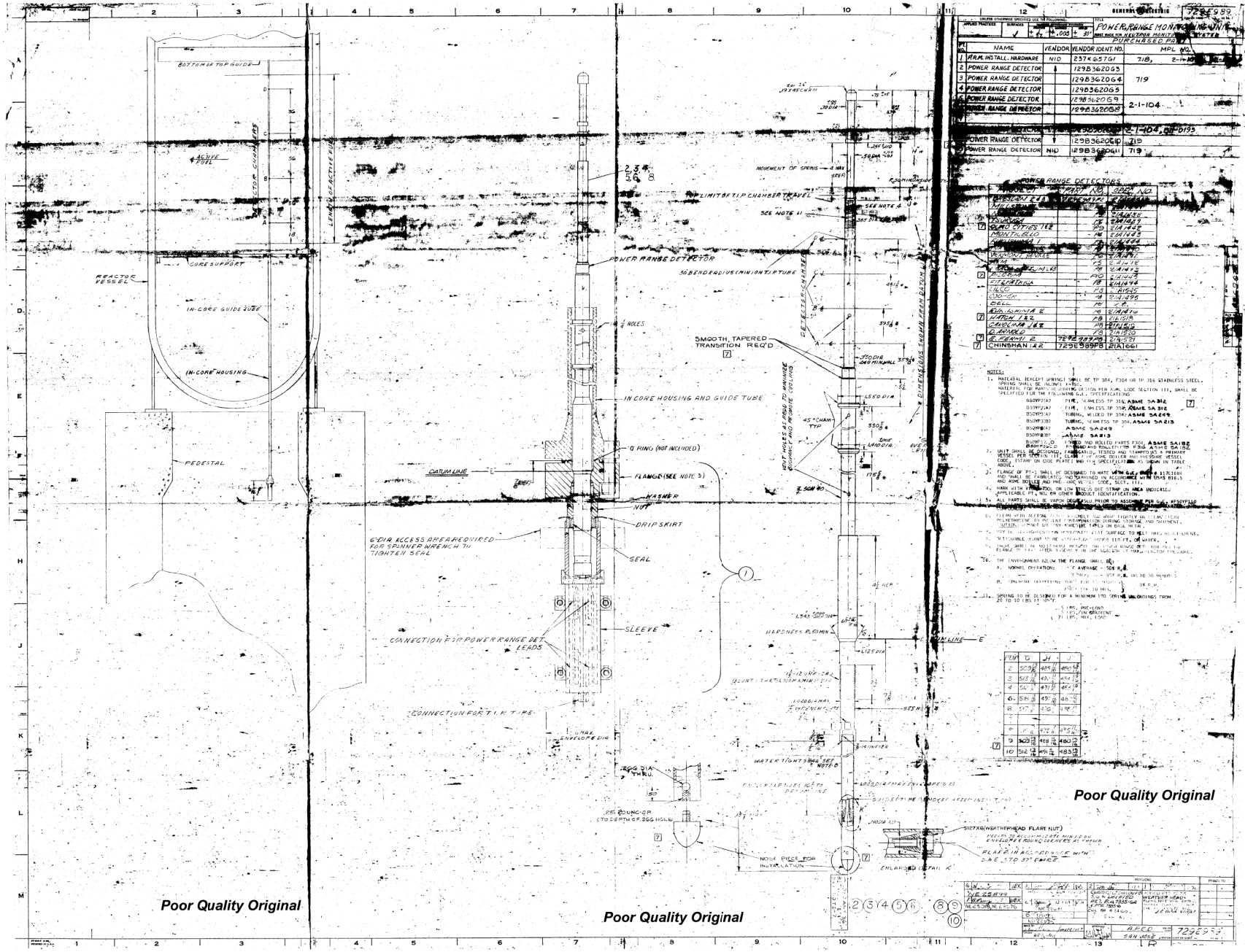
GENERAL ARRANGEMENT PLAN

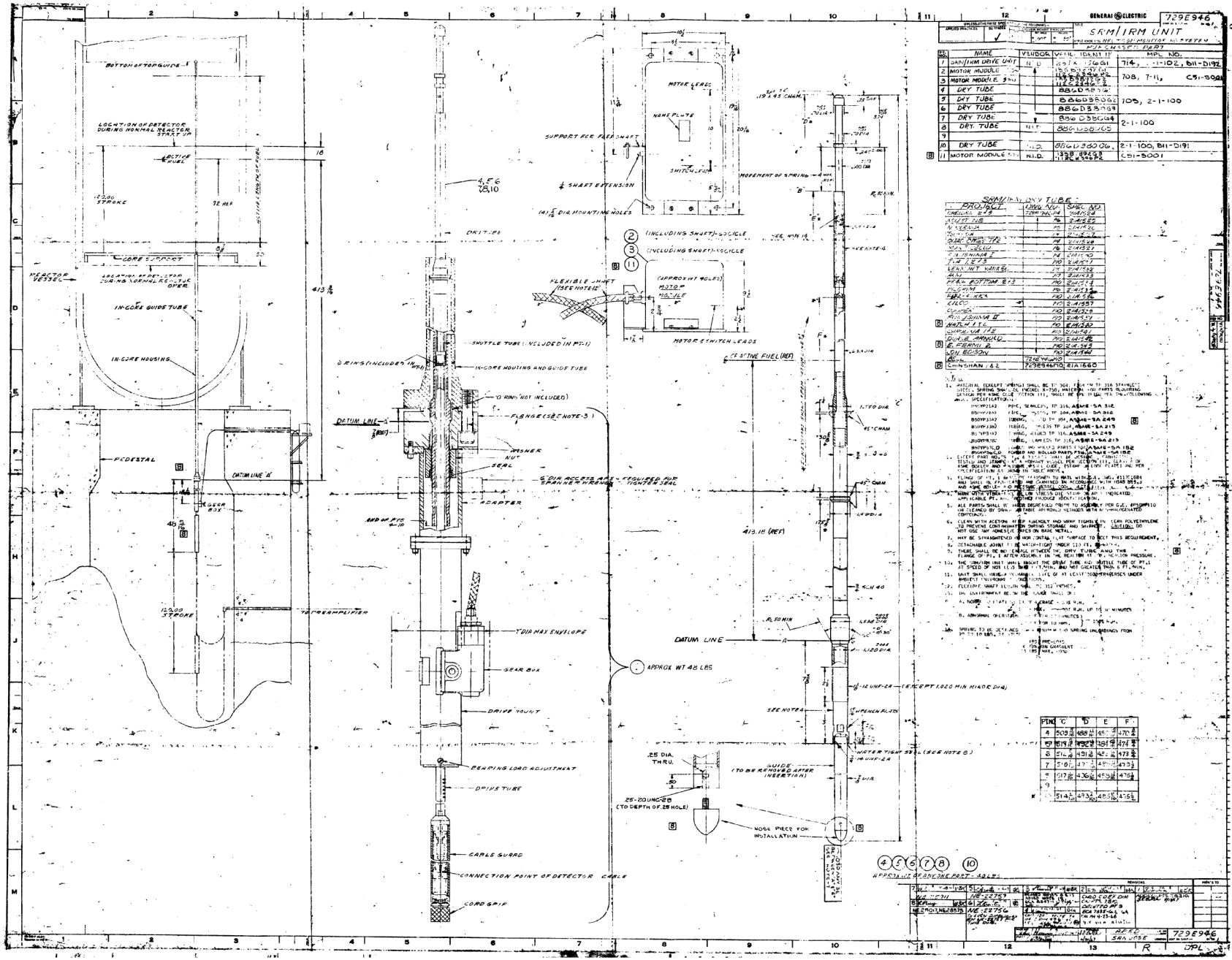
FOR: 2.5 I.D. BWR

APPROVED DATE

SIZE E 234-271 REV

SCALE AS NOTED SHEET


POWER RANGE DETECTOR
IN-CORE HOUSING AND GUIDE TUBE
SMOOTH, TAPERED TRANSITION REQ'D
LIMIT OF T.I.P. CHAMBER TRAVEL
CONNECTION FOR POWER RANGE DET. LEADS
CONNECTION FOR T.I.P. TUBE
SEAL
SLEEVE
DRIP SKIRT
NUT
WASHER
FLANGE (SEE NOTE 3)
O RING (NOT INCLUDED)
PEDESTAL
REACTOR VESSEL
CORE SUPPORT
IN-CORE GUIDE TUBE
IN-CORE HOUSING
ACTIVE FUEL
DATUM LINE
WEATHERHEAD FLARE NUT
NOSE PIECE FOR INSTALLATION
Poor Quality Original
Poor Quality Original
Poor Quality Original



PT. NO.	NAME	VENDOR	VENDOR IDENTIFICATION	MPL NO.
1	SRM/IRM DRIVE UNIT	N.U.	729E946P1	714, 1-102, 811-D192
2	MOTOR MODULE		886D858G1	708, 7-11, CS1-5001
3	MOTOR MODULE 3 PH		886D858G2	
4	DRY TUBE		886D858G3	
5	DRY TUBE		886D858G6	705, 2-1-100
6	DRY TUBE		886D858G8	
7	DRY TUBE		886D858G14	2-1-100
8	DRY TUBE	N.U.T.	886V858G15	
9				
10	DRY TUBE	N.U.	886V858G16	2-1-100, 811-D191
11	MOTOR MODULE 3 PH	N.U.	886D858G9	CS1-5001

PROJECT	DWG NO.	SPEC NO.
OMEGA 2+3	729E946P10	21A1660
CHRISHAN 1 & 2	729E946P10	21A1660
E. FERMI 2		
LOV. ECHO		
ARK. 2		
HATCH 1 & 2		
DUKE 1 & 2		
E. ARNOLD		
MONTICELLO		
PILGRIM		
BRUNS. 1 & 2		
FITZ. & KIN.		
CALVERT CLIFFS 1 & 2		
CLINTON		
FARLEY 1 & 2		
HATCH 1 & 2		
DUANE ARNOLD		
OYSTER CREEK		
NINE MILE POINT 1 & 2		
LASALLE 1 & 2		
VERMONT YANKEE		
PEACH BOTTOM 2 & 3		
MILLSTONE 2		
FITZPATRICK		
BROWNS FERRY 1, 2 & 3		
SUSQUEHANNA 1 & 2		
HOPE CREEK 1 & 2		
LIMERICK 1 & 2		
PEACH BOTTOM 2 & 3		
OMEGA 2+3		

PIN	C	D	E	F
4	509	488	485	470
5	619	492	489	474
6	514	491	487	473
7	518	497	489	473
8	517	496	493	478
9				
10	514	493	485	475

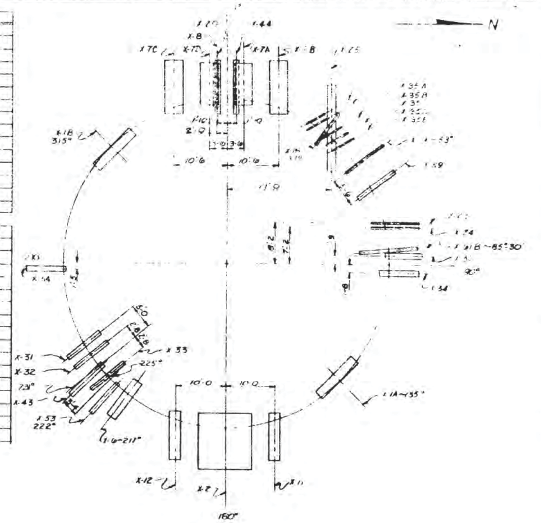
CUSTOMER MK.	SIZE	CB&I DWG. NO.	ELEV	PENET AZ "B"	ANGLE "A"	ELEV "C"	SPARE
SINGLE PENETRATIONS BELOW EQUATOR							
X-30	10" Φ	46	138'-0	81°-03'-47"	0°-44'-35"	138'-0	X-30E & F
X-54	10" Φ	48	138'-0	267°-30'-06"	0°-44'-35"	138'-0	X-54E & F
▶ X-53	10" Φ	48	137'-6	221°-31'-33"	1°-37'-24"	137'-6	✓
X-2	122" I.D.	159	135'-4 1/2	180°	[illegible]-27"	135'-4 17/32	
X-1A	120" I.D.	25	133'-9	135°	8°-14'-56"	133'-9 1/32	
X-1B	120" I.D.	25	133'-9	315°	8°-14'-56"	133'-9 1/32	
X-34	10" Φ	44	133'-0	92°-58'-42	9°-35'-39"	133'-0 1/16	X-34E & F
X-6	24" Φ I.D.	57	131'-7 1/2	211°	12°-03'-36"	131'-7 [illegible]	
X-59	10" Φ	45	125'-3	63°-38'-43"	23°-51'-52"	125'-3 9/32	X-59E & F
X-33	10" Φ	45	125'-3	225°-51'-41"	23°-51'-52"	125'-3 9/32	X-33C-F
X-18	3" Φ	41	124'-8 5/8	37°	24°-03'-37"	124'-8 23/32	
X-20	12" Φ	44	122'-10	356°-19'-21"	28°-36'-26"	122'-10 [illegible]/32	
X-44	12" Φ	44	122'-10	3°-40'-39"	28°-36'-26"	122'-10 [illegible]/32	
X-61B	8" Φ	41	122'-0	85°-30'	30°-17'-29"	122'-0 [illegible]/16	✓
X-43	8" Φ	66	134'-0	230°-56'-11"	?°-46'-44"	134'-[illegible]/16	
MULTIPLE PENETS. BELOW EQUATOR							
X-11	26" Φ	51	133'-0	156°-44'-45"	SEE NOTE ①	[illegible]'-5 [illegible]/16	
X-12	36" Φ	50	132'-6	203°-43'-18"	SEE NOTE ②		
X-7A	42" Φ	35	134'-10	0°	SEE NOTE ③		
X-7B	↓	↓	↓	↓	↓	↓	
X-7C							
X-7D							
X-8	16" Φ		131'-4				
X-35A-E	1 1/2" Φ	47	127'-5	28°-48'-42"	19°-03'-51"	127'-9 1/16	
X-23 & X-24	4" Φ	44	125'-3	75°	23°-51'-52"	125'-3 9/32	
▶ X-31 & X-32	10" Φ	43	125'-3	237°-05'	23°-51'-52"	↓	
X-19	3" Φ	45	125'-3	53°	23°-51'-52"		
X-25	18" Φ	45	122'-0	53°	23°-51'-52"		

NOTES:

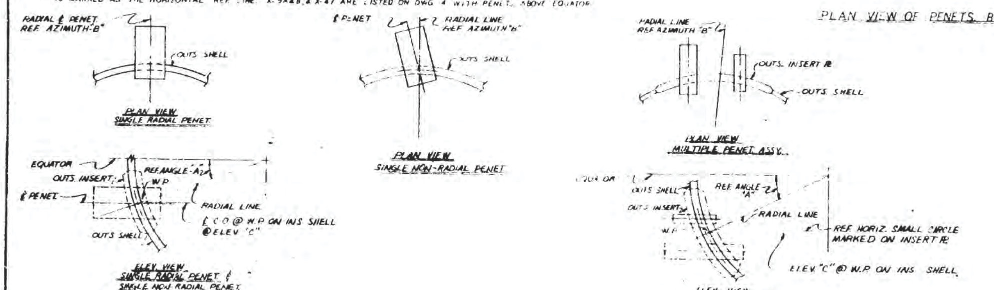
① X-11 IS IN AN INSERT WITH X-13B. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED ON THE INSERT AS THE HORIZONTAL REF. LINE. X-13B IS LISTED ON DWG 4 WITH PENETS ABOVE THE EQUATOR.

② X-12 IS IN AN INSERT WITH X-13A. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED ON THE INSERT AS THE HORIZONTAL REF. LINE. X-13A IS LISTED ON DWG. 4 WITH PENETS. ABOVE THE EQUATOR.

③ X-7A-D & X-8 ARE ASSEMBLED WITH X-9A & B & X-47. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED AS THE HORIZONTAL REF. LINE. X-9A & B, & X-47 ARE LISTED ON DWG 4 WITH PENETS. ABOVE EQUATOR.



PLAN VIEW OF PENETS. BELOW EQUATOR



REVIEWED PER CORPORATE Q.A. PLAN
RELEASED FOR USE
CERTIFIED BY — DATE 2-10-70
UPDATED BY — REV. 2 DATE 4-21-70

EDWIN I. HATCH
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO. BAXLEY, GA.

CHICAGO BRIDGE & IRON COMPANY
PENETRATION SCHEDULE
[illegible] BELOW EQUATOR
69-4153
3

6511 10-502 S15665B

TITLE.

JOB: EDWIN I. HATCH NUCLEAR PLANT-UNIT 1

MFR. CB&I
P. O. PEH-154
REQ.
CLASS 3-A-5

RECORD COPY

COORDINATING PRINT

FROM — DATE

ROUTE	INITIAL	DATE
CIVIL		
STRUCT		
ARCH		
MECH		
LAYOUT		
ELEC		
PROJ ENG		

VENDOR'S DRAWING REVIEW

1 ☑ No comment - Mfg. may proceed.
2 ☐ Comments as noted - Make changes and resubmit drawing per comments.
3 ☐ Review not required - Mfg. may proceed.

Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.

By — RKB — BECHTEL Date —

JOB NO. 6511 — BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P. O. BOX 607 GAITHERSBURG, MD.

S15665B

S 15666 B

Vol. 4

6511 10-502 S/15666

TITLE PENETRATION SCHEDULE ORIENTATION ABOVE EQUATOR

JOB FORM 1, HATCH NUCLEAR PLANT-UNIT 1

MFR. CB&I P O PEH-154 REQ CLASS J-A-5

Revision 2 Reviewed by Southern Services, Inc. and found to comply by letter dated ____ and ____ by ____.

RECORD COPY

SINGLE PENETRATIONS ABOVE EQUATOR (ELEV. 138'-5 1/16 TO 150'-0)

CUSTOMER MK.	SIZE	CORE DWG. NO.	ELEV.	PENET. AZIMUTH "A"	ANGLE "A"	ELEV. "C"	SPARE
X-9A	32"Φ	55	146'-8 1/2"	20°	4°-45'-16"	148'-5 1/16"	✓
X-52	10"Φ	46	146'-8 1/2"	212°-34'-52"	4°-45'-16"	148'-5 1/16"	✓
X-107-A	12"Φ	46	147'-0"	306°-51'-45"	15°-17'-20"	146'-11 3/32"	
X-103-A	12"Φ	46	147'-0"	334°-52'-19"	15°-17'-20"	146'-11 3/32"	
X-103-B	12"Φ	46	147'-0"	321°-51'-45"	15°-17'-20"	146'-11 3/32"	
X-10	16"Φ	46	146'-8 1/2"	346°-31'-10"	14°-45'-16"	148'-5 1/16"	
X-46	4"Φ	46	139'-11"	125°	2°-36'-01"	139'-10 15/16"	

MULTIPLE PENETRATIONS ABOVE EQUATOR (ELEV. 138'-5 1/16 TO 150'-0)

X-9A&B	32"Φ	55	140'-1"	0°	SEE NOTE ①	138'-5 1/16"	✓
X-47	4"Φ	35	140'-1"	0°	SEE NOTE ①	138'-5 1/16"	✓
X-13A	42"Φ	50	138'-8 3/16"	208°-43'-18"	SEE NOTE ②	138'-9 1/16"	
X-13B	42"Φ	51	138'-8 3/16"	156°-44'-45"	SEE NOTE ③	139'-5 1/16"	
X-37A&X-38A	1"Φ	37	———	14°-30'	14°-35'-21"	146'-7 3/32"	X-37A / X-38A
X-37B&X-38B	↓	↓	———	105°-30'	↓	↓	X-37B / X-38B
X-37C&X-38C	↓	↓	———	254°-30'	↓	↓	X-37C / X-38C
X-37D&X-38D	↓	↓	———	285°-30'	↓	↓	X-37D / X-38D

CONTINUED

MULTIPLE PENETS. CONTINUED

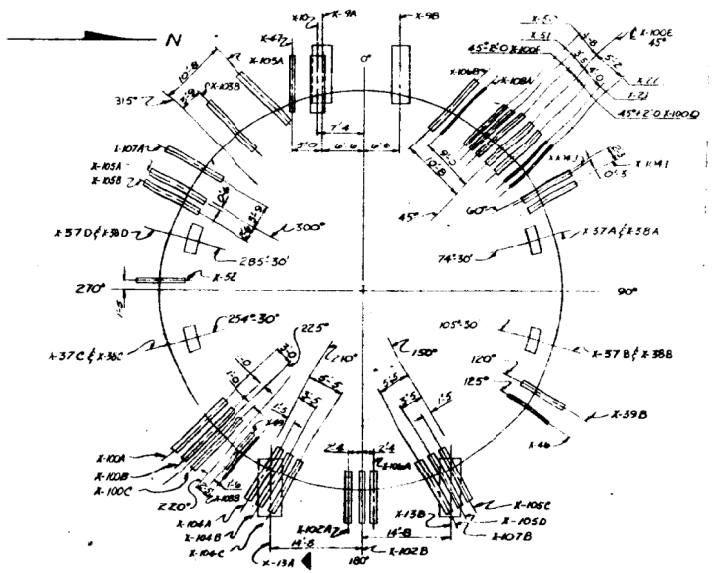
CUST. MK.	SIZE	CORE DWG. NO.	ELEV.	PENET. AZ. "B"	ANGLE "A"	ELEV. "C"	SPARE
X-106-B	12"Φ	46	147'-0"		15°-17'-20"	146'-11 3/32"	X-106-A
X-108-A	2"Φ	9	147'-0"				
X-50 & X-51	10"Φ	53	146'-8 1/2"	45°	2°-06'-51"	146'-10 3/4"	X-50-F
X-100-D&E&F	12"Φ	↓	147'-0"	↓	↓	↓	X-100-H
X-18 & X-22	3"Φ	↓	146'-8 1/2"	↓	↓	↓	
X-041 & J	12"Φ	60	147'-0"	63°	15°-17'-20"	146'-11 3/32"	✓
X-105-C&D&X-107-B	12"Φ	55	147'-0"	155°	15°-17'-20"	146'-11 3/32"	X-105-D / X-107-B
X-102-A&B&X-106-A	12"Φ	40	147'-0"	180°	15°-17'-20"	146'-11 3/32"	X-102-B / X-106-A
X-104-A&B&C	12"Φ	52	147'-0"	205°	15°-17'-20"	146'-11 3/32"	
X-100-A&B&C	12"Φ	39	147'-0"	225°	15°-07'-05"	146'-10 31/32"	X-100-C
X-49	10"Φ	↓	146'-8 1/2"	↓	↓	↓	X-49-F
X-108-B	2 1/2"Φ	↓	147'-0"	↓	↓	↓	
X-105-A&B	12"Φ	60	147'-0"	297°	15°-17'-20"	146'-11 3/32"	X-105-B

NOTES:

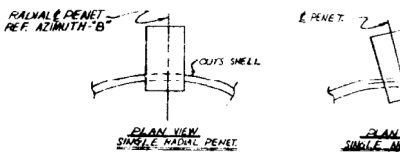
① X-9A&B & X-47 ARE ASSEMBLED WITH X-7A D& X-8. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED AS THE HORIZ. REF. LINE. X-7A D & X-8 ARE LISTED ON DWG. 3 WITH PENETS. BELOW EQUATOR.

② X-13A IS IN AN INSERT WITH X-12. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED AS THE HORIZ. REF. LINE. X-12 IS LISTED ON DWG. 3 WITH PENETS. BELOW EQUATOR.

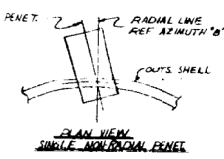
③ X-13B IS IN AN INSERT WITH X-11. THE INSERT STRADDLES THE EQUATOR & THE EQUATOR IS MARKED AS THE HORIZ. REF. LINE. X-11 IS LISTED ON DWG. 3 WITH PENETS. BELOW EQUATOR.



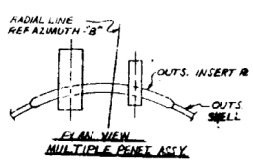
PLAN VIEW ABOVE EQUATOR (ELEV. 138'-5 1/16 TO 150'-0)



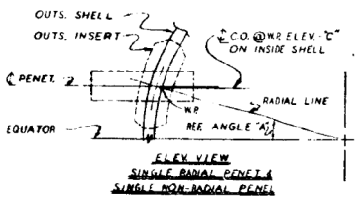
PLAN VIEW SINGLE RADIAL PENET.



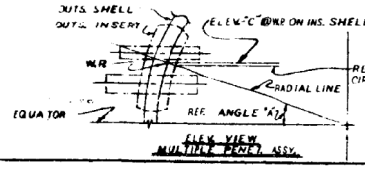
PLAN VIEW SINGLE NON-RADIAL PENET



PLAN VIEW MULTIPLE PENET ASSY.



ELEV. VIEW SINGLE RADIAL PENET. & SINGLE NON-RADIAL PENET.



ELEV. VIEW MULTIPLE PENET. ASSY.

REVIEWED PER CORPORATE Q.A. PLAN RELEASED FOR USE
CERTIFIED BY ____ DATE 1-12-70
UPDATED BY ____ REV. 2 DATE 7-9-70

HATCH 1 - UNIT
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

CHICAGO BRIDGE & IRON COMPANY

PENETRATION SCHEDULE ORIENTATION ABOVE EQUATOR

PURCHASER'S NO. PEH-154 CONTRACT NO. 09-4153
DRAWN BY J.V.W. DATE 2-17-70 REV. NO. 4 OF 2
CHECKED BY J.M.C. DATE 2-17-70
APPROVED BY J.M.C.
DRAWING NO.

COORDINATING PRINT

FROM ____ DATE ____

ROUTE	INITIAL	DATE
CIVIL		
STRUCT		
ARCH		
MECH		
LAYOUT		
ELEC		
PROJ. ENG		

VENDOR'S DRAWING REVIEW

1 ☑ No comment - Mfg may proceed.
2 ☐ Comments as noted. Make changes and resubmit drawing per comments.
3 ☐ Review not required. Mfg may proceed.

Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.

By ____ BECHTEL Date ____

JOB NO 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P O BOX 607 GAITHERSBURG, MD

DWG 4-A

6511 | 10-502 | S1566

TITLE: PENET. SCHEDULE ORIENTATION ABOVE EQUATOR

JOB: EDWIN I. HATCH NUCLEAR PLANT-UNIT 1

MFR. CB&I

P. O. REQ. PEH-154

CLASS 3-A-5

Revision ____ Reviewed by Southern Services, Inc. and returned without comment by letter dated ____ and signed by ____

Microfilm 9-2-77

SINGLE PENETRATIONS ABOVE EQUATOR (ELEV 150'-0 to 163'-2)

CUSTOMER MK	SIZE	CB&I DWG. NO.	ELEV.	PENET. AZ-"B"	ANGLE-"A"	ELEV.-"C"	SPARE
X-62	20"Φ	62	151'-6	180°	23°-42'-14"	151'-5 27/32	✓
X-27	10"Φ	48	154'-0	233°	28°-36'-42"	153'-11 3/16	
X-60A	8"Φ	62	160'-0	86°-28'-03"	41°-33'-06"	159'-11 3/4	✓
X-60B	8"Φ	62	↓	266°-28'-03"	↓	↓	✓
X-39A	10"Φ	59		230°			

MULTIPLE PENETRATIONS ABOVE EQUATOR (ELEV 150'-0 to 163'-2)

X-101A,B&C	12"Φ	42	152'-0	300°	24°-40'-11"	151'-11 27/32	
X-101D&E&F	↓	55	↓	165°	↓	↓	
X-104 D&E	↓	42	151'-6	195°	23°-42'-14"	151'-5 27/32	✓
X-104 F,G&H		54	152'-0	64°	26°-34'-46"	152'-11 9/16	
X-40C&D,X-45	10"Φ	54	154'-0	64°	26°-34'-46"	152'-11 9/16	X-45
X-40A&B	10"Φ	52	154'-0	225°	26°-36'-42"	153'-11 13/16	

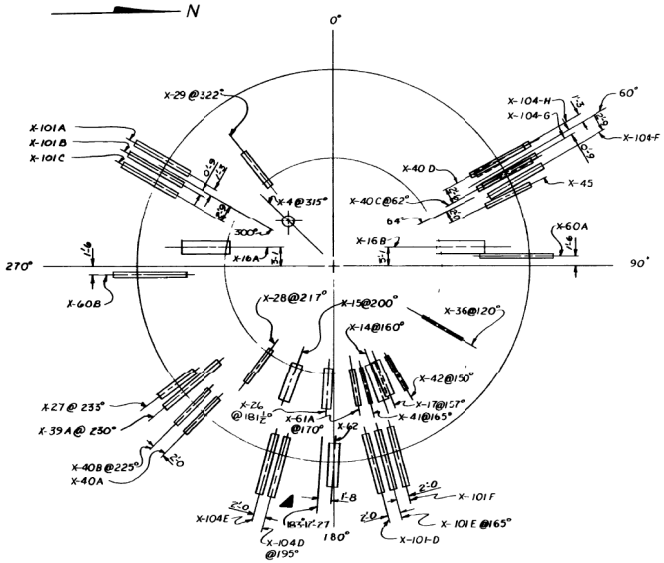
SINGLE PENETRATIONS IN DRYWELL CYLINDER

CUSTOMER MK	SIZE	CB&I DWG. NO.	PENET. AZ-"B"	ELEV.	SPARE
X-14	20"Φ	39	160°	172'-6	
X-15	20"Φ	↓	200°	174'-0	✓
X-16 A	26"Φ		279°-57'-43"	172'-9	
X-16 B	26"Φ		80°-02'-17"	172'-9	
X-26	18"Φ		181°-30'	193'-9	
X-28	10"Φ		217°	172'-6	X-28E
X-29	10"Φ		322°	172'-6	X29F
X-36	6"Φ		120°	176'-6	
X-42	6"Φ	↓	150°	189'-0	

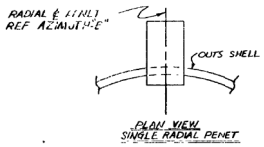
MULTIPLE PENETRATION IN DRYWELL CYLINDER

X-17	18"Φ	40	157°	194'-0	
X-41	6"Φ	↓	↓	↓	
X-61A	8"Φ				✓

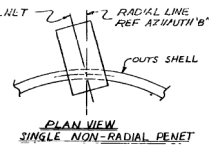
X-4	24 I.D.	63	315°	TOP HEAD MANWAY	



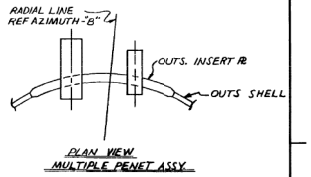
PLAN VIEW OF PENETS. ABOVE EQUATOR (ELEV 150'-0 TO 163'-2) & PENETS. IN DRYWELL CYLINDER



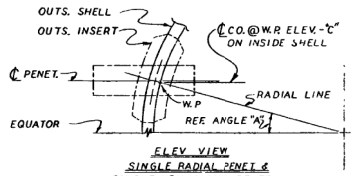
PLAN VIEW
SINGLE RADIAL PENET



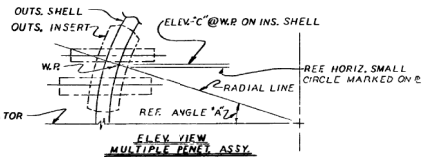
PLAN VIEW
SINGLE NON-RADIAL PENET



PLAN VIEW
MULTIPLE PENET ASSY.



ELEV. VIEW
SINGLE RADIAL PENET & SINGLE NON-RADIAL PENET.



ELEV. VIEW
MULTIPLE PENET. ASSY.

REVIEWED PER CORPORATE QA PLAN
RELEASED FOR USE
CERTIFIED BY ____ DATE 5-27-70
UPDATED BY RR REV. 2 DATE 5-28-70

EDWIN I. HATCH
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

CHICAGO BRIDGE & IRON COMPANY

PENET SCHEDULE ORIENTATION ABOVE EQUATOR

PURCHASER'S NO. 2511-154
DRAWN BY LVW DATE 2/17/70
CHECKED BY JWW DATE 2/17/70
ENGINEERING COORDINATOR
CONTRACT NO. 69-4153
DWG NO. 4-A REV 2

THIS DRAWING IS THE PROPERTY OF THE CHICAGO BRIDGE & IRON COMPANY AND IS TO BE USED ONLY IN CONNECTION WITH THE PERFORMANCE OF WORK BY THE CHICAGO BRIDGE & IRON COMPANY REPRODUCTION IN WHOLE OR IN PART FOR ANYOTHER PURPOSE IS EXPRESSLY FORBIDDEN.

MAY 27 1970

COORDINATING PRINT

FROM ____ DATE ____

ROUTE	INITIAL	DATE
CIVIL		
STRUCT		
ARCH		
MECH		
LAYOUT		
ELEC		
PROJ ENG		

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By ____ BECHTEL Date 6-11-70

JOB NO. 6511

BECHTEL ASSOCIATES
POWER & INDUSTRIAL DIVISION
P. O. BOX 607 GAITHERSBURG, MD.

S-6122

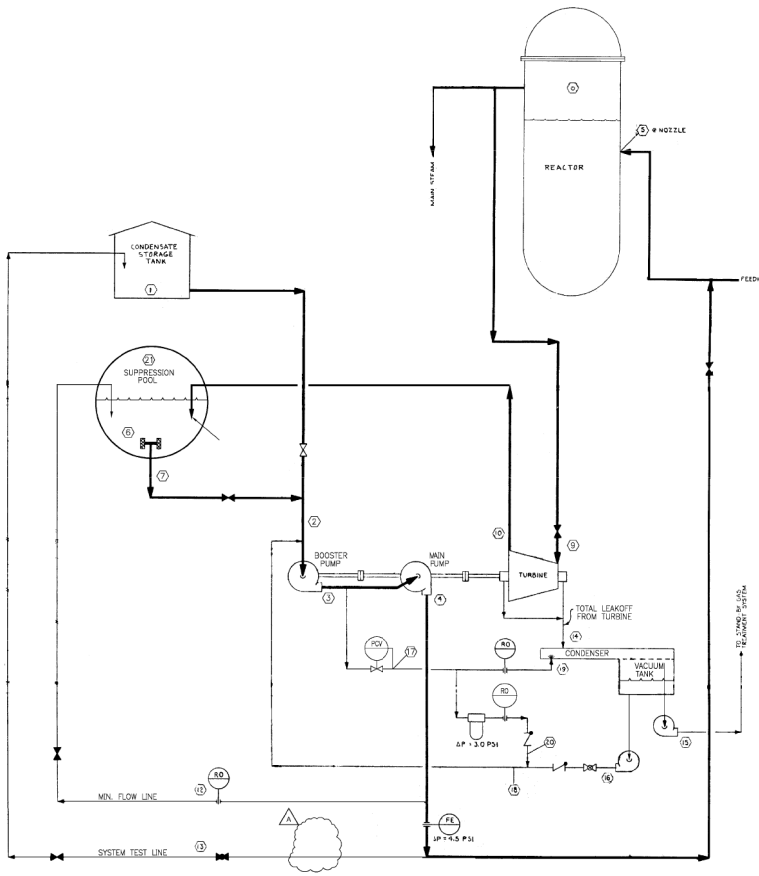
GENERAL ELECTRIC 729E626B

UNLESS OTHERWISE SPECIFIED THE FOLLOWING APPLIES PER MIL-STD-100

TITLE PROCESS DIAGRAM
HIGH PRESSURE COOLANT INJECTION SYS
FIRST MADE FOR EDWIN I. HATCH 626 5390A

FDF : 23B X 1308A, E41-1020

NOTES:
1. ATMOSPHERIC PRESSURE OF 14.7 PSIA WAS USED IN CALCULATIONS.
2. WATER FLOWS ARE SHOWN IN GPM. STEAM FLOWS IN 1000 LB/HR.
3. THE MAXIMUM POOL WATER TEMPERATURE FOR CONTINUOUS SYSTEM OPERATION WILL NOT EXCEED 140°F. HOWEVER, DUE TO POTENTIAL SHORT TERM OPERATION AT HIGHER TEMPERATURES, PIPING EXPANSION SHALL BE BASED ON 170°F.
4. THE FOLLOWING ADDITIONAL ACCIDENT OPERATING MODES ARE POSSIBLE:
   SUCTION FROM CONDENSATE STORAGE ; SUPPRESSION POOL AT LOW PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.
   SUCTION FROM SUPPRESSION POOL, SUPPRESSION POOL AT HIGH PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.
   THESE POTENTIAL OPERATING MODES DO NOT CONTROL PIPE OR VALVE SIZING OR SPECIFICATION, AND NO DATA IS SHOWN.
5. DELETED
6. THE CONTROLLING MODES FOR LINE SIZING AND ARRANGEMENT ARE:
   SUCTION FROM COND. STORAGE - - - MODE A
   SUCTION FROM SUPPRESSION POOL- - MODE C
   PUMP DISCHARGE - - - - - - - - - MODE C
   STEAM SUPPLY - - - - - - - - - - MODE B
   TURBINE EXHAUST- - - - - - - - - MODE A, C & D
   TEST LINE- - - - - - - - - - - - MODE E
   COOLING SYSTEM - - - - - - - - - MODE A
7. THE PRESSURE LOCATION ⑨ IS ESTIMATED FROM PRELIMINARY PUMP DATA.
8. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. IS 450 GPM MINIMUM, DURING MODE A.
9. DELETED



MODE A ACCIDENT MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT HIGH PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW – SEE NOTE 2	—	4250	4320	4250	4250	—	0	—	87.8	87.3	87.3	—	0	0.5	0.05	20*	70	90	83	50	—
PRESSURE – PSIA	14.7	✱	285	✱	175	—	170	—	✱	✱	✱	—	14.5	14.9	✱	75	✱	✱	✱	50	—
TEMPERATURE °F	100	100	100	100	100	—	100	—	166	SAT	SAT	285	100	—	240	200	200	100	150	150	140

MODE B ACCIDENT MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT HIGH PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW – SEE NOTE 2	—	4250	4320	4250	4250	—	0	—	108	108.0	108.0	—	0	0.5	0.05	20*	70	70	20	50	—
PRESSURE – PSIA	14.7	✱	85	✱	170	—	—	65	✱	✱	51.8	✱	—	14.5	14.9	✱	75	✱	✱	✱	50
TEMPERATURE °F	100	100	100	100	100	—	—	166	SAT	SAT	285	100	—	240	200	200	100	150	150	150	140

MODE C ACCIDENT MODE: SUCTION FROM SUPPRESSION POOL, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW – SEE NOTE 2	—	4250	4320	4250	4150	—	4250	—	58.8	58.1	58.1	—	0	0.5	0.05	20*	70	70	28	50	—
PRESSURE – PSIA	—	✱	285	✱	175	17.7	18.5	170	✱	✱	✱	✱	—	14.5	14.9	✱	75	✱	✱	✱	14.7
TEMPERATURE °F	—	140	140	140	140	140	140	166	SAT	SAT	218	140	—	240	200	200	140	170	170	170	140

MODE D ACCIDENT MODE: SUCTION FROM SUPPRESSION POOL, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW – SEE NOTE 2	—	4250	4310	4250	4850	—	4250	—	71.0	70.5	70.5	—	0	0.5	0.05	20*	70	70	20	50	—
PRESSURE – PSIA	—	✱	85	✱	170	17.7	14.5	65	*	▲	16.6	✱	—	14.5	14.9	✱	75	✱	✱	✱	14.7
TEMPERATURE °F	—	140	140	140	140	140	140	166	SAT	SAT	218	140	—	240	200	200	140	170	170	170	140

MODE E TEST MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW – SEE NOTE 2	—	4250	4320	4250	0	—	0	—	143	112.5	142.5	—	4250	0.5	0.05	20*	70	70	28	50	—
PRESSURE – PSIA	14.7	✱	285	✱	—	—	—	1050	✱	✱	29.4	✱	✱	14.5	14.9	✱	75	✱	✱	✱	14.7
TEMPERATURE °F	100	100	100	100	—	—	—	551	SAT	SAT	218	100	100	240	200	200	100	130	130	130	140

✱ = THE PRESSURE AT THIS LOCATION DEPENDS UPON PIPING AND MAY BE VARIED WITHIN THE FOLLOWING LIMITS.

LOCATION
③ MINIMUM NPSH AT PUMP SUCTION = 31 FT.
②TO④ MAXIMUM PRESSURE RISE = 7850 FEET @ HIGH FLOW MODE
1320 FEET @ NOM MODE
⑧ MAXIMUM PRESSURE DROP BETWEEN LOCATIONS ⑧ AND ⑫ = 15 PSI
⑨ MAXIMUM PRESSURE = 65 PSIA
⑪ SUFFICIENT PRESSURE TO RETURN TO SUPPRESSI POOL
⑬ SUFFICIENT PRESSURE TO RETURN TO COND.
⑫ MAXIMUM PRESSURE AVAILABLE = 65 PSIA
⑭ & ⑮ SUFFICIENT PRESSURE TO RETURN TO PUMP DURING OPERATION.

1 T.N.
REV BY

729E626BA

CAD AutoCAD S16122

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 1
TITLE: PROCESS DIAGRAM – HIGH PRESSURE COOLANT INJECTION SYSTEM
VENDOR: GENERAL ELECTRIC
P.O.#: PEH-002
S-16122 B

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
REVISED PER REA HT-96660. SEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 2 BY SCS)	B 10-27-99	KB	HNB	WKK				

B11-D193		729E989	
G511-2010-502		9257248	
TITLE: POWER RANGE MONITORING UNIT ASM - NEUTRON MONITORING SYS.			
EDWIN I. HATCH NUCLEAR PLANT-UNIT 2			
MFR. GE		P.O. PEH-2-2 REQ. CLASS 3-D	

2111-D196

RECORD COPY

Revision 7 Reviewed by Southern Services. Not returned without comment by letter dated 12-31-71 and signed by ...

GENERAL ELECTRIC

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING: APPLIED PRACTICES — SURFACES ✓ — TOLERANCES ON MACHINED DIMENSIONS: FRACTIONS ± 1/64, DECIMALS ±.005, ANGLES ± 30'

TITLE: POWER RANGE MONITORING UNIT

FIRST MADE FOR NEUTRON MONITORING SYSTEM

PURCHASED PART

PT. NO.	NAME	VENDOR	VENDOR IDENT. NO.	MPL NO.
1	P.R.M. INSTALL. HARDWARE	NID	237X657G1	718, 2-1-103, B11-D14
2	POWER RANGE DETECTOR	↓	129B362063	
3	POWER RANGE DETECTOR		129B362064	719
4	POWER RANGE DETECTOR		129B362065	
5	POWER RANGE DETECTOR		129B362069	2-1-104
6	POWER RANGE DETECTOR		129B362065	
7				
8	POWER RANGE DETECTOR		129B362067	2-1-104, B11-D193
9	POWER RANGE DETECTOR	↓	129B3620G10	719
10	POWER RANGE DETECTOR	NID	129B3620G11	719

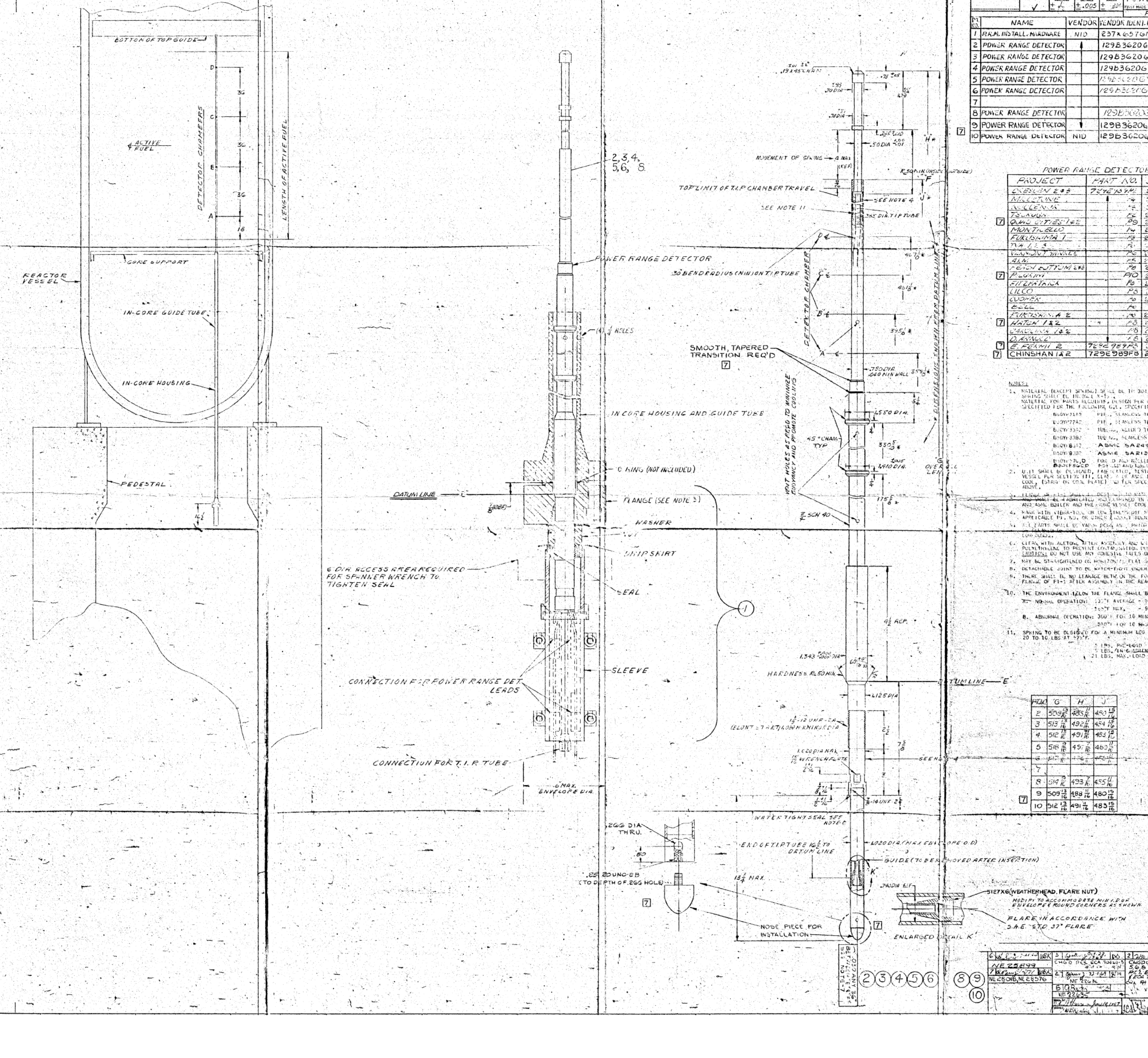
POWER RANGE DETECTORS

PROJECT	PART NO.	SPEC. NO.
DRESDEN 2 & 3	729E989P2	21A1441
MILLSTONE	P4	21A1477
NUCLENOR	P5	[illegible]
TSURUGA	P2	21A1424
QUAD CITIES 1 & 2	P9	21A1442
MONTICELLO	P4	21A1443
FUKUSHIMA 1	P3	21A1444
TVA 1, 2, 3	P6	21A1410
VERMONT YANKEE	P6	21A1477
A.K.M.	P5	21A1498
PEACH BOTTOM 2 & 3	P6	21A1473
PILGRIM	P10	21A1445
FITZPATRICK	P6	21A1499
LILCO	P6	21A1545
COOPER	P6	21A1475
BELL	P6	[illegible]
FUKUSHIMA 2	P6	21A1470
HATCH 1 & 2	P8	21A1519
CAROLINA 1 & 2	P8	21A1510
D. ARNOLD	P8	21A1520
E. FERMI 2	729E989P8	21A1521
CHINSHAN 1 & 2	729E989F8	21A1661

NOTES:

1. MATERIAL (EXCEPT SPRING) SHALL BE TP 304, F304 OR TP 316 STAINLESS STEEL. SPRING SHALL BE INCONEL X-750. MATERIAL FOR PARTS REQUIRING DESIGN PER ASME CODE SECTION III, SHALL BE SPECIFIED PER THE FOLLOWING G.E. SPECIFICATIONS
   - B50YP21A2 PIPE, SEAMLESS TP 316, ASME SA312
   - B50YP22A2 PIPE, SEAMLESS TP 304, ASME SA312
   - B50YP33A2 TUBING, WELDED TP 304, ASME SA249
   - B50YP33B2 TUBING, SEAMLESS TP 304, ASME SA213
   - B50YP63A2 ASME SA249
   - B50YP83B2 ASME SA213
   - B50YP57C,D FORGED AND ROLLED PARTS F304, ASME SA182
   - B50YF56C,D FORGED AND ROLLED PTS F316 ASME SA182
2. UNIT SHALL BE DESIGNED, FABRICATED, TESTED AND STAMPED AS A PRESSURE VESSEL PER SECTION III, CLASS A OF ASME BOILER AND PRESSURE VESSEL CODE, (STAMP ON CODE PLATE) AND PER SPECIFICATION AS SHOWN IN TABLE ABOVE.
3. FLANGE [illegible] SHALL BE DESIGNED TO MATE WITH G.E. DWG. [illegible] AND SHALL BE FABRICATED AND EXAMINED IN ACCORDANCE WITH USAS B16.5 AND ASME BOILER AND PRESSURE VESSEL CODE, SECT. III.
4. MARK WITH VIBRA-TOOL OR LOW STRESS DIE STAMP OR AREA INDICATED APPLICABLE PT. NO. OR OTHER [illegible] IDENTIFICATION.
5. ALL PARTS SHALL BE VAPOR DEGREASED PRIOR TO ASSEMBLY PER G.E. [illegible] [illegible] COMPOUNDS.
6. CLEAN WITH ACETONE AFTER ASSEMBLY AND WRAP TIGHTLY IN CLEAN, CLEAR POLYETHYLENE TO PREVENT CONTAMINATION DURING STORAGE AND SHIPMENT. CAUTION: DO NOT USE ANY ADHESIVE TAPES ON BASE METAL.
7. MAY BE STRAIGHTENED ON HORIZONTAL FLAT SURFACE TO MEET THIS REQUIREMENT.
8. DETACHABLE JOINT TO BE WATER-TIGHT UNDER 11? FT. OF WATER.
9. THERE SHALL BE NO LEAKAGE BETWEEN THE POWER RANGE DETECTOR AND THE FLANGE OF PT-1 AFTER ASSEMBLY IN THE REACTOR AT [illegible] REACTOR PRESSURE.
10. THE ENVIRONMENT BELOW THE FLANGE SHALL BE:
    - A. NORMAL OPERATION: 135°F AVERAGE - 50% R.H. / 165°F MAX. - 90% R.H. - UP TO 30 MINUTES
    - B. ABNORMAL OPERATION: 300°F FOR 10 MINUTES / 250°F FOR 10 HRS. } 100% R.H.
11. SPRING TO BE DESIGNED FOR A MINIMUM 100 SPRING UNLOADINGS FROM 20 TO 10 LBS AT 575°F.
    - 5 LBS. PRE-LOAD
    - 5 LBS./IN GRADIENT
    - 21 LBS. MAX. LOAD

PT. NO.	'G'	'H'	'J'
2	509 13/16	485 11/16	450 15/16
3	513 13/16	492 11/16	454 15/16
4	512 13/16	491 11/16	453 15/16
5	518 9/16	497 7/16	460 11/16
6	517 9/16	496 11/16	459 11/16
7			
8	514 9/16	493 7/16	455 11/16
9	509 13/16	488 11/16	480 15/16
10	512 13/16	491 11/16	483 15/16



VENDOR'S DRAWING REVIEW
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BECHTEL — Date 7/28/71
JOB NO. 6511 — BECHTEL ASSOCIATES POWER & INDUSTRIAL DIVISION P.O. BOX 607 GAITHERSBURG, MD.

microfilmed 4/9/84

POOR QUALITY ORIGINAL

BEST SOURCE DOCUMENT AVAILABLE. MAY NOT BE OF MICROFILMABLE QUALITY.

