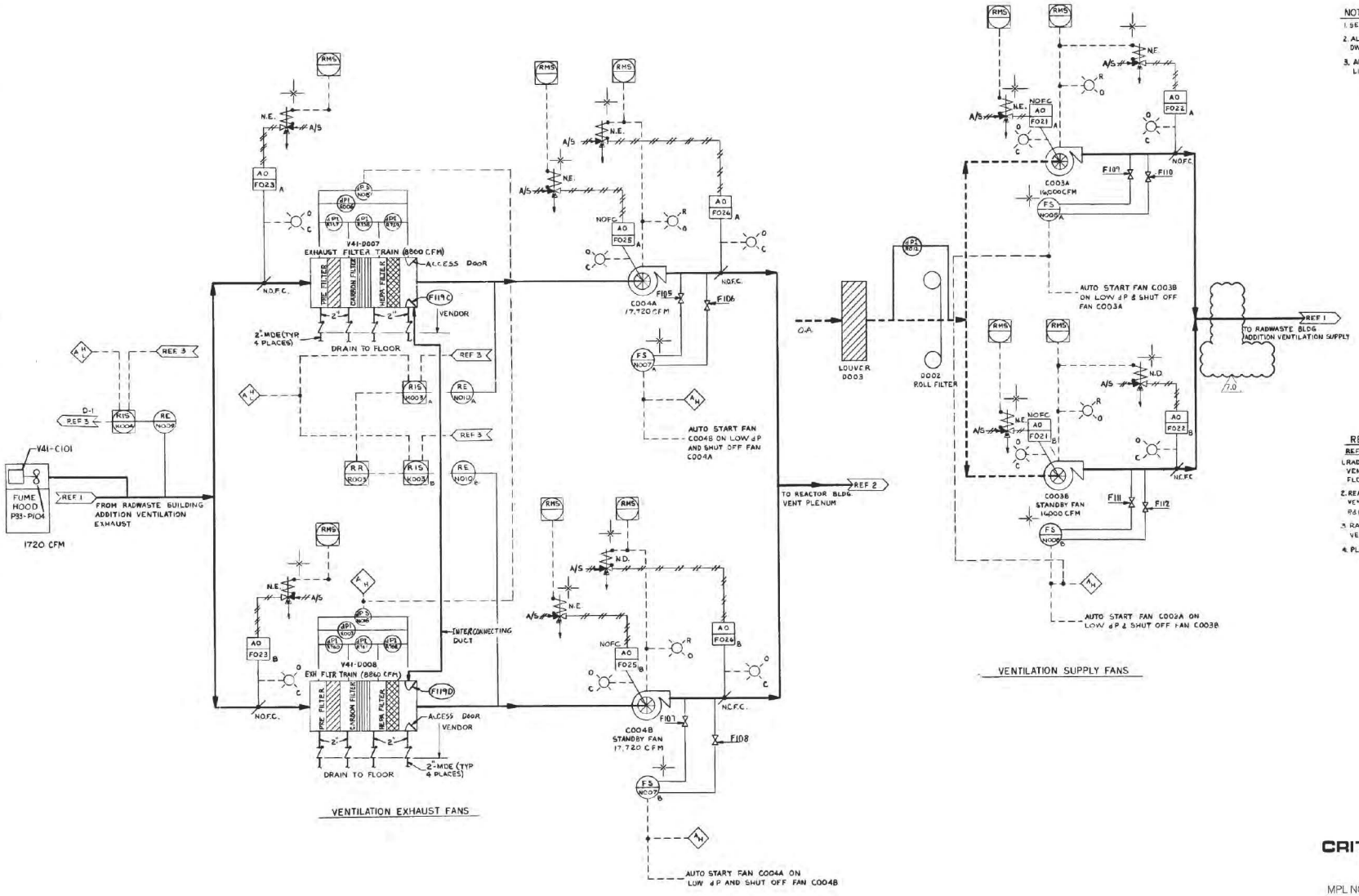
H-16512



CRITICAL DOCUMENT

MPL NO. V41-1030 ACADDVY H18512

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RADWASTE BUILDING ADDITION
VETILATION SYSTEM P&ID

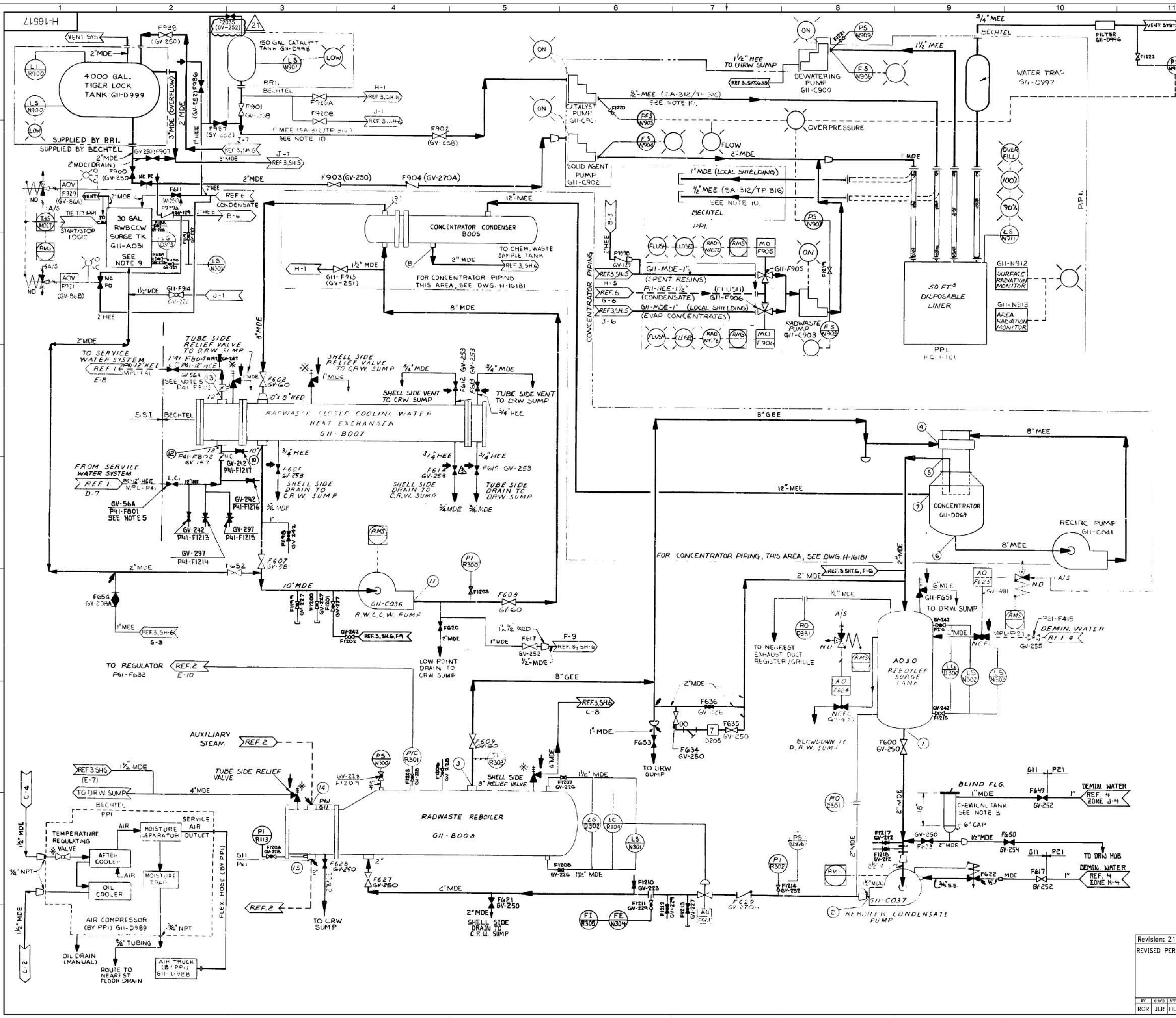
Version: 7.0	Date: 09-18-07
REVISED PER ABN-H00701, VERSION 1.0	

BY	CHK'D	APPR'D
RCR	JWM	JMR

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
WJB	AKN	10-502	H-16512	7.0
DATE	SCALE			
5-22-72	None			

DRAWING CATEGORY: CRITICAL



NOTES:

1. ALL EQUIP. & INSTR. NUMBERS ON THIS DWG. ARE PRECEDED BY MPL G11 UNLESS OTHERWISE NOTED.
2.
3. CHEM. TANK TO BE PLACED IN HORIZONTAL RUN OF PIPE.
4. LOW POINT DRAINS AND HIGH POINT VENTS TO BE ADDED AS DETERMINED BY PHYSICAL ROUTING OF THE SYSTEM.
5. VALVE TO BE PLACED INSIDE BLDG AS CLOSE TO WALL AS POSSIBLE.
6. WHERE GV-NO'S. ARE SHOWN, THE VALVES ARE TAGGED WITH THESE NO'S. WHERE GV-NO'S ARE NOT SHOWN, THE VALVES ARE TAGGED WITH THE MPL NO.
7. THIS ITEM ORDERED BY S.S.I.
8. ✳ DESIGNATES ADJACENT ITEM IS FURNISHED WITH RELIEF VALVES.
9. TANK G11-A031 SHALL BE LOCATED ABOVE THE HIGHEST ELEVATION OF 8" MDE CONCENTRATOR DISCHARGE LINE.
10. ALL "MEE" LINES CONTAINING CATALYST SOLUTION, SHALL BE TYPE 316 STAINLESS STEEL, DESIGNATED THUS: SIZE, MEE (SA 312/TP 316

REFERENCE	MPL ITEM NO.	S.S. DWG. NO.
1. SERVICE WATER SYS. P & I.D.	BY S.S.I.	H-11024
2. AUXILIARY STEAM SYS. P & I.D.	P61-1010	H-16278
3. RADWASTE SYS. P & I.D. SHT. 5	G11-1010	H-16180
SHT. 6		H-16181
SHT. 7		H-16182
4. DEMIN. WATER SYS. P & I.D.	P21-1010	H-16015
5. PIPING & INSTR. SYMBOLS	A41-1010	S-15051
6. REACTOR & RADWASTE BUILDINGS CONDENSATE STORAGE & TRANSFER SYS.	P11-1010	H-16016

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FLOW #/HR	17,500	17,500	17,500	17,500	17,500		12,500	12,500
PRESS. P.S.I.G.	40	75	70	50	40		35	0
TEMP. °F	287	287	316	298	287		281	212

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
FLOW #/HR	10^6	10^6	10^6	1.5×10^6	1.5×10^6	17,850	17,850	
PRESS. P.S.I.G.	55	35	65	70	60	190	188.5	
TEMP. °F	120	105	105	95	105	450	383.7	

LVN (900 SERIES) F907
LVN (600 SERIES) F653

CRITICAL DOCUMENT

MPL # G11-1040,G11-1050

ACADOVY H16517

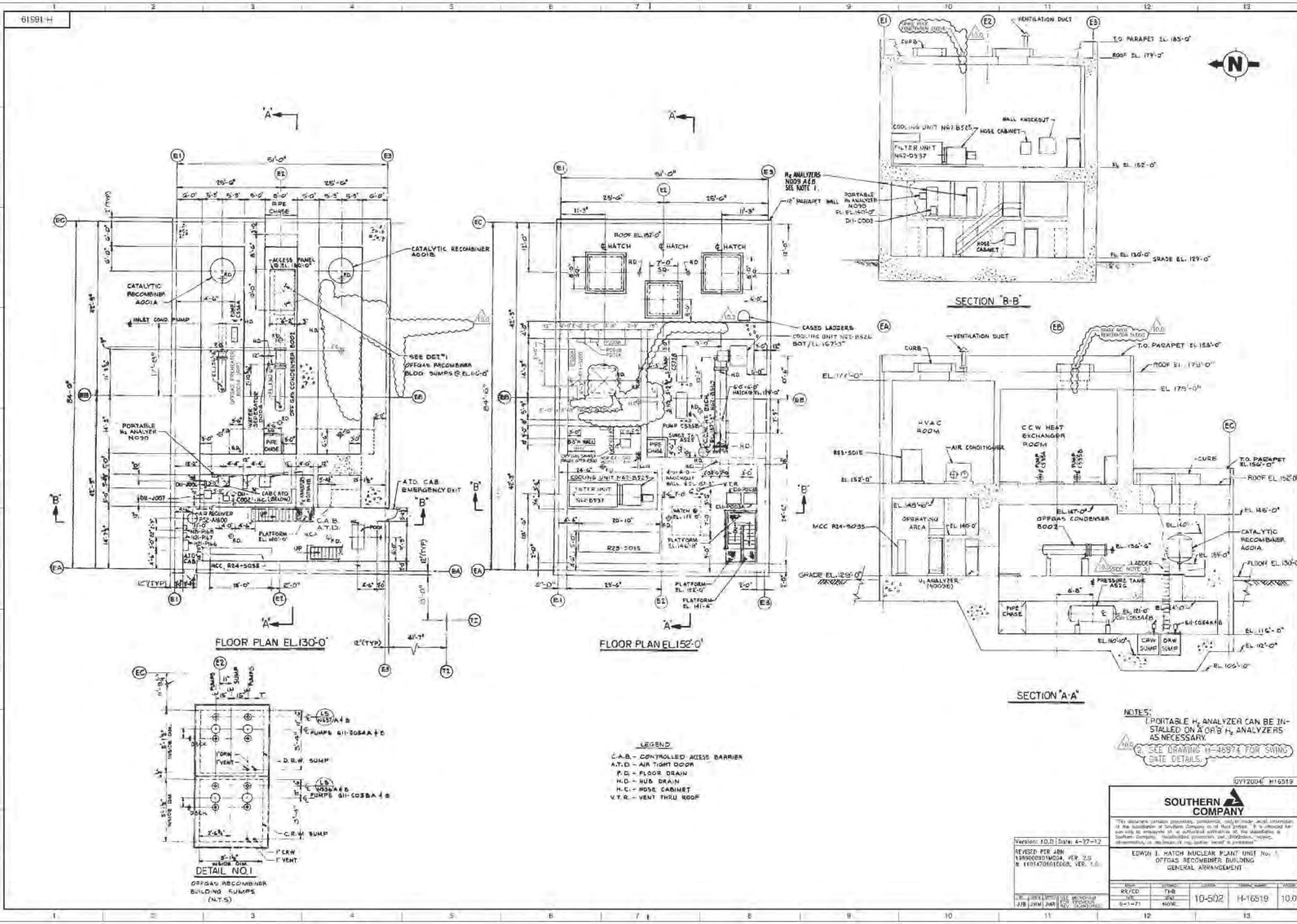
SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RADWASTE BUILDING ADDITION
SUPPORT SYSTEMS P & ID AND P.F.D.

Revision: 21	Date: 4-6-99
REVISED PER ABN 99-0142.	

BY	CHK'D	APPR.1	
RCR	JLR	HEW	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
LKM	JWP	10-502	H-16517	21
DATE: 11-16-71	SCALE: None			



LEGEND

C.A.B. – CONTROLLED ACCESS BARRIER
A.T.D. – AIR TIGHT DOOR
F.D. – FLOOR DRAIN
H.D. – HUB DRAIN
H.C. – HOSE CABINET
V.T.R. – VENT THRU ROOF

NOTES:

1. PORTABLE H_2 ANALYZER CAN BE INSTALLED ON "A" OR "B" H_2 ANALYZERS AS NECESSARY.
2. SEE DRAWING H-46874 FOR SWING GATE DETAILS.

OYY2004 H16519

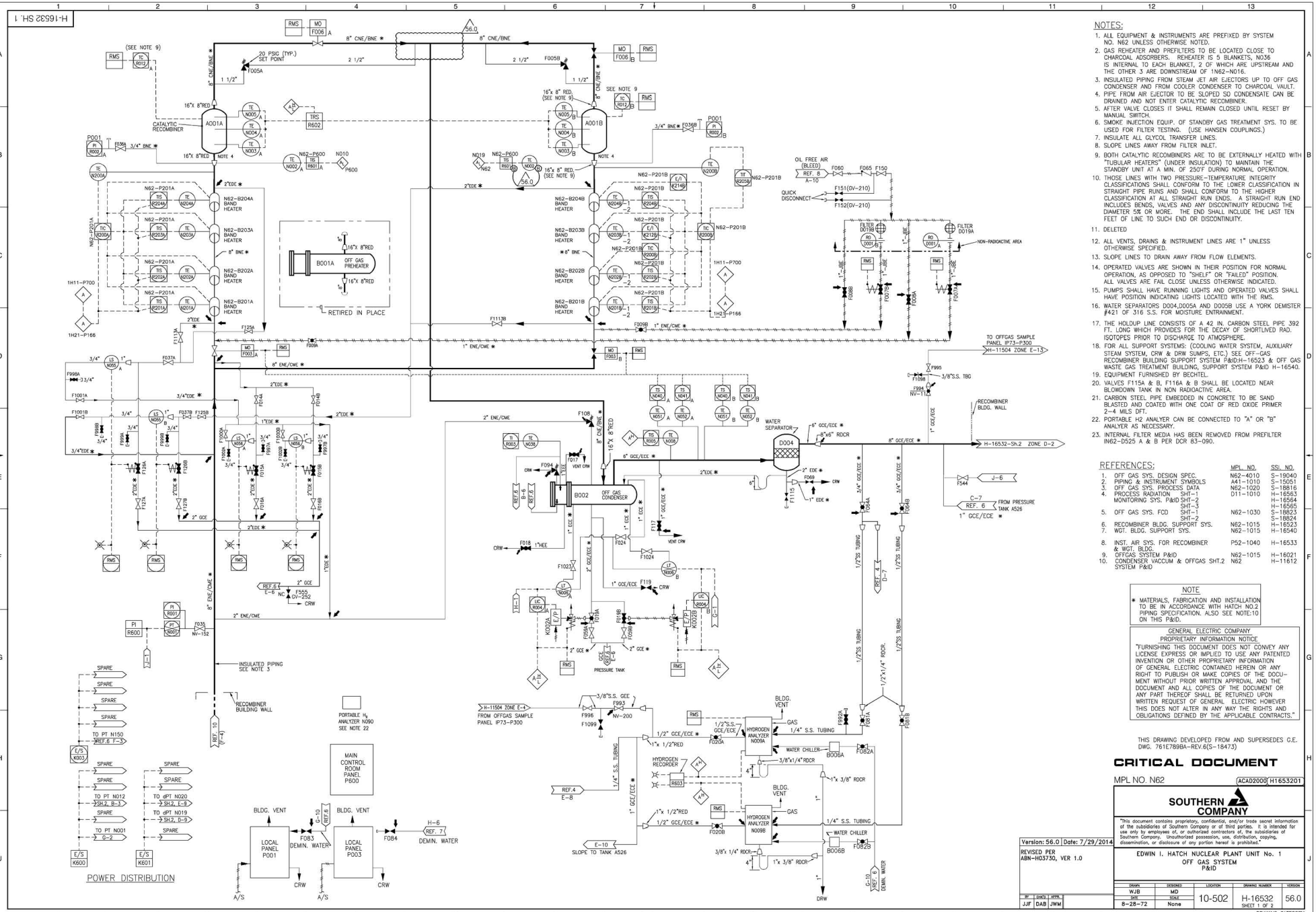
SOUTHERN COMPANY

Version: 10.0 Date: 4-27-12

REVISED PER ABN 19890000101M004, VER. 2.0 & 11014706010008, VER. 1.0

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
OFFGAS RECOMBINER BUILDING
GENERAL ARRANGEMENT

RR/CD	THB	10-502	H-16519	10.0
6-1-71	NONE			



NOTES:

1. ALL EQUIPMENT & INSTRUMENTS ARE PREFIXED BY SYSTEM NO. N62 UNLESS OTHERWISE NOTED.
2. GAS REHEATER AND PREFILTERS TO BE LOCATED CLOSE TO CHARCOAL ADSORBERS. REHEATER IS 5 BLANKETS, N036 IS INTERNAL TO EACH BLANKET, 2 OF WHICH ARE UPSTREAM AND THE OTHER 3 ARE DOWNSTREAM OF 1N62-N016.
3. INSULATED PIPING FROM STEAM JET AIR EJECTORS UP TO OFF GAS CONDENSER AND FROM COOLER CONDENSER TO CHARCOAL VAULT.
4. PIPE FROM AIR EJECTOR TO BE SLOPED SO CONDENSATE CAN BE DRAINED AND NOT ENTER CATALYTIC RECOMBINER.
5. AFTER VALVE CLOSES IT SHALL REMAIN CLOSED UNTIL RESET BY MANUAL SWITCH.
6. SMOKE INJECTION EQUIP. OF STANDBY GAS TREATMENT SYS. TO BE USED FOR FILTER TESTING. (USE HANSEN COUPLINGS.)
7. INSULATE ALL GLYCOL TRANSFER LINES.
8. SLOPE LINES AWAY FROM FILTER INLET.
9. BOTH CATALYTIC RECOMBINERS ARE TO BE EXTERNALLY HEATED WITH "TUBULAR HEATERS" (UNDER INSULATION) TO MAINTAIN THE STANDBY UNIT AT A MIN. OF 250°F DURING NORMAL OPERATION.
10. THOSE LINES WITH TWO PRESSURE-TEMPERATURE INTEGRITY CLASSIFICATIONS SHALL CONFORM TO THE LOWER CLASSIFICATION IN STRAIGHT PIPE RUNS AND SHALL CONFORM TO THE HIGHER CLASSIFICATION AT ALL STRAIGHT RUN ENDS. A STRAIGHT RUN END INCLUDES BENDS, VALVES AND ANY DISCONTINUITY REDUCING THE DIAMETER 5% OR MORE. THE END SHALL INCLUDE THE LAST TEN FEET OF LINE TO SUCH END OR DISCONTINUITY.
11. DELETED
12. ALL VENTS, DRAINS & INSTRUMENT LINES ARE 1" UNLESS OTHERWISE SPECIFIED.
13. SLOPE LINES TO DRAIN AWAY FROM FLOW ELEMENTS.
14. OPERATED VALVES ARE SHOWN IN THEIR POSITION FOR NORMAL OPERATION, AS OPPOSED TO "SHELF" OR "FAILED" POSITION. ALL VALVES ARE FAIL CLOSE UNLESS OTHERWISE INDICATED.
15. PUMPS SHALL HAVE RUNNING LIGHTS AND OPERATED VALVES SHALL HAVE POSITION INDICATING LIGHTS LOCATED WITH THE RMS.
16. WATER SEPARATORS D004,D005A AND D005B USE A YORK DEMISTER #421 OF 316 S.S. FOR MOISTURE ENTRAINMENT.
17. THE HOLDUP LINE CONSISTS OF A 42 IN. CARBON STEEL PIPE 392 FT. LONG WHICH PROVIDES FOR THE DECAY OF SHORTLIVED RAD. ISOTOPES PRIOR TO DISCHARGE TO ATMOSPHERE.
18. FOR ALL SUPPORT SYSTEMS: (COOLING WATER SYSTEM, AUXILIARY STEAM SYSTEM, CRW & DRW SUMPS, ETC.) SEE OFF-GAS RECOMBINER BUILDING SUPPORT SYSTEM P&ID:H-16523 & OFF GAS WASTE GAS TREATMENT BUILDING, SUPPORT SYSTEM P&ID H-16540.
19. EQUIPMENT FURNISHED BY BECHTEL.
20. VALVES F115A & B, F116A & B SHALL BE LOCATED NEAR BLOWDOWN TANK IN NON RADIOACTIVE AREA.
21. CARBON STEEL PIPE EMBEDDED IN CONCRETE TO BE SAND BLASTED AND COATED WITH ONE COAT OF RED OXIDE PRIMER 2-4 MILS DFT.
22. PORTABLE H2 ANALYER CAN BE CONNECTED TO "A" OR "B" ANALYER AS NECESSARY.
23. INTERNAL FILTER MEDIA HAS BEEN REMOVED FROM PREFILTER IN62-D525 A & B PER DCR 83-090.

REFERENCES:

		MPL NO.	SSI NO.
1.	OFF GAS SYS. DESIGN SPEC.	N62-4010	S-19040
2.	PIPING & INSTRUMENT SYMBOLS	A41-1010	S-15051
3.	OFF GAS SYS. PROCESS DATA	N62-1020	S-18816
4.	PROCESS RADIATION MONITORING SYS. P&ID	SHT-1	H-16563
		SHT-2	H-16564
		SHT-3	H-16565
5.	OFF GAS SYS. FCD	SHT-1 N62-1030	S-18823
		SHT-2	S-18824
6.	RECOMBINER BLDG. SUPPORT SYS.	N62-1015	H-16523
7.	WGT. BLDG. SUPPORT SYS.	N62-1015	H-16540
8.	INST. AIR SYS. FOR RECOMBINER & WGT. BLDG.	P52-1040	H-16533
9.	OFFGAS SYSTEM P&ID	N62-1015	H-16021
10.	CONDENSER VACCUM & OFFGAS SHT.2 SYSTEM P&ID	N62	H-11612

NOTE

* MATERIALS, FABRICATION AND INSTALLATION TO BE IN ACCORDANCE WITH HATCH NO.2 PIPING SPECIFICATION. ALSO SEE NOTE:10 ON THIS P&ID.

THIS DRAWING DEVELOPED FROM AND SUPERSEDES G.E. DWG. 761E789BA-REV.6(S-18473)

CRITICAL DOCUMENT

MPL NO. N62 ACAD2000 H1653201

Version: 56.0 Date: 7/29/2014

REVISED PER ABN-H03730, VER 1.0

BY	CHK'D	APPR.
JJF	DAB	JWM

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
OFF GAS SYSTEM
P&ID

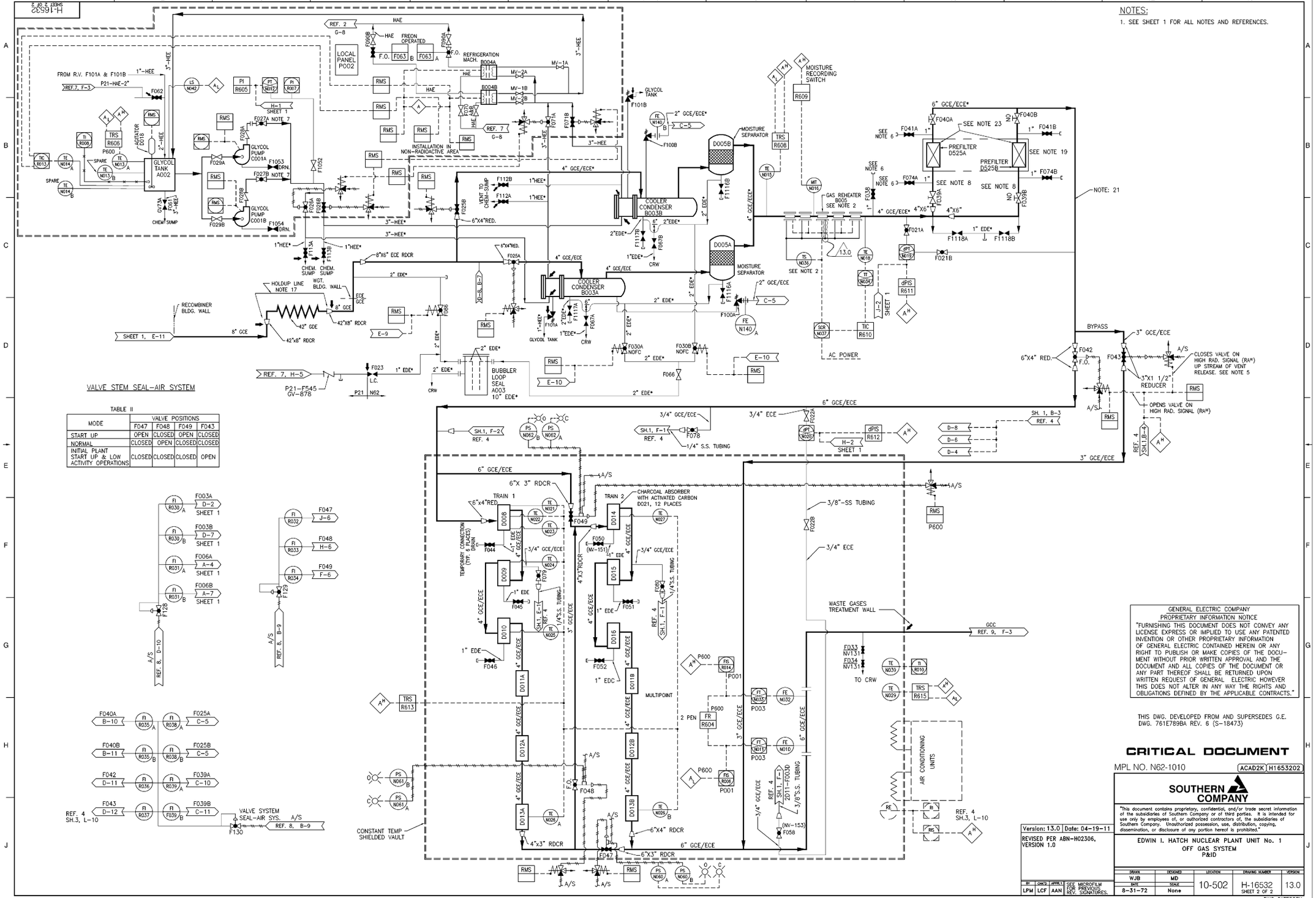
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
WJB	MD	10-502	H-16532	56.0
DATE	SCALE		SHEET 1 OF 2	
8-28-72	None			

13 DRAWING CATEGORY: CRITICAL

H-16532
SHEET 2 OF 2

NOTES:

1. SEE SHEET 1 FOR ALL NOTES AND REFERENCES.



VALVE STEM SEAL-AIR SYSTEM

TABLE II

MODE	VALVE POSITIONS			
	F047	F048	F049	F043
START UP	OPEN	CLOSED	OPEN	CLOSED
NORMAL	CLOSED	OPEN	CLOSED	CLOSED
INITIAL PLANT START UP & LOW ACTIVITY OPERATIONS	CLOSED	CLOSED	CLOSED	OPEN

THIS DWG. DEVELOPED FROM AND SUPERSEDES G.E. DWG. 761E789BA REV. 6 (S-18473)

CRITICAL DOCUMENT

MPL NO. N62-1010 ACAD2K H1653202

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
OFF GAS SYSTEM
P&ID

Version: 13.0 | Date: 04-19-11

REVISED PER ABN-H02306, VERSION 1.0

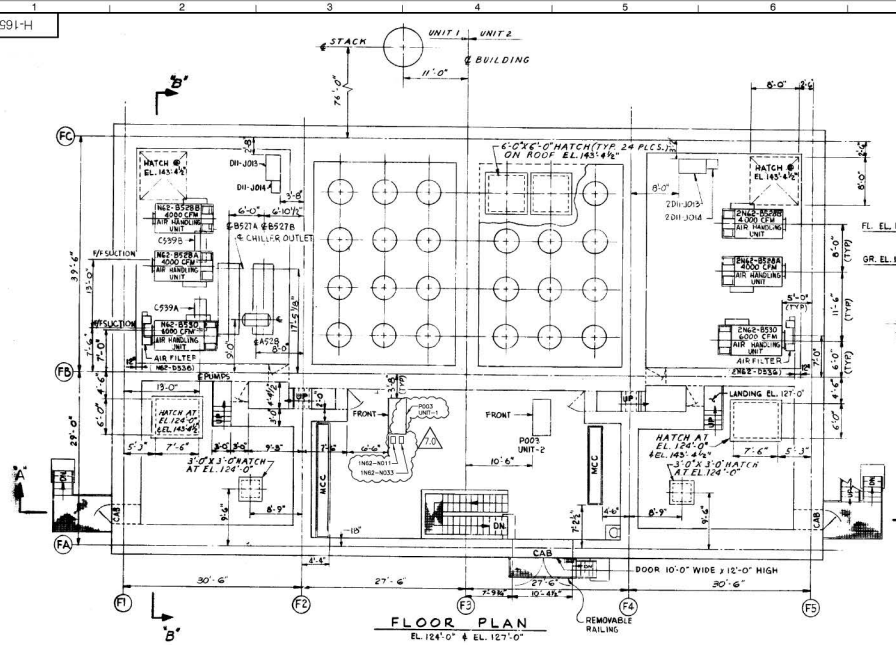
BY	CHK'D	APPR'D
LPM	LCF	AAN

SEE MICROFILM FOR PREVIOUS REV. SIGNATORIES.

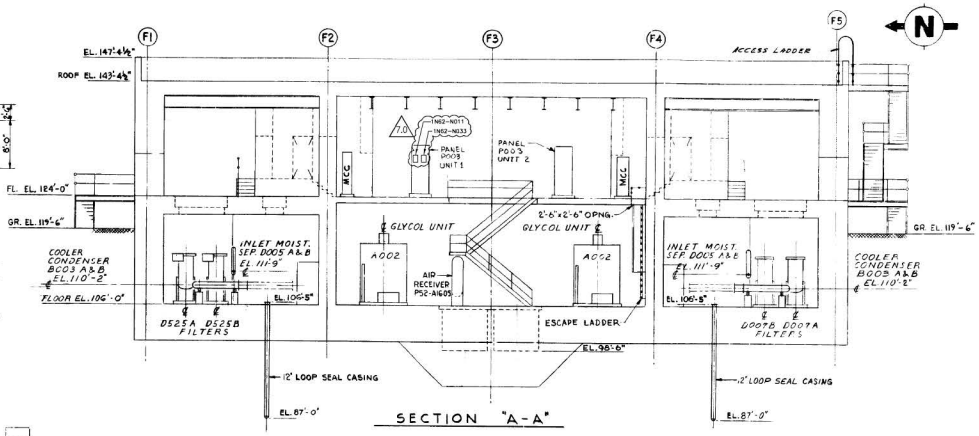
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
WJB	MD	10-502	H-16532 SHEET 2 OF 2	13.0
DATE 8-31-72	SCALE None			

DWG. CATEGORY: CRITICAL

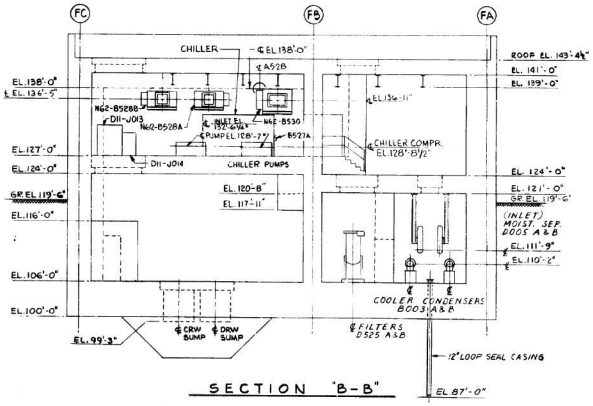
H-16536



FLOOR PLAN
EL. 124'-0" & EL. 127'-0"

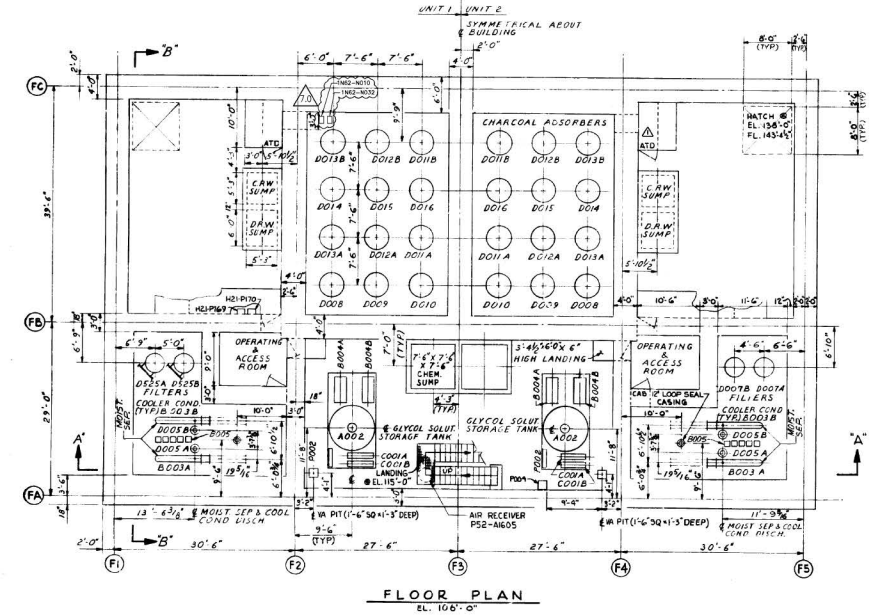


SECTION "A-A"



SECTION "B-B"

NOTES:
1. ALL EQUIPMENT FOR UNIT No.1 IS PRECEDED IN M.P.L. WITH N62
2. ALL EQUIPMENT FOR UNIT No. 2 IS PRECEDED IN M.P.L. WITH 2N62



FLOOR PLAN
EL. 106'-0"

ACADOVY H16536

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1 & 2
WASTE GAS TREATMENT
BUILDING – GENERAL ARRANGEMENT

Version: 7.0	Date: 4-24-08
REVISED PER ABN 10617097O1M003. VER. 1.0	

BY	CHK'D	APPR'D
Vep	RKF	JMR

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
RSH	E.J.	10-502	H-16536	7.0
DATE	SCALE			
4-7-72	1/8"=1'-0"			

H-16549

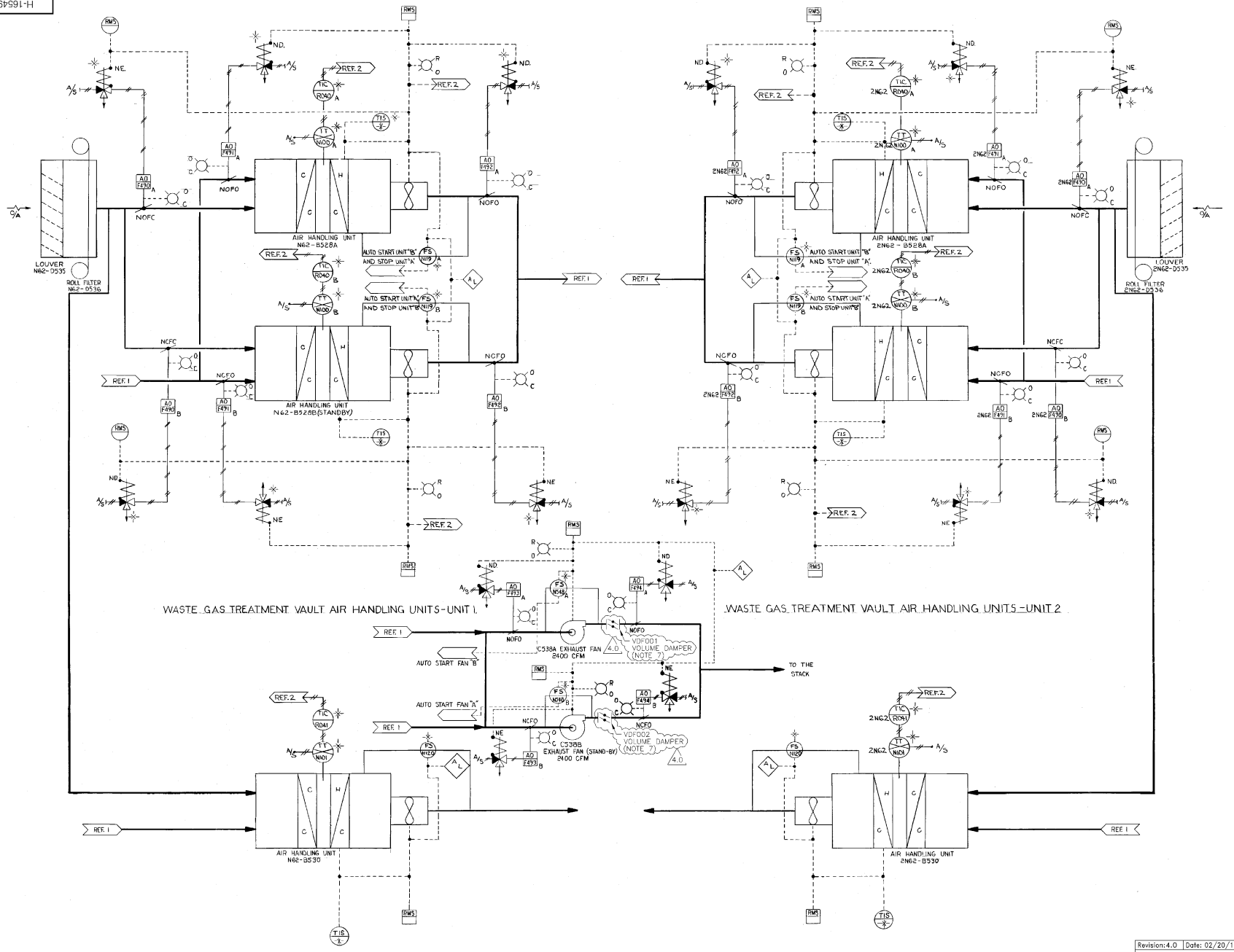


TABLE 1 AIR HANDLING UNITS CONDENSATE DRAIN VALVE SCHEDULE	
Unit 1 Air Handling Unit MPL Numbers	Unit 1 Condensate Drain Valve MPL Numbers
N62-B528A	N62-F1110
N62-B528B	N62-F1111
N62-B530	N62-F1112
Unit 2 Air Handling Unit MPL Numbers	Unit 2 Condensate Drain Valve MPL Numbers
2N62-B528A	2N62-F592
2N62-B528B	2N62-F591
2N62-B530	2N62-F593

NOTES

1. SEE DWG. H-16001 FOR SYMBOL REFERENCES.
2. ALL EQUIPMENT AND INSTRUMENT NO'S FOR UNIT NO. 1 THIS DWG. ARE PRECEDED IN MPL BY N62, EG, N62-B525.
3. ALL EQUIPMENT AND INSTRUMENT NO'S FOR UNIT NO. 2 THIS DWG. ARE PRECEDED IN MPL BY 2N62, EG. 2N62-B525.
4. FOR EQUIPMENT LOCATION SEE DWG. H-16551 & H-16552
5. ALL REMOTE MANUAL SWITCHES, INDICATING LIGHTS & ANNUNCIATORS ARE LOCATED ON PANEL.
6. (T.I.S.) SYMBOL INDICATES INSTRUMENTS FURNISHED BY THE EQUIPMENT MANUFACTURER AND IS PART OF THE PACKAGE.
7. WHEN REFERENCED TO THIS NOTE, EQUIPMENT IS IS REQUIRED FOR NRC ORDER EA-13-109 COMPLIANCE. REFER TO A-53317 AND A-53324 FOR HCVS FUNCTION.

4.0

REFERENCE

REFERENCES	MPL NO.	S.S. NO.
1. WASTE GAS TREATMENT BUILDING UNIT 1 & 2 HVAC SYSTEM PROCESS FLOW DIAGRAM	N62-1016	H-16548
2. WASTE GAS TREATMENT BUILDING UNIT 1 & 2 CHILLED WATER SYSTEM P&ID	N62-1015	H-16538

CRITICAL DOCUMENT

MPL No. N62-1015 ACADOVY H16549

Revision: 4.0	Date: 02/20/18
REVISED PER ABN SNC692852M056, VER. 1.0	

BY	CHKD	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
RS	ACN	JEK	

SOUTHERN COMPANY

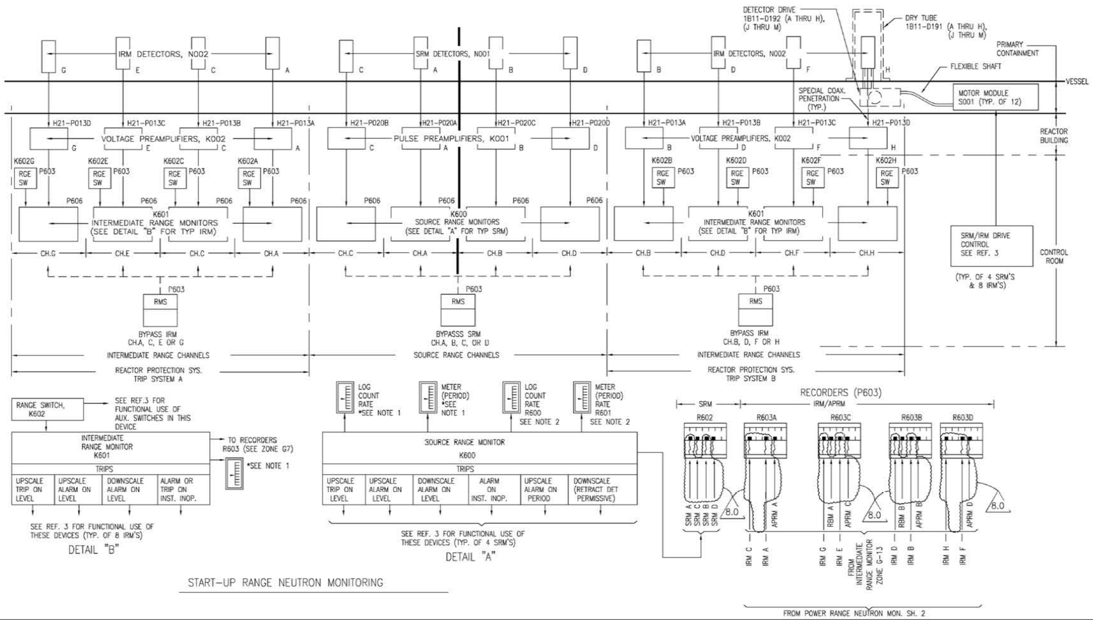
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1 & 2
WASTE GAS TREATMENT BUILDING
AIR COND. SYSTEM P. & I. D.

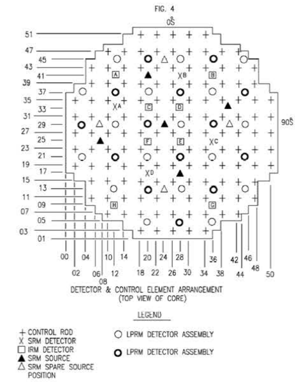
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
E.A.W.	None	10-502	H-16549	4.0
DATE 12-1-72	SCALE None			

WASTE GAS TREATMENT BUILDING AIR HANDLING UNIT — UNIT 1

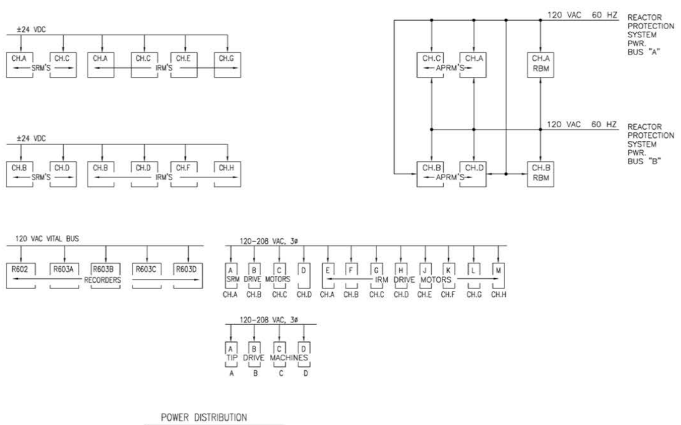
WASTE GAS TREATMENT BUILDING AIR HANDLING UNIT — UNIT 2

H-16560





NOTES:
1. PARTS MARKED *ARE LOCATED ADJACENT TO OR ON THE SIGNAL CONDITIONING EQUIPMENT PERFORMING THE FUNCTION INDICATED.
2. PART IS LOCATED ON THE MAIN CONTROL PANEL.
3. POSITION INFORMATION IS INPUT EVERY ONE INCH. FLUX LEVEL INFORMATION IS INPUT EVERY 3 INCHES ON WITHDRAWAL.
4. ALL EQUIPMENT & INSTRUMENTS ARE PREFIXED BY NO. 1C51 UNLESS OTHERWISE NOTED.
5. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT.



REFERENCE DOCUMENTS:

	MPL ITEM NO.	DWG. NO.
1. REACTOR RECIRC. SYS P&ID	1B31-1010	H-16062, H-16063
2. CONTROL ROD DRIVE HYDRAULIC SYS FCD	1C11-1030	
3. NEUTRON MONITORING SYS FCD	1C51-1020	
4. DESIGN SPECIFICATION	1C51-4010	
5. POWER RANGE DETECTOR PPD	1B11-D193, D194	
6. NEUTRON MONITORING SYSTEM IED SHT.2	1C51-1010	H-16561
7. DATA AQUISITION CHART ERF ANALOG SIGNALS - G1T SIGNAL CONDITIONING SHT. 1 OF 8	X75-P601	SX-19333

ABBREVIATIONS:
- SRM SOURCE RANGE MONITOR
- IRM INTERMEDIATE RANGE MONITOR
- APRM AVERAGE POWER RANGE MONITOR
- LPRM LOCAL POWER RANGE MONITOR
- RBM ROD BLOCK MONITOR
- RGE. SW RANGE SWITCH
- TIP TRAVERSING IN-CORE PROBE

THIS DWG. DEVELOPED FROM G.E. DWG. 105E1504RJ SHT. 1 REV. 0.

