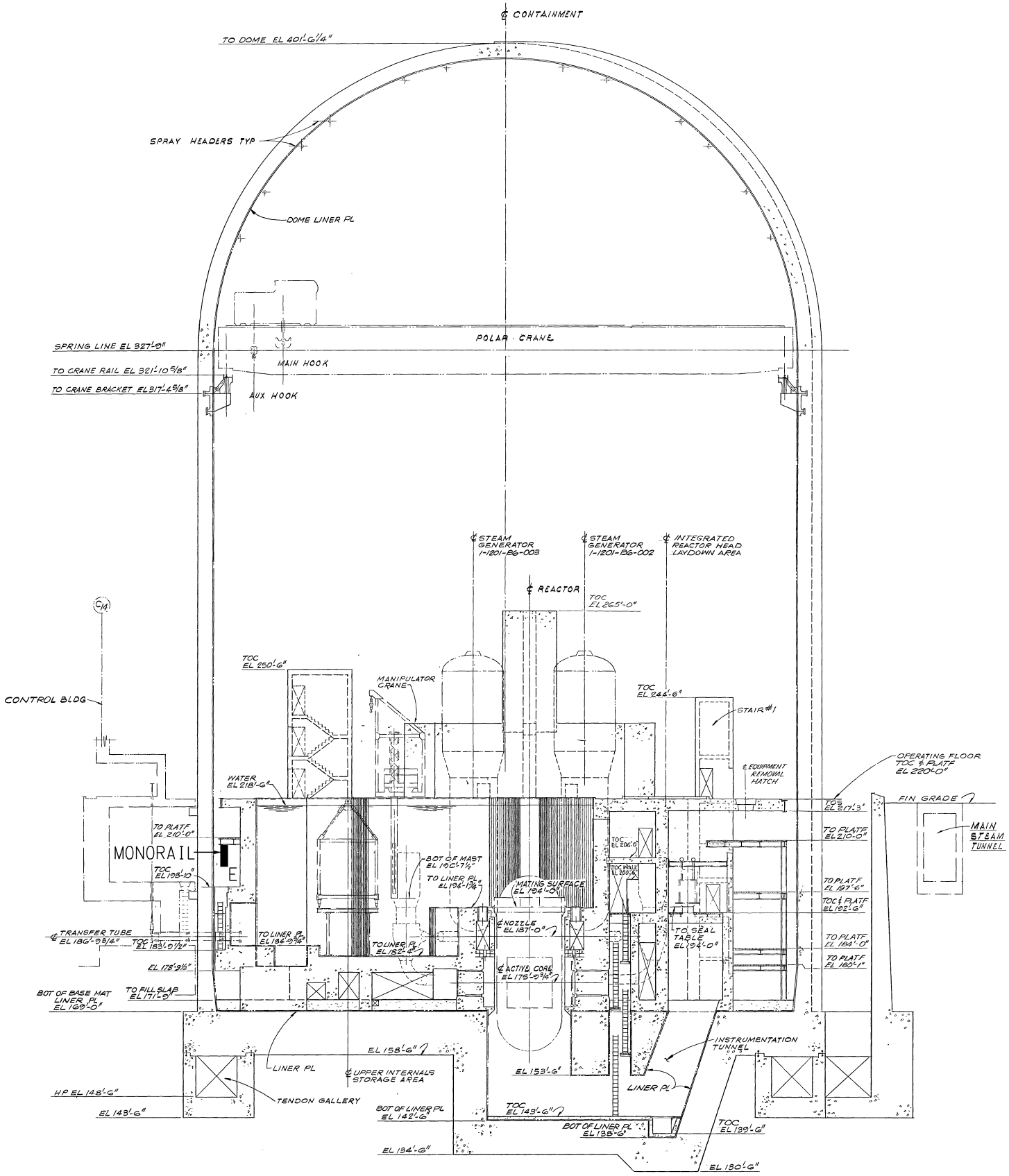


SECTION LOOKING NORTH

LEGEND:
- ■ ELETRIC HOIST
- ● HAND HOIST WITH CEILING RING
- ▶ HAND HOIST WITH FLOOR MOUNTED TRIPOD
- ■ MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- 1-1B CRANE AND LOAD PATH AREA

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
1	ISSUED PER REA 96-VAA054	7-29-98	LVL	RBH	CBH	WFP

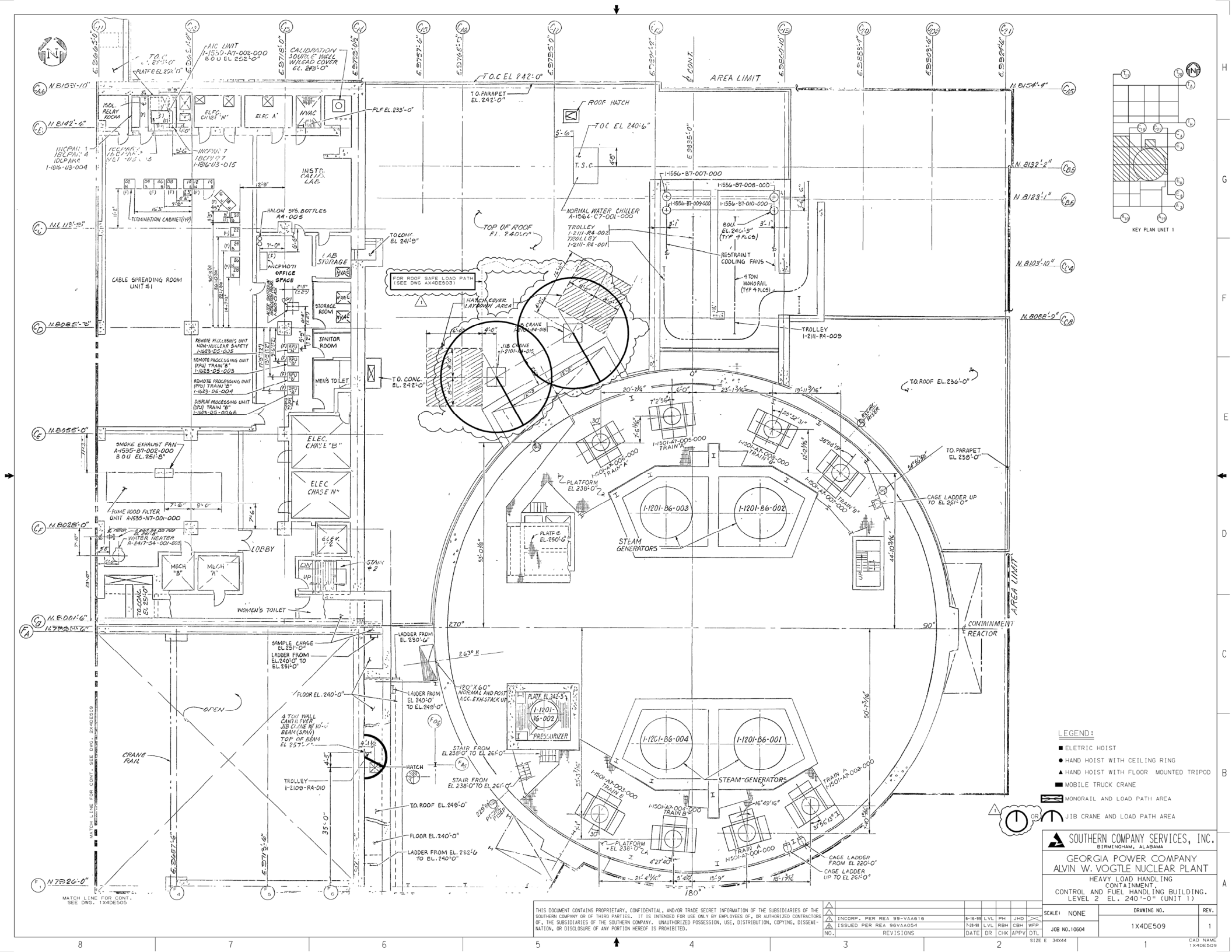
SIZE E 3MM4

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
CONTAINMENT INTERNAL
SECTION LOOKING NORTH

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X4DE508
REV. 0
CAD NAME 1X4DE508



NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
2	INCORP. PER REA 99-VAA616	6-16-99	LVL	PH	JHD	
1	ISSUED PER REA 96VAA054	7-28-98	LVL	RBH	CBH	WFP

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

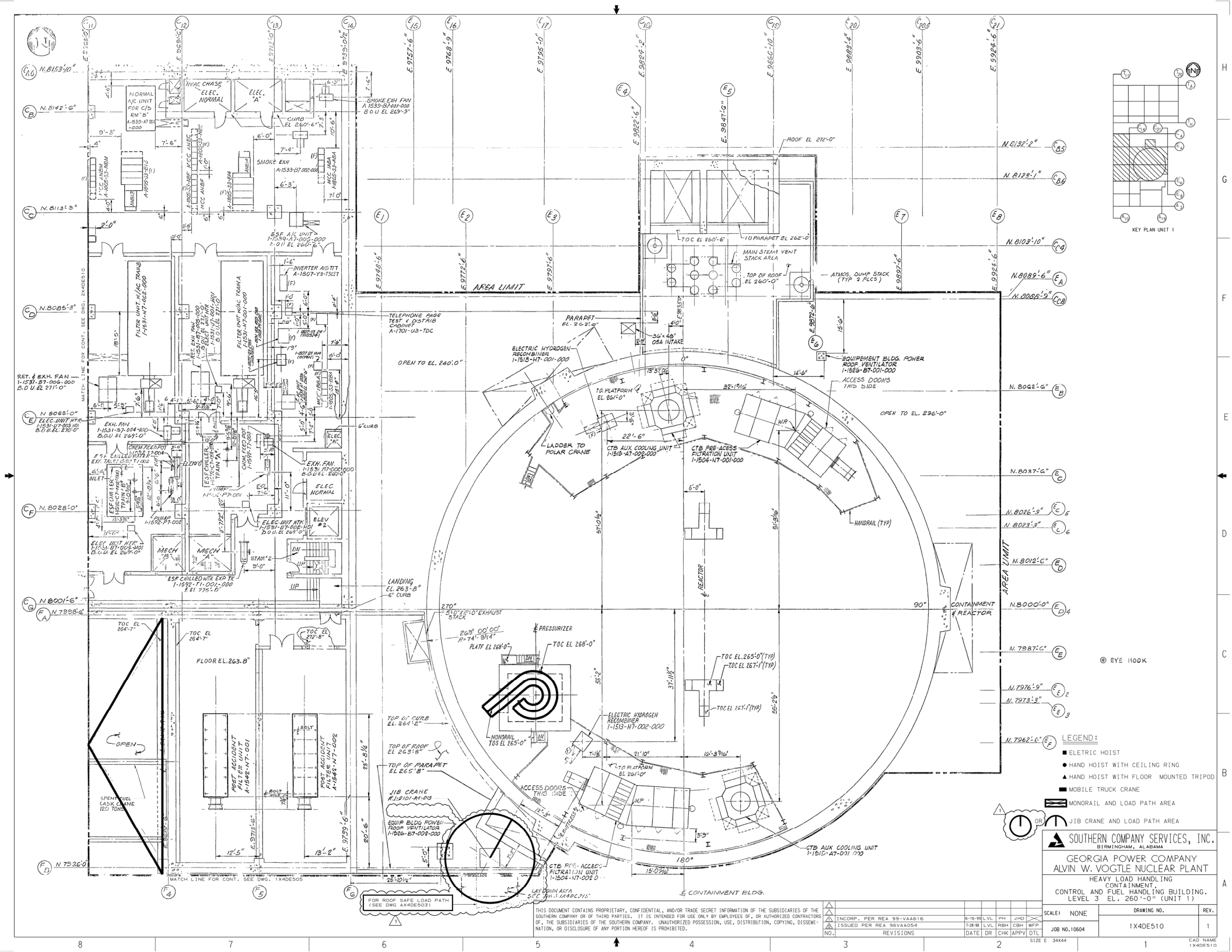
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING CONTAINMENT, CONTROL AND FUEL HANDLING BUILDING. LEVEL 2 EL. 240'-0" (UNIT 1)

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 10604	1X4DE509	1

SIZE E 34X44

CAD NAME 1X4DE509



NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
2	INCORP. PER REA 99-VAA616	6-16-99	LVL	PH	JHD	
1	ISSUED PER REA 96VAA054	7-28-98	LVL	RBH	CBH	WFP

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

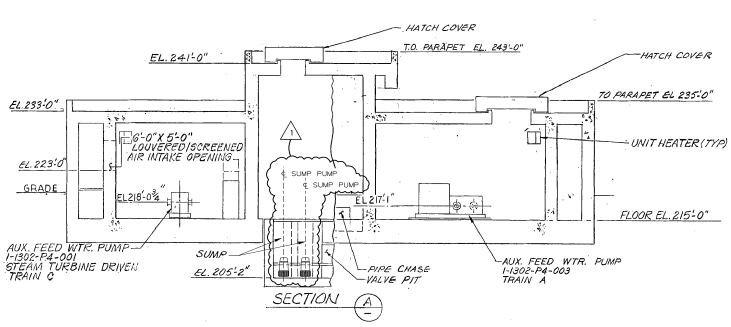
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

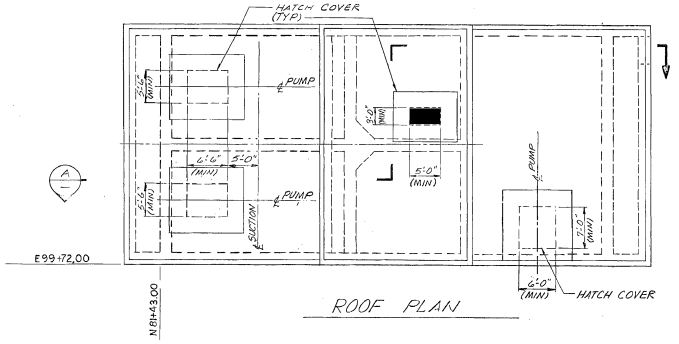
HEAVY LOAD HANDLING CONTAINMENT, CONTROL AND FUEL HANDLING BUILDING. LEVEL 3 EL. 260'-0" (UNIT 1)

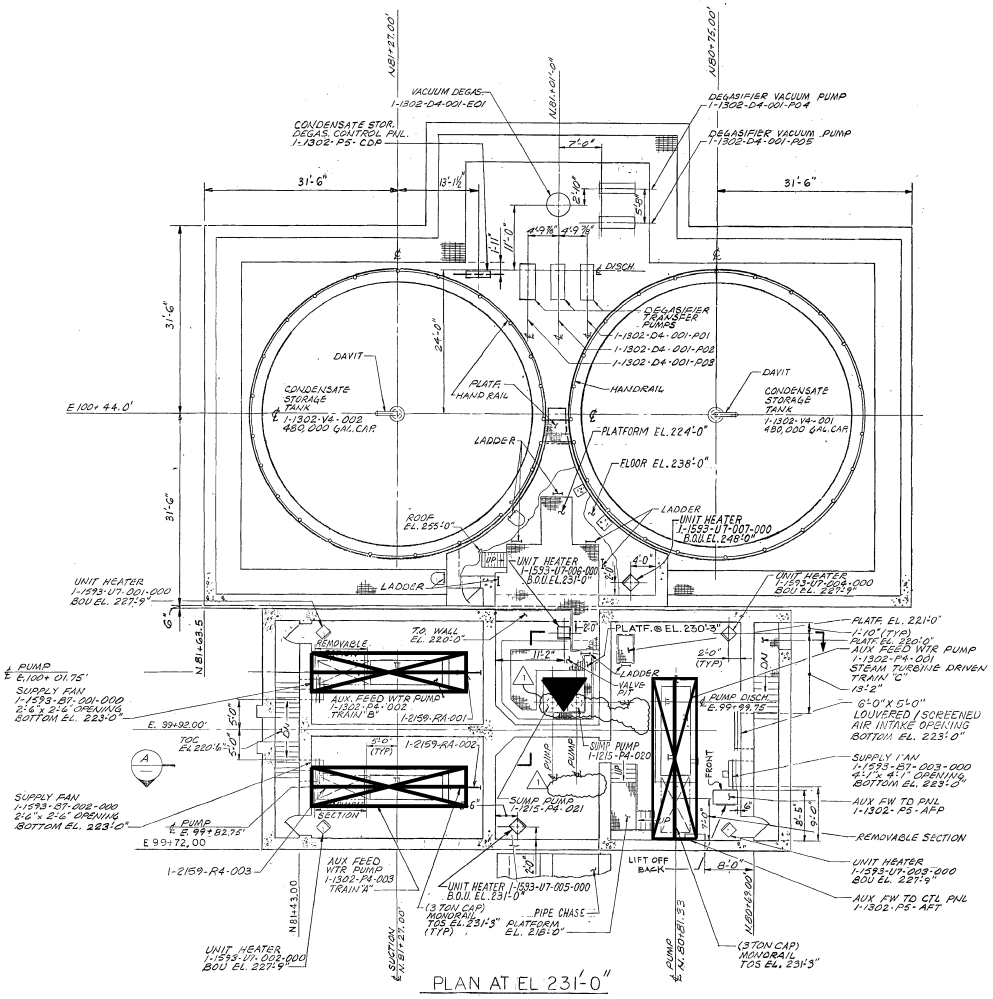
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 10604	1X4DE510	1

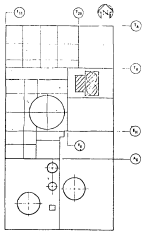
SIZE E 34X44

CAD NAME 1X4DE510









LEGEND:

- ■ ELETRIC HOIST
- ● HAND HOIST WITH CEILING RING
- ▲ HAND HOIST WITH FLOOR MOUNTED TRIPOD
- ▬ MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- JIB CRANE AND LOAD PATH AREA

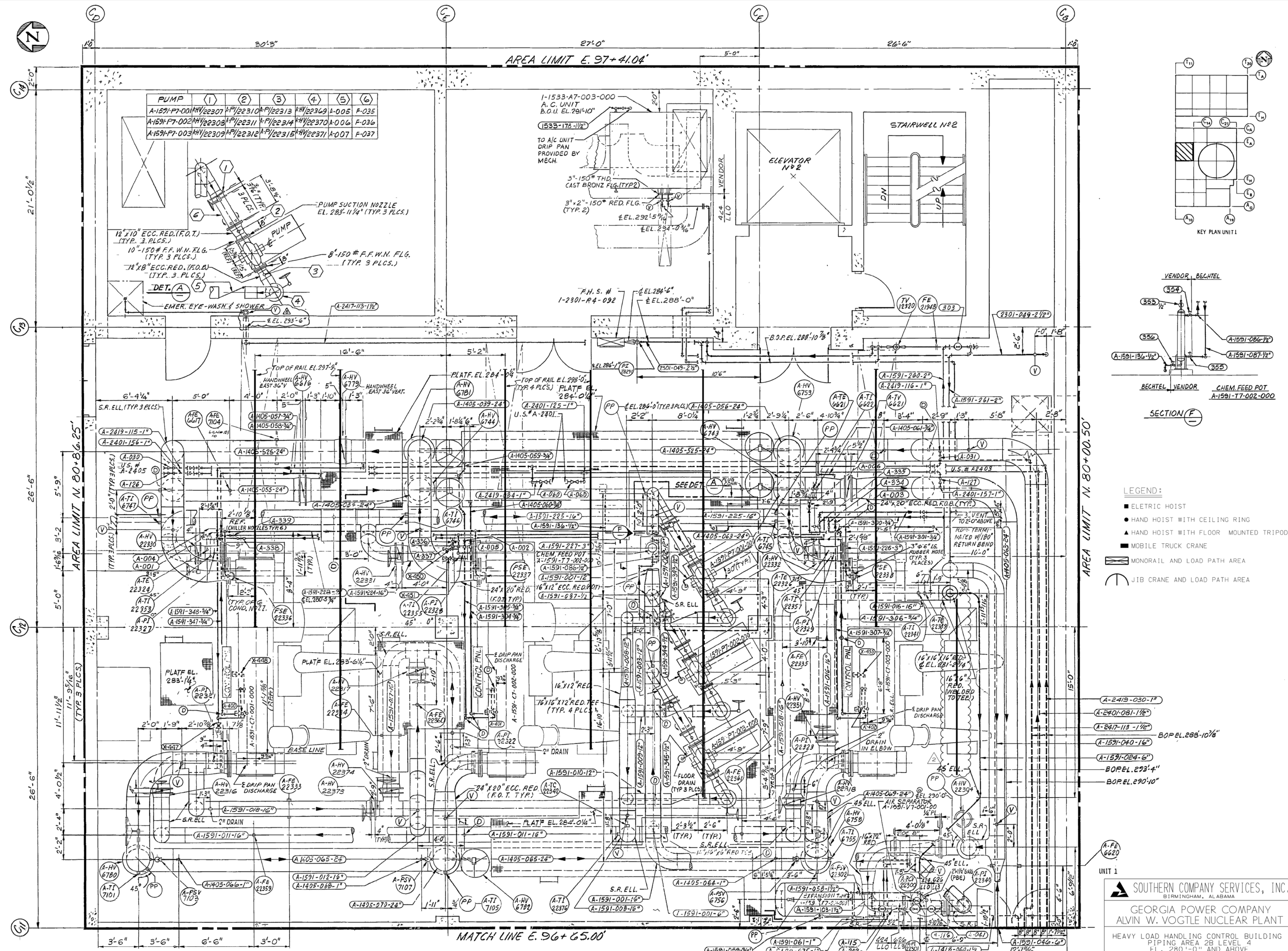
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
AUX. FEEDWATER
PUMP HOUSE AND CONDENSATE
STORAGE TANK

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
3						
2						
1	INCORPORATED PER DCP 97-VAN0063	01/18/01	ELC	GLB	MWD	
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X4DE512
REV. 1
SIZE E 34x44



PUMP	1	2	3	4	5	6
A-1591-P7-001	A-HV/22307	A-PI/22310	A-PI/22313	A-HV/22369	A-005	F-035
A-1591-P7-002	A-HV/22308	A-PI/22311	A-PI/22314	A-HV/22370	A-006	F-036
A-1591-P7-003	A-HV/22309	A-PI/22312	A-PI/22315	A-HV/22371	A-007	F-037

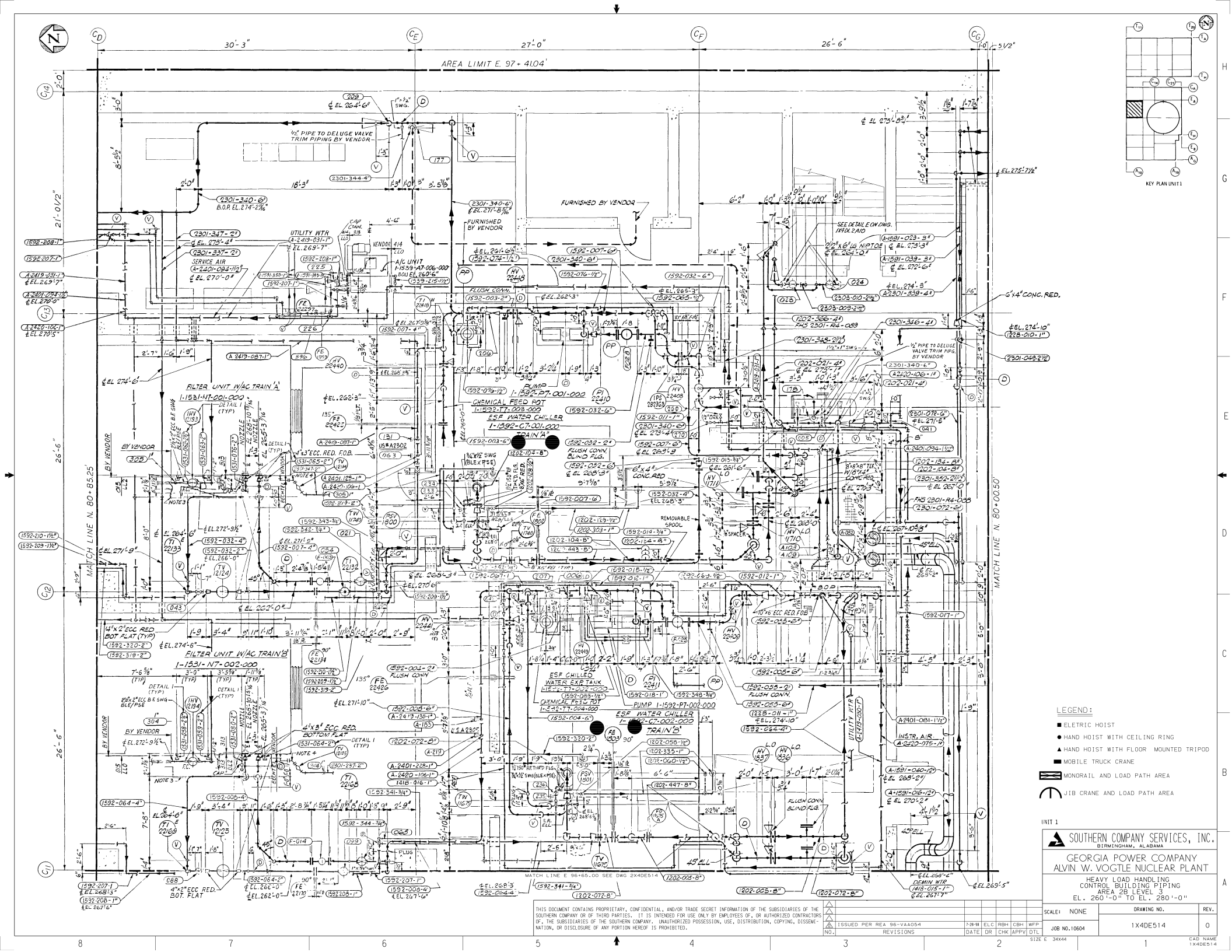
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING CONTROL BUILDING
PIPING AREA 2B LEVEL 4
EL. 280'-0" AND ABOVE