REVISIONS

6 ... WBK NE 25899	3 CHGD PER ECA 90420-5	2 CHGD G, H, J DIMENS PTS 5, 6, 8 DELETED PT. 1, ECA 7335-6A & ECA 7335-6	1 ADDED PTS 5, 7, 8 WEATHERHEAD FLARE NUT WAS BEING PARKER FLARE ...
7 ... 1-7-71 WBK NE 28018, NE 28576	4 ... 12-1-69 NE 22636		
	5 ... NE 22635		

A.F.E.D. — SAN JOSE — 729E989 — SH NO 1

S25140

GENERAL ELECTRIC — TITLE: PROCESS DIAG. RESIDUAL HEAT REMOVAL SYS. — FIRST MADE FOR NUCLEAR BOILER SYS. — 761E292BA

FCF: MPL NO E11-1020 — OVERALL REVISION 9

SUMMARY SHEET	REV
1	9
2	8

LEGEND:
RX PRESS - REACTOR VESSEL PRESSURE
SOH - SHUTOFF HEAD (PUMPS)

REFERENCE DOCUMENTS:	MPL ITEM NO.
1. RESIDUAL HEAT REMOVAL SYSTEM P&ID	E11-1010
2. RECIRCULATION SYSTEM PROCESS FLOW DATA	B31-1040
3. NUCLEAR BOILER PROCESS DATA	B21-1020

MODE A (SEE NOTE 13)

RX PRESS. 20 PSID ABOVE DRYWELL PRESSURE

POSITION ⬡	1	2A	3A	4A			5A	6A	7A	8A	9A	10A								13A	14A	15A	16	
FLOW-GPM	—	10,100	10,100	10,100			10,100					10,100								10,100	10,100	10,100	—	
PRESS-PSIA	14.7	X	X	X			X																34.7	
TEMP. °F	—	175/75																				175/75	—	
MAX. PRESS. DROP-FEET							TDH-324				ΔP=8.6										ΔP=25.1			

MODE B (SEE NOTE 13)

RX PRESS. 20 PSID ABOVE DRYWELL PRESSURE

POSITION ⬡	1	2A&C	3A&C	4A&C	5A&C	6A&C	7A	8A	9A	10A				13A	14A	15A	16							
FLOW-GPM	—	8,650				8,650	17,300									17,300	—							
PRESS-PSIA	14.7	X	X	X	X	X	X	X	X	X				X	X	X	34.7							
TEMP. °F	—	175/75														175/75	—							
MAX. PRESS. DROP-FEET					TDH-391																			

MODE C-1

POSITION ⬡	1	2B&D	3B&D	4B&D	5B&D	6B&D	7B	17B	18B	8B	9B	10B	12B	19B	19.5	19.1B	20B	21	22B	23B	1		24B	25B	
FLOW-GPM	—	5,775				5,775	11,550							11,550	10,950		10,950	—	600	600	—		8,000	8,000	
PRESS.-PSIA	14.7	X	X	X	X	X	X	X	X	X	X	X	X	X				14.7			14.7		X	X	
TEMP. °F	—	165						165	155.3								155.3	—	155.3	155.3	—		95	109	
MAX. PRESS. DROP-FEET					TDH-490																				

DUTY PER HX 56.1 x 10^6 BTU/HR (1 HX OPERATING) — SEE NOTE 4

MODE C-2 (SEE NOTE 2)

POSITION ⬡	1	2B	3B	4B	5B	6B	7B	17B	18B	8B	9B	10B	12B	19B	19.5	19.1B	20B	21	22B	23B	1		24B	25B	
FLOW-GPM	—	7,700												7,700	7,300		7,300	—	400	400	—		8,000	8,000	
PRESS-PSIA	14.7					X	X	X	X	X	X	X	X	X	X	X	X	14.7	X	X	14.7		X	X	
TEMP. °F	—	205						205	183								183	—	183	183	—		95	116.2	
MAX. PRESS. DROP-FEET					TDH-440																				

DUTY PER HX 84.7 x 10^6 BTU/HR (1 HX OPERATING)

MODE H

POSITION ⬡	1	2B&D	3B&D	4B&D	5B&D	6B&D	7B	8B	9B	10B	12B	12.1B	22B	35B	26B	1						
FLOW-GPM	—	7,700				7,700	15,400								15,400	—						
PRESS.-PSIA	14.7	X	X	X	X	X	X	X	X	X						14.7						
TEMP. °F	—	AMB													AMB	—						
MAX. PRESS. DROP-FEET					TDH=440																	

MODE J

RX PRESS. 135 PSIG

POSITION ⬡	16	38	39	40A	41A	5A	6A	48A	26A	1		1	2A&C	3A&C	4A&C	5A&C	6A&C	6.2A	48A	26A	1			
FLOW-GPM	—	>400							>400	—		—	400				400	800	800	800	—			
PRESS.-PSIA	150	X	X	X	X	X			X	14.7		14.7	X	X	X	X				X	14.7			
TEMP. °F	—	358							358	—		—	125							125	—			
MAX. PRESS. DROP-FEET						SOH 575/620										SOH 575/620								

MODE S

POSITION ⬡	1	2A&C B&D	3A&C B&D	4A&C B&D	5A&C B&D	6A&C B&D	9A/B	10A/B	12A/B	13A/B	14A/B	17A/B	18A/B	20A/B	22A/B	44	45	27	28A&B	29A/B	30A/B	31A/B	32A/B	33A/B	36	37	39	41A&B/C&D	46
FLOW GPM	N/A																												N/A
PRESS-PSIA	14.7	X	X	X	X	X	X	X	X	X	1,015	X	X	15.5	X	X	1,015	X	X	X	X	X	X	X	X	X	X	X	X
TEMP. °F	90/40									90/40	547	90/40	90/40	135	90/40	90/40	547	AMB	AMB	90/40				90/40	AMB				AMB

DESIGN PRESSURE & TEMPERATURE, GIVEN BELOW, IS FOR INFORMATION ONLY & IS THE BASIS FOR DESIGN OF BWRSD SUPPLIED EQUIPMENT.

POSITION ⬡	3.5		4	5	6	6.5	7	8	9	10	12	11			13	14	7	16.5	17	18	18.5	8	38	38.5	39	40	41	5
DESIGN PRESS IN PSIG	125			185	RHR PUMP	450										SEE REF 2 (PTS 5-14)	450		RHR HX	450			SEE REF 2 (PTS. 1-4)	185				
DESIGN TEMP IN °F	225			358		358											358	452		452	358			356				
	LPCI LINE (VIA HX BYPASS)																HX LINE						SHUTDOWN SUCTION					

DISABLED (positions 46 through 37)

POSITION ⬡	46	27	28	29	30	17	18	31	32	33	34	34.1	36	37	12	19	19.5	42	43	44	45	34	34.2	35
DESIGN PRESS IN PSIG		SEE REF 3 (PTS. 2-9)			450		450					125			450						N/A NOTE 15	450	125	
DESIGN TEMP IN °F					452		452				140	140			358						N/A NOTE 15	140	225	
	STEAM TO HX						STEAM TO HX								HEAD SPRAY LINE							CONDENSATE TO POOL		

POSITION ⬡	12	19	19.5	19.1	20	12	12.1	22	23	22	22.1	48	26
DESIGN PRESS IN PSIG	450					450				450	125		
DESIGN TEMP IN °F	358				225	358	225			225	225		
	CONTAINMENT SPRAY					SUPPRESSION SPRAY				TEST LINE			

MODE E (SEE NOTE 2)

RX PRESS. 85 PSIG (SEE NOTE 8)

POSITION ⬡	16	38	39	40A&B	41A&B	5A&B	6A&B	7A&B	17A&B	18A&B	8A&B	13A	14A	15A	13B	14B	15B	19	42	43	44	45	16	24A&B	25A&B
FLOW-GPM	—	15,400	15,400	7,700				7,700	<7,700	<7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	N/A				N/A	—	8,000	8,000
PRESS.-PSIA	100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						100	X	X
TEMP. °F	—	328							328	288.8												N/A	—	85	122.7
MAX. PRESS. DROP-FEET						TDH-440													ΔP=20			ΔP=100			

DUTY PER HX 187.1 x 10^6 BTU/HR (2 HX'S OPERATING)

MODE F

RX PRESS. 0 PSIG

POSITION ⬡	16	38	39	40A&B	41A&B	5A&B	6A&B	7A&B	17A&B	18A&B	8A&B	9A&B	10A&B	11A&B			13A&B	14A&B	15A&B	16		24A&B	25A&B		
FLOW-GPM	—	15,400	15,400	7,700															7,700	—		8,000	8,000		
PRESS.-PSIA	14.7						X	X	X	X	X	X	X	X			X	X	X	14.7					
TEMP. °F	—	125							125	117									117	—		85	92.7		
MAX. PRESS. DROP-FEET						TDH-440			ΔP=23.3													ΔP=23.1			

DUTY PER HX 30.8 x 10^6 BTU/HR (2 HX'S OPERATING)

MODE G (SEE NOTE 2 & 13)

RX PRESS. 0 PSIG

POSITION ⬡	1	2A	3A	4A	5A	6A	7A	8A	9A	10A	12A	11A	13A	14A	15A	16								
FLOW-GPM	—	10,900													10,900	—								
PRESS.-PSIA	14.7					X	X	X	X	X	X	X	X	X		14.7								
TEMP. °F	—	175													175	—								
MAX. PRESS. DROP-FEET					TDH-295																			

TABLE 1 - VALVE POSITION CHART — SEE NOTES 7 & 12

	F004	F006			F047	F048	F003	F017	F015	F050	F016	F021	F028	F027	F024	F023	F022	F019	F053	F011	F054	F026	F073	F075	F078	F068	F008	F009	F007
MODE A	O					O		O	O	O																			
MODE B	O					O		O	O	O																			
MODE C1	O				O		O				T	O	O	T												T			
MODE C2	O				O		O				T	O	O	T												T			
MODE E		O			O	Y	O	T/O	O	O																T	O	O	
MODE F		O			O		O	T	O	O																T	O	O	
MODE G	O					O		O	O	O																			
MODE H	O					O							O		T														
MODE J	O	O																									O	O	O O
MODE S	O				O	O	O	O																					

P = STRAINER PLUGGED
BLANK SPACE INDICATES VALVE IS CLOSED
T-C = VALVE THROTTLED OR CLOSED
O-T = VALVE OPENED OR THROTTLED
O = VALVE OPEN
T = VALVE THROTTLED

TABLE 2 - LIMITING LINE LOSSES

MODE A	6-15
MODE B	NONE
MODE C1	13-20-21 & 22-23-1
MODE C2	1-2-5
MODE D1	DELETED
MODE D2	DELETED
MODE D2 (CONT)	DELETED
MODE E	19-45-16
MODE F	16-38-41
MODE G	1-2-5
MODE H	12-22-35-26-1
MODE J	6-48

MODES:
A. ACCIDENT W/RECIRC LINE BREAK IN SIDE II WITH ONE PUMP OPERATION AND STRAINER 50% PLUGGED. (20 PSIG)
B. ACCIDENT W/RECIRC LINE BREAK IN SIDE II WITH TWO PUMP OPERATION AND STRAINER 50% PLUGGED. (20 PSIG)
C-1 POST ACCIDENT CONTAINMENT SPRAY W/HEAT REJECTION WITH TWO PUMP OPERATION AND STRAINER 50% PLUGGED. (NORMAL SUPPRESSION POOL TEMPERATURE)
C-2 POST ACCIDENT CONTAINMENT SPRAY W/HEAT REJECTION WITH ONE PUMP OPERATION AND STRAINER 50% PLUGGED. (PEAK SUPPRESSION POOL TEMPERATURE)
D-1 DELETED
D-2 DELETED
E. NORMAL SHUTDOWN AFTER BLOWDOWN TO MAIN CONDENSER. (SEE NOTE 8)
F. CONTINUATION OF NORMAL SHUTDOWN FROM PLANT MODE E. (0 PSIG) & FUNCTIONAL TEST FOLLOWING SHUTDOWN.
G. ACCIDENT W/RECIRC LINE BREAK IN SIDE II WITH STRAINER 50% PLUGGED AND ONE PUMP OPERATION. (0 PSIG)
H. R.H.R. SYSTEM TEST DURING PLANT OPERATION.
J. MINIMUM FLOW BYPASS MODE.
S. SYSTEM ON STANDBY DUTY.

NOTES:
1. EMPTY DATA BLANKS ARE TO BE FILLED IN BY OTHERS (BASED ON HIS ARRANGEMENTS) AND SUBMITTED TO "BWRSD" FOR REVIEW. IF SIDE I AND SIDE II ARE NOT SYMMETRICALLY ARRANGED, VALUES FOR BOTH SHALL BE SUBMITTED.
2. THE MINIMUM PUMP NPSH AVAILABLE DURING MODE C-2, E OR G MUST BE 4 FT GREATER THAN THE PUMP REQUIREMENTS. (N) ADEQUATE NPSH SHALL BE DETERMINED BASED ON POOL TEMPERATURE OF 206°F FOR MODE C-2 AND 161°F FOR G AND THE SUCTION STRAINERS PLUGGED WITH MAXIMUM POST-ACCIDENT DEBRIS LOADS.
3. ELEVATIONS ARE NOT INCLUDED IN ΔP VALUES GIVEN. ELEVATIONS SHALL BE INCLUDED WHEN DETERMINING FINIAL VALUES FOR THE EMPTY DATA BLANKS.
4. DASHED LINES INDICATES FLOW DOES NOT PASS THROUGH THESE POINTS.
5. SERVICE WATER CROSSTIE SHALL BE SIZED TO FLOW 3200 GPM. SEE SH.2 L-11.
6. LINE SHALL BE BASED ON FLOW SHOWN ON FUEL POOL PROCESS DIAGRAM.
7. TABLE 1 INDICATES VALVE POSITIONS DURING VARIOUS MODES OF OPERATION.
8. SHUTDOWN OPERATION MAY BE INITIATED AT A MAXIMUM REACTOR VESSEL PRESSURE OF 135 PSIG.
9. DELETED
10. THE PRESSURE SHOWN AT POINT 1 ON MODE C-2 IS A MIN. VALUE FOR NPSH CALCULATIONS.
11. THE WEIGHT OF WATER IN THE SHUTDOWN COOLING SUBSYSTEM PIPING, INCLUDING THE HEAT EXCHANGERS & PUMPS, SHALL NOT EXCEED 225,000# AT 70°F TO PREVENT DILLUTION OF STANDBY LIQUID CONTROL NEUTRON ABSORBER BELOW MINIMUM REQUIREMENTS.
12. FOR MODE A, B, C1, C2 AND G ASSUME 1 STRAINER 50% PLUGGED.
13. FLOWS SHOWN FOR MODES "A" AND "B" ARE THE MINIMUM ALLOWABLE (TRUE) FLOWS. FLOW SHOWN FOR MODE "G" IS THE MAXIMUM ALLOWABLE MEASURED FLOW. THE MAXIMUM POSSIBLE RUN OUT FLOW IS 11,500 GPM FOR THE CASE OF ONE PUMP INJECTING INTO A BROKEN RECIRCULATION LOOP, ASSUMING ORIFICE IS SIZED AT THE HIGH END OF A +400/-0 GPM SIZING TOLERANCE.
14. VALVEF010 SHALL BE PERMANENTLY CLOSED (POWER DISCONNECTED) UNLESS THE REACTOR IS IN THE COLD SHUTDOWN CONDITION.
15. HEAD SPRAY DISCONNECTED AT RPV.

HATCH II MPL ITEM NO. E11-1020 PART OR GROUP NO. ____

S-25140 HATCH

REV 9 DATE 7-31-87 INCORPORATED ABN 86-940 SUP O; (DCR 86-63 REV O) (By SCS)
PER NE 80983 — NESS941 — PER ECN NE 44698 — NE 39064
761E292BA — SAN JOSE, CA.

CAD AutoCAD S25140

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: RESIDUAL HEAT REMOVAL SYSTEM PROCESS DIAGRAM
VENDOR: GE — P.O.#: PEH2-2
S25140 N

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	N	DATE	6-3-99
REV. PER REA HT-96660.			
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 11 BY SCS)			

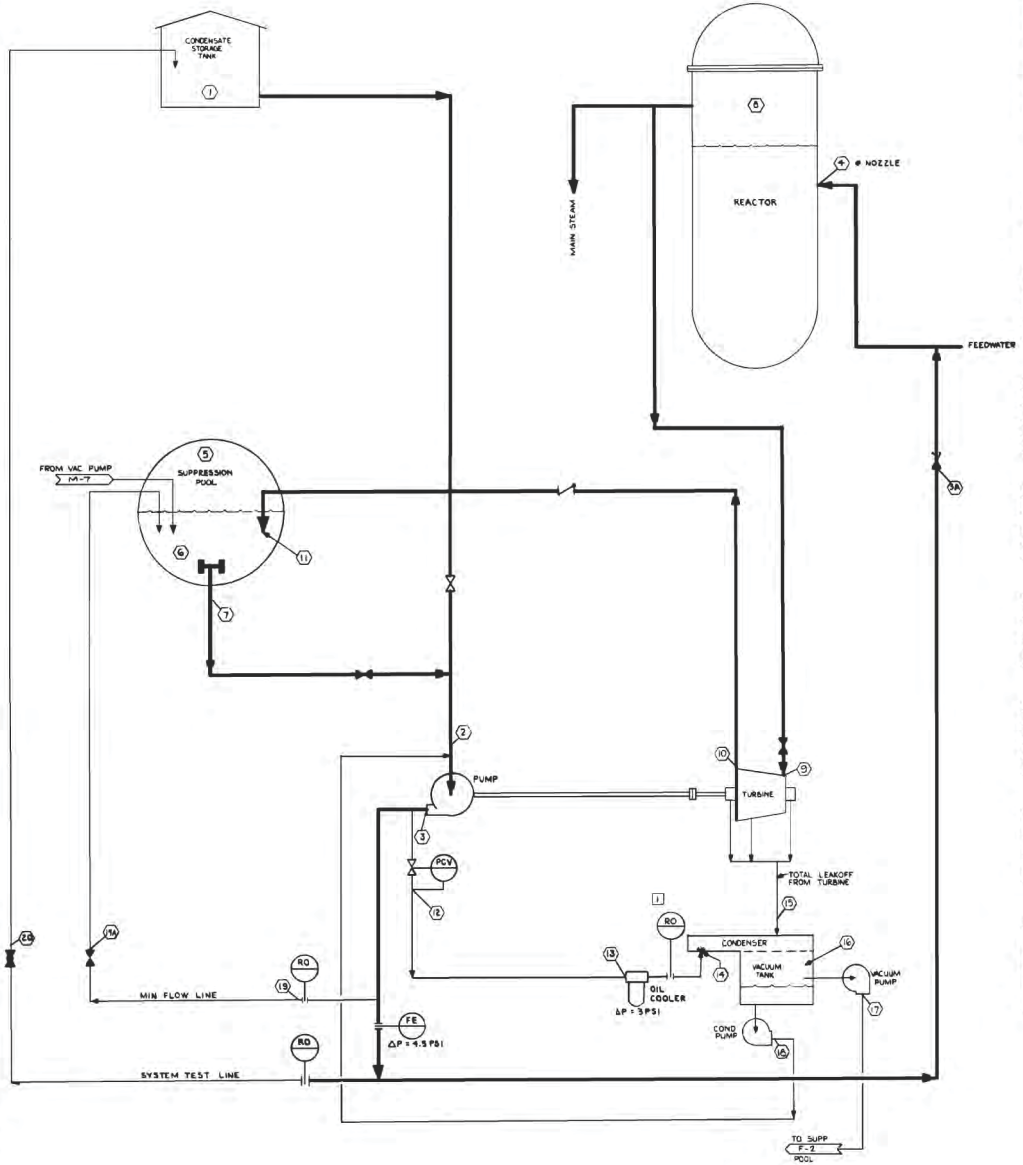
BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
KB	JWD	HNB				

S-25171

12 ESIDENT: PROCESS DIAG RCIC SYS — GENERAL ELECTRIC — 731E7698A

TITLE: RCIC SYSTEM — NUCLEAR BOILER SYS 236X350BA

FGF: 238X131BAG2, ES1-1020



LOCATION

(2) MINIMUM NPSH AT PUMP SUCTION = 20 FEET.

(3) MAXIMUM PRESSURE RISE ACROSS PUMP = 2880 FEET FOR MODES A & C
= 525 FEET FOR MODES B & D

(9) MAXIMUM PRESSURE DROP BETWEEN LOCATIONS (8) AND (9) = 15 PSI

(10) MAXIMUM PRESSURE ALLOWED = 25 PSIA

(13) MAXIMUM PRESSURE ALLOWED = 75 PSIA

(15) SUFFICIENT VACUUM TO PREVENT TURBINE SHAFT-OUT-LEAKAGE. TO BE SPECIFIED ON TURBINE VENDOR DRAWING.

(17) MAXIMUM PRESSURE AVAILABLE = 25 PSIA

(18) MAXIMUM PRESSURE AVAILABLE = 65 PSIA

(19) SUFFICIENT PRESSURE TO RETURN TO SUPPRESSION POOL.

(20) SUFFICIENT PRESSURE TO RETURN TO COND. STORAGE.

* = THE PRESSURE AT THIS LOCATION DEPENDS UPON PIPING ARRANGEMENTS, AND MAY BE VARIED WITHIN THE FOLLOWING LIMITS.

NOTES:

1. ATMOSPHERIC PRESSURE OF 14.7 PSIA WAS USED IN CALCULATIONS.
2. WATER FLOWS ARE SHOWN IN GPM, STEAM FLOWS IN 1000 LB/HR.
3. THE MAXIMUM POOL WATER TEMPERATURE FOR CONTINUOUS SYSTEM OPERATION WILL NOT EXCEED 140°F. HOWEVER, DUE TO POTENTIAL SHORT TERM OPERATION AT HIGHER TEMPERATURES, PIPING EXPANSION SHALL BE BASED ON 170°F.
4. THE UNRECOVERED FLOW NOZZLE PRESSURE DROP OF 4.5 PSI IS A FIXED LOSS BETWEEN LOCATIONS (5) AND (6).
5. THE LUBE OIL COOLER PRESSURE DROP OF 3.0 PSI IS A FIXED LOSS BETWEEN LOCATIONS (13) AND (14).
6. THE CONTROLLING MODES FOR LINE SIZING AND ARRANGEMENT ARE:

SUCTION FROM COND STORAGE	MODE A
SUCTION FROM SUPPRESSION POOL	MODE C
PUMP DISCHARGE	MODE C
STEAM SUPPLY	MODE A & B
TURBINE EXHAUST	MODE A, C & D
TEST LINE	MODE E
COOLING SYSTEM	MODE A

7. THERE ARE OTHER POTENTIAL OPERATING MODES WHICH DO NOT CONTROL PIPE OR VALVE SIZING, OR SYSTEM OPERATION AND NO DATA IS SHOWN. AMONG THESE MODES ARE OPERATION WITH THE PUMP SUCTION TAKEN FROM THE RHR STEAM CONDENSING HEAT EXCHANGERS AND OPERATION WITH INTERMEDIATE PRESSURES IN THE REACTOR VESSEL AND SUPPRESSION POOL.
8. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. FLOW REQUIREMENT IS 50 GPM MINIMUM, DURING MODE A.

MISCELLANEOUS INFORMATION:
THE DESIGN PRESSURES AND TEMPERATURES GIVEN BELOW ARE FOR INFORMATION ONLY, AND ARE THE BASIS FOR DESIGN OF APED SUPPLIED EQUIPMENT.

LOCATION	1-2	3-3A	3A-4	7-2	8-9	10-11	5-12	12-15	13-14	15	17	18-2	19-19A	19A-4	5-20	20-1
DESIGN PRESS IN PSIG	125	1300	(1)	125	1250	150	1300	125	125	75	75	125	1300	125	1300	125
DESIGN TEMP (MAX) IN °F	100	170	(2)	170	575	267	170	170	170	250	190	190	170	170	170	100
DESIGN TEMP (MIN) IN °F	40	40	(2)	40	70	70	40	40	40	40	40	40	40	40	40	40

(1) DESIGN PRESSURE SHALL BE EITHER 1300 PSIG OR DEPENDENT ON FEED-WATER SYSTEM SHUT-OFF HEAD IF THIS CONDITION EXCEEDS 1300 PSIG.

(2) FOR DESIGN TEMPERATURES REFER TO NUCLEAR BOILER SYSTEM PROCESS DIAGRAM, MPL# B21-1020.