CRITICAL DOCUMENT

MPL No. 1C51-1010 ACAD2010 H16560

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
POWER RANGE NEUTRON MONITORING
IED SHT. 1

Version: 8.0 Date: 03/04/16
REVISED PER ABN: SNC528997J023, VER 1.0

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
D.KIMBROUGH	None	10-502	H-16560	8.0
DATE	SCALE			
None	None			

DRAWING CATEGORY: CRITICAL

H-16561

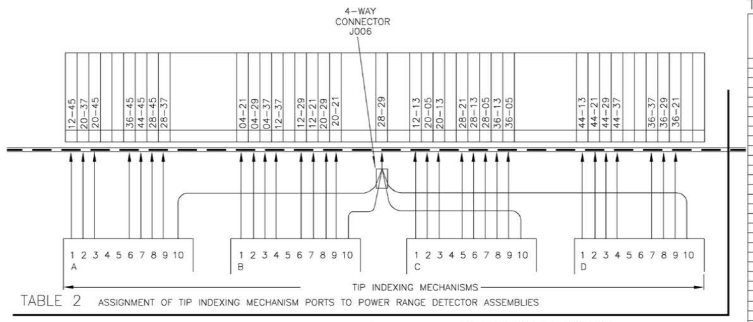
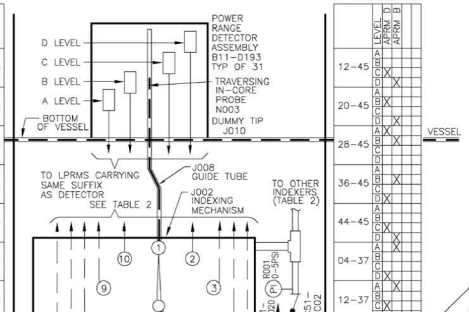


TABLE 2 ASSIGNMENT OF TIP INDEXING MECHANISM PORTS TO POWER RANGE DETECTOR ASSEMBLIES

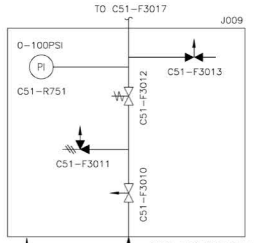
TABLE 1A

TABLE 1B

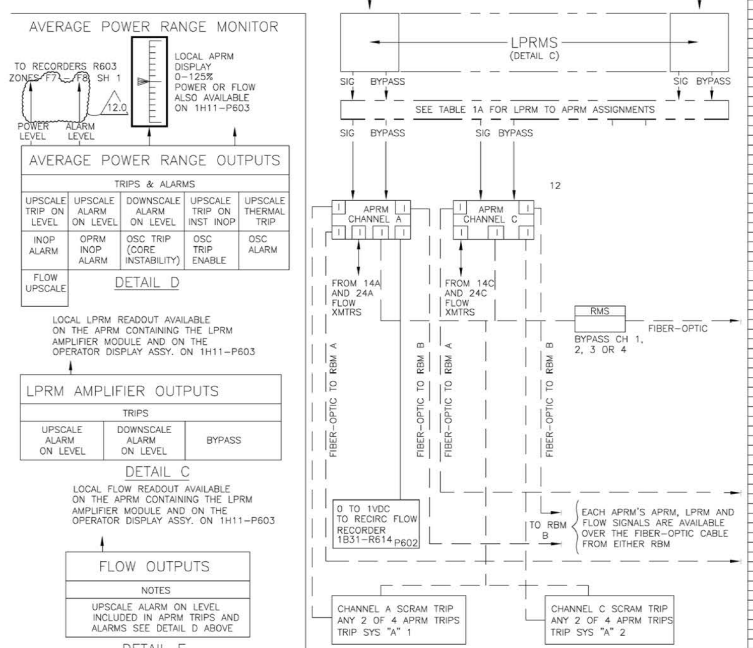


APRM CHANNEL D	RBM CHANNEL A	APRM CHANNEL B	APRM CHANNEL C	APRM CHANNEL A
	RBM CHANNEL B			

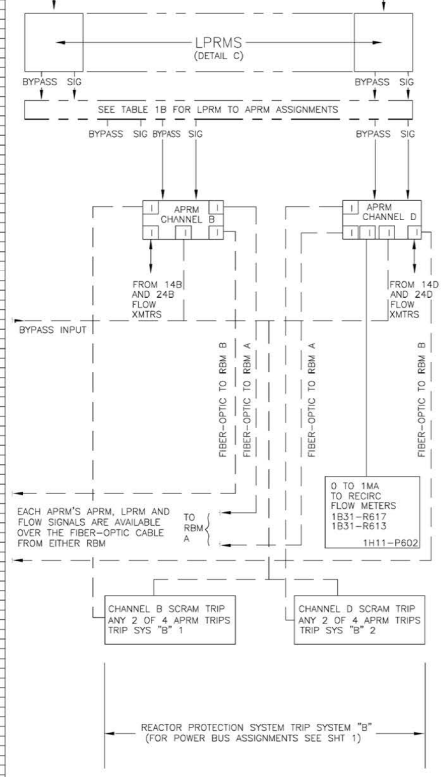
ARRANGEMENT OF PANEL 1H11-P608



DETAIL 'G'



POWER RANGE NEUTRON MONITORING



FOR NOTES AND REFERENCES SEE H-16560.

CRITICAL DOCUMENT

ACAD2010 H16561

SOUTHERN COMPANY

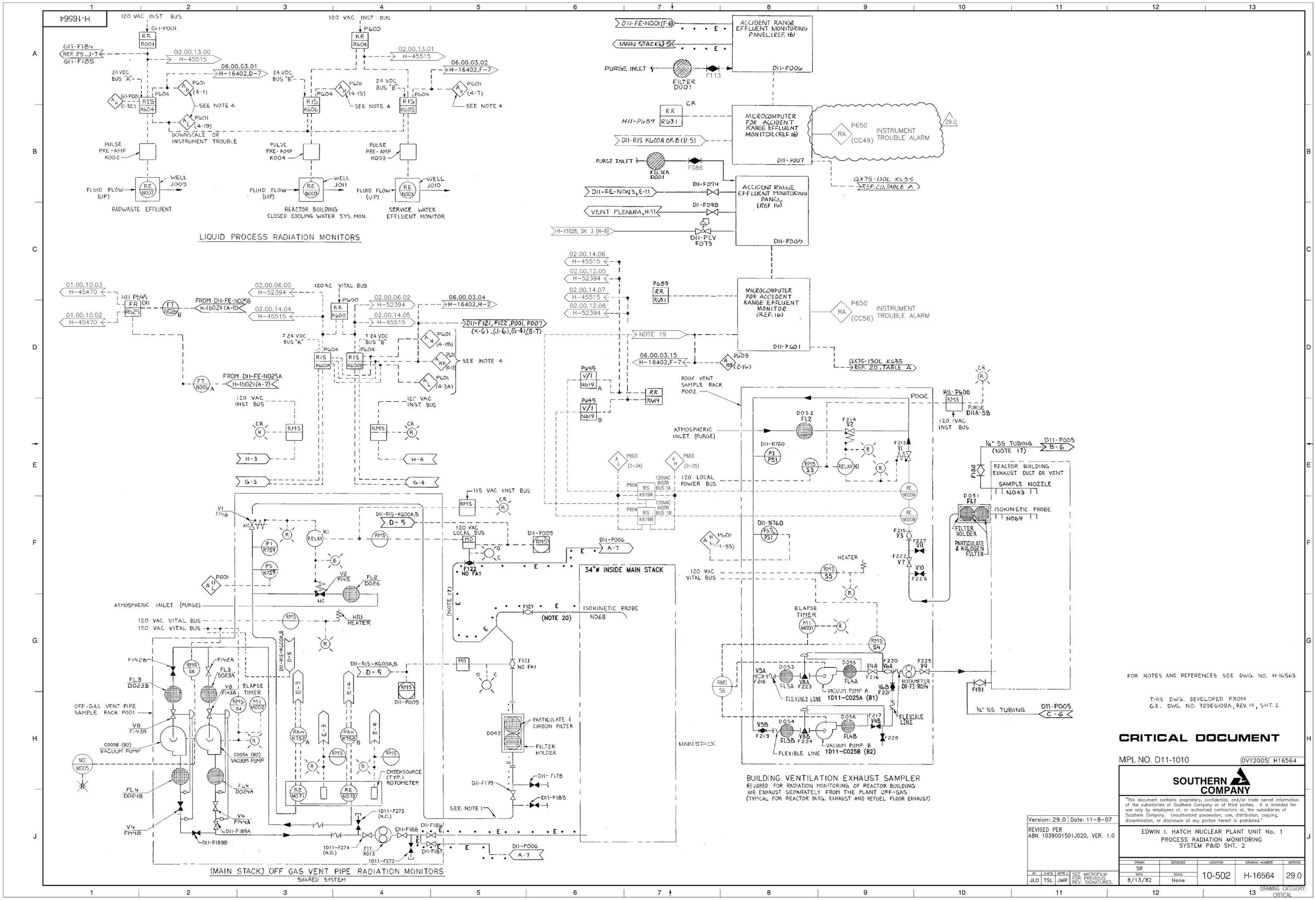
Version: 12.0 Date: 03/03/16
REVISED PER ABN: SNC528997J024, VER 1.0

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
POWER RANGE NEUTRON MONITORING SHT. 2

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
D.KIMBROUGH	None	10-502	H-16561	12.0
DATE	SCALE			
None	None			

BY GTR FOB JTL

DRAWING CATEGORY: CRITICAL


H-16564
LIQUID PROCESS RADIATION MONITORS
RADWASTE EFFLUENT
REACTOR BUILDING CLOSED COOLING WATER SYS. MON.
SERVICE WATER EFFLUENT MONITOR
120 VAC INST BUS
24 VDC BUS "A"
24 VDC BUS "B"
PULSE PRE-AMP K002
PULSE PRE-AMP K004
PULSE PRE-AMP K003
FLUID FLOW (UP)
SEE NOTE 4
DOWNSCALE OR INSTRUMENT TROUBLE
ACCIDENT RANGE EFFLUENT MONITORING PANEL (REF. 16) D11-P006
MICROCOMPUTER FOR ACCIDENT RANGE EFFLUENT MONITOR (REF 16) D11-P007
ACCIDENT RANGE EFFLUENT MONITORING PANEL (REF 16) D11-P009
MICROCOMPUTER FOR ACCIDENT RANGE EFFLUENT MONITOR (REF. 16) D11-P601
PURGE INLET
FILTER D001
INSTRUMENT TROUBLE ALARM
VENT PLENUM, H-11
ROOF VENT SAMPLE RACK P002
ATMOSPHERIC INLET (PURGE)
120 LOCAL POWER BUS
120 VAC VITAL BUS
HEATER
ELAPSE TIMER
VACUUM PUMP A 1D11-C025A (B1)
VACUUM PUMP B 1D11-C025B (B2)
FLEXIBLE LINE
ROTAMETER D11-FI-R014
BUILDING VENTILATION EXHAUST SAMPLER
REQUIRED FOR RADIATION MONITORING OF REACTOR BUILDING AIR EXHAUST SEPARATELY FROM THE PLANT OFF-GAS (TYPICAL FOR REACTOR BLDG. EXHAUST AND REFUEL FLOOR EXHAUST)
REACTOR BUILDING EXHAUST DUCT OR VENT
SAMPLE NOZZLE N043
ISOKINETIC PROBE N069
FILTER HOLDER PARTICULATE & HALOGEN FILTER
¼" SS TUBING (NOTE 17)
FOR NOTES AND REFERENCES SEE DWG. NO. H-16563
THIS DWG. DEVELOPED FROM G.E. DWG. NO. 729E610BA, REV. 14, SHT. 2
34"Ø INSIDE MAIN STACK
ISOKINETIC PROBE N068 (NOTE 20)
MAIN STACK
PARTICULATE & CARBON FILTER
FILTER HOLDER
CHECKSOURCE (TYP.)
ROTOMETER
SEE NOTE 1
OFF-GAS VENT PIPE SAMPLE RACK P001
VACUUM PUMP
(MAIN STACK) OFF GAS VENT PIPE RADIATION MONITORS
SHARED SYSTEM
CRITICAL DOCUMENT
MPL NO. D11-1010
0VY2005 H16564
SOUTHERN COMPANY
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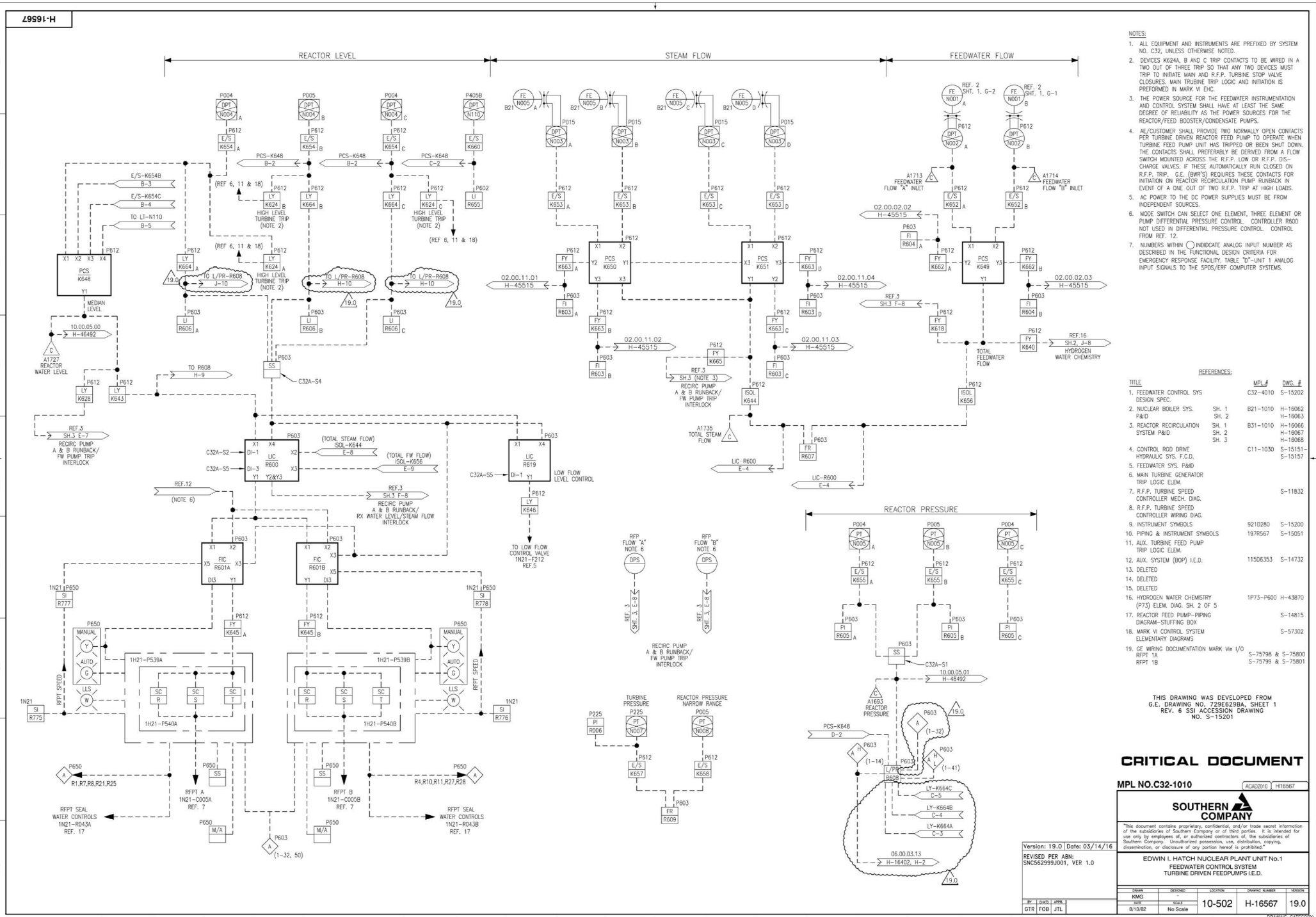
Version: 29.0 Date: 11-8-07
REVISED PER ABN 1039001501J020, VER. 1.0
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
PROCESS RADIATION MONITORING SYSTEM P&ID SHT. 2
JLO TSL JMR
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
SR
8/13/82
None
10-502
H-16564
29.0
DRAWING CATEGORY: CRITICAL

H-16567



NOTES:

1. ALL EQUIPMENT AND INSTRUMENTS ARE PREFIXED BY SYSTEM NO. C32, UNLESS OTHERWISE NOTED.
2. DEVICES K624A, B AND C TRIP CONTACTS TO BE WIRED IN A TWO OUT OF THREE TRIP SO THAT ANY TWO DEVICES MUST TRIP TO INITIATE MAIN AND R.F.P. TURBINE STOP VALVE CLOSURES. MAIN TRUBINE TRIP LOGIC AND INITIATION IS PREFORMED IN MARK VI EHC.
3. THE POWER SOURCE FOR THE FEEDWATER INSTRUMENTATION AND CONTROL SYSTEM SHALL HAVE AT LEAST THE SAME DEGREE OF RELIABILITY AS THE POWER SOURCES FOR THE REACTOR/FEED BOOSTER/CONDENSATE PUMPS.
4. AE/CUSTOMER SHALL PROVIDE TWO NORMALLY OPEN CONTACTS PER TURBINE DRIVEN REACTOR FEED PUMP TO OPERATE WHEN TURBINE FEED PUMP UNIT HAS TRIPPED OR BEEN SHUT DOWN. THE CONTACTS SHALL PREFERABLY BE DERIVED FROM A FLOW SWITCH MOUNTED ACROSS THE R.F.P. LOW OR R.F.P. DIS-CHARGE VALVES. IF THESE AUTOMATICALLY RUN CLOSED ON R.F.P. TRIP. G.E. (BWR'S) REQUIRES THESE CONTACTS FOR INITIATION ON REACTOR RECIRCULATION PUMP RUNBACK IN EVENT OF A ONE OUT OF TWO R.F.P. TRIP AT HIGH LOADS.
5. AC POWER TO THE DC POWER SUPPLIES MUST BE FROM INDEPENDENT SOURCES.
6. MODE SWITCH CAN SELECT ONE ELEMENT, THREE ELEMENT OR PUMP DIFFERENTIAL PRESSURE CONTROL. CONTROLLER R600 NOT USED IN DIFFERENTIAL PRESSURE CONTROL. CONTROL FROM REF. 12.
7. NUMBERS WITHIN ◯ INDIDCATE ANALOG INPUT NUMBER AS DESCRIBED IN THE FUNCTIONAL DESIGN CRITERIA FOR EMERGENCY RESPONSE FACILITY, TABLE "D"-UNIT 1 ANALOG INPUT SIGNALS TO THE SPDS/ERF COMPUTER SYSTEMS.

REFERENCES:

	TITLE		MPL #	DWG. #
1.	FEEDWATER CONTROL SYS DESIGN SPEC.		C32-4010	S-15202
2.	NUCLEAR BOILER SYS. P&ID	SH. 1	B21-1010	H-16062
		SH. 2		H-16063
3.	REACTOR RECIRCULATION SYSTEM P&ID	SH. 1	B31-1010	H-16066
		SH. 2		H-16067
		SH. 3		H-16068
4.	CONTROL ROD DRIVE HYDRAULIC SYS. F.C.D.		C11-1030	S-15151- S-15157
5.	FEEDWATER SYS. P&ID			
6.	MAIN TURBINE GENERATOR TRIP LOGIC ELEM.			
7.	R.F.P. TURBINE SPEED CONTROLLER MECH. DIAG.			S-11832
8.	R.F.P. TURBINE SPEED CONTROLLER WIRING DIAG.			
9.	INSTRUMENT SYMBOLS		921D280	S-15200
10.	PIPING & INSTRUMENT SYMBOLS		197R567	S-15051
11.	AUX. TURBINE FEED PUMP TRIP LOGIC ELEM.			
12.	AUX. SYSTEM (BOP) I.E.D.		115D6353	S-14732
13.	DELETED			
14.	DELETED			
15.	DELETED			
16.	HYDROGEN WATER CHEMISTRY (P73) ELEM. DIAG. SH. 2 OF 5		1P73-P600	H-43870
17.	REACTOR FEED PUMP-PIPING DIAGRAM-STUFFING BOX			S-14815
18.	MARK VI CONTROL SYSTEM ELEMENTARY DIAGRAMS			S-57302
19.	GE WIRING DOCUMENTATION MARK VIe I/O			
	RFPT 1A			S-75798 & S-75800
	RFPT 1B			S-75799 & S-75801

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E6298BA, SHEET 1 REV. 6 SSI ACCESSION DRAWING NO. S-15201

CRITICAL DOCUMENT

MPL NO.C32-1010 | ACAD2010 | H16567

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
FEEDWATER CONTROL SYSTEM
TURBINE DRIVEN FEEDPUMPS I.E.D.

Version: 19.0 | Date: 03/14/16

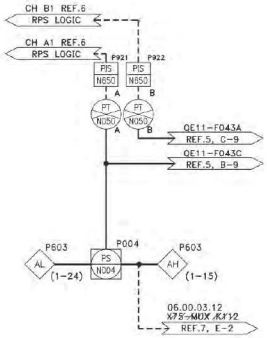
REVISED PER ABN: SNC562999J001, VER 1.0

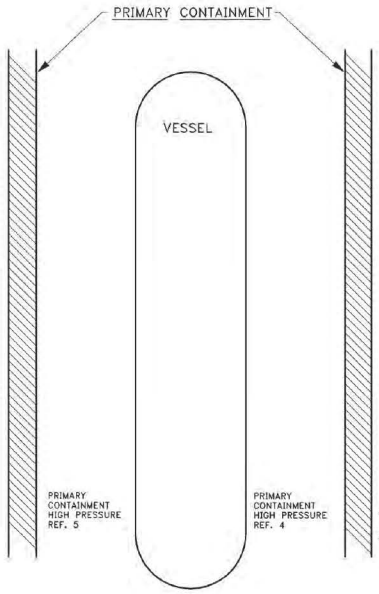
BY	CHK'D	APPR.
GTR	FOB	JTL

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
KMG	-	10-502	H-16567	19.0
DATE	SCALE			
8/13/82	No Scale			

DRAWING CATEGORY: CRITICAL

H-16568





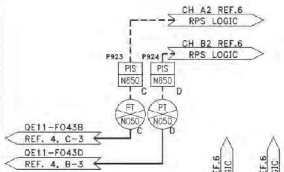
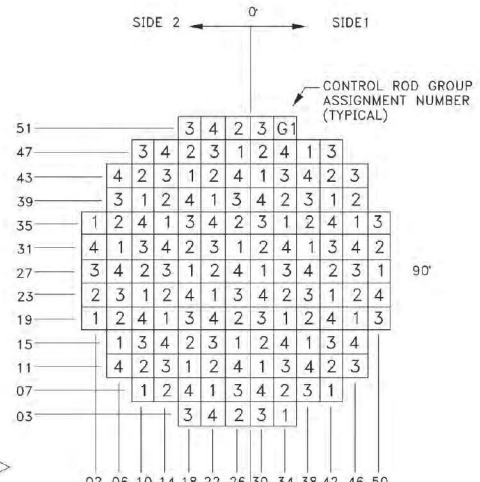


FIGURE 1



CONTROL ROD SCRAM GROUP ASSIGNMENT

FIGURE 2
(TOP VIEW OF CORE)

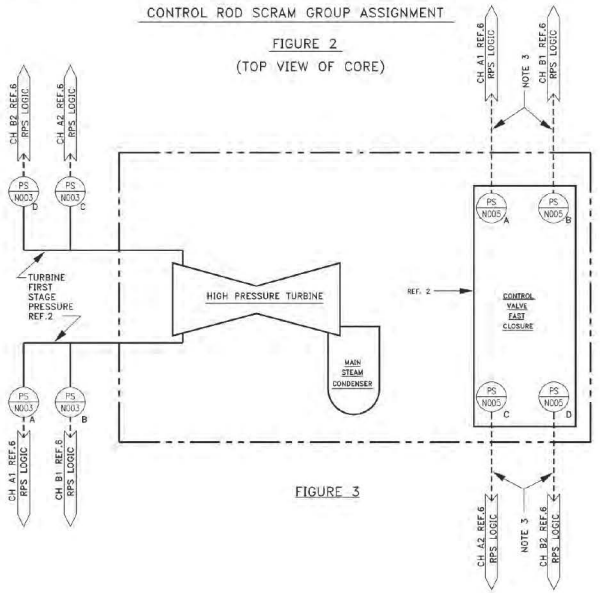


FIGURE 3

NOTES:

1. ALL EQUIPMENT AND INSTRUMENTS ARE PREFIXED BY SYSTEM NUMBER (C71) UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT.
3. TRIP CHANNELS FOR THE "TURBINE CONTROL VALVE FAST CLOSURE" TRIP SHALL BE DERIVED FROM THOSE EVENTS CAUSING FAST CLOSURE OF THE CONTROL VALVES.
4. ALL FUNCTIONAL CONTROL DIAGRAMS ARE SUPERCEDED BY ELECTRICAL ELEMENTARY DIAGRAMS.

REFERENCES:

	TITLE	MPL NO.	DWG NO.
1.	PIPING & INSTRUMENT SYMBOLS	A41-1010	S-15051
2.	TURBINE/GENERATOR & STEAM BYPASS DESIGN SPEC.	A61-4020	SX-15896
3.	REACTOR PROTECTION SYSTEM DESIGN SPEC.	C71-4010	S-15135
4.	RESIDUAL HEAT REMOVAL SYSTEM P&ID SHEET 1	E11-1010	H-16329
5.	RESIDUAL HEAT REMOVAL SYSTEM P&ID SHEET 2	E11-1010	H-16330
6.	REACTOR PROTECTION SYSTEM C71 ELEMENTARY DIAGRAMS SHEETS 1-17	C71-1020	H-17783 THRU H-17882&H-17798
7.	ANNUNCIATOR SIGNALS TO (SPDS RTP) I.E.D	X75-1010	H-16402

CRITICAL DOCUMENT

C71-1010 ACAD2K H16568

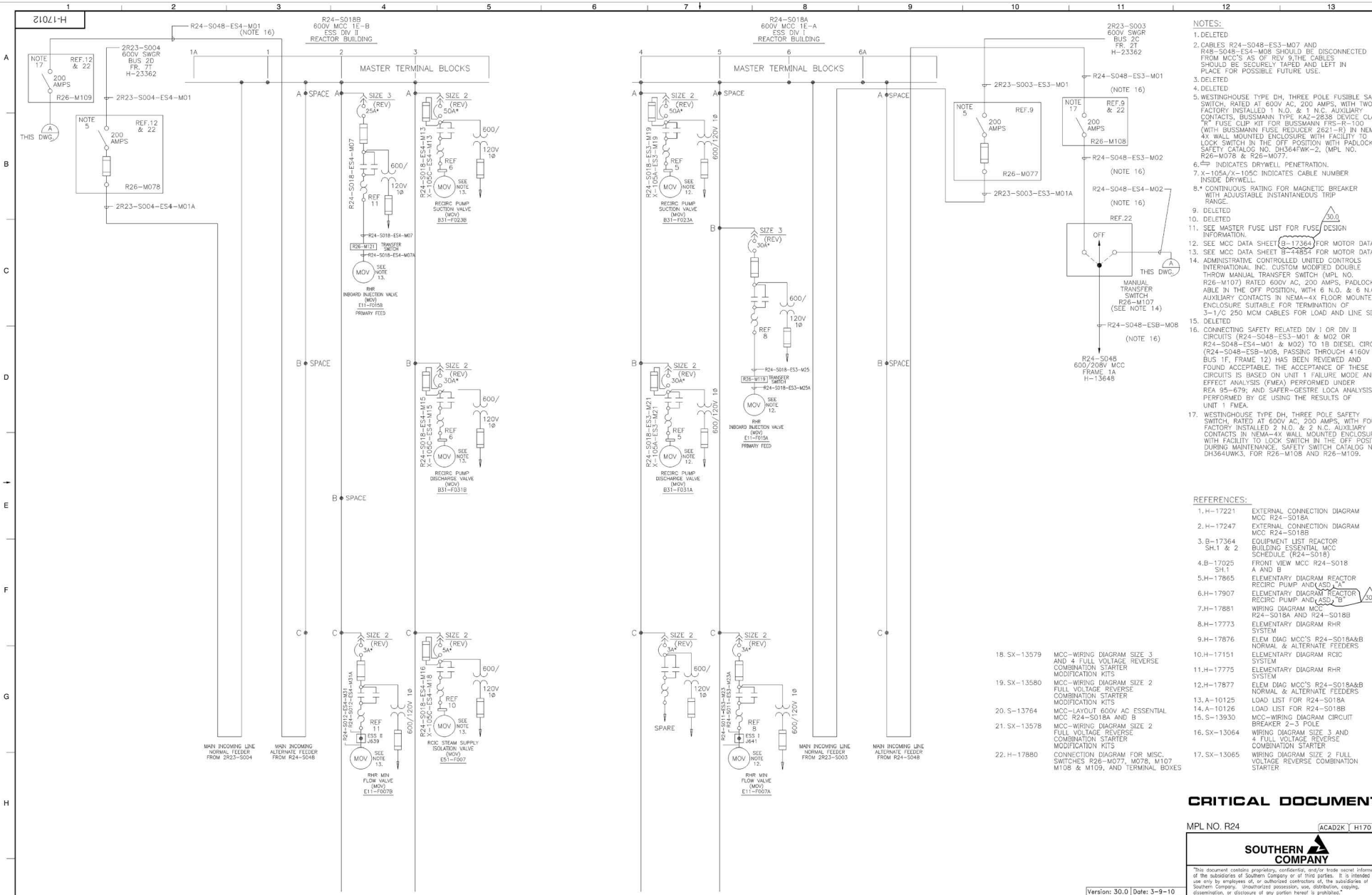
SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
REACTOR PROTECTION SYSTEM
P & ID

Revision: 5	Date: 12-17-03
REVISED PER ABN 99-0049-014.	

BY	CHK'D	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
JOK	RLP	DEW	

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
A.J.J.		10-502	H-16568	5
DATE 6/26/83	SCALE None			



NOTES:

1. DELETED
2. CABLES R24-S048-ES3-M07 AND R48-S048-ES4-M08 SHOULD BE DISCONNECTED FROM MCC'S AS OF REV 9,THE CABLES SHOULD BE SECURELY TAPED AND LEFT IN PLACE FOR POSSIBLE FUTURE USE.
3. DELETED
4. DELETED
5. WESTINGHOUSE TYPE DH, THREE POLE FUSIBLE SAFETY SWITCH, RATED AT 600V AC, 200 AMPS, WITH TWO FACTORY INSTALLED 1 N.O. & 1 N.C. AUXILIARY CONTACTS, BUSSMANN TYPE KAZ-283B DEVICE CLASS "R" FUSE CLIP KIT FOR BUSSMANN FRS-R-100 (WITH BUSSMANN FUSE REDUCER 2621-R) IN NEMA 4X WALL MOUNTED ENCLOSURE WITH FACILITY TO LOCK SWITCH IN THE OFF POSITION WITH PADLOCK. SAFETY CATALOG NO. DH364FWK-2, (MPL NO. R26-M078 & R26-M077.
6. ⏚ INDICATES DRYWELL PENETRATION.
7. X-105A/X-105C INDICATES CABLE NUMBER INSIDE DRYWELL.
8. * CONTINUOUS RATING FOR MAGNETIC BREAKER WITH ADJUSTABLE INSTANTANEOUS TRIP RANGE.
9. DELETED
10. DELETED
11. SEE MASTER FUSE LIST FOR FUSE DESIGN (30.0) INFORMATION.
12. SEE MCC DATA SHEET (B-17364) FOR MOTOR DATA.
13. SEE MCC DATA SHEET B-44854 FOR MOTOR DATA.
14. ADMINISTRATIVE CONTROLLED UNITED CONTROLS INTERNATIONAL INC. CUSTOM MODIFIED DOUBLE THROW MANUAL TRANSFER SWITCH (MPL NO. R26-M107) RATED 600V AC, 200 AMPS, PADLOCK-ABLE IN THE OFF POSITION, WITH 6 N.O. & 6 N.C. AUXILIARY CONTACTS IN NEMA-4X FLOOR MOUNTED ENCLOSURE SUITABLE FOR TERMINATION OF 3-1/C 250 MCM CABLES FOR LOAD AND LINE SIDE.
15. DELETED
16. CONNECTING SAFETY RELATED DIV I OR DIV II CIRCUITS (R24-S048-ES3-M01 & M02 OR R24-S048-ES4-M01 & M02) TO 1B DIESEL CIRCUIT (R24-S048-ESB-M08, PASSING THROUGH 4160V BUS 1F, FRAME 12) HAS BEEN REVIEWED AND FOUND ACCEPTABLE. THE ACCEPTANCE OF THESE CIRCUITS IS BASED ON UNIT 1 FAILURE MODE AND EFFECT ANALYSIS (FMEA) PERFORMED UNDER REA 95-679; AND SAFER-GESTRE LOCA ANALYSIS PERFORMED BY GE USING THE RESULTS OF UNIT 1 FMEA.
17. WESTINGHOUSE TYPE DH, THREE POLE SAFETY SWITCH, RATED AT 600V AC, 200 AMPS, WITH FOUR FACTORY INSTALLED 2 N.O. & 2 N.C. AUXILIARY CONTACTS IN NEMA-4X WALL MOUNTED ENCLOSURE WITH FACILITY TO LOCK SWITCH IN THE OFF POSITION DURING MAINTENANCE. SAFETY SWITCH CATALOG NO. DH364UWK3, FOR R26-M108 AND R26-M109.

REFERENCES:

1. H-17221	EXTERNAL CONNECTION DIAGRAM MCC R24-S018A	
2. H-17247	EXTERNAL CONNECTION DIAGRAM MCC R24-S018B	
3. B-17364 SH.1 & 2	EQUIPMENT LIST REACTOR BUILDING ESSENTIAL MCC SCHEDULE (R24-S018)	
4. B-17025 SH.1	FRONT VIEW MCC R24-S018 A AND B	
5. H-17865	ELEMENTARY DIAGRAM REACTOR RECIRC PUMP AND (ASD "A")	
6. H-17907	ELEMENTARY DIAGRAM REACTOR RECIRC PUMP AND (ASD "B") (30.0)	
7. H-17881	WIRING DIAGRAM MCC R24-S018A AND R24-S018B	
8. H-17773	ELEMENTARY DIAGRAM RHR SYSTEM	
9. H-17876	ELEM DIAG MCC'S R24-S018A&B NORMAL & ALTERNATE FEEDERS	
10. H-17151	ELEMENTARY DIAGRAM RCIC SYSTEM	
11. H-17775	ELEMENTARY DIAGRAM RHR SYSTEM	
12. H-17877	ELEM DIAG MCC'S R24-S018A&B NORMAL & ALTERNATE FEEDERS	
13. A-10125	LOAD LIST FOR R24-S018A	
14. A-10126	LOAD LIST FOR R24-S018B	
15. S-13930	MCC-WIRING DIAGRAM CIRCUIT BREAKER 2-3 POLE	
16. SX-13064	WIRING DIAGRAM SIZE 3 AND 4 FULL VOLTAGE REVERSE COMBINATION STARTER	
17. SX-13065	WIRING DIAGRAM SIZE 2 FULL VOLTAGE REVERSE COMBINATION STARTER	
18. SX-13579	MCC-WIRING DIAGRAM SIZE 3 AND 4 FULL VOLTAGE REVERSE COMBINATION STARTER MODIFICATION KITS	
19. SX-13580	MCC-WIRING DIAGRAM SIZE 2 FULL VOLTAGE REVERSE COMBINATION STARTER MODIFICATION KITS	
20. S-13764	MCC-LAYOUT 600V AC ESSENTIAL MCC R24-S018A AND B	
21. SX-13578	MCC-WIRING DIAGRAM SIZE 2 FULL VOLTAGE REVERSE COMBINATION STARTER MODIFICATION KITS	
22. H-17880	CONNECTION DIAGRAM FOR MISC. SWITCHES R26-M077, M078, M107 M108 & M109, AND TERMINAL BOXES	

CRITICAL DOCUMENT

MPL NO. R24 ACAD2K H17012

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
SINGLE LINE DIAGRAM – REACTOR BUILDING 600V, MCC "1E-A" & "1E-B" MPL R24-S018A & R24-S018B

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
JR	ACV			
DATE	SCALE	10-502	H-17012	30.0
2-11-71	None			

Version: 30.0 | Date: 3-9-10

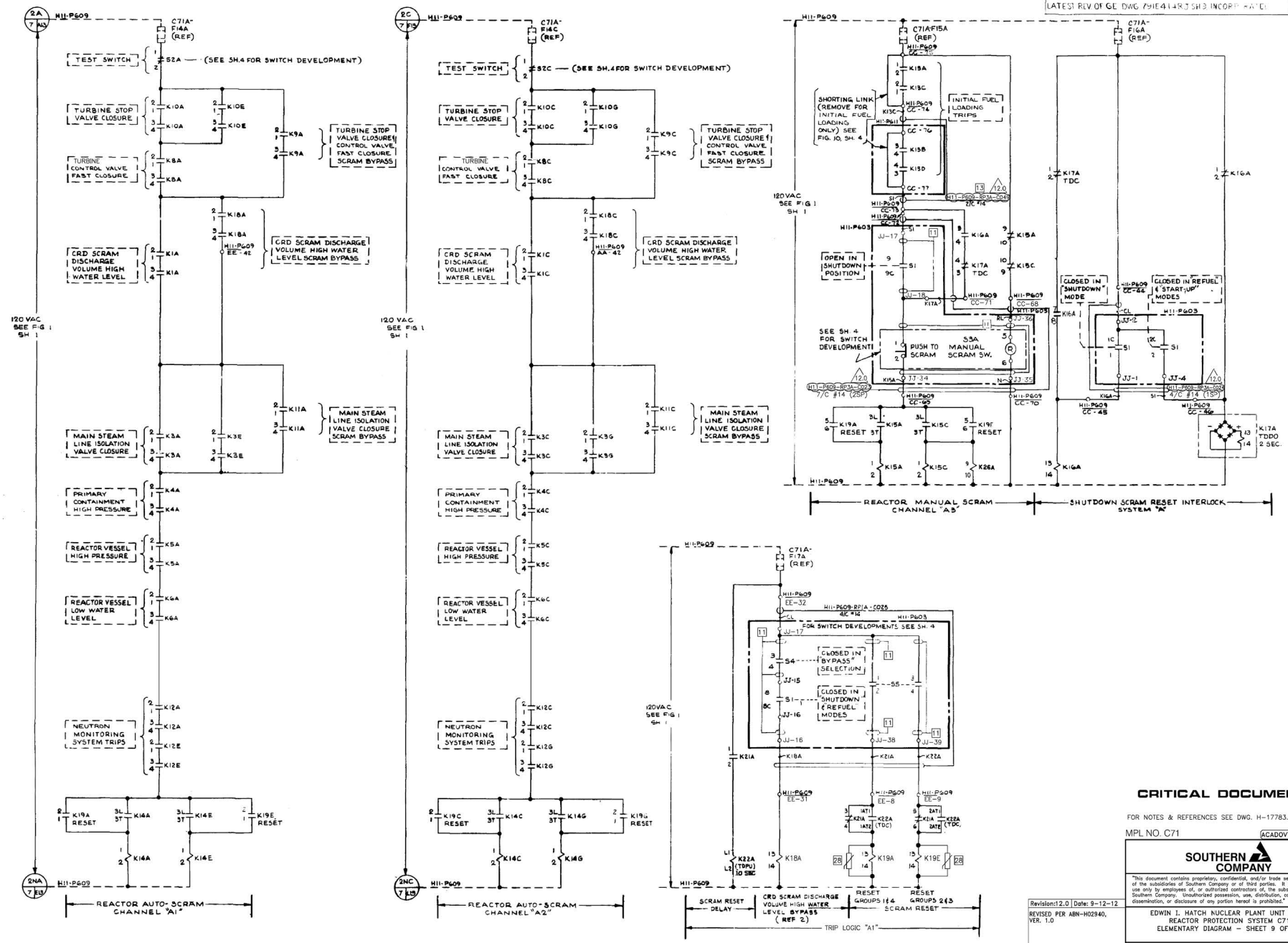
REVISED PER ABN 1040048401E141, VER. 1.0

BY	CHK'D	APPR'D	SEE MICROFILM FOR ORIGINAL REV. SIGNATURES.
JLO	GDM	JMR	

13 DRAWING CATEGORY: CRITICAL

H-17791

LATEST REV OF GE DWG 791E414 R3 SH 3 INCORPORATED 12



CRITICAL DOCUMENT

FOR NOTES & REFERENCES SEE DWG. H-17783.

MPL NO. C71 ACADOVY H17791

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR PROTECTION SYSTEM C71
ELEMENTARY DIAGRAM – SHEET 9 OF 18

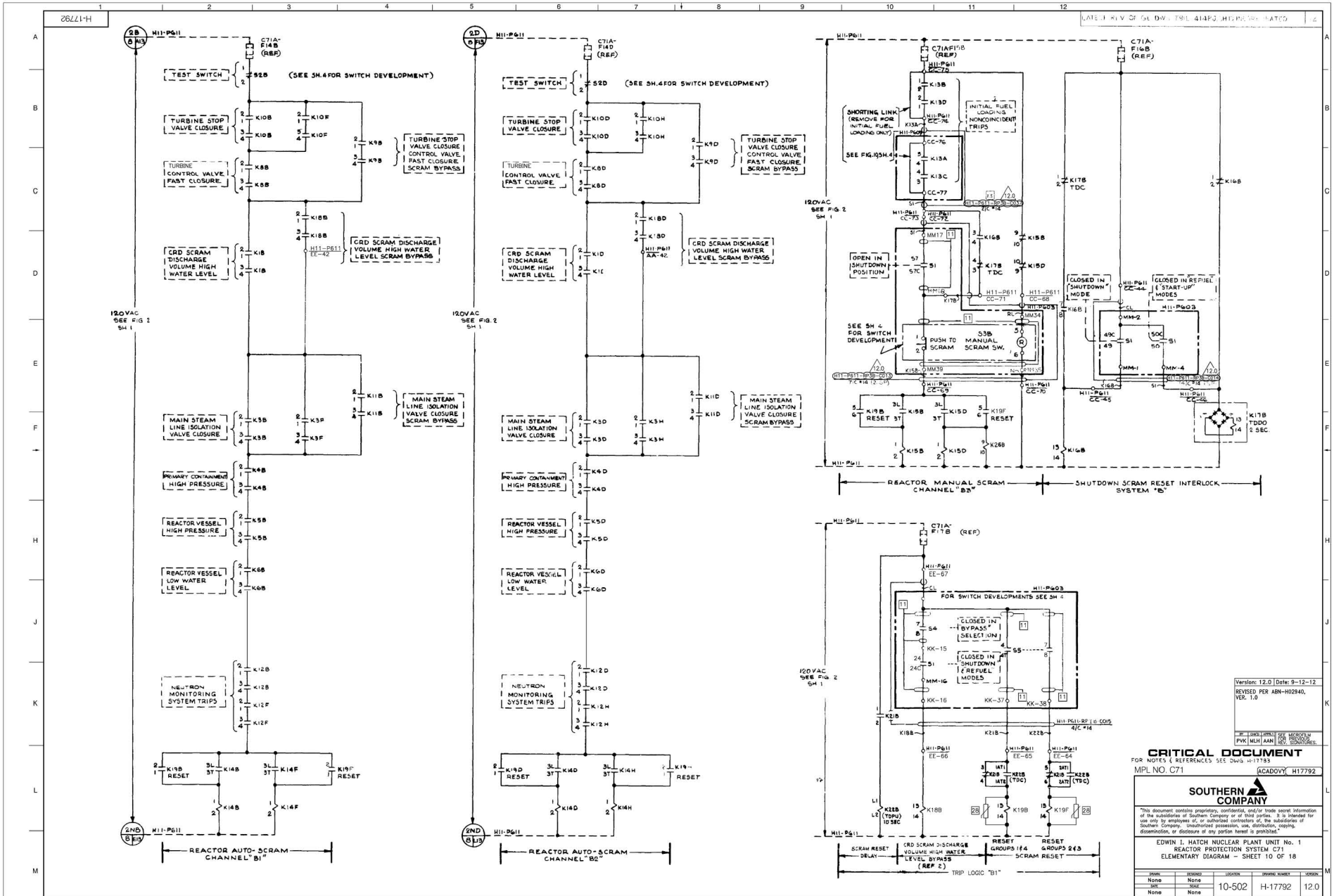
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
None	None	10-502	H-17791	12.0
DATE	SCALE			
None	None			

Revision:12.0 | Date: 9-12-12
REVISED PER ABN-H02940, VER. 1.0

BY	CHKD	APPR'D
PVK	MLH	AAN

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

DWG. CATEGORY: CRITICAL


H-17792
TEST SWITCH
52B
(SEE SH.4 FOR SWITCH DEVELOPMENT)
TURBINE STOP VALVE CLOSURE
TURBINE CONTROL VALVE FAST CLOSURE
TURBINE STOP VALVE CLOSURE CONTROL VALVE FAST CLOSURE SCRAM BYPASS
CRD SCRAM DISCHARGE VOLUME HIGH WATER LEVEL
CRD SCRAM DISCHARGE VOLUME HIGH WATER LEVEL SCRAM BYPASS
MAIN STEAM LINE ISOLATION VALVE CLOSURE
MAIN STEAM LINE ISOLATION VALVE CLOSURE SCRAM BYPASS
PRIMARY CONTAINMENT HIGH PRESSURE
REACTOR VESSEL HIGH PRESSURE
REACTOR VESSEL LOW WATER LEVEL
NEUTRON MONITORING SYSTEM TRIPS
K19B RESET
K19F RESET
120VAC SEE FIG 2 SH 1
REACTOR AUTO-SCRAM CHANNEL "B1"
52D
REACTOR AUTO-SCRAM CHANNEL "B2"
SHORTING LINK (REMOVE FOR INITIAL FUEL LOADING ONLY)
INITIAL FUEL LOADING NONCOINCIDENT TRIPS
OPEN IN SHUTDOWN POSITION
53B MANUAL SCRAM SW.
PUSH TO SCRAM
CLOSED IN SHUTDOWN MODE
CLOSED IN REFUEL & START-UP MODES
K17B TDDO 2 SEC.
REACTOR MANUAL SCRAM CHANNEL "B3"
SHUTDOWN SCRAM RESET INTERLOCK SYSTEM "B"
FOR SWITCH DEVELOPMENTS SEE SH 4
CLOSED IN BYPASS SELECTION
CLOSED IN SHUTDOWN & REFUEL MODES
SCRAM RESET DELAY
CRD SCRAM DISCHARGE VOLUME HIGH WATER LEVEL BYPASS (REF 2)
RESET GROUPS 1 & 4 SCRAM RESET
RESET GROUPS 2 & 3 SCRAM RESET
TRIP LOGIC "B1"
Version: 12.0 Date: 9-12-12
REVISED PER ABN-H02940, VER. 1.0
CRITICAL DOCUMENT
FOR NOTES & REFERENCES SEE DWG H-17793
MPL NO. C71
ACADOVY H17792
SOUTHERN COMPANY
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EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR PROTECTION SYSTEM C71
ELEMENTARY DIAGRAM - SHEET 10 OF 18
DRAWN None
DESIGNED None
LOCATION 10-502
DRAWING NUMBER H-17792
VERSION 12.0
DWG CATEGORY: CRITICAL

00661-H

LEGEND

FUNCTION	SYMBOL	DEFINITION
MANUAL INPUT		MOMENTARY HAND SWITCH INPUT TO LOGIC
		MAINTAINED HAND SWITCH INPUT TO LOGIC
AND		OUTPUT EXISTS ONLY WHEN ALL INPUTS ARE PRESENT.
OR		OUTPUT EXISTS ONLY WHEN ONE OR MORE INPUTS ARE PRESENT.
NOT		OUTPUT EXISTS ONLY WHEN INPUT IS NOT PRESENT.
ON DELAY	TDOE	OUTPUT EXISTS ONLY WHEN INPUT HAS BEEN CONTINUOUSLY PRESENT FOR A PRESET TIME AND REMAINS PRESENT. TIME DELAY ON ENERGIZING (TDOE)
OFF DELAY (TIMED MEMORY)	TDDO	OUTPUT EXISTS ONLY WHEN INPUT IS PRESENT AND FOR A PRESET TIME AFTER THE INPUT IS NOT PRESENT. TIME DELAY ON DROPOUT (TDDO)
MEMORY	S / R	SET OUTPUT EXISTS WHEN SET INPUT IS PRESENT AND CONTINUES UNTIL THE RESET INPUT IS PRESENT. RESET OUTPUT EXISTS ONLY WHEN SET OUTPUT IS NOT PRESENT.
COINCIDENCE MATRIX	A/B	OUTPUT EXISTS ONLY WHEN AT LEAST A OUT OF B INPUTS ARE PRESENT.
LOW BISTABLE	L SP	DIGITAL OUTPUT EXISTS ONLY WHEN ANALOG INPUT IS LOWER THAN SET POINT (SP).
HIGH BISTABLE	SP H	DIGITAL OUTPUT EXISTS ONLY WHEN ANALOG INPUT IS HIGHER THAN SET POINT (SP).
ISOLATION	ISO	OUTPUT IS ELECTRICALLY ISOLATED FROM INPUT.
TEST DEVICE	T TEST	TEST SIGNAL CAN BE INSERTED MANUALLY IN PLACE OF NORMAL SIGNAL.
LIGHT	R	RED-OPERATING, FLOWING, INCREASING, OR OPEN GREEN-NOT OPERATING, NOT FLOWING, DECREASING, OR CLOSED AMBER-AUTOMATIC, STANDBY, OR INTERMEDIATE WHITE-MANUAL OR PROTECTIVE TRIP CLEAR-LOGIC STATUS YELLOW-TEST STATUS BLUE-SCRAM VALVE STATUS OR 4160V IE, IF, IG POTENTIAL (4)
ANNUNCIATOR		INPUT TO ANNUNCIATOR
COMPUTER		INPUT TO COMPUTER
CONTINUATION		LOGIC CONTINUATION

GENERAL NOTES

1. LOGIC SYMBOLS REPRESENT SYSTEM FUNCTIONS AND DO NOT NECESSARILY DUPLICATE CIRCUIT ARRANGEMENT OR DEVICES. SYSTEM CONTROL LOGIC DIAGRAMS DO NOT INHERENTLY IMPLY ENERGIZED, DE-ENERGIZED, OR OTHER CIRCUIT OPERATION STATES.
2. PROCESS EQUIPMENT WILL CHANGE STATE WHEN A CHANGE IS INITIATED, AND WILL REMAIN IN THAT STATE UNTIL A CHANGE TO ANOTHER STATE IS INITIATED.
3. DELETED
4. DELETED
5. SOME PROTECTION ACTIONS ARE SHOWN AS START PERMISSIVES. TRIP FREE DESIGN PREVENTS EQUIPMENT OPERATION WHEN A PROTECTION ACTION EXISTS, EVEN IF A START PERMISSIVE IS NOT SHOWN.
6. FINAL INSTRUMENT SETPOINTS ARE SHOWN ON DWG. A-16397(HNP-1 INSTRUMENT SETPOINT INDEX). SETPOINTS SHOWN ON SYSTEM CONTROL LOGIC DIAGRAMS ARE APPROXIMATE.
7. SEE ELECTRICAL DRAWINGS FOR DETAILS OF EQUIPMENT ELECTRICAL OVERCURRENT, SHORT CIRCUIT, AND DIFFERENTIAL PROTECTION AND SPACE HEATERS.
8. THE MEMORY, RESET, AND START PERMISSIVE LOGIC ASSOCIATED WITH THE OPERATION OF ELECTRICAL PROTECTION DEVICES IS NOT SHOWN.
9. THE TEST CONTROL SWITCHES AT THE SWITCHGEAR WHICH FUNCTION ONLY WHEN A CIRCUIT BREAKER IS IN THE TEST POSITION ARE NOT SHOWN.
10. ALL CIRCUIT CONTROLS, EXCEPT INTERLOCKS WITH OTHER EQUIPMENT, FUNCTION WHEN A CIRCUIT BREAKER IS IN THE TEST POSITION TO ALLOW CIRCUIT TESTING.
11. THE LOGIC TO SHOW THAT VALVE AND DAMPER POSITION LIGHTS ARE BOTH ON WHEN THE EQUIPMENT IS IN AN INTERMEDIATE POSITION IS NOT SHOWN.
12. LIMIT AND TORQUE SWITCHES TO STOP VALVE AND DAMPER MOTOR ACTUATORS AT THE END OF TRAVEL ARE TYPICAL AS SHOWN BELOW. THE VALVE TYPE AND REQUIRED ACTIONS WILL BE NOTED ON THE DIAGRAM WHEN AVAILABLE.