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
2	INCORP. PER ABN-38788	8-07-03	RCR	RBH	DEW	X

SCALE: NONE
JOB NO.10604
DRAWING NO. 1X4DE513
REV. 2
SIZE E 34X44



SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

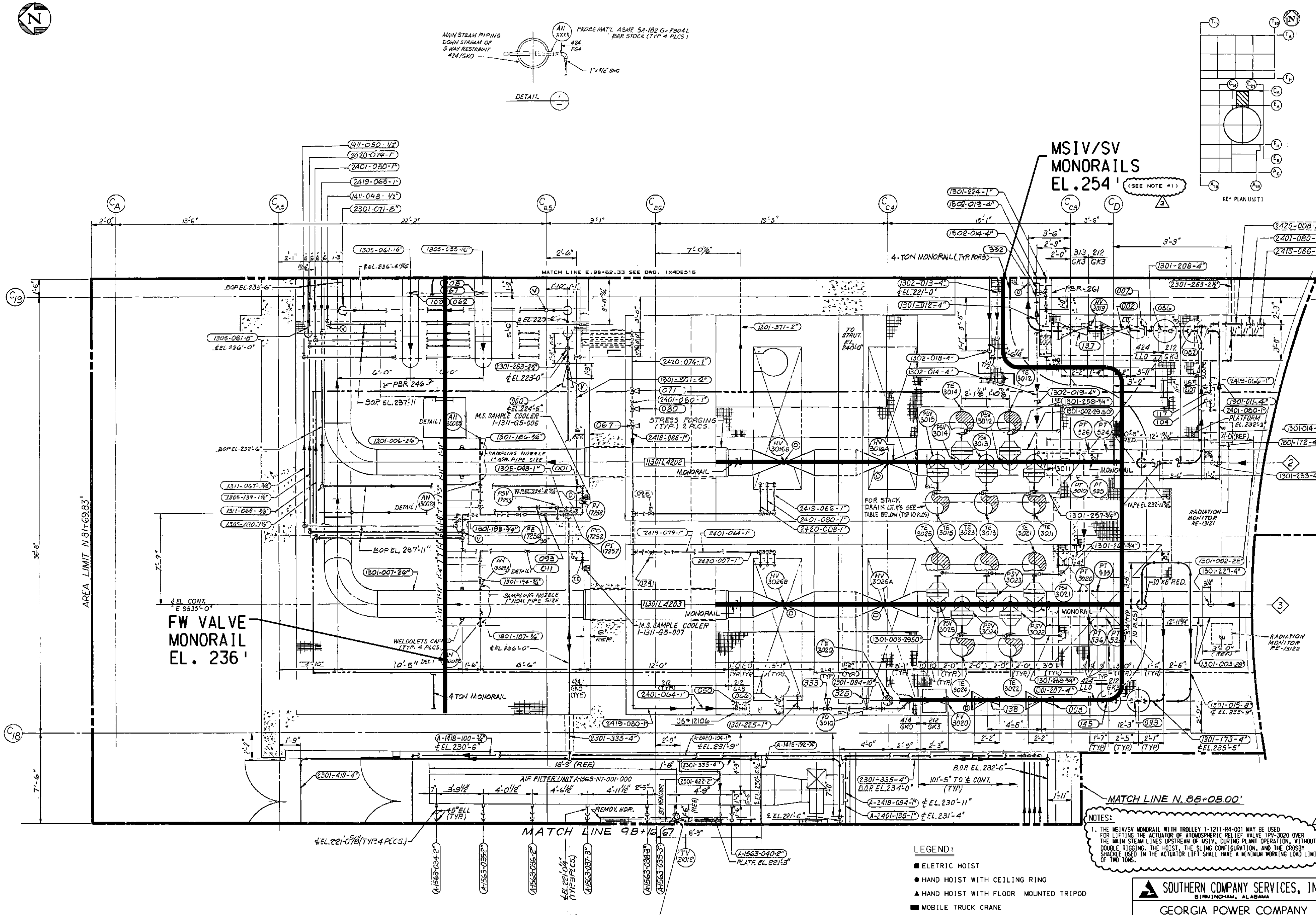
HEAVY LOAD HANDLING
CONTROL BUILDING PIPING
AREA 2B LEVEL 3
EL. 260'-0" TO EL. 280'-0"

SCALE:	DRAWING NO.	REV.
NONE	1X4DE514	0
JOB NO. 10604		

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
1	ISSUED PER REA 96-VAA054	7-28-98	ELC	RBH	CBH	WFP

SIZE E 34X44

CAD NAME 1X4DE514



NOTES:

1. THE MSIV/SV MONORAIL WITH TROLLEY 1-1211-R4-001 MAY BE USED FOR LIFTING THE ACTUATOR OF ATOMOSPHERIC RELIEF VALVE 1PV-3020 OVER THE MAIN STEAM LINES UPSTREAM OF MSIV, DURING PLANT OPERATION, WITHOUT DOUBLE RIGGING. THE HOIST, THE SLING CONFIGURATION, AND THE CROSBY SHACKLE USED IN THE ACTUATOR LIFT SHALL HAVE A MINIMUM WORKING LOAD LIMIT OF TWO TONS.

LEGEND:

- ■ ELETRIC HOIST
- ● HAND HOIST WITH CEILING RING
- ▲ HAND HOIST WITH FLOOR MOUNTED TRIPOD
- ▬ MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- JIB CRANE AND LOAD PATH AREA

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
2	INCORP. PER ABN-51834	3-20-03	LRP	HAB	ASK	

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
NORTH MAIN STEAM VALVE ROOM
PIPING AREA 2E LEVEL 1
EL. 220'-0" AND ABOVE

SCALE: NONE	DRAWING NO.	REV.
JOB NO.10604	1X4DE515	2

SIZE E 34x44

CAD NAME 1X4DE515

MATCH LINE E 99+26.25

AREA LIMIT N 81+69.83"

MATCH LINE E.98+62.33 SEE DWG. 1X4DE515

FW VALVE MONORAIL EL.236'

MSIV/SV MONORAIL EL.254'

ATMOSPHERIC RELIEF VALVE MONORAIL EL. 254'

KEY PLAN UNIT 1

LEGEND:
- ELETRIC HOIST
- HAND HOIST WITH CEILING RING
- HAND HOIST WITH FLOOR MOUNTED TRIPOD
- MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- JIB CRANE AND LOAD PATH AREA

NOTES:
1. THE MSIV/SV MONORAIL WITH TROLLEY 1-1211-R4-0001 MAY BE USED FOR LIFTING THE ACTUATOR OF ATOMSPHERIC RELIEF VALVE 1PV-3020 OVER THE MAIN STEAM LINES UPSTREAM OF MSIV, DURING PLANT OPERATIONS, WITHOUT DOUBLE RIGGING. THE HOIST, THE SLING CONFIGURATION, AND THE CROSBY SHACKLE USED IN THE ACTUATOR LIFT SHALL HAVE A MINIMUM WORKING LOAD LIMIT OF TWO TONS.

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
3	INCORP. PER AGN 51835	3-20-03	LRP	HAB	ASK	

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

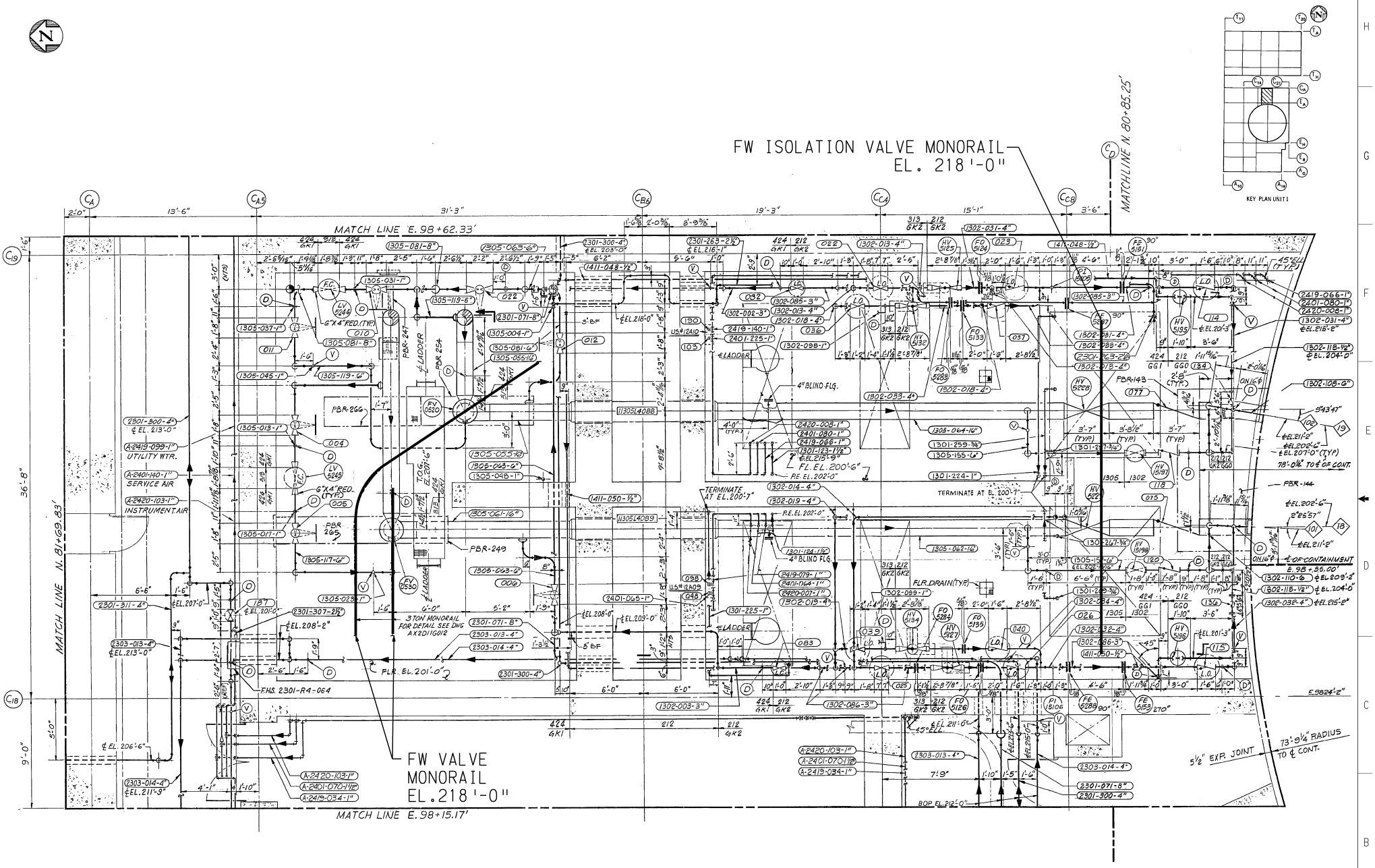
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
CONTROL BUILDING PIPING
AREA 2F LEVEL 1
EL. 220'-0" AND ABOVE

SCALE: NONE	DRAWING NO.	REV.
JOB NO.10604	1X4DE516	1

SIZE E 34X44

CAD NAME 1X4DE516



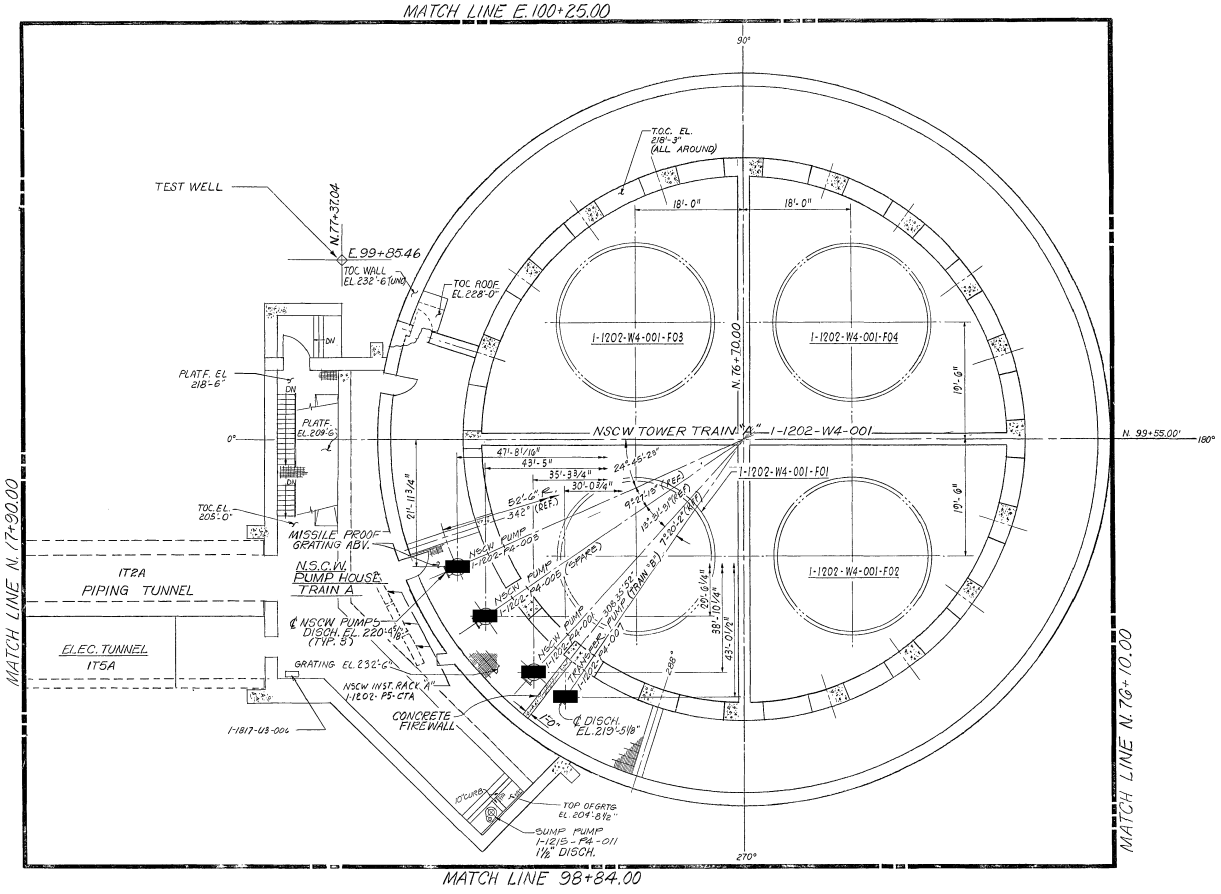
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
NORTH FEEDWATER VALVE
ROOM PIPING AREA 2E LEVEL A
EL. 200'-0" TO EL.220'-0"

SCALE: NONE | DRAWING NO. 1X4DE517 | REV. 0
JOB NO.10604
SIZE E 34X44
CAD NAME 1X4DE517

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4						
3						
2						
1	ISSUED PER REA 96-VAA054	7-28-98	ELC	RBH	CBH	WFP



LEGEND:

- ■ ELETRIC HOIST
- ● HAND HOIST WITH CEILING RING
- ▲ HAND HOIST WITH FLOOR MOUNTED TRIPOD
- ▬ MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- JIB CRANE AND LOAD PATH AREA

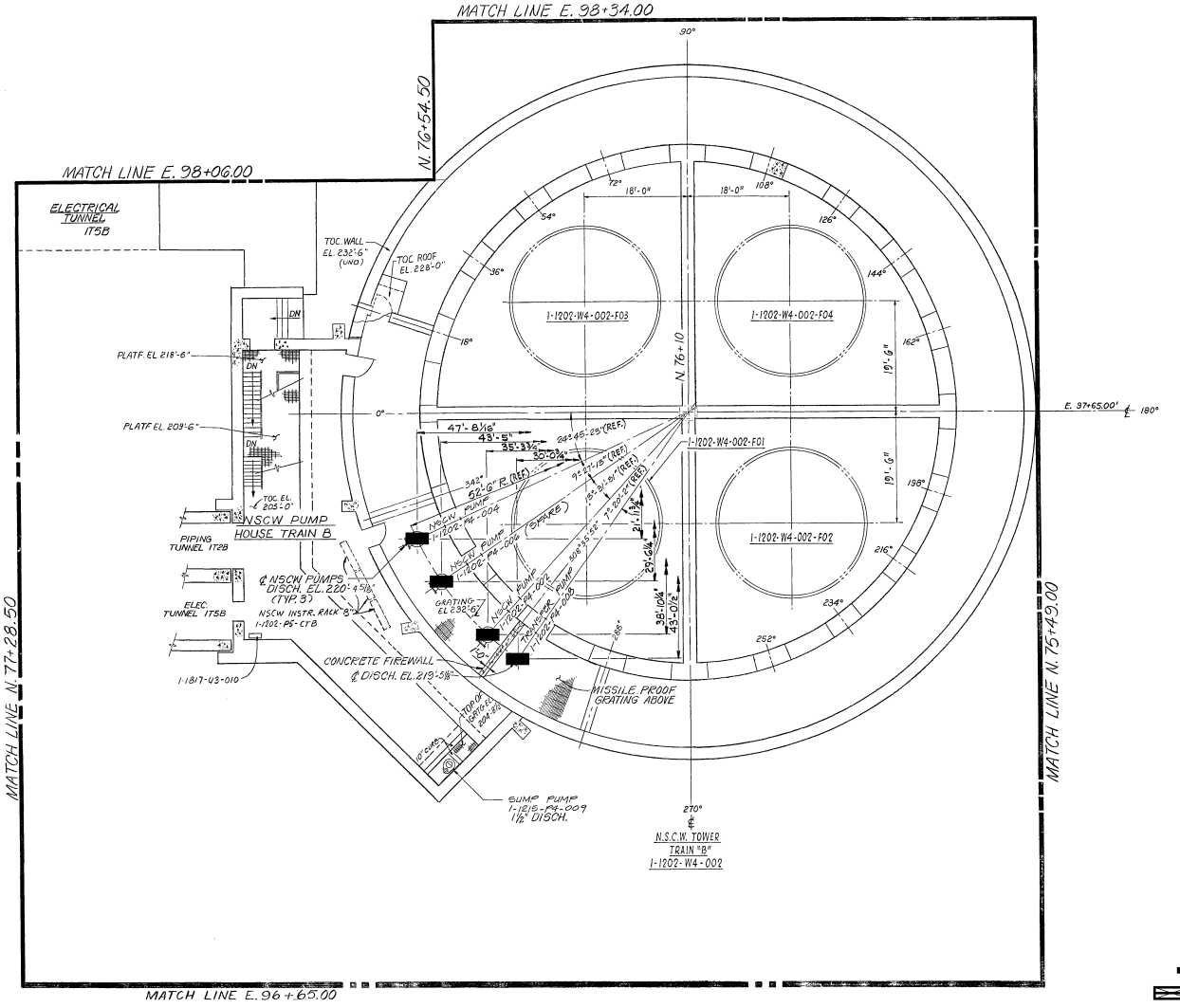
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

HEAVY LOAD HANDLING
TRAIN A
NUCLEAR SERVICE COOLING WATER TOWER
LEVEL 1, EL. 220'-0" (UNIT 1)

SCALE: NONE | DRAWING NO. 1X4DE518 | REV. 0
JOB NO. 10604
SIZE E 34X44
CAD NAME 1X4DE518

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4						
3						
2						
1	ISSUED PER REA 96-VAA054	7-28-98	JLH	RBH	CBH	WFP



LEGEND:

- ■ ELETRIC HOIST
- ● HAND HOIST WITH CEILING RING
- ▲ HAND HOIST WITH FLOOR MOUNTED TRIPOD
- ▬ MOBILE TRUCK CRANE
- MONORAIL AND LOAD PATH AREA
- JIB CRANE AND LOAD PATH AREA

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

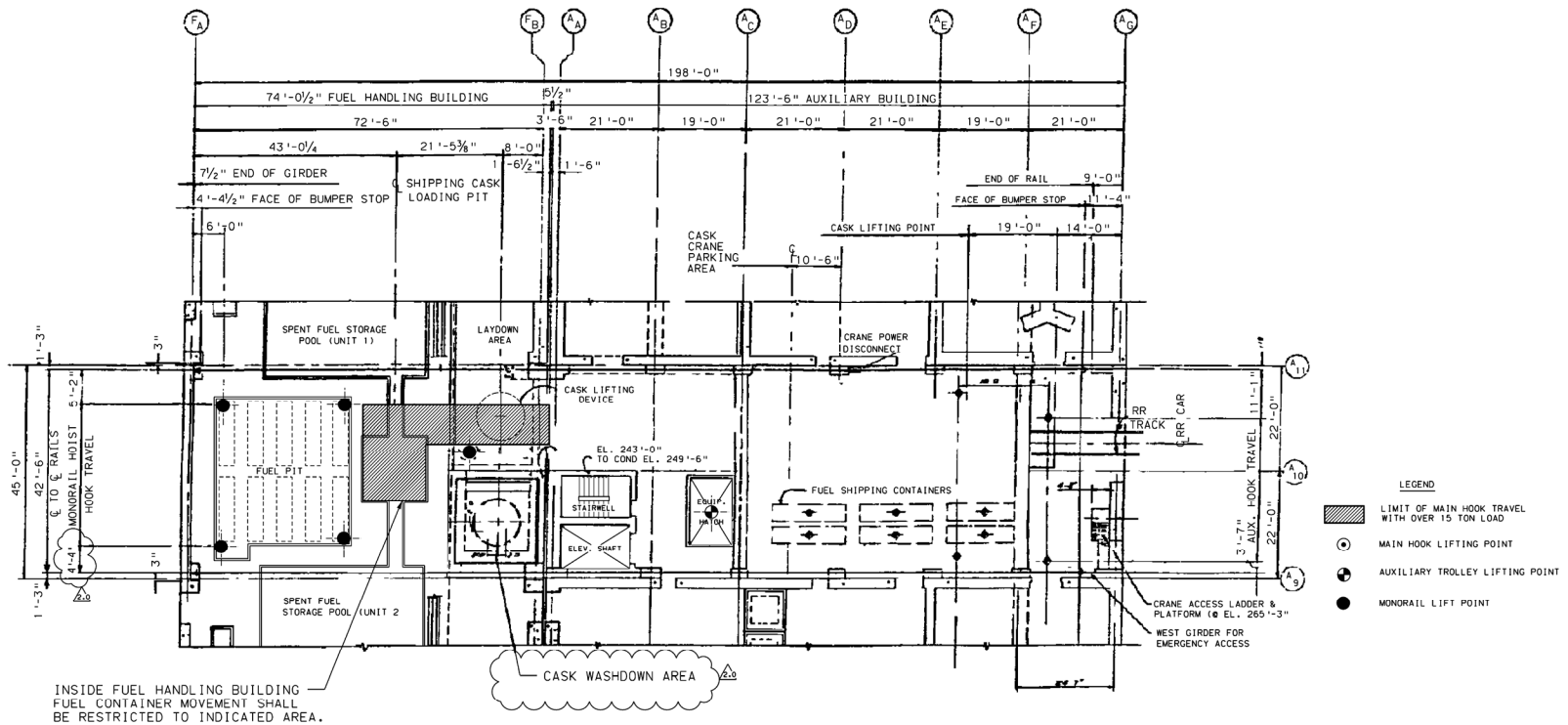
HEAVY LOAD HANDLING
TRAIN B
NUCLEAR SERVICE COOLING WATER TOWER
LEVEL 1 EL. 220'-0" (UNIT 1)

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 10604	1X4DE519	0

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4						
3						
2						
1	ISSUED PER REA 96-VAA054	7-28-98	JLH	RBH	CBH	WFP

SIZE E 34X44

CAD NAME 1X4DE519



NO.	VERSIONS	DATE	DR	CHK	APPV
2.0	REVISED PER ABN SNC142974M025, VER. 2.0	11/12/15	JLO	JMM	JMR

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

SAFE LOAD PATH FOR MOVEMENT OF FUEL CONTAINERS UTILIZING SPENT FUEL CASK BRIDGE CRANE A-2109-R4-001

SCALE: NONE
DRAWING NO.: 1X4DE603
VER.: 2.0
JOB NO.10604
SIZE E 34x44

NOTES: (UNIT 1 ONLY)
1. LIFTS IN THE MEZZANINE AREA OVER THE SEAL INJECTION FILTER PITS, R-B151 OR R-B152, WHEN CONCRETE PLUGS ARE NOT INSTALLED SHALL BE LIMITED TO THE EQUIPMENT REQUIRED TO PERFORM CARTRIDGE FILTER ELEMENT REPLACEMENTS (I.E. WORKING SHIELD PLUG, CENTRAL PLUG, AND TRANSFER CASK).