REFERENCE DOCUMENTS:

	MPL ITEM NO.
1. RCIC SYSTEM P&I	ES1-1010
2. NUCLEAR BOILER PROCESS DIAGRAM	B21-1020

MODE A — SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT HIGH PRESS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	—	400	416	400	—	—	0	—	(22.03	21.88	21.88)	16	16	16	0.15	—	0.01	16*	—	0
OPERATING PRESSURE - PSIA	14.7	*	*	1175	18	—	—	1170	*	*	19.8	75	*	45	*	9.8	*	*	*	—
OPERATING TEMPERATURE - °F	100	100	100	100	140	—	—	564	SAT	SAT	228	100	100	100	230	120	120	120	100	—

MODE B — SUCTION FROM CONDENSATE STORAGE, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT HIGH PRESS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	—	400	416	400	—	—	0	—	645	630	650	16	16	16	0.15	—	0.01	16*	—	0
OPERATING PRESSURE - PSIA	14.7	*	*	170	18	—	—	165	*	*	19.8	75	*	45	*	9.8	*	*	*	—
OPERATING TEMPERATURE - °F	100	100	100	100	140	—	—	366	SAT	SAT	228	100	100	100	230	120	120	120	100	—

MODE C — SUCTION FROM SUPPRESSION POOL, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	—	400	416	400	—	—	400	—	(21.66	21.31	21.31)	16	16	16	0.15	—	0.01	16*	—	0
OPERATING PRESSURE - PSIA	—	*	*	1175	14.7	13.7	17.3	1170	*	*	16.6	75	*	45	*	9.8	*	*	*	—
OPERATING TEMPERATURE - °F	—	140	140	140	140	140	140	564	SAT	SAT	218	140	140	140	230	160	160	160	140	—

MODE D — SUCTION FROM SUPPRESSION POOL, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT LOW PRESS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	—	400	416	400	—	—	400	—	6.10	5.98	5.98	16	16	16	0.15	—	0.01	16*	—	0
OPERATING PRESSURE - PSIA	—	*	*	170	14.7	13.7	17.3	165	*	*	16.9	75	*	45	*	9.8	*	*	*	—
OPERATING TEMPERATURE - °F	—	140	140	140	140	140	140	366	SAT	SAT	218	140	140	140	230	160	160	160	140	—

MODE E — TEST MODE SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	—	400	416	0	—	—	0	—	18.70	18.55	18.55	16	16	16	0.15	—	0.01	16*	—	400
OPERATING PRESSURE - PSIA	14.0	*	*	—	14.1	—	—	1050	*	*	16.6	75	*	45	*	1.8	*	*	*	*
OPERATING TEMPERATURE - °F	100	100	100	—	100	—	—	551	SAT	SAT	218	100	100	100	230	120	120	120	100	100

MODE S — STAND-BY EQUIPMENT NOT OPERATING

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
FLOW - SEE NOTE 2	0	0	0	REFER TO OTHER CONDITIONS	0	0	0	—	—	0	0	0	0	0	0	0	0	0	0	0
PRESSURE - PSIA		STATIC/SYSTEM HEAD						1050	1050											
MAX / MIN TEMERATURE - °F	AMB	↔	AMB		AMB	↔	AMB	564 / 70	564 / 70	AMB	↔									AMB

INTERMITTENT FLOW THRU DRAIN TRAP SYS

CAD: AutoCAD — S25171

Southern Company Services, Inc.
TSW

PLANT: HATCH
UNIT: 2
TITLE: R.C.I.C. SYSTEM PROCESS DIAGRAM

VENDOR: GENERAL ELECTRIC — P.O.#: PEH2-2

S-25171 C

HATCH II
MPL #E51-1020

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
C	6-3-99	KB	JWD	HNB				

REVISED PER REA HT-96660.

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 3 BY SCS)

731E7698A

S-25176

GENERAL ELECTRIC 761E2705

TITLE: PROCESS DIAGRAM
HIGH PRESSURE COOLANT INJECTION SYS
APPLIES TO: STANDARD PLANT

FCF: 238X1508G2 E41-1020

MISCELLANEOUS INFORMATION:
. DESIGN PRESSURES AND TEMPERATURES GIVEN BELOW ARE FOR INFORMATION ONLY, AND ARE THE BASIS FOR DESIGN OF APED SUPPLIED EQUIPMENT.

LOCATION	1	2-17	4-A3	4A-5	7-3	A-11	12-13A	13A-13	13-15B	15A-1	14	15	16-2-17-18	17-20	4-12	4-18
DESIGN PRESSURE IN PSIG	125	440	1300	0(1)	125	1250	150	1300	125	500	125	50	75	125	125	125	1800/900
DESIGN TEMPERATURE (MAX) IN °F	100	440	170	0(1)	170	575	300	170	170	170	100	136	340	200	170	170	170	170
DESIGN TEMPERATURE (MIN) IN °F	40	40	40	0(2)	40	70	70	40	40	40	40	40	40	40	40	40	40	40

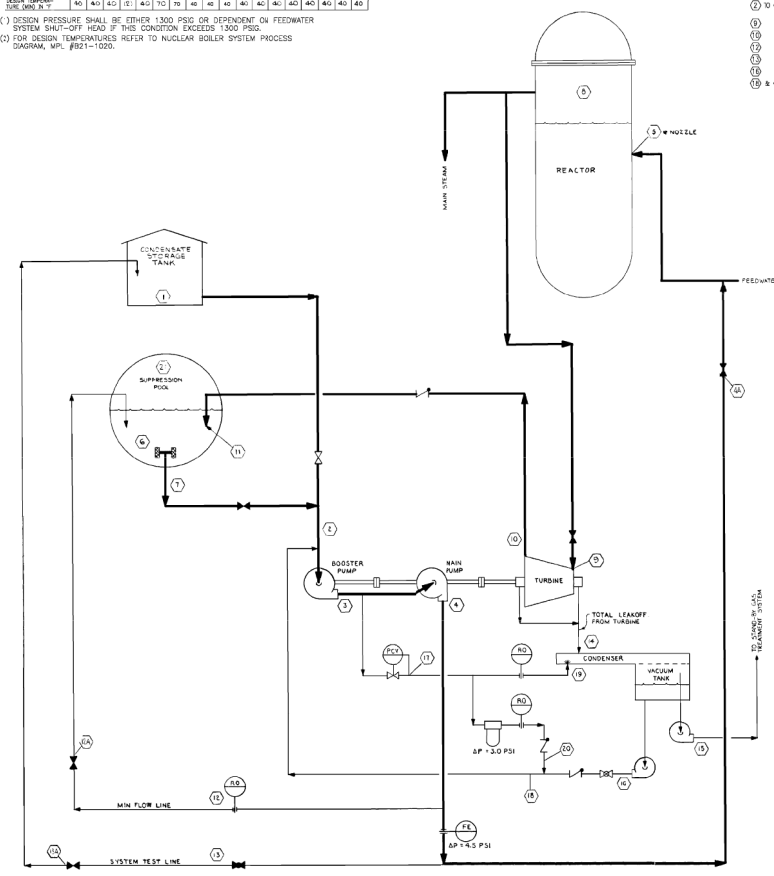
( ) DESIGN PRESSURE SHALL BE EITHER 1300 PSIG OR DEPENDENT ON FEEDWATER SYSTEM SHUT-OFF HEAD IF THIS CONDITION EXCEEDS 1300 PSIG.
(2) FOR DESIGN TEMPERATURES REFER TO NUCLEAR BOILER SYSTEM PROCESS DIAGRAM, MPL #B21-1020.

* = THE PRESSURE AT THIS LOCATION DEPENDS UPON PIPING ARRANGEMENTS, AND MAY BE VARIED WITHIN THE FOLLOWING LIMITS:

LOCATION
(2) — MINIMUM NPSH AT PUMP SUCTION = 21 FEET
(2) TO (4) — MAXIMUM PRESSURE RISE = 2880 FEET @ HIGH PRESS MODE = 329 FEET @ LOW PRESS MODE
(9) — MAXIMUM PRESSURE DROP BETWEEN LOCATIONS (8) AND (9) = 15 PSI
(10) — MAXIMUM PRESSURE = 65 PSIA
(12) — SUFFICIENT PRESSURE TO RETURN TO SUPPRESSION POOL
(13) — SUFFICIENT PRESSURE TO RETURN TO COND. STORAGE
(18) — MAXIMUM PRESSURE AVAILABLE = 65 PSIA
(18) & (22) — SUFFICIENT PRESSURE TO RETURN TO PUMP SUCTION DURING OPERATION

NOTES:
1. ATMOSPHERIC PRESSURE OF 14.7 PSIA WAS USED IN CALCULATIONS.
2. WATER FLOWS ARE SHOWN IN GPM, STEAM FLOWS IN 1000 LB/HR.
3. THE MAXIMUM POOL WATER TEMPERATURE FOR CONTINUOUS SYSTEM OPERATION WILL NOT EXCEED 140°F; HOWEVER, DUE TO POTENTIAL SHORT TERM OPERATION AT HIGHER TEMPERATURES, PIPING EXPANSION SHALL BE BASED ON 170°F.
4. THE FOLLOWING ADDITIONAL ACCIDENT OPERATING MODES ARE POSSIBLE:
   SUCTION FROM CONDENSATE STORAGE , SUPPRESSION POOL AT LOW PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.
   SUCTION FROM SUPPRESSION POOL, SUPPRESSION POOL AT LOW PRESSURE, REACTOR AT HIGH OR LOW PRESSURE.
   THESE POTENTIAL OPERATING MODES DO NOT CONTROL PIPE OR VALVE SIZING OR SPECIFICATION, AND NO DATA IS SHOWN.
5. —
6. THE CONTROLLING MODES FOR LINE SIZING AND ARRANGEMENT ARE:
   SUCTION FROM COND. STORAGE - - - MODE A
   SUCTION FROM SUPPRESSION POOL - MODE C
   PUMP DISCHARGE - - - - - - - - - MODE C
   STEAM SUPPLY - - - - - - - - - - MODE A & B
   TURBINE EXHAUST - - - - - - - - MODE A, C & D
   TEST LINE - - - - - - - - - - - MODE E
   COOLING SYSTEM - - - - - - - - MODE A
7. THE PRESSURE AT LOCATION (2) IS ESTIMATED FROM PRELIMINARY PUMP DATA.
8. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. FLOW REQUIREMENT IS 450 GPM MINIMUM, DURING MODE A.

REFERENCE DOCUMENTS: MPL ITEM NOS.
1. HPCI SYSTEM P&ID - E41-1040
2. NUCLEAR BOILER PROCESS DIAGRAM - - - - - - - - - B21-1020



MODE A — ACCIDENT MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT HIGH PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	—	4250	4320	4250	4250	—	0	—	(187.8)	(87.3)	(87.3)	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	14.7	*	280	*	1175	—	—	170	*	*	51.9	*	—	14.5	14.9	*	75	*	45	*	50
OPERATING TEMPERATURE °F	100	100	100	100	100	—	—	364	SAT	SAT	285	100	—	240	200	200	100	150	150	150	140

MODE B — ACCIDENT MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT HIGH PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	—	4250	4320	4250	4250	—	0	—	109.5	109.0	109.0	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	14.7	*	85	*	170	—	—	97	*	16	51.8	*	—	14.5	14.9	*	75	*	45	*	50
OPERATING TEMPERATURE °F	100	100	100	100	100	—	—	166	SAT	SAT	285	100	—	240	200	200	100	150	150	150	140

MODE C — ACCIDENT MODE: SUCTION FROM SUPPRESSION POOL, REACTOR AT HIGH PRESSURE, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	—	4250	4320	4250	4250	—	4250	—	138.6	138.1	138.1	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	—	*	280	*	1175	17.7	16.5	170	*	*	16.7	*	—	14.5	14.9	*	75	*	45	*	16.7
OPERATING TEMPERATURE °F	—	140	140	140	140	140	140	364	SAT	SAT	218	140	—	240	200	200	140	170	170	170	140

MODE D — ACCIDENT MODE: SUCTION FROM SUPPRESSION POOL, REACTOR AT LOW PRESSURE, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	—	4250	4320	4250	4250	—	4250	—	71.0	71.3	70.5	—	0	0.5	0.05	20*	70	70	20	50	—
OPERATING PRESSURE - PSIA	—	*	85	*	170	17.7	16.5	65	*	16	16.6	*	—	14.5	14.9	*	75	*	45	*	16.7
OPERATING TEMPERATURE °F	—	140	140	140	140	140	140	364	SAT	SAT	218	140	—	240	200	200	140	170	170	170	140

MODE E — TEST MODE: SUCTION FROM CONDENSATE STORAGE, REACTOR AT HIGH PRESS, SUPPRESSION POOL AT LOW PRESS.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	—	4250	4320	4250	4250	0	—	0	—	(143.0)	(142.5)	(142.5)	—	4250	0.5	0.05	20*	70	70	50	—
OPERATING PRESSURE - PSIA	14.7	*	285	*	—	—	—	1050	*	337.5	78.9	*	*	14.5	14.9	*	75	*	45	*	14.7
OPERATING TEMPERATURE °F	100	100	100	100	—	—	—	551	SAT	SAT	218	100	100	240	200	200	100	150	150	150	140

MODE S — SYSTEM STAND-BY, EQUIPMENT NOT OPERATING

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
FLOW - SEE NOTE 2	0	0	0	0			0	0	—	—	0	0	0	0	0	0	0	0	0	0	
PRESSURE - PSIA			STATIC HEAD	STATIC HEAD				1050	1050												
MAX-MIN TEMPERATURE - °F	AMB	AMB	UPS	AMB			AMB	AMB	SEE NOTE 5	SEE NOTE 5	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB	AMB

INTERMITTENT FLOW THRU DRAIN TRAP SYSTEM

REVISIONS			
3	MMH		
REV	BY		
PENDING			
2	PEH		
PEH-2			
1	PEH		
PEH-1			

APED SAN JOSE, CALIFORNIA 761E2708

GAD AutoCAD S25176

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: PROCESS DIAG. HPCI SYSTEM
VENDOR: G.E.
P.O.#: PEH2-2
S-25176 D

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
D	6-3-99	KB	JWD	HNB				

REVISED PER RCA HT-9668C.

IEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 4 BY SCS)

S-25178

EIS IDENT. PROC. DIAG.
11 CORE SPRAY SYS
GENERAL ELECTRIC
REV. NO. J J J J
CONT ON SHT. 1 SHT. NO. 1
TRU PROCESS DIAGRAM
CORE SPRAY SYSTEM
NUCLEAR BOILER SYSTEM
161F338
236X358BA

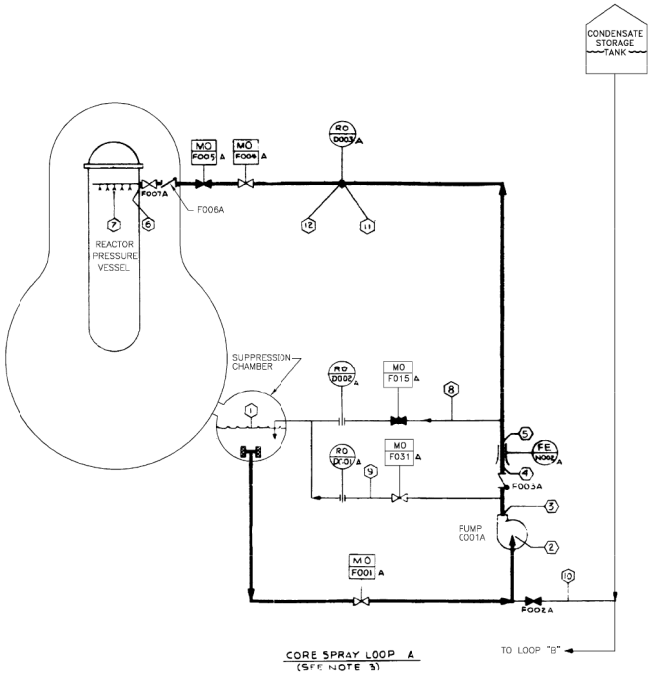
FCF: 238X1298A (E21-1020)

CONDITION I NORMAL SYSTEM TEST

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	4725	→		4725	0	0	4725	0	→		0
PRESS-PSIA	14.7					N/A	N/A		N/A	N/A		
TEMP-°F	AMB	→			AMB	N/A	N/A	AMB	N/A	N/A		N/A
SEE NOTE												
ΔP-FT.		●	633	●	8	●						

CONDITION II TEST USING CONDENSATE STORAGE TANK

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	6200	→				6200	0	0	6200	6200	6200
PRESS-PSIA	14.7						14.7					
TEMP-°F	N/A	95	→				95	N/A	N/A	95	95	95
SEE NOTE		4										
ΔP-FT.		●	590	●	14	●	341	●				



CORE SPRAY LOOP A
(SEE NOTE 3)

CONDITION III PUMP OPERATING ON BYPASS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	475	475	0	→			0	475	0	0	0
PRESS-PSIA												
TEMP-°F	175	175	175						175			
SEE NOTE												
ΔP-FT.		●	900	●								

CONDITION IV CORE SPRAY INJECTING AT REACTOR PRESS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	4725	→				4725	0	0	0	4725	4725
PRESS-PSIA	19.3						132.3					
TEMP-°F	175						175				175	175
SEE NOTE		5										
ΔP-FT.		●	633	●	14	●	18	●				

CONDITION V CORE SPRAY INJECTING AT ZERO (0) REACTOR PRESS. DIFF.

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	4725	→				4725	0	0	0	4725	4725
PRESS-PSIA	14.7						14.7					
TEMP-°F	200						200				200	200
SEE NOTE		8										
ΔP-FT.		●	633	●	14	●	198	●				

CONDITION VI ACCIDENT, SYSTEM INJECTION AT RUNOUT

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12
FLOW GPM	N/A	5900	→				5900	0	0	0	5900	5900
PRESS-PSIA	14.7						14.7					
TEMP-°F	175	→					175				175	175
MAX PRESS DROP-FT		●	523	●								

VALVE POSITIONS

CONDITIONS	VALVE NO				
	F001	F002	F005	F015	F031
I	O	C	C	P	C
II	C	D	O	C	C
III	O	C	C	C	O
IV	O	C	O	C	C
V	O	C	P	C	C
VI	O	C	O	C	C

O-FULL OPEN
C-FULL CLOSED
P-PARTIALLY OPEN

NOTES:
1. FINAL VALUES SHALL BE REPORTED "BY OTHERS" FOR ALL POINTS LISTED.
2. THE BYPASS FLOW IS APPROXIMATE AND WILL BE SPECIFIED BY THE PUMP VENDOR.
3. ONLY ONE CORE SPRAY LOOP IS SHOWN, THE SECOND LOOP IS IDENTICAL.
4. IN CONDITION II THE NET POSITIVE SUCTION HEAD (NPSH) AVAILABLE AT THE PUMP INLET (LOCATION 2) MUST BE 32 FEET.
5. IN CONDITION IV IN THE NET POSITIVE SUCTION HEAD (NPSH) AVAILABLE AT THE PUMP INLET (LOCATION 2) MUST BE EQUAL OR GREATER THAN 15 FT. ADEQUATE NPSH MUST BE DEMONSTRATED FOR PUMP OPERATION WITH POOL TEMPERATURE AT 206°F.
6. 100 GPM IS INCLUDED IN THE FLOW RATE GIVEN FOR MODE IV TO ALLOW FOR LEAKAGE IN THE REACTOR INTERNALS.
7. THE ΔP BETWEEN LOCATION (1) AND (12) WILL BE DETERMINED IN PRE-OPERATION TEST. THE ΔP WILL BE ADJUSTED TO MEET THE FLOW REQUIREMENTS OF CONDITION IV.
8. THE AVAILABLE NPSH IN CONDITION V SHALL BE EQUAL TO OR GREATER THAN 25 FT.

S-25178

CAD AutoCAD S25178

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: CORE SPRAY SYSTEM PROCESS FLOW DIAGRAM
VENDOR: GE
P.O.#: PEH2-0000002
S-25178 J

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

161F338 CONT ON SHT. 1 SHT. NO. 1

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
J	6-3-99	KB	JWD	HNB				

REV. PER REA HT-96660.

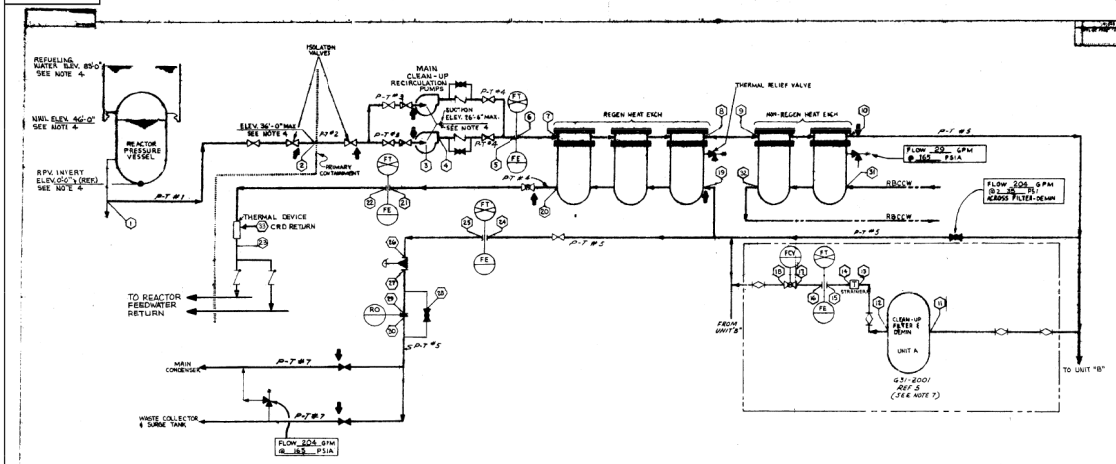
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
(VENDOR REV. 8 BY SCS)

S-25285

GENERAL ELECTRIC 761E710

PROCESS DIAGRAM
REACTOR WATER CLEANUP SYSTEM
(HIGH PRESSURE)
NUCLEAR BOILER SYS. 238x356/84

FCF: 238 x 146 BA, 62, G31-1030



NOTES:
1. ● THIS IS THE MAXIMUM RBCCW OUTLET TEMPERATURE.
   ●● THIS IS THE MAXIMUM FLOW RATE POSSIBLE FOR THIS MODE WITH THESE HEAT EXCHANGERS.
   ●●● TEMP. & FLOWS TEMP ID IS THE MAXIMUM TEMP. DIFFERENCE ACROSS THE NR HX. THIS OPERATING MODE WOULD BE LIMITED DURING THE LIFE OF THE PLANT TO THE NUMBER OF CYCLES PERMITTED BY PARA. + A15.1 OF SECTION III OF THE ASME CODE (340 MAXIMUM)
2. POSITIONS 31 | 32 INDICATE CLEANUP CONDITIONS WITH VARIOUS RBCCW INLET TEMPERATURES.
3. THE MINIMUM REQUIRED RPWM OF THE CLEANUP RECIRCULATION PUMPS IS 10%.
4. ELEVATIONS SHOWN ARE NOT INDICATIVE OF ARRANGEMENT REQUIREMENTS EXCEPT AS PARTICULAR FLOWS THEIR ELEVATIONS ARE REFERENCED FROM REACTOR PRESSURE VESSEL INVERT. THE PRESSURE UNDER POSITIONS 'B' AND 'A' INCLUDE CHANGES IN STATIC HEAD DUE TO THESE ASSUMED ELEVATIONS.
5. FOR BACKWASH & PRECOAT FREQUENCY SEE RADWASTE SYSTEM PROCESS DIAGRAM REF. 3.
6. PRESSURE SHOWN IN MODE "A" POSITION "25" IS THE MINIMUM REQUIRED PRESSURE.
7. FOR TABLES, FILTER/DEMIN. BACKWASH AND PRECOAT SEQUENCE SEE REF. 5.
8. PIPING DESIGN PRESS. AND TEMPERATURE GIVEN BELOW IS FOR INFORMATION ONLY.
9. FOR ABNORMAL (LOW OCCURANCE) FLOWS SEE REF G 17.