    A) GLOBE VALVE
    OPEN - LIMIT STOPPED
    CLOSE - TORQUE SEATED

    B) GATE VALVE
    OPEN - LIMIT STOPPED
    CLOSE - TORQUE STOPPED

    C) BUTTERFLY VALVE
    OPEN - LIMIT STOPPED
    CLOSE - LIMIT STOPPED

    D) THREE WAY GLOBE VALVE
    OPEN - TORQUE STOPPED
    CLOSE - TORQUE STOPPED

    E) PLUG VALVE
    OPEN - LIMIT STOPPED
    CLOSE - LIMIT STOPPED

    TORQUE STOPPED - INDICATES ACTUATOR OPENS OR CLOSES VALVE UNTIL PRESET TORQUE VALUE (LESS THAN TORQUE VALUE REQUIRED FOR TIGHT SHUTOFF) IS REACHED.

    TORQUE SEATED - INDICATES ACTUATOR CLOSES VALVE UNTIL PRESET TORQUE VALUE REQUIRED FOR TIGHT SHUTOFF IS REACHED.

13. FOR LIST OF SYSTEM LOGIC DIAGRAMS, SEE REFERENCES 1-11.
14. ALL CLASS 1E DIGTAL INPUTS TO THE ERF COMPUTER ARE ISOLATED AND MULTIPLEXED. ALL NON-1E DIGTAL INPUTS TO THE ERF COMPUTER ARE MULTIPLEXED ONLY.

REFERENCES

	TITLE	MPL NO.	DWG. NO.
1.	NUCLEAR BOILER SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 12	B21-1030	H-19901 THRU H-19912
2.	REACTOR RECIRCULATION SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 5	B31-1030	H-19913 THRU H-19917
3.	CONTROL ROD DRIVE HYDRAULIC SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 9	C11-1030	H-19918 THRU H-19925, H-19967
4.	STANDBY LIQUID CONTROL SYSTEM LOGIC DIAGRAMS SHEET 1	C41-1030	H-19926
5.	NEUTRON MONITORING SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 8	C51-1030	H-19927 THRU H-19932 H-19965 THRU H-19966
6.	REACTOR PROTECTION SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 4	C71-1030	H-19933 THRU H-19936
7.	RESIDUAL HEAT REMOVAL SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 7	E11-1030	H-19937 THRU H-19943
8.	CORE SPRAY SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 3	E21-1030	H-19944 THRU H-19946
9.	HIGH PRESSURE COOLANT INJECTION SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 8	E41-1030	H-19947 THRU H-19954
10.	REACTOR CORE ISOLATION COOLING SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 8	E51-1030	H-19955 THRU H-19962
11.	REACTOR WATER CLEANUP SYSTEM LOGIC DIAGRAMS SHEETS 1 THRU 2	G31-1030	H-19963 THRU H-19964

MPL NO. A21-1030

REV 4 DATE 8-12-93
REVISED DESCRIPTION FOR BLUE LIGHT IN LEGEND PER WCN 93-5005-002.

BY	CKD	AP 1	AP2	AP3	AP4
RCR	RCF	CGF	RBV		

NO.	REVISIONS	DATE	BY
3	REVISED PER REA HT-4674 AND ABN 87-255, DCR 86-234 REV.0	4/18/88	MG
2	REVISED PER REA HT-4674	3/29/87	MLV
1	REVISED PER REA HT-4674	5/9/86	TAE
0	ISSUED PER REA HT-4674	5/12/86	BEW

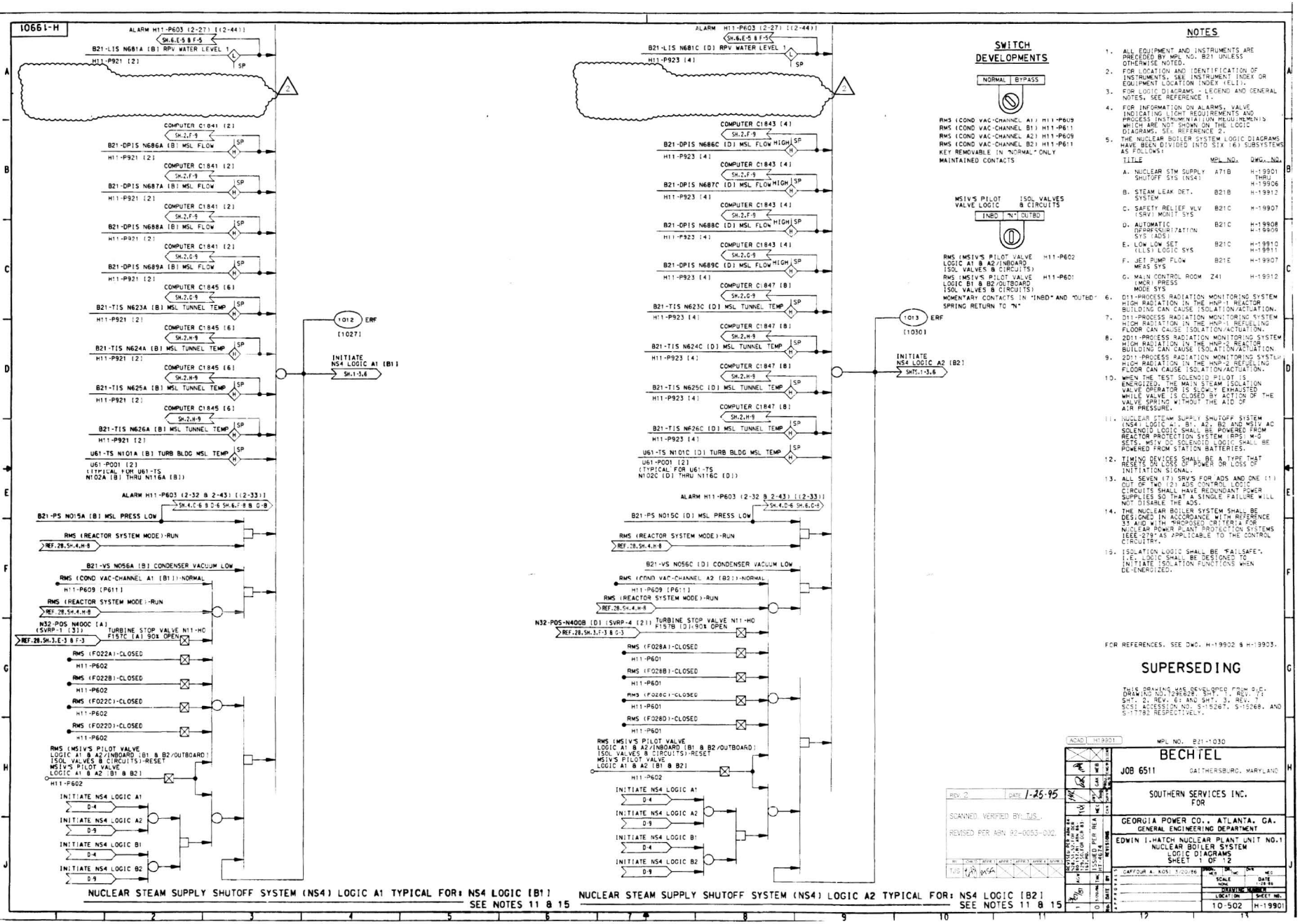
BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND

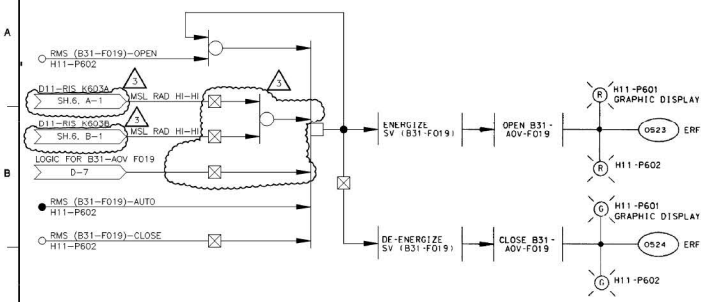
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I. HATCH NUCLEAR PLANT UNIT NO. 1
LOGIC DIAGRAMS
LEGEND AND GENERAL NOTES

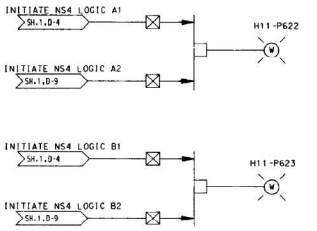
GAFFOUR A. KOSI 3-12-86
DSGN. RHB DR. CADD/BEW CHK NEB
SCALE NONE DATE 11-19-85
DRAWING NUMBER: LOCATION 10-502 SHEET NO. H-19900

FSAR FIGURE NO. 7.1-3

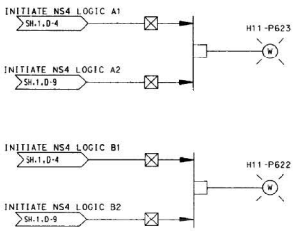

10661-H
NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM (NS4) LOGIC A1 TYPICAL FOR: NS4 LOGIC [B1]
SEE NOTES 11 & 15
NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM (NS4) LOGIC A2 TYPICAL FOR: NS4 LOGIC [B2]
SEE NOTES 11 & 15
SWITCH DEVELOPMENTS
NORMAL
BYPASS
MSIV'S PILOT VALVE LOGIC
ISOL VALVES 8 CIRCUITS
INBD
OUTBD
NOTES
SUPERSEDING
SCANNED, VERIFIED BY: TJS
REVISED PER ABN 92-0053-002
BECHTEL
JOB 6511
GAITHERSBURG, MARYLAND
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT
EDWIN I. HATCH NUCLEAR PLANT UNIT NO.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 12
MPL NO. B21-1030
10-502
H-19901



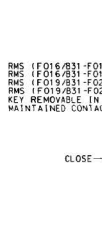
REACTOR WATER SAMPLE INBOARD ISOLATION VALVE (PCIS VALVE GROUP 1) B31-AOV F019

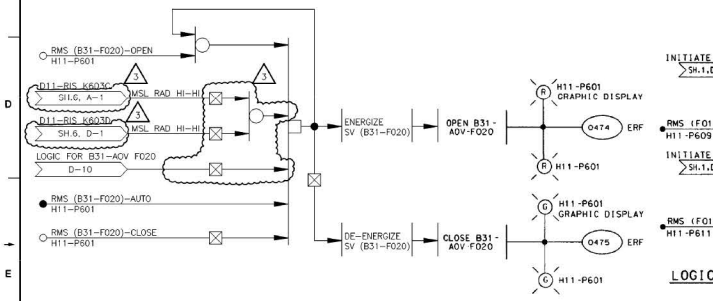


MSIV AC LOGIC STATUS

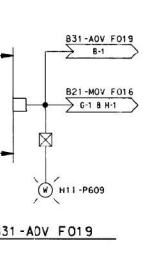


MSIV DC LOGIC STATUS

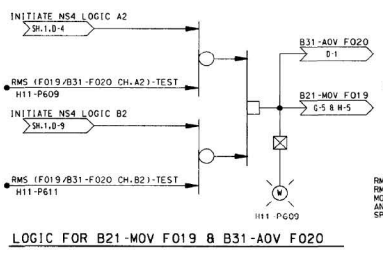




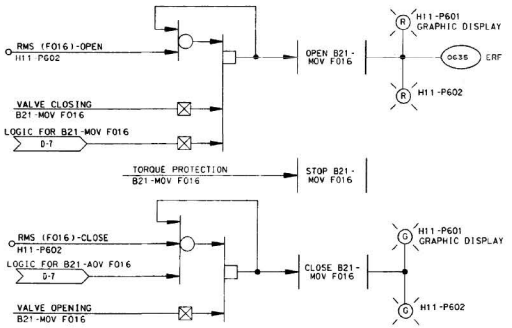
REACTOR WATER SAMPLE OUTBOARD ISOLATION VALVE (PCIS VALVE GROUP 1) B31-AOV F020



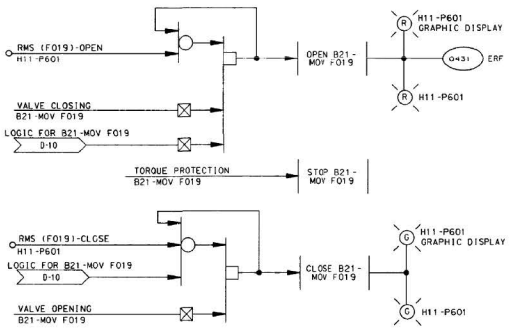
LOGIC FOR B21-MOV F016 & B31-AOV F019



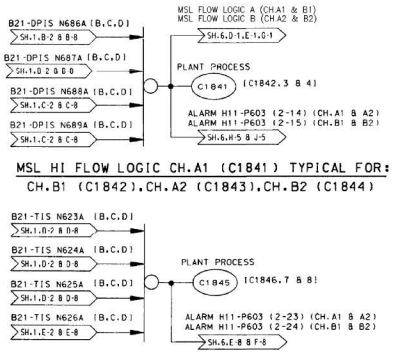
LOGIC FOR B21-MOV F019 & B31-AOV F020



MAIN STEAM LINE DRAIN INBOARD ISOLATION GATE VALVE (PCIS VALVE GROUP 1) B21-MOV F016



MAIN STEAM LINE DRAIN OUTBOARD ISOLATION GATE VALVE (PCIS VALVE GROUP 1) B21-MOV F019



MSL HI FLOW LOGIC CH.A1 (C1841) TYPICAL FOR:
CH.B1 (C1842), CH.A2 (C1843), CH.B2 (C1844)

MSL TUNNEL HI TEMP LOGIC CH.A1 (C1845) TYPICAL FOR:
CH.B1 (C1846), CH.A2 (C1847), CH.B2 (C1848).

REFERENCES
CONT. ON H-19903

	TITLE	MPL NO.	DWG.NO.
1.	LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES	A21-1030	H-19900
2.	NUCLEAR BOILER SYSTEM P&ID SHEET 1 NUCLEAR BOILER SYSTEM P&ID SHEET 2 NUCLEAR BOILER SYSTEM P&ID SHEET 3	B21-1010 B21-1010 B21-1010	H-16062 H-16063 H-16145
3.	REACTOR RECIRCULATION SYSTEM P&ID SHEET 1 REACTOR RECIRCULATION SYSTEM P&ID SHEET 2 REACTOR RECIRCULATION SYSTEM P&ID SHEET 3	B31-1010 B31-1010 B31-1010	H-16066 H-16067 H-16068
4.	NEUTRON MONITORING SYSTEM IED SHEET 1 NEUTRON MONITORING SYSTEM IED SHEET 2	C51-1010 C51-1010	H-16560 H-16561
5.	REACTOR PROTECTION SYSTEM P&ID	C71-1010	H-16568
6.	PROCESS RADIATION MONITORING SYSTEM P&ID SHEET 1 PROCESS RADIATION MONITORING SYSTEM P & ID SHEET 2 PROCESS RADIATION MONITORING SYSTEM P & ID SHEET 3 PROCESS RADIATION MONITORING SYSTEM P & ID SHEET 4 PROCESS RADIATION MONITORING SYSTEM IED SHEET 5	D11-1010 D11-1010 D11-1010 D11-1010 D11-1010	H-16563 H-16564 H-16565 H-16566 H-16165
7.	FISSION PRODUCTS MONITORING SYS. P&ID SHT.1 P&ID SHT.2	D11-1010 D11-1010	H-16173 H-16274
8.	AREA RADIATION MONITORING SYS.IED	D21-1010	H-16562
9.	RHR SYSTEM P&ID SHEET 1 RHR SYSTEM P&ID SHEET 2	E11-1010 E11-1010	H-16329 H-16330
10.	CORE SPRAY SYS.P&ID	E21-1010	H-16331
11.	RADWASTE SYSTEM P&ID SHEET 1 RADWASTE SYSTEM P&ID SHEET 2 RADWASTE SYSTEM P&ID SHEET 3 RADWASTE SYSTEM P&ID SHEET 4 RADWASTE SYSTEM P&ID SHEET 5 RADWASTE SYSTEM P&ID SHEET 6 RADWASTE SYSTEM P&ID SHEET 7	G11-1010 G11-1010 G11-1010 G11-1010 G11-1010 G11-1010 G11-1010	H-16176 H-16177 H-16178 H-16179 H-16180 H-16181 H-16182
12.	REACTOR WATER CLEAN-UP SYSTEM P&ID SHEET 1 REACTOR WATER CLEAN-UP SYSTEM P&ID SHEET 2	G31-1010 G31-1010	H-16188 H-16189
13.	TORUS DRAINAGE & PURIFICATION SYSTEM P&ID AND PFD	G51-1010 G51-1020	H-16135
14.	ELEMENTARY DIAGRAM TURBINE AUXILIARY EQUIPMENT SH.2 OF 2	N32/N34 N39/N61	H-13377
15.	ELEMENTARY DIAGRAM OFF-GAS SYSTEM SH.2 OF 3	N62	H-17077
16.	PRIM CONT.ATM H2 & O2 ANALYZER SYSTEM P&ID SHEET 1 P&ID SHEET 2	P33-1010 P33-1010	H-16276 H-16280
17.	POST ACCIDENT REACTOR COOLANT AND CONTAINMENT ATMOSPHERE SAMPLING SYSTEM P&ID	2P33-1010	H-26384

FOR NOTES, SEE DWG. H-19901, H-19904

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E628, SHT. 1, REV. 7; SHT. 2, REV. 6; AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-25268, AND S-17782 RESPECTIVELY.

MPL NO. B21-1030

MPL NO. B21-1030 ACADOV1 H19902

SOUTHERN COMPANY

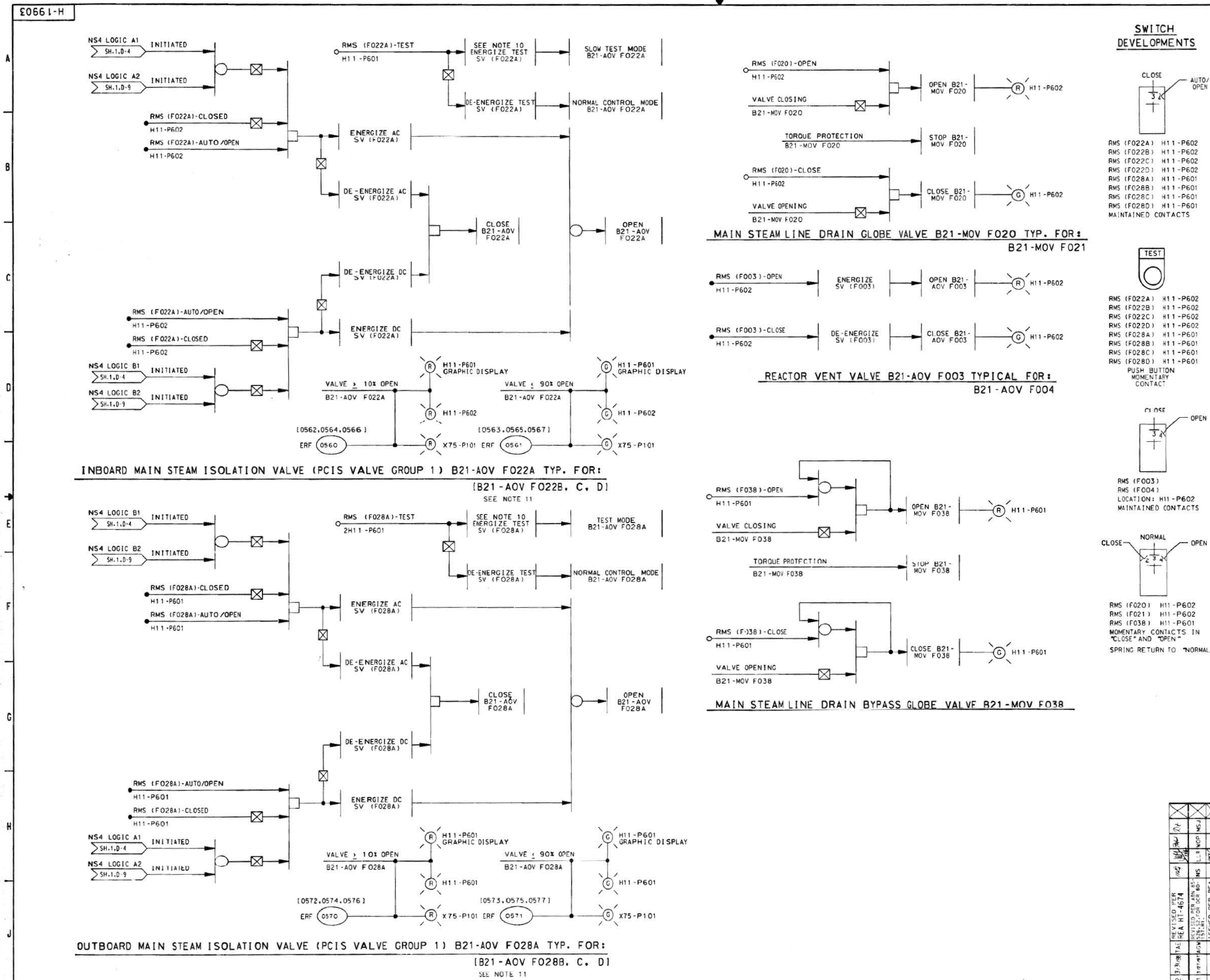
Revision: 3	Date: 8-08-97
REVISED PER ABN 97-0103.	

BY	CHK'D	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
RCR	RLP	JAS	

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 2 OF 12

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
TMC	MEB	10-502	H-19902	3
DATE 1-28-86	SCALE None			

FSAR FIGURE NO. 7.3-5 (SHEET 2 OF 12)



REFERENCES

CONT. FROM H-19902

	TITLE	MPL NO.	DWG. NO.
18.	DRYWELL PNEUMATIC SYS P&ID SHEET 1	P70-1010	H-16286
	SHEET 2		H-16299
19.	REACTOR ZONE VENT SYS P&ID	T41-1010	H-16005
20.	REACTOR BUILDING REFUELING FLOOR VENT SYS P&ID	T41-1010	H-16014
21.	STANDBY GAS TREAT SYS P&ID SHEET 1	T46-1010	H-16020
	SHEET 2		H-16174
22.	DRYWELL TO TORUS DIFF PRESS SYS P&ID	T48-1010	H-16153
23.	NITROGEN INERTING SYS P&ID	T48-1010	H-16000
24.	PRI. CTMT. PURGE & INERTING SYS P&ID	T48-1020	H-16024
25.	TURB. BLDG - LEAK DETECTION SYS IED	U61-1010	H-16083
26.	REAC RECIRC SYS LOGIC DIAG SHTS 1 THRU 4	B31-1030	H-19913 THRU H-19917
27.	NEUTRON MONITORING SYS LOGIC DIAG SHTS 1 THRU 8	C51-1030	H-19927 TO H-19932, H-19965,66
28.	REAC PROTECTION SYS LOGIC DIAG SHTS 1 THRU 4	C71-1030	H-19933 THRU H-19936
29.	RESID. HEAT REMOVAL SYS LOGIC DIAG SHTS 1 THRU 7	E11-1030	H-19937 THRU H-19943
30.	CORE SPRAY SYS LOGIC DIAG SHTS 1 THRU 3	E21-1030	H-19944 THRU H-19946
31.	REAC WTR CLEAN-UP SYS LOGIC DIAG SHEET 1	G31-1030	H-19963
	SHEET 2		H-19964
32.	GE 22A1300DA BWR PLANT REQUIREMENTS	A61-4020	S-19842
33.	GE 22A2989 ELEC EQUIP SEPARATION FOR SAFEGUARD SYS	A70	S-17108
34.	NUCLEAR BOILER SYS P&ID SH 1	2B21-1010	H-26000
	SH 2		H-26001
	SH 3		H-26189
35.	REAC PROT SYS P&ID	2C71-1010	H-28001
36.	PROCESS RAD MONIT SYS P&ID SH 1	2D11-1010	H-26011
	IED SH 2		H-26012
	IED SH 3		H-26013
	IED SH 4		H-26107
37.	AREA RAD MONIT SYS IED	2D21-1010	H-26010
38.	CORE SPRAY SYS P&ID	2E21-1010	H-26018
39.	CONTROL BLDG - CONTROL & CABLE SPREADING ROOMS AIR COND TEMP CONTROL DIAG	Z41-1050	H-16042
40.	NUCULAR BOILER SYSTEM LOGIC DIAGRAM SHEETS 1 THRU 12	2B21-1030	H-24701 THRU H-24712
41.	CORE SPRAY SYSTEM LOGIC DIAGRAM SHEETS 1 THRU 3	2E21-1030	H-24739 THRU H-24741
42.	ERF CLASS IE DIGITAL ISOLATION SYS. I.E.D.	X75-1010	H-16400
43.	ERF MULTIPLEXER SYSTEM I.E.D.	X75-1010	H-16401
44.	DIGITAL INPUT SIGNALS TO THE ERF COMPUTER SYS. I.E.D. SHTS. 1 THRU 15		H-16403 THRU H-16417

FOR NOTES, SEE DWG. H-19901.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628, SHT. 1, REV. 7; SHT. 2, REV. 6; AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY.

MPL NO. B21-1030

BECHTEL

JOB 6511 GAITHERSBURG, MARYLAND

SOUTHERN SERVICES INC. FOR

GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I. HATCH NUCLEAR PLANT UNIT NO.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 3 OF 12

REVISED PER REA HT-4674

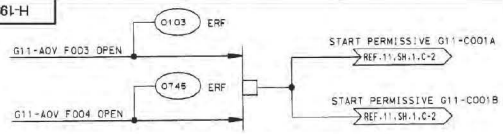
ISSUED PER REA HT-4674

GAFFOUR A. KOSI 3/20/86

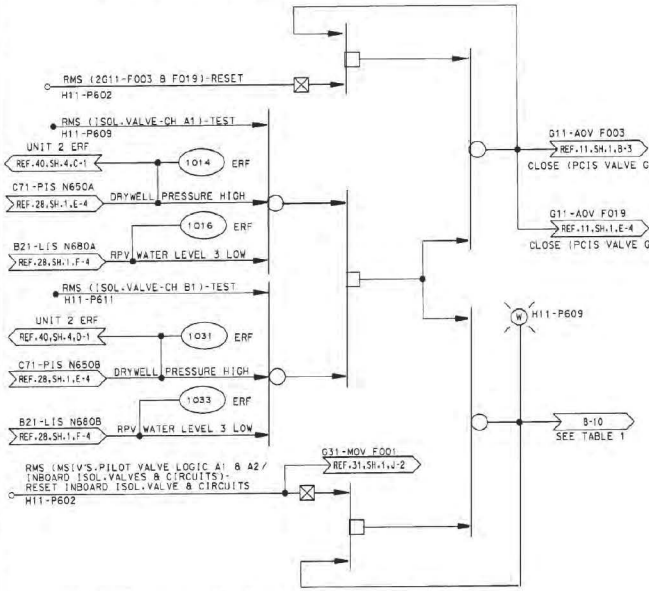
DRAWING NUMBER: 10-502 H-19903

H-19903

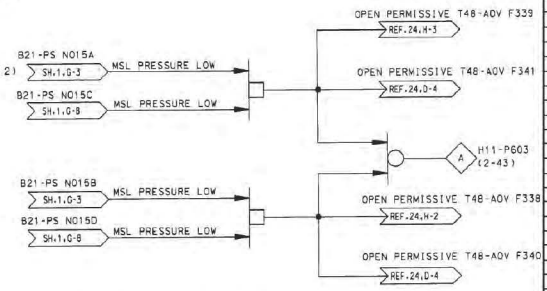
H-19904



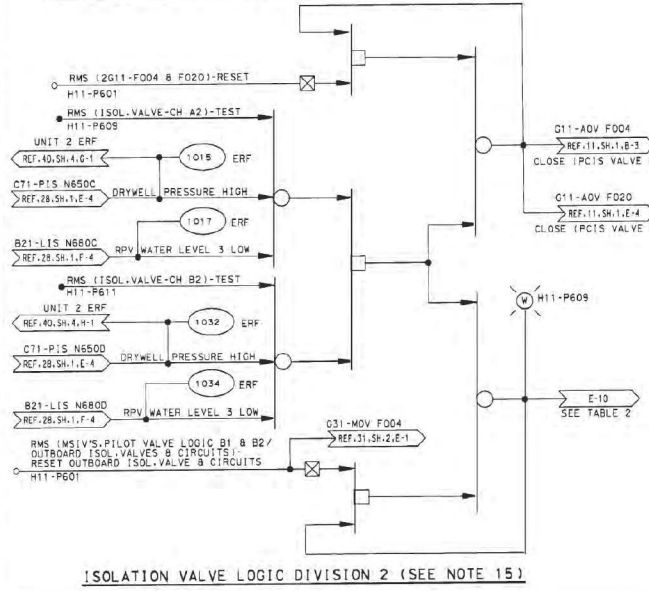
START PERMISSIVE FOR G11-C001A & B



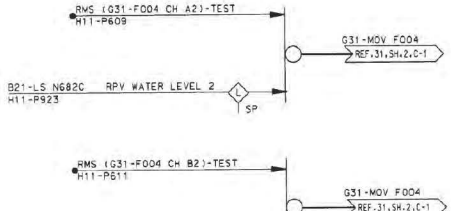
ISOLATION VALVE LOGIC DIVISION 1 (SEE NOTE 15)



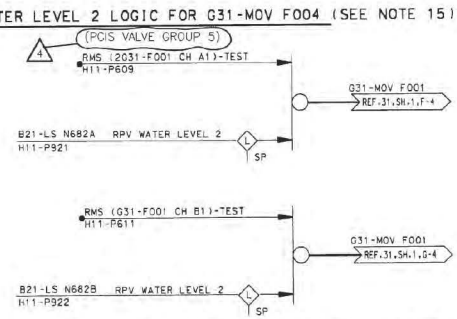
MSL PRESSURE LOGIC FOR T48-AOV F338 THRU F341 (SEE NOTE 15)



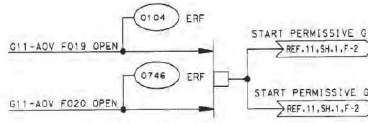
ISOLATION VALVE LOGIC DIVISION 2 (SEE NOTE 15)



RPV WATER LEVEL 2 LOGIC FOR G31-MOV F004 (SEE NOTE 15)

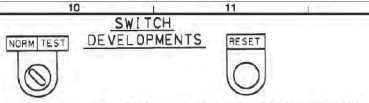


RPV WATER LEVEL 2 LOGIC FOR G31-MOV F001 (SEE NOTE 15)



START PERMISSIVE FOR G11-C006A & B

SWITCH DEVELOPMENTS



RMS (ISOL VALVE CH A1) H11-P609
RMS (ISOL VALVE CH B1) H11-P611
RMS (ISOL VALVE CH A2) H11-P609
RMS (ISOL VALVE CH B2) H11-P611
RMS (G31-F001 CH A1) H11-P609
RMS (G31-F001 CH B1) H11-P611
RMS (G31-F004 CH A2) H11-P609
RMS (G31-F004 CH B2) H11-P611
KEY REMOVABLE IN "NORM" ONLY
MAINTAINED CONTACTS

RMS (G11-F003 B F019) H11-P602
RMS (G11-F004 B F020) H11-P601
PUSH BUTTON MOMENTARY CONTACTS

TABLE 1 (FROM D-4)

ACTION	MPL NUMBERS	PCIS VALVE GROUP	REF.	SH.	COORD.	NOTES
CLOSE	B21-AOV F111		17	-	E-2	6 8 7
WITHDRAW	C51 TIP SYSTEM		27	7	E-1 & E-5	
CLOSE	C51-F3012	2	27	7	H-7	
CLOSE	D11-SV F050	11	7	1	E-3	6 8 7
CLOSE	D11-SV F051	11	7	1	C-4	6 8 7
CLOSE	D11-AOV F071		7	1	C-6	6 & 7
CLOSE	E11-MOV F015A		29	2	E-1	
CLOSE	E11-MOV F040		29	6	E-10 & F-10	
CLOSE	E11-SV F079A		29	6	G-1	
CLOSE	E11-SV F079B		29	6	H-1	
CLOSE	E11-AOV F122A		29	5	E-1	
CLOSE	E41-SV F122		17	-	H-3	6 8 7
CLOSE	P33-AOV F002	10	16	1	B-4	
CLOSE	P33-AOV F003	10	16	1	C-4	
CLOSE	P33-AOV F004	10	16	1	E-4	
CLOSE	P33-SV F005	10	16	1	G-7	
CLOSE	G51-AOV F011		13	-	C-5	
CLOSE	G51-AOV F021		13	-	C-1	
CLOSE	P33-AOV F006	10	16	1	F-4	
CLOSE	P33-AOV F007	10	16	1	D-4	
CLOSE	P70-AOV F002	11	18	-	F-8	
CLOSE	T48-AOV F118A	11	23	-	G-5	
CLOSE	T48-AOV F118B	11	23	-	G-5	
CLOSE	T48-AOV F307	2	24	-	C-9	
CLOSE	T48-AOV F309	2	24	-	E-10	
CLOSE	T48-AOV F318	2	24	-	G-4	
CLOSE	T48-AOV F319	2	24	-	C-4	
CLOSE	T48-AOV F339	10	24	-	H-3	
CLOSE	T48-AOV F341	11	24	-	D-4	

TABLE 2 (FROM H-4)

ACTION	MPL NUMBERS	PCIS VALVE GROUP	REF.	SH.	COORD.	NOTES
CLOSE	B21-AOV F112		17	-	E-2	6 8 7
CLOSE	D11-SV F052	11	7	1	E-4	
CLOSE	D11-SV F053	11	7	1	C-5	
CLOSE	D11-AOV F072		7	1	E-6	6 & 7
CLOSE	E11-MOV F015B		29	2	E-1	
CLOSE	E11-MOV F049		29	6	E-10 & F-10	
CLOSE	E11-SV F080A		29	6	G-1	
CLOSE	E11-SV F080B		29	6	H-1	
CLOSE	E11-AOV F122B		29	5	E-1	
CLOSE	E41-SV F121		17	-	H-3	6 8 7
CLOSE	G51-AOV F012		13	-	C-5	
CLOSE	G51-AOV F013		13	-	C-2	
CLOSE	P33-SV F013	10	16	-	D-5	
CLOSE	P33-AOV F010	10	16	1	B-5	
CLOSE	P33-AOV F011	10	16	1	C-6	
CLOSE	P33-AOV F012	10	16	1	E-5	
CLOSE	P33-AOV F014	10	16	1	F-5	
CLOSE	P33-AOV F015	10	16	1	G-5	
CLOSE	P70-AOV F003	11	18	-	F-8	
CLOSE	T48-AOV F103	11	23	-	F-2	
CLOSE	T48-AOV F104	11	23	-	G-4	
CLOSE	T48-AOV F308	2	24	-	C-9	
CLOSE	T48-AOV F320	2	24	-	C-3	
CLOSE	T48-AOV F324	2	24	-	D-10	
CLOSE	T48-AOV F326	2	24	-	G-3	
CLOSE	T48-AOV F338	10	24	-	H-2	
CLOSE	T48-AOV F340	11	24	-	D-4	

FOR NOTES, SEE DWG. H-19901

FOR REFERENCES, SEE DWG. H-19902 & H-19903

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628, SHT. 1, REV. 7; SHT. 2, REV. 61 AND SHT. 3, REV. 7 SCS ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY.

MPL No. B21-1030 ACADOVY H19904

SOUTHERN COMPANY

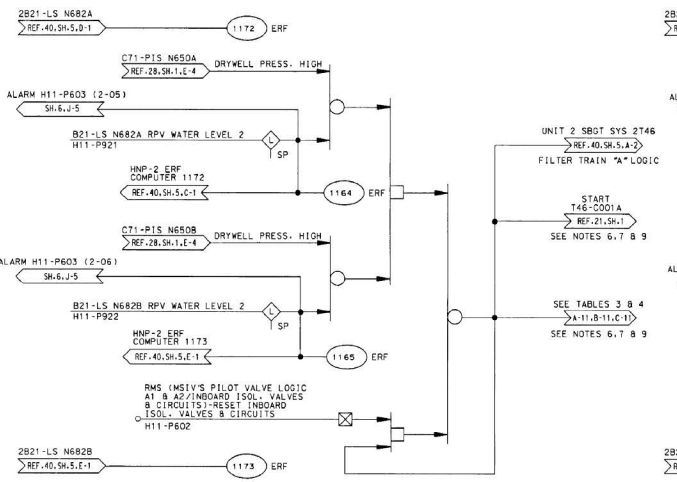
Revision: 4	Date: 1-14-98
REVISED PER ABN 97-0302.	

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 4 of 12

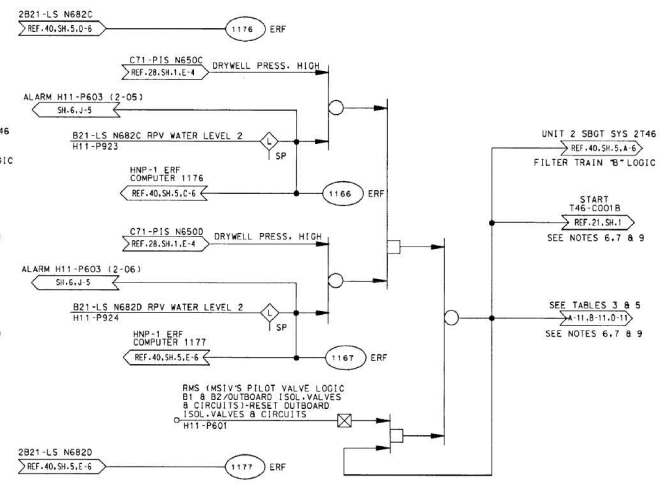
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
TMC	MEB	10-502	H-19904	4
DATE 1-28-86	SCALE No Scale			

DR	CHECK	APPROV	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES
KML	RLP	PRK	

S0661-H



SECONDARY CONTAINMENT ACTUATION LOGIC DIVISION 1 (SEE NOTE 15)



SECONDARY CONTAINMENT ACTUATION LOGIC DIVISION 2 (SEE NOTE 15)

TABLE 3

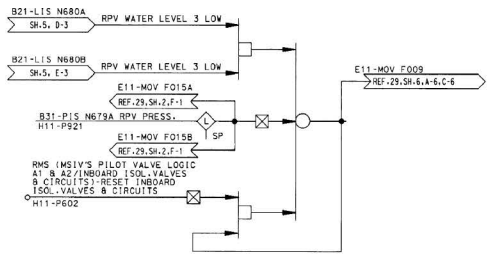
ACTION	MPL NUMBERS	PCIS VALVE GROUP	REF.	COORD.	NOTE
STOP	T41-C001A		19	B-3	6,7,8,9
STOP	T41-C001B		19	D-3	6,7,8,9
STOP	T41-C004A		19	C-8	6,7,8,9
STOP	T41-C004B		19	D-8	6,7,8,9
STOP	T41-C007A		19	F-8	6,7,8,9
STOP	T41-C007B		19	H-8	6,7,8,9
STOP	T41-C002A		20	B-4	6,7,8,9
STOP	T41-C002B		20	D-4	6,7,8,9
STOP	T41-C005A		20	F-8	6,7,8,9
STOP	T41-C005B		20	H-8	6,7,8,9

TABLE 4

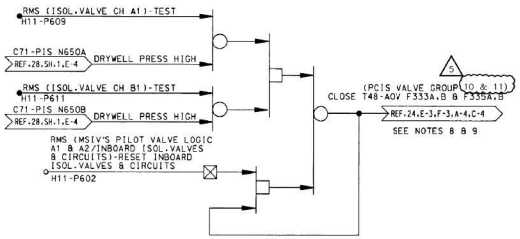
ACTION	MPL NUMBERS	PCIS VALVE GROUP	REF.	COORD.	NOTE
CLOSE	T41-AOV F011A		19	D-5	6,7,8,9
CLOSE	T41-AOV F043A		19	C-10	6,7,8,9
CLOSE	T41-AOV F044A		19	G-10	6,7,8,9
OPEN	T41-AOV F032A		19	G-4	6,7,8,9
CLOSE	T41-AOV F003A		20	C-5	6,7,8,9
CLOSE	T41-AOV F023A		20	F-10	6,7,8,9
OPEN	T41-AOV F040A		20	H-4	6,7,8,9

TABLE 5

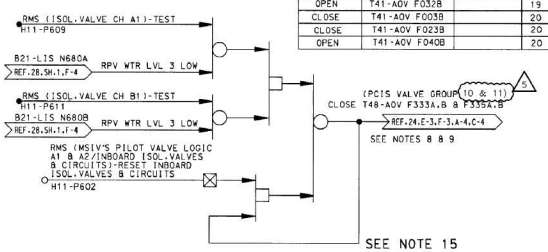
ACTION	MPL NUMBERS	PCIS VALVE GROUP	REF.	COORD.	NOTE
CLOSE	T41-AOV F011B		19	C-5	6,7,8,9
CLOSE	T41-AOV F043B		19	C-10	6,7,8,9
CLOSE	T41-AOV F044B		19	G-10	6,7,8,9
OPEN	T41-AOV F032B		19	H-4	6,7,8,9
CLOSE	T41-AOV F003B		20	C-5	6,7,8,9
CLOSE	T41-AOV F023B		20	G-11	6,7,8,9
OPEN	T41-AOV F040B		20	J-4	6,7,8,9



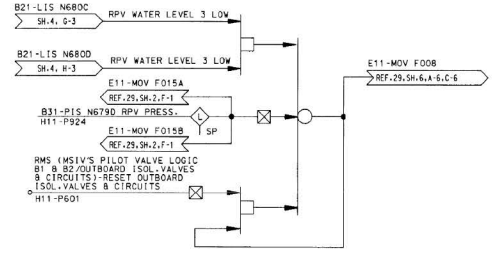
RPV WATER LEVEL 3 & RPV PRESSURE LOGIC FOR E11-MOV F009 SEE NOTE 15



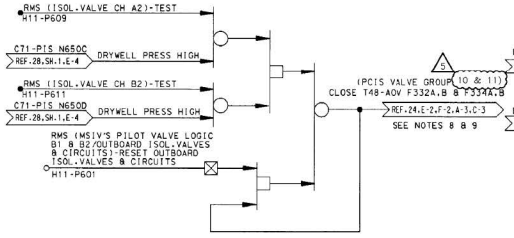
DRYWELL PRESSURE LOGIC FOR T48-AOV F333A,B & F335A,B SEE NOTE 15



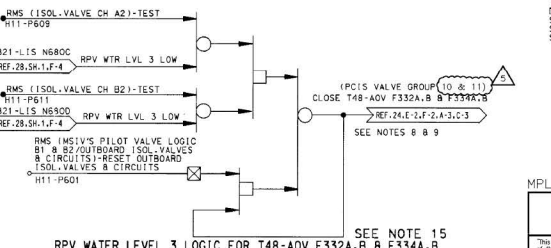
RPV WATER LEVEL 3 LOGIC FOR T48-AOV F333A,B & F335A,B SEE NOTE 15



RPV WATER LEVEL 3 & RPV PRESSURE LOGIC FOR E11-MOV F008
(PCIS VALVE GROUP 6) SEE NOTE 15



DRYWELL PRESSURE LOGIC FOR T48-AOV F332A,B & F334A,B SEE NOTE 15



RPV WATER LEVEL 3 LOGIC FOR T48-AOV F332A,B & F334A,B SEE NOTE 15

FOR NOTES, SEE DWG. H-19901.
FOR REFERENCES, SEE DWG. H-19902 & H-19903.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628 SHT. 1, REV. 7; SHT. 2, REV. 6; AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY.

MPL NO. B21-1030 ACADOVY H19905

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 5 OF 12

Revision: 5	Date: 8-08-97
REVISED PER ABN 97-0103.	