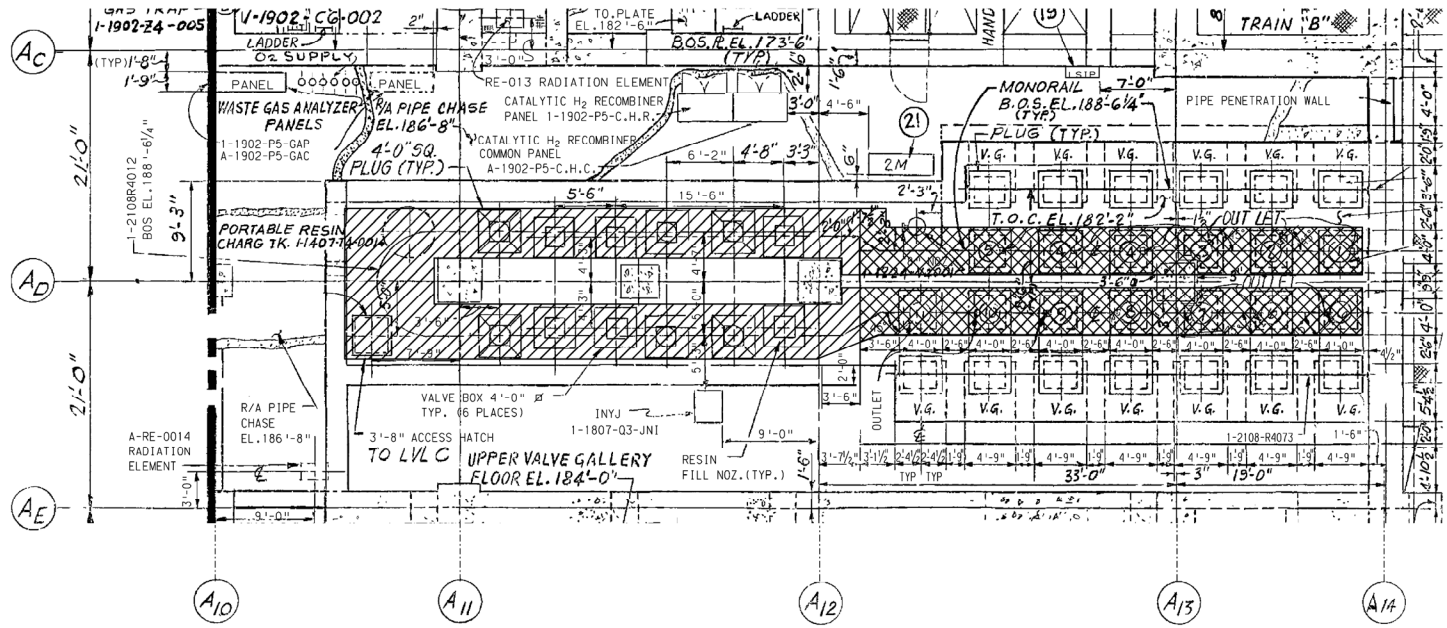
1.0

LEGEND

THE LOAD IN THIS AREA SHALL NOT BE LIFTED HIGHER THAN 3 FEET (AS MEASURED FROM SLAB TO BOTTOM OF LOAD).

THE LOAD HEIGHT IN THIS AREA IS NOT LIMITED.

1.0



1.0

NOTE: UNIT 1 SHOWN. UNIT 2 IS A MIRROR IMAGE.

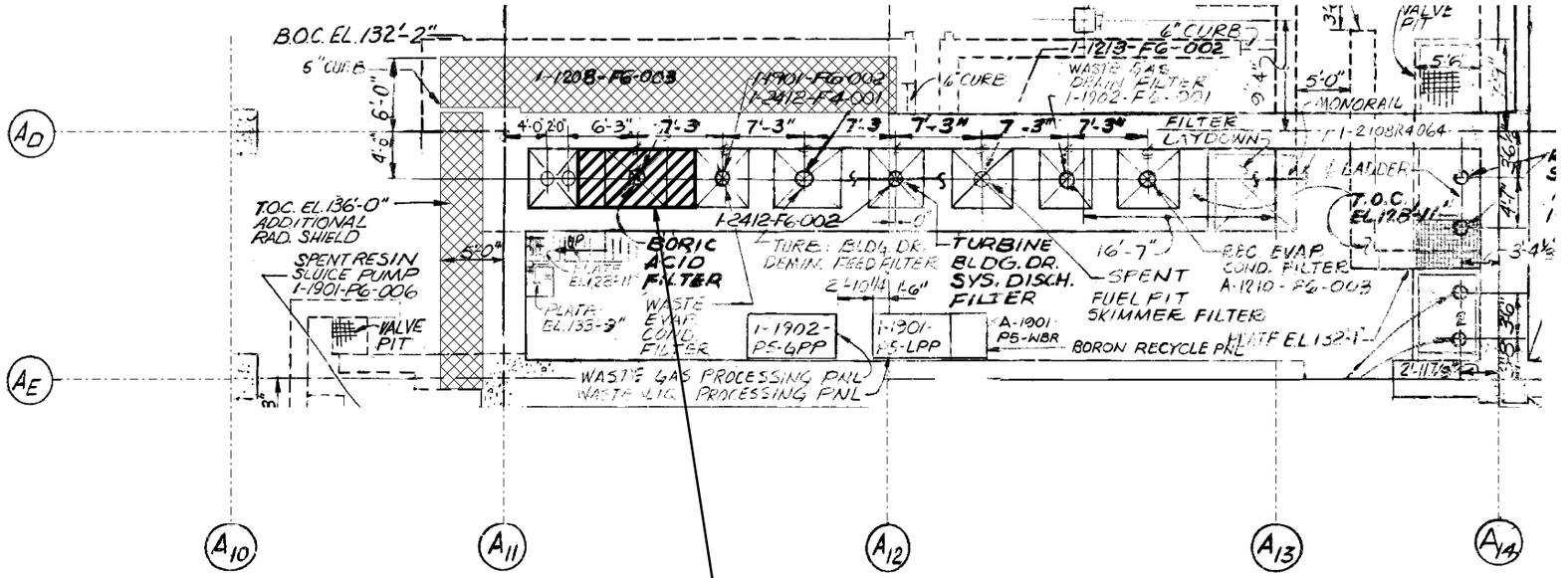
NO.	VERSIONS	DATE	DR	CHK	APPV
1.0	REVISED PER ABN SNC517148C010, VER.1.0	09/15/14	JLO	CYN	TSL

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

SAFE LOAD PATH FOR BACKFLUSHABLE FILTER MONORAIL
AUXILIARY BUILDING
LEVEL B MONORAIL 2108-R4-012

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X4DE605
VER. 1.0
SIZE D 22X34



IN THE INDICATED AREA THE LOAD
SHALL NOT BE LIFTED HIGHER THAN 1 FOOT
(AS MEASURED FROM SLAB TO BOTTOM OF LOAD)

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
1	REVISED PER REA 96-VAA054	10-1-98	GS	RBH	CBH	
0	ISSUED PER REA 96-VAA054	SEE MICROFILM FOR SIGNATURES				

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

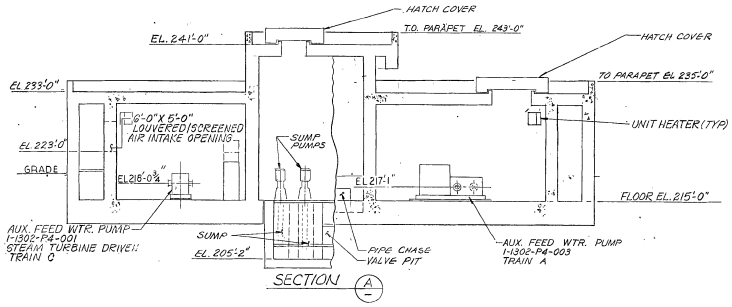
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

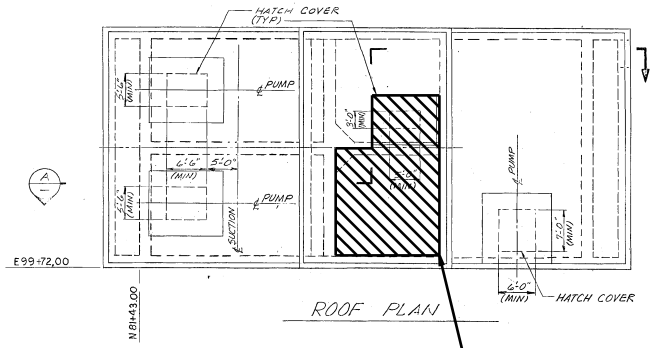
SAFE LOAD PATH FOR CARTRIDGE FILTER MONORAIL
AUXILIARY BUILDING
LEVEL D MONORAIL 2108-R4-064
(UNIT 1)

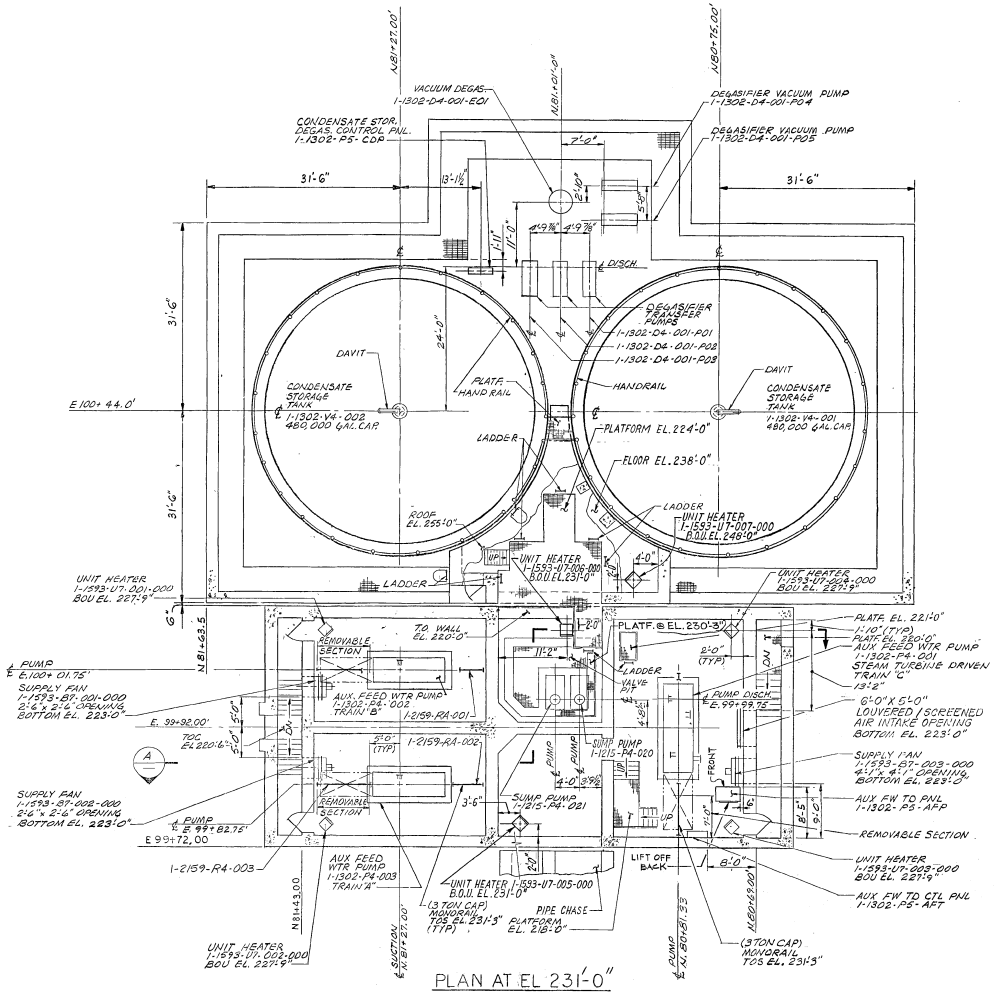
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 10604	1X4DE606	1

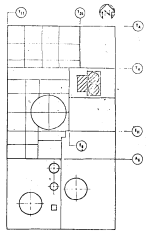
SIZE D 22X34

CAD NAME 1X4DE606









THE LOAD SHALL BE LIFTED ONLY IN THE INDICATED AREA AND SHALL NOT BE LIFTED HIGHER THAN 2 FT. (AS MEASURED FROM THE SLAB TO THE BOTTOM OF THE LOAD).

NOTE: UNIT 1 SHOWN. UNIT 2 IS A MIRROR IMAGE.

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

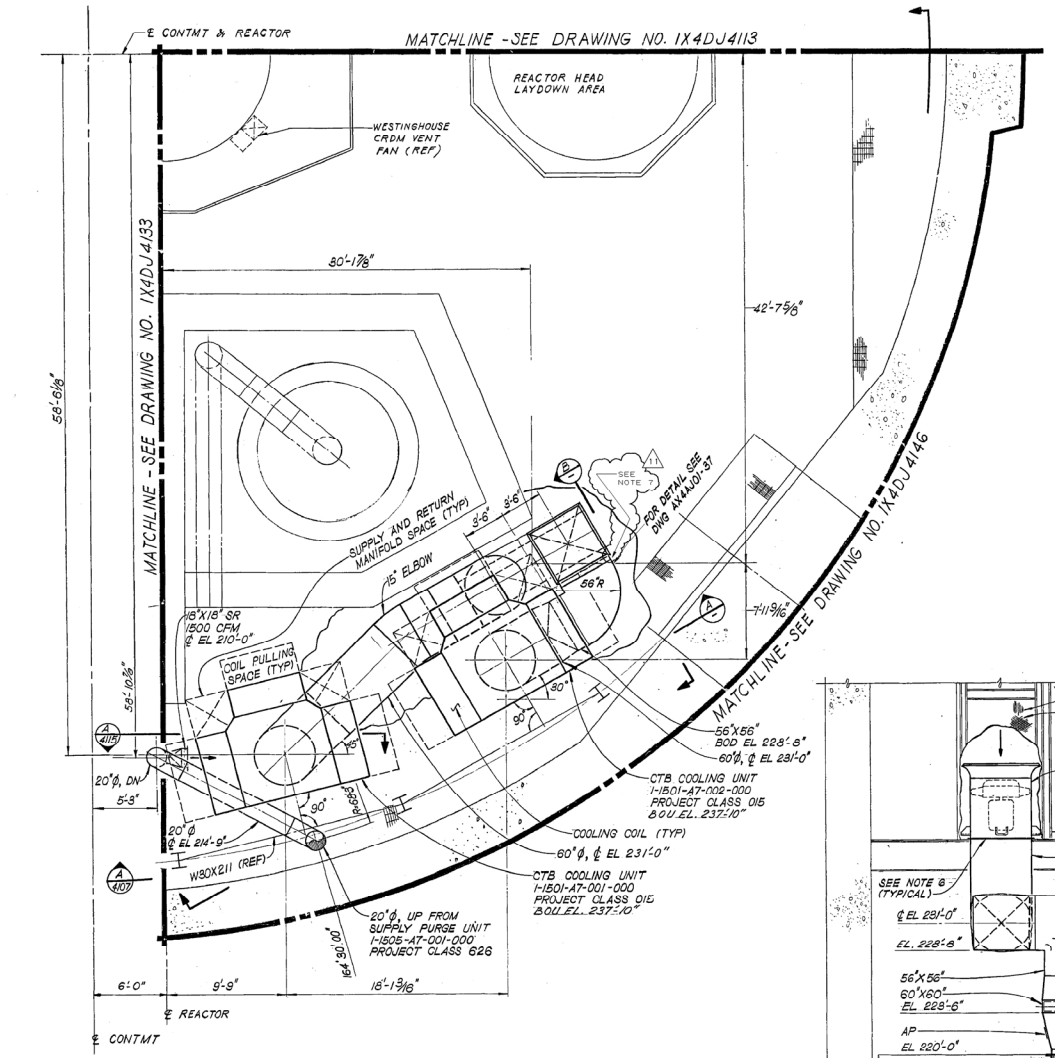
SAFE LOAD PATH
FOR AUXILIARY FEEDWATER PUMPHOUSE
SUMP PUMP HATCHES

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 10604	1X4DE607	0

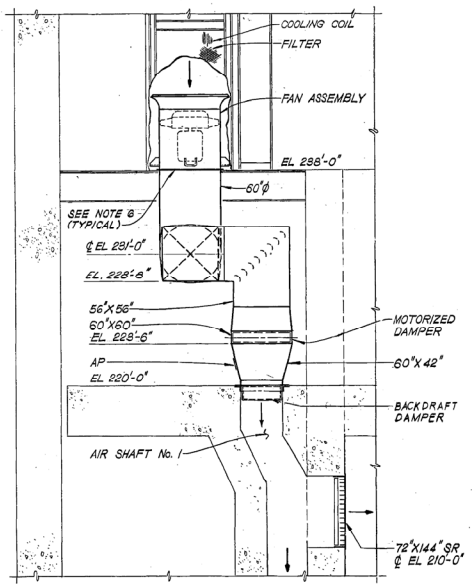
NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4						
3						
2						
1	ISSUED PER REA 96-VAA054	7-26-96	SRM	RBH	CBH	WFP

SIZE E 34X44

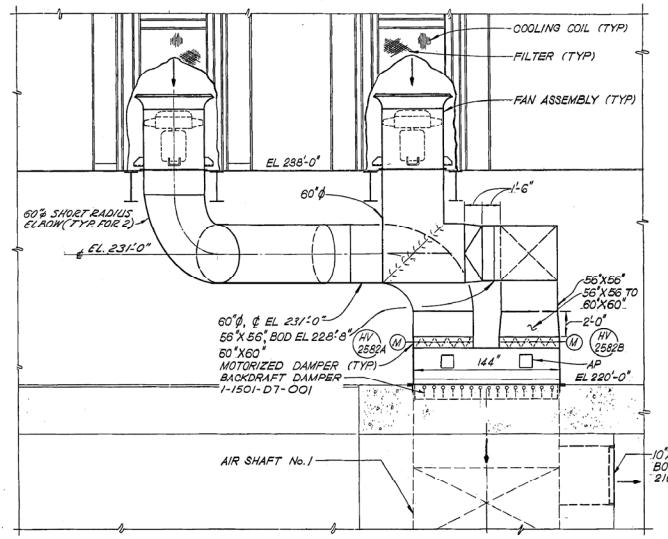
CAD NAME 1X4DE607



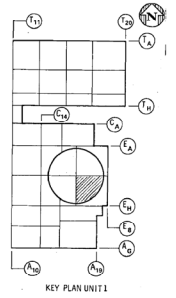
PLAN - EL. 210'-0" TO 238'-0"
SCALE: ¼"=1'-0"



SECTION (B)
SCALE: ¼"=1'-0"



SECTION (A)
SCALE: ¼"=1'-0"



NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG AX4DJ0001 AND AX4DJ0002.
2. FOR AREA ABOVE SEE DWG 1X4DJ4102.
3. FOR AREA BELOW SEE DWG 1X4DJ4105.
4. ALL DUCTWORK SHOWN IS PROJECT CLASS 015 UNLESS OTHERWISE NOTED.
5. FOR FLOW TRANSMITTERS LOCATIONS SEE CONTROL BLDG. DRAWING 1X4DJ2111
6. DUCTWORK SHALL BE BOLTED TO THE BOTTOM OF SYSTEM 1-1501-A7-001-000 & 002-000 UNITS. BOLT PATTERN TO CONFORM TO DWG AX2D67W001 REQUIREMENTS.
7. SEE MDC 97-V1M058 FOR TURNING VANE GAUGE AND STIFFENER DETAILS.

REFERENCE DRAWINGS

P&ID	1X4DB212, 213 & 251
CIVIL	1X2D48A012
STRUCTURAL	1X2D48F115, F118
ARCHITECTURAL	
PIPING	1X4DL4A02, A03
PLUMBING	
ELECTRICAL	1X3DK513, K514
DUCT SUPPORT	

4121018067A
ACTIVITY PACKAGE NO. 4121011119A

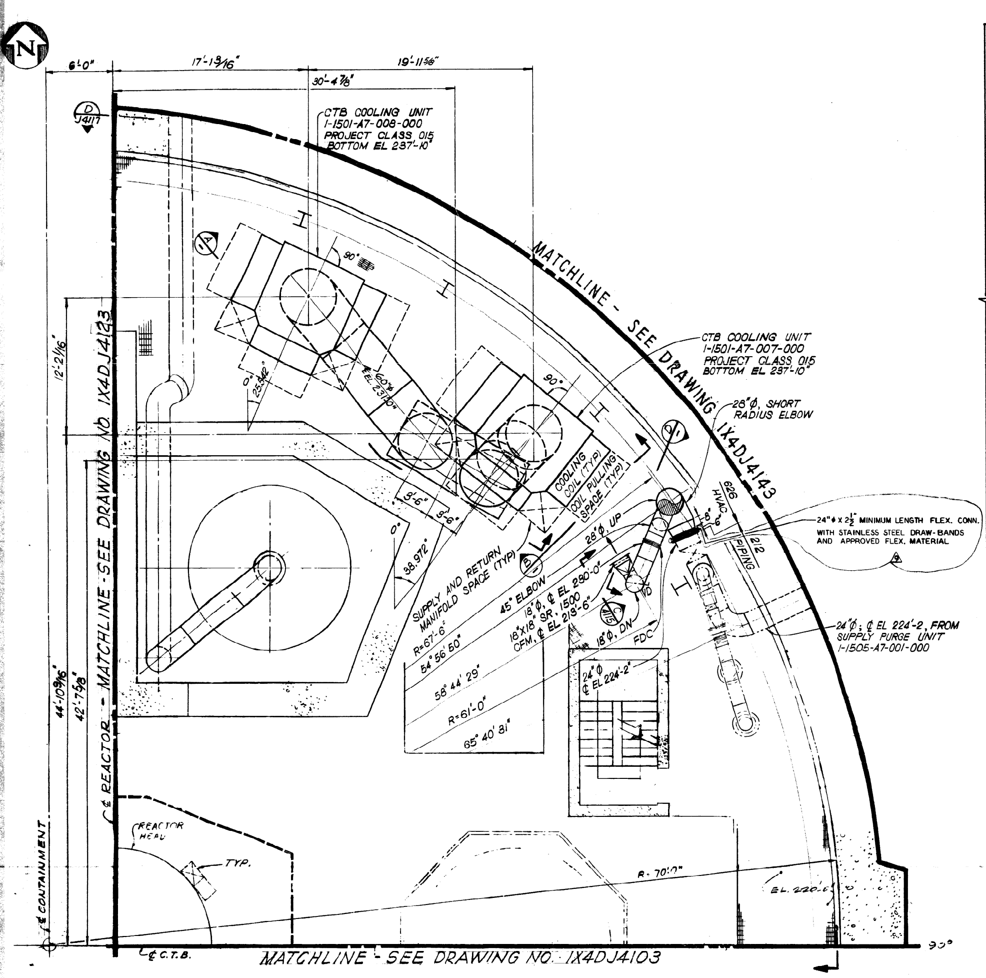
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

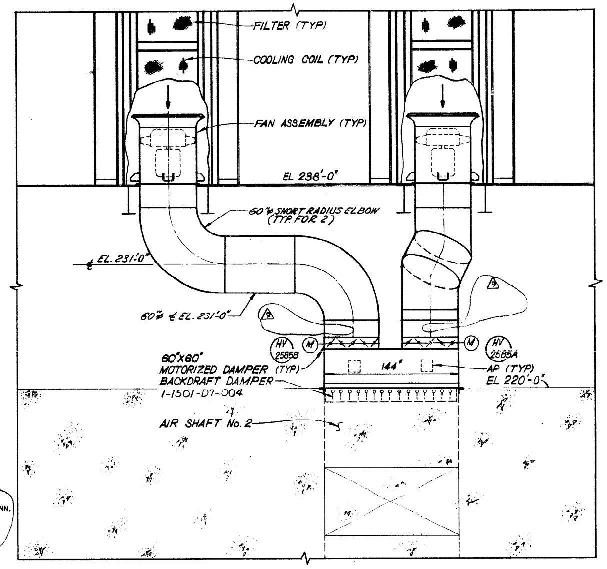
CONTAINMENT BLDG
AREA 4A LEVEL 1
PLAN EL. 210'-0" TO 238'-0"

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
2	INCORP. PER ABN-42696	12-23-97	SRM	EJG	MWD	
1	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

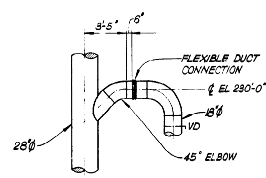
SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X4DJ4103
REV. 11
SIZE E 34x44
CAD NAME 14DJ4103



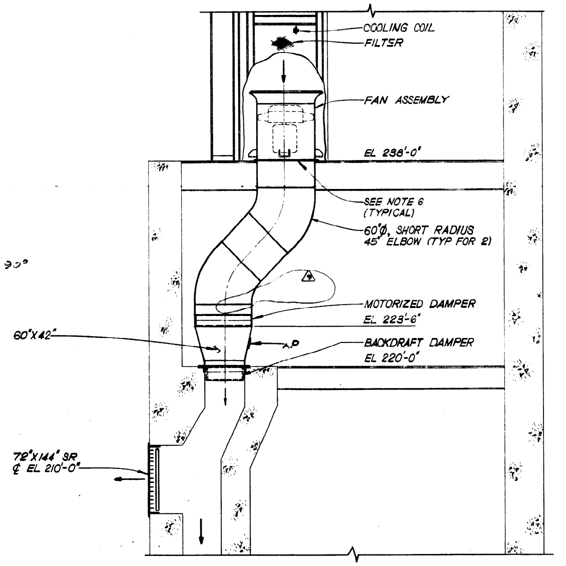
PLAN EL 210'-0" TO 238'-0"
SCALE: ¼"=1'-0"



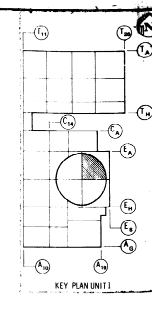
SECTION A
SCALE: ¼"=1'-0"



SECTION D
SCALE: ¼"=1'-0"



SECTION B
SCALE: ¼"=1'-0"



NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG AX4DJ0001 AND AX4DJ0002.
2. FOR AREA ABOVE SEE DWG 1X4DJ4112
3. FOR AREA BELOW SEE DWG 1X4DJ4115
4. ALL DUCTWORK SHOWN IS PROJECT CLASS 015 UNLESS OTHERWISE NOTED.
5. FOR FLOW TRANSMITTER LOCATION SEE CONTROL BLDG. DRAWING 1X4DJ2103.
6. DUCTWORK SHALL BE BOLTED TO THE BOTTOM OF SYSTEM 1-1501-A7-007-000 & 008-000 UNITS. BOLT PATTERN TO CONFORM TO DWG AX2D67W001 REQUIREMENTS.