761E710 REV 18

REFERENCE DOCUMENTS:

	MPL ITEM NO.
1. REACTOR WATER CLEANUP P&ID	G31-1010
2. RWCU DESIGN SPEC.	G31-4010
3. RADWASTE SYSTEM P.D.	G11-1020
4. PIPING & INSTRUMENT SYMBOLS	A41-1010
5. FILTER/DEMIN SYSTEM	G31-2001
6. CONTROL ROD DRIVE PROCESS DIAG.	C11-1020
7. CONTROL ROD DRIVE DESIGN SPEC.	C11-4010

LEGEND:
RSS REACTOR STEAM SPACE
R. Hx REGENERATIVE HEAT EXCHANGER
NR. Hx NON REGENERATIVE HEAT EXCHANGER

MODE "A" NORMAL OPERATION — RSS 1050 PSIA — SEE NOTE 2&6 — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	31	32	31	32	31	32	33
FLOW GPM	100	200	200	200	200	200	200	211	211	211	201																												
TEMPERATURE °F	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534
PRESS. PSIA	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
MAXIMUM PRESSURE DROP PSI	1.4																																						

TDH 183 — 38.6 — ALLOWABLE PIPE FRICTION DROPS

MODE "A" DESIGN BASIS FOR HEAT EXCHANGERS AND SIZING OF THE MAIN CLEAN-UP PUMPS' DISCHARGE PIPING

OPERATING PROCEDURES:
1. MAIN CLEAN-UP PUMPS IN OPERATION
2. RHX UNDER FULL LOAD
3. NRHX UNDER FULL LOAD
4. FILTER-DEMINERALIZERS IN OPERATION
5. FCV IN OPERATION
6. NO BYPASS FLOW

MODE "D" - REFUELING OPERATION (MAX BYPASS) — RSS 15 PSIA — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FLOW GPM	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	204	18
TEMPERATURE °F	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
PRESS PSIA	40	264																															50
MAXIMUM PRESSURE DROP PSI	214																																

TDH — 1.4 — FRICTION DROP CONTROLLED — ΔP BY MODE "A" — ALLOWABLE PIPE FRICTION DROPS

OPERATING PROCEDURES:
1. MAIN PUMPS IN OPERATION
2. NO RHX LOAD
3. NO NRHX LOAD
4. FILTER-DEMINERALIZERS IN OPERATION
5. FCV IN OPERATION
6. ENTIRE FLOW IS DISCHARGED TO RADWASTE OR CONDENSER

MODE "D" DUMPING REFUELING WATER AND SIZING OF BYPASS LINE FCV

MODE "B" — STARTUP OPERATION — RSS 200 PSIA — SEE NOTE 2 — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FLOW GPM	200	200	127	200	200	200	200	200	200	200	200																						
TEMPERATURE °F	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536
PRESS. PSIA	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536
MAXIMUM PRESSURE DROP PSI	1.4																																

TDH 189 — FRICTION DROP CONTROLLED — ΔP BY MODE "A" — ALLOWABLE PIPE FRICTION DROPS

OPERATING PROCEDURES
1. MAIN CLEAN-UP PUMPS IN OPERATION
2. RHX UNDER PARTIAL LOAD
3. NRHX UNDER MIN. START UP LOAD
4. FILTER-DEMINERALIZERS IN OPERATION
5. FCV IN OPERATION
6. CRD & SWELL ARE DISCHARGED TO RADWASTE OR CONDENSER

MODE B' OPERATIONAL INFORMATION

MODE "E" — REFUELING — RSS 15 PSIA — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FLOW GPM	204	204	131	204	204	204	204	204	204	102																							18
TEMPERATURE °F	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
PRESS PSIA	40	264																															50
MAXIMUM PRESSURE DROP PSI	224																																

TDH — 1.4 — FRICTION DROP CONTROLLED — ΔP BY MODE "A" — ALLOWABLE PIPE FRICTION DROPS

OPERATING PROCEDURES
1. MAIN PUMPS IN OPERATION
2. NO RHX LOAD
3. NO NRHX LOAD
4. FILTER-DEMINERALIZERS IN OPERATION
5. FCV IN OPERATION
6. NO BYPASS FLOW

MODE "E" CONTINUOUS CLEANING OF REACTOR WATER DURING REFUELING

MODE "C" — BLOWDOWN OPERATION — RSS 1093 PSIA — SEE NOTES 1 & 2 — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FLOW GPM	84	84	84	84	84	84	84	84	84	70	35																						
TEMPERATURE °F	545	545	545	545	545	545	545	545	545	545	200																						
PRESS. PSIA	1093																																
FLOW GPM	12	96	96	96	96	96	96	96	72	36																							
TEMPERATURE °F	545	545	545	545	545	545	545	545	545	533	105																						
PRESS. PSIA	1093									1088																							
FLOW GPM	24	110	110	110	110	110	110	110	86	41																							
TEMPERATURE °F	545	545	545	545	545	545	545	545	545	533	110																						
PRESS PSIA	1093									1088																							
FLOW GPM	24	134	134	134	134	134	134	134	134	70	39																						
TEMPERATURE °F	545	545	545	545	545	545	545	545	545	533	111																						
PRESS PSIA	1093									1088																							
MAXIMUM PRESSURE DROP PSI	169																																

TDH — 66 — FRICTION DROP CONTROLLED — ΔP BY MODE "A" — ALLOWABLE PIPE FRICTION DROPS

OPERATING PROCESSES:
1. MAIN PUMPS IN OPERATION (1)
2. RHX UNDER FULL LOAD
3. NRHX UNDER PARTIAL LOAD
4. FILTER-DEMINERALIZERS IN OPERATION
5. FCV IN OPERATION
6. ENTIRE FLOW IS DISCHARGED TO RADWASTE OR CONDENSER

MODE "C" OPERATION LIMITATIONS & DESIGN BASIS FOR BYPASS ORIFICE

MODE "F" — HOT STANDBY OPERATION — RSS 1093 PSIA — SEE NOTE 2&3 — NOTE 9

POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FLOW GPM	2102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102
TEMPERATURE °F	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545	545
PRESS PSIA	1093																																
MAXIMUM PRESSURE DROP PSI	161																																

TDH — 1.4 — FRICTION DROP CONTROLLED — ΔP BY MODE "A" — ALLOWABLE PIPE FRICTION DROPS

OPERATING PROCEDURES:
1. MAIN PUMPS IN OPERATION
2. RH x UNDER FULL LOAD
3. NRHX UNDER PARTIAL LOAD
4. FILTER-DEMINERALIZER IN OPERATION
5. FCV IN OPERATION
6. NO BYPASS FLOW

MODE "F" DESIGN BASIS FOR MAIN CLEAN UP PUMP (MAXIMUM CAPACITY AND MINIMUM NPSH) AND SIZING OF THE MAIN PUMPS' SUCTION PIPING

PIPING PRESSURE-TEMPERATURE (P-T) INDEX

P-T NO.	DESIGN TEMP (°F)	DESIGN PRESS PSIG	MIN. TEMP °F
1	575	1280	70
2	575	1280	40
3	575	1130	40
4	575	1200	40
5	150	1300	40
6	BY OTHERS	BY OTHERS	40
7	150	150	40

HATCH 2
MPL # G31-1030

BEST BOUNDS, VOLUMES, AREAS, ARE APPROXIMATE AND NOT TO BE USED AS AS-BUILT

REVISED FLOW RATES FOR ADDED 7 BYPASS WITH POINTS 3 AND 4 PER NORMALLY CLOSED GLOBE VALVES G31-F519 & 520 W/ VALVE PER ABN 84-157 REVISED P&ID'S G31-1010 SHT 1 & G31-1030 SHT 2 & 3 AND TO ADD DCR 89-310 REV. 0 89-40 R.D. (BY S.C.S.) — (BY S.C.S.)

NO	DATE	BY	REVISIONS	CHK'D	APPR'D	ENGR MGR
4	7/31/89	MB	INC. ABN 83-348 REV. 0 DCR 89-86 REV. 0	MB	RJ	RM
3	6/1/89	RJ				

SECTEL REVISION

761E710

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5

SCANNED, VERIFIED BY KB
REV. PER REA HT-96660.
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES. (VENDOR REV. 7 BY SCS)

REVISION J DATE 6-3-99

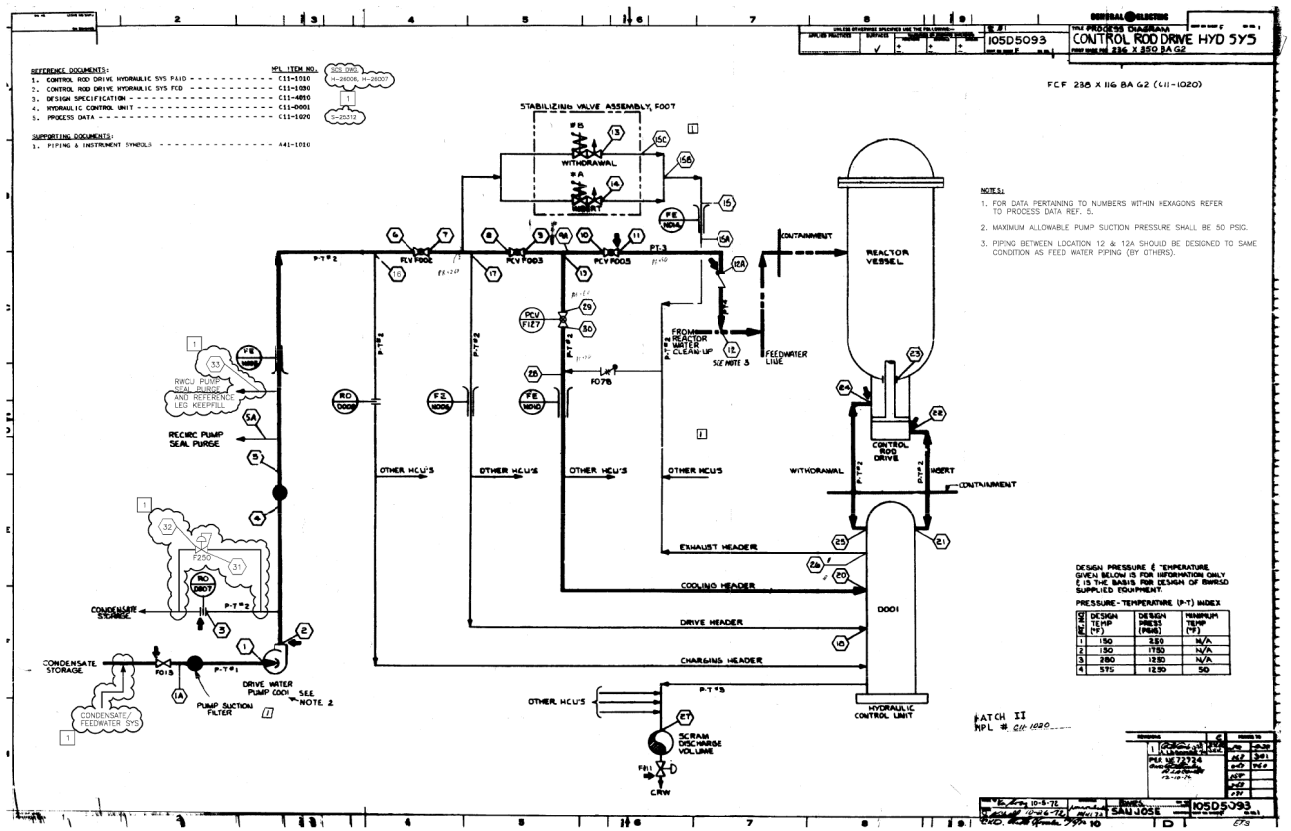
BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
KB	JWD	HNB				

GAD AutoCAD S25285

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: RWCU SYSTEM PROCESS DIAGRAM
VENDOR: G.E.
P.O.#: PEH2-0000002
S-25285 J

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

S-25311



AutoCAD S25311

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: PFD - CRD HYDRAULIC SYSTEM
VENDOR: G.E.
P.O.#: PEH2-2
S-25311

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION 1 DATE 12-18-01
REVISED PER ABN 99-0035-002.
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
RCR	JGH	ASK				

S-25312

NOTES:

1. DEFINITION OF SYMBOLS
   / INDICATES CONDITIONS FOR 0 FLOWRATE.
   " INDICATES THE SAME CONDITION AS LISTED UNDER MODE A
   PR INDICATES REACTOR PRESSURE MEASURED IMMEDIATELY ABOVE THE CORE PLATE
   * INDICATES REVISED VALUE
2. MAXIMUM OPERATING TEMPERATURES

   THE MAXIMUM SYSTEM OPERATING TEMPERATURES WILL NOT EXCEED 150°F FROM LOCATIONS 1 THROUGH 30 WITH THE FOLLOWING EXCEPTIONS:

	LOCATION	MAX. TEMP (°F)
MODE A	23	200
MODE C	23	546
	24	546
	25	280
	27	280
MODE D	23	200
	24	280
	25	280
	27	280

3. MODE A
   A. LOCATION 12 - THE REACTOR RETURN LINE PRESSURE SHALL NOT EXCEED PR + 50 psig WITH THE CRD COOLING WATER FLOWRATE AT 0.20 gal/min/drive. PRESSURE IN EXCESS OF PR +50 psig UNDER THE ABOVE CONDITIONS WILL ADVERSELY AFFECT CRD OPERATION.
   B. LOCATION 16 - THE MAXIMUM ACCUMULATOR CHARGING PRESSURE SHALL NOT EXCEED 1510 psig. ACCUMULATOR PRESSURE IN EXCESS OF 1510 psig WILL CAUSE CRD DAMAGE DURING A SCRAM.
   C. LOCATION 20 - THE CRD COOLING WATER PRESSURE SHALL NOT BE LESS THAN PR +15 psig FOR THE CONDITIONS INDICATED.
   D. LOCATION 23 - MAXIMUM DRIVE COOLING REQUIREMENTS WILL NOT EXCEED 0.34 gal/min/drive FOR THE CONDITIONS LISTED. MINIMUM DRIVE COOLING REQUIREMENTS WILL NOT BE LESS THAN 0.20 gal/min/drive.
4. MODE B
   A. LOCATIONS 13 AND 14 - INSERT VALVE F007-A CLOSES ON DRIVE INSERT SIGNAL. WITHDRAW VALVE F007-B CLOSES ON DRIVE WITHDRAW SIGNAL BUT DOES NOT STAY CLOSED DURING SETTLING.
   B. LOCATION 18 - THE CRD DRIVE WATER PRESSURE SHALL NOT BE LESS THAN PR +250 psig FOR THE CONDITIONS INDICATED.
5. MODE C
   A. CONDITIONS LISTED FOR MODE C REPRESENT THOSE CONDITIONS WHICH EXIST AT 10 PERCENT OF THE FULL-STROKE INSERTION.
   B. THE 546°F TEMPERATURE LISTED IN NOTE 2 FOR MODE C, POSITION 23 AND 24, SHALL BE USED ONLY IN DETERMINING THE MINIMUM PIPE WALL THICKNESS IN VICINITY OF THE DRIVE HOUSING AND NOT IN DETERMINING STRESSES DUE TO THERMAL EXPANSION. IN DETERMINING MINIMUM WALL THICKNESS, IT MAY BE ASSUMED THAT THIS TEMPERATURE OCCURS LESS THAN 1 PERCENT OF THE OPERATING LIFE OF THE SYSTEM. SEE THE CRD HYDRAULIC SYSTEM DESIGN SPECIFICATION TO DETERMINE CYCLIC STRESSES DUE TO THERMAL EXPANSION.
   C. LOCATIONS 21 TO 22 - THE PRESSURE DROP FROM LOCATION 21 TO 22 SHALL NOT EXCEED 436 psi AT 90 gal/min FOR ANY CRD.
   D. LOCATION 23 - A NEGATIVE FLOWRATE INDICATES FLOW FROM THE REACTOR THROUGH THE DRIVE SEAL INTO THE CRD. THE MAXIMUM LEAK RATE FROM THE REACTOR CAN REACH 10 gal/min/drive.
   E. LOCATIONS 24 TO 25 - THE PRESSURE DROP FROM LOCATION 24 TO 25 SHALL NOT EXCEED 162 psi AT 29.6 gal/min FOR ANY CRD.
   F. RESPONSE TIME OF FCV-F002 IS SUCH THAT SCRAM IS COMPLETED BEFORE FCV-F002 STARTS TO CLOSE.
   G. SCRAM VENT VALVE F010 AND DRAIN VALVE F011 CLOSE WITH A SCRAM SIGNAL.
6. MODE D
   A. LOCATIONS 24 AND 25 - A NEGATIVE FLOWRATE HERE INDICATES A TRANSIENT CONDITION IN WHICH FLOW FROM THE WITHDRAW LINE PASSES THROUGH THE CRD AND INTO THE REACTOR; DURING SCRAM THE DRIVE ACTS AS A PUMP TO CHARGE THE SCRAM DISCHARGE VOLUME TO A PRESSURE ABOVE THAT OF THE REACTOR. IMMEDIATELY FOLLOWING SCRAM, THE WITHDRAW LINE WILL REJECT WATER TO THE VESSEL UNTIL THE LOSS OF THIS WATER REDUCES THE WITHDRAW LINE PRESSURE TO APPROXIMATELY THAT OF THE REACTOR.
   B. LOCATION 27 - THE SCRAM DISCHARGE VOLUME SHALL BE SIZED SO THAT THE RESULTING PRESSURE AFTER 100-PERCENT STROKE IS LESS THAN 65 psig.
7. MAXIMUM ALLOWABLE PUMP SUCTION PRESSURE SHOULD BE 50 psig.
8. PROCESS DIAGRAM 105D5093 SHALL BE USED WITH AND FORM PART OF THIS PROCESS DATA. IF THERE ARE ANY CONFLICTS BETWEEN THE PROCESS DIAGRAM AND THIS PROCESS DATA, THE PROCESS DATA SHALL GOVERN.

4.2.2-1(1)Dwk 3-31

MODE A. NORMAL OPERATION

LOCATION	1A	1	2	3	4	5	5A	6	7	8	9	10	11*	12*	13	14	15	16
FLOW, (gal/min)	88.6	88.6	88.6	20.0	68.6	68.6	10.0	58.6	58.6	52.6	52.6	12.0	12.0	12.0	2.0	4.0	6.0	0
PRES, (psig)	21.	19.	1460.	1460.	1438.	1430.	1430.	1427.	PR +250	PR +250	PR +60	PR +60	PR+50	PR +50 MAX	PR +20 MAX	PR +20 MAX	PR +20	1427.

4.2-21a(Dwk 3-31

LOCATION	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31**	32	33
FLOW, (gal/min)	/	/	40.6	.34 MAX	.34 MAX	.34 MAX	.34 MAX	0	/	0	0	46.6	40.6	40.6	30	30	6
PRES, (psig)	/	/	PR +60	PR +15	PR +14	PR +14	PR	PR	/	PR +20 MAX	0	PR +20 MAX	PR +60	PR +20 MAX	454	97	1458

4.2-21b(Dwk 3-31

CONDITIONS. 1) DRIVES LATCHED, 2) PRESSURE OF REACTOR AT 1035 PSIG (STEAM DOME), 3) MAXIMUM COOLING FLOW TO DRIVES. MINIMUM REQUIRED PRESSURE AT POSITION 1A IS SHOWN. 4) PRESSURE AT LOCATION 16 SHALL NOT EXCEED 1510 PSIG.

MODE A SIZES THE COOLING WATER HEADERS.

MODE B. ROD INSERTION

LOCATION	1A	1	2	3	4	5	5A	6	7	8	9	10	11*	12*	13	14	15	16	17	18	19	20	21	22	23
FLOW, (gal/min)	"	"	"	"	"	"	"	"	"	"	"	8.7	8.7	8.7	"	0	2.0	"	4.0	4.0	43.9	/	4.0	4.0	1.3
PRES, (psig)	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	PR +260	PR +250	"	"	PR +31	PR +90	"

4.2-21c(Dwk 3-31

LOCATION	24	25	26	27	28	29	30	31**	32	33
FLOW, (gal/min)	.7	.7	.7	"	46.5	43.9	43.9	30	30	6
PRES, (psig)	PR+20 MAX	PR+20 MAX	PR+20 MAX	"	PR +20 MAX	"	"	1454	97	1458

4.2-21d(Dwk 3-31

CONDITIONS. 1) DRIVES INSERTING, 2) PRESSURE OF REACTOR AT 1035 PSIG (STEAM DOME), 3) MAX DRIVING FLOW TO DRIVES.

MODE B SIZES THE DRIVE WATER HEADERS.

MODE C. SCRAM

LOCATION	1A	1	2	3	4	5	5A	6	7	8	9	10	11*	12*	13	14	15	16	17	18	19	20	21	22	23
FLOW, (gal/min)	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	0	90	90	-3.6
PRES, (psig)	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1167 MIN	731 MIN	"

4.2-21e(Dwk 3-31

LOCATION	24	25	26	27	28	29	30	31**	32	33
FLOW, (gal/min)	29.6	29.6	"	APPX 4055.	/	/	/	30	30	6
PRES, (psig)	256 MAX	94	"	7.6				1454	97	1458

4.2-21f(Dwk 3-31

CONDITIONS. 1) DRIVES SCRAMMING, 2) PRESSURE OF REACTOR AT 1035 PSIG (STEAM DOME), 3) FLOW BASE ON MAXIMUM ROD VELOCITY OF 85 IN./S.

MODE C SIZES THE INSERT AND WITHDRAW LINES.

MODE D. SCRAM COMPLETED

LOCATION	1A	1	2	3	4	5	5A	6	7	8	9	10	11*	12*	13	14	15	16	17	18	19	20	21	22	23
FLOW, (gal/min)	200.	200.	200.	18.	180.	180.	10.	5	5	5	5	5	5	5	/	/	/	165.	/	/	/	/	1.28	1.28	1.74
PRES, (psig)	6.	-4.	1141.	1141.	1063.	1010.	1010.	987.	PR	PR	PR	PR	PR	PR	/	/	/	987.	/	/	/	/	126.	126.	"

4.2-21g(Dwk 3-31

LOCATION	24	25	26	27	28	29	30	31**	32	33
FLOW, (gal/min)	-0.46	-0.46	/	0	/	/	/	0	0	6
PRES, (psig)	65 MAX.	65 MAX.	/	65 MAX.				97	1141	1010

4.2-2 1c(Dwk 3-31

CONDITIONS. 1) SCRAMMING OF DRIVES COMPLETED, 2) PRESSURE OF REACTOR AT 0 PSIG (STEAM DOME), 3) MAXIMUM CRD SUPPLY PUMP FLOW.

NOTE - MINIMUM ACCUMULATION PRECHARGE PRESSURE IS 565 psig.

MODE D SIZES THE PUMP SUCTION LINE.

1

* WHEN F005 IS CLOSED, NODES 11 & 12 WILL HAVE 0 GPM FLOW.

** WHEN F005 IS OPEN, VALVE F250 (NODE 31) WILL MODULATE TO MAINTAIN SYSTEM PRESSURE BELOW 1450 PSIG (H.P. ALARM SETPOINT = 1480 PSIG)

CAD AutoCAD S-25312

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 2
TITLE: PROCESS DATA CRD HYDRAULIC SYSTEM
VENDOR: G.E.
P.O.#: PEH2-2
S-25312

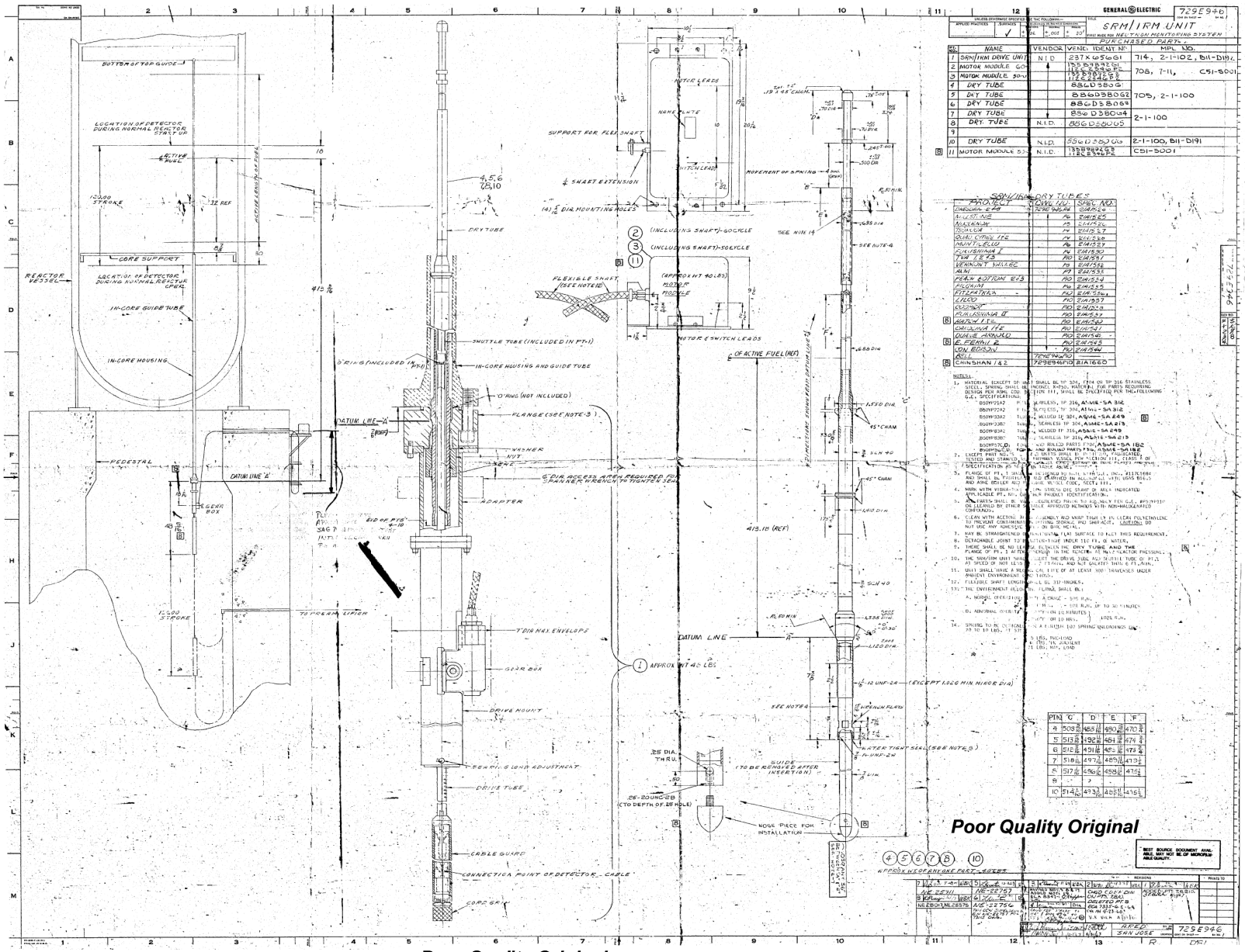
THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	1	DATE	12-18-01
REVISED PER ABN 99-0035-002.			

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
RCR	JGH	ASK				

Poor Quality Original



Poor Quality Original

Poor Quality Original

DWG. NO.	DESCRIPTION
150	LOCK STRUCTURAL ASS'Y
151	INTERIOR BULKHEAD ASS'Y
152	INTERIOR BULKHEAD DETAILS
153	EXTERIOR BULKHEAD ASS'Y
154	EXTERIOR BULKHEAD DETAILS
155	LOCK STRUCTURAL DETAILS
156	STRUCTURAL MISC. DETAILS
157	INTERIOR DOOR ASS'Y
158	EXTERIOR DOOR ASS'Y
159	FLOOR ASS'Y & DETAILS
160	TIE DOWN DETAILS
161	LIMIT SWITCH ASS'Y
162	INSERT ASS'Y
163	ELECTRICAL ASS'Y
164	ELECTRICAL DETAILS
167	NAMEPLATE DETAIL

DRG PC.	MARK	ASSM PC.	DESCRIPTION	LENGTH FT.	LENGTH IN.	WEIGHT
1	100-A		LOCK SHIPPING ASS'Y.			
	101-A	1	LOCK FINAL ASS'Y			
	160-A	4	TIE DOWN BOLT ASS'Y			
	160-C	10	TIE DOWN BOLT ASS'Y			
	155-A	2	MEDALLION ASS'Y			
	167-2	1	5188-A NAMEPLATE (STEEL)			EA.
	100-1	4	DRIVE [illegible] 10 U-TYPE	0	0 1/8	EA.

ETHYLENE PROPYLENE GASKET
PRESSURE TEST TAP
DOOR FRAME
DOOR
DETAIL "A"

43'-6 23/32 TO ℄ OF VESSEL.
16'-2 OVERALL
15'-11 HANDWHEEL TO HANDWHEEL
2'-1 1/8
2 9/16
7/16
PATH OF HINGE ROLLER
℄ LOCK
6'-1 7/16 CLEAR TO DOOR STIFFENER
℄ HINGE
7'-2 3/8 CLEAR FOR DOOR SWING
28'-6 11/32 TO ℄ OF VESSEL
1'-7
5'-7 3/16 FROM ℄ HINGE TO OUTER EDGE OF ROLLERS
PLAN VIEW

EQUALIZING VALVE
BULKHEAD
VALVE SUPPORT
DRIVE BOX
DETAIL "D"

NDT DESIGNATIONS
PT- DYE PENETRANT TESTING.
UT- ULTRASONIC TESTING.
RT- RADIOGRAPHIC TESTING.
MT- MAGNETIC PARTICLE TESTING.