BY	DATE	APPR.	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES
RCR	RLP	JAS	

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
TMC	MEB			
DATE	SCALE	10-502	H-19905	5
1-28-86	None			

FSAR FIGURE NO. 7.3-5 (SHEET 5 OF 12)

D11-RIS K603A MSL RADIATION H-HE
H11-P606 SH.2, A-1
D11-RIS K603C MSL RADIATION H-HE
H11-P606 SH.2, D-1
D11-RIS K603B MSL RADIATION H-HE
H11-P606 SH.2, B-1
D11-RIS K603D MSL RADIATION H-HE
H11-P606 SH.2, D-1
2
RMS (MSIV'S PILOT VALVE LOGIC A1 & A2/INBOARD (B1 & B2/OUTBOARD) ISOL VALVES & CIRCUITS)-RESET INBOARD (OUTBOARD) ISOL VALVES & CIRCUITS
H11-P602 (P601)
INITIATE MSL RAD LOGIC DIVISION 1 (2)
A-3, B-3

MSL RADIATION LOGIC DIVISION 1 TYP. FOR:
MSL RADIATION LOGIC DIVISION (2)
SEE NOTE 15

MSL RAD LOGIC DIV 1 B-3
MSL RAD LOGIC DIV 2 B-3
STOP VACUUM PUMP REF.14
STOP EXHAUST BLOWER 1A REF.15,B-3
STOP EXHAUST BLOWER 1B REF.15,E-3

MSL RADIATION LOGIC FOR TURBINE VACUUM PUMP AND GLAND SEAL EXHAUST BLOWERS 1A & 1B

B21-PS N002 RPV FLANGE SEAL PRESSURE HIGH (A,H) H11-P603 (1-53)

3

3

B21-DPIS N686A THRU N689A MSL FLOW HIGH SH.1,F-10
B21-DPIS N686B THRU N689B MSL FLOW HIGH SH.1,F-10
RMS (MSIV'S PILOT VALVE LOGIC A1 & A2/INBOARD (SOL VALVES & CIRCUITS)-RESET INBOARD ISOL VALVES & CIRCUITS
H11-P602
INITIATE MSL FLOW LOGIC A SH.12,C-2
INITIATE PRESSURIZATION MODE LOGIC A (Z41) (SEE ALSO REF.40 SH.12,C-2)

MSL FLOW LOGIC A
SEE NOTE 15

B21-DPIS N686C THRU N689C MSL FLOW HIGH SH.1,F-10
B21-DPIS N686D THRU N689D MSL FLOW HIGH SH.1,F-10
RMS (MSIV'S PILOT VALVE LOGIC B1 & B2/OUTBOARD (SOL VALVES & CIRCUITS)-RESET OUTBOARD ISOL VALVES & CIRCUITS
H11-P601
INITIATE MSL FLOW LOGIC B SH.12,G-2
INITIATE PRESSURIZATION MODE LOGIC B (Z41) (SEE ALSO REF.40 SH.12,C-2)

MSL FLOW LOGIC B
SEE NOTE 15

B21-LIS N681A SH.1,A-2	RPV WATER LEVEL 1	(A,L) H11-P603 (2-27)
B21-LIS N681C SH.1,A-8	RPV WATER LEVEL 1	
B21-LIS N681B SH.1,A-2	RPV WATER LEVEL 1	(A,L) H11-P603 (2-44)
B21-LIS N681D SH.1,A-8	RPV WATER LEVEL 1	
INITIATES NS4 LOGIC A1 SH.1,D-4		(A) H11-P603 (2-08)
INITIATES NS4 LOGIC A2 SH.1,D-9		
INITIATES NS4 LOGIC B1 SH.1,D-4		(A) H11-P603 (2-09)
INITIATES NS4 LOGIC B2 SH.1,D-9		
B21-DPIS N686A THRU N689A SH.2,G-9		(A,H) H11-P603 (2-14)
B21-DPIS N686C THRU N689C SH.2,G-9		
B21-DPIS N686B THRU N689B SH.2,G-9		(A,H) H11-P603 (2-15)
B21-DPIS N686D THRU N689D SH.2,G-9		
B21-LS N682A SH.5,D-1	RPV WATER LEVEL 2	(A,L) H11-P603 (2-05)
B21-LS N682C SH.5,D-5	RPV WATER LEVEL 2	
B21-LS N682B SH.5,D-1	RPV WATER LEVEL 2	(A,L) H11-P603 (2-06)
B21-LS N682D SH.5,D-5	RPV WATER LEVEL 2	

B21-TIS N623A THRU N626A SH.2,H-9		(A,H) H11-P603 (2-23)
B21-TIS N623C THRU N626C SH.2,H-9		
B21-TIS N623B THRU N626B SH.2,H-9		(A,H) H11-P603 (2-24)
B21-TIS N623D THRU N626D SH.2,H-9		
B21-PS N015A SH.1,G-3	MSL PRESS LOW	(A,L) H11-P603 (2-32)
B21-PS N015C SH.1,G-8	MSL PRESS LOW	
B21-PS N015B SH.1,G-3	MSL PRESS LOW	(A,L) H11-P603 (2-33)
B21-PS N015D SH.1,G-8	MSL PRESS LOW	
RMS (COND VAC-CHANNEL A1)-BYPASS H11-P609		(A) H11-P603 (2-41)
RMS (COND VAC-CHANNEL A2)-BYPASS H11-P609		
RMS (COND VAC-CHANNEL B1)-BYPASS H11-P611		(A) H11-P603 (2-42)
RMS (COND VAC-CHANNEL B2)-BYPASS H11-P611		

FOR NOTES, SEE DWG. H-19901.
FOR REFERENCES, SEE DWGS. H-19902 & H-19903

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729628 SHT. 1, REV. 7; SHT. 2, REV. 6; AND SHT. 3, REV. 7 SCS ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY.

MPL NO. B21-1030 ACADDWG H19906

Revision: 3 Date: 02-24-03
REVISED PER ABN 00-0037-002.

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAM
SHEET 6 OF 12

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
TMC	MEB			
DATE	SCALE	10-502	H-19906	3
1-28-86	None			

BY	CHKD	APPD
Vep	RLP	DEW

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

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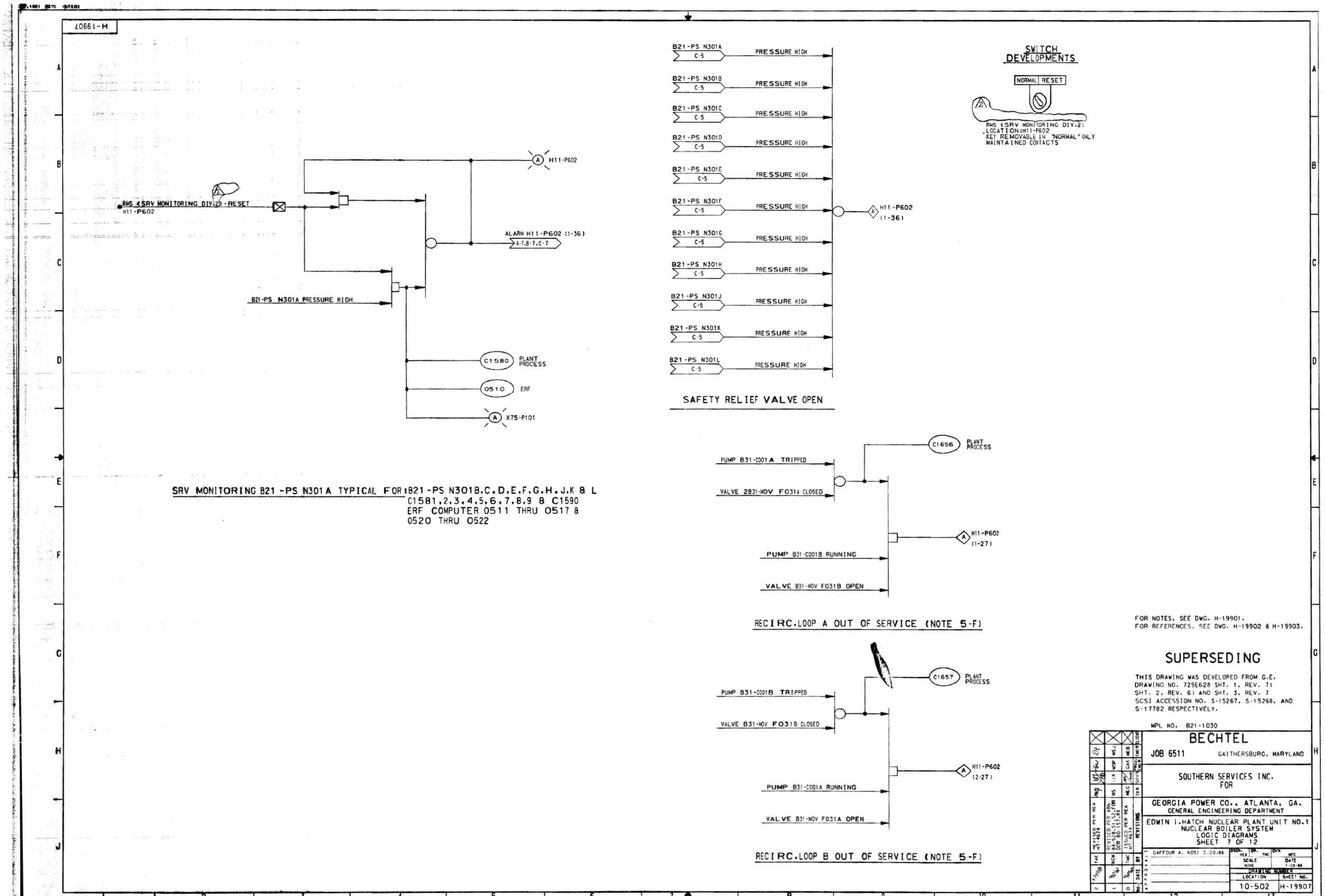
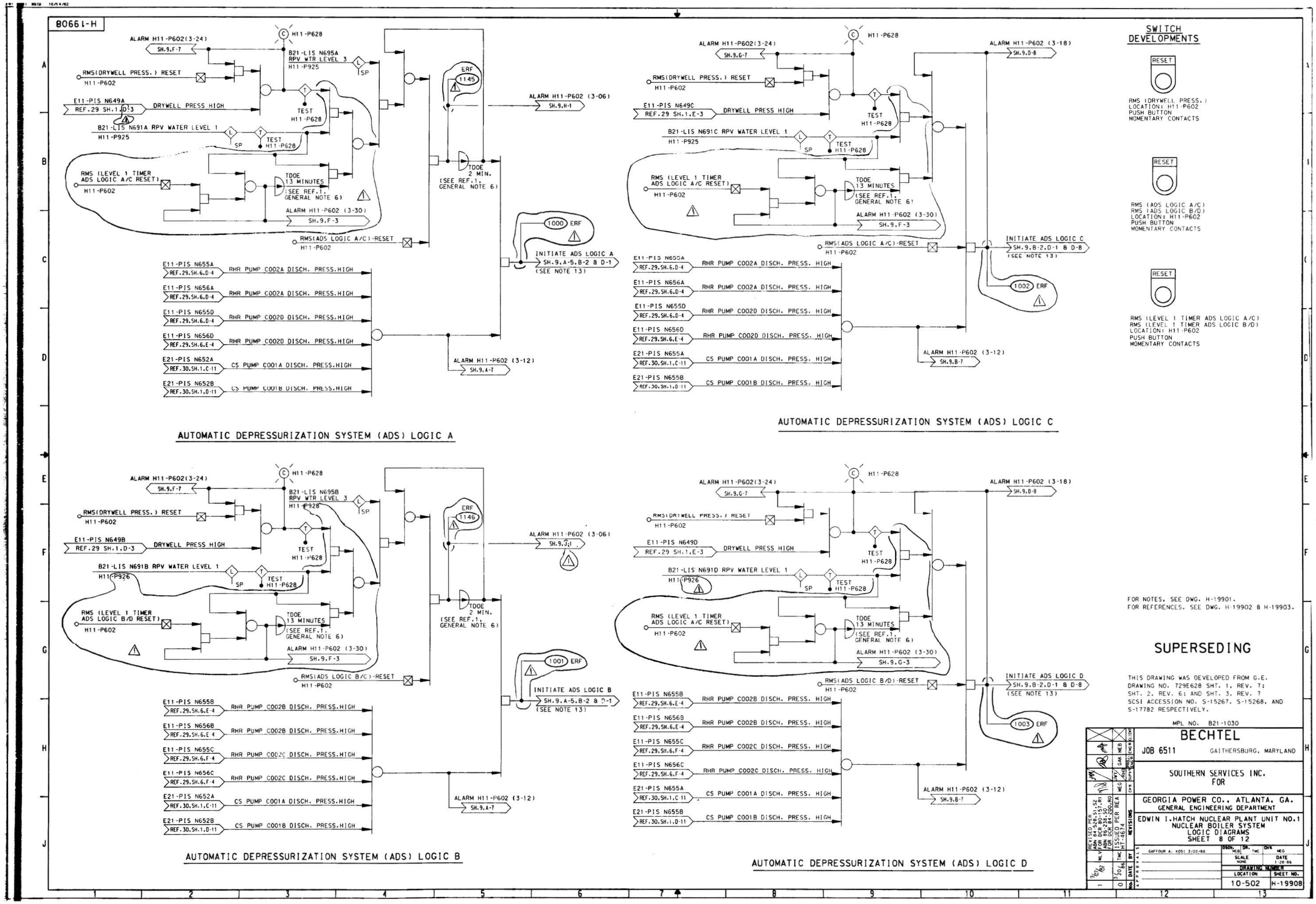
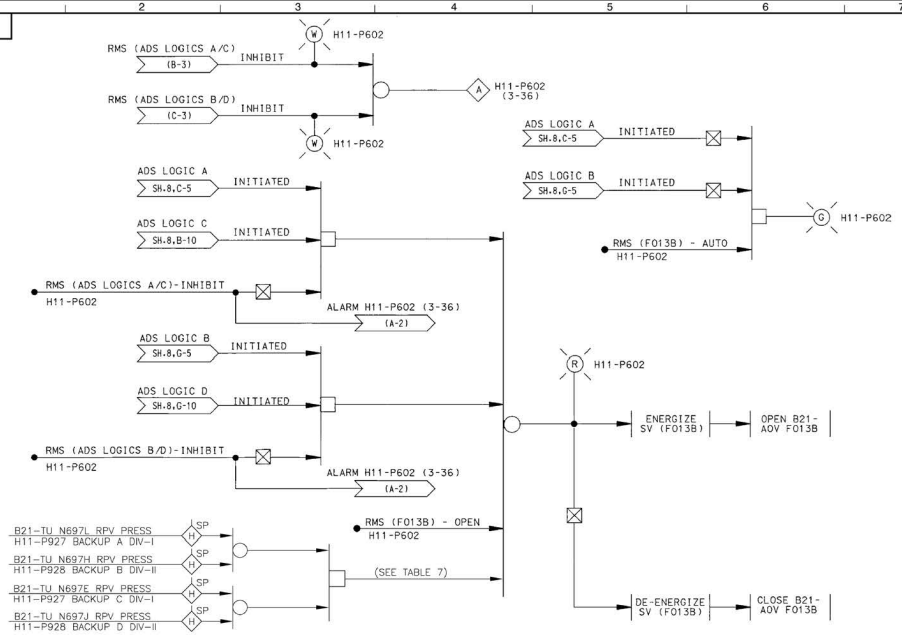


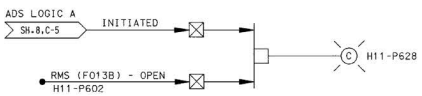
FSAR FIGURE NO.7.3-5 (SHEET 7 OF 12)



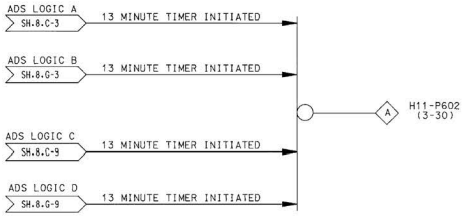
B0661-H
AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) LOGIC A
AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) LOGIC B
AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) LOGIC C
AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) LOGIC D
SWITCH DEVELOPMENTS
RESET
RMS (DRYWELL PRESS.)
LOCATION: H11-P602
PUSH BUTTON
MOMENTARY CONTACTS
RMS (ADS LOGIC A/C)
RMS (ADS LOGIC B/D)
LOCATION: H11-P602
PUSH BUTTON
MOMENTARY CONTACTS
RMS (LEVEL 1 TIMER ADS LOGIC A/C)
RMS (LEVEL 1 TIMER ADS LOGIC B/D)
LOCATION: H11-P602
PUSH BUTTON
MOMENTARY CONTACTS
FOR NOTES, SEE DWG. H-19901.
FOR REFERENCES, SEE DWG. H-19902 & H-19903.
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628 SHT. 1, REV. 7; SHT. 2, REV. 6; AND SHT. 3, REV. 7
SCSI ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY.
MPL NO. B21-1030
BECHTEL
JOB 6511
GAITHERSBURG, MARYLAND
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT
EDWIN I. HATCH NUCLEAR PLANT UNIT NO.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 8 OF 12
10-502
H-19908

6066I-H

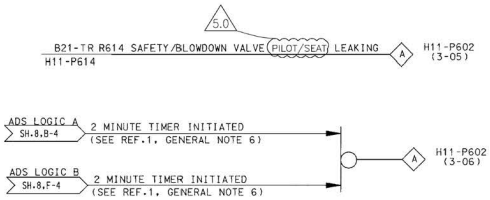




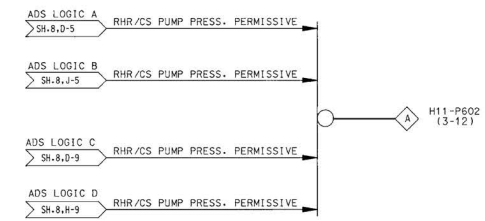
ADS LOGIC A INITIATED LIGHT TYPICAL FOR: ADS LOGIC B,C & D



ADS LOW WATER LEVEL ACTUATION TIMER INITIATED

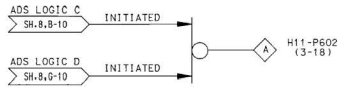


MPL NUMBERS					REFERENCE DRAWING	COORD.
BACKUP DIV I (A)	BACKUP DIV II (B)	BACKUP DIV I (C)	BACKUP DIV II (D)	ADS SRV		
B21-TU-N697L	B21-TU-N697H	B21-TU-N697E	B21-TU-N697J	B21-AOV-F013B	H-17759	B-6
B21-TU-N697G	B21-TU-N697K	B21-TU-N697F	B21-TU-N697M	B21-AOV-F013K	H-17759	B-8
B21-TU-N697G	B21-TU-N697K	B21-TU-N697F	B21-TU-N697M	B21-AOV-F013D	H-17759	B-9
B21-TU-N697G	B21-TU-N697K	B21-TU-N697F	B21-TU-N697M	B21-AOV-F013F	H-17759	B-11
B21-TU-N697G	B21-TU-N697K	B21-TU-N697F	B21-TU-N697M	B21-AOV-F013L	H-17759	B-12
B21-TU-N697L	B21-TU-N697H	B21-TU-N697E	B21-TU-N697J	B21-AOV-F013E	H-17759	E-11
B21-TU-N697L	B21-TU-N697H	B21-TU-N697E	B21-TU-N697J	B21-AOV-F013J	H-17759	E-13

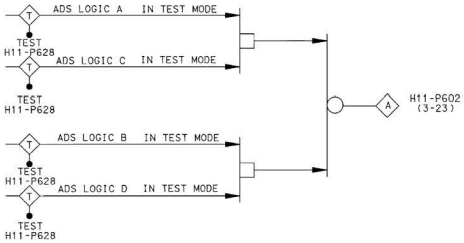


AUTO BLOWDOWN CS OR RHR PRESSURE PERMISSIVE

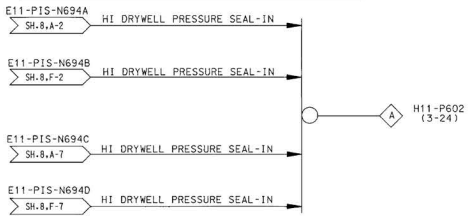
AUTO BLOWDOWN CONTROL POWER FAILURE



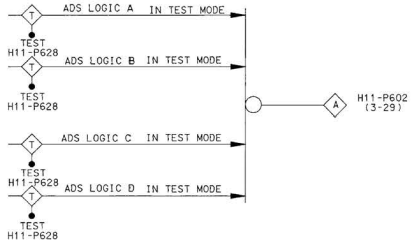
ADS LOGIC C OR D INITIATED



FAULTY AUTO BLOWDOWN TEST PROCEDURE

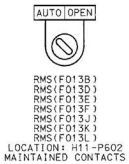


HIGH DRYWELL PRESSURE SEALED IN



AUTO BLOWDOWN IN TEST STATUS

SWITCH DEVELOPMENT



FOR NOTES, SEE DWG. .
FOR REFERENCES, SEE DWG. H-19902 & H-19903.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628 SHT. 1, REV. 7; SHT. 2, REV. 6, AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-15268 AND S-17728 RESPECTIVELY.

MPL NO. B21-1030

MPL NO. B21-1030 OVY2000 H19909

SOUTHERN COMPANY

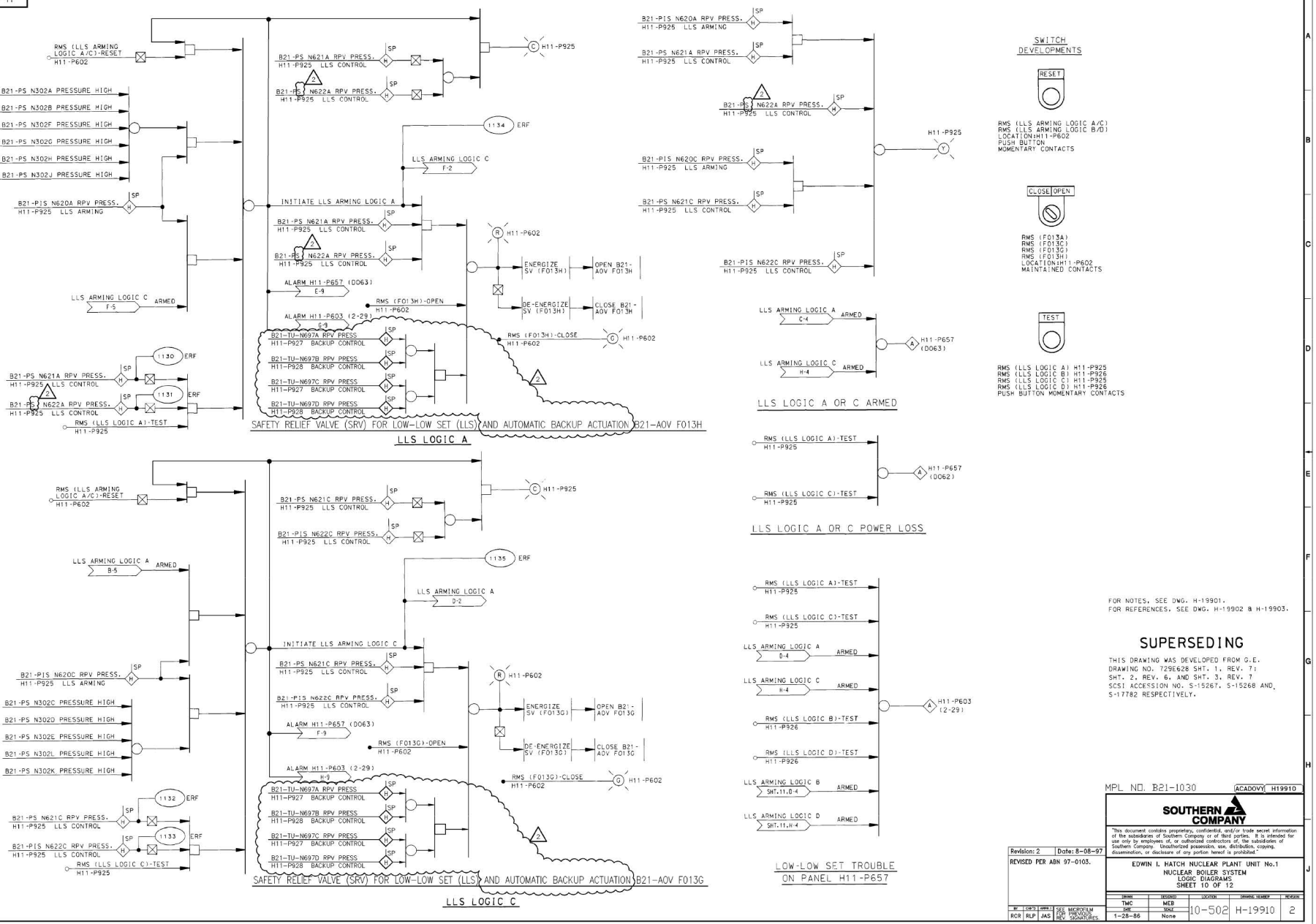
EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 9 OF 12

Version: 5.0 Date: 08/01/14
REVISED PER ABN: 10727242012005, VER 1.0

BY	CHK'D	APPR.
GTR	DAB	JTL

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
	MEB			
DATE	SCALE	10-502	H-19909	5.0
1-28-86	None			

H-19910



FOR NOTES, SEE DWG. H-19901.
FOR REFERENCES, SEE DWG. H-19902 & H-19903.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628 SHT. 1, REV. 7; SHT. 2, REV. 6, AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-15268 AND S-17782 RESPECTIVELY.

MPL NO. B21-1030 ACADOVY H19910

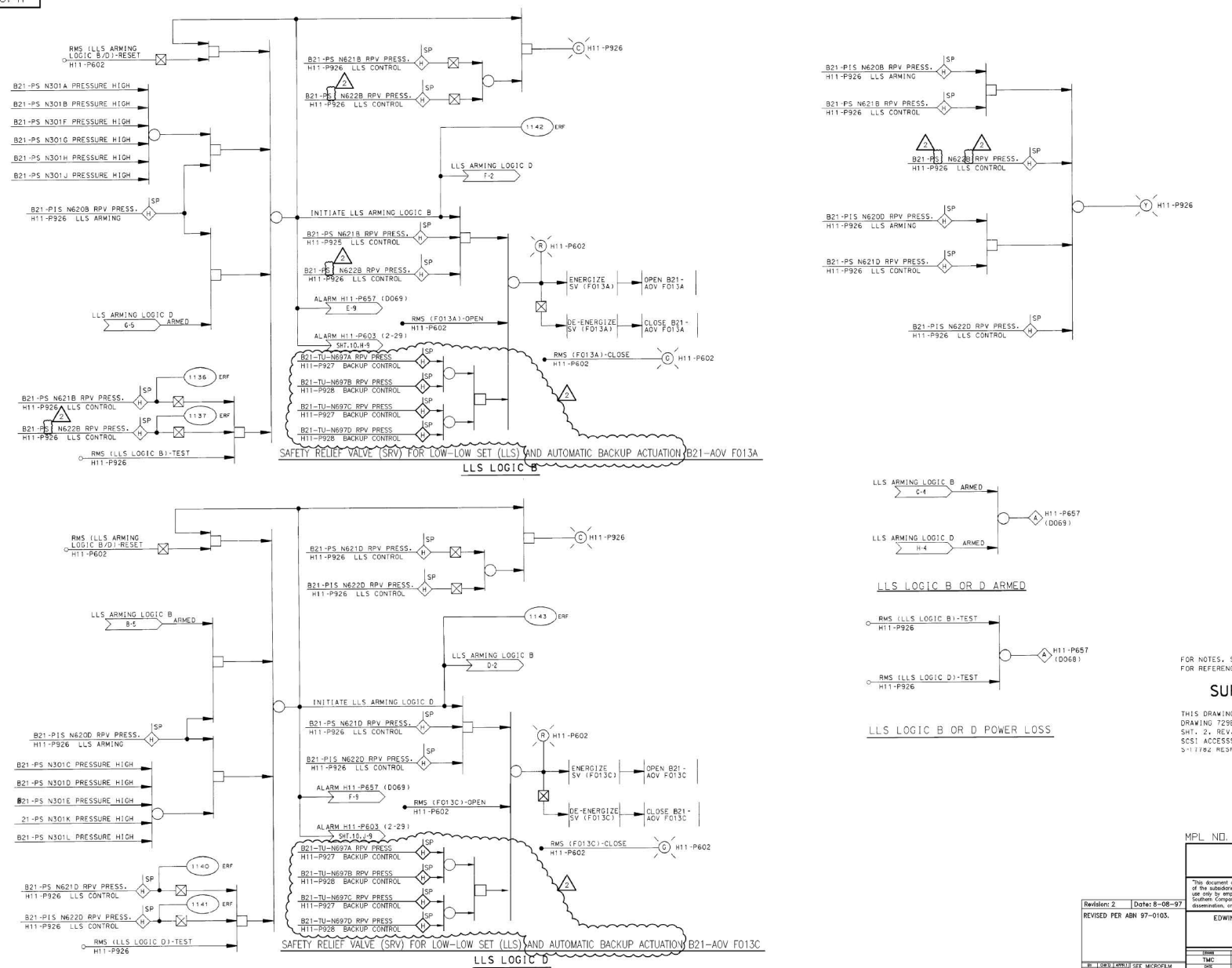
SOUTHERN COMPANY

Revision: 2	Date: 8-08-97
REVISED PER ABN 97-0103.	

EDWIN I. HATCH NUCLEAR PLANT UNIT No.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 10 OF 12

BY	CHK'D	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES
RCR	RLP	JAS	

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
TMC	MEB			
DATE	SCALE	10-502	H-19910	2
1-28-86	None			



FSAR FIGURE NO. 7.3-5 (SHEET 11 OF 12)

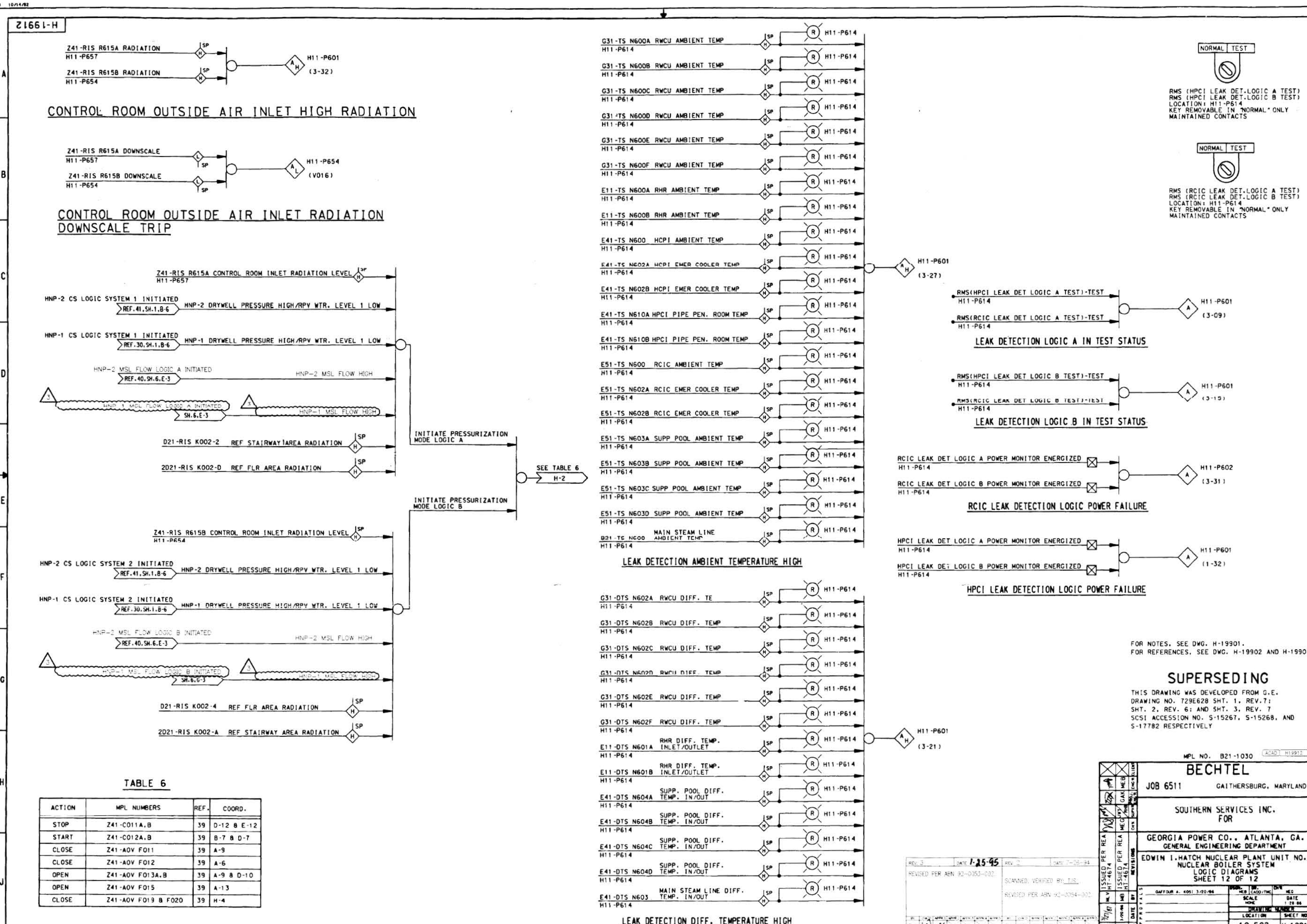

H-19912
Z41-RIS R615A RADIATION
H11-P657
Z41-RIS R615B RADIATION
H11-P654
H11-P601 (3-32)
CONTROL ROOM OUTSIDE AIR INLET HIGH RADIATION
Z41-RIS R615A DOWNSCALE
H11-P657
Z41-RIS R615B DOWNSCALE
H11-P654
H11-P654 (V016)
CONTROL ROOM OUTSIDE AIR INLET RADIATION DOWNSCALE TRIP
Z41-RIS R615A CONTROL ROOM INLET RADIATION LEVEL
H11-P657
HNP-2 CS LOGIC SYSTEM 1 INITIATED
REF.41,SH.1,B-6
HNP-2 DRYWELL PRESSURE HIGH/RPV WTR. LEVEL 1 LOW
HNP-1 CS LOGIC SYSTEM 1 INITIATED
REF.30,SH.1,B-6
HNP-1 DRYWELL PRESSURE HIGH/RPV WTR. LEVEL 1 LOW
HNP-2 MSL FLOW LOGIC A INITIATED
REF.40,SH.6,E-3
HNP-2 MSL FLOW HIGH
HNP-1 MSL FLOW LOGIC A INITIATED
SH.6,E-3
HNP-1 MSL FLOW HIGH
D21-RIS K002-2 REF STAIRWAY AREA RADIATION
2D21-RIS K002-D REF FLR AREA RADIATION
INITIATE PRESSURIZATION MODE LOGIC A
SEE TABLE 6
H-2
INITIATE PRESSURIZATION MODE LOGIC B
Z41-RIS R615B CONTROL ROOM INLET RADIATION LEVEL
H11-P654
HNP-2 CS LOGIC SYSTEM 2 INITIATED
REF.41,SH.1,B-6
HNP-2 DRYWELL PRESSURE HIGH/RPV WTR. LEVEL 1 LOW
HNP-1 CS LOGIC SYSTEM 2 INITIATED
REF.30,SH.1,B-6
HNP-1 DRYWELL PRESSURE HIGH/RPV WTR. LEVEL 1 LOW
HNP-2 MSL FLOW LOGIC B INITIATED
REF.40,SH.6,E-3
HNP-2 MSL FLOW HIGH
HNP-1 MSL FLOW LOGIC B INITIATED
SH.6,G-3
HNP-1 MSL FLOW HIGH
D21-RIS K002-4 REF FLR AREA RADIATION
2D21-RIS K002-A REF STAIRWAY AREA RADIATION
G31-TS N600A RWCU AMBIENT TEMP
G31-TS N600B RWCU AMBIENT TEMP
G31-TS N600C RWCU AMBIENT TEMP
G31-TS N600D RWCU AMBIENT TEMP
G31-TS N600E RWCU AMBIENT TEMP
G31-TS N600F RWCU AMBIENT TEMP
E11-TS N600A RHR AMBIENT TEMP
E11-TS N600B RHR AMBIENT TEMP
E41-TS N600 HCPI AMBIENT TEMP
E41-TS N602A HCPI EMER COOLER TEMP
E41-TS N602B HCPI EMER COOLER TEMP
E41-TS N610A HPCI PIPE PEN. ROOM TEMP
E41-TS N610B HPCI PIPE PEN. ROOM TEMP
E51-TS N600 RCIC AMBIENT TEMP
E51-TS N602A RCIC EMER COOLER TEMP
E51-TS N602B RCIC EMER COOLER TEMP
E51-TS N603A SUPP POOL AMBIENT TEMP
E51-TS N603B SUPP POOL AMBIENT TEMP
E51-TS N603C SUPP POOL AMBIENT TEMP
E51-TS N603D SUPP POOL AMBIENT TEMP
B21-TS N600 MAIN STEAM LINE AMBIENT TEMP
H11-P614
H11-P601 (3-27)
LEAK DETECTION AMBIENT TEMPERATURE HIGH
G31-DTS N602A RWCU DIFF. TE
G31-DTS N602B RWCU DIFF. TEMP
G31-DTS N602C RWCU DIFF. TEMP
G31-DTS N602D RWCU DIFF. TEMP
G31-DTS N602E RWCU DIFF. TEMP
G31-DTS N602F RWCU DIFF. TEMP
E11-DTS N601A RHR DIFF. TEMP. INLET/OUTLET
E11-DTS N601B RHR DIFF. TEMP. INLET/OUTLET
E41-DTS N604A SUPP. POOL DIFF. TEMP. IN/OUT
E41-DTS N604B SUPP. POOL DIFF. TEMP. IN/OUT
E41-DTS N604C SUPP. POOL DIFF. TEMP. IN/OUT
E41-DTS N604D SUPP. POOL DIFF. TEMP. IN/OUT
E41-DTS N603 MAIN STEAM LINE DIFF. TEMP. IN/OUT
H11-P601 (3-21)
LEAK DETECTION DIFF. TEMPERATURE HIGH
NORMAL TEST
RMS (HPCI LEAK DET.LOGIC A TEST)
RMS (HPCI LEAK DET.LOGIC B TEST)
LOCATION: H11-P614
KEY REMOVABLE IN "NORMAL" ONLY
MAINTAINED CONTACTS
RMS (RCIC LEAK DET.LOGIC A TEST)
RMS (RCIC LEAK DET.LOGIC B TEST)
RMS(HPCI LEAK DET LOGIC A TEST)-TEST
RMS(RCIC LEAK DET LOGIC A TEST)-TEST
H11-P601 (3-09)
LEAK DETECTION LOGIC A IN TEST STATUS
RMS(HPCI LEAK DET LOGIC B TEST)-TEST
RMS(RCIC LEAK DET LOGIC B TEST)-TEST
H11-P601 (3-19)
LEAK DETECTION LOGIC B IN TEST STATUS
RCIC LEAK DET LOGIC A POWER MONITOR ENERGIZED
RCIC LEAK DET LOGIC B POWER MONITOR ENERGIZED
H11-P602 (3-31)
RCIC LEAK DETECTION LOGIC POWER FAILURE
HPCI LEAK DET LOGIC A POWER MONITOR ENERGIZED
HPCI LEAK DET LOGIC B POWER MONITOR ENERGIZED
H11-P601 (1-32)
HPCI LEAK DETECTION LOGIC POWER FAILURE

TABLE 6

ACTION	MPL NUMBERS	REF.	COORD.
STOP	Z41-C011A,B	39	D-12 & E-12
START	Z41-C012A,B	39	B-7 & D-7
CLOSE	Z41-AOV F011	39	A-9
CLOSE	Z41-AOV F012	39	A-6
OPEN	Z41-AOV F013A,B	39	A-9 & D-10
OPEN	Z41-AOV F015	39	A-13
CLOSE	Z41-AOV F019 & F020	39	H-4

FOR NOTES, SEE DWG. H-19901.
FOR REFERENCES, SEE DWG. H-19902 AND H-19903.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E628 SHT. 1, REV.7; SHT. 2, REV. 6; AND SHT. 3, REV. 7 SCSI ACCESSION NO. S-15267, S-15268, AND S-17782 RESPECTIVELY

MPL NO. B21-1030

REV. 3 DATE 1-25-95 REVISED PER ABN 92-0053-002
REV. 2 DATE 7-28-94 SCANNED, VERIFIED BY TJS. REVISED PER ABN 92-0054-002

BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND

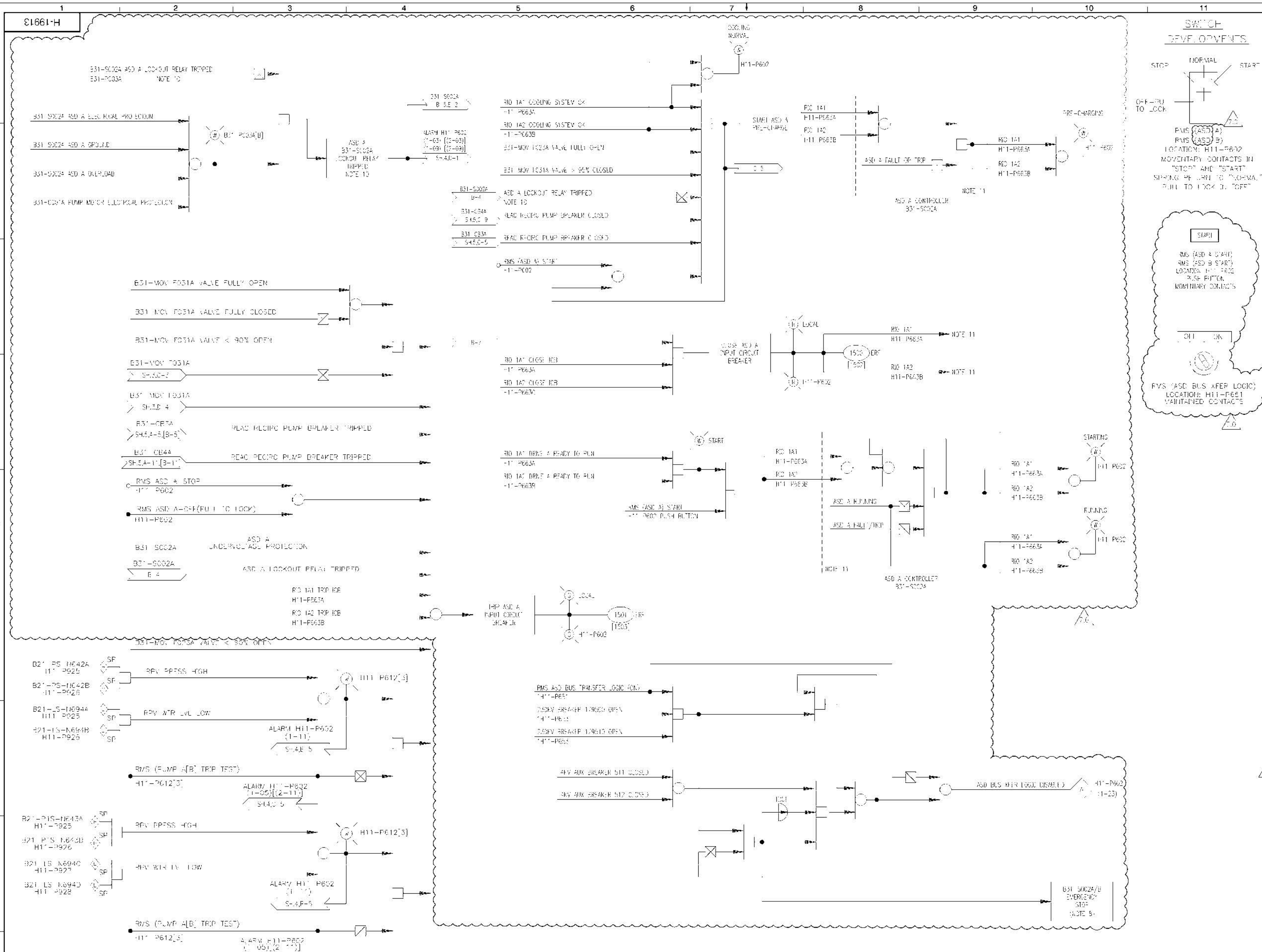
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I.HATCH NUCLEAR PLANT UNIT NO.1
NUCLEAR BOILER SYSTEM
LOGIC DIAGRAMS
SHEET 12 OF 12

ISSUED PER REA HT-4674
ISSUED PER REA HT-4674

LOCATION 10-502 | SHEET NO. H-19912

H-19913



ASD A B31-S002A FOR REACTOR RECIRCULATION PUMP B31-C001A TYPICAL FOR: B31-S002B, B31-C001B

NOTES:

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO. B31 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS, SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. FOR LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES, SEE REFERENCE 1.
4. FOR INFORMATION ON ALARMS, VALVE INDICATING LIGHT REQUIREMENTS AND PROCESS INSTRUMENTATION REQUIREMENTS WHICH ARE NOT SHOWN ON THE LOGIC DIAGRAMS, SEE REFERENCES 2&3.
5. DELETED.
6. FUNCTION IS SHOWN FOR RECIRCULATION SYSTEM "A" (EXCEPT AS NOTED) AND IS TYPICAL FOR RECIRCULATION SYSTEM "B".
7. DEVICES SHOWN WILL OPERATE RECIRC PUMP "A". DEVICES IN [ ] WILL OPERATE RECIRC PUMP "B".
8. EMERGENCY STOP (E-STOP) DISABLES THE ASD OUTPUT, CAUSING THE RECIRC PUMP TO COAST DOWN. REMOVAL OF THE E-STOP ENABLES THE THE ASD TO SYNC WITH THE RECIRC PUMP MOTOR AND RESTORE OUTPUT.
9. SEE REF.1, GENERAL NOTE 6.
10. THE ASD A AUXILIARY LOCKOUT RELAY IS A BACKUP TO THE ASD A LOCKOUT RELAY IF IT FAILS TO TRIP.
11. INTERFACE WITH ASD CONTROLLER IS THROUGH RENDUNDANT I/O (RIO) RACK IN PANEL H11-P663. SEE REF. 12 AND 13.

REFERENCES

	TITLE		MPL NO.	DWG. NO.
1.	LOGIC DIAGRAMS LEGEND & GENERAL NOTES		A21-1030	H-19900
2.	REAC RECIRC SYSTEM P&ID	SHT.1	B31-1010	H-16066
		SHT.2		H-16067
		SHT.3		H-16068
3.	DELETED.			
4.	NUCLEAR BOILER SYSTEM P&ID	SHT.1	B21-1010	H-16062
		SHT.2		H-16063
		SHT.3		H-16145
5.	FEEDWATER CONTROL SYSTEM TURBINE DRIVEN FEEDPUMPS I.E.D.		C32-1010	H-16567
6.	REAC PROTECTION SYSTEM LOGIC DIAGS SHT.1 THRU SHT.4		C71-1030	H-19933 THRU H-19936
7.	RESIDUAL HEAT REMOVAL SYSTEM LOGIC DIAGRAMS SHT.1 THRU SHT.7		E11-1030	H-19937 THRU H-19943
8.	ERF CLASS 1E DIGITAL ISOLATION SYSTEM I.E.D.		X75-1010	H-16400
9.	ERF MULTIPLEXER SYSTEM I.E.D.		X75-1010	H-16401
10.	ANNUNCIATOR SIGNALS TO TSC I.E.D.		X75-1010	H-16402
11.	DIGITAL INPUT SIGNALS TO THE ERF COMPUTER SYSTEM I.E.D. SHEETS 1 THRU 15		X75-1010	H-16403 THRU H-16417
12.	REACTOR RECIRC PUMP ASD CONTROL NARRATIVE		B31	S-58810
13.	REACTOR RECIRC PUMP ASD SEQUENCE OF OPERATION TEXT DOCUMENT		B31	S-58809

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DWG. NO. 729E825BA SHT.1, REV.6; SHT.2, REV.2, SHT.3, REV.5 SCS ACCESSION DRAWING NO. S-16204, S-16205 & S-16206 RESPECTIVELY.