REFERENCE DRAWINGS

P&ID	1X4DB212, 213, 251 & 213-1
CIVIL	1X2D48A012
STRUCTURAL	1X2D48F114
ARCHITECTURAL	—
PIPING	1X4DLB02, B03
PLUMBING	1X4DH4103
ELECTRICAL	1X3DK503 & 513
DUCT SUPPORT	

ACTIVITY PACKAGE NO. 412101B067A, 412101116A

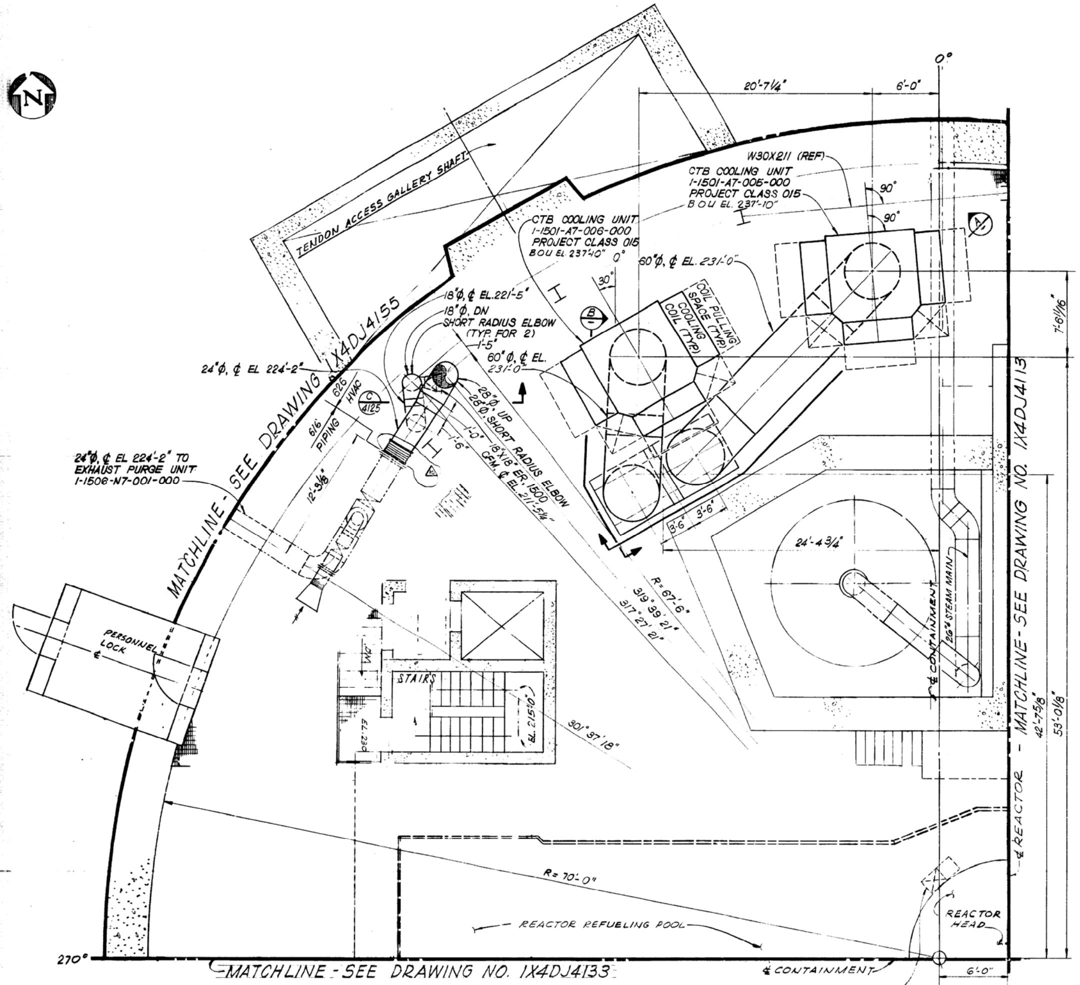
BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BLDG
AREA 4B LEVEL 1
PLAN EL. 210'-0" TO 238'-0"

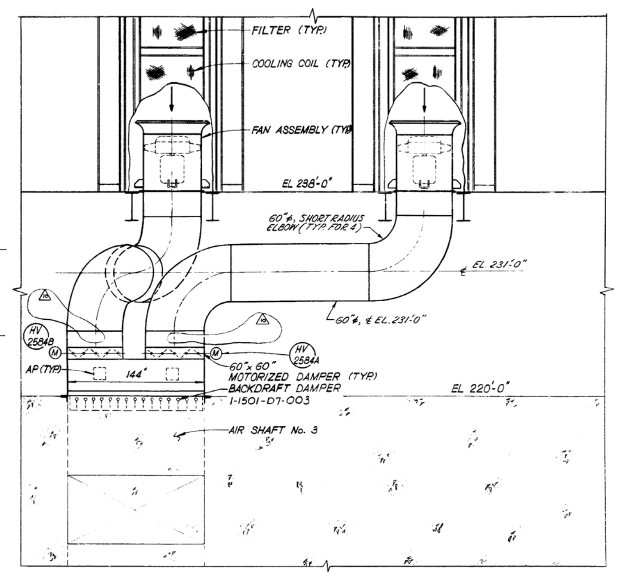
SCALE: ¼"=1'-0"
JOB NO. 9510
DRAWING NO. 1X4DJ4113
REV. 9
SIZE E 34x44

REVISIONS	DATE
INCORP. M-FCRB-14995 & M-FCRB-15302.	10-19-89
INCORP. DCN-R# 7 (C-FCRB-18,624)	6-17-86
INCORP. DCN-R# 5 & 6	2-5-86
INCORP. DCN-R# 4 (C-FCRB-15,142)	8-9-85
INCORP. DCN-R# 3; REV AS SHOWN (PFE)	7-12-84
REVISED DAMPER SIZE; INCORP. DCN #1 (MOD) & 2; REVISED DUCTWORK, ADDED NOTE #5, REVISED AS NOTED	4-25-83
[illegible]	6-14-[illegible]
RELOCATED EQUIPMENT & REVISED DUCTWORK	1-25-82
18"Ø PURGE SUPPLY DUCT REVISED	3-21-80
ISSUED FOR CONSTRUCTION	2-5-80



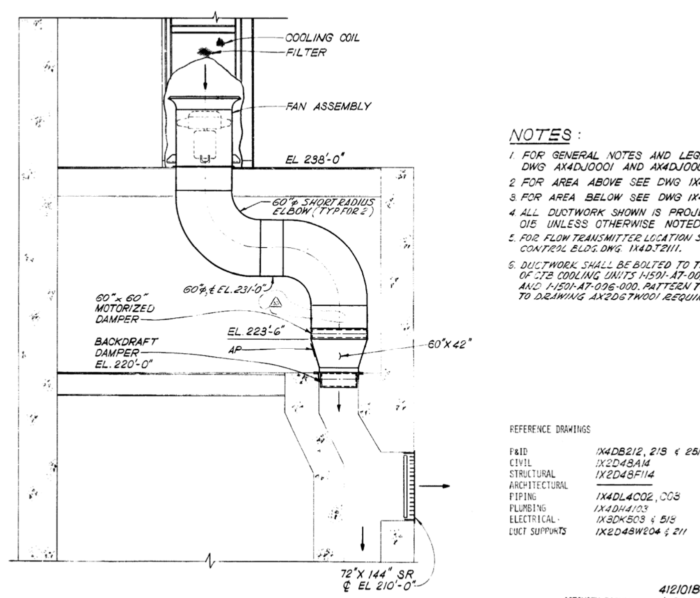
PLAN EL 210'-0" TO 238'-0"

SCALE: 1/4" = 1'-0"



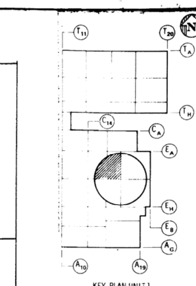
SECTION A

SCALE 1/4" = 1'-0"



SECTION B

SCALE 1/4" = 1'-0"



NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG AX4DJ0001 AND AX4DJ0002.
2. FOR AREA ABOVE SEE DWG 1X4DJ4122.
3. FOR AREA BELOW SEE DWG 1X4DJ4125.
4. ALL DUCTWORK SHOWN IS PROJECT CLASS 015 UNLESS OTHERWISE NOTED
5. FOR FLOW TRANSMITTER LOCATION SEE CONTROL BLDG. DWG 1X4DJ2111.
6. DUCTWORK SHALL BE BOLTED TO THE BOTTOM OF CTB COOLING UNITS H501-A7-005-000 AND 1-1501-A7-006-000. PATTERN TO CONFORM TO DRAWING AX2D67W001 REQUIREMENTS.

REFERENCE DRAWINGS

P&ID	1X4DB212, 213 & 281
CIVIL	1X2D48A14
STRUCTURAL	1X2D48F114
ARCHITECTURAL	
PIPING	1X4DL4C02, C03
PLUMBING	1X4DH4103
ELECTRICAL	1X3DK503 & 518
DUCT SUPPORTS	1X2D48W204 & 211

412101B067A

ACTIVITY PACKAGE NO. 41210111GA

Q

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BLDG
AREA 4C LEVEL 1
PLAN EL. 210'-0" TO 238'-0"

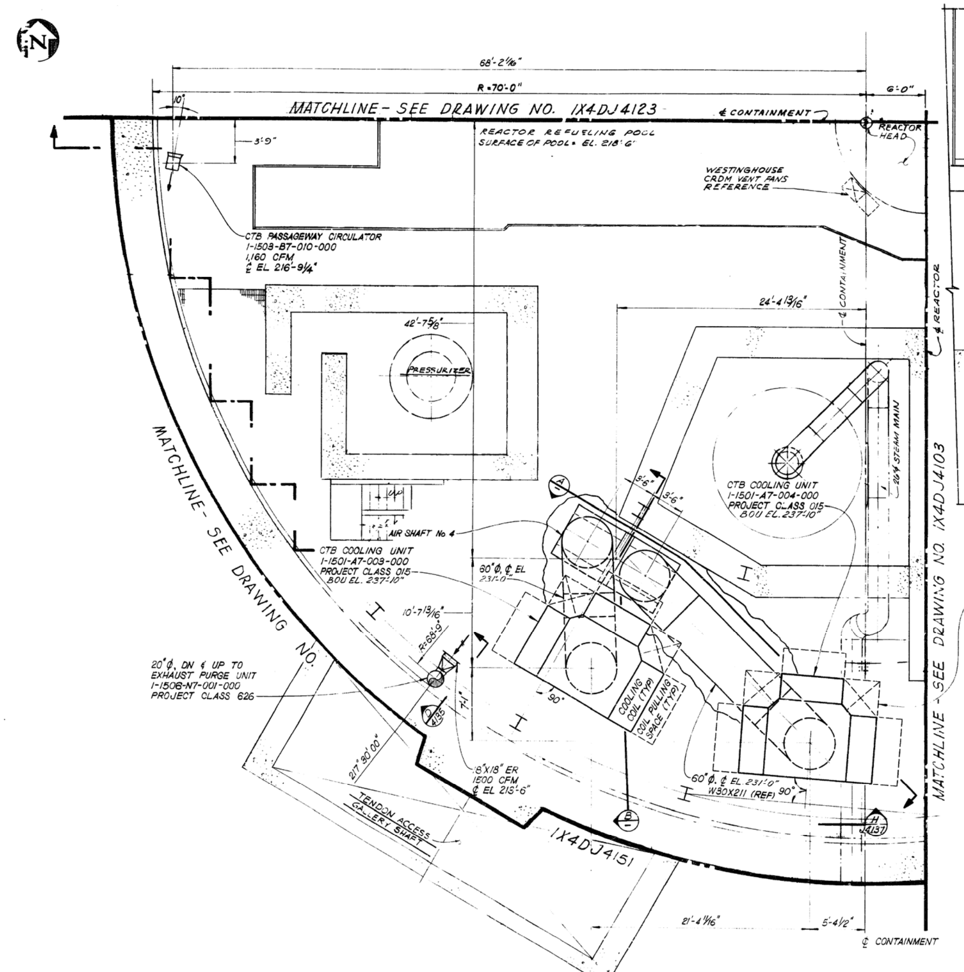
SCALE	DRAWING NO.	REV.
AS NOTED	1X4DJ4123	10
JOB NO. 9510		

NO.	REVISIONS	DATE	DR.	CHK.	SUP'V.	EGL	EGS	CHF.E	P.E.	Q.A.E.
10	INCORP. M-FCRB-14995, M-FCRB-15302 & M-FCRB-15655.	11-14-89	C.I.B.	[illegible]	REP					
9	INCORP DCN-R# 9 (C-FCRB-18,625)	6-17-86	#	[illegible]			7V		[illegible]	
8	INCORP DCN-R# 7 & 8	2-5-86	#	7V		[illegible]	[illegible]		[illegible]	
7	INCORP DCN-R# 6 (C-FCRB-15,141) (PFE)	8-13-85	#	7V		[illegible]	[illegible]		[illegible]	
6	INCORP. DCN No's 4 (M-FCRB-6076), 5 AND TRANSFERRED TO PFE	6-4-84	MSF	HT		[illegible]	[illegible]		[illegible]	
5	INCORP. DCN No. 3, REV'D MOTORIZED DMPR. & ADDED NOTE #5	8-22-83	MSF	HT		[illegible]	[illegible]		[illegible]	
4	INCORP DCN # 1 & 2, ADDED SECTION D; REVISED REF DWG NOS; REVISED AS NOTED	3/10/83	#	HT		[illegible]	[illegible]		[illegible]	
3	REV'D BDD LOCATION, DUCTWORK, REF DWGS & ADDED INSTRUMENTS	[illegible]	MSF	HT		[illegible]	[illegible]		[illegible]	
2	RELOCATED EQUIPMENT & REVISED DUCTWORK	[illegible]	#	HT		[illegible]	[illegible]		[illegible]	
1	DIMENSIONS REVISED & REGISTERS ADDED	3-27-80	RTC	DC		[illegible]	[illegible]		MPT	
0	ISSUED FOR CONSTRUCTION	2-5-80	RTC/ME	GAA		DC	[illegible]		MPT	

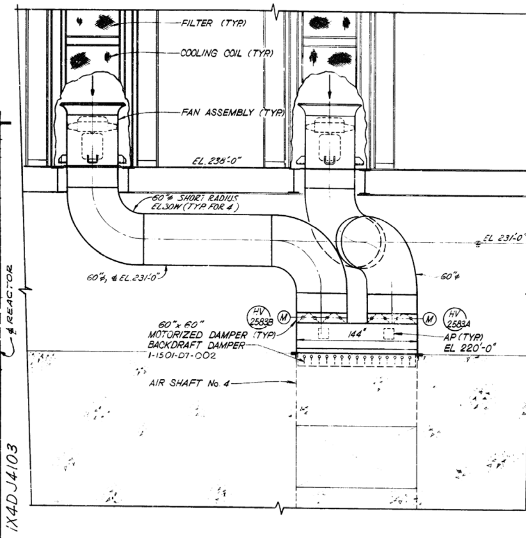
ENG. MGR.

DATE

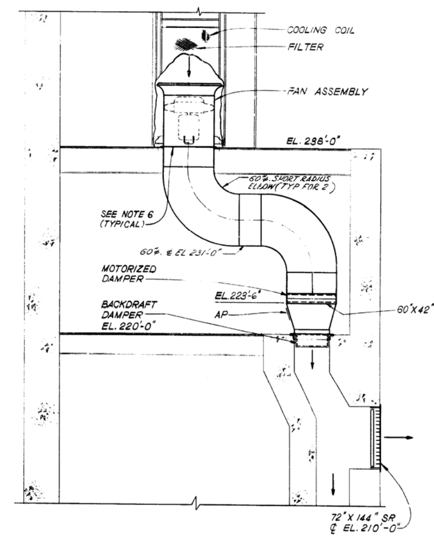
SIZE E 34 x 44



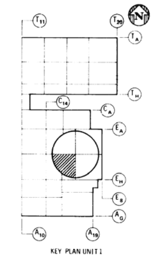
PLAN EL 210'-0" TO 238'-0"
SCALE: 1/4"=1'-0"



SECTION (A)
SCALE: 1/4"=1'-0"



SECTION (B)
SCALE: 1/4"=1'-0"



NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG AX4DJ0001 AND AX4DJ0002.
2. FOR AREA ABOVE SEE DWG 1X4DJ4132.
3. FOR AREA BELOW SEE DWG 1X4DJ4135.
4. ALL DUCTWORK SHOWN IS PROJECT CLASS 015 UNLESS OTHERWISE NOTED.
5. FOR FLOW TRANSMITTER LOCATION, SEE CONTROL BLDG. DRAWING 1X4DJ2103
6. DUCTWORK SHALL BE BOLTED TO THE BOTTOM OF SYSTEM 1-1501-A7-003-000 & 004-000 UNITS. BOLT PATTERN TO CONFORM TO DWG AX2D67W001 REQUIREMENTS.

REFERENCE DRAWINGS

P&ID	1X4DB212, 213 & 251
CIVIL	1X2D48A015
STRUCTURAL	1X2D48F115, F113
ARCHITECTURAL	———
PIPING	1X4DL4D02, D03
PLUMBING	———
ELECTRICAL	1X3DK513, K514
DUCT SUPPORT	

4121011B067A
ACTIVITY PACKAGE NO. 41210111116A

BECHTEL
LOS ANGELES

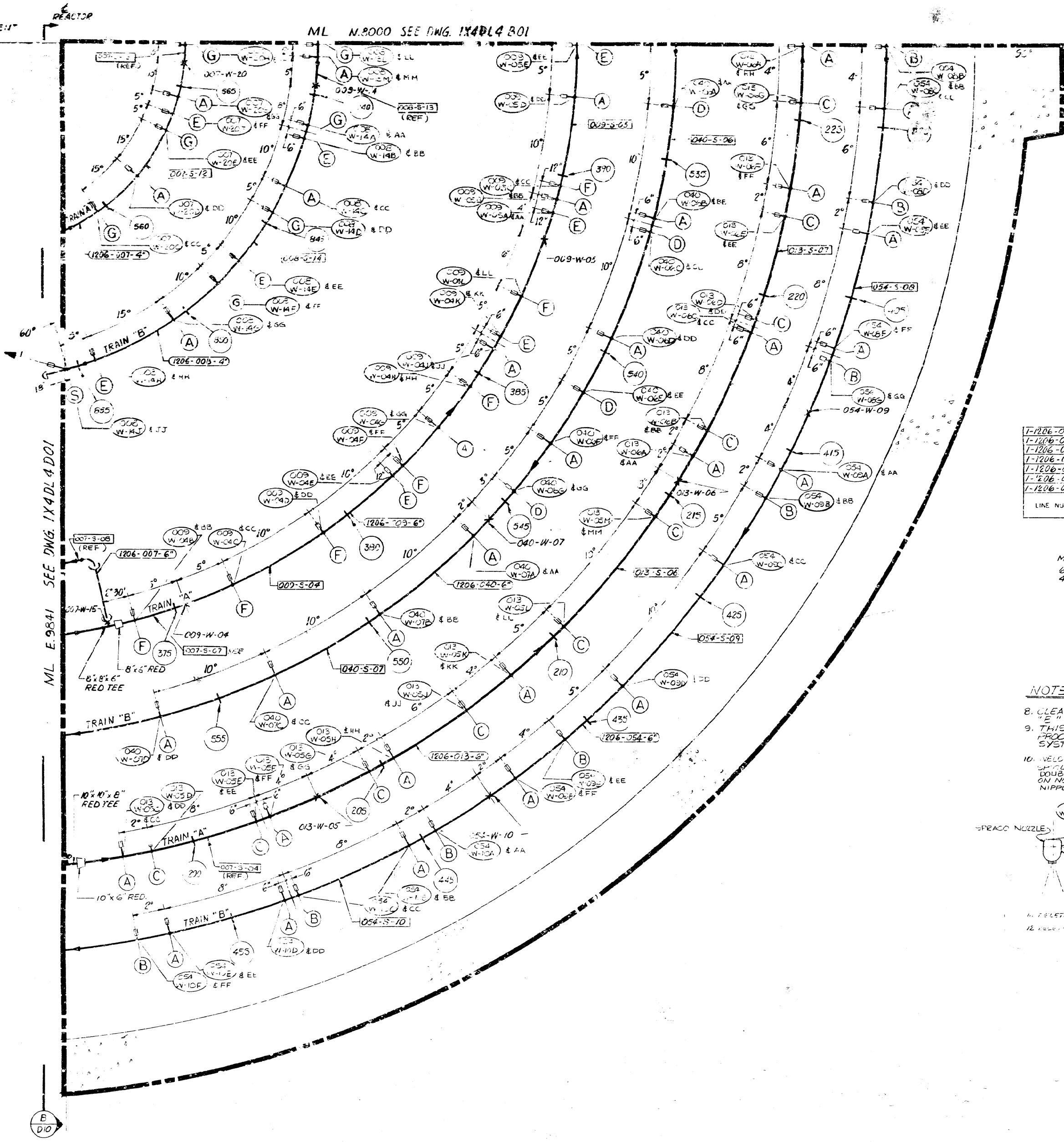
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

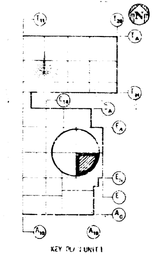
CONTAINMENT BLDG
AREA 4D LEVEL 1
PLAN EL. 210'-0" TO 238'-0"

SCALE: 1/4"=1'-0"
JOB NO. 9510
DRAWING NO. 1X4DJ4133
REV.

REVISIONS	DATE
REV. TO CLOSE DCN #7 (C-FCRB-17981). NO DRAFTING CHANGE REQD.	5-7-90
INCORP. MFCRB-14995 & CFCRB-17581	1-19-89
INCORP DCN-R # 5 & 6	2-5-86
INCORP DCN-R # 4, REV AS SHOWN	7-12-84
INCORP DCN # 3 (ISSUED BY PFE)	11-23-83
ADDED ... REVISED SIZE OF MOTORIZED DAMPERS AND AS NOTED	4-25-83
REV'D BLD LOCATION, DUCTWORK & ADDED INSTRUMENTS	
RELOCATED EQUIPMENT & REVISED DUCTWORK	
DUCT DIMENSION & AZIMUTH REVISED	
ISSUED FOR CONSTRUCTION	

SIZE E 34 x 44





PIPE SUPPORT LIST

NODE	SUPPORT TAG NO.
395	V1-1206-054-H023
405	H024
415	H025
425	H026
435	H027
445	H028
455	V1-1206-054-H029
200	V1-1206-013-H014
205	H015
210	H016
215	H017
220	H018
225	V1-1206-013-H019
535	V1-1206-040-H006
540	H007
545	H008
550	H009
555	V1-1206-040-H010
390	V1-1206-009-H016
385	H017
380	H0[illegible]
375	V1-1206-009-H019
840	V1-1206-008-H026
845	H027
850	H028
855	V1-1206-008-H029
560	V1-1206-007-H008
565	V1-1206-007-H009

SPOOL STATUS

SPOOL NUMBER	REV. NO.	SHOP SHT. NO.	ACT. PKG.	REMARKS
1-1206-007-S-12	0		075A	
1-1206-008-S-14	0		075A	
1-1206-009-S-04	0		075A	
1-1206-009-S-05	0		075A	
1-1206-013-S-06	0		075A	
1-1206-013-S-07	0		075A	
1-1206-040-S-06	0		075A	
1-1206-040-S-07	0		075A	
1-1206-054-S-08	0		075A	
1-1206-054-S-09	0		075A	
1-1206-054-S-10	0		075A	

LINE NUMBER	PROJ CLASS	PIPING CLASS	PIPING AREA	CIVIL / STRUCTURAL REFERENCE DRAWINGS	COATING	STRESS CALC. NO.	P & ID REFERENCE DWGS
1-1206-054-6"	212	LL1	1X4DL4A01		NONE		1X4DB131
1-1206-040-6"	212	LL1	1X4DL4A01		NONE		1X4DB131
1-1206-013-6"	212	LL1	1X4DL4A01		NONE		1X4DB131
1-1206-009-6"	212	LL1	1X4DL4A01		NONE		1X4DB131
1-1206-008-4"	[illegible]	[illegible]	1X4DL4A01		NONE		1X4DB131
1-1206-007-6"	212	LL1	1X4DL4A01		NONE		1X4DB131
1-1206-007-4"	212	LL1	1X4DL4A01		NONE		1X4DB131

MIN. WALL AFTER BENDING
6" - 0.238"
4" - 0.202"

FOR PLAN BELOW THIS AREA SEE DWG. 1X4DL4A18

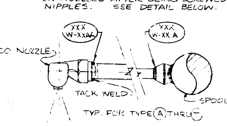
THIS DRAWING IS REQUIRED FOR
W PROOF OF DESIGN

NOTES:

1. ALL NOZZLES ARE SPRACO # 1713A 1"NPT FEMALE CONN. SUPPLIED BY WESTINGHOUSE
   TRAIN "A" TOTAL 171 NOZZLES
   TRAIN "B" TOTAL 171 NOZZLES
2. USE 1" SOCKOLETS SOCKET WELD FITTINGS & P.O.E. x T.O.E. NIPPLES FOR ALL NOZZLES TYPE (A) THRU (T)
3. SEE DWG. 1X4DL4D03 FOR NOZZLE TYPES: (A) (B) (C) (D) (E) (F) (G) (H) (S) (T)
4. FOR RADIUS OF HEADERS SEE DWG. 1X4DL4C01.
5. SPRACO NOZZLES TO BE INSTALLED IN FIELD
6. FOR GENERAL NOTES SEE DWG. AX4DR001
7. ALL WELDS SHALL BE EXAMINED IN ACCORDANCE WITH ASME SECTION III CLASS I N.D.E. REQUIREMENTS

NOTES:

8. CLEAN ASSEMBLY PER CLASS "E" REQUIREMENTS
9. THIS DWG IS GOVERNED BY PROCEDURE 1X-6A. CLOSURE SYSTEMS.
10. WELDS SHOWN IN ELLIPSES ARE SPOOL TO 1" NIPPLES. DOUBLE VARIABLES ARE TACK WELDS ON NOZZLES AFTER BEING SCREWED ON NIPPLES. SEE DETAIL BELOW.