GENERAL NOTES:

THE LOCKING MECHANISM IS DESIGNED TO SEAL THE DOOR AGAINST A PRESSURE OF 2 PSIG. THE DOORS AND LOCK ARE DESIGNED FOR A PRESSURE OF 56 PSIG EXISTING IN THE CONTAINMENT VESSEL OR THE CONTAINMENT VESSEL AND LOCK SIMULTANEOUSLY. BOTH DOORS AND VALVES CAN BE MANUALLY OPERATED FROM EITHER SIDE OF EITHER DOOR AND ARE MECHANICALLY INTERLOCKED TO PREVENT OPENING BOTH DOORS AND VALVES AT THE SAME TIME. ONE DOOR AND VALVE CANNOT BE OPENED UNLESS THE OPPOSITE DOOR AND VALVE IS SEALED. THE OPERATING AND MAINTENANCE MANUALS DESCRIBE THE METHOD OF DELIBERATELY VIOLATING THE INTERLOCK.

THE OPERATION OF THE HANDWHEEL WILL PERFORM THE FOLLOWING FUNCTIONS: (1) ACTUATE THE MECHANICAL INTERLOCK TO BLOCK OPERATION OF THE OPPOSITE MECHANISM. (2) OPEN THE PRESSURE EQUALIZING VALVE. (3) UNLATCH THE DOOR. (4) SWING THE DOOR OPEN ON IT'S HINGE. THESE OPERATIONS ARE IN THE SEQUENCE AS DESCRIBED FOR OPENING A DOOR AND ARE REVERSED FOR CLOSING A DOOR. THE REMOTE OPERATOR ON THE OUTSIDE OF THE LOCK AT EACH DOOR WILL PERFORM THE ABOVE FUNCTIONS ON THE OPPOSITE DOOR.

LIMIT SWITCHES ARE SUPPLIED AT THE VALVE AND LATCH OPERATORS FOR EACH DOOR TO FACILITATE REMOTE INDICATION OF EACH DOOR AND VALVE POSITION. POSITION INDICATORS AT EACH HANDWHEEL DENOTE THE POSITION OF ITS RELATED VALVE, LATCH AND DOOR.

TIE DOWNS ARE REQUIRED ON THE INTERIOR DOOR FOR LOCK TESTS GREATER THAN 2 PSIG OVER CONTAINMENT PRESSURE. (SEE DWG. # 160.)

SEE VESSEL GENERAL PLAN FOR ADDITIONAL INFORMATION.

HANDWHEEL ROTATION	OPERATION	HANDLE EFFORT
0 - 1 1/2 TURNS	VALVE OPEN	10 LBS.
1 1/2 - 5 1/2 TURNS	DOOR UNLOCK	75 LBS.
5 1/2 - 5 1/2 TURNS	DOOR SWING	15 LBS.

APPROVED FOR PROCARD Q.A. MANUAL RELEASED FOR USE
Certified by [illegible] Date 10-2-72
UPDATED BY E.L.S. REV. 5 DATE 1-18-73

(3) 1" DIA. SCH. 160 PENETRATIONS (SEE DWG. #153)
PT
TACK
E309
ELECTRICAL BOX
EMERGENCY AIR ACCESS
℄ LOCK
FOR EXTERIOR DOOR
155-A
167-2
1
10'-5 1/8 O.D. EXTERIOR END
WARNING LIGHT
LIGHT SWITCH
FOR INTERIOR DOOR
℄ LOCK ELEV. 136'-4 1/2
TEST CONNECTIONS
See Dwg. #158
7'-8
3'-3 5/8
EXTERIOR END

INCANDESCENT LIGHT
LIGHT SWITCH FOR INTERIOR DOOR
EXTERIOR DOOR
COMMUNICATIONS FOR EXTERIOR DOOR
2'-0 1/2
2'-8 1/2
INTERIOR DOOR
VALVE LIMIT SWITCH-TYP BOTH DOORS (D.P.D.T. ALLEN BRADLEY 802TMT-W1) (SEE DWG. #161)
FLOOR SEE DWG. #159
DETAIL "A"
TIE DOWNS STOWED UNDER FLOOR
160-A
160-C
3'-6 3/4
TOP OF FLOOR ELEV. 151'-10 5/8
NOTE: SEE DWG. #160 FOR ASS'Y OF THESE PCS.
ELEVATION VIEW

PT
E309
TACK
0° AZIMUTH
(3) 1" DIA. SCH. 160 PENETRATIONS (SEE DWG. #161)
2'-11 1/4
℄ HINGE
℄ LOCK
155-A
ELECTRICAL BOX
VALVE LIMIT SWITCH
SEE DET. "D"
LATCHING LIMIT SWITCH (D.P.D.T. ALLEN BRADLEY 802TMT-W1) (TYP.) (SEE DWG. #161)
LIGHT SWITCH FOR INTERIOR DOOR
10'-7 O.D. INTERIOR END
For Exterior Door
3'-7 5/8
4
INTERIOR END

EDWIN I. HATCH NUCLEAR PLANT, UNIT II
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA

CHICAGO BRIDGE & IRON COMPANY
GENERAL ARRANGEMENT 4'-0 X 6'-6 PERSONNEL LOCK
PURCHASER'S NO. PEH 2-33
DRAWN BY TJM DATE 7-10-72
CHECKED BY TJM DATE 8-8-72
CONTRACT NO. 71-2981
JOB NO 100 DWG NO 5

BEST SOURCE DOCUMENT AVAILABLE. MAY NOT BE OF MICROFILMABLE QUALITY.

CB & I 100

6511-20	10-502	S-26583 E

TITLE: General Arrangement

JOB: EDWIN I. HATCH NUCLEAR PLANT UNIT 2

MFR: CHICAGO BRIDGE & IRON

P.O. PEH-2-33
REQ.
CLASS 3-A-5

Rev. 5

RECORD COPY

VENDOR'S DRAWING REVIEW

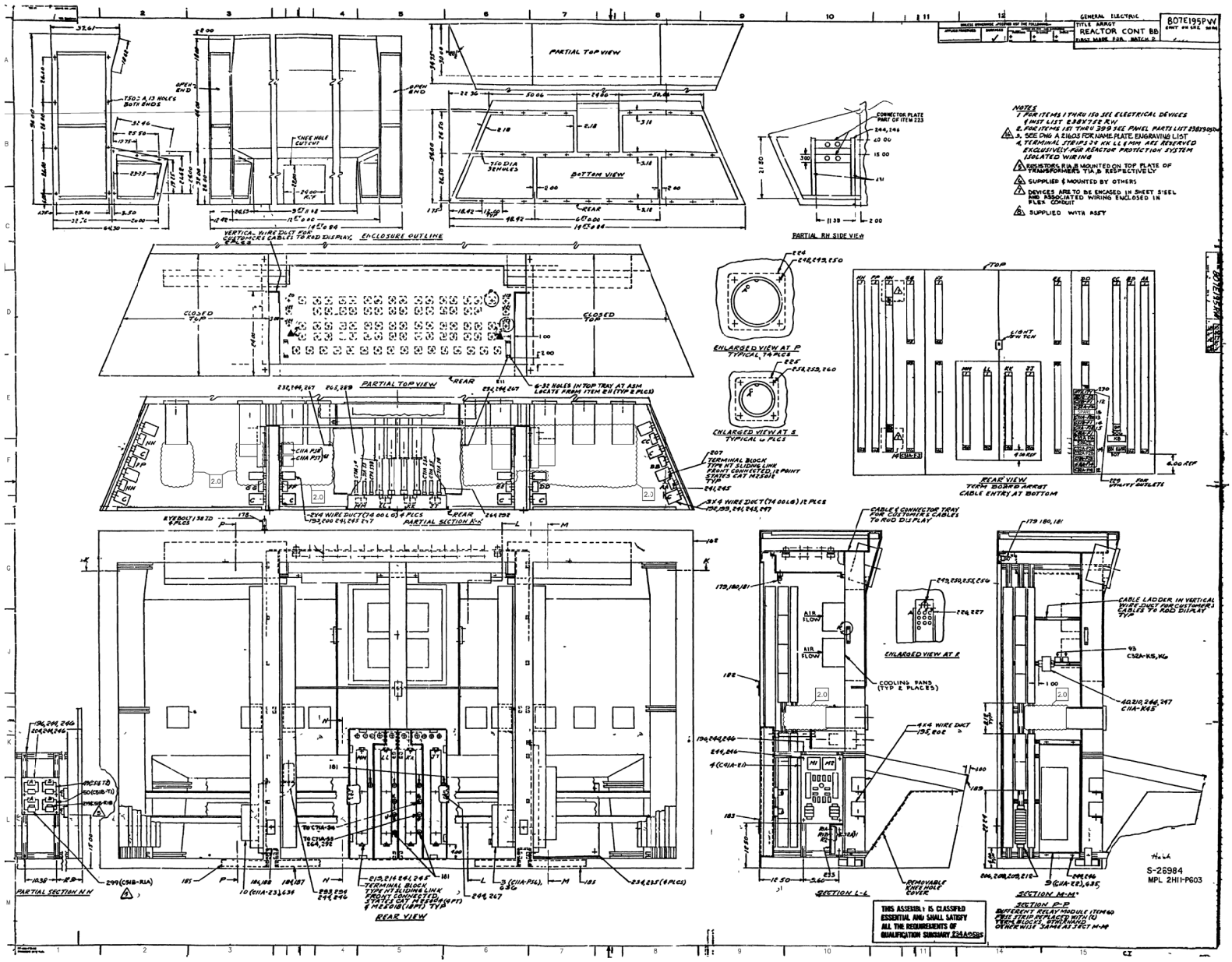
1 [X] Approved - Mfg. may proceed.
2 [ ] Approved - Submit final dwg. - Mfg. may proceed.
3 [ ] Approved except as noted - Make changes and submit final dwg. - Mfg. may proceed as approved.
4 [ ] Not approved - Correct and resubmit.
5 [ ] Review not required - Mfg. may proceed.

Approval of this drawing does not relieve supplier from full compliance with contract or purchase order requirements.

By [illegible] Date 7-11-73

JOB NO.	BECHTEL CORPORATION
6511	POWER & INDUSTRIAL DIVISION P.O. BOX 607 GAITHERSBURG, MD.

Microfilmed 5-4-84



CAD: S26984	MPL NO. 2H11-P603
OVY2000 JLD	
THIS DWG. REFERENCED IN VENDOR MANUAL N/A	Southern Nuclear Operating Company, Inc.
TAB/SECT. N/A	FOR
PAGE N/A	EDWIN I. HATCH NUCLEAR PLANT UNIT NO. 2
FIGURE N/A	
VERSION 2.0 DATE 04/20/15	TITLE:
REVISED BY SNC PER SNC345312E034, VER 1.0	ARRGT. REACTOR CONTROL BB SHEET 1
BY CHK'D APPR.	VENDOR: GE P.O.#: PEH2-002
GTR HBF JTL	DRAWING NO. S-26984

S-26986

AutoCAD	S26986

Southern Company Services, Inc.	
PLANT: HATCH	
UNIT: 2	
TITLE: ARRGT.-REACTOR CONT. BB	
VENDOR: G.E.	P.O.#: PEH2-02
S-26986 B	

THIS DWG. PART OF VENDOR MANUAL N/A

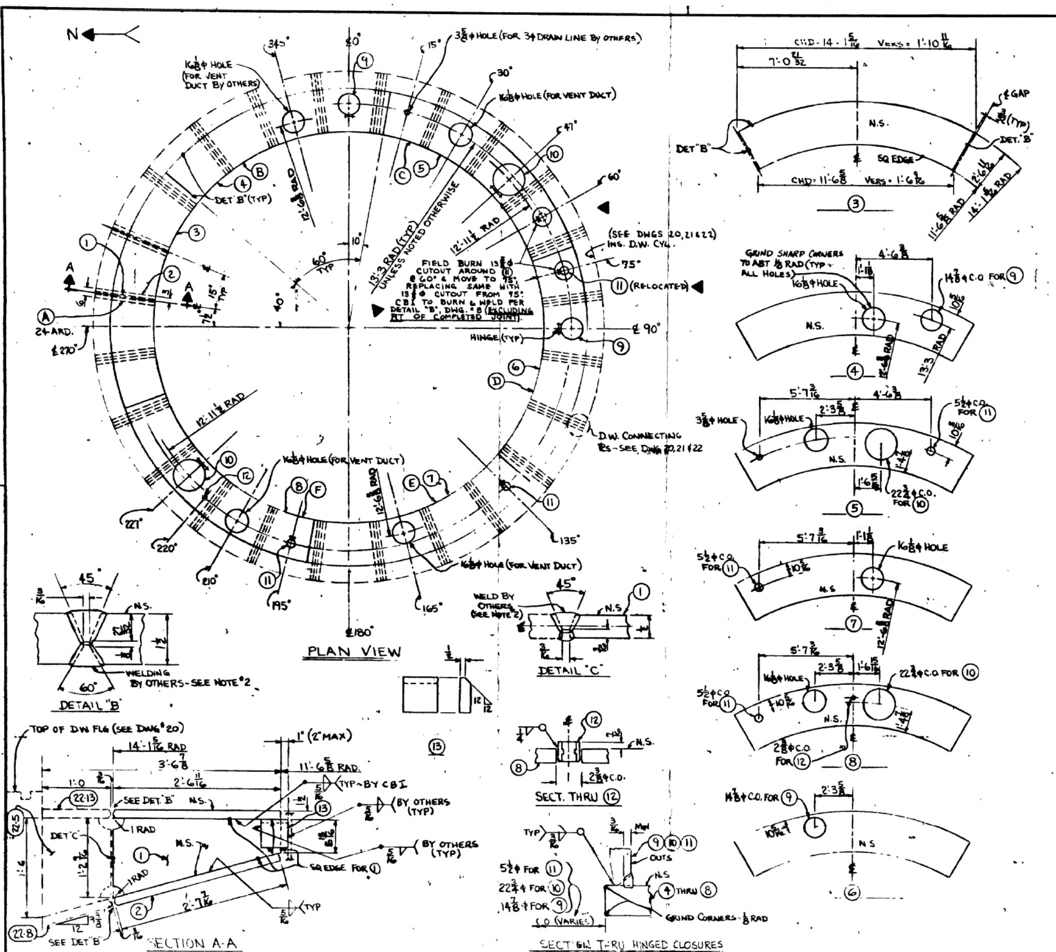
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
REVISION B	DATE 7-23-97	D.K.	HEW	CCS				

SCANNED; VERIFIED BY D.K.

REVISED PER ABN 94-0008-017.

(VENDOR REV. 2 BY SCS)



SHIP PC.	MARK	ASSM. PC.	DESCRIPTION	LENGTH FT.	LENGTH IN.	SPEC.		
24	96-A		WATER SEAL GUSSET ASSY					
	96-1	24	PL-SK x ½ (PL-20¾ x ½ x 2-7 C/2)			A36	D	
	96-2	24	PL-6 x 1½ x SK (C/F 6 x 1½ x 2-8⅛)	2	7 1/16	A36	D	
1	96-3		PL-SK x 1½ (PL-85½ x 14-2½ C/2)			A36	D	
1	96-B		WATER SEAL ASSY					
	96-4	1	PL-SK x 1½ (PL-85½ x 14-2½ C/2) (C/W 96-3)			A36	D	
	96-9	1	16φ T-BOLT HINGED CLOSURE, CLASS 75-TB				D	
			WITH STD MATL ~ CARBON STEEL & "BUNA-N"					
			O-RING ~ AND STD WT PIPE BEVEL (TUBE TURNS OR EQUAL)					
1	96-C		WATER SEAL ASSY					
	96-5	1	PL-SK x 1½ (PL-85½ x 14-2½ C/2)			A36	D	
	96-10	1	24φ SPRING LOADED T-BOLT HINGED CLOSURE,				D	
			CLASS 75-TB WITH STD MATL ~ CARBON STEEL &					
			BUNA-N" O-RING ~ AND STD WT PIPE BEVEL (TUBE TURNS OR EQUAL)					
	96-11	1	6φ T-BOLT HINGED CLOSURE, CLASS 75-TB WITH				D	
			STD MATL ~ CARBON STL & "BUNA-N" O-RING ~					
			AND STD WT PIPE BEVEL (TUBE TURNS OR EQUAL)					
1	96-D		WATER SEAL ASSY					
	96-6	1	PL-SK x 1½ (PL-85½ x 14-2½ C/2) (C/W 96-5)			A36	D	
	96-9	1	16φ T-BOLT ----- (SAME AS 96-9 ABOVE)				D	
1	96-E		WATER SEAL ASSY					
	96-7	1	PL-SK x 1½ (PL-85½ x 14-2½ C/2)			A36	D	
	96-11	1	6φ T-BOLT ----- (SAME AS 96-11 ABOVE)				D	
1	96-F		WATER SEAL ASSY					
	96-8	1	PL-SK x 1½ (PL-85½ x 14-2½ C/2) (C/W 96-7)			A36	D	
	96-10	1	24φ SPRING LOADED T-BOLT ----- (SAME AS 96-10 ABOVE)				D	
	96-11	1	6φ T-BOLT ----- (SAME AS 96-11 ABOVE)				D	
	96-12	1	1φ 6000# S.W. PIPE COUPLING			A105-II	D	
24	96-13		PL 5 x 1 (BEVEL ONE EDGE)	0	5	A36	D	

GENERAL NOTES

1. DIMS & DETAILS OF PLS (4) THRU (8) ARE THE SAME AS THOSE FOR PL (3) EXCEPT FOR CUTOUTS.
2. FIELD TO ERECT THIS D.W. WATER SEAL IN PLACE, MATCH IT TO THE CORRESPONDING CONNECTING PLS SHOWN ON DWG #20, REMOVE IT FROM THE DRYWELL AND STORE AT A SUITABLE PLACE IN THE FIELD WITH PROTECTIVE COVERING AS DIRECTED BY PURCHASER. ALL FIELD WELDING IS TO BE DONE BY OTHERS, UNLESS NOTED OTHERWISE.

APPROVED PER NUCLEAR Q.A. MANUAL RELEASED FOR USE
R L Bentley 4-6-73
Reviewed by / Date
UPDATED BY ROR REV. 2 DATE 6-12-73

EDWIN I. HATCH NUCLEAR PLANT, UNIT II
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

REV	REVISIONS	DATE	BY	CHKD
2	MOVED (11) FROM 60° TO 75°	6-12-73	ROR	CFW
1	RELOCATED 16⅛φ HOLES @ ABTS 165° & 345° ADDED PL (13) AND CHANGED WELDS	4-5-73	ROR	JJJ

CHICAGO BRIDGE & IRON COMPANY

WATER SEAL ASSEMBLY INSIDE D.W. CYLINDER

PURCHASER'S NO. PEH 2 33 CONTRACT NO. 71-2981
DRAWN BY REE DATE 3-16-73
CHECKED BY ROR DATE 3-16-73
ENGINEERING COORDINATOR
DWG NO 96 REV 2

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SCANNED DATE 1-7-93

2CB&I 96

6511-20	10-502	S-27793B

TITLE: Water Seal Assembly Inside D.W. Cylinder

JOB: EDWIN I. HATCH NUCLEAR PLANT UNIT 2

MFR: CHICAGO BRIDGE & IRON — P.O. PEH-2-33 — REQ. — CLASS 3-A-5

Rev. 2

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By CW Date 7/3/73

JOB NO. 6511 — BECHTEL CORPORATION POWER & INDUSTRIAL DIVISION P.O. BOX 607 GAITHERSBURG, MD.

microfilmed 5/22/84

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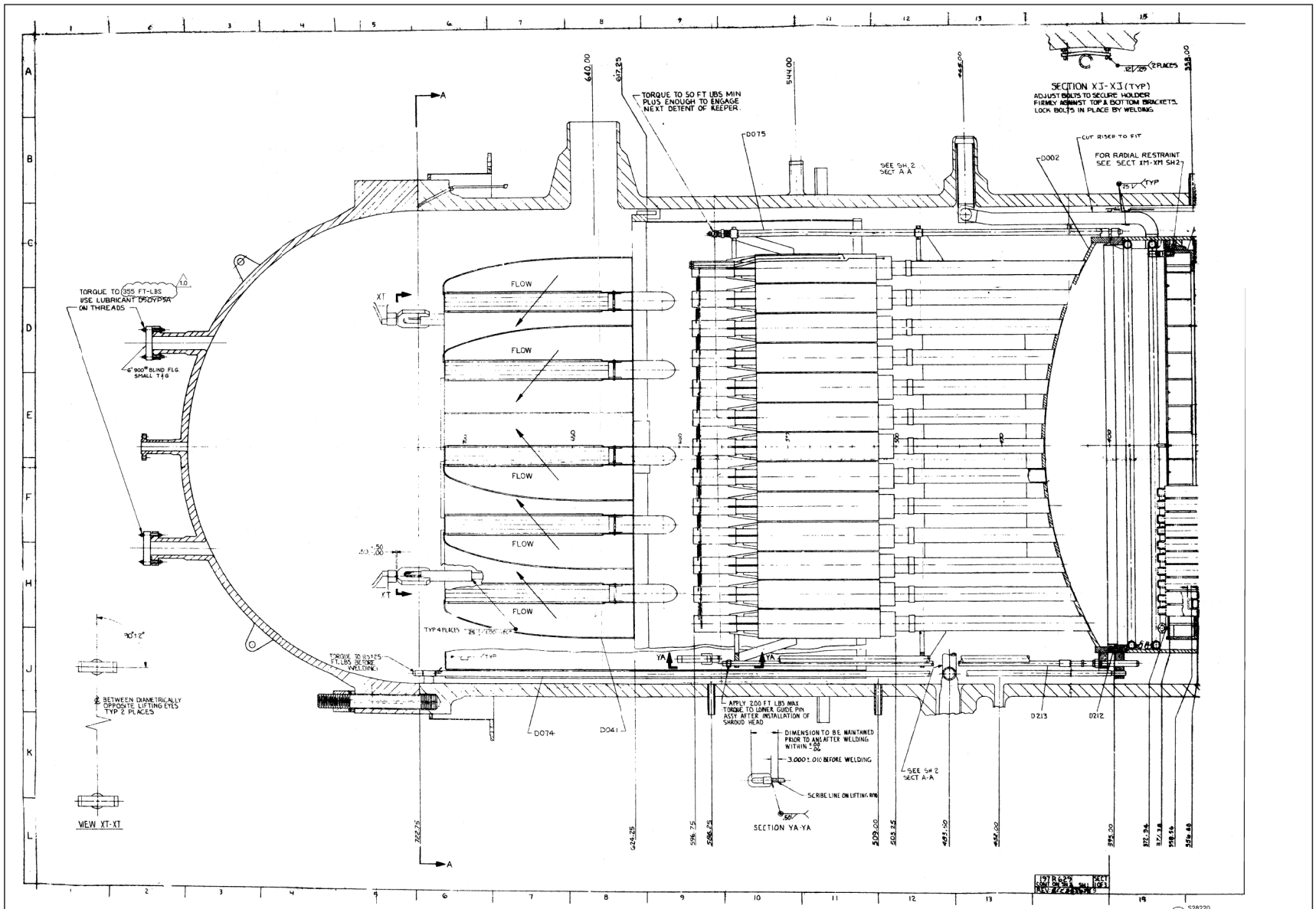
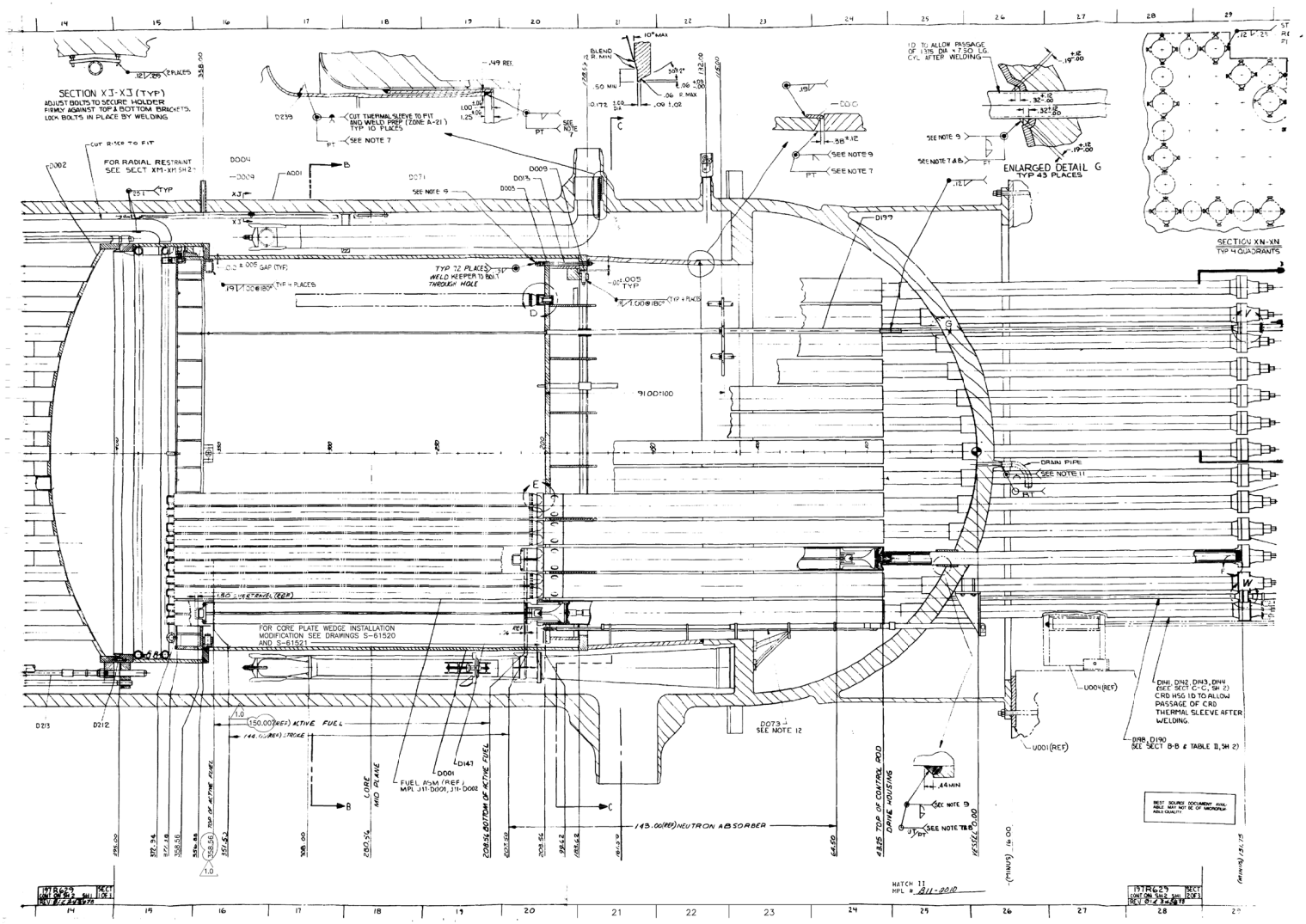