MPL NO. B31-1030

ACAD2K H19913

Version: 7.0 | Date: 6-18-10

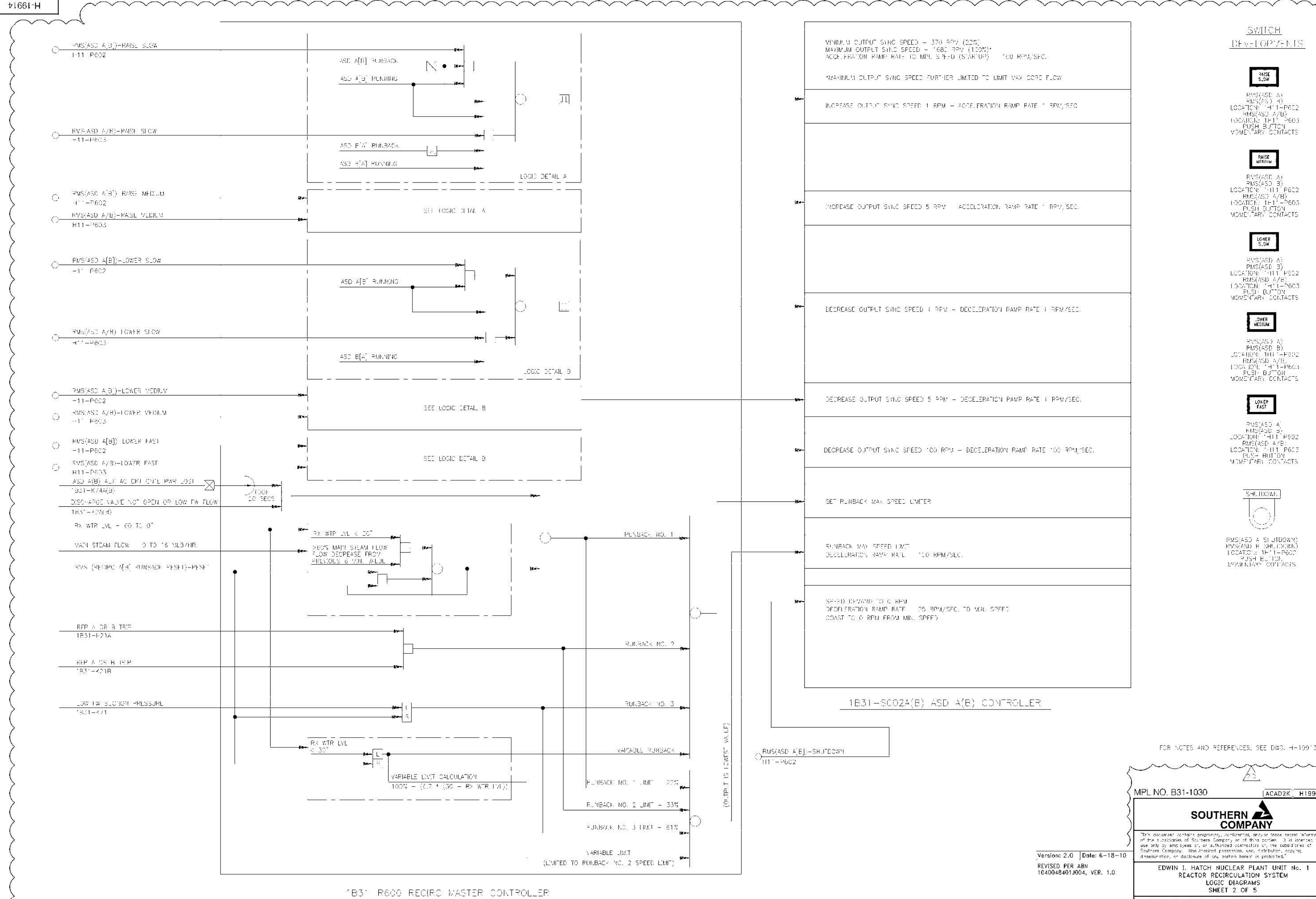
REVISED PER ABN 1040048401J003, VER. 2.0

BY	CHK'D	APPR'D	
JLO	GDM	JMR	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR RECIRCULATION SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 5

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
CADD/DC	DMP	10-502	H-19913	7.0
DATE	SCALE: None			


RMS(ASD A[B])-RAISE SLOW
H11-P602
ASD A[B] RUNBACK
ASD A[B] RUNNING
RMS(ASD A/B)-RAISE SLOW
H11-P603
ASD B[A] RUNBACK
ASD B[A] RUNNING
LOGIC DETAIL A
RMS(ASD A[B])-RAISE MEDIUM
H11-P602
RMS(ASD A/B)-RAISE MEDIUM
H11-P603
SEE LOGIC DETAIL A
RMS(ASD A[B])-LOWER SLOW
H11-P602
ASD A[B] RUNNING
RMS(ASD A/B)-LOWER SLOW
H11-P603
ASD B[A] RUNNING
LOGIC DETAIL B
RMS(ASD A[B])-LOWER MEDIUM
H11-P602
RMS(ASD A/B)-LOWER MEDIUM
H11-P603
SEE LOGIC DETAIL B
RMS(ASD A[B])-LOWER FAST
H11-P602
RMS(ASD A/B)-LOWER FAST
H11-P603
SEE LOGIC DETAIL B
ASD A(B) AUX AC CKT CNTL PWR LOST
1B31-K74A(B)
TDDF
20 SECS
DISCHARGE VALVE NOT OPEN OR LOW FW FLOW
1B31-K2A(B)
RX WTR LVL - 60 TO 0"
MAIN STEAM FLOW 0 TO 16 MLB/HR.
RMS (RECIRC A[B] RUNBACK RESET)-RESET
RX WTR LVL < 20"
>60% MAIN STEAM FLOW
FLOW DECREASE FROM
PREVIOUS 6 MIN. VALUE
RUNBACK NO. 1
RFP A OR B TRIP
1B31-K21A
RFP A OR B TRIP
1B31-K21B
RUNBACK NO. 2
LOW FW SUCTION PRESSURE
1B31-K71
RUNBACK NO. 3
RX WTR LVL
< 30"
VARIABLE RUNBACK
VARIABLE LIMIT CALCULATION
100% - (6.7 * (30 - RX WTR LVL))
RUNBACK NO. 1 LIMIT - 22%
RUNBACK NO. 2 LIMIT - 33%
RUNBACK NO. 3 LIMIT - 61%
VARIABLE LIMIT
(LIMITED TO RUNBACK NO. 2 SPEED LIMIT)
(OUTPUT IS LOWEST VALUE)
1B31 R600 RECIRC MASTER CONTROLLER
MINIMUM OUTPUT SYNC SPEED - 370 RPM (22%)
MAXIMUM OUTPUT SYNC SPEED - 1680 RPM (100%)*
ACCELERATION RAMP RATE TO MIN. SPEED (STARTUP) 100 RPM/SEC.
*MAXIMUM OUTPUT SYNC SPEED FURTHER LIMITED TO LIMIT MAX CORE FLOW
INCREASE OUTPUT SYNC SPEED 1 RPM - ACCELERATION RAMP RATE 1 RPM/SEC.
INCREASE OUTPUT SYNC SPEED 5 RPM - ACCELERATION RAMP RATE 1 RPM/SEC.
DECREASE OUTPUT SYNC SPEED 1 RPM - DECELERATION RAMP RATE 1 RPM/SEC.
DECREASE OUTPUT SYNC SPEED 5 RPM - DECELERATION RAMP RATE 1 RPM/SEC.
DECREASE OUTPUT SYNC SPEED 100 RPM - DECELERATION RAMP RATE 100 RPM/SEC.
SET RUNBACK MAX SPEED LIMITER
RUNBACK MAX SPEED LIMIT
DECELERATION RAMP RATE 100 RPM/SEC.
SPEED DEMAND TO 0 RPM
DECELERATION RAMP RATE 25 RPM/SEC. TO MIN. SPEED
COAST TO 0 RPM FROM MIN. SPEED
1B31-SC02A(B) ASD A(B) CONTROLLER
RMS(ASD A[B])-SHUTDOWN
H11-P602
SWITCH DEVELOPMENTS
RAISE SLOW
RMS(ASD A)
RMS(ASD B)
LOCATION: H11-P602
RMS(ASD A/B)
LOCATION: H11-P603
PUSH BUTTON
MOMENTARY CONTACTS
RAISE MEDIUM
LOWER SLOW
LOWER MEDIUM
LOWER FAST
SHUTDOWN
RMS(ASD A SHUTDOWN)
RMS(ASD B SHUTDOWN)
LOCATION: H11-P602

FOR NOTES AND REFERENCES, SEE DWG. H-19913

MPL NO. B31-1030 | ACAD2K | H19914

SOUTHERN COMPANY

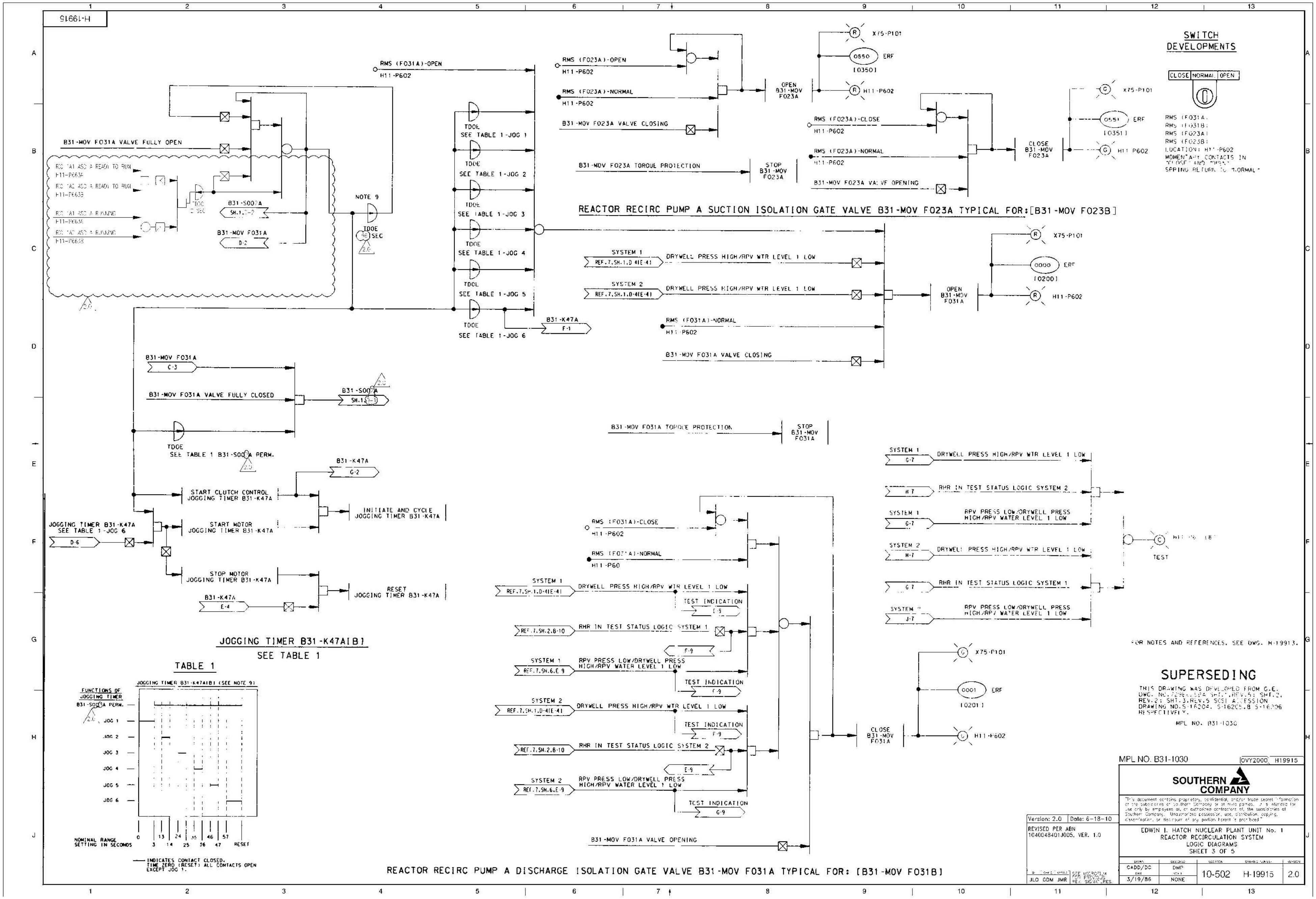
Version: 2.0 | Date: 6-18-10

REVISED PER ABN 1040048401J004, VER. 1.0

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR RECIRCULATION SYSTEM
LOGIC DIAGRAMS
SHEET 2 OF 5

BY	CHK'D	APPR'D	
JLO	GDM	JMR	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
CADD/DC	DMP	10-502	H-19914	2.0
DATE	SCALE: None			


H-19915
RMS (F031A)-OPEN
H11-P602
B31-MOV F031A VALVE FULLY OPEN
NOTE 9
TDOE
SEE TABLE 1-JOG 1
SEE TABLE 1-JOG 2
SEE TABLE 1-JOG 3
SEE TABLE 1-JOG 4
SEE TABLE 1-JOG 5
SEE TABLE 1-JOG 6
B31-K47A
F-1
RMS (F023A)-OPEN
H11-P602
RMS (F023A)-NORMAL
H11-P602
B31-MOV F023A VALVE CLOSING
OPEN B31-MOV F023A
X75-P101
ERF
H11-P602
RMS (F023A)-CLOSE
H11-P602
RMS (F023A)-NORMAL
H11-P602
B31-MOV F023A VALVE OPENING
CLOSE B31-MOV F023A
B31-MOV F023A TORQUE PROTECTION
STOP B31-MOV F023A
REACTOR RECIRC PUMP A SUCTION ISOLATION GATE VALVE B31-MOV F023A TYPICAL FOR:[B31-MOV F023B]
SWITCH DEVELOPMENTS
CLOSE NORMAL OPEN
RMS (F031A)
RMS (F031B)
RMS (F023A)
RMS (F023B)
LOCATION: H11-P602
MOMENTARY CONTACTS IN "CLOSE" AND "OPEN"
SPRING RETURN TO "NORMAL"
B31-S003A
SH.1.C-2
B31-MOV F031A
D-2
SYSTEM 1
REF.7,SH.1,D-4(E-4)
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
SYSTEM 2
REF.7,SH.1,D-4(E-4)
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
RMS (F031A)-NORMAL
H11-P602
B31-MOV F031A VALVE CLOSING
OPEN B31-MOV F031A
X75-P101
ERF
H11-P602
B31-MOV F031A
C-3
B31-MOV F031A VALVE FULLY CLOSED
B31-S003A
SH.1
TDOE
SEE TABLE 1 B31-S003A PERM.
B31-MOV F031A TORQUE PROTECTION
STOP B31-MOV F031A
B31-K47A
G-2
START CLUTCH CONTROL JOGGING TIMER B31-K47A
INITIATE AND CYCLE JOGGING TIMER B31-K47A
JOGGING TIMER B31-K47A
SEE TABLE 1-JOG 6
D-6
START MOTOR JOGGING TIMER B31-K47A
STOP MOTOR JOGGING TIMER B31-K47A
B31-K47A
E-4
RESET JOGGING TIMER B31-K47A
JOGGING TIMER B31-K47A[B]
SEE TABLE 1
TABLE 1
JOGGING TIMER B31-K47A[B] (SEE NOTE 9)
FUNCTIONS OF JOGGING TIMER
B31-S003A PERM.
JOG 1
JOG 2
JOG 3
JOG 4
JOG 5
JOG 6
NOMINAL RANGE SETTING IN SECONDS
0 3 13 14 24 25 35 36 46 47 57 RESET
— INDICATES CONTACT CLOSED.
TIME ZERO (RESET) ALL CONTACTS OPEN EXCEPT JOG 1.
RMS (F031A)-CLOSE
H11-P602
RMS (F031A)-NORMAL
H11-P60
SYSTEM 1
REF.7,SH.1,D-4(E-4)
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
TEST INDICATION
F-9
REF.7,SH.2,B-10
RHR IN TEST STATUS LOGIC SYSTEM 1
F-9
SYSTEM 1
REF.7,SH.6,E-9
RPV PRESS LOW/DRYWELL PRESS HIGH/RPV WATER LEVEL 1 LOW
TEST INDICATION
F-9
SYSTEM 2
REF.7,SH.1,D-4(E-4)
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
TEST INDICATION
F-9
REF.7,SH.2,B-10
RHR IN TEST STATUS LOGIC SYSTEM 2
E-9
SYSTEM 2
REF.7,SH.6,E-9
RPV PRESS LOW/DRYWELL PRESS HIGH/RPV WATER LEVEL 1 LOW
TEST INDICATION
G-9
B31-MOV F031A VALVE OPENING
CLOSE B31-MOV F031A
X75-P101
ERF
H11-P602
SYSTEM 1
G-7
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
H-7
RHR IN TEST STATUS LOGIC SYSTEM 2
SYSTEM 1
G-7
RPV PRESS LOW/DRYWELL PRESS HIGH/RPV WATER LEVEL 1 LOW
SYSTEM 2
H-7
DRYWELL PRESS HIGH/RPV WTR LEVEL 1 LOW
G-7
RHR IN TEST STATUS LOGIC SYSTEM 1
J-7
RPV PRESS LOW/DRYWELL PRESS HIGH/RPV WATER LEVEL 1 LOW
TEST
FOR NOTES AND REFERENCES, SEE DWG. H-19913.
SUPERSEDING
MPL NO. B31-1030
REACTOR RECIRC PUMP A DISCHARGE ISOLATION GATE VALVE B31-MOV F031A TYPICAL FOR: [B31-MOV F031B]
MPL NO. B31-1030
OVY2000 H19915
SOUTHERN COMPANY
Version: 2.0 Date: 6-18-10
REVISED PER ABN
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR RECIRCULATION SYSTEM
LOGIC DIAGRAMS
SHEET 3 OF 5
CADD/DC
3/19/86
DMP
NONE
10-502
H-19915
2.0
JLO GDM JMR

H-19916

SWITCH DEVELOPMENTS

1B31-R600 RECIRC PUMP MASTER CONTROLLER TROUBLE → A 1H11-P602 (1-29)

1B31-S002A [B] ASD A [B] TRIP WARNING → A 1H11-P602 (1-1)[(2-1)]

1B31-S002A [B] ASD A [B] FATAL FAULT → A 1H11-P602 (1-2)[(2-2)]

1B31-S002A [B] ASD A [B] PROCESS TROUBLE → A 1H11-P602 (1-7)[(2-7)]

1B31-S002A [B] ASD A [B] TROUBLE → A 1H11-P602 (1-8)[(2-8)]

1B31-S002A [B] ASD A [B] LOCAL CONTROL → A 1H11-P602 (1-14)[(2-14)]

1B31-S002A [B] ASD A [B] COOLING TROUBLE → A 1H11-P602 (1-25)[(2-25)]

1B31-S002A [B] ASD A [B] COOLING FAULT → A 1H11-P602 (1-26)[(2-26)]

1B31-K74A [B] RECIRC A [B] SPEED LIMITER #1 INHIBITED → A 1H11-P602 (1-33)[(2-33)]

RESET

RMS (PUMP VIBRATION)
RMS(RECIRC. A RUNBACK)
RMS(RECIRC. B RUNBACK)
LOCATION: H11-P602
PUSH BUTTON
MOMENTARY CONTACTS

TEST A | NORMAL | TEST C

RMS (RPT CHANNEL 1)
LOCATION: H11-P612
MAINTAINED CONTACTS

TEST B | NORMAL | TEST D

RMS (RPT CHANNEL 2)
LOCATION: H11-P613
MAINTAINED CONTACTS

B31-S002A[B] SH.1,I-5 — RPV PRESS. HIGH/RPV WATER LEVEL LOW TRIP
B31-S002A[B] SH.1,H-5 — RPV PRESS. HIGH/RPV WATER LEVEL LOW TRIP
→ A H/L H11-P602 (1-20)

B31-S002A[B] SH.1,K-5 — RMS(PUMP A[B] TRIP TEST)
B31-S002A[B] SH.1,J-5 — RMS(PUMP A[B] TRIP TEST)
→ A H11-P602 (1-05)[(2-11)]

B31-P002A[B] (W)
125 VDC NORMAL POWER B31-P002A[B]
NOTE 9 TDDO 0.6 SEC
G H11-P602 LOCKOUT BUS POWER AVAILABLE
DC CONTROL POWER TRANSFER A [B] → A H11-P602 (1-31)[(2-31)]
125 VDC ALTERNATE POWER B31-P002A[B]

B31-S002A[B] SH.1,G-10 — ASD A[B] LOCKOUT RELAY TRIPPED → A H11-P602 (1-03)[(2-03)]

SH.1,B-4 — B31-S002A[B] — ASD A[B] AUX LOCKOUT RELAY TRIPPED (NOTE 10) → A H11-P602 (1-09)[(2-09)]

B31-S002A[B] — ASD A[B] OVERLOAD → A H11-P602 (1-13)[(2-13)]

B31-S002A[B] — ASD A[B] GROUND → A H11-P602 (1-19)[(2-19)]

B31-FS N004A[B] PUMP A[B] SEAL CLOSED COOLING WATER FLOW LOW → A L H11-P602 (1-28)[(2-28)]

B31-FS N007A[B] PUMP A[B] SEAL STAGING FLOW HIGH
B31-FS N007A[B] PUMP A[B] SEAL STAGING FLOW LOW
→ A H/L H11-P602 (1-22)[(2-22)]

B31-FS N002A[B] OUTER SEAL A[B] LEAK DETECTION FLOW HIGH → A H H11-P602 (1-16)[(2-16)]

B31-LS N039A[B] PUMP MOTOR A[B] UPPER OIL LEVEL HIGH
B31-LS N040A[B] PUMP MOTOR A[B] LOWER OIL LEVEL HIGH
→ A H H11-P602 (1-10)[(2-10)]

B31-LS N039A[B] PUMP MOTOR A[B] UPPER OIL LEVEL LOW
B31-LS N040A[B] PUMP MOTOR A[B] LOWER OIL LEVEL LOW
→ A L H11-P602 (1-11)[(2-11)]

B31-TR R601 RECIRC. PUMP MOTOR A&B TEMP H11-P614 → SP H → A H H11-P602 (2-17)

MARK V RFP A TRIP S-54628
MARK V RFP B TRIP S-54628
C32 SYSTEM REF.5,G-7 — RECIRC. PUMP RUNBACK REAC. FEED PUMP A TRIP
C32 SYSTEM REF.5,G-8 — RECIRC. PUMP RUNBACK REAC. FEED PUMP B TRIP
C32-FY K628 REF.5,D-1 — RECIRC. PUMP RUNBACK RPV WATER LEVEL LOW
C32-FY K665 REF.5,D-8 — RECIRC. PUMP RUNBACK TOTAL STEAM FLOW > SINGLE RFP CAPACITY
RMS(RECIRC. A[B] RUNBACK RESET)-RESET H11-P602
RECIRC. PUMP RUNBACK N21-K630 LOW FW SUCTION PRESSURE
RECIRC. PUMP RUNBACK C32-R600 LOW RX LEVEL/STEAM FLOW
B31-MOV F031A[B] VALVE FULLY OPEN
C32-FY K618 REF.5,D-10 — FEEDWATER FLOW NORMAL NPSH INTERLOCK (NOTE 9 TDOE 15 SECS; NOTE 9 TDDO 15 SECS)
B31-S002A[B] ASD BREAKER AUX CONTACT CLOSED
→ R H11-P602
→ A H11-P602 (1-34)[(2-34)]

RECIRC. FLOW A[B] LIMIT

RECIRC. PUMP A[B] RUNBACK SPEED CONTROL

RECIRC PUMP A[B] RUNBACK SPEED LIMITED

FOR NOTES AND REFERENCES, SEE DWG. H-19913.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DWG. NO.729E625BA SHT.1,REV.5; SHT.2, REV.2; SHT.3,REV.5 SCSI ACCESSION DRAWING NO.S-16204, S-16205,& S-16206 RESPECTIVELY.

MPL NO. B31-1030 ACAD2K H19916

SOUTHERN COMPANY

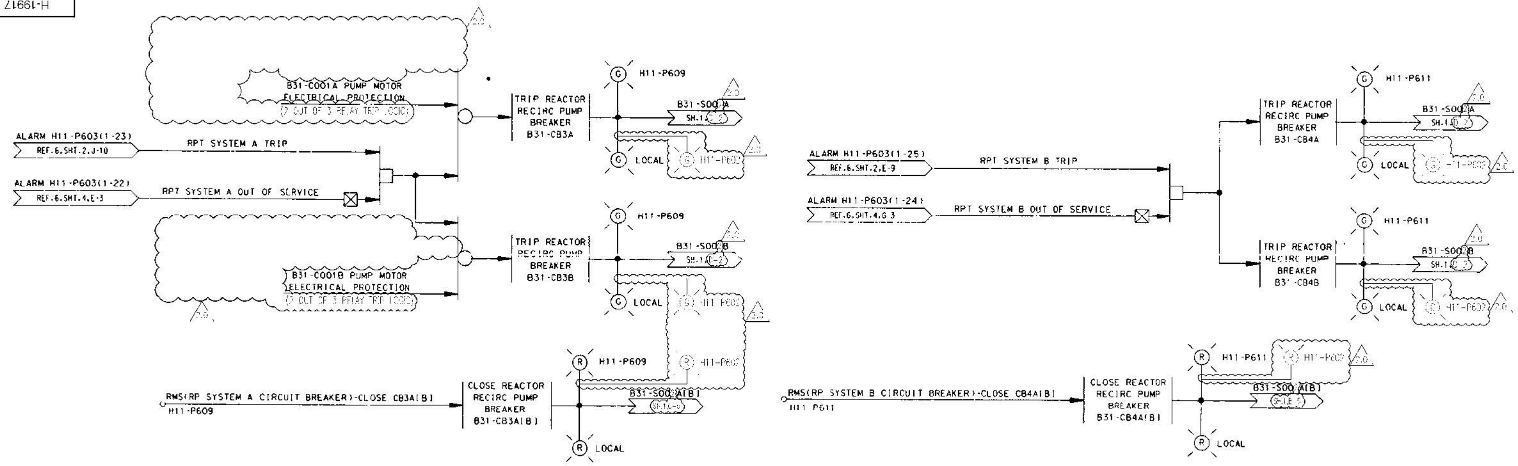
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR RECIRCULATION SYSTEM
LOGIC DIAGRAMS
SHEET 4 OF 5

Version: 9.0	Date: 6-18-10
REVISED PER ABN 1040048401J006, VER. 1.0	

BY	CHK'D	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
JLO	GDM	JMR	

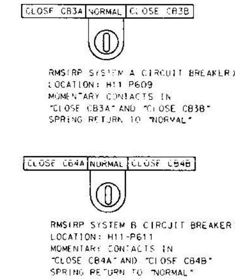
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
DC	DMP	10-502	H-19916	9.0
DATE	SCALE			
3-19-86	None			

H-19917



REACTOR RECIRCULATION PUMP B31-C001A[B] BREAKERS B31-CB3A & CB4A [B31-CB3B & CB4B]

(END OF CYCLE BREAKERS)



FOR NOTES AND REFERENCES, SEE DWG. H-19913

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E625B7 SHT.1, REV.5 SHT.2,REV.2,SHT.3,REV.5,SCSI ACCESSION DRAWING NO. S-16204, S-16205 & S-16206 RESPECTIVELY.

Version: 2.0 Date: 6-18-10
REVISED PER ABN 1040048401J007, VER. 1.0

JLO | GDM | JMR | SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

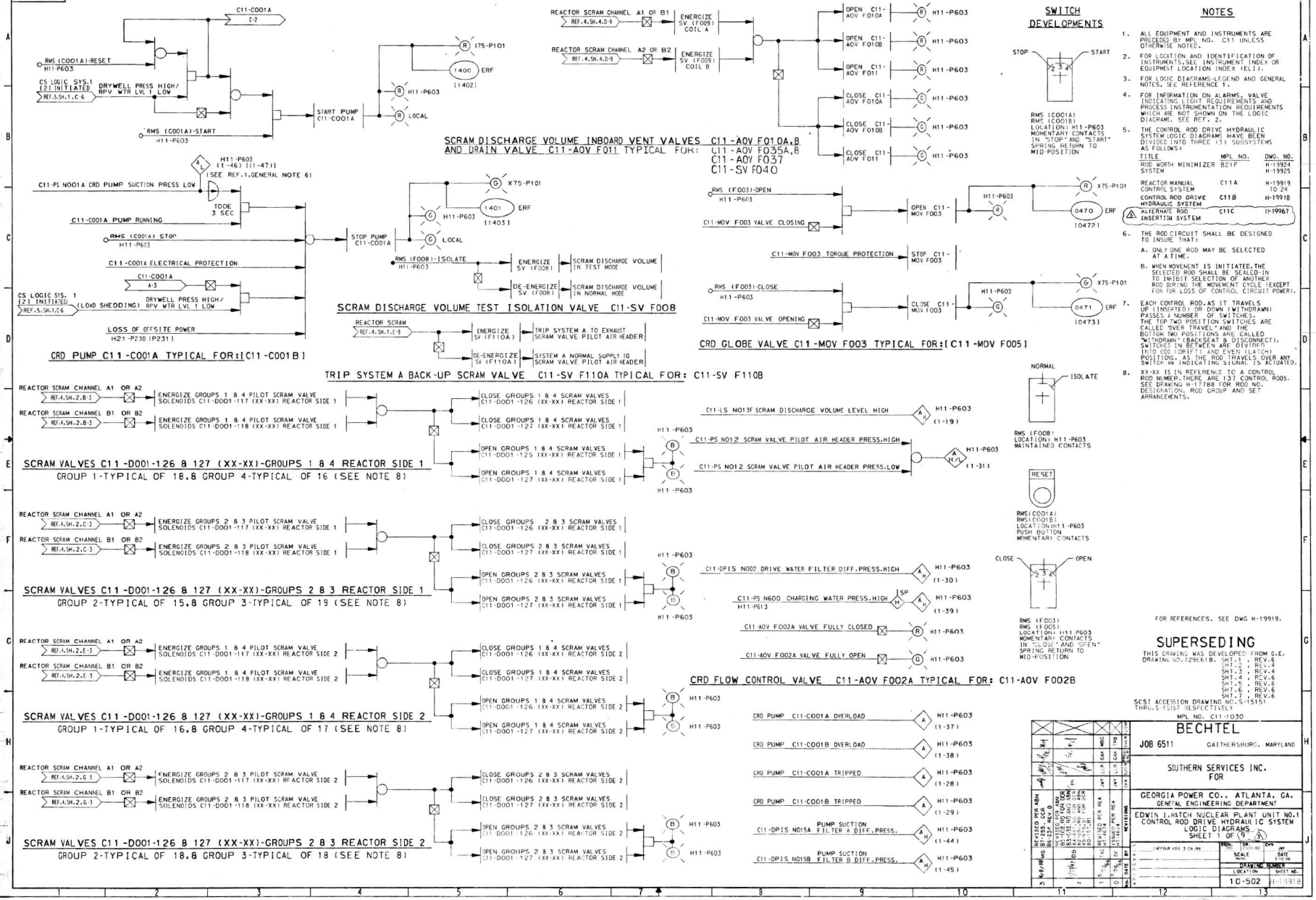
MPL NO. B31-1030 | 0VY2000 H19917

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR RECIRCULATION SYSTEM
LOGIC DIAGRAMS
SHEET 5 OF 5

DRAWN	CHECKED	LOCATION	DRAWING NUMBER	VERSION
CADD/DC	DMP	10-502	H-19917	2.0
DATE 3/19/86	SCALE None			

9166I-H



SWITCH DEVELOPMENTS

RMS (C001A)
RMS (C001B)
LOCATION: H11-P603
MOMENTARY CONTACTS IN "STOP" AND "START" SPRING RETURN TO MID-POSITION

NOTES

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO. C11 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS,SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. FOR LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES, SEE REFERENCE 1.
4. FOR INFORMATION ON ALARMS, VALVE INDICATING LIGHT REQUIREMENTS AND PROCESS INSTRUMENTATION REQUIREMENTS WHICH ARE NOT SHOWN ON THE LOGIC DIAGRAMS, SEE REF. 2.
5. THE CONTROL ROD DRIVE HYDRAULIC SYSTEM LOGIC DIAGRAMS HAVE BEEN DIVIDED INTO THREE (3) SUBSYSTEMS AS FOLLOWS:

TITLE	MPL NO.	DWG. NO.
ROD WORTH MINIMIZER SYSTEM	B21F	H-19924 H-19925
REACTOR MANUAL CONTROL SYSTEM	C11A	H-19919 TO 24
CONTROL ROD DRIVE HYDRAULIC SYSTEM	C11B	H-19918
ALTERNATE ROD INSERTION SYSTEM	C11C	H-19967

6. THE ROD CIRCUIT SHALL BE DESIGNED TO INSURE THAT:
   A. ONLY ONE ROD MAY BE SELECTED AT A TIME.
   B. WHEN MOVEMENT IS INITIATED,THE SELECTED ROD SHALL BE SEALED-IN TO INHIBIT SELECTION OF ANOTHER ROD DURING THE MOVEMENT CYCLE (EXCEPT FOR FOR LOSS OF CONTROL CIRCUIT POWER).
7. EACH CONTROL ROD,AS IT TRAVELS UP (INSERTED) OR DOWN (WITHDRAWN) PASSES A NUMBER OF SWITCHES. THE TOP TWO POSITION SWITCHES ARE CALLED "OVER TRAVEL" AND THE BOTTOM TWO POSITIONS ARE CALLED "WITHDRAWN" (BACKSEAT & DISCONNECT). SWITCHES IN BETWEEN ARE DRIFTING INTO CDD (DRIFT) AND EVEN (LATCH) POSITIONS. AS THE ROD TRAVELS OVER ANY SWITCH AN INDICATING SIGNAL IS ACTUATED.
8. XX-XX IS IN REFERENCE TO A CONTROL ROD NUMBER.THERE ARE 137 CONTROL RODS. SEE DRAWING H-17788 FOR ROD NO. DESIGNATION, ROD GROUP AND SET ARRANGEMENTS.

FOR REFERENCES, SEE DWG H-19919.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E618. SHT.1 , REV.6
SHT.2 , REV.4
SHT.3 , REV.4
SHT.4 , REV.6
SHT.5 , REV.6
SHT.6 , REV.6
SHT.7 , REV.6

SCSI ACCESSION DRAWING NO.S-15151 THRU.S-15157 RESPECTIVELY

MPL NO. C11-1030

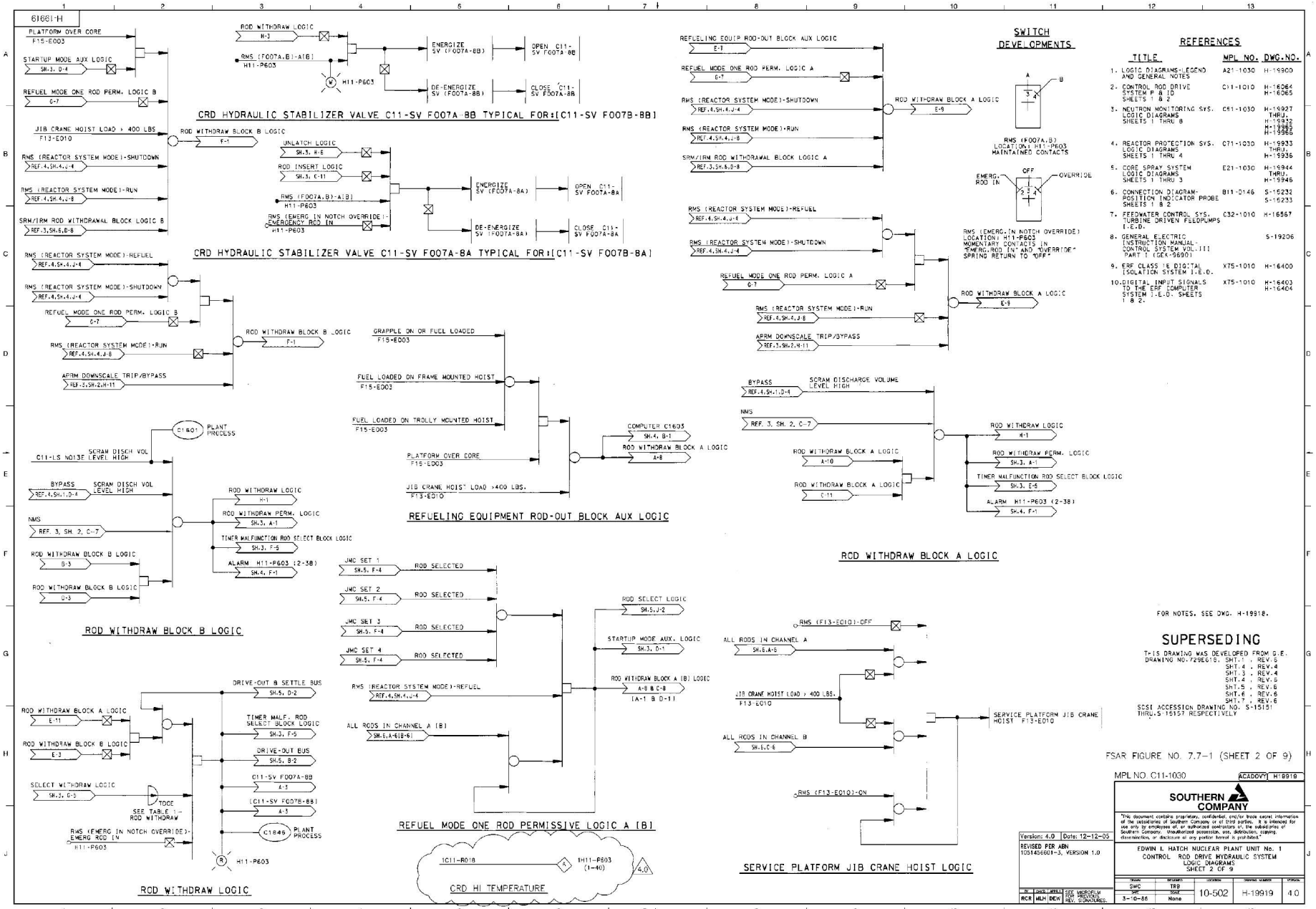
BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND

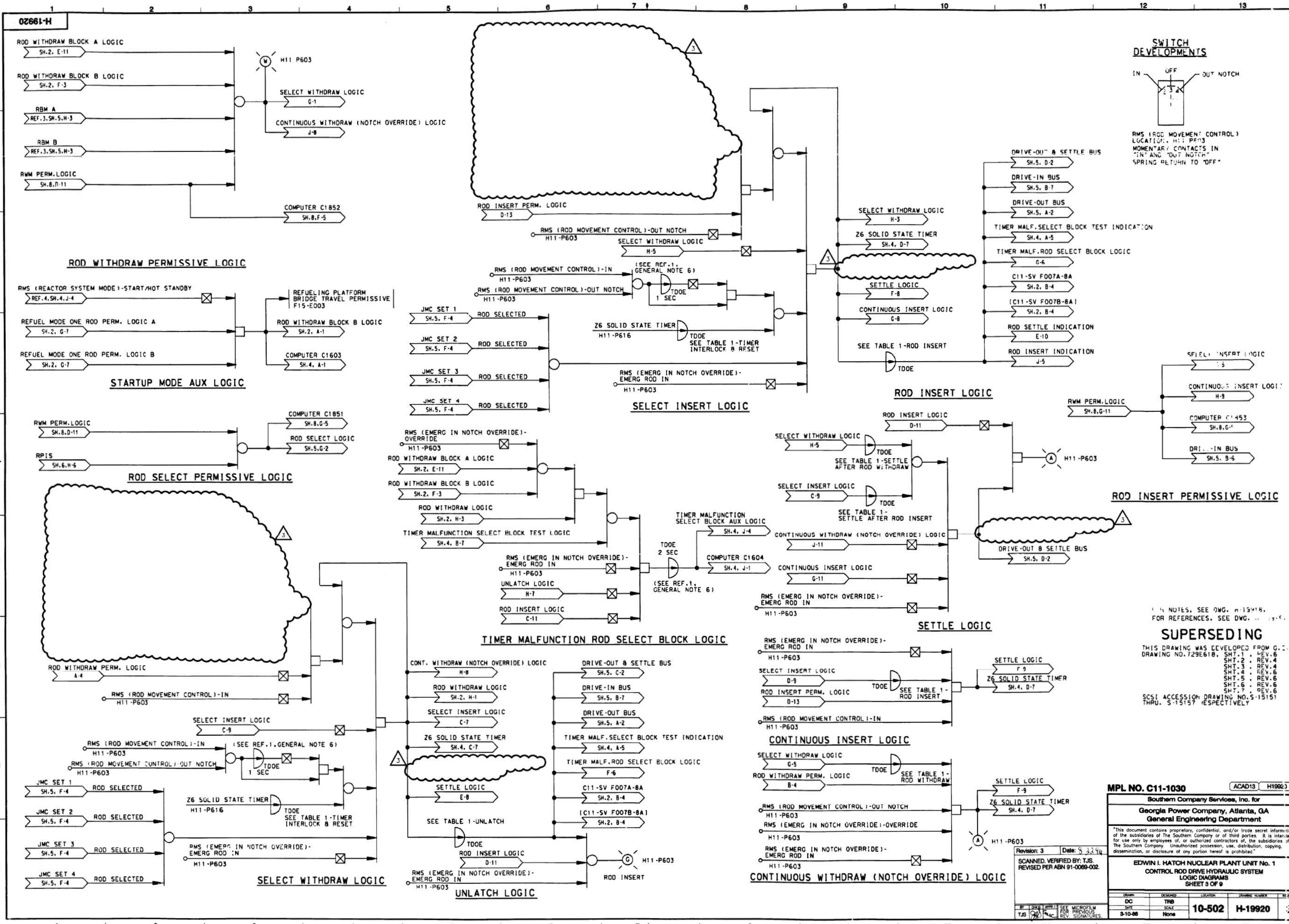
SOUTHERN SERVICES INC.
FOR

GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I.HATCH NUCLEAR PLANT UNIT NO.1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 9

DRAWING NUMBER	SHEET NO.
1C-502	H-19918


6168I-H
CRD HYDRAULIC STABILIZER VALVE C11-SV F007A-8B TYPICAL FOR:[C11-SV F007B-8B]
CRD HYDRAULIC STABILIZER VALVE C11-SV F007A-8A TYPICAL FOR:[C11-SV F007B-8A]
REFUELING EQUIPMENT ROD-OUT BLOCK AUX LOGIC
ROD WITHDRAW BLOCK A LOGIC
ROD WITHDRAW BLOCK B LOGIC
REFUEL MODE ONE ROD PERMISSIVE LOGIC A [B]
ROD WITHDRAW LOGIC
SERVICE PLATFORM JIB CRANE HOIST LOGIC
SWITCH DEVELOPMENTS
REFERENCES
SUPERSEDING
FOR NOTES, SEE DWG. H-19918.
FSAR FIGURE NO. 7.7-1 (SHEET 2 OF 9)
MPL NO. C11-1030
ACADDWG H19919
SOUTHERN COMPANY
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 2 OF 9
10-502
H-19919
4.0



[illegible] NOTES, SEE DWG. H-13918.
FOR REFERENCES, SEE DWG. [illegible]

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E618, SHT.1, REV.6
SHT.2, REV.4
SHT.3, REV.4
SHT.4, REV.6
SHT.5, REV.6
SHT.6, REV.6
SHT.7, REV.6
SCSI ACCESSION DRAWING NO.S-15151 THRU. S-15157 RESPECTIVELY

MPL NO. C11-1030 | ACAD13 | H19920

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

Revision: 3 | Date: 8 22 96
SCANNED. VERIFIED BY: TJS.
REVISED PER ABN 91-0069-002.

BY: TJS | CHKD | APPR | SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 3 OF 9

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
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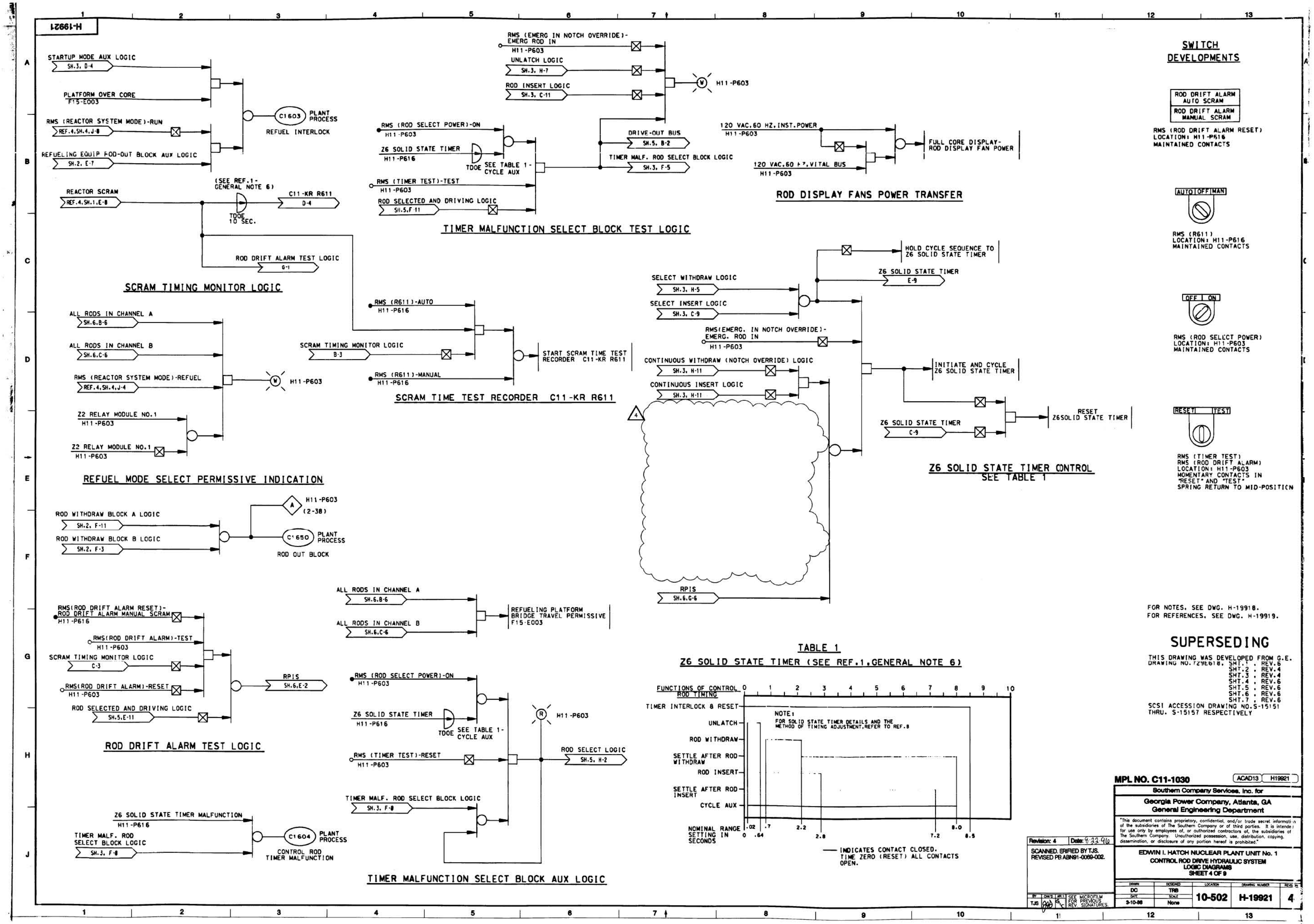
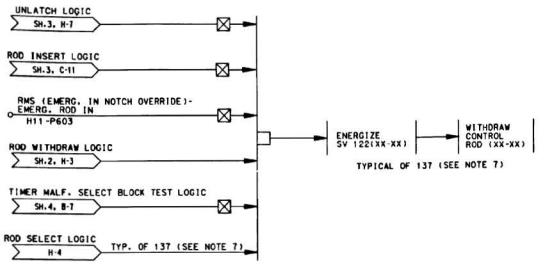
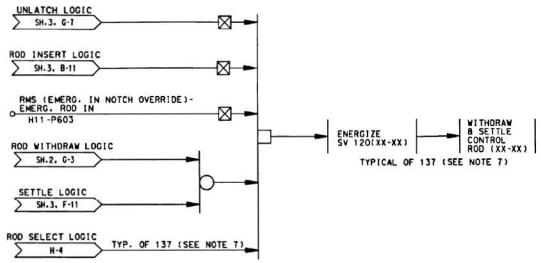
DATE: 3-10-86	SCALE: None			


H-19921
STARTUP MODE AUX LOGIC
SH.3, D-4
PLATFORM OVER CORE
F15-E003
RMS (REACTOR SYSTEM MODE)-RUN
REF.4,SH.4,J-8
REFUELING EQUIP FOD-OUT BLOCK AUX LOGIC
SH.2, E-7
C1603
PLANT PROCESS
REFUEL INTERLOCK
REACTOR SCRAM
REF.4,SH.1,E-8
(SEE REF.1-GENERAL NOTE 6)
C11-KR R611
D-4
TDOE 10 SEC.
ROD DRIFT ALARM TEST LOGIC
G-1
SCRAM TIMING MONITOR LOGIC
RMS (EMERG IN NOTCH OVERRIDE)-EMERG ROD IN
H11-P603
UNLATCH LOGIC
SH.3, H-7
ROD INSERT LOGIC
SH.3, C-11
H11-P603
RMS (ROD SELECT POWER)-ON
H11-P603
Z6 SOLID STATE TIMER
H11-P616
TDOE
SEE TABLE 1-CYCLE AUX
RMS (TIMER TEST)-TEST
H11-P603
ROD SELECTED AND DRIVING LOGIC
SH.5,F-11
DRIVE-OUT BUS
SH.5, B-2
TIMER MALF. ROD SELECT BLOCK LOGIC
SH.3, F-5
TIMER MALFUNCTION SELECT BLOCK TEST LOGIC
120 VAC,60 HZ,INST.POWER
H11-P603
120 VAC,60 HZ,VITAL BUS
H11-P603
FULL CORE DISPLAY-ROD DISPLAY FAN POWER
ROD DISPLAY FANS POWER TRANSFER
SWITCH DEVELOPMENTS
ROD DRIFT ALARM AUTO SCRAM
ROD DRIFT ALARM MANUAL SCRAM
RMS (ROD DRIFT ALARM RESET)
LOCATION: H11-P616
MAINTAINED CONTACTS
AUTO OFF MAN
RMS (R611)
LOCATION: H11-P616
MAINTAINED CONTACTS
OFF ON
RMS (ROD SELECT POWER)
LOCATION: H11-P603
MAINTAINED CONTACTS
RESET TEST
RMS (TIMER TEST)
RMS (ROD DRIFT ALARM)
LOCATION: H11-P603
MOMENTARY CONTACTS IN "RESET" AND "TEST"
SPRING RETURN TO MID-POSITION
ALL RODS IN CHANNEL A
SH.6,B-6
ALL RODS IN CHANNEL B
SH.6,C-6
RMS (REACTOR SYSTEM MODE)-REFUEL
REF.4,SH.4,J-4
H11-P603
Z2 RELAY MODULE NO.1
H11-P603
Z2 RELAY MODULE NO.1
H11-P603
REFUEL MODE SELECT PERMISSIVE INDICATION
RMS (R611)-AUTO
H11-P616
SCRAM TIMING MONITOR LOGIC
B-3
RMS (R611)-MANUAL
H11-P616
START SCRAM TIME TEST RECORDER C11-KR R611
SCRAM TIME TEST RECORDER C11-KR R611
HOLD CYCLE SEQUENCE TO Z6 SOLID STATE TIMER
Z6 SOLID STATE TIMER
E-9
SELECT WITHDRAW LOGIC
SH.3, H-5
SELECT INSERT LOGIC
SH.3, C-9
RMS(EMERG. IN NOTCH OVERRIDE)-EMERG. ROD IN
H11-P603
CONTINUOUS WITHDRAW (NOTCH OVERRIDE) LOGIC
SH.3, H-11
CONTINUOUS INSERT LOGIC
SH.3, H-11
INITIATE AND CYCLE Z6 SOLID STATE TIMER
RESET Z6SOLID STATE TIMER
Z6 SOLID STATE TIMER
C-9
Z6 SOLID STATE TIMER CONTROL
SEE TABLE 1
ROD WITHDRAW BLOCK A LOGIC
SH.2, F-11
ROD WITHDRAW BLOCK B LOGIC
SH.2, F-3
H11-P603
(2-38)
C1650
PLANT PROCESS
ROD OUT BLOCK
RPIS
SH.6,G-6
ALL RODS IN CHANNEL A
SH.6,B-6
ALL RODS IN CHANNEL B
SH.6,C-6
REFUELING PLATFORM BRIDGE TRAVEL PERMISSIVE
F15-E003
RMS(ROD DRIFT ALARM RESET)-ROD DRIFT ALARM MANUAL SCRAM
H11-P616
RMS(ROD DRIFT ALARM)-TEST
H11-P603
SCRAM TIMING MONITOR LOGIC
C-3
RMS(ROD DRIFT ALARM)-RESET
H11-P603
ROD SELECTED AND DRIVING LOGIC
SH.5,E-11
RPIS
SH.6,E-2
ROD DRIFT ALARM TEST LOGIC
RMS (ROD SELECT POWER)-ON
H11-P603
Z6 SOLID STATE TIMER
H11-P616
TDOE
SEE TABLE 1-CYCLE AUX
H11-P603
RMS (TIMER TEST)-RESET
H11-P603
ROD SELECT LOGIC
SH.5, H-2
TIMER MALF. ROD SELECT BLOCK LOGIC
SH.3, F-8
Z6 SOLID STATE TIMER MALFUNCTION
H11-P616
TIMER MALF. ROD SELECT BLOCK LOGIC
SH.3, F-8
C1604
PLANT PROCESS
CONTROL ROD TIMER MALFUNCTION
TIMER MALFUNCTION SELECT BLOCK AUX LOGIC
TABLE 1
Z6 SOLID STATE TIMER (SEE REF.1,GENERAL NOTE 6)
FUNCTIONS OF CONTROL ROD TIMING
TIMER INTERLOCK & RESET
UNLATCH
ROD WITHDRAW
SETTLE AFTER ROD WITHDRAW
ROD INSERT
SETTLE AFTER ROD INSERT
CYCLE AUX
NOMINAL RANGE SETTING IN SECONDS
NOTE:
FOR SOLID STATE TIMER DETAILS AND THE METHOD OF TIMING ADJUSTMENT,REFER TO REF.8
INDICATES CONTACT CLOSED. TIME ZERO (RESET) ALL CONTACTS OPEN.
FOR NOTES, SEE DWG. H-19918.
FOR REFERENCES, SEE DWG. H-19919.
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E618, SHT.1, REV.6
SHT.2, REV.4
SHT.3, REV.4
SHT.4, REV.6
SHT.5, REV.6
SHT.6, REV.6
SHT.7, REV.6
SCSI ACCESSION DRAWING NO.S-15151 THRU. S-15157 RESPECTIVELY
MPL NO. C11-1030
ACAD13
H19921
Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 4 OF 9
Revision: 4
SCANNED. ERIFIED BY TJS.
REVISED PB ABN91-0069-002.
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
DC
TRB
3-10-86
None
10-502
H-19921
4

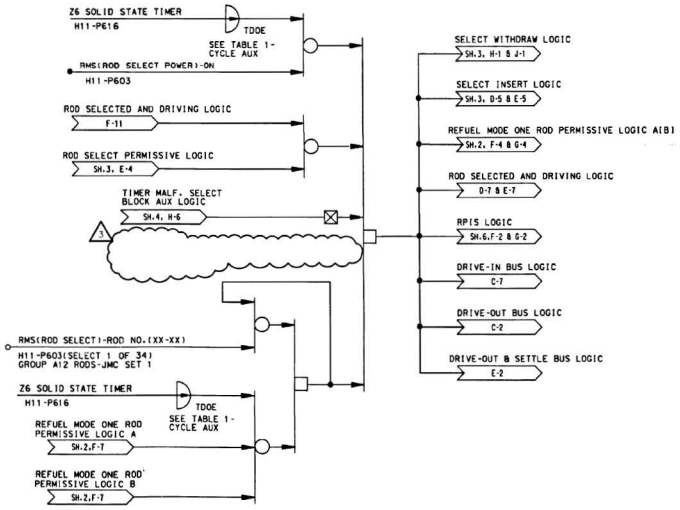
H-19922



DRIVE-OUT BUS LOGIC

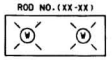


DRIVE-OUT & SETTLE BUS LOGIC

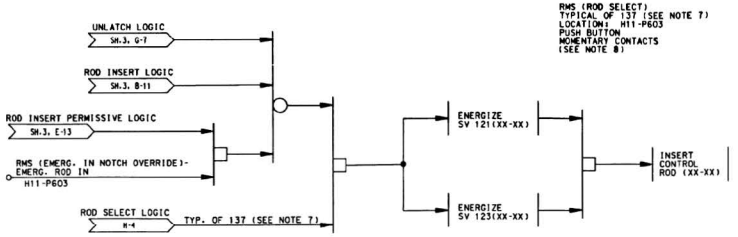


ROD SELECT LOGIC GROUP A12 RODS-JMC SET 1 TYPICAL FOR: GROUP A34 RODS-JMC SET 2 (SELECT 1 OF 34)
GROUP B12 RODS-JMC SET 3 (SELECT 1 OF 35)
GROUP B34 RODS-JMC SET 4 (SELECT 1 OF 34)

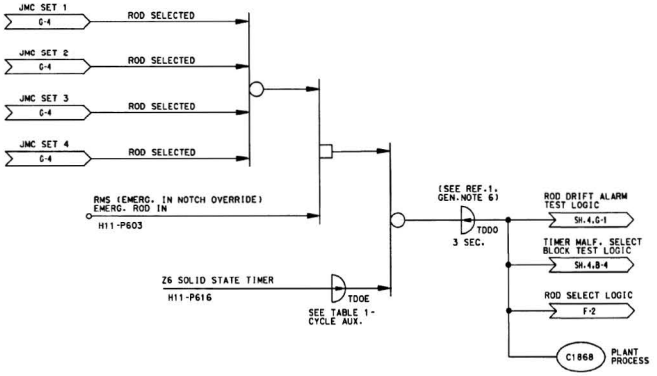
SWITCH DEVELOPMENTS



RMS (ROD SELECT)
TYPICAL OF 137 (SEE NOTE 7)
LOCATION: H11-P603
PUSH BUTTON
MOMENTARY CONTACTS
(SEE NOTE 8)



DRIVE-IN BUS LOGIC



ROD SELECTED AND DRIVING LOGIC

FOR NOTES, SEE DWG. H-19918.
FOR REFERENCES, SEE DWG. H-19919.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E618, SHT.1 , REV.6
SHT.2 , REV.4
SHT.3 , REV.4
SHT.4 , REV.6
SHT.5 , REV.6
SHT.6 , REV.6
SHT.7 , REV.6

SCSI ACCESSION DRAWING NO. S-15151 THRU.S-15157 RESPECTIVELY

Revision: 3 Date: 5 23 96
SCANNED, VERIFIED BY: TJS.
REVISED PER ABN91-0069-002.