11. DELETE
12. DELETE

REFERENCE DRAWINGS

P&ID INDEX 1X4DB131
CIVIL
STRUCTURAL 1X2D01J028
ARCHITECTURAL
HVAC
PLUMBING
ELECTRICAL
CTMT. PENET.

AS BUILT

Installers Note

1. SER ISO A01-A, A01-A1 FOR FIELD B/M INSTRUCTIONS
2. SPEC LL1-212
3. MFG. STD ASME SECT. III CL. 2
4. DESIGN PRESS 150 PSIG.
5. DESIGN TEMP 253 °F.
6. PIPE 4, 6" Ø SIGDS SA-312, TP304, TP304L
7. FITTINGS SA-403, GR. WP304, WP304L
8. FORGINGS SA-182, GR. F316, F316L
9. PROCESS SHTS. REQ. W/THIS DWG
10. INSTALL PER PROCEDURE IX-3

Q. A. Approval
PULLMAN PO. FROD.

REV.	BY	DATE
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]

ACTIVITY PACKAGE #4-1 2101-3-075A. UNIT 1

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BUILDING - PIPING
AREA 4A - LEVELS 4 & 5
PLAN - ELEV. 287'-0" & ABOVE

SCALE: 3/8" = 1'-0"
JOB NO. 9510
DRAWING NO. 1X4DL4A01
REV. 3

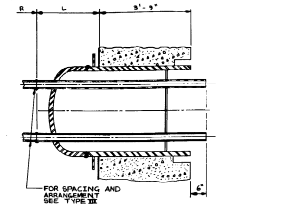
NO.	REVISIONS	DATE	DR.	CHK.	SUPV.	E.G.S	CHF. E	P.E.	Q.A.E.
	REVISED AS REQUIRED								

ENG. MGR.
DATE

SIZE E 34 x 44

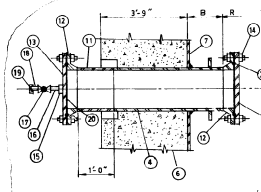
SEE DWG. 1X4DLA13

PENETRATION NO.	LINE NO. SYSTEM	LINE NO. SEQ. NO.	NOM. SIZE	PIPE SPEC.	SYSTEM DESCRIPTION	TYPE	INSERVICE INSPECTION SEE NOTE #17	NORM. OPERATING PRESS. (P.S.I.G.)	NORM. OPERATING TEMP. (°F)	MAX. DESIGN PRESS. (P.S.I.G.)	MAX. DESIGN TEMP. (°F)	PIPE O.D. (INCH)	PIPE I.D. (INCH)	WALL THK.	MATERIAL (A.S.M.E. SPEC. NO.) (SEE NOTE #15) ①⑤ PIPE REFERENCE	② FLUED HEAD SEE NOTE #15	③ INTERMEDIATE SLEEVE	④ PENETRATION SLEEVE	PENETRATION ASSEMBLY DIMENSIONS (INCHES) (SEE NOTE #15) L	B	C	D	t	℄ ELEVATION	℄ AZIMUTH	P. & I.D. DWG. NO.	MECH. DWG. NO.	RADIUS "R"	PENETRATION NO.
70 (A)	1513	002	3/4"	LL1	CONTAINMENT HYDROGEN MONITOR-PS-HMB (OUT)	III	VISUAL	80	340	80	340	1.050	0.824	SCH.40S	SA-312, TP304L	SA-182, GR F304L	SA-312, TP304L	SA-333, GR. 6	12.750	6.250	6.000	12.750	0.375	210'-1"	233°30'46"	1X4DB213-2	1X4DL4D03	68'-11 1/2"	70A
(B)	↓	006	↓	↓	(IN)			↓	↓	↓	↓	↓	↓	↓	↓											↓			B
(C)	1206		1/2"	SEE NOTE #7	CONTAINMENT PRESS. INSTR.-IPT 0934 (NOTE 7)			0	100	60	320	0.840	0.252	SCH XXS	SA-312, TP304L									↓	↓	1X4DB131	↓		C
71 (A)	1513	014	3/4"	LL1	CONTAINMENT HYDROGEN MONITOR-PS-HMA (OUT)			80	340	80	340	1.050	0.824	SCH.40S	SA-312, TP304L									189'-6"	153°14'33"	1X4DB213-2	1X4DL4A06		71A
(B)	↓	009	↓	↓	(IN)			80	↓	↓	↓	↓	↓	↓	↓											↓			B
(C)	1206		1/2"	SEE NOTE #7	CONTAINMENT PRESS INSTR. IPT-0935 (NOTE 7)			0	100	60	320	0.840	0.252	SCH XXS	SA-312, TP304L									↓	↓	1X4DB131	↓		C
72 (A)	1204	106	3/4"	HGO	LOOP1 ACCUMULATOR V6-002 SAMPLE			700	120	700	300	1.050	0.824	SCH. 40S	SA-312, TP304L									181'-4 1/2"	177°34'03"	1X4DB120	1X4DL4D07		72A
(B)	↓	108		↓	LOOP3 V6-004			↓	↓	↓	↓		↓	↓	↓														B
(C)	—	—		SEE NOTE #11	SPARE NECK ASS'Y.			—	—	—	—		0.612	SCH 160	SEE NOTE #18										↓	↓			C
73 (A)	1204	107		HGO	LOOP2 ACCUMULATOR V6-003 SAMPLE			700	120	700	300		0.824	SCH 40S	SA-312, TP304L										180°	1X4DB120			73A
(B)	↓	109		↓	LOOP4 V6-005			↓	↓	↓	↓		↓	↓	↓														B
(C)	—	—	↓	SEE NOTE #11	SPARE NECK ASS'Y	↓	↓	—	—	—	—	↓	0.612	SCH 160	SEE NOTE #18	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	C
74	—	—	—	—	NOT USED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74
75	2630,32 34&36	64 64 64 48	2-2" 2-4"	—	BULK GASES SUPPLY SYSTEM TEMPORARY	V	N/A	—	—	—	—	—	—	—	—	—	—	SA-333, GR.6	—	*8.250	—	10.750	0.365	201'-11 1/2"	248°6'28"	AX4DB012 022,032,042	1X4DL4D04	—	75
76	—	—	—	—	SPARE PENETRATION SLEEVE	I	—	—	—	—	—	—	—	—	—	—	—		—	8.250	6.000			189'-6"	182°25'57"	—	1X4DL4D06	—	76
77	1901	022	3"	LL1	RCDT-E6-001 HT EX DISCH TO WPS WASTE HOLDUP TANK T-002	II	VISUAL	125	130	150	250	3.500	3.068	SCH. 40S	SA-312, TP304L	SA-182, GRF304L	SA-312, TP304L		15.750	6.250	6.000			201'-11 1/2"	245°40'31"	1X4DB127	1X4DL4D04	68'-8 1/2"	77
78	1214	028	2"	↓	CONTAINMENT SUMP PUMPS DISCH. TO WPS. FDT. T-008 & WHT T-002			57	AMB	60	AMB	2.375	2.067	↓	↓	↓	↓		↓					202'-6"	153°14'33"	1X4DB143	1X4DL4A04	↓	78
79	1901	029	3/4"	LL2	RCDT T-001 H2 SUPPLY & WASTE GAS REMOVAL			02	120	150	250	1.050	0.742	SCH.80	SA-106, GR.B	SA-350, LF2	NONE		12.000			↓	↓	201'-11 1/2"	243°14'34"	1X4DB127	1X4DL4D04	69'-0 1/4"	79
80	2401	050	4"	LL1	SERVICE AIR SUPPLY			120	115	132	115	4.500	4.026	SCH.40S	SA-312, TP304	SA-182, GR.F304L			16.000			18.000	0.500	189'-6"	187°17'51"	1X4DB186-1	1X4DL4D06	68'-8 1/4"	80
81	2420	043	2"	↓	INSTRUMENT AIR	↓	↓	↓	↓	↓	↓	2.375	2.067	SCH40S	↓	↓	↓		12.000	↓	↓	10.750	0.365	↓	184°5'54"	1X4DB186-2	↓	69'-0 1/4"	81
82	—	—	—	—	SPARE PENETRATION SLEEVE	V	N/A	—	—	—	—	—	—	—	—	—	—		—	8.250	—	18.000	0.500	210'-1"	245°40'31"	—	1X4DL4D03	—	82
83	1505	003	24"	LL1	CTB NORMAL PROCESS PURGE SUPPLY	NOTE 2	VISUAL	01	98	80	340	24.000	23.250	STD.WT.	SA-312, TP304	—	NONE		10.000	—	—	24.000		224'-2"	65°40'31"	1X4DB213-1	1X4DJ4113 1X4DL4B02	69'-2 1/4"	83
84	1506	002	↓	↓	EXHAUST	↓	↓	01	120	↓	↓	↓	↓	↓	↓	—	↓		↓	—	—	↓	↓	↓	301°37'18"	↓	1X4DJ4123 1X4DL4C02	↓	84
85 (A)	—	—	3/4"	SEE NOTE #11	SPARE NECK ASS'Y.	III	VISUAL	—	—	—	—	1.050	0.612	SCH 160	SEE NOTE #18	SA-182, GR F304L	SA312, TP304L		12.750	6.250	6.000	12.750	0.375	182'-3 1/2"	250°32'25"	—	1X4DL4D07	68'-11 1/2"	85A
(B)	—	—	↓	↓			VISUAL	—	—	—	—	↓	↓	↓	↓											—			B
(C)	1206		1/2"	SEE NOTE #7	CONTAINMENT PRESSURE INSTR. IPT-0936 (NOTE 7)	↓	VISUAL	0	100	60	320	0.840	0.252	SCH XXS	SA-312, TP304L	↓	↓		↓	↓					↓	1X4DB131		↓	C
86 (A)	2702	002	1/2"	LL1	POST ACCIDENT SAMPLING SYSTEM	III		50	300	65	400	0.840	0.622	SCH 40S	SA-312, TP304L	SA-182, GR304L	SA-312, TP304L		23.67	8.250					235°56'43'	1X4DB110		68'-0 9/16"	86A
(B)	—		1/2"	SEE NOTE #11	SPARE			—	—	—	—	↓	↓	SCH40S	↓	↓	↓	↓								—			B
(C)	2702	008	1"	FG0	POST ACCIDENT SAMPLING SYSTEM	↓	↓	2235	617	2485	650	1.315	0.815	SCH 160	SA-312, TP304L	SA-182, GR304L	SA-312, TP304L									1X4DB110		↓	C
87	1222	015	8"	LL2	CONTAINMENT LEAK RATE TEST	I	VISUAL	60	100	60	100	8.625	7.981	SCH40	SA-106, GRB	SA-350, LF2	SA-106, GRB	SA-333, GR 6	16.000	6.250	6.000	18.000	0.500	189'-6"	167°50'15"	1X4DB132	1X4DL4A06	68'-8 1/4"	87
88	1201		1/2"	FG2	RESERVED FOR RVLIS	VII	VISUAL	2235	120	2485	320	0.840	0.252	XXS	SA-312, TP304L	SA-182, F304L	NONE	↓	15.25	8.250	6.000	10.750	0.365	189'-1 1/2"	228°38'52"	1X4DB113	1X4DL4D06	68'-9"	88
89	—	—	26"	—	FUEL TRANSFER TUBE (SEE NOTE #2 & #8)	—	—	—	—	—	—	—	—	—	—	—	—	SA-516, GR70	—	—	—	—	—	186'-9 3/4"	—	1X4DB130	1X2D48J006 1X4DL4D06	SEE NOTE 2	89
90	—	—	—	—	DEDICATED PENETRATION	VII	VISUAL (9)	—	—	—	—	—	—	—	—	—	—	SA-333, GR 6	—	8.250	6.000	10.750	0.365	189'-6"	155°4'30"	—	1X4DL4A06	68'-9 3/4"	90
91	1202	216	8"	LL8	N.S.C.W. SUPPLY TO CTMT. COOLER 1-1501-A7-007 & 008 TRAIN B	II	VISUAL	145	95	200	280	8.625	7.981	SCH 40S	SA-312, TP304L	SA-182, GRF304L	SA-312, TP304L		19.750	6.250	6.000	18.000	0.750	189'-1 1/2"	245°40'31"	1X4DB135-2	1X4DL4D06	68'-4 1/2"	91
92		209			1-1501-A7-003 & 004 TRAIN B																			↓	240°48'37"	↓	↓		92
93		188			1-1501-A7-002 & 001 TRAIN A																			181'-4 1/2"	148°22'39"	1X4DB135-1	1X4DL4A07		93
94		196			1-1501-A7-005 & 006 TRAIN A				↓															189'-6"	↓	↓	1X4DL4A06		94
95		220			RETURN FM 1-1501-A7-007 & 008 TRAIN B				105															189'-1 1/2"	248°6'28"	1X4DB135-2	1X4DL4D06		95
96		212			1-1501-A7-003 & 004 TRAIN B																			↓	243°14'34"	↓	↓		96
97		001			1-1501-A7-005 & 006 TRAIN A																			189'-6"	150°48'36"	1X4DB135-1	1X4DL4A06		97
98	↓	192	↓	↓	1-1501-A7-002 & 001 TRAIN A	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	181'-4 1/2"	↓	↓	1X4DL4A07	↓	98
99	—	—	—	—	NOT USED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99
100	1508	001	4"	LL1	CTB POST LOCA PURGE EXHAUST	NOTE 2	VISUAL	03	150	80	340	4.500	4.026	SCH. 40S	SA-312, TP304	--	NONE	SA-333, GR, 6	9.250	—	—	4.500	0.237	264'-3"	177°34'01"	1X4DB213-1	1X4DJ4132 1X4DL4D16	69'-3"	100
101	1302	110	6"	GK2	AUX. FEEDWATER	I	VOLUMETRIC	1150	445	1800	460	6.625	5.501	SCH.120	SA-106, GRB	SA-350, LF2	NONE		20.55	6.250	6.000	18.000	0.750	211'-2"	2°-25'-57"	1X4DB168-3	1X4DL4C03	68'-3 11/16"	101
102		108	6"																					211'-2"	9°-43'-47"		1X4DL4B03		102
103		109	6"																					209'-10"	177°-34'-01"		1X4DL4D03		103
104	↓	107	6"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	209'-10	170°-16'-12"	↓	1X4DL4A03	↓	104



FOR NOTES AND COMPLETE DETAILED INFORMATION SEE VENDOR DWG. NO. 7-050613.

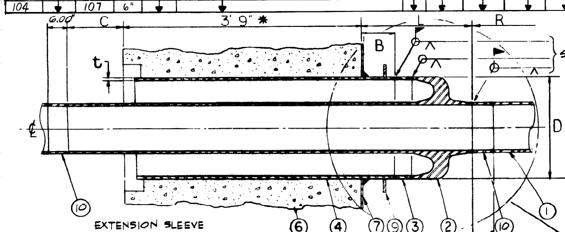
TYPE VII



TYPE VII
(5, 55, & 90)

(CONTINUED FROM BELOW)

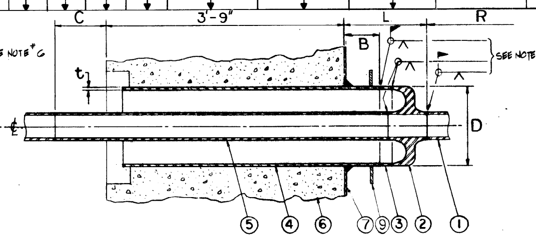
- (11) EXTENSION SLEEVE FOR PENETRATION NO'S 5.55 & 90.
- (12) WELDING NECK FLANGE ("O" RING JOINTS).
- (13) BLIND FLANGE-10" 150 LBS, WITH "O" RING JOINTS.
- (14) NUTS & BOLTS.
- (15) HALF COUPLING.
- (16) 3/4" Ø X 3" LONG NIPPLE (P.B.E.).
- (17) 3/4" GLOBE VALVE.
- (18) 3/4" Ø X 3" LONG NIPPLE (T.O.E.).
- (19) 3/4" THREADED CAP.
- (20) RING JOINT GASKET.



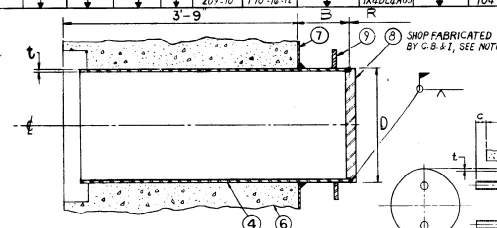
EXTENSION SLEEVE FOR PENETRATIONS NO'S. 56, 57, 58, 59 & 60

TYPE I

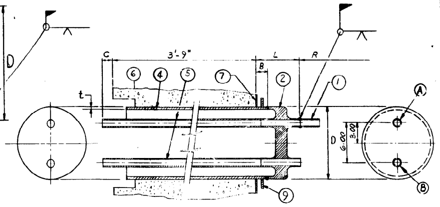
* FOR PENETRATIONS 1 & 2 DIMEN. IS 3'-9 11/16"
FOR PENETRATIONS 18 & 20 DIMEN. IS 3'-9 5/16"



TYPE II

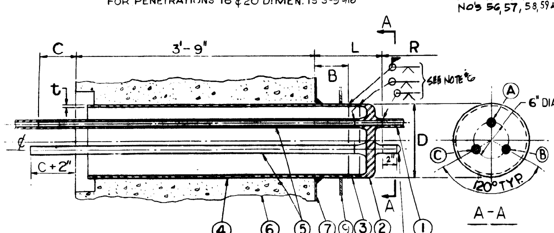


TYPE V
SPARE PENETRATION SLEEVE



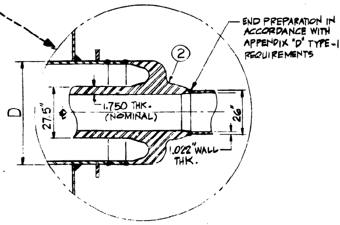
TYPE VI

EXTENSION SLEEVE FOR PENETRATIONS NO'S 56, 57, 58, 59 & 60

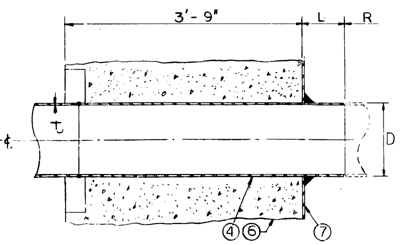


TYPE III

A-A
SEE NOTE #18



MAIN STEAM FLUED HEAD
PENETRATIONS 1 THRU 4 ONLY



TYPE IV

LEGEND

1. CONNECTING PIPE OR COMPONENT
2. FLUED HEAD FITTING
3. INTERMEDIATE SLEEVE (NOTE #3 & #13)
4. PENETRATION SLEEVE (NOTE #2)
5. NECK EXTENSION (NOTE #11)
6. CONTAINMENT WALL
7. LINER PLATE (INSIDE CONTAINMENT WALL)
8. PERMANENT END CLOSURE
9. REINFORCING RING PLATE
10. EXTENSION SLEEVE FOR PENETRATION NO'S 56 THRU 60 NOTE # 16)

(9) (CONTINUED ABOVE)

THIS DRAWING IS REQUIRED FOR
W PROOF OF DESIGN

FOR NOTES & REFERENCES SEE DWG. NO. 1X4DL4A13

ACT. PKG. 2-1-2101-C-008A UNIT 1 Q

BECHTEL
LOS ANGELES

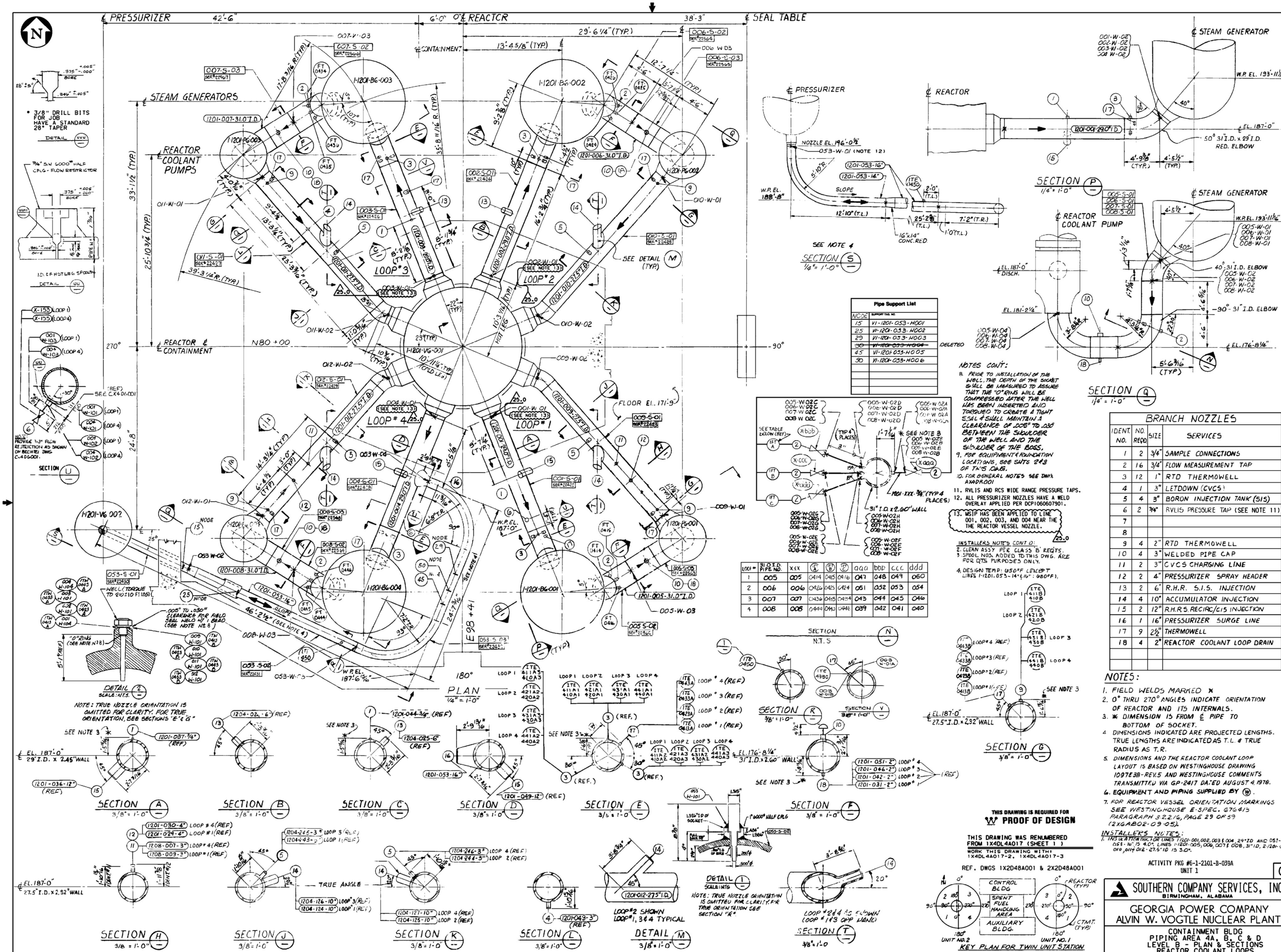
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BLDG. UNIT 1
CONTAINMENT WALL PIPING PENETRATION DESIGN LIST

NO.	REVISIONS	DATE	DR.	CHK.	SUP'V.
	INCORP. DCN 4 (M-FCRB-568F), 5 & 6, M-FCRB-6944F.	10-12-89	C.L.B.		
	INTERCHANGED PENET. #76 & 88 PER LTR. LOG #PFE-5973	5-15-85	DAG		
	REVISED PRESS. & TEMP. PER LATEST LINE LIST REV #22	10-31-84			
	REVISED PER LATEST P&I.D, VENDOR & LINE LIST	3-4-85	SMP		
	INCORP. DCN #3	1-12-87	SMP		
	INCORPORATED DCN #2	5-11-83	AMR		
	REVISED PER LATEST P&ID, VENDORS, STRUC. DWGS; ADDED		AMR		
	INCORP. ABN 00465 (MODIFIED)	11-1990	W.V.G.		