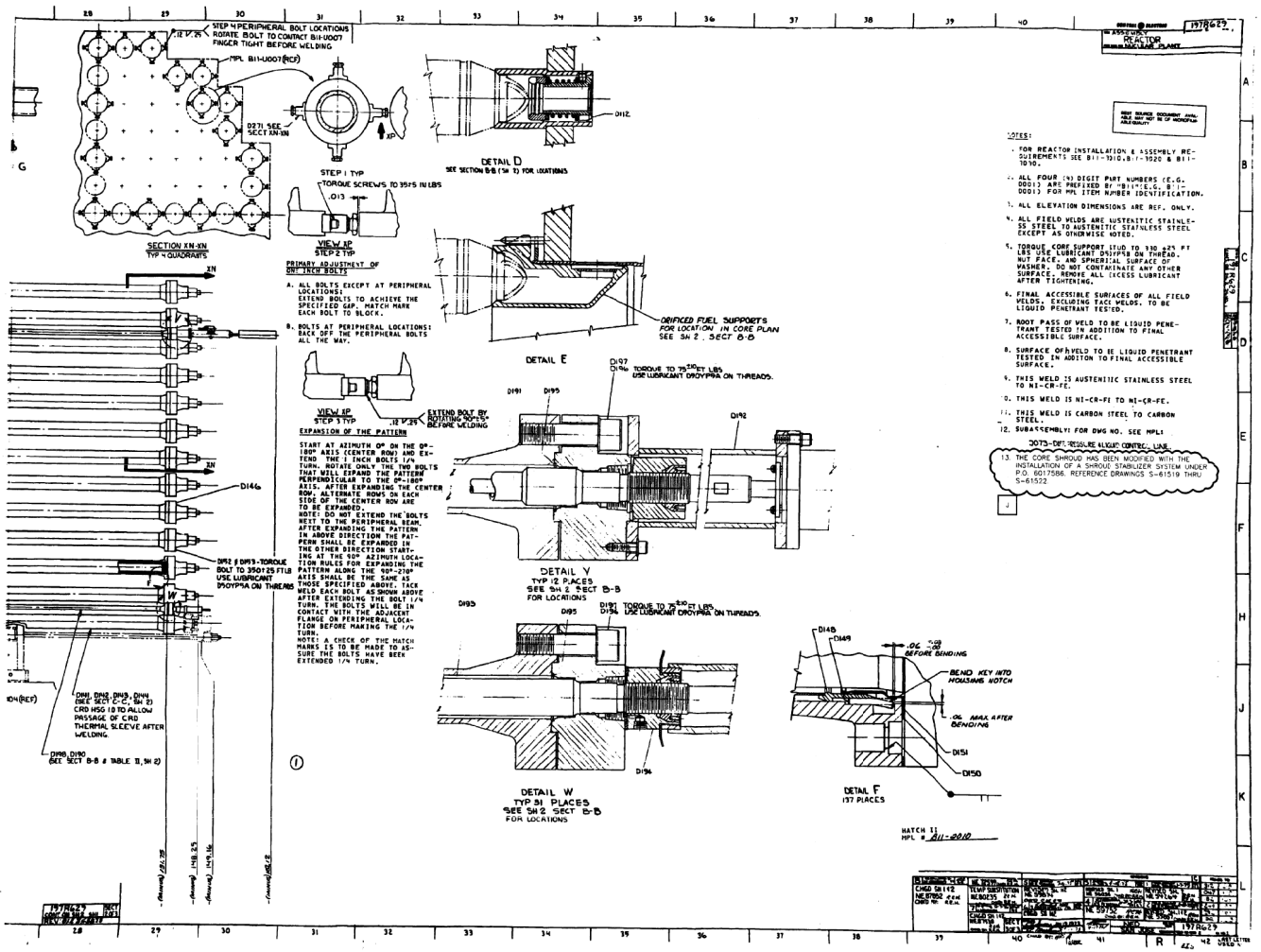
THIS DWG. REFERENCED IN VENDOR MANUAL N/A	S28220	
TAB/SECT. N/A	OV12004	CYN
PAGE N/A	WPL NO. 811-2010	
FIGURE N/A	FOR: Southern Nuclear Operating Company, Inc.	
VERSION 1.0 DATE 07/20/09	E.I. HATCH NUCLEAR PLANT UNIT NO. 2	
REVISED BY SNC PER ABN-H01315, VER. 1.0.	TITLE: REACTOR ASSEMBLY SUPERSEDES S25295	
SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.		
BY: CYN CHK'D: LRP APPR.1: PML APPR.2:	VENDOR: GE P.O.#: PEH2-0000002	
	DRAWING NO. S-28220	



S28221
AUTOCAD2000 | JCP

THIS DWG. REFERENCED IN VENDOR MANUAL N/A	Southern Nuclear Operating Company, Inc.
TAB/SECT. N/A	FOR
PAGE N/A	EDWIN I. HATCH NUCLEAR PLANT UNIT 2
FIGURE N/A	
VERSION 1.0 | DATE 11-17-14	TITLE: REACTOR ASSEMBLY SECTION 2, SHEET 1
REVISED BY SNC PER ABN-H03893, VER.1.0	
BY: JCP | CHK'D: JJF | APPR.: JTL	VENDOR: GE | P.O.#: PEH2-2
	DRAWING NO. S-28221

S-28222



CAD AutoCAD S28222

Southern Company Services, Inc. FOR

PLANT: HATCH

UNIT: 2

TITLE: REACTOR ASSEMBLY SH. 1 SEC. 3

VENDOR: GE

P.O.# PEH2-2

S-28222 J

THIS DWG. PART OF VENDOR MANUAL N/A

TAB/SECT. N/A

PAGE N/A

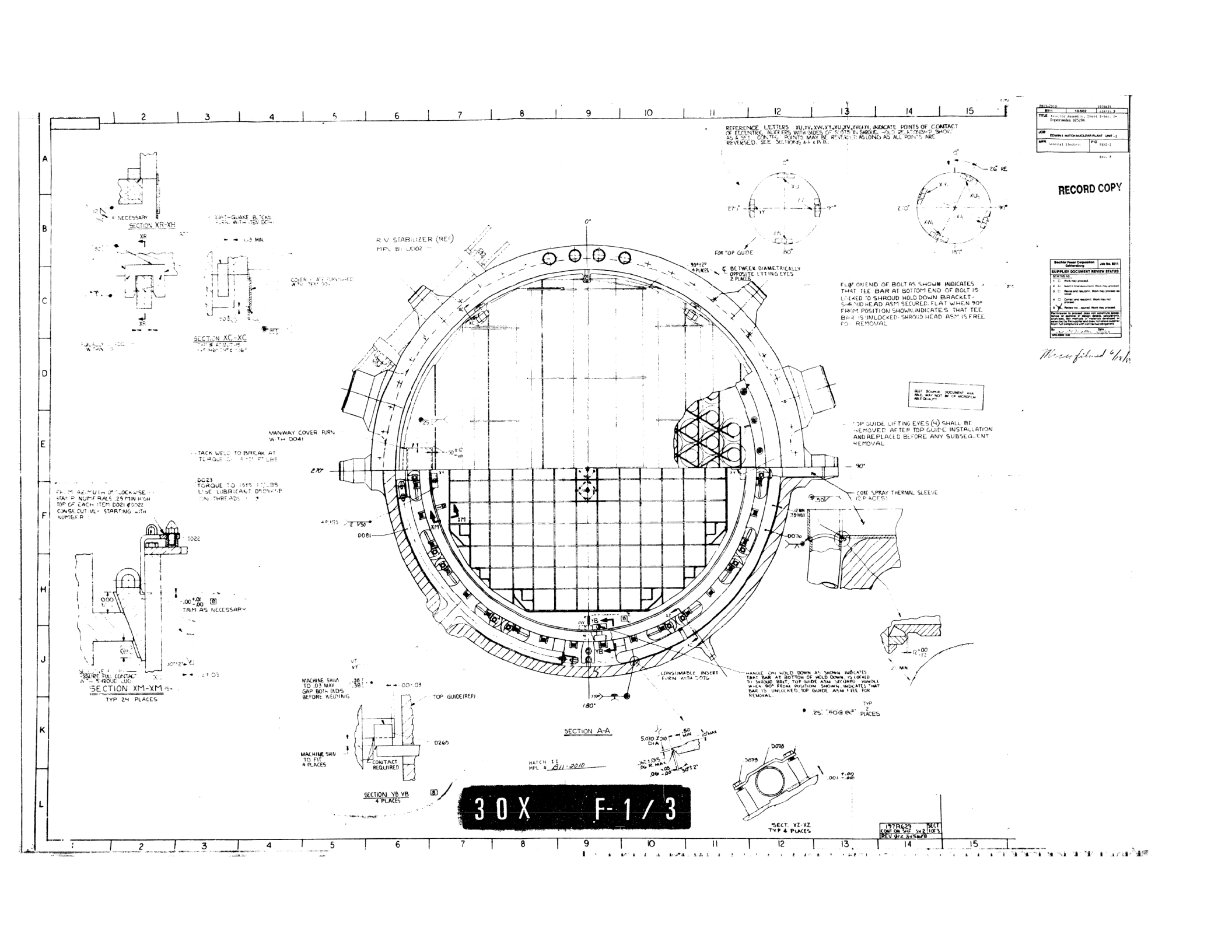
FIGURE N/A

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
J	3-25-96	BKG						

SCANNED, VERIFIED BY BKG

REVISED PER ABN 94-0052-001, CORE SHROUD REPAIR

(VENDOR REV. 9 BY SCS)


REFERENCE LETTERS XU,YU,XW,XY,XU,XV,YW,AN, INDICATE POINTS OF CONTACT OF ECCENTRIC ALIGNERS WITH SIDES OF SLOTS IN SHROUD HOLD DOWN BRACKET-SHROUD HEAD ASM. CONTACT POINTS MAY BE REVERSED ALONG AS ALL POINTS ARE REVERSED. SEE SECTIONS A-A & B-B.
RECORD COPY
RV STABILIZER (REF) MPL B11J0102
MANWAY COVER FURN WITH D041
TACK WELD TO BREAK AT TORQUE OF 1425 FT-LBS
D023 TORQUE TO 1615 FT-LBS USE LUBRICANT DRESSER ON THREADS
FROM AZIMUTH 0° CLOCKWISE STAMP NUMERALS .25 MIN HIGH TOP OF EACH ITEM D021 & D022 CONSECUTIVELY STARTING WITH NUMBER 8
SECTION XM-XM
TYP 24 PLACES
SECTION XR-XR
SECTION XC-XC
SECTION A-A
SECTION YB YB 4 PLACES
SECT XZ-XZ TYP 4 PLACES
CORE SPRAY THERMAL SLEEVE (2 PLACES)
TOP GUIDE LIFTING EYES (4) SHALL BE REMOVED AFTER TOP GUIDE INSTALLATION AND REPLACED BEFORE ANY SUBSEQUENT REMOVAL
FLAT ON END OF BOLT AS SHOWN INDICATES THAT TEE BAR AT BOTTOM END OF BOLT IS LOCKED TO SHROUD HOLD DOWN BRACKET-SHROUD HEAD ASM SECURED. FLAT WHEN 90° FROM POSITION SHOWN INDICATES THAT TEE BAR IS UNLOCKED SHROUD HEAD ASM IS FREE FOR REMOVAL
HANDLE ON HOLD DOWN AS SHOWN INDICATES THAT BAR AT BOTTOM OF HOLD DOWN IS LOCKED TO SHROUD BRKT. TOP GUIDE ASM SECURED. HANDLE WHEN 90° FROM POSITION SHOWN INDICATES THAT BAR IS UNLOCKED. TOP GUIDE ASM FREE FOR REMOVAL
CONSUMABLE INSERT FURN WITH D076
TOP GUIDE(REF)
MACHINE SHIM TO FIT 4 PLACES
CONTACT REQUIRED
MACHINE SHIM TO .03 MAX GAP BOTH ENDS BEFORE WELDING
TRIM AS NECESSARY
EARTHQUAKE BLOCKS FURN WITH ITEM D091
COVER PLATE FURNISHED WITH ITEM D091
FOR TOP GUIDE
BEST AVAILABLE DOCUMENT AVAILABLE MAY NOT BE FOR MICROFILM ADEQUALITY
30X F-1/3
Bechtel Power Corporation Gaithersburg
Job No. 6511
SUPPLIER DOCUMENT REVIEW STATUS
STATUS NO.
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3 C Revise and resubmit. Work may not proceed as noted
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By Date
SRO 5000 1/80
6511 10-502 328321-3
TITLE Reactor Assembly, Sheet 2-Sec. I-Spacemaker, SPUN.
JOB EDWIN I. HATCH NUCLEAR PLANT UNIT-2
MFR General Electric P.O. P8102-2
Rev. 4
1978629 SECT
CONT OR SHT SH 2 10F3
REV 012 4/5/78

INDICATE POINTS OF CONTACT
ID HOLD RELATIONSHIP SHOWN
NG AS ALL POINTS ARE

ND OF BOLT AS SHOWN INDICATE
BAR AT BOTTOM END OF BOLT IS
SHROUD HOLD DOWN BRACKET
EAD ASM SECURED FLAT WHEN NOT
ITION SHOWN INDICATES THAT TEE
LOCKED - SHROUD HEAD ASM IS FREE
OVAL

IDE LIFTING EYES (4) SHALL BE
VED AFTER TORQUIDE INSTALLATION
PLACED BEFORE ANY SUBSEQUENT
VAL

SPRAY THERMAL SLEEVE
ACES)

20° MIN

ES

LEGEND

- ● LOCAL RANGE POWER MONITOR
- ■ INTERMEDIATE RANGE MONITOR
- ▲ DESIGN NEUTRON SOURCE
- △ SPARE NEUTRON SOURCE
- × SOURCE RANGE MONITOR

TABLE I - FUEL SUPPORT LOCATIONS

PART NO.	D154	D155	D156	D157	D158	D159	D160	D161	D162
CORE POSITION	ALL POSITIONS NOT INDICATED	06,39,14,47	38,47,44,39	38-07,46,45	06-15,14-07	10-47,18-51, 27-51,26-54, 30-51,34-51, 42-47	44-43,50-42, 44-11	47-07, 34-03, 50-39,50-07, 50-13,50-19, 44-11	07-19,03-11, 07-27,03-35, 30-43

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Bechtel Power Corporation Gaithersburg — Job No. 6811

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By _____ Date _____

SPC-6811-1000

VIEW J
TYP WELDED CLAMP

SECTION XK-XK TYP
BRACES TO BE CENTERED VERTICALLY ON PAD ±.25

SECT XL-XL
2 PLACES

SECTION H-H
(ENLARGED)

KEEPERS SHALL BE ORIENTED TO CORE AS POSSIBLE PERPENDICULAR TO THE LINE CONNECTING CENTERS OF THE CORE PLATE BOLT AND THE NEAREST PERIPHERAL FUEL SUPPORT - TYP 8 PLACES

DEVELOPED VIEW AT K-K
2 PLACES

CO ORDINATES ARE READ X-Y
EXAMPLE -
FUEL ELEMENT 11-18
CONTROL ROD 10-15

X CO ORDINATES — 00 02 04 06 08 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52
01 03 05 07 09 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51

Y CO ORDINATES

SECTION B-B

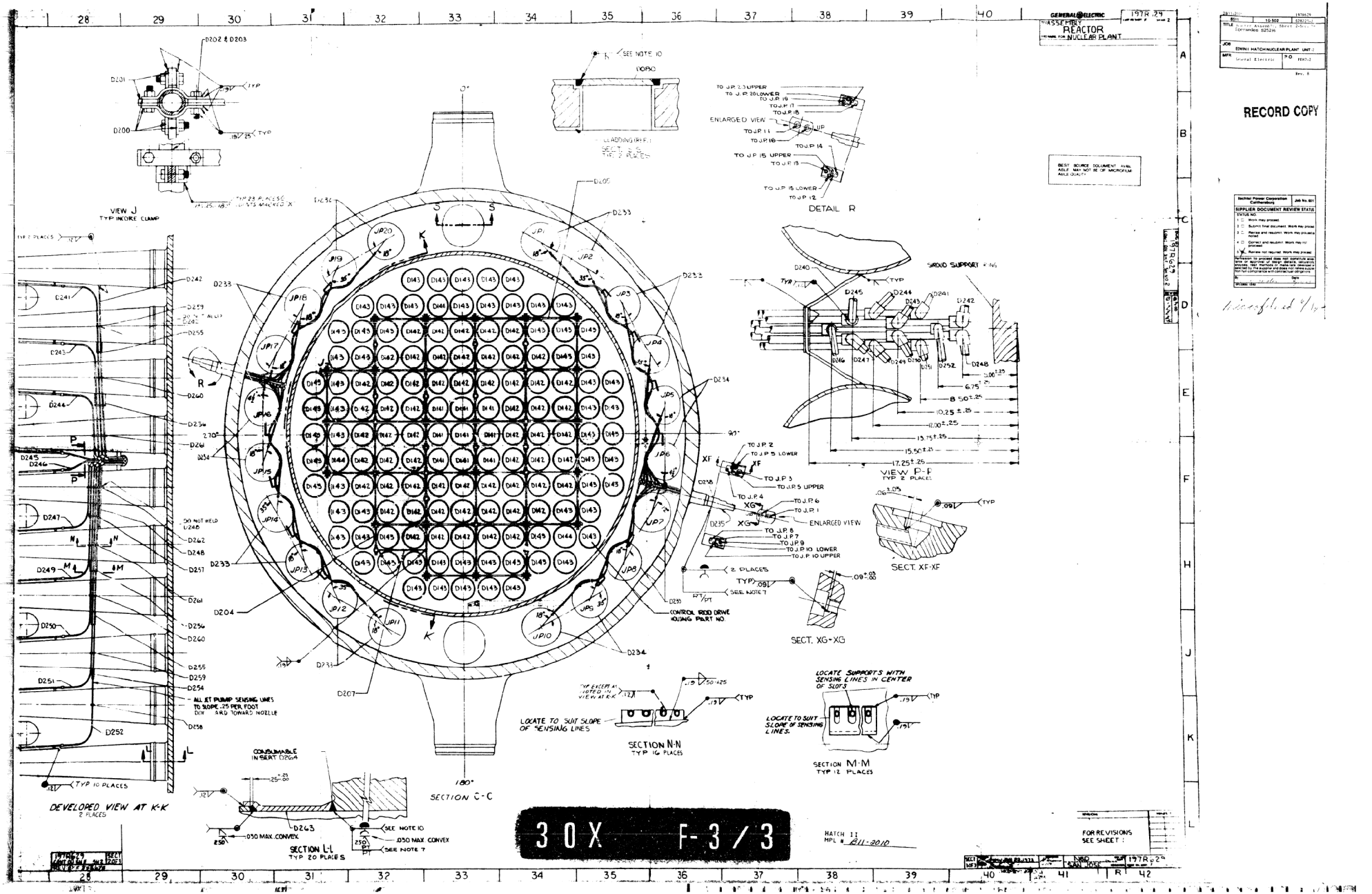
AXIAL COMPRESSIVE BOLT LOAD - 36,000 ± 500 LBS
BOLT SHALL BE LOADED USING AN APED ENGINEERING APPROVED TENSIONER

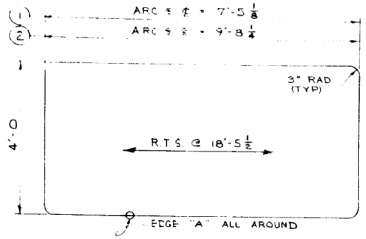
HATCH II
MFL # BLL-9010

30X F-2/3

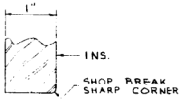
197R629 SECT CONT OF SHT SHT NO 3 REV 0 FOR REVIEW

197R629 SECT CONT OF SHT SHT NO 1 REV 0 FOR REVIEW

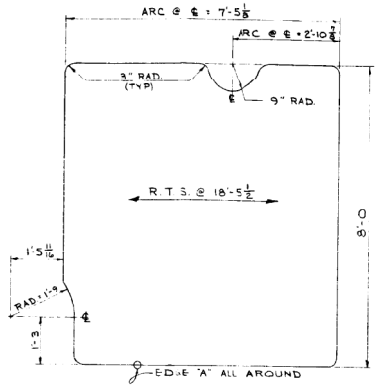

GENERAL ELECTRIC
ASSEMBLY REACTOR NUCLEAR PLANT
RECORD COPY
DEVELOPED VIEW AT K-K
SECTION C-C
SECTION L-L
SECTION N-N
SECTION M-M
SECT. XF-XF
SECT. XG-XG
VIEW P-P
DETAIL R
VIEW J
30X F-3/3
HATCH II
FOR REVISIONS SEE SHEET



1&2



EDGE "A"



3R

SHIP PC.	MARK	ASSM. PC.	DESCRIPTION	LENGTH FT.	LENGTH IN.	SPEC.	
2	270-1		R-48 x 1 - 8 PL 7/8 (90 - 24 3/4)	7	5 1/8	MAT'L "1"	B
4	270-2		R-48 x 1 PL 7/8 (97 - 13' 5 1/2)	9	8 1/4	MAT'L "1"	B
2	270-3R		R-36 x 1 - SK PL 7/8 (W270-1)	7	5 1/8	MAT'L "1"	B

MAT'L "1" - SA 516 GR 70 (MC-626B)

NOTE: IN AREAS INACCESSIBLE TO MT EQUIPMENT, PT MAY BE SUBSTITUTED FOR MT.

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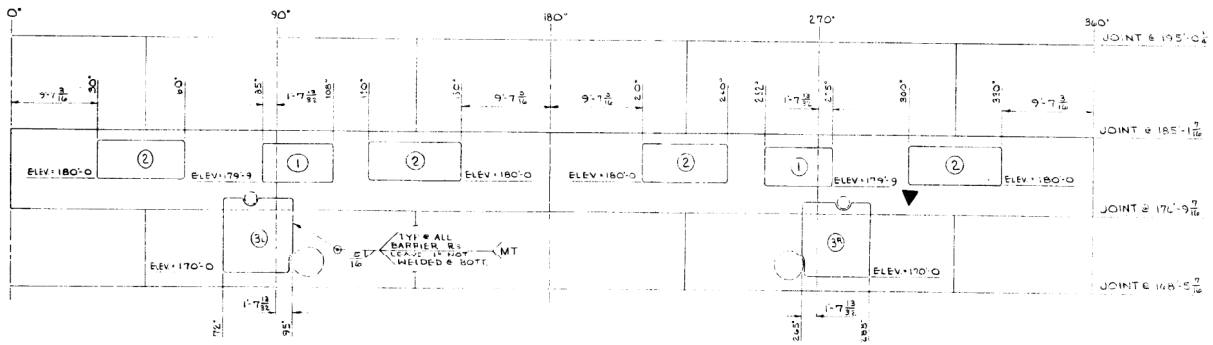

DRYWELL CYLINDER INSIDE STRETCHOUT

~ DIMENSIONS ARE CHORDS ON INSIDE OF SHELL @ RAD 18'-6 1/2" ~

APPROVED FOR NUCLEAR Q.A. MANUAL RELEASED FOR USE

Certified by Date

UPDATED BY REV. DATE

EDWIN I. HATCH NUCLEAR PLANT, UNIT II
REACTOR BUILDING CONTAINMENT VESSEL
GEORGIA POWER CO., BAXLEY, GA.

CHECKED E.E.V.