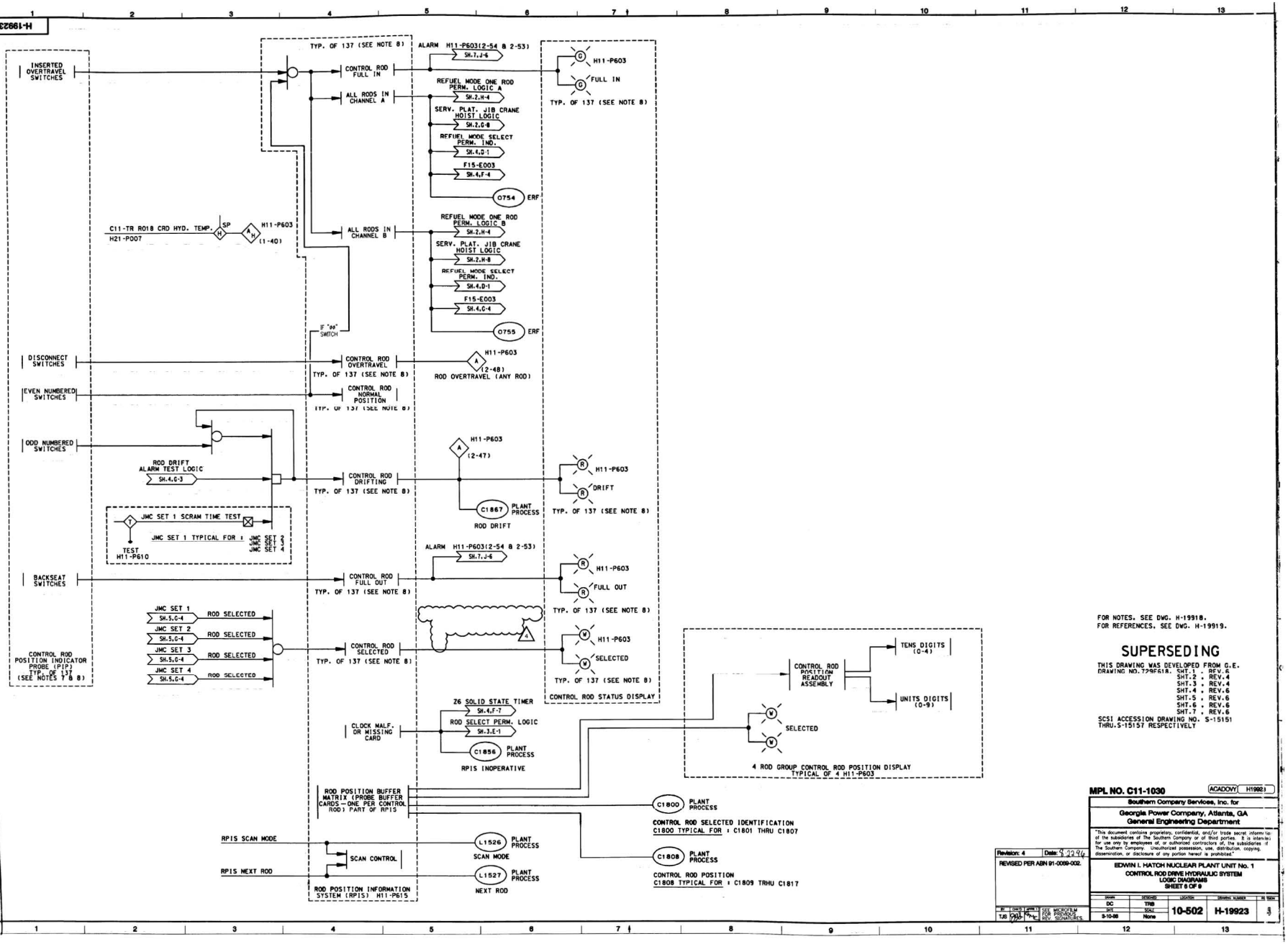
BY	CHK'D	APP'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES
TJS	[illegible]	[illegible]	

MPL NO. C11-1030 ACAD15 H19922

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 5 OF 9

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
DC	TRB	10-502	H-19922	3
DATE 3-10-88	SCALE None			



FOR NOTES, SEE DWG. H-19918.
FOR REFERENCES, SEE DWG. H-19919.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729F818, SHT. 1 , REV. 6
SHT. 2 , REV. 4
SHT. 3 , REV. 4
SHT. 4 , REV. 6
SHT. 5 , REV. 6
SHT. 6 , REV. 6
SHT. 7 , REV. 6

SCSI ACCESSION DRAWING NO. S-15151 THRU S-15157 RESPECTIVELY

Revision: 4 Date: 3 22 96
REVISED PER ABN 91-0099-002.

MPL NO. C11-1030 ACADDWG H19923

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

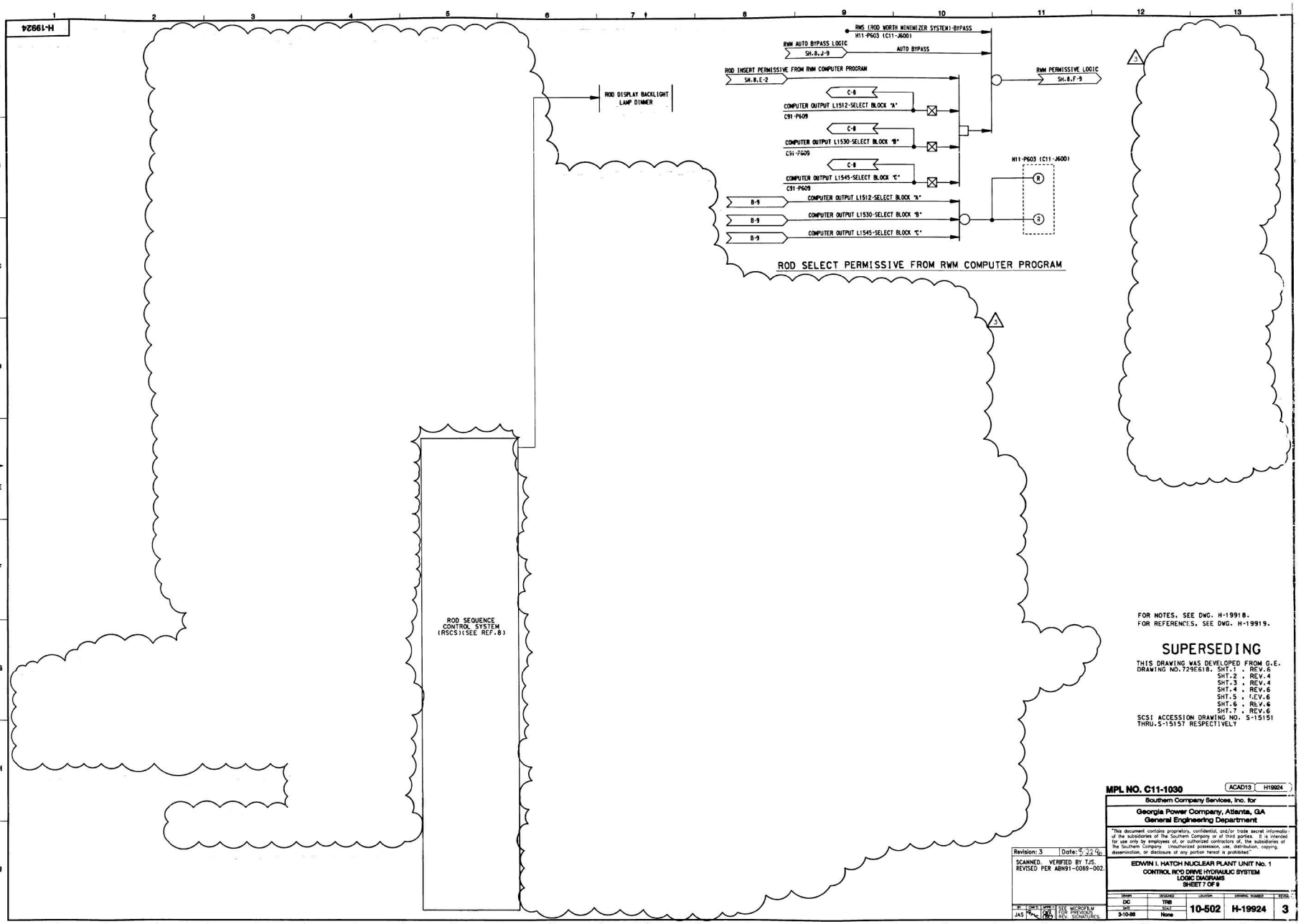
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 6 OF 9

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
DC	TNB	10-502	H-19923	4
DATE	SCALE			
8-10-88	None			

BY CHK'D APP'D
TJB

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES

H-19924



FOR NOTES. SEE DWG. H-19918.
FOR REFERENCES. SEE DWG. H-19919.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E618. SHT.1 . REV.6
SHT.2 . REV.4
SHT.3 . REV.4
SHT.4 . REV.6
SHT.5 . REV.6
SHT.6 . REV.6
SHT.7 . REV.6

SCSI ACCESSION DRAWING NO. S-15151 THRU.S-15157 RESPECTIVELY

Revision: 3 Date: 5/22/96

SCANNED. VERIFIED BY TJS. REVISED PER ABN91-0069-002.

BY JAS CHK'D APPR'D SEE MICROFILM FOR PREVIOUS REV. SIGNATURES

MPL NO. C11-1030 ACAD13 H19924

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 7 OF 9

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
DC	TRB	10-502	H-19924	3
DATE 3-10-88	SCALE None			

H-19925

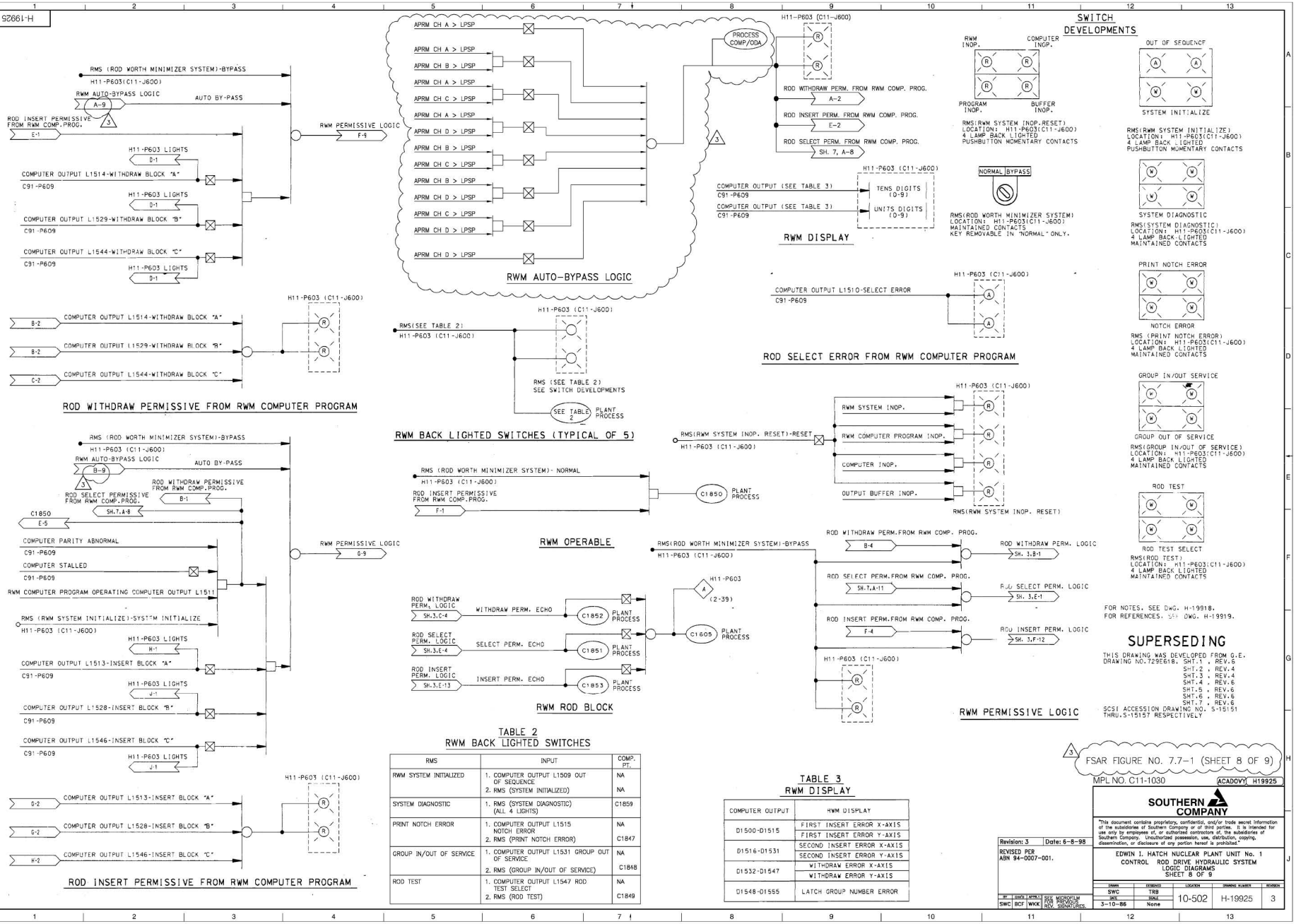


TABLE 2
RWM BACK LIGHTED SWITCHES

RMS	INPUT	COMP. PT.
RWM SYSTEM INITIALIZED	1. COMPUTER OUTPUT L1509 OUT OF SEQUENCE	NA
	2. RMS (SYSTEM INITIALIZED)	NA
SYSTEM DIAGNOSTIC	1. RMS (SYSTEM DIAGNOSTIC) (ALL 4 LIGHTS)	C1859
PRINT NOTCH ERROR	1. COMPUTER OUTPUT L1515 NOTCH ERROR	NA
	2. RMS (PRINT NOTCH ERROR)	C1847
GROUP IN/OUT OF SERVICE	1. COMPUTER OUTPUT L1531 GROUP OUT OF SERVICE	NA
	2. RMS (GROUP IN/OUT OF SERVICE)	C1848
ROD TEST	1. COMPUTER OUTPUT L1547 ROD TEST SELECT	NA
	2. RMS (ROD TEST)	C1849

TABLE 3
RWM DISPLAY

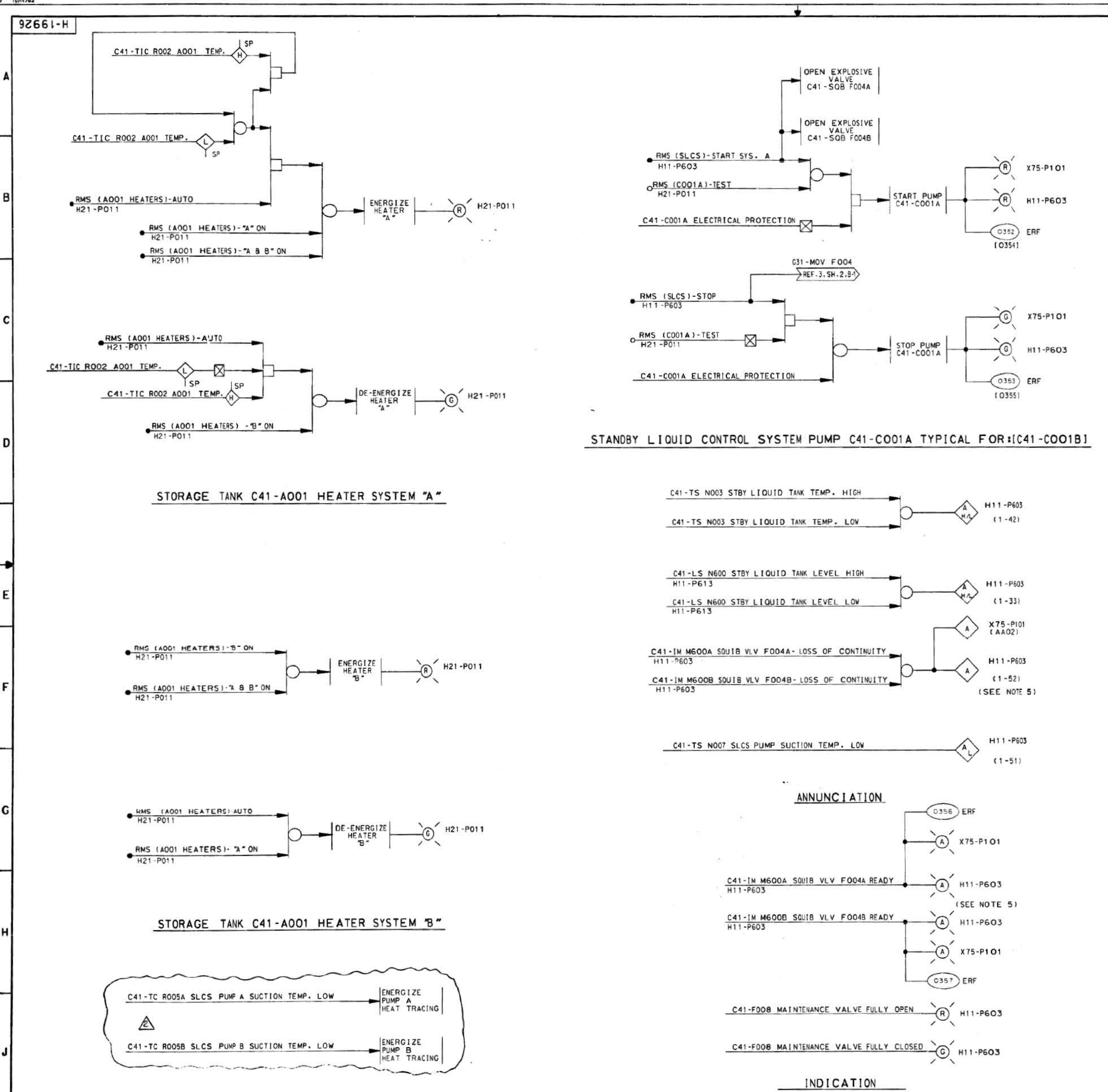
COMPUTER OUTPUT	RWM DISPLAY
D1500-D1515	FIRST INSERT ERROR X-AXIS
	FIRST INSERT ERROR Y-AXIS
D1516-D1531	SECOND INSERT ERROR X-AXIS
	SECOND INSERT ERROR Y-AXIS
D1532-D1547	WITHDRAW ERROR X-AXIS
	WITHDRAW ERROR Y-AXIS
D1548-D1555	LATCH GROUP NUMBER ERROR

Revision: 3	Date: 6-8-98
REVISED PER ASN 94-0007-001.	

BY	CHK'D	APP'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
SWC	BCF	WKK	

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
CONTROL ROD DRIVE HYDRAULIC SYSTEM
LOGIC DIAGRAMS
SHEET 8 OF 9

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
SWC	TRB	10-502	H-19925	3
DATE	SCALE			
3-10-86	None			



SWITCH DEVELOPMENTS

NOTES

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO.C41 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS ,SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. FOR LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES.SEE REFERENCE 1.
4. FOR INFORMATION ON ALARMS,VALVE INDICATING LIGHT REQUIREMENTS AND PROCESS INSTRUMENTATION REQUIREMENTS WHICH ARE NOT SHOWN ON THE LOGIC DIAGRAMS. SEE REFERENCE 2.
5. CONTINUITY INDICATING LIGHT IS ON WHEN IGNITION CIRCUIT HAS CONTINUITY THROUGH SQUIB CIRCUITS.ANNUNCIATOR TRIPS AND LIGHT GOES OUT UPON LOSS OF CONTINUITY IN IGNITION CIRCUIT. CONTINUITY MONITOR CIRCUIT SHALL BE CURRENT LIMITED AND WIRED TO PREVENT ACCIDENTAL FIRING OF EXPLOSIVE VALVES.

REFERENCES

	TITLE	MPL NO.	DWG.NO.
1.	LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES	A21-1030	H-19900
2.	STANDBY LIQUID CONTROL SYSTEM P&ID	C41-1010	H-16061
3.	REACTOR WATER CLEAN-UP SYSTEM LOGIC DIAGRAMS SHEETS 1 AND 2	G31-1030	H-19963 H-19964
4.	ERF MULTIPLEXER SYSTEM I.E.D.	X75-1010	H-16401
5.	ANNUNCIATOR SIGNALS TO TSC I.E.D.	X75-1010	H-16402
6.	DIGITAL INPUT SIGNALS TO THE ERF COMPUTER SYSTEM I.E.D. SH.2 OF 15.	X75-1010	H-16404

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.919D694BA, SHT.1 , REV.3
SCSI ACCESSION DRAWING NO.S-15159

MPL NO. C41-1030

NO.	DATE	BY	REVISIONS	CHK	SUPV	PROJ. ENG'R	ENG'R CLIENT
2	4/6/98	BCL	REVISED PER ABN 87-262, NO DCR	[illegible]	[illegible]	[illegible]	RSR
1	1/26/87	BEW	REVISED PER ABN 84-528 SUPP.O, ABN 84-503 SUPP.O FOR DCR 80-157 REV.1	JWY	LLR / RHB	FHM	GM
0	3/12/86	BEW	ISSUED PER REA HT-4674	MEB	JWY RHB	GAK	DEF

BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND

SOUTHERN SERVICES INC.
FOR

GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I.HATCH NUCLEAR PLANT UNIT NO.1
STANDBY LIQUID CONTROL SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 1

APPROVALS

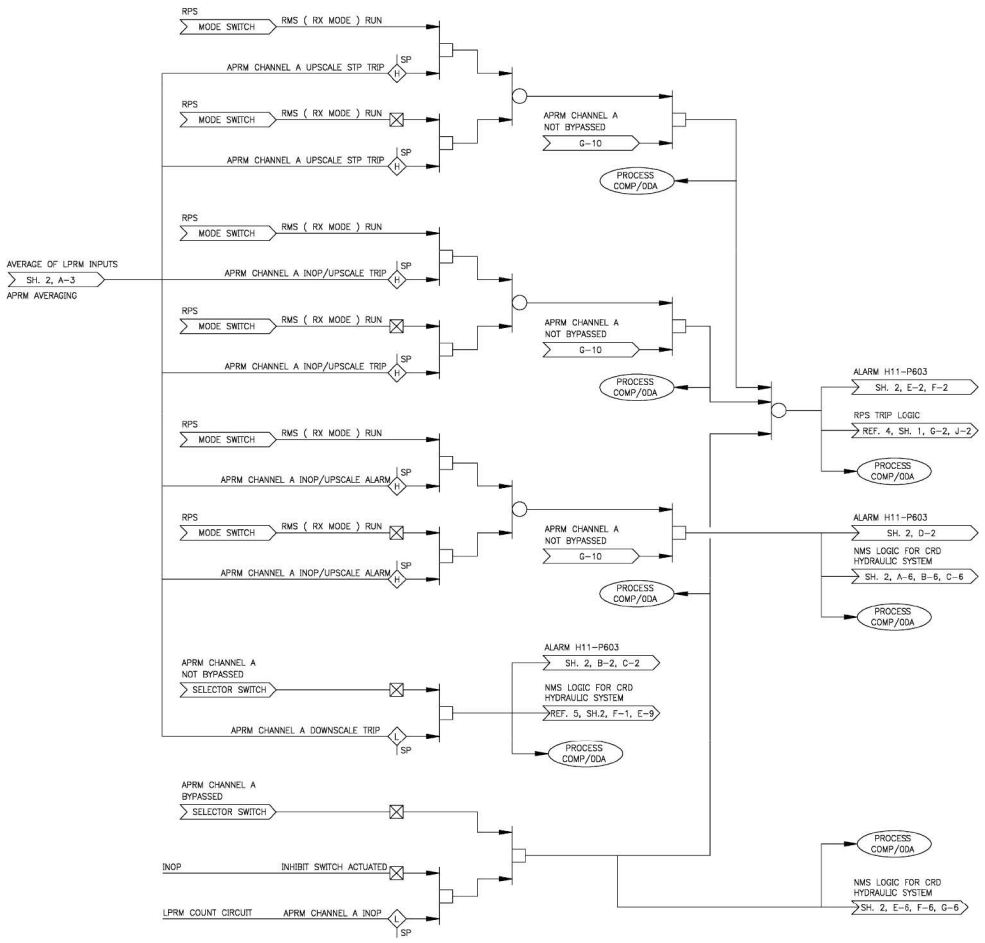
DSGN.	DR.	CHK.
RHB	CADD/BEW	MEB

SCALE: NONE
DATE: 11-19-85

DRAWING NUMBER

LOCATION	SHEET NO.
10-502	H-19926

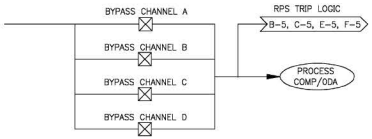
H-19927



C51-K615A POWER RANGE NEUTRON MONITOR CHANNEL A
TYPICAL FOR 4

SWITCH DEVELOPMENTS

BYPASS SELECTOR



RMS (APRM CHANNELS BYPASS SELECTOR)

NOTES:

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO. C51 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. DELETED
4. DELETED
5. DELETED
6. DELETED
7. DELETED
8. DELETED
9. DELETED
10. DELETED
11. DELETED
12. DELETED
13. ONLY IRM CHANNEL A IS SHOWN, TYP. FOR CHANNEL B THRU H. ANY CHANNEL WILL PROVIDE INPUT TO THE COMPUTER POINT.
14. ONLY IRM CHANNEL A IS SHOWN, TYP. FOR CHANNEL B THRU H. EACH CHANNEL HAS AN INDIVIDUAL LIGHT.
15. ONLY SRM CHANNEL A IS SHOWN, TYP. FOR CHANNEL B, C, & D. ANY CHANNEL WILL PROVIDE INPUT TO THE COMPUTER POINT.
16. ONLY SRM CHANNEL A IS SHOWN, TYP. FOR CHANNEL B, C, & D. EACH CHANNEL HAS AN INDIVIDUAL LIGHT.
17. COMPUTER INPUT C1569 IS FOR IRM TRIP AUXILIARY UNIT A ONLY. THE OTHER INPUTS ARE:

UNIT		UNIT	
B	C1570	E	C1573
C	C1571	F	C1574
D	C1572	G	C1575
		H	C1576

18. DELETED
19. DELETED
20. DELETED

TITLE:

A.	START-UP RANGE NEUTRON MONITORING SYSTEM	C51A	H-19929 H-19930
B.	POWER RANGE NEUTRON MONITORING SYSTEM	C51B	H-19927,8 H-19931,2
C.	START-UP RANGE / INTERMEDIATE RANGE DETECTOR DRIVE CONTROL SYSTEM	C51C	H-19966
D.	TRAVERSING IN-CORE PROBE SYSTEM	C51D	H-19965

21. ERF COMPUTER INPUT 1100 IS FOR SRM CHANNEL A ONLY. THIS COMPUTER INPUT IS NOT APPLICABLE FOR THE IRM CHANNELS A, B, C, D, E, F, G AND H.
THE OTHER INPUTS ARE: SRM CHANNEL B 1101, SRM CHANNEL C 1102, SRM CHANNEL D 1103
22. ERF COMPUTER INPUT 1104 IS FOR SRM CHANNEL A ONLY. THIS COMPUTER INPUT IS NOT APPLICABLE FOR THE IRM CHANNELS A, B, C, D, E, F, G AND H.
THE OTHER INPUTS ARE: SRM CHANNEL B 1105, SRM CHANNEL C 1106, SRM CHANNEL D 1107
23. PLANT PROCESS COMPUTER POINTS P1500 AND P1501 ARE COMMON FOR ALL FOUR CHANNELS A, B, C, AND D. LOGIC INPUTS FROM CHANNELS B, C, AND D ARE SIMILAR TO THOSE FROM CHANNEL A. SEE TABLE 9 ON DRAWING NO. H-19966 FOR "TIP CORE TOP ENABLE" AND "TIP POSITION PULSE ENABLE" COMPUTER ID NOS. FROM EACH CHANNEL.

FSAR FIGURE NO. 7.5-20 (SHEET 1 OF 8)

C51-1030 ACAD14 H19927

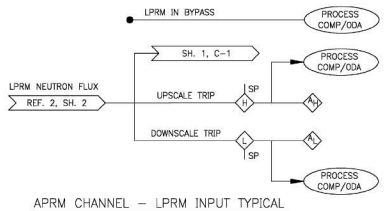
Revision: 4	Date: 6-8-98
REDRAWN PER ABN 94-0007-001.	

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAM
SHEET 1 OF 8

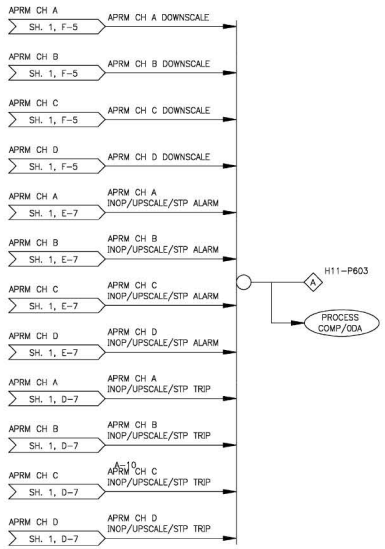
BY	CHK'D	APP'D	SCE MICROFILM FOR PREVIOUS REV. SIGNATURES.
SWC	BCF	WKK	

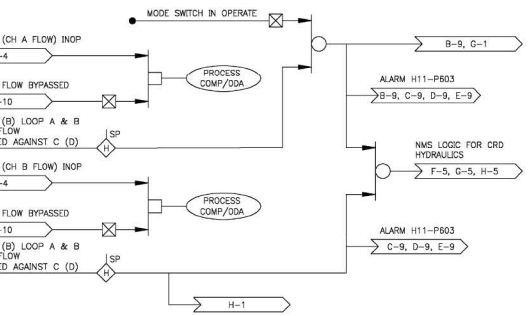
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
LEB/SWC	MEB	10-502	H-19927	4
DATE	SCALE			
3-27-85	None			

H-19928

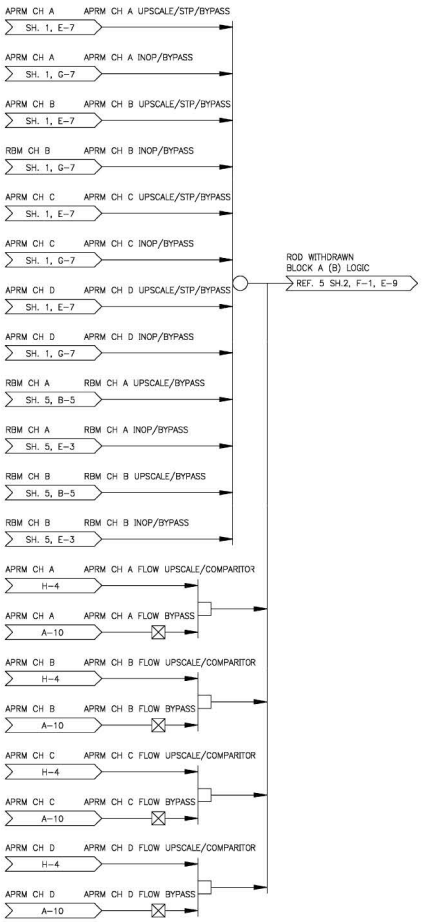


APRM CHANNEL – LPRM INPUT TYPICAL

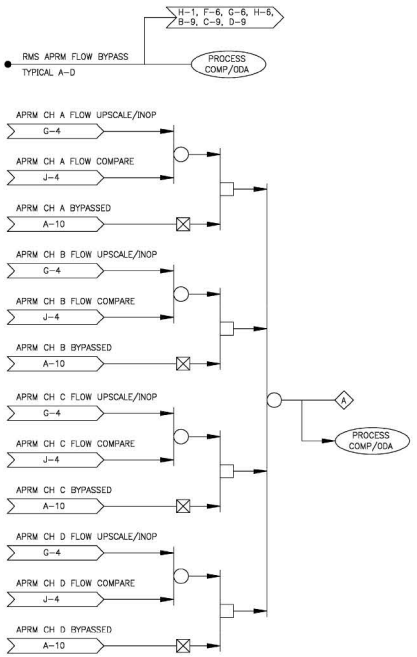




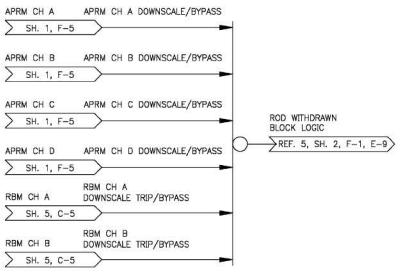
APRM A FLOW: TYPICAL FOR APRM B, C & D



NMS LOGIC A (B) FOR CRD HYDRAULIC SYSTEM



NMS LOGIC FOR CRD HYDRAULIC SYSTEM



APRM DOWNSCALE TRIP/BYPASS LOGIC FOR CRD HYDRAULIC SYSTEM

FOR NOTES SEE DWG. H-19927
FOR REFERENCES SEE DWG. H-19931

FSAR FIGURE NO. 7.5-20 (SHEET 2 OF 8)

MPL NO. C51-1030 ACAD14 H19928

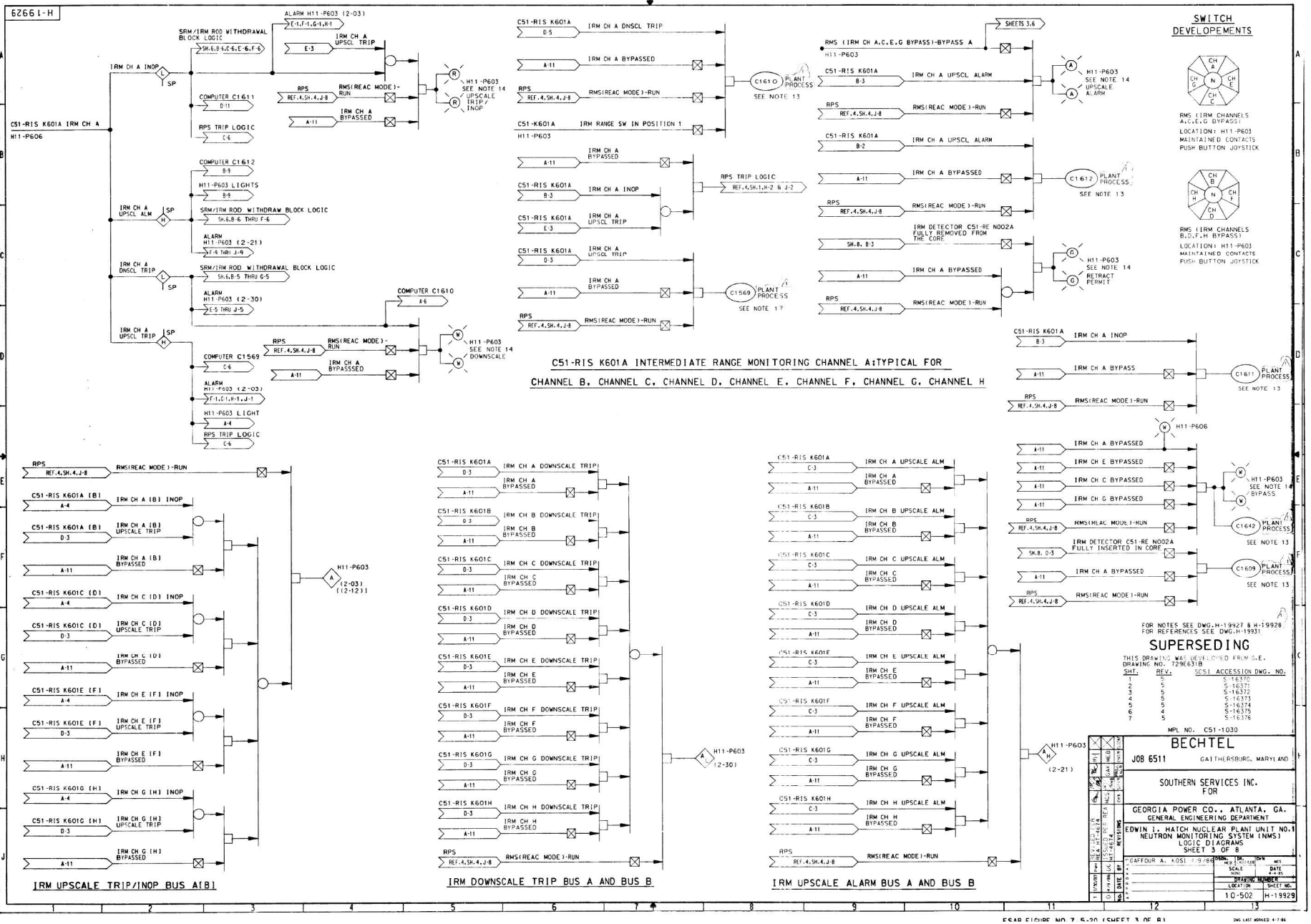
Revision: 3	Date: 6-8-98
REDRAWN PER ABN 94-0007-001.	