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X4DL4A14	9

SIZE E 34 x 44



Pipe Support List	
NODE	SUPPORT TAG. NO.
15	VI-1201-053-H001
25	VI-1201-053-H002
29	VI-1201-053-H003
~~30~~	~~VI-1201-053-H004~~ DELETED
45	VI-1201-053-H005
50	VI-1201-053-H006

LOOP #	31.0 I.D. PIPE NO.	XXX	IFT A	IFT B	IFT C	aaa	bbb	ccc	ddd
1	005	005	0414	0415	0416	047	048	049	050
2	006	006	0426	0425	0424	051	052	053	054
3	007	007	0436	0435	0434	043	044	045	046
4	008	008	0444	0443	0446	039	042	041	040

NOTES CONT:

8. PRIOR TO INSTALLATION OF THE WELL, THE DEPTH OF THE SOCKET SHALL BE MEASURED TO ASSURE THAT THE "O" RING WILL BE COMPRESSED AFTER THE WELL HAS BEEN INSERTED AND TORQUED TO CREATE A TIGHT SEAL & SHALL MAINTAIN A CLEARANCE OF .005" TO .030" BETWEEN THE SHOULDER OF THE WELL AND THE SHOULDER OF THE BOSS.
9. FOR EQUIPMENT & FOUNDATION LOCATIONS, SEE SHTS 2 & 3 OF THIS DWG.
10. FOR GENERAL NOTES SEE DWG AX4DR001
11. RVLIS AND RCS WIDE RANGE PRESSURE TAPS.
12. ALL PRESSURIZER NOZZLES HAVE A WELD OVERLAY APPLIED PER DCP1060607901.
13. MSIP HAS BEEN APPLIED TO LINE 001, 002, 003, AND 004 NEAR THE THE REACTOR VESSEL NOZZLE.

INSTALLERS NOTES CONT'D:

2. CLEAN ASS'Y PER CLASS 'B' REQTS.
3. SPOOL NOS. ADDED TO THIS DWG. ARE FOR QTS PURPOSES ONLY.
4. DESIGN TEMP: 650°F (EXCEPT LINES 1-1201-053-14" & 16": 680°F).

BRANCH NOZZLES			
IDENT. NO.	NO. REQ'D	SIZE	SERVICES
1	2	3/4"	SAMPLE CONNECTIONS
2	16	3/4"	FLOW MEASUREMENT TAP
3	12	1"	RTD THERMOWELL
4	1	3"	LETDOWN (CVCS)
5	4	3"	BORON INJECTION TANK (BIS)
6	2	3/4"	RVLIS PRESSURE TAP (SEE NOTE 11)
7			
8			
9	4	2"	RTD THERMOWELL
10	4	3"	WELDED PIPE CAP
11	2	3"	CVCS CHARGING LINE
12	2	4"	PRESSURIZER SPRAY HEADER
13	2	6"	R.H.R. S.I.S. INJECTION
14	4	10"	ACCUMULATOR INJECTION
15	2	12"	R.H.R.S. RECIRC/CIS INJECTION
16	1	16"	PRESSURIZER SURGE LINE
17	9	2 1/2"	THERMOWELL
18	4	2"	REACTOR COOLANT LOOP DRAIN

NOTES:

1. FIELD WELDS MARKED ✱
2. 0° THRU 270° ANGLES INDICATE ORIENTATION OF REACTOR AND ITS INTERNALS.
3. ✱ DIMENSION IS FROM ℄ PIPE TO BOTTOM OF SOCKET.
4. DIMENSIONS INDICATED ARE PROJECTED LENGTHS. TRUE LENGTHS ARE INDICATED AS T.L. & TRUE RADIUS AS T.R.
5. DIMENSIONS AND THE REACTOR COOLANT LOOP LAYOUT IS BASED ON WESTINGHOUSE DRAWING 1097E38-REV.5 AND WESTINGHOUSE COMMENTS TRANSMITTED VIA GP-2417 DATED AUGUST 4, 1978.
6. EQUIPMENT AND PIPING SUPPLIED BY Ⓦ.
7. FOR REACTOR VESSEL ORIENTATION MARKINGS SEE WESTINGHOUSE E-SPEC. 676413 PARAGRAPH 3.2.2.16, PAGE 29 OF 59 (2X6AB02-09-05).

INSTALLERS NOTES:

1. INSULATION THK. FOR LINES 1-1201-001, 002, 003 & 004, 29" ID AND 053-14", 053-16" IS 4.0". LINES 1-1201-005, 006, 007 & 008, 31" ID, 2-1201-009, 010, 011 & 012 - 27.5" ID IS 3.0".

THIS DRAWING IS REQUIRED FOR
Ⓦ PROOF OF DESIGN

THIS DRAWING WAS RENUMBERED FROM 1X4DL4A017 (SHEET 1)

WORK THIS DRAWING WITH: 1X4DL4A017-2, 1X4DL4A017-3

REF. DWGS 1X2D48A001 & 2X2D48A001

ACTIVITY PKG #6-1-2101-B-039A
UNIT 1

Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BLDG
PIPING AREA 4A, B, C & D
LEVEL B - PLAN & SECTIONS
REACTOR COOLANT LOOPS

NO.	VERSIONS	DATE	DR	CHK	APPV
25.0	REVISED PER ABN SNC523893M003, VER. 1.0	6-04-14	DCP	ELC	JMR

SCALE: NOTED	DRAWING NO.	VER.
JOB NO. 10604	1X4DL4A017-1	25.0

SIZE E 34X44

LARGE BORE 1

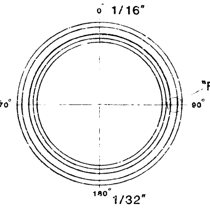
PLAN DIM. FROM REF. DWG. 1X4DL4A17

REACTOR COOLANT PUMP CASING ELEV. & LOC.						
	STA	PLAN	LOOP 1	LOOP 2	LOOP 3	LOOP 4
	PLAN	N/A	A,B,C 189-7.5376 A1A2A3 189-7.0276	189-7.4006 189-6.9006	189-7.4706 189-6.9706	189-7.4766 189-6.9766
	A	N/A	189-7.4560	189-7.5516	189-7.6810	189-7.3082
	A1	N/A	189-6.9500	189-7.0410	189-7.1730	189-6.8002
	B	N/A	189-7.4680	189-7.5144	189-7.6810	189-7.3112
	B1	N/A	189-6.9590	189-7.0092	189-7.1740	189-6.8042
	C	N/A	189-7.4490	189-7.5540	189-7.6340	189-7.3012
	C1	N/A	189-6.9390	189-7.0428	189-7.1280	189-6.7902
HORZ. LOC.	NORTH SOUTH	25.9074	-25.9010	+25.9190	+25.9074	-25.8983
HORZ. LOC.	EAST WEST	29.5016	+29.4836	+29.4611	-29.5016	-29.4363
	AZ	48-42-41	48°-42'-04"	48°-39'-55"	48°42'-41"	48°-39'-26"
	FIELD BOOK		SCI-40	SCI-38	SCI-39	SCI-41

+ NORTH / EAST FROM ℄ R.V.
− SOUTH / WEST FROM ℄ R. V.

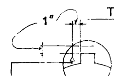
STEAM GENERATOR ELEV., LOC. PLUM.						
	STA	PLAN	LOOP 1	LOOP 2	LOOP 3	LOOP 4
	PLAN	N/A	195-5.0520"	195-4.9482	195-5.0887	195-5.1277
	W	N/A	195-4.8662	195-4.9766	195-4.8658	195-4.6880
	X	N/A	195-5.0092	195-4.9156	195-4.9258	195-4.7540
	Y	N/A	195-4.6432	195-4.8276	195-4.8238	195-4.5390
	Z	N/A	195-4.4862	195-4.9106	195-4.8138	195-4.5450
HORZ. LOC.	NORTH SOUTH	33.125	-33.0512	+33.0743	33.0817	-33.0987
HORZ. LOC.	EAST WEST	13.3854	+13.5252	+13.4044	-13.4814	-13.3596
PLUM	NORTH SOUTH	0	-13/16"	+1/8"	0	-1/2"
PLUM	EAST WEST	0	0	-7/16"	-7/16"	-1/2"
	AZ	22-00-11	157-44-41	22-03-42"	337-30-37	201-58-49
	FIELD BOOK		SCI-40	SCI-38	SCI-38, SCI-39	SCI-41

+ NORTH / EAST FROM ℄ R.V.
− SOUTH / WEST FROM ℄ R. V.



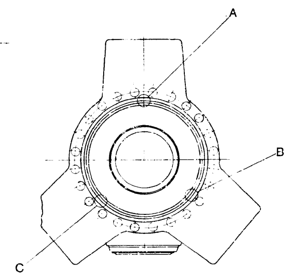
@ CORE SUPPORT LEDGE

SECTION "A"-"A"

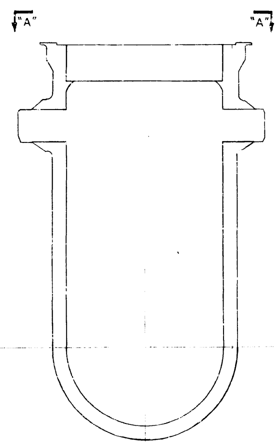


ELEVATIONS

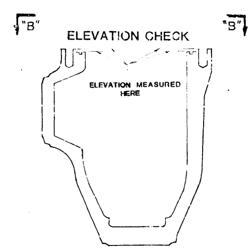
0 - 192 - 11.062
90 - 192 - 11.059
180 - 192 - 11.053
270 - 192 - 11.050
AVG. PLAN - 192 - 11.0126



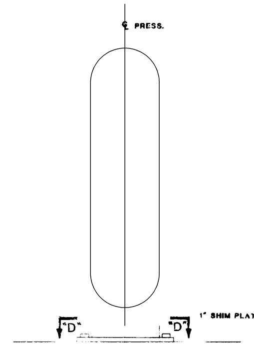
SECTION "B"-"B"

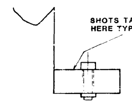


REACTOR VESSEL



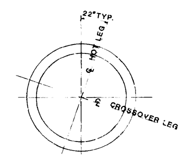
REACTOR COOLING PUMP CASING
TYP. 3 PLACES



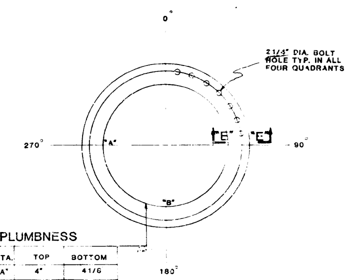


SECTION "E"-"E"

PLUMBNESS CHECK



DETAIL 2
TYP. 4 PLACES

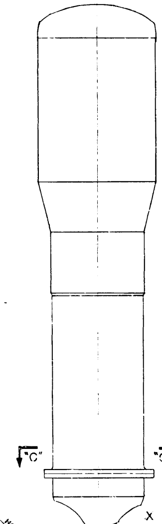


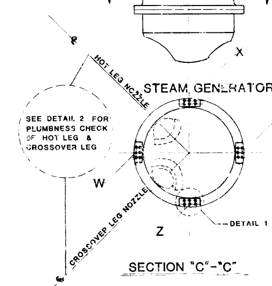
PLUMBNESS

STA.	TOP	BOTTOM
"A"	4"	41/6
"B"	4"	41/8"
ERROR	WEST 1/8"	SOUTH 1/8"

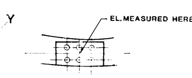
PLAN	195 - 11.4996"
0°	195 - 11.5920"
90°	195 - 11.6556"
180°	195 - 11.6016"
270°	195 - 11.5392"

SECTION "D"-"D"





SECTION "C"-"C"



DETAIL 1

NOTE: SHOTS WERE TAKEN ON CENTER LINE OF BOLTS. ON TOP OF S.G. SUPPORT RING

NOTES: 1) DETAIL 2 IS TYPICAL FOR ALL FOUR (4) STEAM GENERATOR
2) DETAIL 3 IS TYPICAL FOR ALL FOUR (4) REACTOR COOLANT PUMP CASING

22 THIS DRAWING WAS RENUMBERED FROM 1X4DL4A017 (SHEET 2)
WORK THIS DRAWING WITH: 1X4DL4A017-1, 1X4DL4A017-3

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

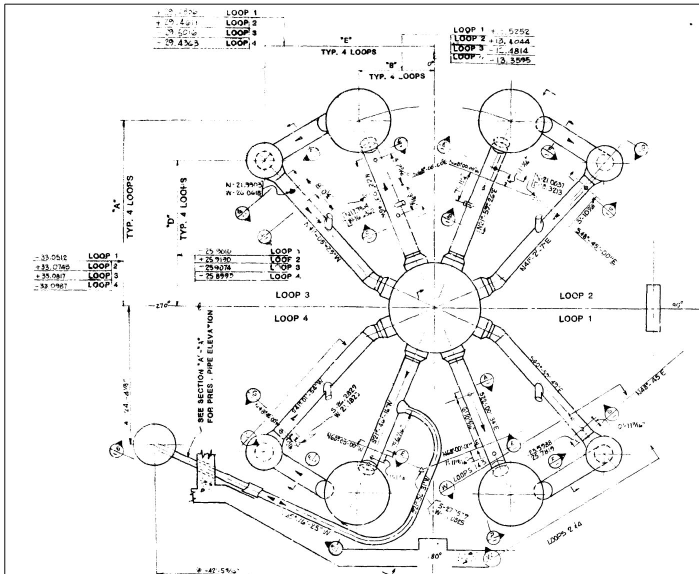
CONTAINMENT BLDG
PIPING AREA 4A, B, C & D
LEVEL B - PLAN & SECTIONS
REACTOR COOLANT LOOPS

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
22	INCORP PER ABN 38665	4-25-03	DFV	LRP	ASK	-

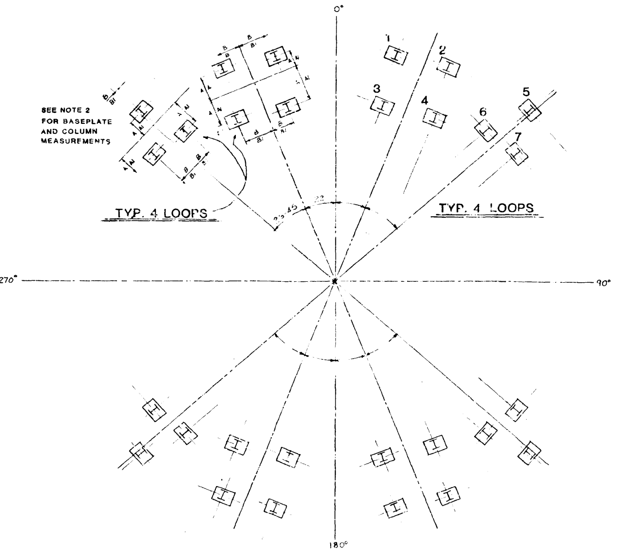
SCALE: NTS	DRAWING NO.	REV.
JOB NO.10604	1X4DL4A017-2	22

SIZE E 34X44

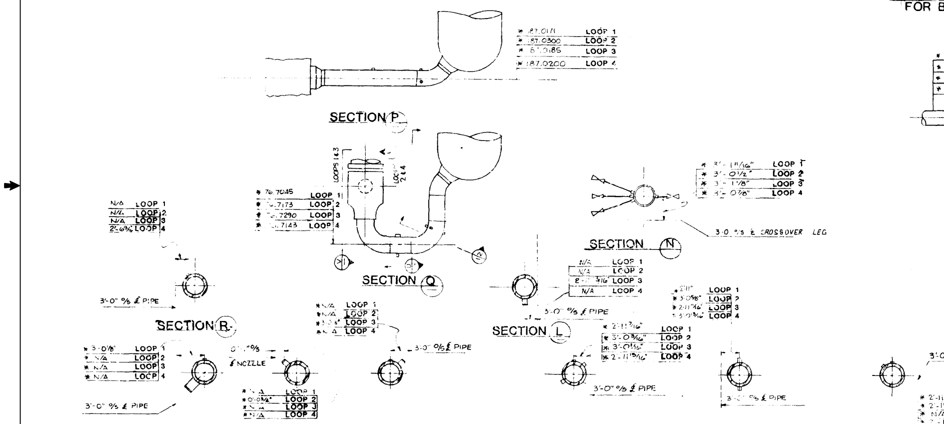
CAD NAME 1X4DL4A0172

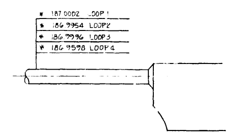


PLAN VIEW

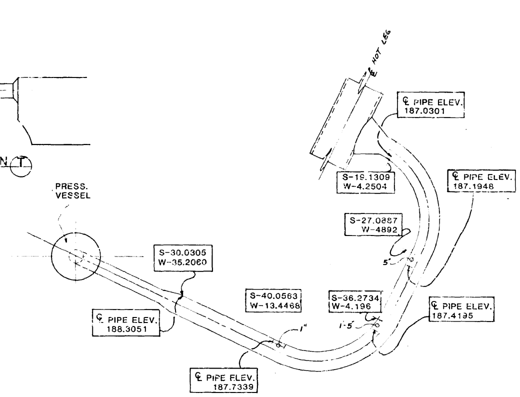


BASE PLATE GENERAL ARRANGEMENT
FOR BASE PLATE DETAILS SEE DWGS 1185F12 & 1187F36





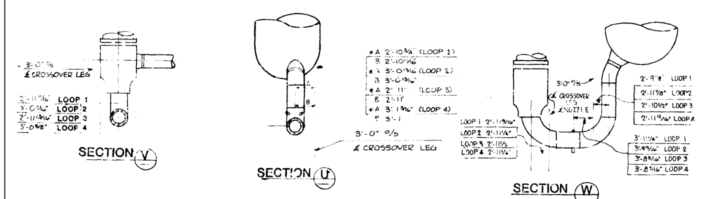
SECTION T

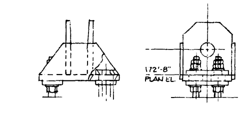


SECTION AA

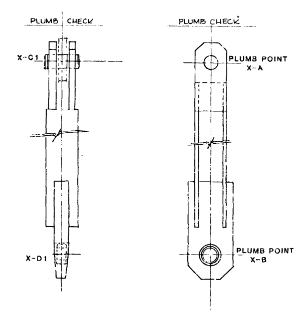
BASE PLATES LOCATION & EL.								
LOOP#	PLATE#	ACTUAL "A"	PLAN "A"	ACTUAL "B"	PLAN "B"	ACTUAL EL.	PLAN EL.	FIELD BOOK
1	1	3'-8 13/16"	3'-9"	5'-1"	5'-0 13/16	172.6490	172.6667	SCI-40
1	2	5'-0 5/16"	5'-0 13/16"	3'-8 7/8"	3'-9"	172.6533		"
1	3	5'-1 1/16"	5'-0 13/16"	3'-9"	3'-9"	172.7031		"
1	4	3'-9 1/16"	3'-9"	5'-0 7/8"	5'-0 13/16"	172.6843		"
1	5	4'-2 9/16"	4'-2 9/16"	0'-6 5/8"	0'-6 11/16"	172.6733		"
1	6	[illegible]'-10"	3'-7 9/16"	2'-9 7/16"	2'-9 7/8"	172.6737		"
1	7	2'-3 11/16"	2'-3 3/8"	3'-7 1/16"	3'-7"	172.6579		"
2	1	[illegible]'-9 1/16"	3'-9"	5'-0 5/8"	5'-0 13/16"	172.6699		SCI-38
2	2	5'-1 1/8"	5'-0 13/16"	3'-9 5/16"	3'-9"	172.6743		"
2	3	5'-0 3/4"	5'-0 13/16"	3'-9"	3'-9"	172.6975		"
2	4	3'-8 13/16"	3'-9"	5'-1 [illegible]"	5'-0 13/16"	172.6653		"
2	5	4'-2 5/8"	4'-2 9/16"	0'-6 1/2"	0'-6 11/16"	172.675[illegible]		"
2	6	3'-9 1/8"	3'-7 9/16"	2'-9 11/16"	2'-9 7/8"	172.6775		"
2	7	2'-3 1/4"	2'-3 3/8"	3'-7 1/4	3'-7"	172.6722		"
3	1	3'-9"	3'-9"	5'-1 3/16	5'-0 13/16"	172.6717		SCI-39
3	2	5'-1 1/16	5'-0 13/16"	3'-8 7/16"	3'-9"	172.6938		"
3	3	5'-0 9/16"	5'-0 13/16"	3'-9 3/16"	3'-9"	172.6808		"
3	4	3'-8 13/16"	3'-9"	5'-0 1/2"	5'-0 13/16"	172.7076		"
3	5	4'-2 15/16"	4'-2 9/16"	0'-7 11/16"	0'-6 11/16"	172.6329		"
3	6	3'-9 5/16"	3'-7 9/16"	2'-10 1/16"	2'-9 7/8"	172.6830		"
3	7	2'-3 3/8"	2'-3 3/8"	3'-6 9/16"	3'-7"	172.6865		"
4	1	3'-8 11/16"	3'-9"	5'-0 1/2"	5'-0 13/16"	172.6668		SCI-41
4	2	5'-0 3/16"	5'-0 13/16"	3'-8 13/16"	3'-9"	172.6613		"
4	3	5'-1 3/16"	5'-0 13/16"	3'-8 3/4"	3'-9"	172.6863		"
4	4	3'-9 11/16"	3'-9"	5'-0 15/16"	5'-0 13/16"	172.6666		"
4	5	4'-2 1/2"	4'-2 9/16"	0'-6 7/16"	0'-6 11/16"	172.6410		"
4	6	2'-9 7/8"	3'-7 9/16"	2'-9 9/16"	2'-9 7/8"	172.6632		"
4	7	2'-3 1/2"	2'-3 3/8"	3'-7 1/8"	3'-7"	172.6565		"

SUPPORT COL'S - LOCATION & PLUMBNESS										
LOOP#	COL.#	ACTUAL A1	PLAN A1	ACTUAL B1	PLAN B1	DIST. TOP TWRD. VES.	DIST. TOP FROM VES.	DIST. TOP EAST	DIST. TOP WEST	FIELD BOOK
1	1	3'-8 15/16"	3'-9"	5'-0 11/16"	5'-0 13/16"	0'-0 3/16"	—	0'-2 3/4"	—	SCI-40
1	2	5'-0 1/16"	5'-0 13/16	3'-9 3/8"	3'-9"	0'-2 5/8"	—	0'-2 5/16"	—	"
1	3	5'-1 7/16	5'-0 13/16	3'-8 3/4	3'-9"	0'-0 3/16"	—	0'-0 3/8"	—	"
1	4	3'-9 1/2"	3'-9"	5'-1 1/16"	5'-0 13/16"	0'-3 3/16"	—	0'-0 5/16"	—	"
1	5	4'-2 1/4"	4'-2 9/16"	0'-6 5/8"	0'-6 11/16"	0'-2 1/4"	—	—	0'-0 3/16"	"
1	6	3'-8 13/16	3'-7"	2'-9 1/2"	2'-9 7/8"	—	0'-[illegible]"	—	0'-2"	"
1	7	2'-3 7/8"	2'-3 3/8"	3'-7"	3'-7"	0'-2 7/8"	—	—	0'-0 3/16"	"
2	1	3'-8 13/16"	3'-9"	5'-0 11/16"	5'-0 13/16"	0'-2"	—	0'-0 3/8"	—	SCI-38
2	2	5'-1"	5'-0 13/16"	3'-9 5/16"	3'-9"	0'-3"	—	0'-0 9/16"	—	"
2	3	5'-1 1/16"	5'-0 13/16"	3'-9 1/8"	3'-9"	0'-1 1/2"	—	0'-0 3/16"	—	"
2	4	3'-9 7/16	3'-9"	5'-1 3/16"	5'-0 13/16"	0'-2 5/16"	—	—	0'-0 3/8"	"
2	5	4'-1 15/16"	4'-2 9/16"	0'-6 9/16"	0'-6 11/16"	0'-2 1/16"	—	—	0'-1 3/8"	"
2	6	3'-8 3/8"	3'-7 9/16"	2'-10 1/8"	2'-9 7/8"	—	0'-4 7/16"	—	0'-1"	"
2	7	2'-3 5/8"	2'-3 3/8"	3'-6 7/8"	3'-7"	0'-2 13/16"	—	—	0'-0 5/8"	"
3	1	3'-9"	3'-9"	5'-0 3/4"	5'-0 13/16"	0'-1"	—	—	0'-2 1/16"	SCI-39
3	2	5'-0 3/8"	5'-0 13/16"	3'-9 1/16"	3'-9"	0'-3"	—	—	0'-3/16"	"
3	3	5'-0 15/16"	5'-0 13/16"	3'-9 1/2"	3'-9"	0'-[illegible]3/8"	—	—	0'-0 3/4"	"
3	4	3'-9"	3'-9"	5'-0 9/16"	5'-0 13/16"	0'-3 3/16"	—	0'-0 3/16"	—	"
3	5	4'-2 1/3"	4'-2 9/16"	0'-7 1/8"	0'-6 11/16"	0'-2 11/16"	—	—	0'-0 3/16"	"
3	6	3'-9 3/8"	3'-7 9/16"	2'-10 5/16"	2'-9 7/8"	—	0'-5 7/16"	0'-0 7/8"	—	"
3	7	2'-3 7/16"	2'-3 3/8"	3'-6 5/8"	3'-7"	0'-2 3/16"	—	—	0'-0 3/8"	"
4	1	3'-8 5/16"	3'-9"	5'-0 5/8"	5'-0 13/16"	0'-1 3/8"	—	—	0'-0 5/8"	SCI-41
4	2	4'-11 15/16"	5'-0 13/16"	3'-9 7/16"	3'-9"	0'-1 7/8"	—	—	0'-0 1/1"	"
4	3	5'-1 3/8"	5'-0 13/16"	3'-8 13/16"	3'-9"	0'-1 1/4"	—	0'-0 3/4"	—	"
4	4	3'-10 3/16"	3'-9"	5'-0 15/16"	5'-0 13/16"	0'-2 3/16"	—	0'-0 3/16"	—	"
4	5	4'-2 1/4"	4'-2 9/16"	0'-6 11/16"	0'-6 11/16"	0'-3"	—	0'-1 3/16"	—	"
4	6	3'-8 15/16"	3'-7 9/16"	2'-9 3/4	2'-9 7/8"	—	0'-4 7/8"	0'-5/16"	—	"
4	7	2'-4 3/16"	2'-3 3/8"	3'-6 7/8"	3'-7"	0'-2 7/8"	—	0'-0 5/8"	—	"