CHICAGO BRIDGE & IRON COMPANY

BARRIER PLATES
~DRYWELL CYLINDER~

PURCHASER'S NO. PEH 2-33
DRAWN BY C.F.H. 6-21-73
CHECKED BY W. 6-21-73
ENGINEERING COORDINATOR
CONTRACT NO. 71-2981
DWG NO. 270 REV 1

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2 CB&I 270

6511-20	10-502	S-28345 A

TITLE: Barrier Plates

JOB: EDWIN I. HATCH NUCLEAR PLANT UNIT 2

MFR: CHICAGO BRIDGE & IRON

P.O. PEH 2-33
REQ.
CLASS 3-A-5

Rev. 1

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By KKS/cw Date 8.10.73

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6511	

M-2 Columns 5/25/74

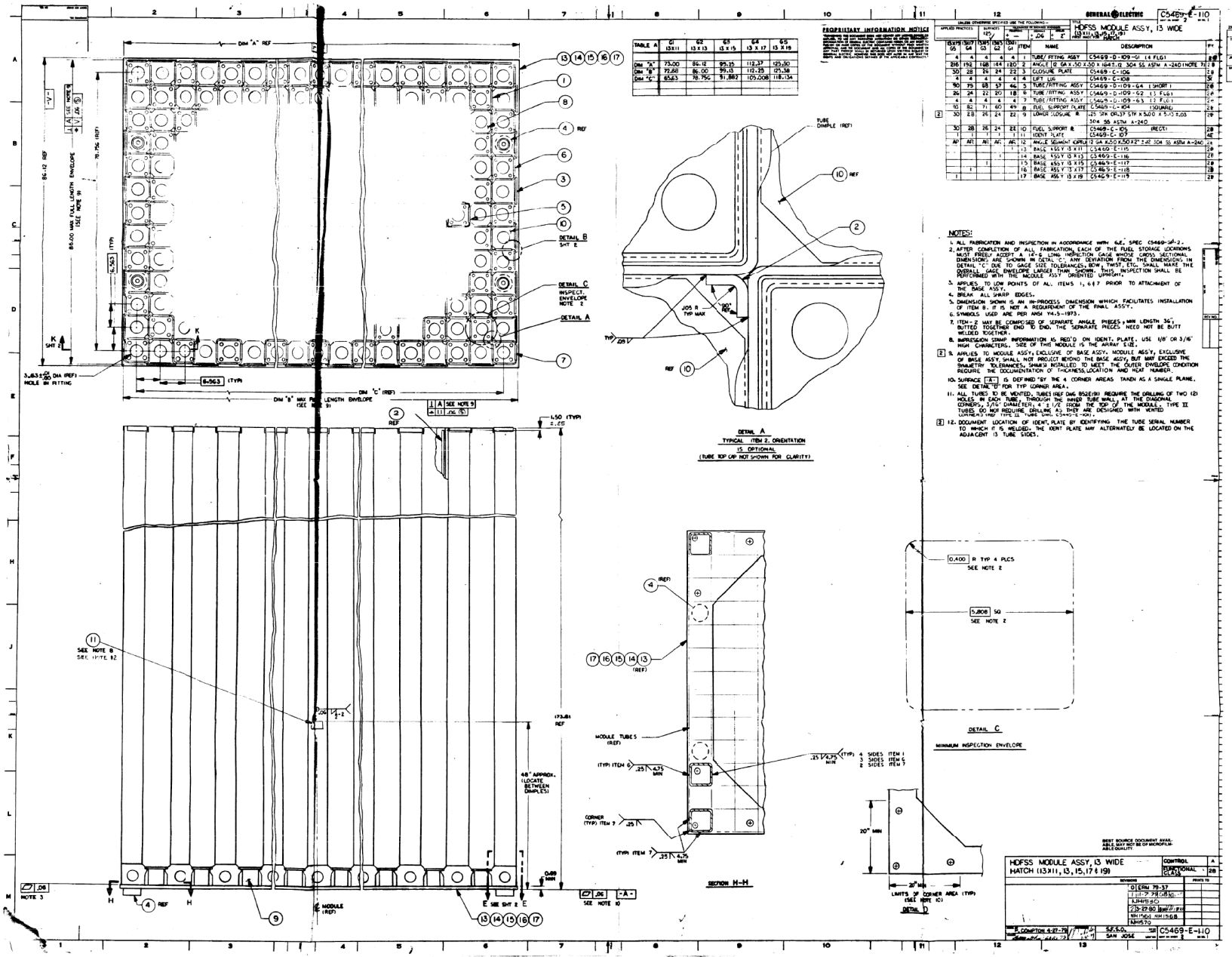

TABLE A	G1 (3X11)	G2 (3 X 13)	G3 (5 X 15)	G4 (3 X 17)	G5 (3 X 19)
DIM "A"	73.00	86.12	99.25	112.37	125.50
DIM "B"	72.68	86.00	99.13	112.25	125.38
DIM "C"	69.63	76.750	91.882	105.008	118.134

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GENERAL ELECTRIC — C5469-E-110

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING — APPLIED PRACTICES — SURFACES: 125 — TOLERANCES: .X ± .06, .XX ± .02, ANGLES ± 2° — MATERIAL — FINISH — HEAT TREAT

TITLE: HOFSS MODULE ASSY, 13 WIDE (13 X 11, 13 X 15, 13 X 17, 13 X 19) HATCH

G5	G4	G3	G2	G1	ITEM	NAME	DESCRIPTION	PPY
4	4	4	4	4	1	TUBE/FITTING ASSY	C5469-D-109-G1 (4 FLG)	8P
216	192	168	144	120	2	ANGLE	(2 GR X .50 X 50 X 1645.12 304 SS ASTM A-240) NOTE 7	2 B
30	28	26	24	22	3	CLOSURE PLATE	C5469-C-106	1 B
4	4	4	4	4	4	LIFT LUG	C5469-C-108	3C
90	75	68	57	46	5	TUBE/FITTING ASSY	C5469-D-109-G4 (SHORT)	2B
26	24	22	20	18	6	TUBE/FITTING ASSY	C5469-D-109-G2 (3 FLG)	2A
4	4	4	4	4	7	TUBE/FITTING ASSY	C5469-D-109-G3 (3 FLG)	2A
93	82	71	60	49	8	FUEL SUPPORT PLATE	C5469-C-104 (SQUARE)	2B
30	28	26	24	22	9	LOWER CLOSURE R	.25 SHT OR .375 STK X 5.00 X 5.13 T.03 304 SS ASTM A-240	2P
30	28	26	24	22	10	FUEL SUPPORT R	C5469-C-105 (RECT)	2B
1	1	1	1	1	11	IDENT PLATE	C5469-C-107	4E
AR	AR	AR	AR	AR	12	ANGLE SEGMENT	(2 GR X 2.0 X .50 X 2" X 40 304 SS ASTM A-240)	2A
				1	13	BASE ASSY (3 X 11)	C5460-E-115	2B
			1		14	BASE ASSY (3 X 13)	C5469-E-116	2E
		1			15	BASE ASSY (3 X 15)	C5469-E-117	2B
	1				16	BASE ASSY (3 X 17)	C5469-E-118	2B
1					17	BASE ASSY (3 X 19)	C5469-E-119	2B

NOTES:

1. ALL FABRICATION AND INSPECTION IN ACCORDANCE WITH G.E. SPEC C5469-SP-2.
2. AFTER COMPLETION OF ALL FABRICATION, EACH OF THE FUEL STORAGE LOCATIONS MUST FREELY ACCEPT A 14" LONG INSPECTION GAGE WHOSE CROSS SECTIONAL DIMENSIONS ARE SHOWN IN DETAIL C. ANY DEVIATION FROM THE DIMENSIONS IN DETAIL C DUE TO GAGE SIZE TOLERANCES, BOW, TWIST, ETC. SHALL MAKE THE OVERALL GAGE ENVELOPE LARGER THAN SHOWN. THIS INSPECTION SHALL BE PERFORMED WITH THE MODULE ASSY ORIENTED UPRIGHT.
3. APPLIES TO LOW POINTS OF ALL ITEMS 1, 6 & 7 PRIOR TO ATTACHMENT OF THE BASE ASSY.
4. BREAK ALL SHARP EDGES.
5. DIMENSION SHOWN IS AN IN-PROCESS DIMENSION WHICH FACILITATES INSTALLATION OF ITEM 8. IT IS NOT A REQUIREMENT OF THE FINAL ASSY.
6. SYMBOLS USED ARE PER ANSI Y14.5-1973.
7. ITEM 2 MAY BE COMPOSED OF SEPARATE ANGLE PIECES, MIN LENGTH 36", BUTTED TOGETHER END TO END. THE SEPARATE PIECES NEED NOT BE BUTT WELDED TOGETHER.
8. IMPRESSION STAMP INFORMATION AS REQ'D ON IDENT. PLATE. USE 1/8" OR 3/16" HIGH CHARACTERS. SIZE OF THIS MODULE IS THE ARRAY SIZE.
2 9. APPLIES TO MODULE ASSY, EXCLUSIVE OF BASE ASSY. MODULE ASSY, EXCLUSIVE OF BASE ASSY, SHALL NOT PROJECT BEYOND THE BASE ASSY, BUT MAY EXCEED THE SYMMETRY TOLERANCES, WHEN INSTALLED TO MEET THE OUTER ENVELOPE CONDITION REQUIRE THE DOCUMENTATION OF THICKNESS, LOCATION AND HEAT NUMBER.
10. SURFACE "A" IS DEFINED BY THE 4 CORNER AREAS TAKEN AS A SINGLE PLANE. SEE DETAIL "D" FOR TYP CORNER AREA.
11. ALL TUBES TO BE VENTED. TUBES (REF DWG 852E191) REQUIRE THE DRILLING OF TWO (2) HOLES IN EACH TUBE, THROUGH THE INNER TUBE WALL, AT THE DIAGONAL CORNERS, 3/16" DIAMETER, 4 ± 1/2 FROM THE TOP OF THE MODULE. TYPE II TUBES DO NOT REQUIRE DRILLING AS THEY ARE DESIGNED WITH VENTED CORNERS (REF TYPE II TUBE SPEC C5469-E-104).
2 12. DOCUMENT LOCATION OF IDENT. PLATE BY IDENTIFYING THE TUBE SERIAL NUMBER TO WHICH IT IS WELDED. THE IDENT PLATE MAY ALTERNATELY BE LOCATED ON THE ADJACENT 13 TUBE SIDES.

DETAIL A
TYPICAL ITEM 2 ORIENTATION
IS OPTIONAL
(TUBE TOP CAP NOT SHOWN FOR CLARITY)

SECTION H-H

DETAIL C
MINIMUM INSPECTION ENVELOPE

LIMITS OF CORNER AREA (TYP) (SEE NOTE 10)
DETAIL D

BEST SOURCE DOCUMENT AVAILABLE. MAY NOT BE OF MICROFILMABLE QUALITY

HOFSS MODULE ASSY, 13 WIDE
HATCH (13X11, 13, 15, 17 & 19)

CONTROL — A
FUNCTIONAL CLASS — 2B

REVISIONS	PRINTS TO
O ECR# 79-37	
1 11-7-79 (SB)	
4.3415 SO	
2 5-27-80	
NH 1560 NH 1568	
NH 1570	

DRN. S. COMPTON 4-27-79 — CHK. — APP. — S.E.O. SAN JOSE — C5469-E-110

I certify that the image contained on this frame was made in the normal and regular course of business, on the date stated below and that it is an accurate reproduction of the document(s) submitted to Micrographics.

20Y

C 5469-D-118 — 6 — 10-1-77 — E 60869 1 — TITLE: HOFSS Module Assembly, 13 Wide (13 X 11, 13 X 15, 13 X 17, 13 X 19) Hatch, 3 Row, 1 — JOB: 13 X 11, HATCH NICKLED PLATE UNIT 2 — MFR: — SIZE: — FIG. DESIG. 2 — REV. CLASS — Rev. 2

VENDOR'S DRAWING REVIEW
- 1 Approved. May now proceed.
- 2 Approved. Submit final dwg. May proceed.
- 3 Approved subject to noted. Make changes and resubmit for record. Do not proceed or release until resubmitted.
- 4 Not approved. Correct and resubmit.
- 5 Receipt only. Does not relieve. May now proceed.

Review of this drawing does not relieve supplier of responsibility for conformance to all requirements of contract documents. Approval shall not be construed as a change in the terms of the contract.

By: [signature] 5/7/80

BECHTEL — GAITHERSBURG — JOB 6937

rotilmed 9-19-84

E.I. Hatch Nuclear Plant
Unit No. 1 / 2

Document Number:

S-53448

Document Title:
RHRSW PUMP TEST CURVES-JOHNSTON PUMP MODEL 18 DC 7 STG -E11-C001A/B/C/D

SUPERSEDED BY:

S-56429

Superseded by SNC Per ABN-H03080 Ver. 1.0

SNC Ver. 2.0

JOHNSTON PUMP COMPANY

PERFORMANCE TEST SET–UP AND TEST DATA SHEET

TC No.: TC–06784
Job Number: ND–6509
Customer: Georgia Power Company
Model / Stages: 18DC / 7
Imp. Dia.: 13.750
TBF / CL.: .063" / "C"
Imp. Material: Bronze
Bowl Material: St. Stl.
Bowl Coating: Plasite
Suction: Bell
Test D. Head: Lab 16" H.P. Disch. Head
Test Col.: Lab Tapper Column

Test Constants:
Flow: 508.504
Head: 2.31

Pipe Dia. @ Gage: 16.000

Motor Eff. :
100 %:
75 %:
50 %:

Motor H.P. / R.P.M.: 150 / 880
PH / CY / V: 3 / 60 / 460
Motor S / N:
Job OR Lab Motor: Lab
Wattmeter No.: #2
Orifice Diameter: 7.022
Test line Size: 16
Pressure Gage: 300
Impeller Adjustment: Two Turns

DESIGN @ R.P.M.: 1780
G.P.M.: 4000
Head: 955.00
B.H.P.:
Efficiency: 84 % Bowl
Specific Gravity 1: 1.00
Specific Gravity 2: 0.00
Item No.:
Fluid: Water
Application:
End User: Georgia Power Company
Site: Georgia Power Company

Comments: Test the Bowl Assembly only at reduced speed with a Test Lab Disch. Head and Column using a Test Lab Motor.

Reviewed By R. Clark Date 10-19-92
Title Senior Cntr Manager

Test Procedure #: JP–TP–0069 Rev. #4

Serial #: NRX – 6533
Job #: ND–6509
POF #: 66224
Chattanooga P.O.#: TE – 10234

Water To Floor: 10 INCHES
Floor To Gauge: 60 INCHES

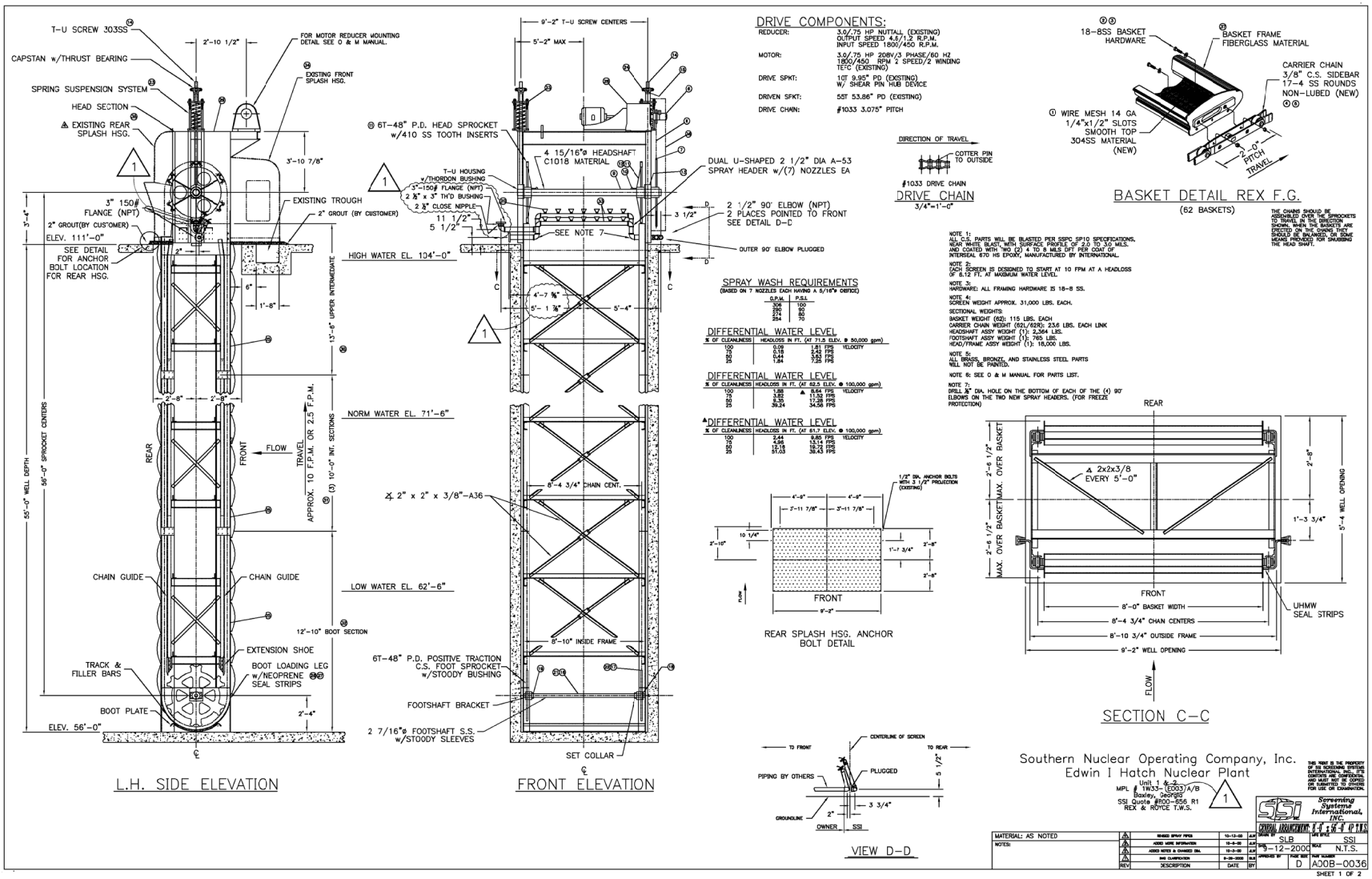
Take Shut – Off (Yes / No): Yes

Test Point #	1	2	3	4	5	6	7	8	9	10	11	12	13	14
D	10.80	0.80	1.70	2.70	4.00	5.00	6.10	10.80	13.50	16.90	20.50	24.30	28.50	0.00
Gallons Per Minute	2000	844	794	1000	1217	1361	1503	2000	2236	2502	2756	3000	3249	0
Gage Reading	105.00	144.30	138.10	133.70	129.60	126.00	121.00	105.50	97.30	85.90	74.00	63.60	50.70	152.30
Feet of Head	242.55	333.33	319.01	308.85	299.38	291.06	279.51	243.71	224.76	198.43	170.94	146.92	117.12	351.81
Gage Elev.Corr.	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83
Velocity Head Loss	0.16	0.01	0.02	0.04	0.06	0.07	0.09	0.16	0.20	0.26	0.30	0.36	0.42	0.00
Total Head	248.54	339.18	324.87	314.72	305.27	296.97	285.43	249.70	230.79	204.51	177.07	153.11	123.37	357.65
Watt Reading:	123.90	105.30	106.60	109.60	114.90	118.10	119.50	123.90	124.90	124.00	121.80	118.50	112.40	99.20
Input H.P.	166.09	141.15	142.90	146.92	154.02	158.31	160.19	166.09	167.43	166.22	163.27	158.85	150.67	132.98
Motor Efficiency	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
B.H.P.	149.48	127.04	128.61	132.23	138.62	142.48	144.17	149.48	150.68	149.60	146.94	142.96	135.60	119.68
Test R.P.M.:	887	890	890	889	889	888	888	888	887	887	887	888	889	890
Volts: (Ref.Only)														
Amps (Ref.Only):														
Vibration in Mils:														
Rated R.P.M.:	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780
Gallons Per Minute:	4014	1089	1587	2002	2437	2728	3013	4009	4487	5021	5530	6014	6505	0
Total Head in Feet:	1000.90	1358.71	1299.48	1261.71	1223.82	1193.22	1146.88	1003.29	929.43	823.58	713.09	615.18	494.58	1430.59
B.H.P. @ 1.0 Sp.Gr.:	1207.99	1016.30	1028.85	1061.38	1112.70	1147.56	1161.16	1203.92	1217.74	1208.97	1187.52	1151.44	1088.49	957.43
B.H.P. @ Sp.Gr.1:	1207.99	1016.30	1028.85	1061.38	1112.70	1147.56	1161.16	1203.92	1217.74	1208.97	1187.52	1151.44	1088.49	957.43
B.H.P.@ Sp.Gr.2:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Efficiency:	0.840	0.387	0.506	0.601	0.677	0.716	0.752	0.844	0.885	0.864	0.839	0.811	0.748	0.000

Tested By: Darryl Clark Jr.
Certified By: Ernie Rodriguez

Witnessed By:
Date Of Test: October 16, 1992

S-55894



DRIVE COMPONENTS:

REDUCER:	3.0/.75 HP NUTTALL (EXISTING) OUTPUT SPEED 4.8/1.2 R.P.M. INPUT SPEED 1800/450 R.P.M.
MOTOR:	3.0/.75 HP 208V/3 PHASE/60 HZ 1800/450 RPM 2 SPEED/2 WINDING TEFC (EXISTING)
DRIVE SPKT:	10T 9.95" PD (EXISTING) W/ SHEAR PIN HUB DEVICE
DRIVEN SPKT:	55T 53.86" PD (EXISTING)
DRIVE CHAIN:	#1033 3.075" PITCH

DIRECTION OF TRAVEL

COTTER PIN TO OUTSIDE

#1033 DRIVE CHAIN

DRIVE CHAIN

3/4"=1'-0"

BASKET DETAIL REX F.G.

(62 BASKETS)

THE CHAINS SHOULD BE ASSEMBLED OVER THE SPROCKETS TO TRAVEL IN THE DIRECTION SPECIFIED ON THE DRAWING. ARE SPECIFIED ON THE DRAWING THEY SHOULD BE BALANCED OR SOME MEANS PROVIDED FOR SNUBBING THE HEAD SHAFT.

SPRAY WASH REQUIREMENTS

(BASED ON 7 NOZZLES EACH HAVING A 5/16"ø ORIFICE)

G.P.M.	P.S.I.
306	100
292	80
277	90
254	70

DIFFERENTIAL WATER LEVEL

% OF CLEANLINESS	HEADLOSS IN FT. (AT 71.5 ELEV. @ 50,000 gpm)	VELOCITY
100	0.09	1.81 FPS
75	0.19	2.43 FPS
50	0.44	3.63 FPS
25	1.84	7.25 FPS

DIFFERENTIAL WATER LEVEL

% OF CLEANLINESS	HEADLOSS IN FT. (AT 62.5 ELEV. @ 100,000 gpm)	VELOCITY
100	1.55	5.64 FPS
75	3.82	11.52 FPS
50	8.35	17.28 FPS
25	39.24	34.56 FPS

△DIFFERENTIAL WATER LEVEL

% OF CLEANLINESS	HEADLOSS IN FT. (AT 61.7 ELEV. @ 100,000 gpm)	VELOCITY
100	2.44	9.85 FPS
75	4.96	13.14 FPS
50	12.10	19.72 FPS
25	51.03	39.43 FPS

NOTE 1:
ALL C.S. PARTS WILL BE BLASTED PER SSPC SP10 SPECIFICATIONS, NEAR WHITE BLAST, WITH SURFACE PROFILE OF 2.0 TO 3.0 MILS. AND COATED WITH (NO (2) 4 TO 8 MILS DFT PER COAT OF INTERSEAL 670 HS EPOXY, MANUFACTURED BY INTERNATIONAL.

NOTE 2:
EACH SCREEN IS DESIGNED TO START AT 10 FPM AT A HEADLOSS OF 6.12 FT. AT MAXIMUM WATER LEVEL.

NOTE 3:
HARDWARE: ALL FRAMING HARDWARE IS 18-8 SS.

NOTE 4:
SCREEN WEIGHT APPROX. 31,000 LBS. EACH.

SECTIONAL WEIGHTS:
BASKET WEIGHT (62): 115 LBS. EACH
CARRIER CHAIN WEIGHT (62L/62R): 256 LBS. EACH LINK
HEADSHAFT ASSY WEIGHT (1): 2,364 LBS.
FOOTSHAFT ASSY WEIGHT (1): 765 LBS.
HEAD/FRAME ASSY WEIGHT (1): 15,000 LBS.

NOTE 5:
ALL BRASS, BRONZE, AND STAINLESS STEEL PARTS WILL NOT BE PAINTED.

NOTE 6: SEE O & M MANUAL FOR PARTS LIST.

NOTE 7:
DRILL ¼" DIA. HOLE ON THE BOTTOM OF EACH OF THE (4) 90° ELBOWS ON THE TWO NEW SPRAY HEADERS. (FOR FREEZE PROTECTION)

REAR SPLASH HSG. ANCHOR BOLT DETAIL

SECTION C-C

VIEW D-D

Southern Nuclear Operating Company, Inc.
Edwin I Hatch Nuclear Plant
Unit 1 & 2
MPL # 1W33-E003A/B
Stanley Swayngim
SSI Quote #R00-856 R1
REX & ROYCE T.W.S.

THIS DRAWING IS THE PROPERTY OF SSI SCREENING SYSTEMS INTERNATIONAL, INC., IT IS LOANED WITH THE UNDERSTANDING THAT IT WILL NOT BE COPIED OR SUBMITTED TO OTHERS FOR USE OR EXAMINATION.

Screening Systems International, INC.
CENTRAL ARKANSAS P.O. BOX 4 LITTLE ROCK, AR 72203

DRAWN BY	SLB
DATE	3-12-2000
APPROVED BY	
SCALE	N.T.S.
SIZE	D
DWG NUMBER	A00B-0036

MATERIAL: AS NOTED
NOTES:

REV	DESCRIPTION	DATE	BY
1	REVISED SPRAY PIPES	10-13-03	AJH
0	ADDED MORE INFORMATION	10-3-03	AJH
0	ADDED NOTES & CHANGED DIA.	10-2-03	AJH
0	DWG CLARIFICATION	9-26-2000	RLH

SHEET 1 OF 2

1 AutoCAD S55894 1W33-E003A&B

Southern Company Services, Inc.
FOR
PLANT: HATCH
UNIT: 1 & 2
TITLE: UNIT 1 AND 2 TRAVELING WATER SCREENS – GENERAL ARRANGEMENT DRAWING
VENDOR: S.S.I.
P.O.#: 6046417
S-55894

THIS DWG. PART OF VENDOR MANUAL N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

REVISION	1	DATE	3-11-03
REVISED PER ABN 00-0022-015.			

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
Vep	CFC	DEW				