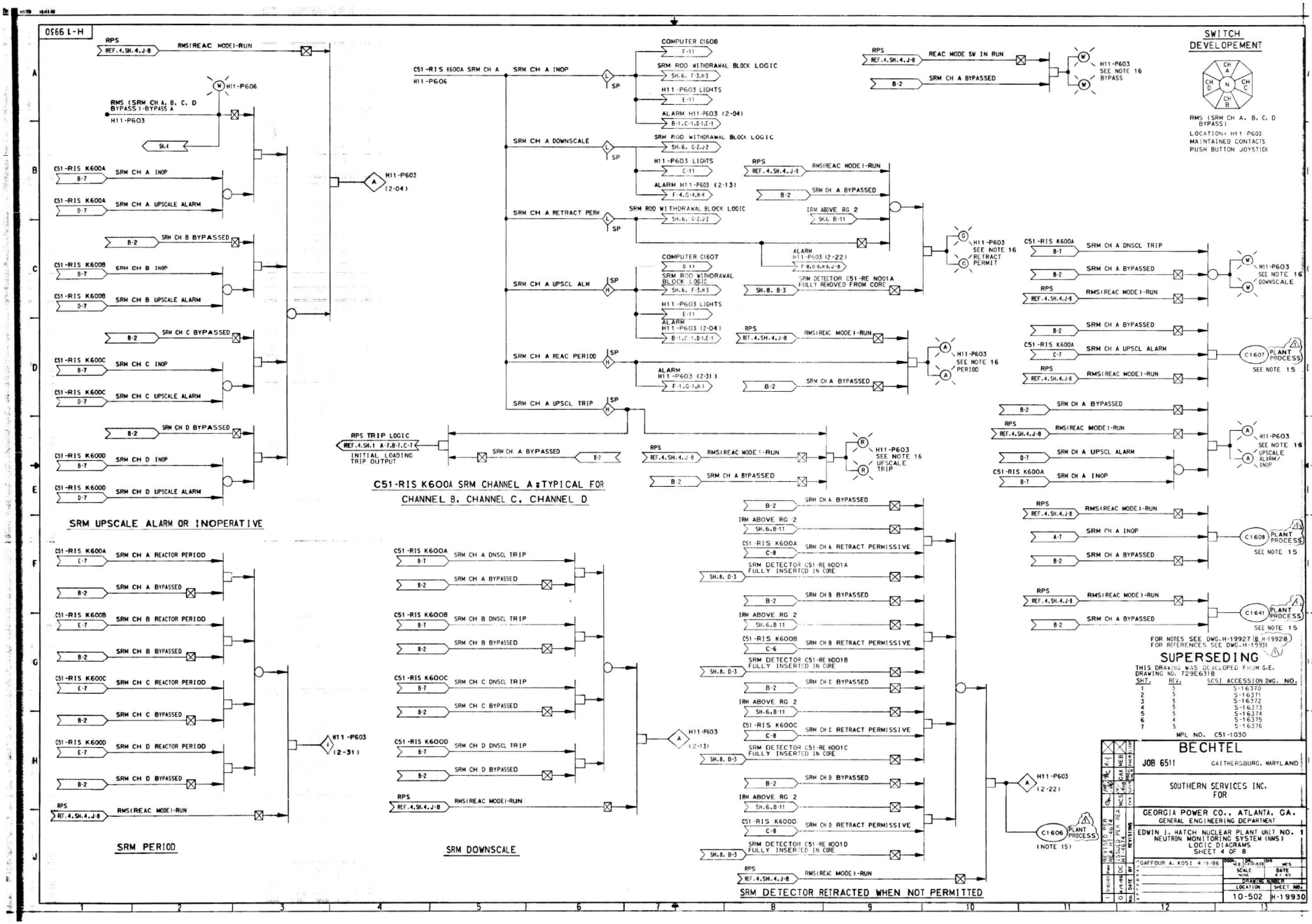
BY	CHK'D	APP'D	SIGS. MICROFILM FOR PREVIOUS REV. SIGNATURES.
SWC	BCF	WKK	

SOUTHERN COMPANY

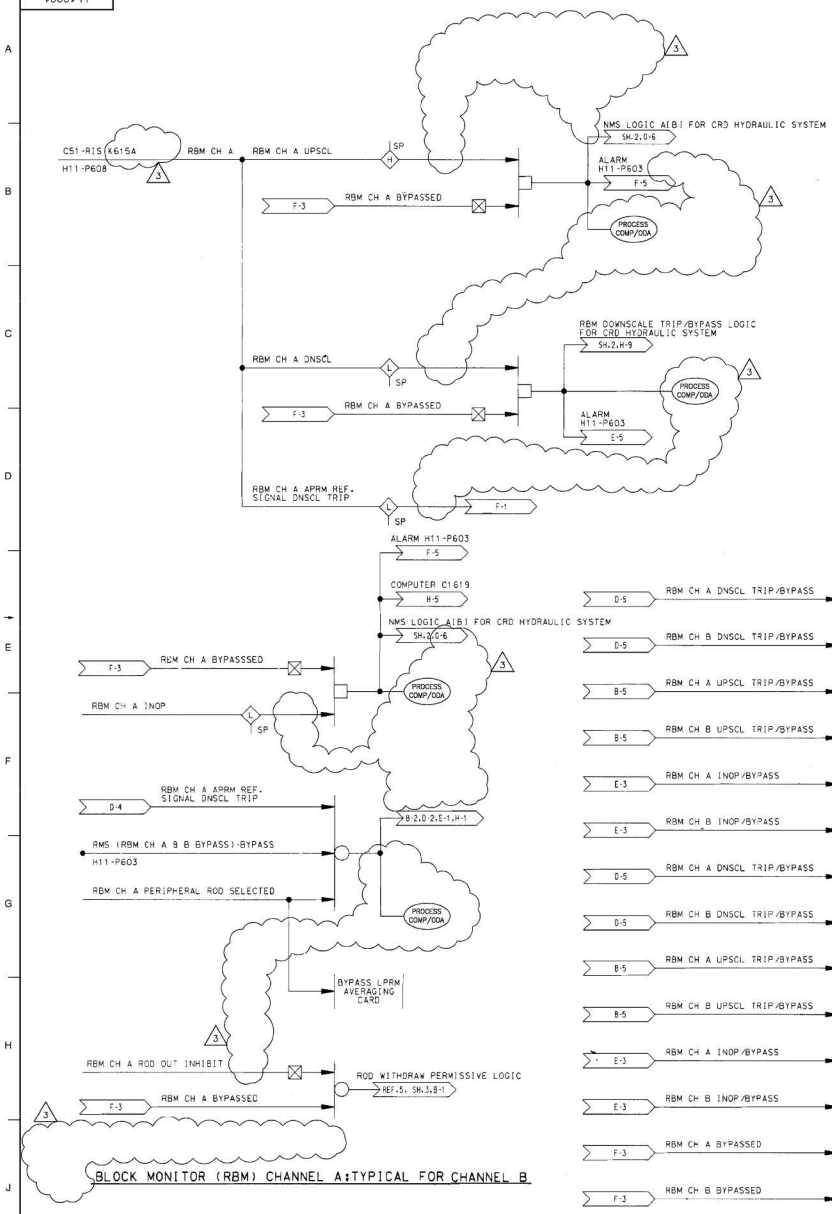
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAM
SHEET 2 OF 8

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
LEB/SWC	MEB	10-502	H-19928	3
DATE	SCALE			
3-28-85	None			

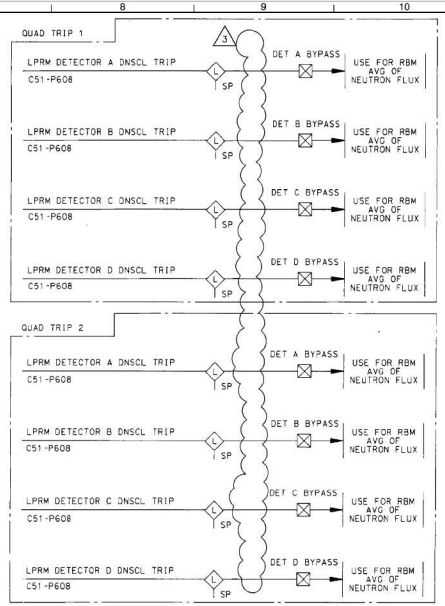

H-19929
C51-RIS K601A IRM CH A
H11-P606
IRM CH A INOP
SP
SRM/IRM ROD WITHDRAWAL BLOCK LOGIC
SH.6,B-6,C-6,E-6,F-6
ALARM H11-P603 (2-03)
E-1,F-1,G-1,H-1
IRM CH A UPSCL TRIP
E-3
COMPUTER C1611
D-11
RPS TRIP LOGIC
C-6
RPS
REF.4,SH.4,J-8
RMS(REAC MODE)-RUN
IRM CH A BYPASSED
A-11
H11-P603 SEE NOTE 14 UPSCALE TRIP/INOP
IRM CH A UPSCL ALM
H
SRM/IRM ROD WITHDRAW BLOCK LOGIC
SH.6,B-6 THRU F-6
COMPUTER C1612
B-9
H11-P603 LIGHTS
ALARM H11-P603 (2-21)
F-9 THRU J-9
IRM CH A DNSCL TRIP
SRM/IRM ROD WITHDRAWAL BLOCK LOGIC
SH.6,B-5 THRU G-5
ALARM H11-P603 (2-30)
E-5 THRU J-5
IRM CH A UPSCL TRIP
COMPUTER C1610
A-6
COMPUTER C1569
C-6
ALARM H11-P603 (2-03)
F-1,G-1,H-1,J-1
H11-P603 LIGHT
A-4
H11-P603 SEE NOTE 14 DOWNSCALE
C51-RIS K601A
IRM CH A DNSCL TRIP
D-5
IRM CH A BYPASSED
IRM CH A INOP
IRM CH A UPSCL TRIP
IRM RANGE SW IN POSITION 1
H11-P603
RPS TRIP LOGIC
REF.4,SH.1,H-2 & J-2
C1610 PLANT PROCESS
SEE NOTE 13
C1569 PLANT PROCESS
SEE NOTE 17
SHEETS 3,6
RMS (IRM CH A,C,E,G BYPASS)-BYPASS A
IRM CH A UPSCL ALARM
B-2
IRM DETECTOR C51-RE N002A FULLY REMOVED FROM THE CORE
SH.8, B-3
RETRACT PERMIT
C1612 PLANT PROCESS
SEE NOTE 13
SWITCH DEVELOPEMENTS
CH A
CH E
CH C
CH G
N
RMS (IRM CHANNELS A,C,E,G BYPASS)
LOCATION: H11-P603
MAINTAINED CONTACTS
PUSH BUTTON JOYSTICK
CH B
CH D
CH H
RMS (IRM CHANNELS B,D,F,H BYPASS)
LOCATION: H11-P603
MAINTAINED CONTACTS
PUSH BUTTON JOYSTICK
C51-RIS K601A INTERMEDIATE RANGE MONITORING CHANNEL A;TYPICAL FOR
CHANNEL B, CHANNEL C, CHANNEL D, CHANNEL E, CHANNEL F, CHANNEL G, CHANNEL H
C51-RIS K601A
B-3
IRM CH A INOP
IRM CH A BYPASS
C1611 PLANT PROCESS
SEE NOTE 13
H11-P606
IRM CH A BYPASSED
IRM CH E BYPASSED
IRM CH C BYPASSED
IRM CH G BYPASSED
H11-P603 SEE NOTE 14 BYPASS
C1642 PLANT PROCESS
SEE NOTE 13
IRM DETECTOR C51-RE N002A FULLY INSERTED IN CORE
SH.8, D-3
C1609 PLANT PROCESS
SEE NOTE 13
FOR NOTES SEE DWG.H-19927 & H-19928
FOR REFERENCES SEE DWG.H-19931
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E631B
SHT. REV. SCSI ACCESSION DWG. NO.
1 5 S-16370
2 5 S-16371
3 5 S-16372
4 5 S-16373
5 5 S-16374
6 4 S-16375
7 5 S-16376
MPL NO. C51-1030
C51-RIS K601A (B)
IRM CH A (B) INOP
IRM CH A (B) UPSCALE TRIP
IRM CH A (B) BYPASSED
C51-RIS K601C (D)
IRM CH C (D) INOP
IRM CH C (D) UPSCALE TRIP
IRM CH C (D) BYPASSED
C51-RIS K601E (F)
IRM CH E (F) INOP
IRM CH E (F) UPSCALE TRIP
IRM CH E (F) BYPASSED
C51-RIS K601G (H)
IRM CH G (H) INOP
IRM CH G (H) UPSCALE TRIP
IRM CH G (H) BYPASSED
H11-P603 (2-03) (12-12)
IRM UPSCALE TRIP/INOP BUS A(B)
C51-RIS K601A
IRM CH A DOWNSCALE TRIP
IRM CH A BYPASSED
C51-RIS K601B
IRM CH B DOWNSCALE TRIP
IRM CH B BYPASSED
C51-RIS K601C
IRM CH C DOWNSCALE TRIP
IRM CH C BYPASSED
C51-RIS K601D
IRM CH D DOWNSCALE TRIP
IRM CH D BYPASSED
C51-RIS K601E
IRM CH E DOWNSCALE TRIP
IRM CH E BYPASSED
C51-RIS K601F
IRM CH F DOWNSCALE TRIP
IRM CH F BYPASSED
C51-RIS K601G
IRM CH G DOWNSCALE TRIP
IRM CH G BYPASSED
C51-RIS K601H
IRM CH H DOWNSCALE TRIP
IRM CH H BYPASSED
H11-P603 (2-30)
IRM DOWNSCALE TRIP BUS A AND BUS B
C51-RIS K601A
IRM CH A UPSCALE ALM
IRM CH A BYPASSED
C51-RIS K601B
IRM CH B UPSCALE ALM
IRM CH B BYPASSED
C51-RIS K601C
IRM CH C UPSCALE ALM
IRM CH C BYPASSED
C51-RIS K601D
IRM CH D UPSCALE ALM
IRM CH D BYPASSED
C51-RIS K601E
IRM CH E UPSCALE ALM
IRM CH E BYPASSED
C51-RIS K601F
IRM CH F UPSCALE ALM
IRM CH F BYPASSED
C51-RIS K601G
IRM CH G UPSCALE ALM
IRM CH G BYPASSED
C51-RIS K601H
IRM CH H UPSCALE ALM
IRM CH H BYPASSED
H11-P603 (2-21)
IRM UPSCALE ALARM BUS A AND BUS B
RPS
REF.4,SH.4,J-8
RMS(REAC MODE)-RUN
BECHTEL
JOB 6511
GAITHERSBURG, MARYLAND
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT
EDWIN I. HATCH NUCLEAR PLANT UNIT NO.1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAMS
SHEET 3 OF 8
DRAWING NUMBER
10-502
H-19929
SCALE
NONE
DATE
4-7-86
ESAR FIGURE NO 7.5-20 (SHEET 3 OF 8)


0666 I-H
SRM UPSCALE ALARM OR INOPERATIVE
SRM PERIOD
SRM DOWNSCALE
SRM DETECTOR RETRACTED WHEN NOT PERMITTED
C51-RIS K600A SRM CHANNEL A : TYPICAL FOR CHANNEL B, CHANNEL C, CHANNEL D
SWITCH DEVELOPEMENT
RMS (SRM CH A, B, C, D BYPASS)
LOCATION: H11-P603
MAINTAINED CONTACTS
PUSH BUTTON JOYSTICK
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E631B
SHT. REV. SCSI ACCESSION DWG. NO.
1 5 S-16370
2 5 S-16371
3 5 S-16372
4 5 S-16373
5 5 S-16374
6 4 S-16375
7 5 S-16376
MPL NO. C51-1030
FOR NOTES SEE DWG. H-19927 & H-19928
FOR REFERENCES SEE DWG. H-19931
BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND
SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT
EDWIN I. HATCH NUCLEAR PLANT UNIT NO. 1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAMS
SHEET 4 OF 8
DRAWING NUMBER
10-502 H-19930

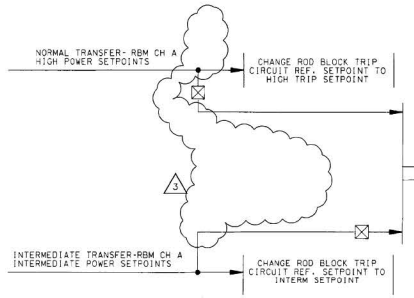
H-19931



BLOCK MONITOR (RBM) CHANNEL A:TYPICAL FOR CHANNEL B



LPRM INPUTS TO ROD BLOCK MONITOR CHANNEL A AVERAGING CIRCUIT: TYPICAL FOR CHANNEL B (LIGHT INDICATES THE LPRM FAILED OR BYPASSED)



LOGIC FOR NORMAL AND INTERMIDIATE TRANSFER, RBM CHANNEL A:TYP FOR CHANNEL B

SWITCH DEVELOPMENT

RMS (RBM CH A & B BYPASS)
LOCATION: H11-P603
MAINTAINED CONTACTS
PUSH BUTTON JOYSTICK

RMS (RBM CH.A MANUAL RESET) (RBM CH.B MANUAL RESET)
LOCATION:H11-P608
MOMENTARY CONTACTS
PUSH BUTTON

REFERENCES
P.I.&D. / I.E.D.

	TITLE	MPL. NO.	DWG. NO.
1.	LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES.	A21-1030	H-19900
2.	NEUTRON MONITORING SYSTEM IED SHT.1 SHT.2	C51-1010	H-16560 H-16561
3.	REACTOR RECIRC. SYSTEM P&ID SHT.1 THRU SHT.3	B31-1010	H-16066 THRU H-16068
4.	REACTOR PROTECTION SYSTEM LOGIC DIAGRAM SHTS 1 THRU 4	C71-1030	H-19933 THRU H-19936
5.	CONTROL ROD DRIVE HYDRAULIC SYSTEM LOGIC DIAGRAMS SHTS 1 THRU 9	C11-1030	H-19918 THRU H-19925 H-19967
6.	NUCLEAR BOILER SYS. LOGIC DIAG.SHT.1 THRU SHT.12	B21-1030	H-19901 THRU H-19912
7.	DIGITAL INPUT SIGNALS TO THE ERF COMPUTER SH. 15 OF 15	X75-1010	H-16417
8.	ERF MULTIPLEXER SYSTEM I.E.D.	X75-1010	H-16401

FOR NOTES SEE DWG. H-19927

FSAR FIGURE NO. 7.5-20 (SHEET 5 OF 8)

MPL NO. C51-1030 ACADDVY H19931

SOUTHERN COMPANY

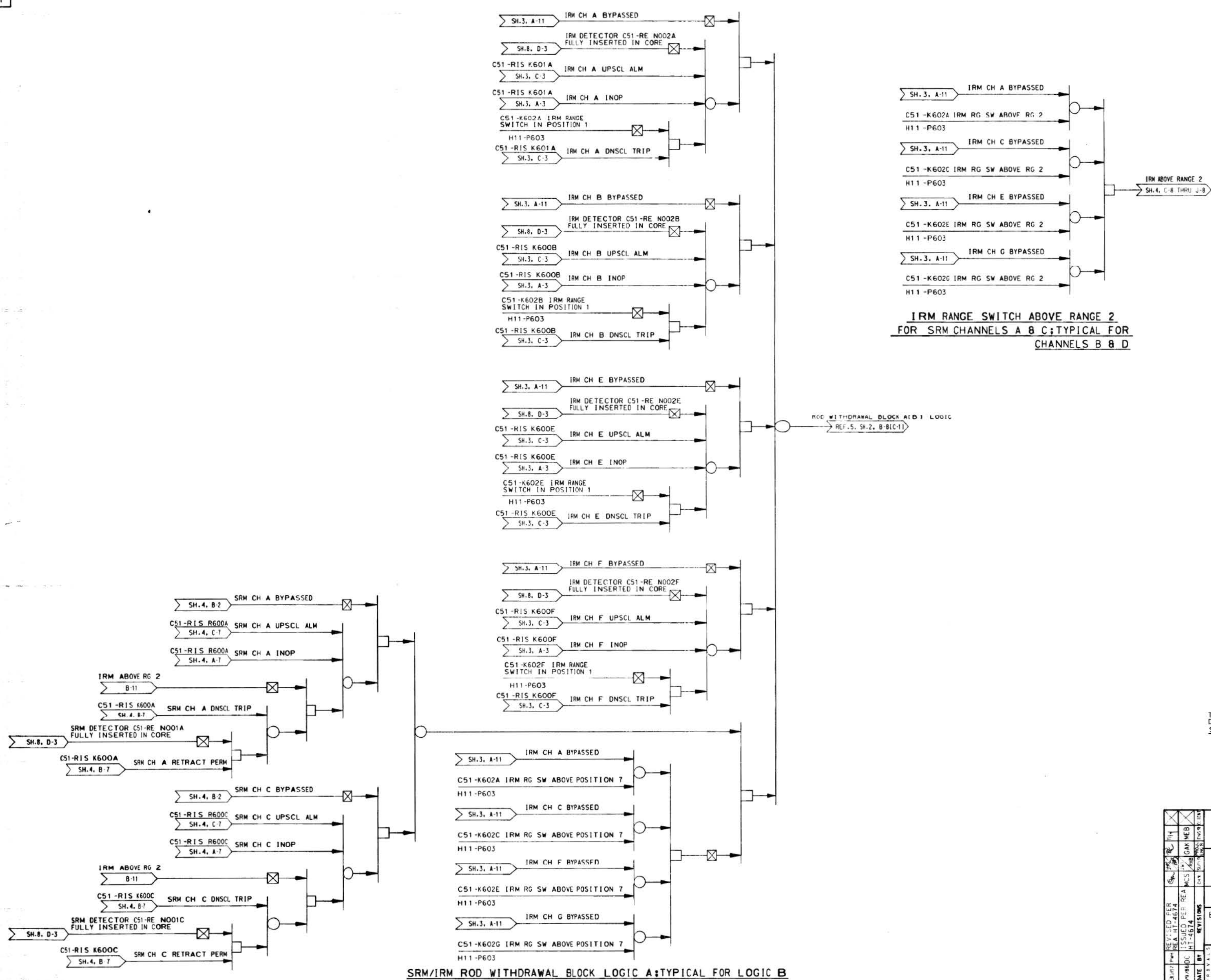
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAMS
SHEET 5 OF 8

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
SWC	MEB	10-502	H-19931	3
DATE	SCALE			
4-1-85	None			

Revision: 3	Date: 6-8-98
REVISED PER ABN 94-0007-001.	

BY	CHK'D	APP'D
SWC	BCF	WKK

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.



IRM RANGE SWITCH ABOVE RANGE 2 FOR SRM CHANNELS A & C; TYPICAL FOR CHANNELS B & D

SRM/IRM ROD WITHDRAWAL BLOCK LOGIC A; TYPICAL FOR LOGIC B

FOR NOTES SEE DWG. H-19927 & H-19928
FOR REFERENCES SEE DWG. H-19931
FOR SHT. 7 OF 8, SEE DWG. H-19965.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E631B

SHT.	REV.	SCSI ACCESSION DWG. NO.
1	5	S-16370
2	5	S-16371
3	5	S-16372
4	5	S-16373
5	5	S-16374
6	4	S-16375
7	5	S-16376

MPL NO. C51-1030

BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND

SOUTHERN SERVICES INC.
FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

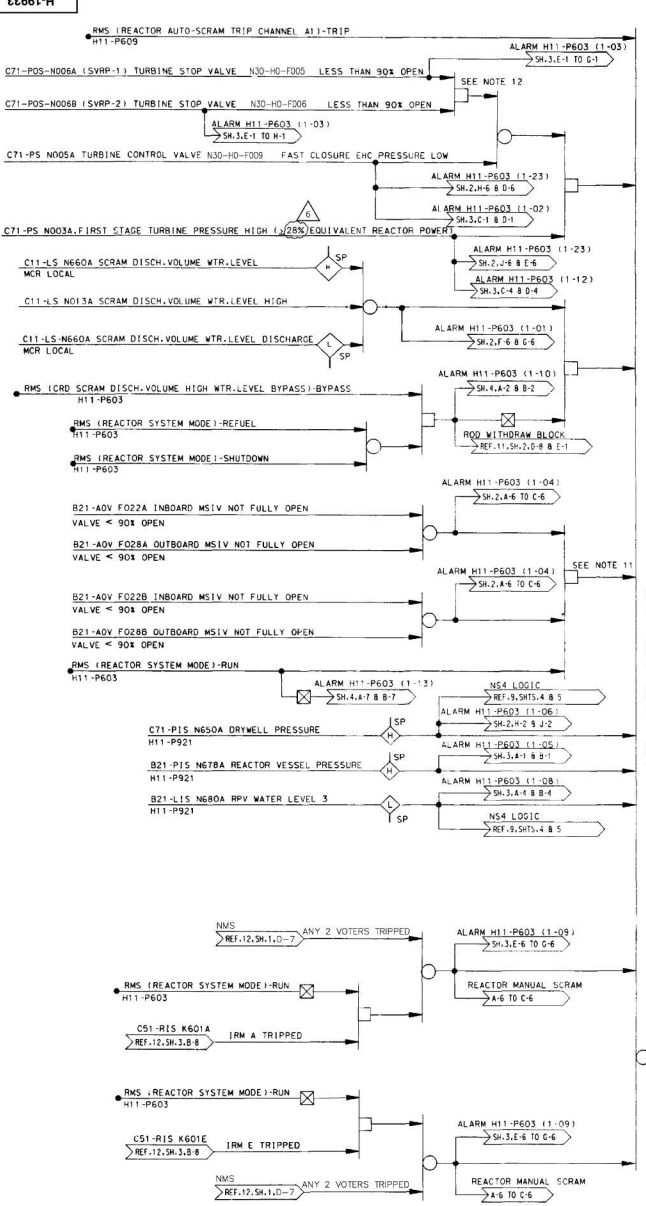
EDWIN I. HATCH NUCLEAR PLANT UNIT NO. 1
NEUTRON MONITORING SYSTEM (NMS)
LOGIC DIAGRAMS
SHEET 6 OF 8

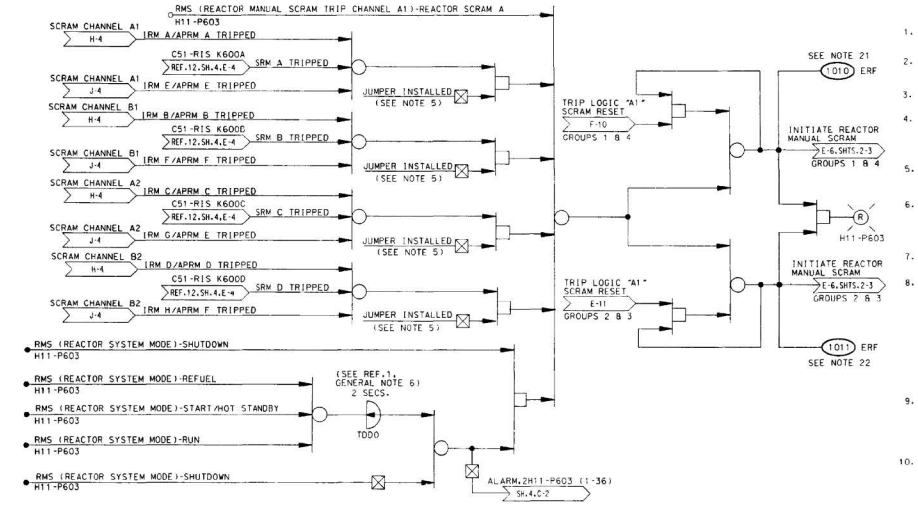
GAFOUR A. KOSI 4/9/86

LOCATION	SHEET NO.
10-502	H-19932

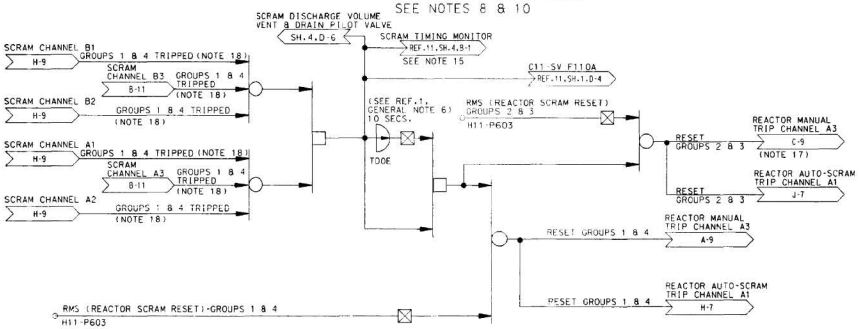
No.	DATE	BY	REVISIONS
0	4/9/86	DC	ISSUED PER HT-4674
1			REVISED PER HT-4674

H-19933

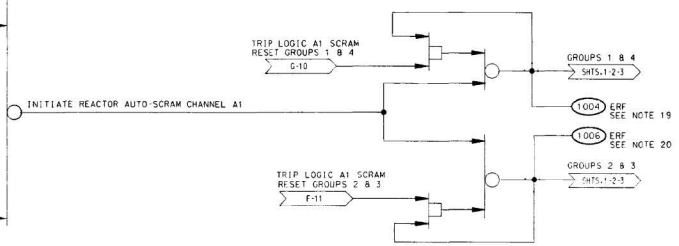




REACTOR MANUAL SCRAM CHANNEL A3
TYPICAL FOR CHANNEL B3
SEE NOTES 8 & 10



TRIP LOGIC A1 TYPICAL FOR: LOGIC B1
TRIP LOGIC A2 & B2 TYPICAL EXCEPT AS NOTED
SEE NOTES 8 & 10



REACTOR AUTO-SCRAM CHANNEL A1 TYPICAL FOR: CHANNEL A2
CHANNEL B1
CHANNEL B2
SEE NOTES 8 & 10

NOTES

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO.C71 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS,SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. FOR LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES, SEE REFERENCE 1.
4. FOR INFORMATION ON ALARMS,VALVE IND)-CATING LIGHT REQUIREMENTS AND PROCESS INSTRUMENTATION REQUIREMENTS WHICH ARE NOT SHOWN ON THE LOGIC DIAGRAMS, SEE REFERENCE 2.
5. THESE SIGNALS ARE NORMALLY JUMPERED EXCEPT DURING CORE ALTERATIONS OR SHUTDOWN MARGIN DEMONSTRATIONS.
6. XX-XX IS IN REFERENCE TO A CONTROL ROD NUMBER.THERE ARE 137 CONTROL RODS. SEE DRAWING H-17788 FOR ROD NO. DESIGNATION,AND ROD GROUP AND SET ARRANGEMENTS.
7. THERE IS ONLY ONE ANNUNCIATOR WHICH IS ACTIVATED BY ANY ONE OF THE 137 CIRCUITS.
8. DEVICES USED IN TRIP SYSTEM A ARE IDENTIFIED BY LETTERS A,C,E,G,ETC.THOSE USED IN TRIP SYS.B ARE B,D,F,H,ETC.

TRIP CHANNEL	LETTERS
A1	A E
B1	D F
A2	C G
B2	D H

ISOLATION LOGIC SHALL BE "FAIL SAFE".I.E. LOGIC SHALL BE DESIGNED TO INITIATE ISOLATION FUNCTIONS WHEN DE-ENERGIZED.

9. ACTUATION SHALL BE SUCH THAT ALTERNATE SOURCE CAN ONLY BE APPLIED TO EITHER BUS A OR B AT ONE TIME. SYSTEM SHALL BE ARRANGED SO THAT THE BUS CANNOT BE ENERGIZED FROM THE M-G SET AND ALTERNATE SOURCE AT THE SAME TIME.
10. ONE RESET SWITCH SHALL BE USED FOR BOTH TRIP SYSTEMS A AND B AND SO ARRANGED THAT ONE ACTUATION OF THE SWITCH WILL RESET ALL SCRAM PILOT VALVES (A & B) IN GROUP 1 AND GROUP 4 AS WELL AS BACK-UP SCRAM VALVE A. A DIFFERENT ACTUATION OF THE SWITCH WILL RESET ALL SCRAM PILOT VALVES (A & B) IN GROUP 2 AND GROUP 3 AS WELL AS BACK-UP SCRAM VALVE B. THE RESET SWITCH SHALL BE SO CONSTRUCTED THAT REACTOR PROTECTION SYSTEM CHANNELS A & B2 ARE PHYSICALLY SEPARATED FROM CHANNELS A1, B1, A3, & B3.
11. MAIN STEAM LINE ISOLATION VALVE CLOSURE TRIP SHALL BE ARRANGED SO THAT ANY ONE STEAM LINE MAY BE ISOLATED (BY FULL CLOSURE OF ITS ISOLATION VALVES) AND THE ISOLATION VALVE FOR ANY ONE OTHER STEAM LINE CAN BE CLOSED (MORE THAN 10%) WITHOUT CAUSING A RPS TRIP.
12. LOGIC FOR THE "TURBINE STOP VALVE CLOSURE" TRIP SHALL BE ARRANGED SO THAT CLOSURE OF 3 OUT OF 4 STOP VALVES WILL CAUSE A RPS TRIP.PROVISION SHALL BE MADE TO ALLOW CLOSURE OF ONE STOP VALVE (FOR TEST PURPOSES) WITHOUT CAUSING A TRIP OF EITHER TRIP SYSTEM A OR B.
13. TRIP CHANNELS FOR THE "TURBINE CONTROL VALVE FAST CLOSURE"TRIP SHALL BE DERIVED FROM EHC SYSTEM PRESSURE LOW.
14. EACH MAIN STEAM LINE RADIATION MONITOR MONITORS ALL FOUR MAIN STEAM LINES
15. THIS SIGNAL ALSO STARTS MOTOR OF CRD SCRAM TIME MONITOR RECORDER. THIS SIGNAL IS APPLICABLE FOR TRIP LOGIC A1 ONLY.
16. THE DISCHARGE VOLUME HIGH LEVEL BYPASS SWITCH SHALL BE SO CONSTRUCTED THAT REACTOR PROTECTION SYSTEM CHANNELS A1 & B1 ARE PHYSICALLY SEPARATED FROM CHANNELS A2 & B2.
17. THIS SIGNAL IS APPLICABLE FOR TRIP LOGIC A1 AND B1 ONLY.
18. TRIP LOGIC A1 AND A2 UTILIZE GROUPS 1 & 4 WHILE TRIP LOGIC B1 & B2 UTILIZE GROUPS 2 & 3.

NOTES CONT. ON H-19934
FOR REFERENCES, SEE DWG. H-19935.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E611BA , SHT.1 , REV.9; SH1.2 , REV.7; SH1.3 , REV.11 SCSI ACCESSION DRAWING NO.S-15065, S-15064,AND S-15063 RESPECTIVELY.

FSAR FIGURE 7.2-1 (SHEET 1 OF 4)

Revision: 6	Date: 6-14-99
REVISED PER ABN 96-0048-001.	

BY	DATE	APP'L	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
DJT	JAS	RBV	

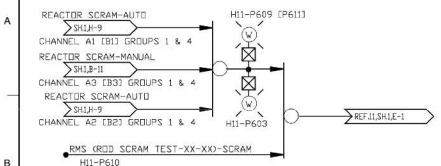
MPL NO. C71-1030 ACADOWY H19933

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

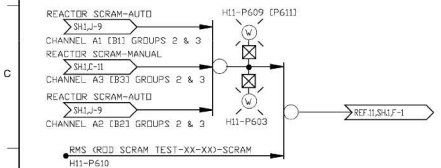
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR PROTECTION SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 4

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
CADD/MB	MEG			
DATE	SCALE	10-502	H-19933	6
2-14-86	None			

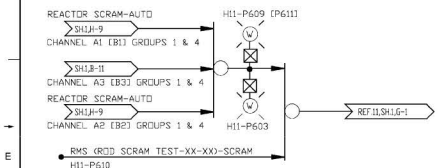
H-19934



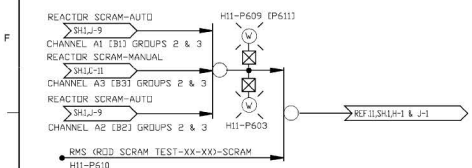
PILOT SCRAM VALVES SOLENOIDS C11-D001-117 [118] (XX-XX)-GROUPS 1 & 4 REAC SIDE 1:
GROUP 1-TYPICAL OF 18,GROUP 4-TYPICAL OF 16,(SEE NOTE 6)



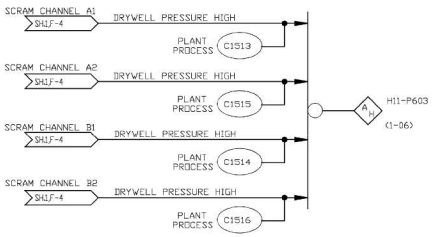
PILOT SCRAM VALVES SOLENOIDS C11-D001-117 [118] (XX-XX)-GROUPS 2 & 3 REAC SIDE 1:
GROUP 2-TYPICAL OF 15,GROUP 3-TYPICAL OF 19,(SEE NOTE 6)

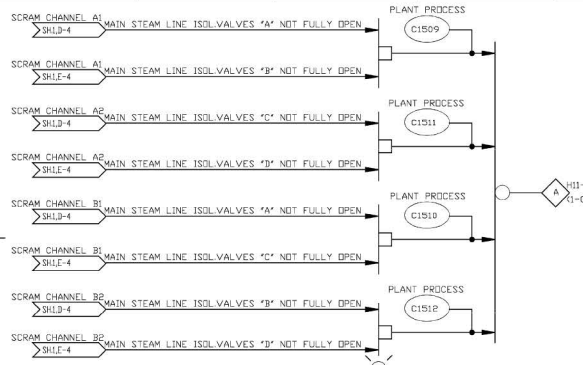


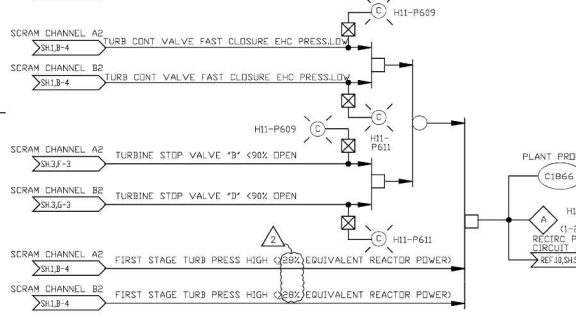
PILOT SCRAM VALVES SOLENOIDS C11-D001-117 [118] (XX-XX)-GROUPS 1 & 4 REAC SIDE 2:
GROUP 1-TYPICAL OF 16,GROUP 4-TYPICAL OF 17,(SEE NOTE 6)



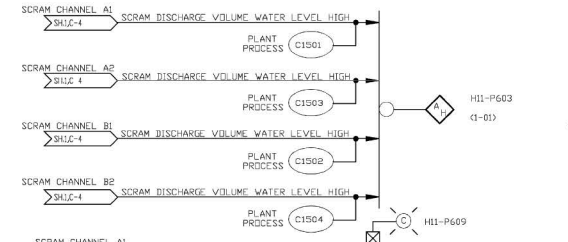
PILOT SCRAM VALVES SOLENOIDS C11-D001-117 [118] (XX-XX)-GROUPS 2 & 3 REAC SIDE 2:
GROUP 2-TYPICAL OF 18,GROUP 3-TYPICAL OF 18,(SEE NOTE 6)







RPT SYSTEM B TRIP



RPT SYSTEM A TRIP

FSAR FIGURE NO.7.2-1 (SHEET 2 OF 4)

SWITCH DEVELOPMENTS

REACTOR SCRAM A3

RMS (REACTOR MANUAL SCRAM TRIP CHANNEL A3)
LOCATION: H11-P603
PUSH BUTTON,MOMENTARY CONTACTS,LIGHTED

REACTOR SCRAM B3

RMS (REACTOR MANUAL SCRAM TRIP CHANNEL B3)
LOCATION: H11-P603
PUSH BUTTON,MOMENTARY CONTACTS,LIGHTED

GROUPS 1 & 4 | NORMAL | GROUPS 2 & 3

RMS (REACTOR SCRAM RESET)
LOCATION: H11-P603
MOMENTARY CONTACTS IN "GROUPS 1 & 4"
AND "GROUPS 2 & 3".
SPRING RETURN TO "NORMAL"

NORMAL | TRIP

RMS (REACTOR AUTO SCRAM TRIP CHANNEL A1)
RMS (REACTOR AUTO SCRAM TRIP CHANNEL A2)
LOCATION: H11-P609
RMS (REACTOR AUTO SCRAM TRIP CHANNEL B1)
RMS (REACTOR AUTO SCRAM TRIP CHANNEL B2)
LOCATION: H11-P611
MAINTAINED CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY

NORMAL | BYPASS

RMS (CRD SCRAM DISCH.VOL HIGH WATER LEVEL BYPASS)
LOCATION: H11-P603
MAINTAINED CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY

NORMAL | SCRAM

RMS (ROD SCRAM TEST-XX-XX)
TYPICAL OF 137-(ONE FOR EACH ROD)
SET 1 (QTY 34) WHITE
SET 2 (QTY 34) BLACK
SET 3 (QTY 35) RED
SET 4 (QTY 34) BLUE
(SEE NOTE 6)
LOCATION: H11-P610
TOGGLE SWITCH,MAINTAINED CONTACTS.

NOTES

CONT.FROM H-19933

19. ERF COMPUTER INPUT 1004 IS FOR AUTO SCRAM CHANNEL A1 ONLY. THE OTHER INPUTS ARE:
AUTO SCRAM CHANNEL A2 1005
AUTO SCRAM CHANNEL B1 1021
AUTO SCRAM CHANNEL B2 1022

20. ERF COMPUTER INPUT 1006 IS FOR AUTO SCRAM CHANNEL A1 ONLY. THE OTHER INPUTS ARE:
AUTO SCRAM CHANNEL A2 1007
AUTO SCRAM CHANNEL B1 1023
AUTO SCRAM CHANNEL B2 1024

21. ERF COMPUTER INPUT 1010 IS FOR MANUAL SCRAM CHANNEL A3 ONLY. ERF COMPUTER INPUT FOR MANUAL SCRAM CHANNEL B3 IS 1025.

22. ERF COMPUTER INPUT 1011 IS FOR MANUAL SCRAM CHANNEL A3 ONLY. ERF COMPUTER INPUT FOR MANUAL SCRAM CHANNEL B3 IS 1026.

FOR REFERENCES, SEE DWG. H-19935.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E611BA , SHT.1 , REV.9) SHT.2 , REV.7 , SHT.3 , REV.7 , SCSI ACCESSION DRAWING NOS.S-15065, S-15064 AND S-15063 RESPECTIVELY.

MPL NO. C71-1030

ACAD14 | H19934

SOUTHERN COMPANY

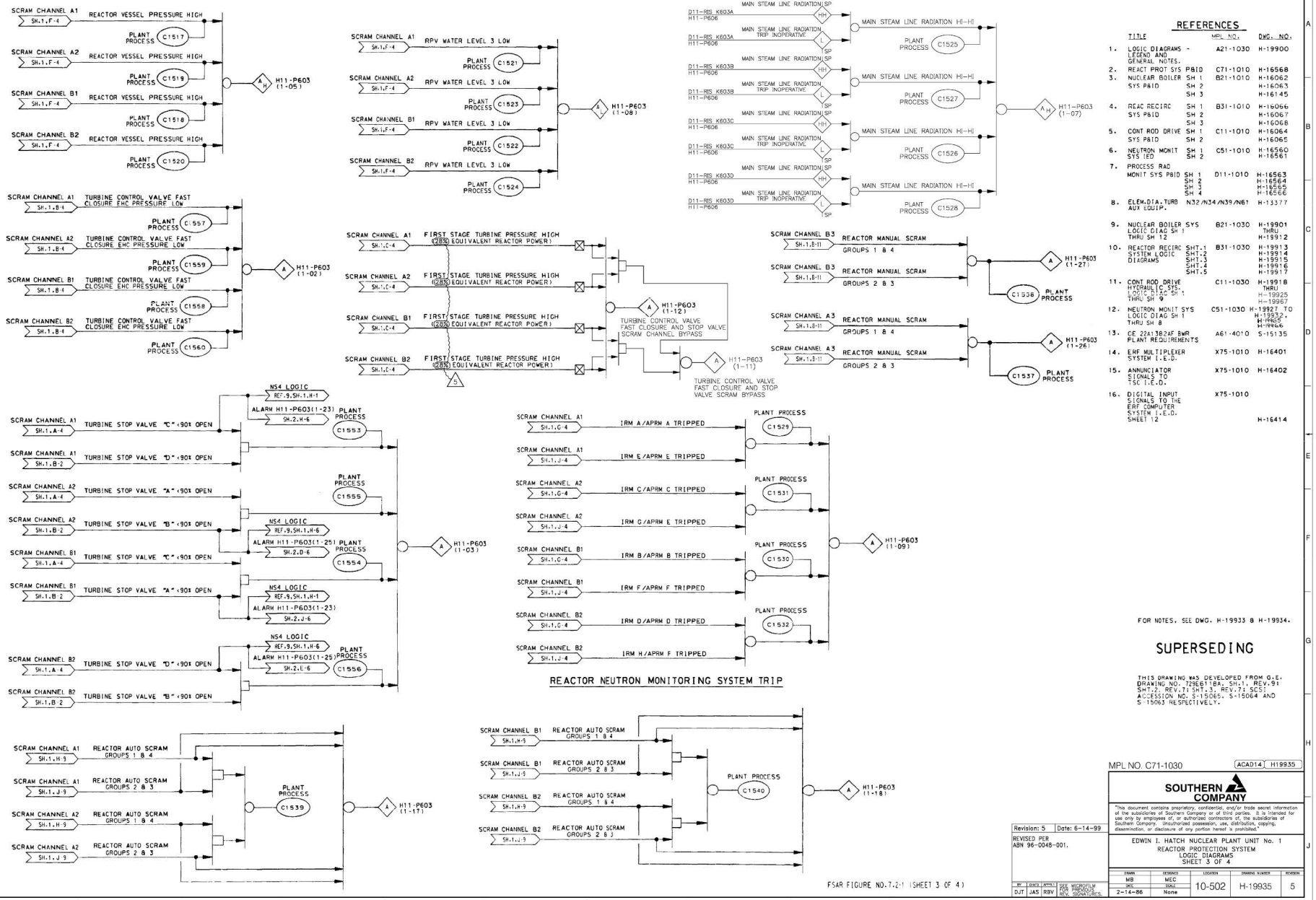
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR PROTECTION SYSTEM
LOGIC DIAGRAMS
SHEET 2 OF 4

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
MB	MEO			
DATE	SCALE	10-502	H-19934	2
2-14-86	None			

Revision: 2 Date: 6-14-99
REVISED PER ABN 96-0048-001.

BY	DATE	APP'L	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
DJT	JAS	RBV	

H-19935



REFERENCES

	TITLE		MPL NO.	DWG. NO.
1.	LOGIC DIAGRAMS - LEGEND AND GENERAL NOTES.		A21-1030	H-19900
2.	REACT PROT SYS P&ID		C71-1010	H-16568
3.	NUCLEAR BOILER SYS P&ID	SH 1	B21-1010	H-16062
		SH 2		H-16063
		SH 3		H-16145
4.	REAC RECIRC SYS P&ID	SH 1	B31-1010	H-16066
		SH 2		H-16067
		SH 3		H-16068
5.	CONT ROD DRIVE SYS P&ID	SH 1	C11-1010	H-16064
		SH 2		H-16065
6.	NEUTRON MONIT SYS IED	SH 1	C51-1010	H-16560
		SH 2		H-16561
7.	PROCESS RAD MONIT SYS P&ID	SH 1	D11-1010	H-16563
		SH 2		H-16564
		SH 3		H-16565
		SH 4		H-16566
8.	ELEM.DIA.TURB AUX EQUIP.		N32/N34/N39/N61	H-15377
9.	NUCLEAR BOILER SYS LOGIC DIAG SH 1 THRU SH 12		B21-1030	H-19901 THRU H-19912
10.	REACTOR RECIRC SYSTEM LOGIC DIAGRAMS	SH1.1	B31-1030	H-19913
		SH1.2		H-19914
		SH1.3		H-19915
		SH1.4		H-19916
		SH1.5		H-19917
11.	CONT ROD DRIVE HYDRAULIC SYS. LOGIC DIAG SH 1 THRU SH 9		C11-1030	H-19918 THRU H-19925 H-19967
12.	NEUTRON MONIT SYS LOGIC DIAG SH 1 THRU SH 8		C51-1030	H-19927 TO H-19932, H-19965, H-19966
13.	GE 22A1382AF BWR PLANT REQUIREMENTS		A61-4010	S-15135
14.	ERF MULTIPLEXER SYSTEM I.E.D.		X75-1010	H-16401
15.	ANNUNCIATOR SIGNALS TO TSC I.E.D.		X75-1010	H-16402
16.	DIGITAL INPUT SIGNALS TO THE ERF COMPUTER SYSTEM I.E.D. SHEET 12		X75-1010	H-16414

FOR NOTES, SEE DWG. H-19933 & H-19934.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E611BA, SH.1, REV.9; SH.2, REV.7; SH.3, REV.7; SCSI ACCESSION NO. S-15065, S-15064 AND S-15063 RESPECTIVELY.

FSAR FIGURE NO.7.2-1 (SHEET 3 OF 4)

MPL NO. C71-1030 ACAD14 H19935

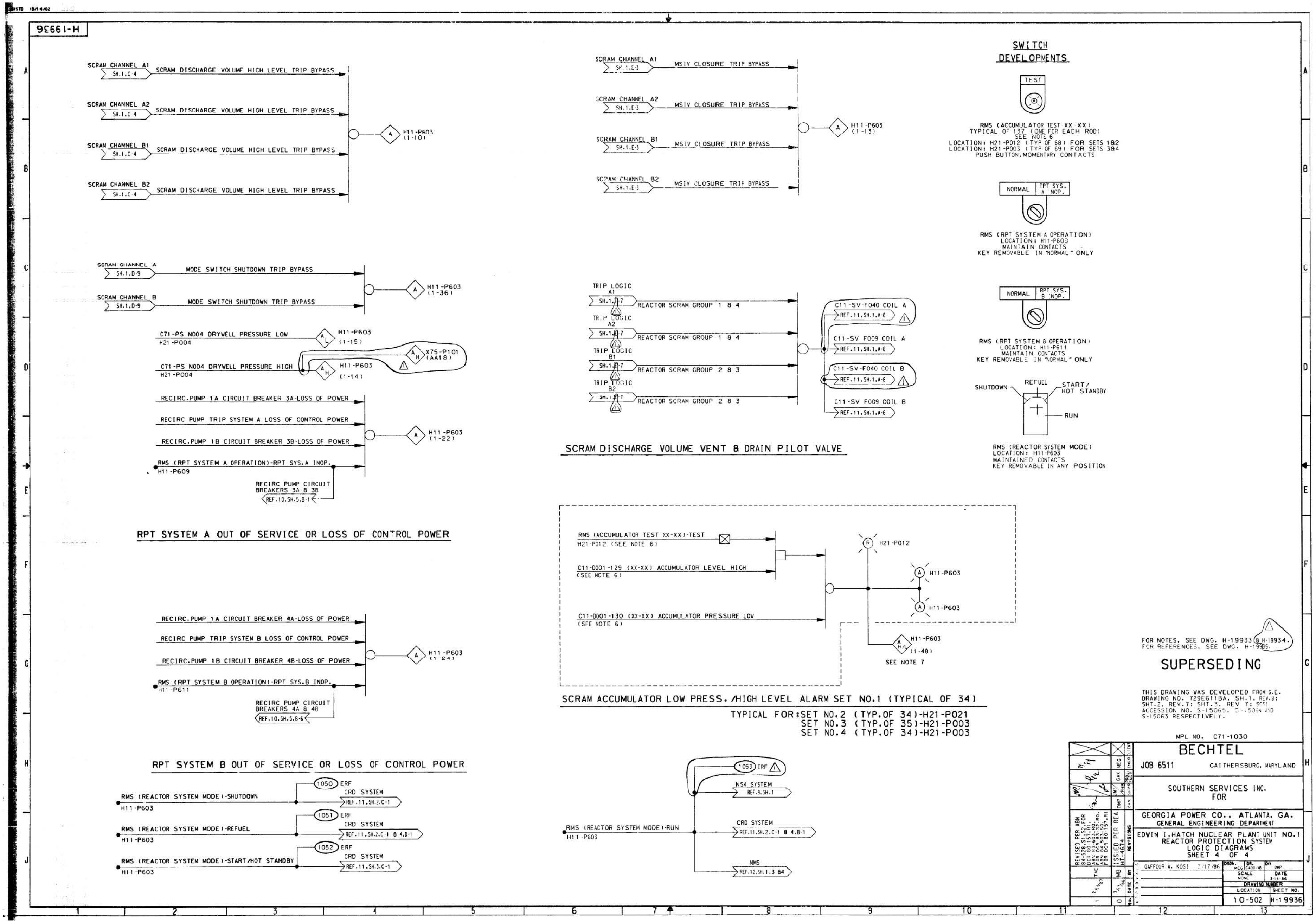
SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
REACTOR PROTECTION SYSTEM
LOGIC DIAGRAMS
SHEET 3 OF 4

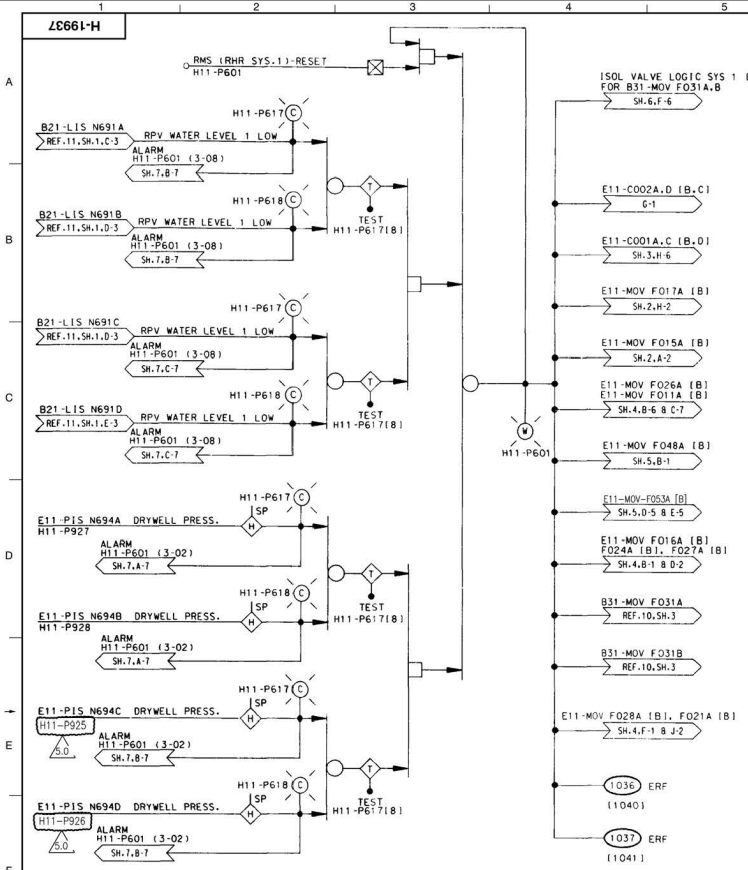
Revision: 5	Date: 6-14-99
REVISED PER ABN 96-0048-001.	