R.C. PUMP & S.G. COLUMN BASE
7 BASE REQD PER LOOP



VERTICAL COLUMNS
S.G. - 4 REQD PER LOOP
R.C. PUMP - 3 REQD PER LOOP

X-A 1 — COLUMN# / STA# / COMPUTED

* DUE TO HIS CONFIGURATION OF THE SUPPORT COL'S AND BASE PLATES, ℄ PIN TO ℄ PIN PLUMBNESS MUST BE CALCULATED ON THE WEB SIDE OF THE SUPPORTS

NOTES:

1. DENOTES ASBUILT DIMENSION.
2. A- MEASURED TO ℄ BASE PLATE A1 - MEASURED TO ℄ COL
3. ALL C L PIPE O/S'S ARE FROM ACTUAL C L PIPE, NOT THEORETICAL
4. FROM VESSEL OR TOWARD VESSEL, MEANS THE VESSEL THAT THE COLUMN'S ARE HOLDING UP.
5. N/A : NOT APPLICABLE
6. O/S : OFF SET

22 THIS DRAWING WAS RENUMBERED FROM 1X4DL4A017 (SHEET 3)
WORK THIS DRAWING WITH: 1X4DL4A017-1, 1X4DL4A017-2

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
22	INCORP PER ABN 38665	4-25-03	DFV	LRP	ASK	-

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BLDG
PIPING AREA 4A, B, C & D
LEVEL B - PLAN & SECTIONS
REACTOR COOLANT LOOPS

SCALE: NOTED
JOB NO. 10604
DRAWING NO. 1X4DL4A017-3
REV. 22

SIZE E 34X44
LARGE BORE
CAD NAME 1X4DL4A0173

PIPE SUPPORT LIST

NODE	SUPPORT TAG NO.
275	VI-1206-054-[illegible]
265	H002
255	H003
245	H004
235	H005
225	H006
215	H007
205	H008
465	VI-1206-054-H030
135	VI-1206-013-H008
130	H009
125	H010
130	H011
115	H012
110	VI-1206-013-H013
520	VI-1206-040-H018
625	H019
630	H020
635	H021
640	H022
645	VI-1206-040-H023
560	VI-1206-040-H011
310	VI-1206-009-H001
315	H002
320	H003
325	VI-1206-009-H004
780	VI-1206-008-H018
785	H019
790	H020
795	H021
937	VI-1206-008-H001
927	VI-1206-008-H002

PIPE SUPPORT LIST

NODE	SUPPORT TAG NO.	
515	VI-1206-007-H004	
525	VI-1206-007-H005	
490	H037	W/A
485	H001	
365	H039	W/A
285	H005	W/A
183	H038	W/A
75	VI-1206-007-H047	

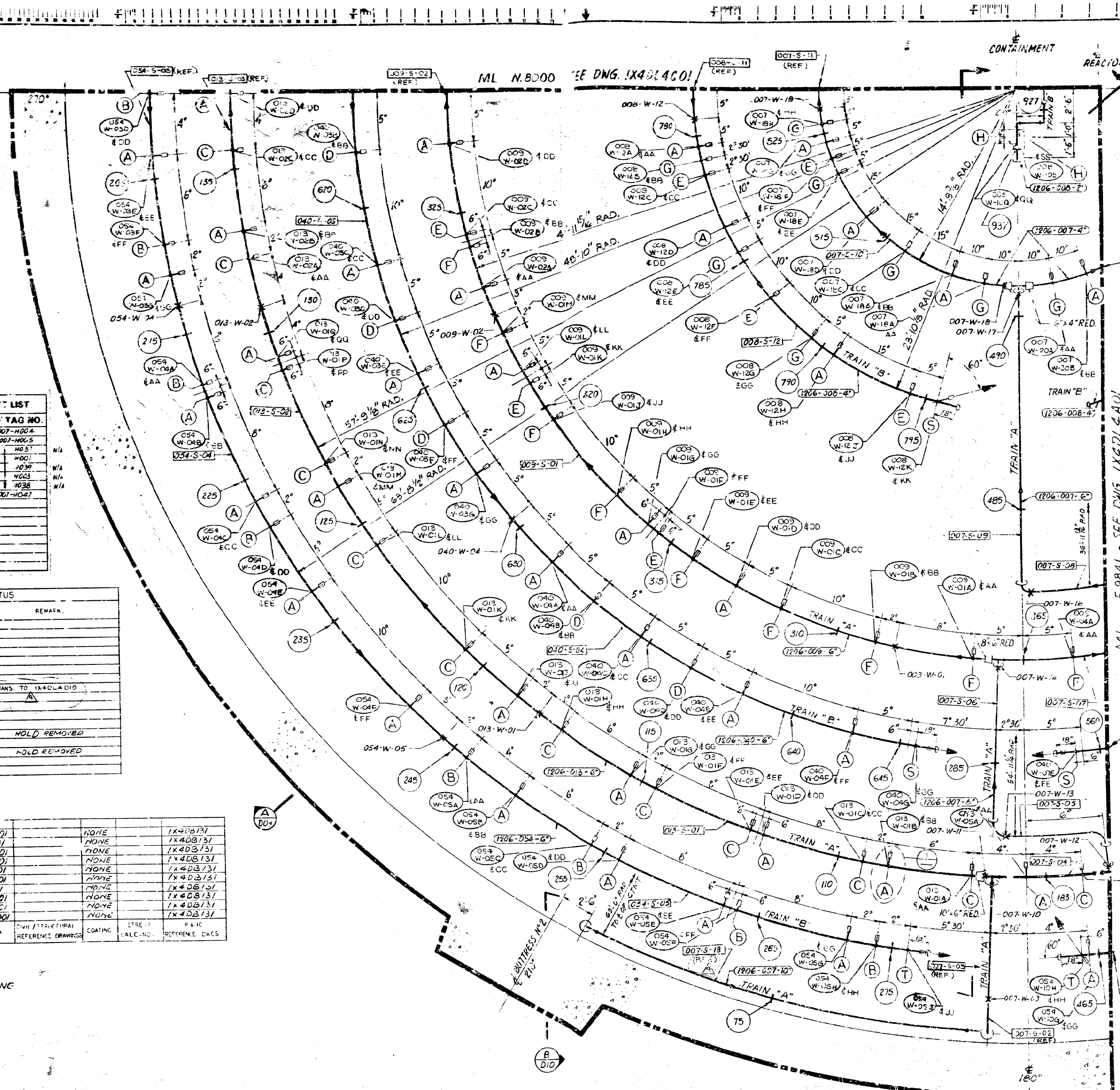
SPOOL STATUS

SPOOL NUMBER	REV. NO.	SHOP SHT. NO.	ACT. PKG.	REMARK.
1-1206-007-S-04	0		075A	
1-1206-007-S-05	0		075A	
1-1206-007-S-06	0		075A	
1-1206-007-S-07	0		075A	
1-1206-007-S-08	0		075A	
1-1206-007-S-09	0		075A	
1-1206-007-S-10	0		075A	
~~1-1206-007-S-12~~	~~0~~		~~075A~~	TRANS. TO 1X4DL4D10 (9)
1-1206-008-S-12	0		075A	
1-1206-009-S-01	0		075A	
1-1206-013-S-01	0		075A	
1-1206-013-S-02	0		075A	
1-1206-040-S-03	0		075A	HOLD REMOVED
1-1206-040-S-04	0		075A	
1-1206-054-S-04	1		075A	HOLD REMOVED
1-1206-054-S-05	0		075A	

LINE NUMBER	PROJ CLASS	PIPING CLASS	PIPING AREA	CIVIL / STRUCTURAL REFERENCE DRAWINGS	COATING	STRESS CALC. NO.	P & ID REFERENCE DWGS
1206-003-2"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-054-6"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-040-6"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-013-6"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-009-6"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-008-4"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-007-4"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-007-6"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-007-8"	212	LL1	1X4DL4D01		NONE		1X4DB131
1206-007-10"	212	LL1	1X4DL4D01		NONE		1X4DB131

MIN WALL AFTER BENDING

10" - 0.310"
6" - 0.274"
8" - 0.288"
4" - 0.202"
2" - 0.1308"



AS BUILT

~~AS BUILT EXCEPT - 007-S-18 & SUPPORT @ NODE~~ DELETE ~~POINT 75 (SEE NOTE # 12 ON 1X4DL4A01)~~

THIS DRAWING IS REQUIRED FOR PROOF OF DESIGN

FOR DETAIL & FIELD WELD NO.s ON LINE NO. 1206-008-2" SEE DWG. 1X4DL4D10.

FOR NOTES SEE DWG. 1X4DL4A01

FOR PLAN BELOW THIS AREA SEE DWG. 1X4DL4D16.

TYPICAL DETAIL (1) NTS

REFERENCE DRAWINGS
P&ID - 1X4DB131
CIVIL-
STRUCTURAL - 1X2D01J028
ARCHITECTURAL
HVAC
PLUMBING
ELECTRICAL

Installers Note
1. SEE ISO [illegible] FOR FIELD B/M INSTRUCTIONS
2. SPEC LL1-212
3. MFR STD ASME SECT. III C1.2
4. DESIGN PRESS 150 PSIG
5. DESIGN TEMP 253°F
6. PIPE 4,6,8,10" S/40S SA-312, TP304, TP304L
7. FITTINGS SA-403, GR. WP304, WP304W, WP-304W
8. FORGINGS SA-182, GR. F316, F316L
9. PROCESS SHEETS REQUIRED WITH THIS DRAWING
10. INSTALL PER PROC. 1X-3

ACTIVITY PACKAGE #4-1-2101-3-075A UNIT 1

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

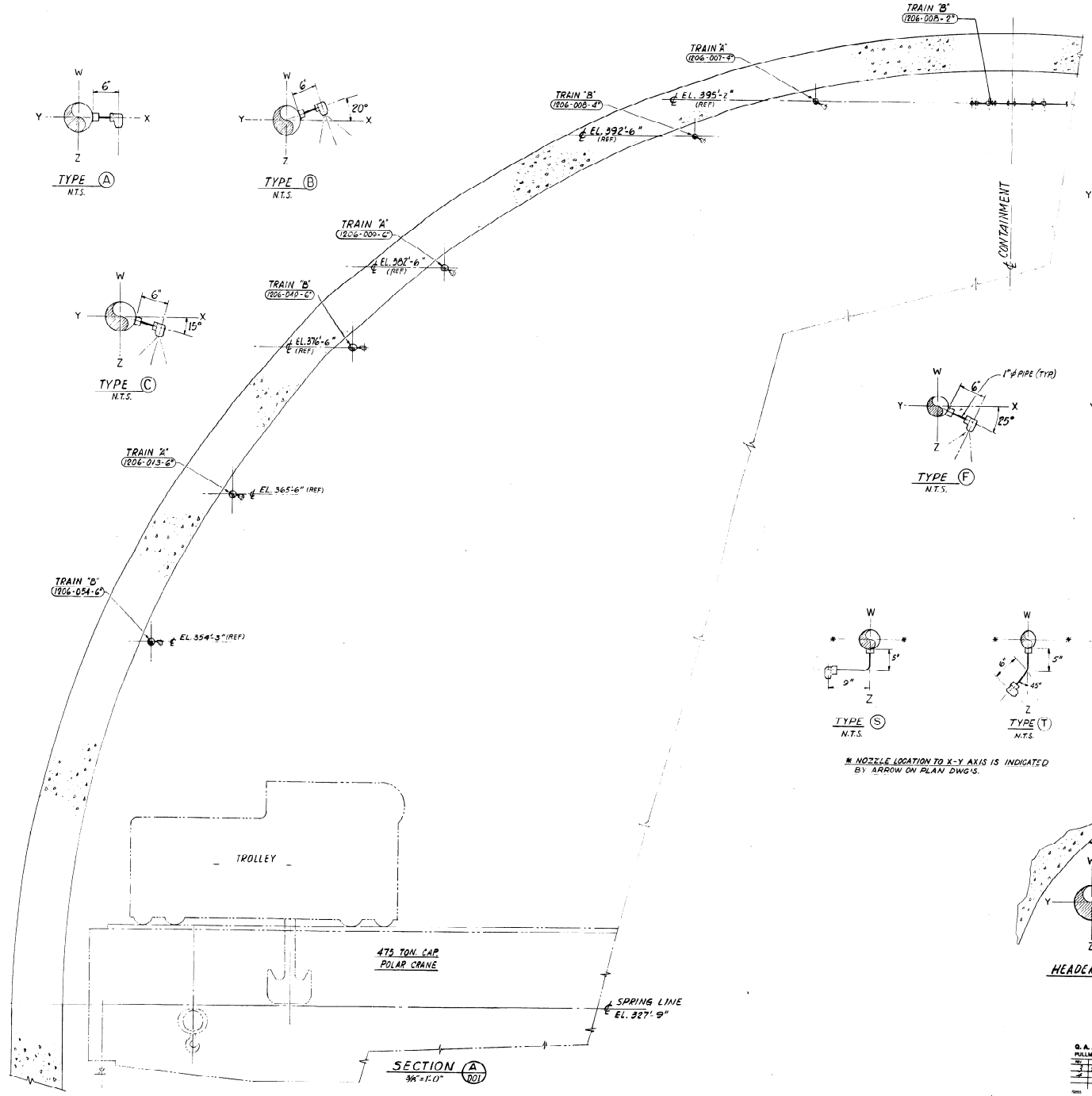
CONTAINMENT BUILDING - PIPING
AREA 4D - LEVELS 4 & 5
PLAN - ELEV. 287'-0" & ABOVE

SCALE: 3/8" = 1'-0"
JOB NO. 9510
DRAWING NO. 1X4DL4D01
REV. 9

REVISIONS
- REV. INST. REFERENCE STATUS, NO AFFECT TO AS BUILT
- UPDATED [illegible]
- AS BUILT [illegible]
- ADDED FIELD WELDS
- INCORP. DCN #1
- REVISED AS NOTED & ISSUED FOR FABRICATION
- ISSUED FOR CONSTRUCTION

SIZE E 34 x 44

30X

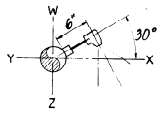


SECTION (A) (D01)
3/4" = 1'-0"

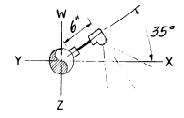
TYPE (A) N.T.S.

TYPE (B) N.T.S.

TYPE (C) N.T.S.

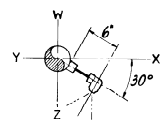


TYPE (D) N.T.S.

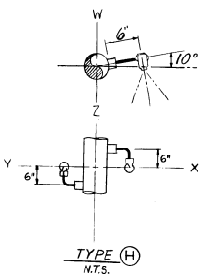


TYPE (E) N.T.S.

TYPE (F) N.T.S.



TYPE (G) N.T.S.



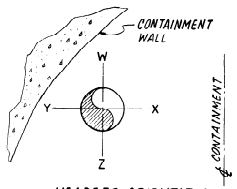
TYPE (H) N.T.S.

NOZZLE LOCATION TO X-Y AXIS AS SHOWN ON PLAN DWG'S.

TYPE (S) N.T.S.

TYPE (T) N.T.S.

* NOZZLE LOCATION TO X-Y AXIS IS INDICATED BY ARROW ON PLAN DWG'S.



HEADERS ORIENTATION

THIS DRAWING IS REQUIRED FOR W PROOF OF DESIGN (A)

FOR NOTES SEE DWG. NO. 1X4DL4A01

ACTIVITY PACKAGE #4-1-2101-3-075A UNIT 1

BECHTEL LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTAINMENT BUILDING - PIPING
AREA 4A, B, C & D - LEVEL 5
SECTION & DETAILS

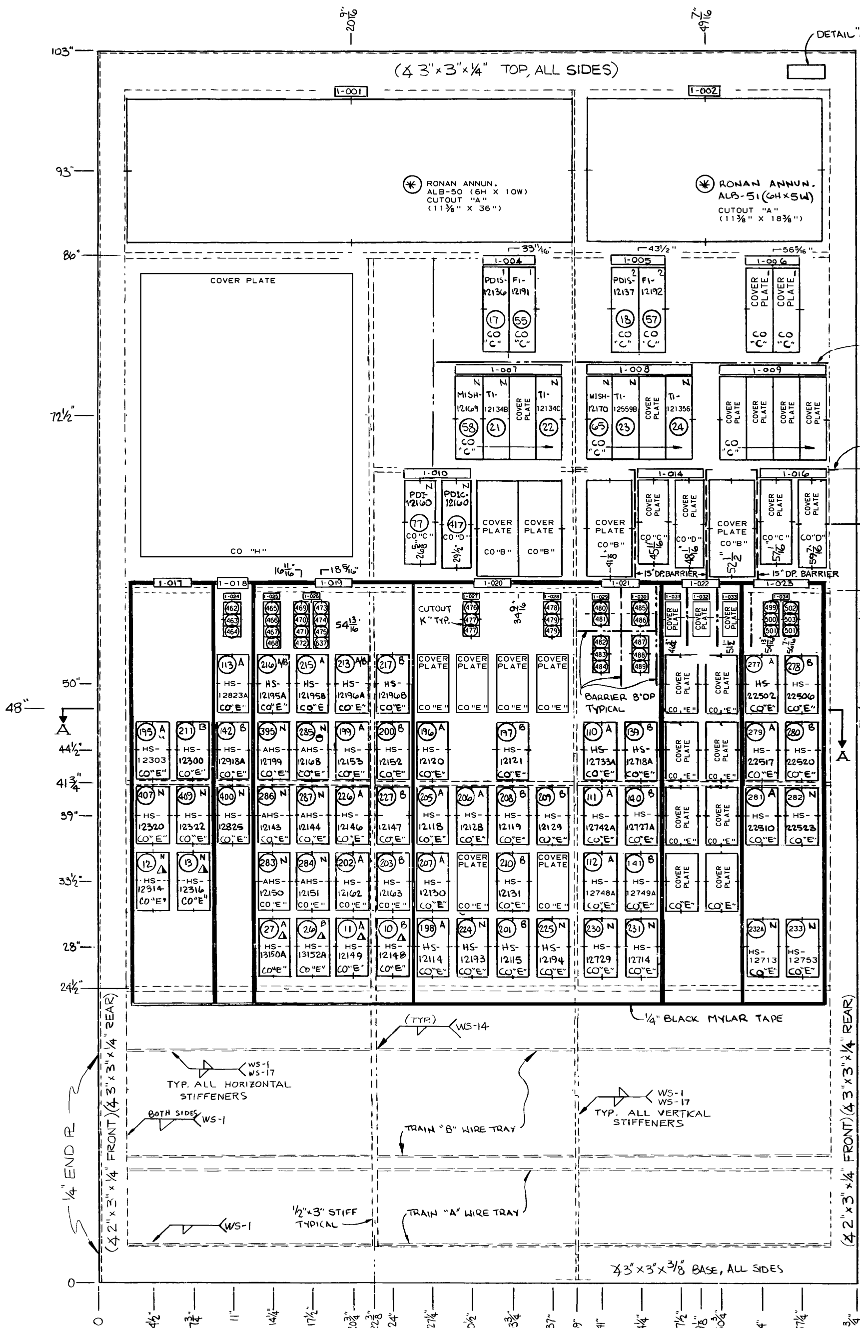
SCALE: AS NOTED | DRAWING NO. 1X4DL4009 | REV. 4
JOB NO. 9510

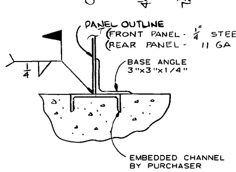
Q. A. Approval PULLMAN PO. PROD.

NO.	REVISIONS	DATE	DR.	CHK.	SUPV.	EGS	CHF.E	P.E.	Q.A.E.
(A)	NOZZLE PER (1X4DL4A01, D01 DCN-1)								
(A)	ISSUED FOR INSTALLATION & REV. TYPE (H)	11-15-91	APPM	SMP					ENG. MGR.
(A)	TRANSFERRED TO G.P.C.	6-21-91	SMP						
(A)	REVISED AS NOTED & ISSUED FOR FABRICATION	1-11-91	AMR						
(A)	ISSUED FOR CONSTRUCTION	11-4-90	FF	SMP					DATE
NO.	REVISIONS	DATE	DR.	CHK.	SUPV.	EGS	CHF.E	P.E.	Q.A.E.
(A)	INCORP. DCN-R #3	1-11-90	MB	SMP					
NO.	REVISIONS	DATE	DR.	CHK.	SUPV.	EGS	CHF.E	P.E.	Q.A.E.

SIZE E 36 X 44

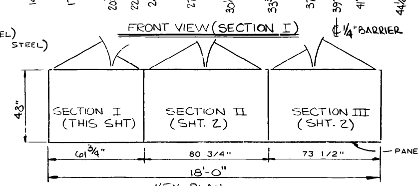
LARGE BORE



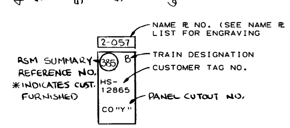


ANCHOR DETAIL

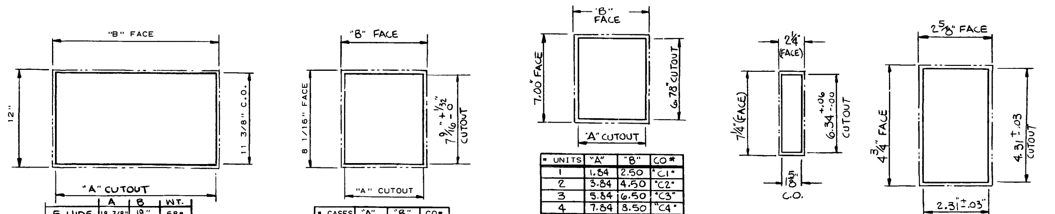
NOTE: SEE WELD PATTERN OF PANEL BASE FOR LENGTH OF WELDS



KEY PLAN



TYP. EQUIP. IDENT



	A	B	WT.
5 WIDE	18 3/8"	19"	68*
7 WIDE	25 3/8"	26"	95*
10 WIDE	36"	36½"	135*

CUTOUT "A"
MFR: RONAN
TYPE: X12-2000
DEPTH: 14⅛"
WT: SEE CHART

* CASES	"A"	"B"	CO*
1	3¼"	3 11/16	"B1"
2	6 5/16	6¾"	"B2"

*NOTE: 24" MIN CLEARANCE FOR REMOVAL (FRONT)

CUTOUT "B"
MFR: RECORDER VERITRAK
TYPE: MODEL 75
DEPTH: 22⅝"
WT. 26 LBS

* UNITS	"A"	"B"	CO*
1	1.84	2.50	"C1"
2	3.84	4.50	"C2"
3	5.84	6.50	"C3"
4	7.84	8.50	"C4"
5	9.84	10.50	"C5"

CUTOUT "C"
MFR: SIGMA
TYPE: 9270
DEPTH: 12¼"
WT. 4 LBS

CUTOUT "D"
MFR: WESTINGHOUSE
TYPE: 7300 SERIES
DEPTH: 8"
WT: 2 LBS

CUTOUT "E"
MFR: ELECTROSWITCH
TYPE: MOD. 20M
DEPTH: 6"
WT. (SINGLE TRAIN 2 LBS)
(DUAL TRAIN 4 LBS)

RELIANCE WELDING NOTES

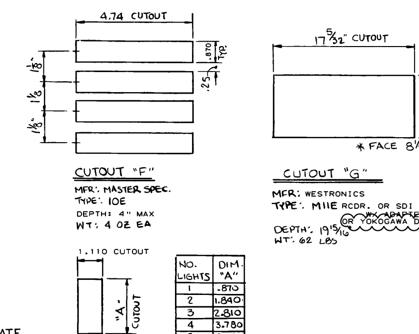
1. MINIMUN LENGTH OF EACH FILLET WELD SHALL NOT BE LESS THAN 1½ INCHES.
2. MAXIMUM CENTER TO CENTER SPACING FOR FILLET WELDS SHALL NOT EXCEED (8) INCHES. ALL STRUCTURAL MEMBERS TO HAVE A WELD ON BOTH ENDS.
3. MINIMUM SIZE OF ALL STRUCTURAL FILLET WELDS SHALL BE IN ACCORDANCE WITH THE BELOW LISTED TABLE

MINIMUM SIZE FILLET WELD

MATERIAL THICKNESS OF THICKER PART JOINED (INCHES)	MINIMUM SIZE OF FILLET WELD. * (INCHES)
TO ¼ INCLUSIVE	⅛
OVER ¼ TO ½	3/16
OVER ½ TO ¾	¼
OVER ¾	5/16

* LEG DIMENSION OF FILLET WELDS.