BY	DATE	APPD	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
DJT	JAS	RBV	

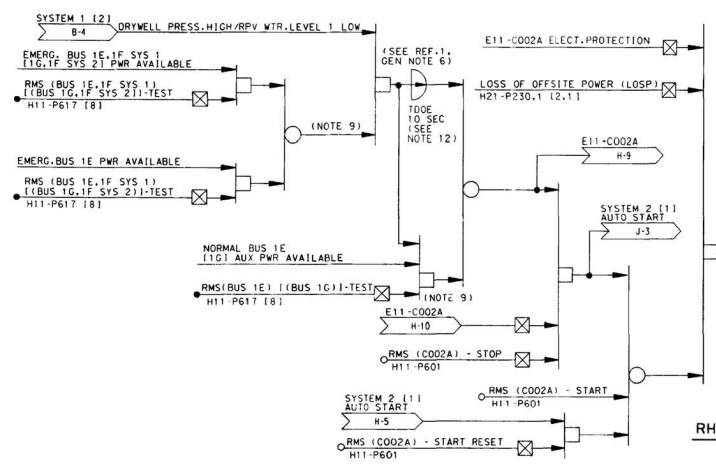
DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
MB	MEC	10-502	H-19935	5
DATE	SCALE			
2-14-86	None			


H-19936
SCRAM CHANNEL A1 SH.1.C-4 SCRAM DISCHARGE VOLUME HIGH LEVEL TRIP BYPASS
SCRAM CHANNEL A2 SH.1.C-4 SCRAM DISCHARGE VOLUME HIGH LEVEL TRIP BYPASS
SCRAM CHANNEL B1 SH.1.C-4 SCRAM DISCHARGE VOLUME HIGH LEVEL TRIP BYPASS
SCRAM CHANNEL B2 SH.1.C-4 SCRAM DISCHARGE VOLUME HIGH LEVEL TRIP BYPASS
H11-P603 (1-10)
SCRAM CHANNEL A1 SH.1.E-3 MSIV CLOSURE TRIP BYPASS
SCRAM CHANNEL A2 SH.1.E-3 MSIV CLOSURE TRIP BYPASS
SCRAM CHANNEL B1 SH.1.E-3 MSIV CLOSURE TRIP BYPASS
SCRAM CHANNEL B2 SH.1.E-3 MSIV CLOSURE TRIP BYPASS
H11-P603 (1-13)
SWITCH DEVELOPMENTS
TEST
RMS (ACCUMULATOR TEST-XX-XX)
TYPICAL OF 137 (ONE FOR EACH ROD)
SEE NOTE 6
LOCATION: H21-P012 (TYP OF 68) FOR SETS 1&2
LOCATION: H21-P003 (TYP OF 69) FOR SETS 3&4
PUSH BUTTON, MOMENTARY CONTACTS
NORMAL RPT SYS. A INOP.
RMS (RPT SYSTEM A OPERATION)
LOCATION: H11-P609
MAINTAIN CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY
NORMAL RPT SYS. B INOP.
RMS (RPT SYSTEM B OPERATION)
LOCATION: H11-P611
MAINTAIN CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY
SHUTDOWN REFUEL START/HOT STANDBY RUN
RMS (REACTOR SYSTEM MODE)
LOCATION: H11-P603
MAINTAINED CONTACTS
KEY REMOVABLE IN ANY POSITION
SCRAM CHANNEL A SH.1.D-9 MODE SWITCH SHUTDOWN TRIP BYPASS
SCRAM CHANNEL B SH.1.D-9 MODE SWITCH SHUTDOWN TRIP BYPASS
H11-P603 (1-36)
C71-PS N004 DRYWELL PRESSURE LOW H21-P004
H11-P603 (1-15)
C71-PS N004 DRYWELL PRESSURE HIGH H21-P004
X75-P101 (AA18)
H11-P603 (1-14)
RECIRC.PUMP 1A CIRCUIT BREAKER 3A-LOSS OF POWER
RECIRC PUMP TRIP SYSTEM A LOSS OF CONTROL POWER
RECIRC.PUMP 1B CIRCUIT BREAKER 3B-LOSS OF POWER
RMS (RPT SYSTEM A OPERATION)-RPT SYS.A INOP. H11-P609
H11-P603 (1-22)
RECIRC PUMP CIRCUIT BREAKERS 3A & 3B REF.10.SH.5.B-1
RPT SYSTEM A OUT OF SERVICE OR LOSS OF CONTROL POWER
TRIP LOGIC A1 SH.1.B-7 REACTOR SCRAM GROUP 1 & 4
TRIP LOGIC A2 SH.1.B-7 REACTOR SCRAM GROUP 1 & 4
TRIP LOGIC B1 SH.1.B-7 REACTOR SCRAM GROUP 2 & 3
TRIP LOGIC B2 SH.1.B-7 REACTOR SCRAM GROUP 2 & 3
C11-SV-F040 COIL A REF.11.SH.1.A-6
C11-SV F009 COIL A REF.11.SH.1.A-6
C11-SV-F040 COIL B REF.11.SH.1.A-6
C11-SV F009 COIL B REF.11.SH.1.A-6
SCRAM DISCHARGE VOLUME VENT & DRAIN PILOT VALVE
RMS (ACCUMULATOR TEST XX-XX)-TEST H21-P012 (SEE NOTE 6)
C11-D001-129 (XX-XX) ACCUMULATOR LEVEL HIGH (SEE NOTE 6)
C11-D001-130 (XX-XX) ACCUMULATOR PRESSURE LOW (SEE NOTE 6)
H21-P012
H11-P603
H11-P603
H11-P603 (1-48)
SEE NOTE 7
SCRAM ACCUMULATOR LOW PRESS./HIGH LEVEL ALARM SET NO.1 (TYPICAL OF 34)
TYPICAL FOR: SET NO.2 (TYP.OF 34)-H21-P021
SET NO.3 (TYP.OF 35)-H21-P003
SET NO.4 (TYP.OF 34)-H21-P003
RECIRC.PUMP 1A CIRCUIT BREAKER 4A-LOSS OF POWER
RECIRC PUMP TRIP SYSTEM B LOSS OF CONTROL POWER
RECIRC.PUMP 1B CIRCUIT BREAKER 4B-LOSS OF POWER
RMS (RPT SYSTEM B OPERATION)-RPT SYS.B INOP. H11-P611
H11-P603 (1-24)
RECIRC PUMP CIRCUIT BREAKERS 4A & 4B REF.10.SH.5.B-6
RPT SYSTEM B OUT OF SERVICE OR LOSS OF CONTROL POWER
RMS (REACTOR SYSTEM MODE)-SHUTDOWN H11-P603
1050 ERF
CRD SYSTEM REF.11.SH.2.C-1
RMS (REACTOR SYSTEM MODE)-REFUEL H11-P603
1051 ERF
CRD SYSTEM REF.11.SH.2.C-1 & 4.D-1
RMS (REACTOR SYSTEM MODE)-START/HOT STANDBY H11-P603
1052 ERF
CRD SYSTEM REF.11.SH.3.C-1
RMS (REACTOR SYSTEM MODE)-RUN H11-P603
1053 ERF
NS4 SYSTEM REF.9.SH.1
CRD SYSTEM REF.11.SH.2.C-1 & 4.B-1
NMS REF.12.SH.1.3 B4
FOR NOTES, SEE DWG. H-19933 & H-19934.
FOR REFERENCES, SEE DWG. H-19935.
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E611BA, SH.1, REV.9; SHT.2, REV.7; SHT.3, REV 7; SEE ACCESSION NO. S-15065, S-15064 AND S-15063 RESPECTIVELY.
MPL NO. C71-1030
BECHTEL
JOB 6511 GAITHERSBURG, MARYLAND
SOUTHERN SERVICES INC. FOR
GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT
EDWIN I. HATCH NUCLEAR PLANT UNIT NO.1
REACTOR PROTECTION SYSTEM
LOGIC DIAGRAMS
SHEET 4 OF 4
GAFFOUR A. KOSI 3/17/86
SCALE NONE
DATE 2-14-86
DRAWING NUMBER
LOCATION 10-502
SHEET NO. H-19936
ISSUED PER REA
REVISIONS

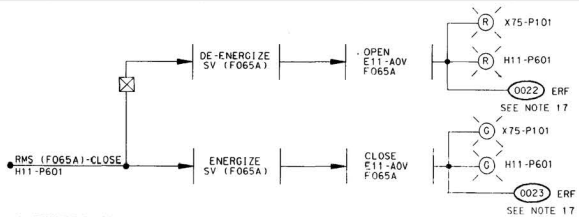
H-19937



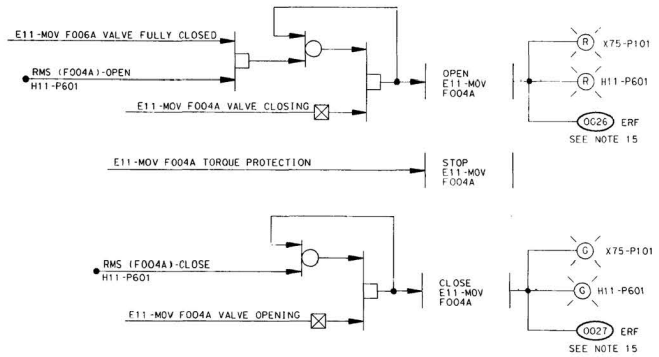
DRYWELL PRESS./RPV WTR. LEVEL 1 LOGIC SYSTEM 1 TYPICAL FOR: [SYSTEM 2] SEE NOTE 7



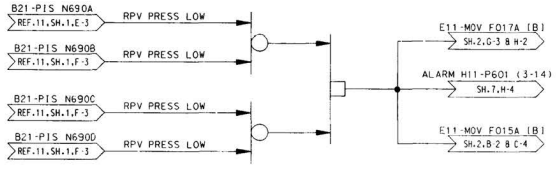
RHR PUMP E11-C002A TYPICAL FOR: E11-C002D
[E11-C002B,C]



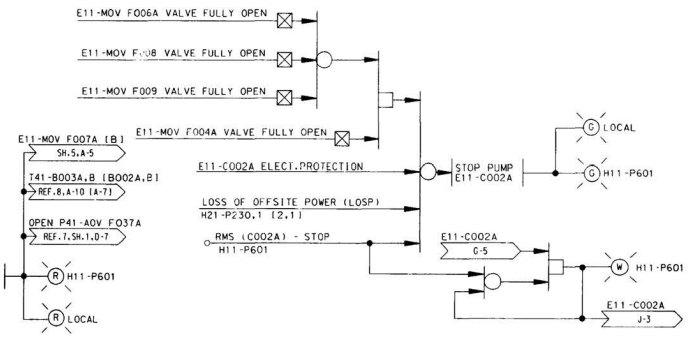
SUPPRESSION POOL ISOLATION VALVE E11-AOV F065A TYPICAL FOR:
E11-AOV F065B,C,D



RHR PUMP SUCTION GATE VALVE E11-MOV F004A TYPICAL FOR:
E11-MOV F004B,C,D

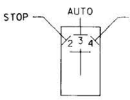


RPV PRESS.LOGIC SYSTEM 1 TYPICAL FOR: [SYSTEM 2] SEE NOTE 7



SWITCH DEVELOPMENTS

RMS (C002A)
RMS (C002B)
RMS (C002C)
RMS (C002D)
LOCATION:H11-P601
PUSH BUTTON
MOMENTARY CONTACTS



RMS (C002A)
RMS (C002B)
RMS (C002C)
RMS (C002D)
LOCATION:H11-P601
MOMENTARY CONTACTS
IN "STOP" AND "START"
SPRING RETURN
TO "AUTO"

RMS (F065A)
RMS (F065B)
RMS (F065C)
RMS (F065D)
LOCATION:H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "OPEN" ONLY

RMS (F004A)
RMS (F004B)
RMS (F004C)
RMS (F004D)
LOCATION:H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "OPEN" ONLY

RMS(BUS 1E) H11-P617
RMS(BUS 1E SYS 1) H11-P617
RMS(BUS 1F SYS 1) H11-P617
RMS(BUS 1F SYS 1) H11-P617
RMS(BUS 1G) H11-P618
RMS(BUS 1F SYS 2) H11-P618
RMS(BUS 1F SYS 2) H11-P618
RMS(BUS 1G SYS 2) H11-P618
MAINTAINED CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY

RMS (RHR SYS 1)
RMS (RHR SYS 2)
LOCATION: H11-P601
PUSH BUTTON
MOMENTARY CONTACTS

NOTES

1. ALL EQUIPMENT AND INSTRUMENTS ARE PRECEDED BY MPL NO.E11 UNLESS OTHERWISE NOTED.
2. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS,SEE INSTRUMENT INDEX OR EQUIPMENT LOCATION INDEX (ELI).
3. FOR LOGIC DIAGRAMS-LEGEND AND GENERAL NOTES,SEE REFERENCE 1.
4. FOR INFORMATION ON ALARMS,VALVE INDICATING LIGHT REQUIREMENTS & PROCESS INSTRUMENTATION REQUIREMENTS WHICH ARE NOT SHOWN ON THE LOGIC DIAGRAMS, SEE REFERENCES 2 & 3.
5. THE RHR SYSTEM LOGIC DIAGRAMS HAVE BEEN DIVIDED INTO TWO (2) SUBSYSTEMS AS FOLLOWS:

	TITLE	MPL NO.	DWG.NO.
A.	RHR SYS	E11	H-19937-38 H-19940-42
B.	RHR SERVICE WATER SYS	E11A	H-19939 H-19941

6. THE CONTROL SYSTEM AS DRAWN SHOWS SYSTEM 1.THE OPERATING SEQUENCE AFTER RPV WATER LEVEL 1 LOW OR HIGH DRYWELL PRESSURE SIGNAL IS AS FOLLOWS:

CONDITION A	PLANT ON NORMAL AUX.POWER	
PUMP - C002A	STARTS	NO DELAY
PUMP - C002B	STARTS	NO DELAY
PUMP - C002C	STARTS	NO DELAY
PUMP - C002D	STARTS	NO DELAY

VALVES
F017A OPENS AFTER REAC LOW PRESS.PERM.
F015A OPENS AFTER REAC LOW PRESS.PERM.

CTMT COOLING-CLOSE IF OPEN (NORMALLY MAINTAINED CLOSED)
F016A
F021A
F029A
F024A
F027A

HEAT EXCH.VALVE F068A-CLOSES (IF OPEN)
SERVICE WATER PUMPS C001A,B,C,D STOP IF RUNNING

CONDITION B PLANT ON STANDBY DIESEL POWER

PUMP	PUMP MOTOR BUS	(SEE REF.1, GENERAL NOTE 6) SET TIME DELAY DEVICE
PUMP - C002A	1E	10 SECONDS
PUMP - C002C	1F	0.2 OR LESS SEC.
PUMP - C002B	1G	10 SECONDS
PUMP - C002D	1F	10 SECONDS

VALVES - SEQUENCE SAME AS CONDITION A

SERVICE PUMPS - SAME AS CONDITION A

7. SYS.1 CKTS.& EQUIPMENT ARE SHOWN. SYS.2 CKTS.& EQUIPMENT ARE IDENTICAL EXCEPT CORRESPONDING EQUIP.NO., SUFFIXES ARE AS FOLLOWS:

   SYS.1 - A & C
   SYS.2 - B & D

8. AUXILIARY RELAYS & DEVICES ARE NOT SHOWN ON THE LOGIC DIAGRAM EXCEPT WHERE NEEDED TO CLARIFY THE FUNCTIONAL REQUIREMENTS.
9. MOTIVE POWER FOR PUMP SHALL BE SUPPLIED FROM BUSSES AS SHOWN IN NOTE 6.
10. THE RESIDUAL HEAT REMOVAL SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH "PROPOSED CRITERIA FOR NUCLEAR POWER PLANT PROTECTION SYSTEM IEEE 279" AS APPLICABLE TO THE CONTROL CIRCUITRY.
11. THE RESIDUAL HEAT REMOVAL SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH REF.14.
12. TIME DELAY IS 10 SECONDS FOR 1E11-C002 A, B, & D. 0.2 SECONDS OR LESS FOR 1E11-C002C.
13. DELETED

NOTES CONT. ON H-19939

FOR REFERENCES, SEE DWG. H-19938.

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E630BA, SHT.1 , REV.4; SHT.2, REV.4; AND SHT.3,REV.4 SCS1 ACCESSION NO. S-15326, S-15327, AND S-15328 RESPECTIVELY.

MPL # E11-1030 ACADOWY H19937

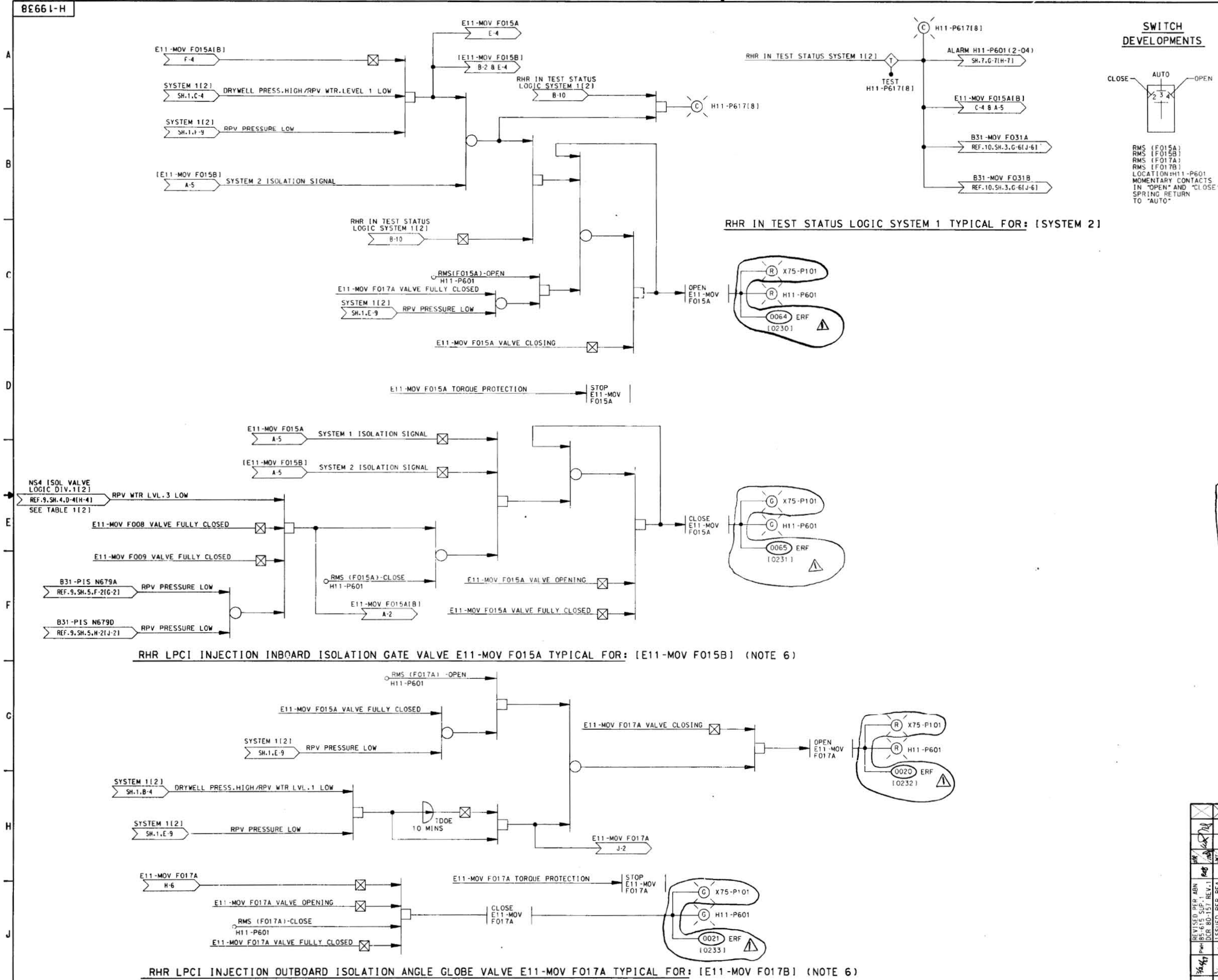
SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RESIDUAL HEAT REMOVAL SYSTEM
LOGIC DIAGRAMS
SHEET 1 OF 7

Version: 5.0	Date: 04/24/14
REVISED PER ABN 1110139901E038, VER. 1.0.	

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	VERSION
ACW	DEF	10-502	H-19937	5.0
DATE	SCALE			
3-14-86	None			

BY	CHK'D	APPR'D
KB	MWD	JMR



REFERENCES

TITLE		MPL NO.	DWG.NO.
1. LOGIC DIAGRAMS-LEGEND & GENERAL NOTES		A21-1030	H-19900
2. RHR SYS P&ID	SH 1 SH 2	E11-1010	H-16329 H-16330
3. RHR SERVICE WATER SYS P&ID		E11-1010	D-11004
4. RX RECIRC SYS P&ID	SH 1 SH 2 SH 3	B31-1010	H-16066 H-16067 H-16068
5. CORE SPRAY SYS P&ID		E21-1010	H-16331
6. RCIC SYS P&ID	SH 1 SH 2	E51-1010	H-16334 H-16335
7. RX BLDG PLANT SERVICE WATER SYS P&ID	SH 1	P41-1010	H-16011
8. SAFEGUARD EQUIP. EMERGENCY COOLING SYSTEM P&ID		T41-1010	H-16023
9. NUCLEAR BOILER SYS LOGIC DIAGRAMS SHEETS 1-12		B21-1030	H-19901 THRU H-19912
10. REACTOR RECIRC SYS LOGIC DIAG SHEETS 1-4		B31-1030	H-19913 THRU H-19917
11. CORE SPRAY SYS. LOGIC DIAGRAMS SHEETS 1-3		E21-1030	H-19944 THRU H-19946
12. HPCI SYSTEM LOGIC DIAGRAMS SHEETS 1-8		E41-1030	H-19947 THRU H-19954
13. RCIC SYSTEM LOGIC DIAGRAMS SHEETS 1-8		E51-1030	H-19955 THRU H-19962
14. GE 22A2989 ELECTRICAL EQUIP. SEPARATION FOR SAFEGUARD SYSTEMS		A61-4050	S-17108
15. NUCLEAR BOILER SYS.P&ID.	SH.1 SH.2 SH.3	B21-1010	H-16062 H-16063 H-16145
16. HPCI SYS. P&ID.	SH.1 SH.2	E41-1010	H-16332 H-16333
17. ERF MULTIPLEXER SYSTEM I.E.D.		X75-1010	H-16401
18. ANNUNCIATOR SIGNALS TO TSC I.E.D.		X75-1010	H-16402
19. DIGITAL INPUT SIGNAL TO THE ERF COMPUTER SYSTEM I.E.D. SHTS.2,3,4,13,15		X75-1010	H-16404 H-16405 H-16406 H-16415 H-16417
20. ERF CLASS 1E TO NON CLASS 1E DIGITAL ISOLATION SYSTEM		X75A	H-19770 H-19771 H-19772

FOR NOTES, SEE DWG. H-19937, H-19939

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E630BA, SHT.1, REV.4; SHT.2, REV.4; AND SHT.3,REV.4 SCSI ACCESSION NO. S-15326, S-15327, AND S-15328 RESPECTIVELY.

MPL NO. E11-1030

BECHTEL

JOB 6511 GAITHERSBURG, MARYLAND

SOUTHERN SERVICES INC.
FOR

GEORGIA POWER CO., ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

EDWIN I.HATCH NUCLEAR PLANT UNIT NO.1
RESIDUAL HEAT REMOVAL SYSTEM
LOGIC DIAGRAMS
SHEET 2 OF 7

NO.	DATE	BY	REVISIONS	CHK	S/P/YR	PROJ. ENGR	ENGR	CLIENT
0	3/18/86	AGW	ISSUED PER REA HT-4674	MEG	JWY RHB	GAK	DEF	
1		PWH	REVISED PER ABN 85-615 SUP.1 DCR 80-157 REV.1					

APPROVALS: GAFFOUR A. KOSI 3/18/86

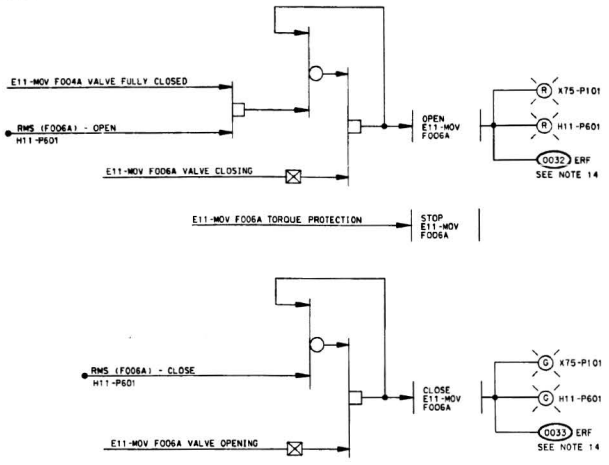
DSGN. DEF | DR. CADD/AGW | CHK MEG | SCALE NONE | DATE 3-14-86

DRAWING NUMBER: LOCATION 10-502 | SHEET NO. H-19938

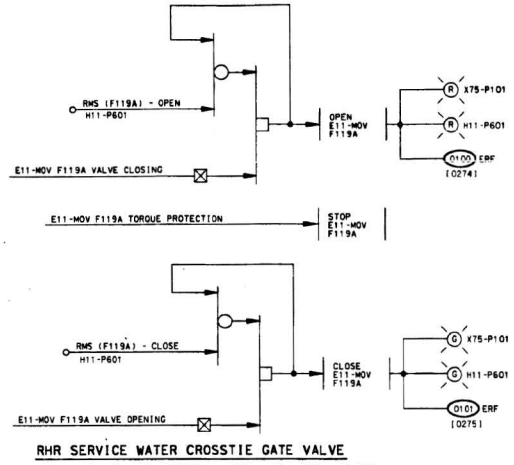
FIG.NO.7.4-8 (SHEET 2 OF 7)

LAST WORKED 3-25-87

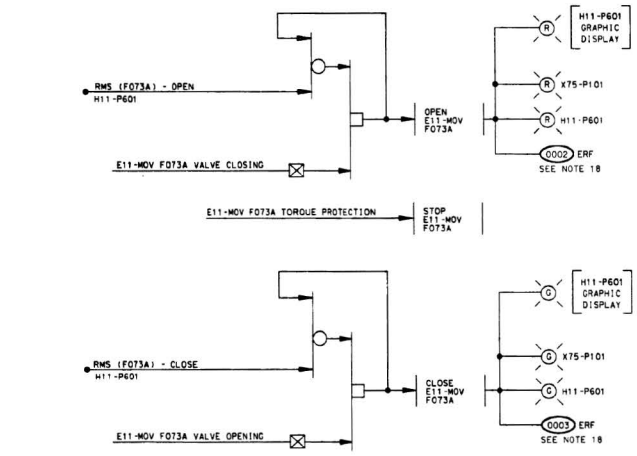
H-19939



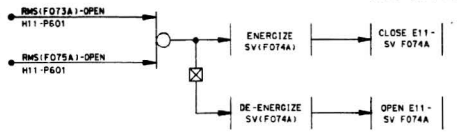
SHUTDOWN COOLING GATE VALVE E11-MOV F006A TYPICAL FOR: E11-MOV F006B,C,D



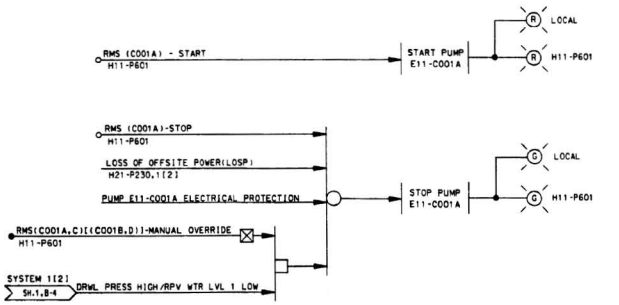
RHR SERVICE WATER CROSSTIE GATE VALVE
E11-MOV F119A TYPICAL FOR: E11-MOV F119B



SERVICE WATER CROSSTIE GATE VALVE E11-MOV F073A TYPICAL FOR:
E11-MOV F073B
[E11-MOV F075A,B]

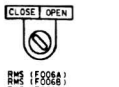


SERVICE WATER CROSSTIE DRAIN VALVE E11-SV F074A TYPICAL FOR: E11-SV F074B



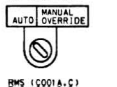
RHR SERVICE WATER PUMP E11-C001A TYPICAL FOR: E11-C001C
[E11-C001B,D]

SWITCH DEVELOPMENTS



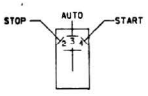
RMS (F006A)
RMS (F006B)
RMS (F006C)
RMS (F006D)
LOCATION:H11-P601
MAINTAINED CONTACTS

RMS (F073A)
RMS (F073B)
RMS (F075A)
RMS (F075B)
LOCATION:H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "CLOSE" ONLY



RMS (C001A,C)
RMS (C001B,D)
LOCATION:H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "AUTO"

RMS (F119A)
RMS (F119B)
LOCATION:H11-P601
MOMENTARY CONTACTS
IN "CLOSE", "OPEN"
SPRING RETURN TO "NORMAL"



RMS (C001A)
RMS (C001B)
RMS (C001C)
RMS (C001D)
LOCATION:H11-P601
MOMENTARY CONTACTS
IN "STOP" AND "START"
SPRING RETURN
TO "AUTO"

NOTES

(CONT. FROM H-19937)

14. ERF COMPUTER INPUTS 0032 AND 0033 ARE FOR E11-MOV-F006A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F006B 0240 AND 0241
    C 0034 AND 0035
    D 0242 AND 0243
15. ERF COMPUTER INPUTS 0026 AND 0027 ARE FOR E11-MOV-F004A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F004B 0234 AND 0235
    C 0030 AND 0031
    D 0236 AND 0237
16. ERF COMPUTER INPUTS 0036 AND 0037 ARE FOR E11-MOV-F047A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F047B 0246 AND 0247
    F003A 0040 AND 0041
    B 0250 AND 0251 (A)
    NO ERF COMPUTER POINTS FOR E11-MOV-F010
17. ERF COMPUTER INPUTS 0022 AND 0023 ARE FOR E11-AOV-F065A ONLY. THE OTHER INPUTS ARE:
    E11-AOV-F065B 0222 AND 0223
    C 0024 AND 0025
    D 0224 AND 0225
18. ERF COMPUTER INPUTS 0002 AND 0003 ARE FOR E11-MOV-F073A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F073B 0216 AND 0217
    F075A 0044 AND 0045
    B 0202 AND 0203
19. ERF COMPUTER INPUTS 0060 AND 0061 ARE FOR E11-MOV-F016A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F016B 256 AND 257
    E11-MOV-F024A 0006 AND 0007
    B 0206 AND 0207
    F027A 0010 AND 0011
    B 0210 AND 0211
20. ERF COMPUTER INPUTS 0054 AND 0055 ARE FOR E11-MOV-F026A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F026B 0244 AND 0245
    E11-MOV-F011A 0012 AND 0013
    B 0212 AND 0213
21. ERF COMPUTER INPUTS 0052 AND 0053 ARE FOR E11-MOV-F028A ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F028B 0254 AND 0255
    E11-MOV-F021A 0004 AND 0005
    B 0204 AND 0205
22. ERF COMPUTER INPUTS 0434 AND 0435 ARE FOR E11-MOV-F008 ONLY. THE OTHER INPUTS ARE:
    E11-MOV-F009 0046 AND 0047
23. ERF COMPUTER INPUT E11-MOV-040 & 0525

FOR NOTES SEE DWG. H-19937
FOR REFERENCES, SEE DWG. H-19938

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO. 729E6308A, SHT.1 : REV.4; SHT.2, REV.4; AND SHT.3,REV.4 SCSI ACCESSION NO. S-15326, S-15327, AND S-15328, RESPECTIVELY.

Revision: 4 Date: 5 21 96
REVISED PER ABN 94-0031-002.

BY | CHK'D | APPR'D | SEE MICROFILM FOR PREVIOUS REV. SIGNATURES
ARK | [signature] | [signature]

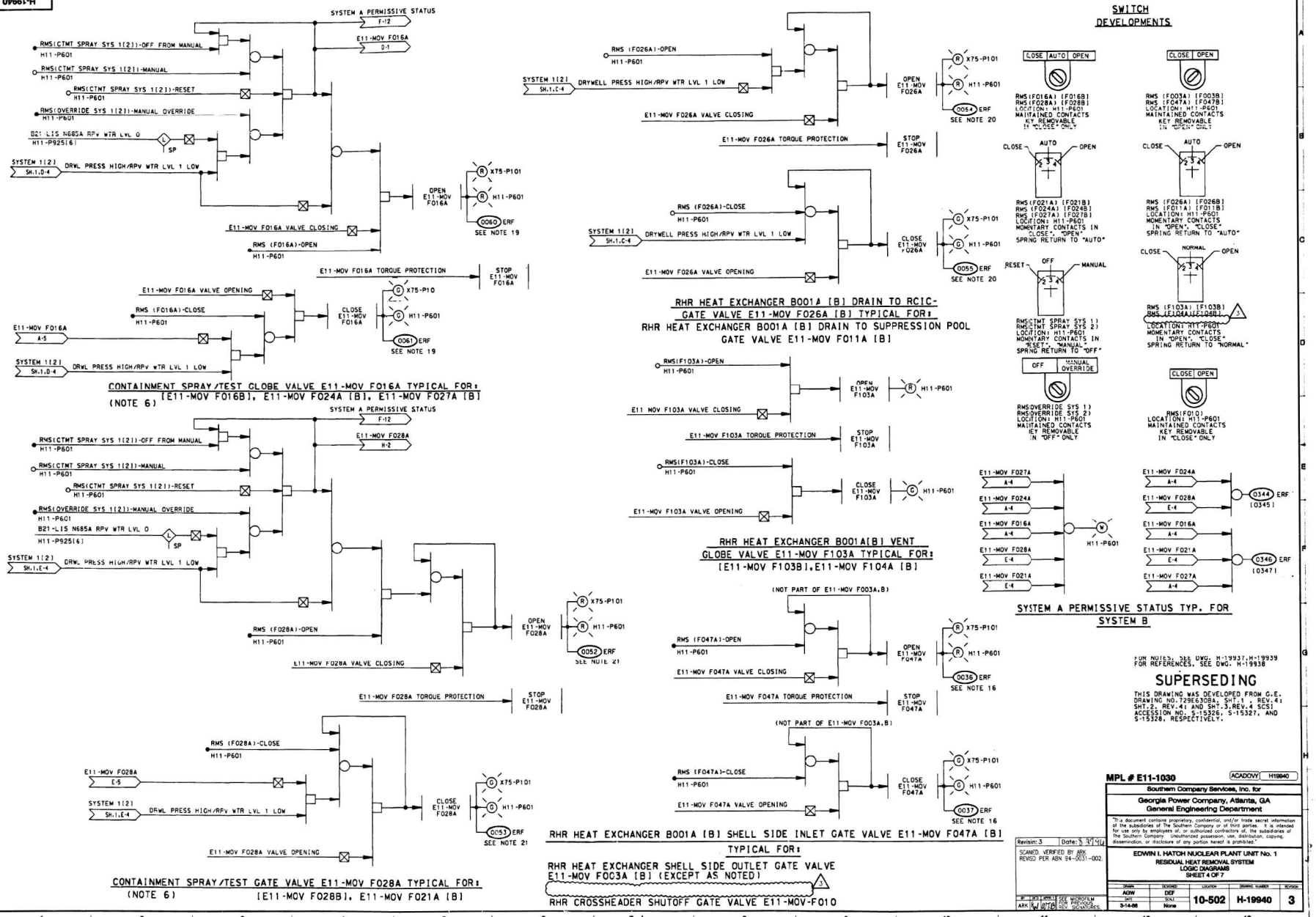
MPL # E11-1030 ACADCVY H19939

Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RESIDUAL HEAT REMOVAL SYSTEM
LOGIC DIAGRAMS
SHEET 3 OF 7

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
ACW	DEF	10-502	H-19939	4
DATE	SCALE			
5-14-96	None			

H-19940


SYSTEM A PERMISSIVE STATUS
F-12
E11-MOV F016A
D-1
RMS(CTMT SPRAY SYS 1(2))-OFF FROM MANUAL
H11-P601
RMS(CTMT SPRAY SYS 1(2))-MANUAL
H11-P601
RMS(CTMT SPRAY SYS 1(2))-RESET
H11-P601
RMS(OVERRIDE SYS 1(2))-MANUAL OVERRIDE
H11-P601
B21-LIS N685A RPV WTR LVL 0
H11-P925(6)
SP
SYSTEM 1(2)
SH.1,D-4
DRWL PRESS HIGH/RPV WTR LVL 1 LOW
OPEN E11-MOV F016A
X75-P101
H11-P601
0060 ERF
SEE NOTE 19
E11-MOV F016A VALVE CLOSING
RMS (F016A)-OPEN
H11-P601
E11-MOV F016A TORQUE PROTECTION
STOP E11-MOV F016A
E11-MOV F016A VALVE OPENING
RMS (F016A)-CLOSE
H11-P601
CLOSE E11-MOV F016A
0061 ERF
SEE NOTE 19
E11-MOV F016A
A-5
SYSTEM 1(2)
SH.1,D-4
DRWL PRESS HIGH/RPV WTR LVL 1 LOW
CONTAINMENT SPRAY/TEST GLOBE VALVE E11-MOV F016A TYPICAL FOR:
[E11-MOV F016B], E11-MOV F024A [B], E11-MOV F027A [B]
(NOTE 6)
SYSTEM A PERMISSIVE STATUS
F-12
E11-MOV F028A
H-2
RMS(CTMT SPRAY SYS 1(2))-OFF FROM MANUAL
H11-P601
RMS(CTMT SPRAY SYS 1(2))-MANUAL
H11-P601
RMS(CTMT SPRAY SYS 1(2))-RESET
H11-P601
RMS(OVERRIDE SYS 1(2))-MANUAL OVERRIDE
H11-P601
B21-LIS N685A RPV WTR LVL 0
H11-P925(6)
SP
SYSTEM 1(2)
SH.1,E-4
DRWL PRESS HIGH/RPV WTR LVL 1 LOW
RMS (F028A)-OPEN
H11-P601
OPEN E11-MOV F028A
X75-P101
H11-P601
0052 ERF
SEE NOTE 21
E11-MOV F028A VALVE CLOSING
E11-MOV F028A TORQUE PROTECTION
STOP E11-MOV F028A
RMS (F028A)-CLOSE
H11-P601
E11-MOV F028A
E-5
SYSTEM 1(2)
SH.1,E-4
DRWL PRESS HIGH/RPV WTR LVL 1 LOW
CLOSE E11-MOV F028A
0053 ERF
SEE NOTE 21
E11-MOV F028A VALVE OPENING
CONTAINMENT SPRAY/TEST GATE VALVE E11-MOV F028A TYPICAL FOR:
(NOTE 6)
[E11-MOV F028B], E11-MOV F021A [B]
RMS (F026A)-OPEN
H11-P601
SYSTEM 1(2)
SH.1,C-4
DRYWELL PRESS HIGH/RPV WTR LVL 1 LOW
OPEN E11-MOV F026A
X75-P101
H11-P601
0054 ERF
SEE NOTE 20
E11-MOV F026A VALVE CLOSING
E11-MOV F026A TORQUE PROTECTION
STOP E11-MOV F026A
RMS (F026A)-CLOSE
H11-P601
SYSTEM 1(2)
SH.1,C-4
DRYWELL PRESS HIGH/RPV WTR LVL 1 LOW
CLOSE E11-MOV F026A
0055 ERF
SEE NOTE 20
E11-MOV F026A VALVE OPENING
RHR HEAT EXCHANGER B001A (B) DRAIN TO RCIC-
GATE VALVE E11-MOV F026A (B) TYPICAL FOR:
RHR HEAT EXCHANGER B001A (B) DRAIN TO SUPPRESSION POOL
GATE VALVE E11-MOV F011A (B)
RMS(F103A)-OPEN
H11-P601
OPEN E11-MOV F103A
H11-P601
E11 MOV F103A VALVE CLOSING
E11-MOV F103A TORQUE PROTECTION
STOP E11-MOV F103A
RMS(F103A)-CLOSE
H11-P601
CLOSE E11-MOV F103A
E11-MOV F103A VALVE OPENING
RHR HEAT EXCHANGER B001A(B) VENT
GLOBE VALVE E11-MOV F103A TYPICAL FOR:
[E11-MOV F103B], E11-MOV F104A [B]
(NOT PART OF E11-MOV F003A,B)
RMS (F047A)-OPEN
H11-P601
OPEN E11-MOV F047A
X75-P101
H11-P601
0036 ERF
SEE NOTE 16
E11-MOV F047A VALVE CLOSING
E11-MOV F047A TORQUE PROTECTION
STOP E11-MOV F047A
(NOT PART OF E11-MOV F003A,B)
RMS (F047A)-CLOSE
H11-P601
CLOSE E11-MOV F047A
0037 ERF
SEE NOTE 16
E11-MOV F047A VALVE OPENING
RHR HEAT EXCHANGER B001A (B) SHELL SIDE INLET GATE VALVE E11-MOV F047A (B)
TYPICAL FOR:
RHR HEAT EXCHANGER SHELL SIDE OUTLET GATE VALVE
E11-MOV F003A (B) (EXCEPT AS NOTED)
3
RHR CROSSHEADER SHUTOFF GATE VALVE E11-MOV-F010
SWITCH
DEVELOPMENTS
CLOSE AUTO OPEN
RMS (F016A) (F016B)
RMS (F028A) (F028B)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE
IN "CLOSE" ONLY
CLOSE OPEN
RMS (F003A) (F003B)
RMS (F047A) (F047B)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE
IN "OPEN" ONLY
CLOSE AUTO OPEN
RMS (F021A) (F021B)
RMS (F024A) (F024B)
RMS (F027A) (F027B)
LOCATION: H11-P601
MOMENTARY CONTACTS IN
"CLOSE", "OPEN"
SPRING RETURN TO "AUTO"
CLOSE AUTO OPEN
RMS (F026A) (F026B)
RMS (F011A) (F011B)
LOCATION: H11-P601
MOMENTARY CONTACTS
IN "OPEN", "CLOSE"
SPRING RETURN TO "AUTO"
RESET OFF MANUAL
RMS(CTMT SPRAY SYS 1)
RMS(CTMT SPRAY SYS 2)
LOCATION: H11-P601
MOMENTARY CONTACTS IN
"RESET", "MANUAL"
SPRING RETURN TO "OFF"
CLOSE NORMAL OPEN
RMS (F103A) (F103B)
RMS (F104A) (F104B)
3
LOCATION: H11-P601
MOMENTARY CONTACTS
IN "OPEN", "CLOSE"
SPRING RETURN TO "NORMAL"
OFF MANUAL OVERRIDE
RMSOVERRIDE SYS 1)
RMSOVERRIDE SYS 2)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE
IN "OFF" ONLY
CLOSE OPEN
RMS(F010)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE
IN "CLOSE" ONLY
E11-MOV F027A
A-4
E11-MOV F024A
A-4
E11-MOV F016A
A-4
E11-MOV F028A
E-4
E11-MOV F021A
E-4
N
H11-P601
E11-MOV F024A
A-4
E11-MOV F028A
E-4
E11-MOV F016A
A-4
E11-MOV F021A
E-4
E11-MOV F027A
A-4
0344 ERF
(0345)
0346 ERF
(0347)
SYSTEM A PERMISSIVE STATUS TYP. FOR
SYSTEM B
FOR NOTES, SEE DWG. H-19937,H-19939
FOR REFERENCES, SEE DWG. H-19938
SUPERSEDING
THIS DRAWING WAS DEVELOPED FROM G.E.
DRAWING NO.729E630BA, SH.1 , REV.4;
SH.2, REV.4; AND SH.3,REV.4 SCSI
ACCESSION NO. S-15326, S-15327, AND
S-15328, RESPECTIVELY.
MPL # E11-1030
ACADOVY H19940
Southern Company Services, Inc. for
Georgia Power Company, Atlanta, GA
General Engineering Department
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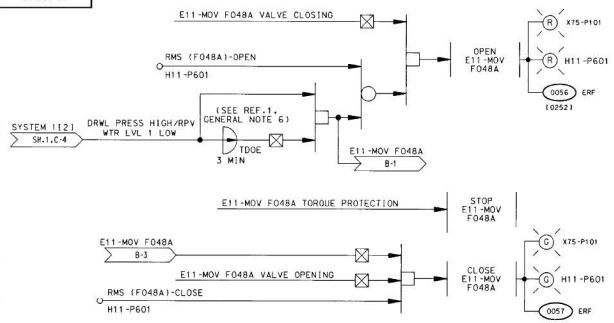
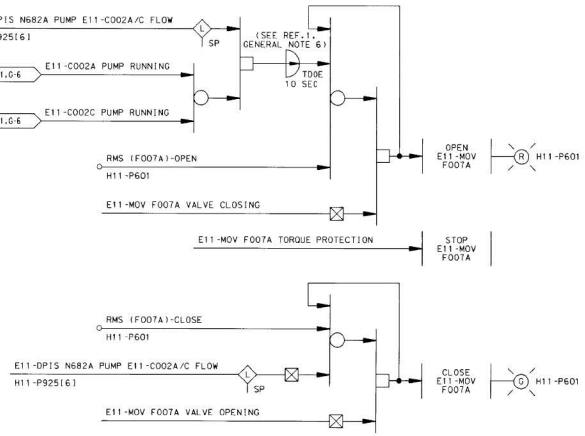
EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RESIDUAL HEAT REMOVAL SYSTEM
LOGIC DIAGRAMS
SHEET 4 OF 7
DRAWN ACW
DESIGNED DEF
LOCATION 10-502
DRAWING NUMBER H-19940
REVISION 3
DATE 3-14-96
SCALE None
Revision: 3 Date: 3/14/96
SCANNED, VERIFIED BY ARK
REVISED PER ABN 94-0031-002
BY DCN APPR'D SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
ARK 96 0078

H-19941



RHR HEAT EXCHANGER SHELL SIDE BYPASS GLOBE VALVE E11-MOV F048A [B]

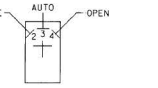


RHR PUMP MINIMUM FLOW BYPASS GATE VALVE E11-MOV F007A [B]

SWITCH DEVELOPMENTS

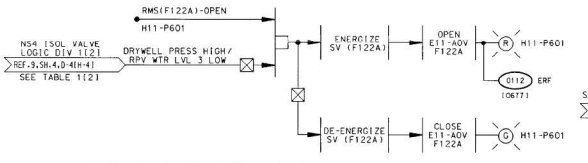
RMS F053A)
RMS F053B)
LOCATION: H11-P601
MAINTAINED CONTACTS

RMS (F122A) (F122B)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "CLOSE" ONLY

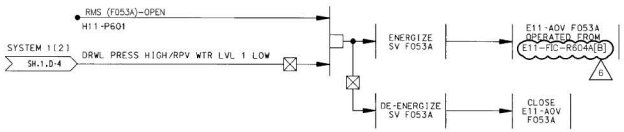


RMS (F007A) (F007B)
RMS (F048A)(F048B)
LOCATION: H11-P601
MOMENTARY CONTACTS IN "CLOSE", "OPEN"
SPRING RETURN TO "AUTO"

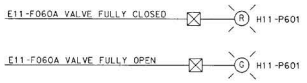
RMS (F068A)(F068B)
LOCATION: H11-P601
MAINTAINED CONTACTS
KEY REMOVABLE IN "NORMAL" ONLY



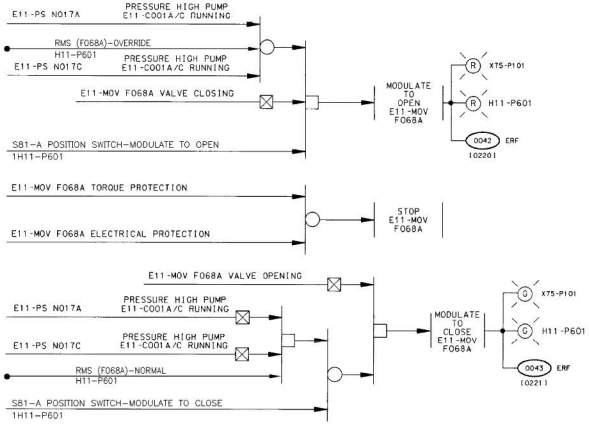
RHR ISOLATION CHECK VALVE BYPASS E11-AOV F122A [B]



CONDENSATE DISCHARGE TO TORUS OR RCIC VALVE E11-AOV F053A[B]



MANUAL RHR INJECTION VALVE E11-F060A [B]



RHR HEAT EXCHANGER B001A[B] SERVICE WATER DISCHARGE BALL VALVE E11-MOV F068A[B]
DIFFERENTIAL PRESSURE CONTROL

FOR NOTES, SEE DWG. H-19937, H-19939
FOR REFERENCES, SEE DWG H-19938

SUPERSEDING

THIS DRAWING WAS DEVELOPED FROM G.E. DRAWING NO.729E630BA, SHT.1 , REV.4; SHT.2, REV.4: AND SHT.3,REV.4 SCSI ACCESSION NO. S-15326, S-15327, AND S-15328 RESPECTIVELY.

Revision: 6	Date: 1-4-01
REVISED PER ABN 99-0022-002.	

BY	CHK'D	APPR'D	SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.
BgT	JAS	RBV	

MPL # E11-1030 ACADOVY H19941

SOUTHERN COMPANY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 1
RESIDUAL HEAT REMOVAL SYSTEM
LOGIC DIAGRAMS
SHEET 5 OF 7

DRAWN	DESIGNED	LOCATION	DRAWING NUMBER	REVISION
AGW	DEF	10-502	H-19941	6
DATE	ISSUE			
3-14-86	None			