4. ALL WELDING & JOINT DETAILS ARE PER THE REQUIREMENTS OF QCP 5.1.

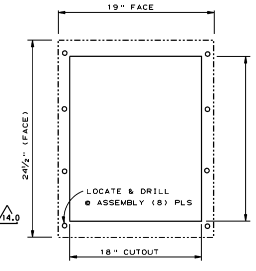


CUTOUT "F"
MFR: MASTER SPEC.
TYPE: 10E
DEPTH: 4" MAX
WT: 4 OZ EA

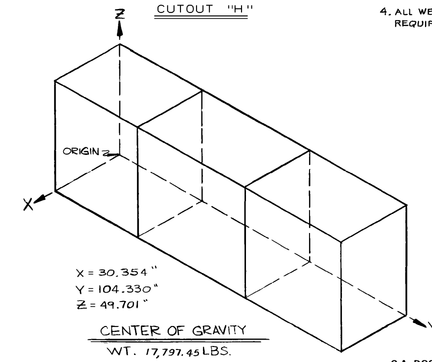
CUTOUT "G"
MFR: WESTRONICS
TYPE: M11E RCDR. OR SDI 300 INDICATOR OR YOKOGAWA DX230 RECORDER
DEPTH: 19 5/16
WT: 62 LBS

NO. LIGHTS	DIM. "A"
1	.870
2	1.840
3	2.810
4	3.780
9	8.630

CUTOUT "K"
MFR: MASTER SPEC.
TYPE: 10E
DEPTH: 4" MAX
WT: 4 OZ. EA.

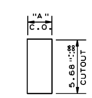


CUTOUT "H"



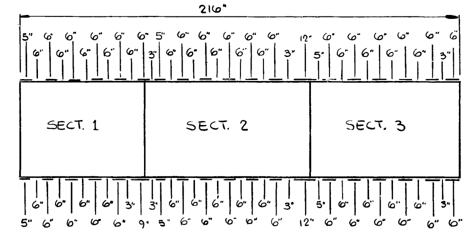
X = 30.354"
Y = 104.330"
Z = 49.701"

CENTER OF GRAVITY
WT. 17,797.45 LBS.



* OF UNITS	"A" DIM.
1	1.77
2	3.51
3	5.25
4	6.99

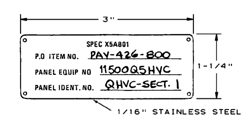
CUTOUT "L"
MFR: INTERNATIONAL INSTR.
TYPE: 1251
DEPTH: 5"
WT: 30 OZ. EA.



WELD PATTERN AT BASE OF PANEL (BY FIELD)

FIELD WELDING NOTES:

1. THE THREE SECTIONS OF PANEL SHALL BE BOLTED TOGETHER BEFORE WELDING.
2. ALL FOUR CORNERS SHALL BE WELDED AS SHOWN PRIOR TO ANY OTHER WELDING.
3. SEE ANCHOR DETAIL THIS SHT FOR WELD SIZE.



DETAIL "A"

GENERAL NOTES

Q A DOCUMENT CONTROL ■YES □NO
NUCLEAR SAFETY RELATED ■YES □NO (LABEL)
SEISMIC QUALIFICATION REQ'D ■YES □NO

1 —MATERIAL: FRONT ¼" STEEL STIFFENERS ___
ENCLOSURE TOP & SIDES 1/4", REAR 11 GA. SUB-PANELS 11 GA
BOTTOM OPEN DUCTS 11 GA, COVERS 16 GA
2.—DOORS: MATERIAL 11 GA. TYPE LIFT-OFF
HINGE TYPE LIFT-OFF
LATCH TYPE 3 POINT LATCHING LOCKING? YES
LOUVERS? 1"x5" STIFFENERS? AS REQD
3 —LIFTING EYES? YES SIZE 1" DIA. QTY. 12
4 —CHANNEL BASE? NO SIZE ___
SHIP SEPARATE ___ SHIP WITH PNL. ___
5 —RUB STRIP? NO KICK PL? ___
6 —GROUND BUS? YES SIZE 1/4"x1" LOCATION NOTED
TERMINALS ___
7 —LIGHTING? YES TYPE INCAND. SPACING 10 REQD. SEE DWG.
8 —RECEPTACLES? YES SPACING 6 REQD. SEE DWG
9.—PAINT: SHERWIN-WILLIAMS PRIMER DESCRIPTION TILECLAD II EPOXY PRIMER B62N71/B60V70 MILS ___
INTERIOR FINISH DESC POLANE F63W12/V66B29
COLOR ___
NO OF COATS ___ MILS ___
EXTERIOR FINISH DESC. POLANE F63 SERIES
COLOR SINCLAIR "RAW SIENNA" (SPF-2)
NO OF COATS ___ MILS ___
TOTAL DRY FILM THICKNESS-INT. ___ EXT. ___
REFERENCE PROGRAM PLAN PROCEDURE? ___
10 —NAMEPLATES? YES MATL SEE NP LIST COLOR ___
SIZE SEE NP LIST LETTER SIZE ___ COLOR ___
ATTACHMENT-TAPE ___ SCREWS ✓ OTHER ___
11.—DRAWING POCKET REQ'D? NO
12 —VIBRATION PADS REQ'D? NO
13 —ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
14.- ALL THREADED FASTENERS TO HAVE FLAT & LOCK WASHERS.
15.- PROJECT CLASS 11J
16.- INSTRUMENT TAG NO. FOR UNIT NO. "1" PREFIX "1"; COMMON INSTRUMENTS SHOULD BE PREFIX "A".

⊖- NEW FRONT PLATE ONLY
Δ- EQUIP. PURCHASED ON JOB #10AX090097

NUCLEAR SAFETY RELATED

E-FCRB-17,466

PROJ MGR APPROVED	Q A MGR APPROVED	REV NO	DESCRIPTION	BY & DATE
		10	ECO 011114	
Oct		9	ECO # 12922	
Oct		8	ECO NO. 9904	
Oct		7	ECO NO. 9921	
Oct		6	ECO NO. 10210	
Oct		5	ECO NO. 10553	
Oct	RM	4	ECO NO. 10523	
Oct		3	ECO Nº 1963	
Oct		2	ECO Nº 1184	
		1	ECO NO. 1109	
		0	APPROVAL	

EQUIPMENT TAG# 1-1500-Q5-HVC "Q"

TITLE MECH. DWG. - HVAC PANEL UNIT 1 11500Q5HVC
PROJECT MANAGER BILL CLEVELAND SCALE 3"=1'-0" EXCEPT AS NOTED
RELIANCE ORDER NO 99AX400923 CUSTOMER ORDER NO PAV-426
CUSTOMER GA. POWER CO./VOGTLE NUCLEAR PLANT
PROJ MGR APPROVED DATE ___ Q A MGR APPROVED DATE 4-5-82
DRAWN BY E. SIMS DATE 3-19-82 DR NO M-99X0923-E SH 1 OF 9
RELIANCE ELECTRIC COMPANY CUSTOM CONTROLS STONE MOUNTAIN, GEORGIA 30083

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A
VERSION14.0 DATE 08/28/09
REVISED BY SNC PER ABN 1052592101J040, VER. 1.0
SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.

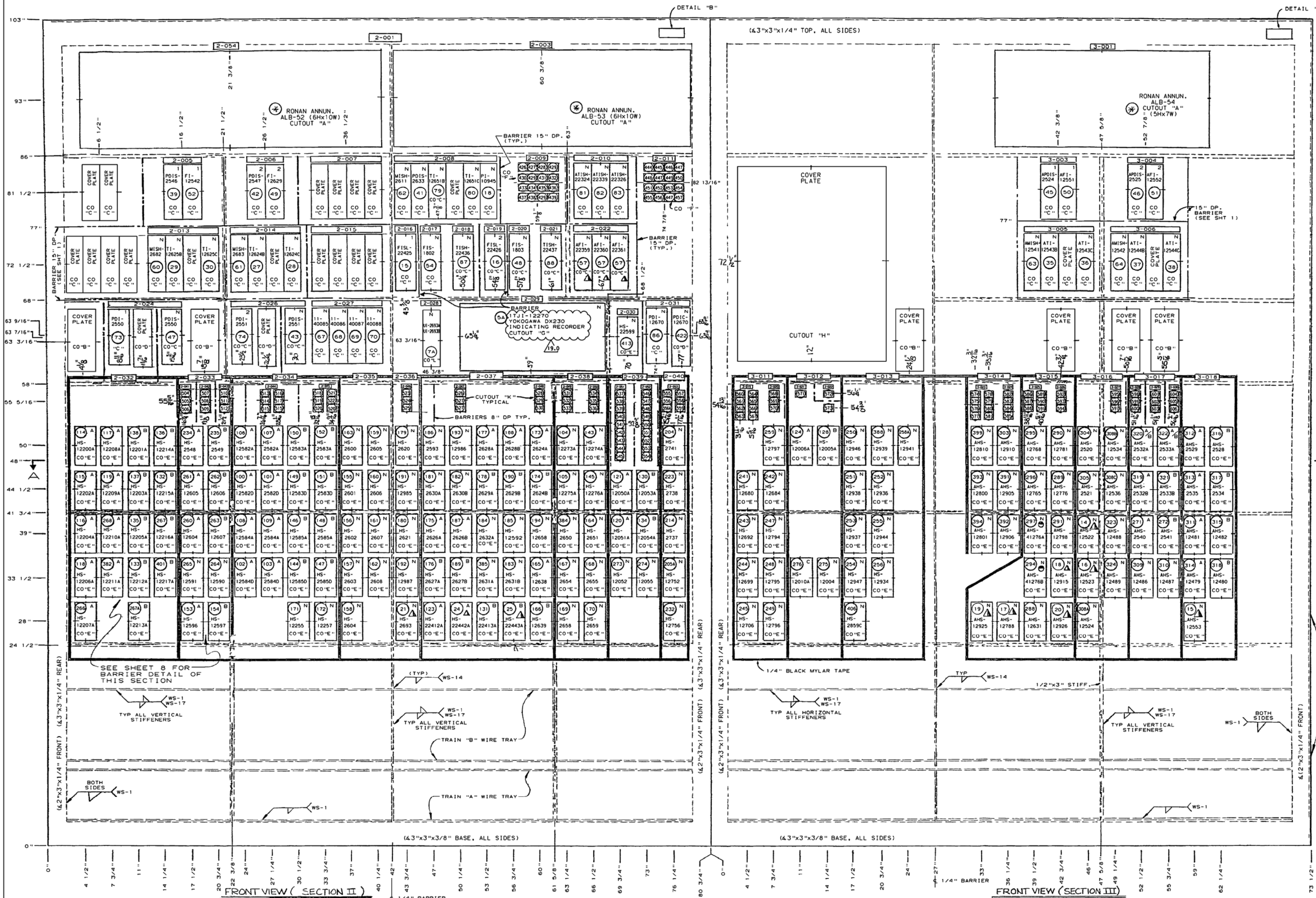
BY	CHK'D	APPR.1	APPR.2
TSL	ELC	JMR	X

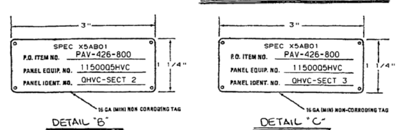
CAD MICROSTATION TSL/01 1X5AB01-00066.DGN

Southern Nuclear Operating Company, Inc. FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

TITLE: MECH. DWG. HVAC PANEL 1-1500-Q5-HVC (SECTION 1)

VENDOR: RELIANCE ELEC. P.O.#: PAV-426
DRAWING NO. 1X5AB01-00066





▲ – EQUIP. PURCHASED ON JOB # 10AX090097
◒ – NEW FRONT PLATE ONLY

NUCLEAR SAFETY RELATED

Q.L. MGR. APPROVED	G.A. MGR. APPROVED	REV NO.	DESCRIPTION	B & DATE
		12	ECO 009464	WC 6.86
		11	ECO 12816	
		10	ECO N 12922	
		9	ECO No 9926	
		8	ECO NO 9921	
		7	ECO No 9912	
		6	ECO NO 10210	
		5	ECO NO 10586	
		4	ECO NO 10523	
		3	ECO N-1963	
		2	ECO N-1184	
		1	ECO NO. 1109	
		0	APPROVAL	

Y-FCRB-1505 (DCNS-1)

TITLE MECH DWG – HVAC PANEL UNIT I 1150005HVC
PROJECT MANAG BILL CLEVELAND SCALE 3" = 1'-0"
RELIANCE ORDER NO. 99Ax400923 CUSTOMER ORDER NO. PAV 426
CUSTOMER GA POWER CO./VOGTLE NUCLEAR PLANT
DRAWN BY E SIMS DATE 3-19-82 DR. NO. M-99x0923 E SH. 2

RELIANCE ELECTRIC COMPANY CUSTOM CONTROLS STONE MOUNTAIN GEORGIA 30083

Q THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A
VERSION 19.0 DATE 08/28/09
REVISED BY SNC PER ABN 1052592101J041, VER.1.0
SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.

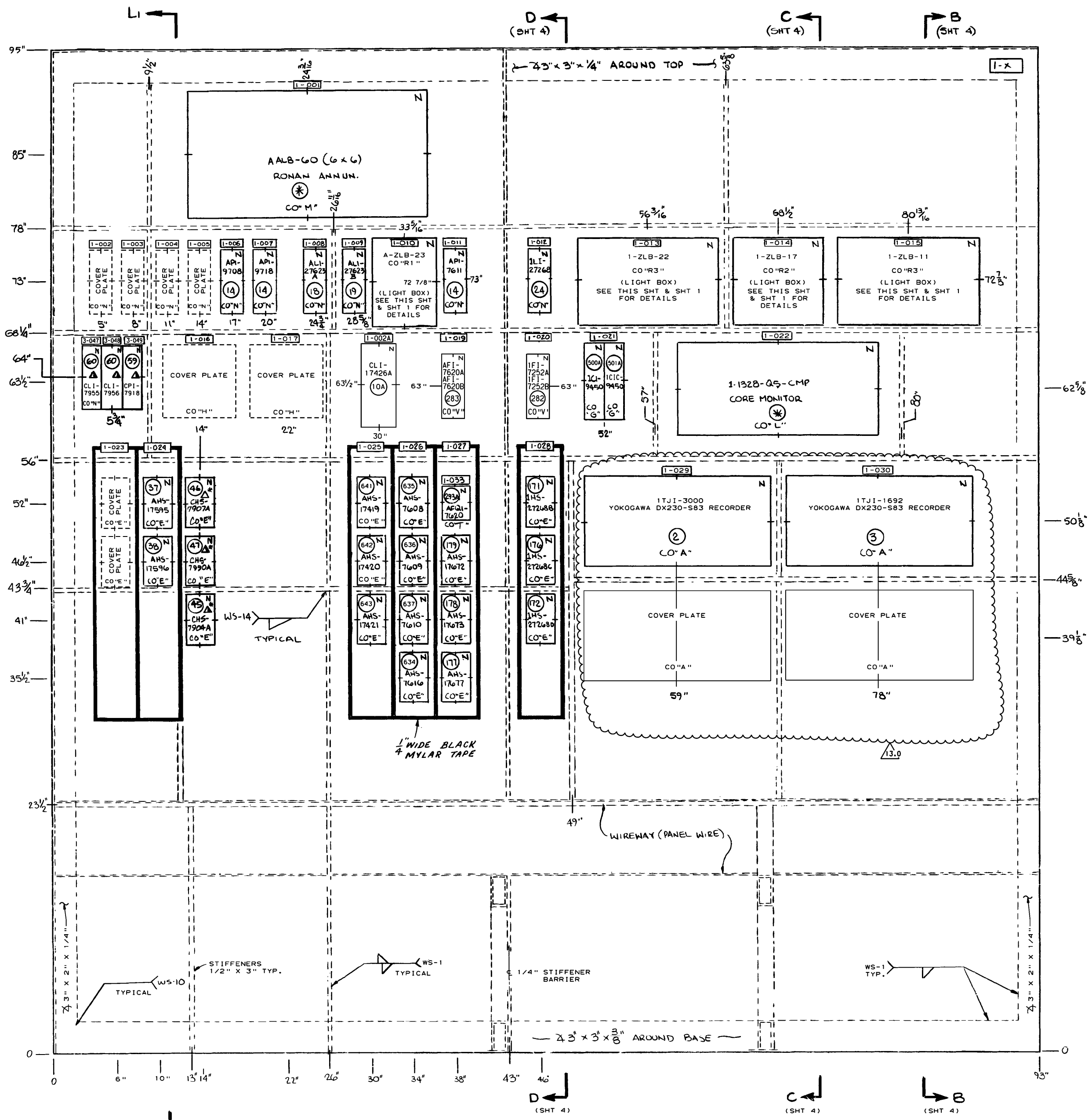
BY	CHK'D	APPR.1	APPR.2
TSL	ELC	JMR	X

CAD MICROSTATION TSL/01 1X5AB01-00067.DGN

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

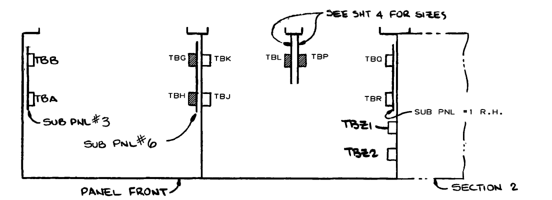
TITLE: MECH. DWG. - HVAC PANEL 1-1500-Q5-HVC (SECTIONS 2 & 3)

VENDOR: RELIANCE ELEC. P.O.#: PAV-426
DRAWING NO. 1X5AB01-00067



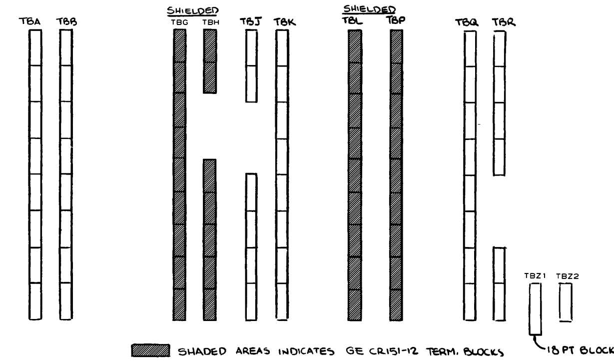
FRONT ELEVATION "SECTION 1"

▲ - EQUIP. PURCH. ON JOB # 10AX090097



"TOP VIEW" TERMINAL BLOCK ARRANGEMENT

(SEE SHT 11 FOR SUB PANEL DETAILS)



SHADED AREAS INDICATES GE CR151-12 TERM. BLOCKS

NON-SHADED AREAS INDICATES STATES TERM. BLOCKS (12 POINTS)

"ELEVATION" TERMINAL BLOCK ARRANGEMENT

1-010 A-ZLB-23

599	598	598	598
601	598	598	598
603	598	598	598
605	598	598	598
598	598	598	598
598	598	598	598

1-013 1-ZLB-22

563	564	565	566	567	568	585	586	587	588
569	570	571	572	573	574	589	590	591	588
575	576	577	576A	577A	578	592	593	594	588
579	580	581	582	583	584	595	596	597	588
588	588	588	588	588	588	588	588	588	588
588	588	588	588	588	588	588	588	588	588

1-014 1-ZLB-17

539	541	542	543	545	540
546	547	548	549	550	540
551	544	552	553	554	540
555	556	557	558	540	540
559	560	561	562	540	540
658	540	540	540	540	540

1-015 1-ZLB-11

300	301	302	303	303A	304	305	306	307	308
309	310	311	312	313	314	315	316	317	318
319	320	321	322	303A	323	324	325	326	327
328	329	330	331	332	333	334	335	336	337
338	339	340	341	342	343	344	345	346	347
348	349	350	351	303A	303A	303A	303A	303A	299

MASTER SPEC. LIGHTS ARRANGEMENT

NOTE: NUMBER INSIDE SQUARE INDICATES RELIANCE'S ITEM NUMBER

EQUIPMENT TAG NO: 1-1604-Q5-PCP

* REFER TO SUMMARY OF MATERIALS BM-10AX090097-A, BECHTEL LOG Nº 1X5AB01-1108

NUCLEAR SAFETY RELATED

PROJ MGR APPROVED	Q/A MGR APPROVED	REV. NO	DESCRIPTION	BY & DATE
		13	ECO Nº 11530	EMI 8/86
		12	ECO 013961	W.C. 6-86
		11	ECO 12932	
		10	ECO 12919	
		9.	ECO NO. 9941	
		8	ECO NO. 9934	
		7	ECO NO 9910	
		6	ECO NO. 9928	
		5	ECO NO. 10212	
		4	ECO NO. 10569	
		3	ECO NO. 10248	
		2	ECO NO. 1378	
		1	ECO NO. 1398	
		0	APPROVAL	

TITLE: MISCELLANEOUS SYSTEMS/EQUIPMENT PANEL (QPCP) SECTION 1, UNIT 1
PROJECT MANAGER: B. ALLEN SCALE: 3" = 1'0"
RELIANCE ORDER NO: 99AX400924 CUSTOMER ORDER NO: PAV-426
CUSTOMER: GEORGIA POWER CO.
PROJ MGR APPROVED: DATE: 4/ /82 Q A MGR APPROVED: DATE:
DRAWN BY: E. SIMS DATE: 2-10-82 DR NO. M-99X0924-F SH. 2 OF 11
RELIANCE ELECTRIC COMPANY CUSTOM CONTROLS STONE MOUNTAIN, GEORGIA 30083

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A
VERSION 13.0 DATE 08/18/09
REVISED BY SNC PER ABN 1052592101J002, VER. 1.0
SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.

BY	CHK'D	APPR.1	APPR.2
TSL	ELC	JMR	X

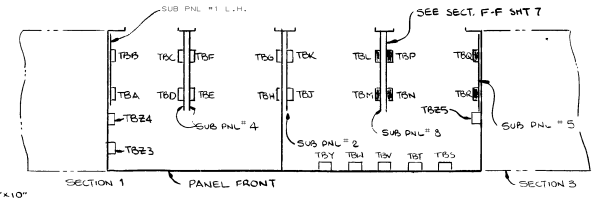
CAD MICROSTATION TSL/01 1X5AB01-00557.DGN Q

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

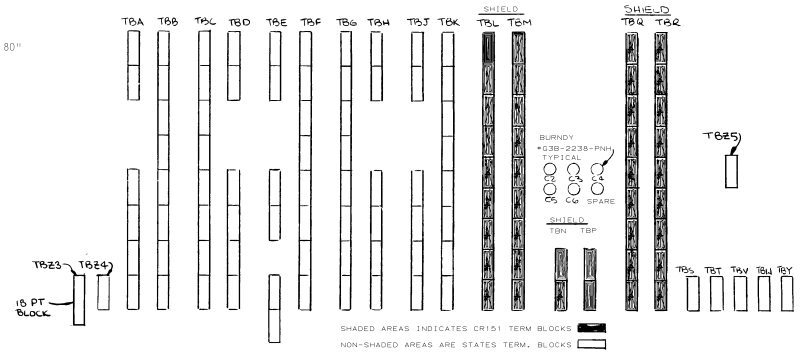
TITLE: MISCELLANEOUS SYSTEMS EQUIPMENT PANEL (QPCP) SECTION 1

VENDOR: RELIANCE ELEC. P.O.#: PAV-426

DRAWING NO. 1X5AB01-00557



"TOP VIEW" TERMINAL BLOCK ARRANGEMENT
(SEE SHT 11 FOR SUB PANEL DETAILS)



"ELEVATION" TERM. BLOCK ARRANGEMENT

2-004 1-ZLB-12

353	354	355	356	357	358	359	360	361	362
363	364	365	366	367	357	368	369	370	371
372	373	374	375	376	377	378	379	380	381
382	383	384	385	386	387	388	389	390	391
392	393	394	395	396	397	398	399	400	357
401	402	357	403	404	405	406	357	357	352

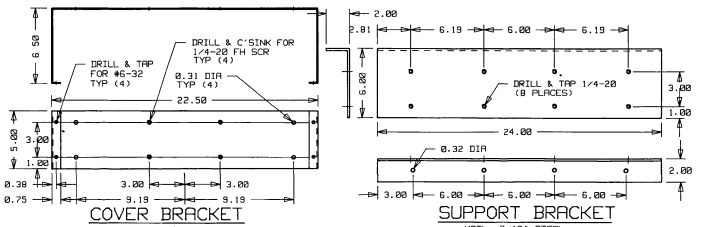
2-005 1-ZLB-13

409	410	411	412	413	414	415	416	417	418
419	420	421	422	423	424	425	426	427	428
429	430	431	432	433	434	435	436	437	438
439	440	441	442	443	444	445	446	447	448
449	450	451	452	453	454	455	456	457	458
459	460	461	462	408	408	408	408	408	407

2-007 1-ZLB-14

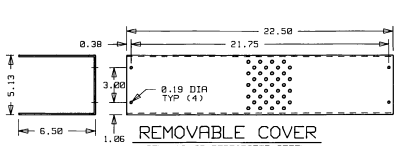
465	463	463	463	466	467	468	463	463	463
469	470	471	472	473	474	463	463	475	463
476	477	478	479	480	481	482	483	484	485
486	487	488	489	490	491	492	493	494	495
496	497	498	499	500	501	502	503	504	505
506	507	508	509	510	511	512	513	514	464

MASTER SPEC. LIGHTS ARRANGEMENT
NOTE: NUMBER INSIDE SQUARE INDICATES RELIANCE'S ITEM NUMBER

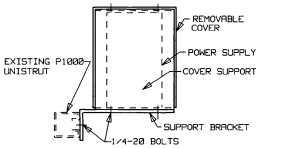


COVER BRACKET
MATL: 16 GA STEEL

SUPPORT BRACKET
MATL: 3/16" STEEL



REMOVABLE COVER
MATL: 16 GA PERFORATED STEEL



POWER SUPPLY MTG ASSY

NUCLEAR SAFETY RELATED

REV NO	DESCRIPTION	DATE
10	ECO 12747	
9	ECO NO. 9941	
8	ECO NO. 9932	
7	ECO NO. 9910	
6	ECO NO. 9928	
5	ECO NO. 10212	
4	ECO NO. 10511	
3	ECO NO. 10248	
2	ECO NO. 10175	
1	ECO NO. 10132	
0	APPROVAL	

11 ECO ISSUED

DCNS-1 (E-TCBB-15,503)

TITLE: MISCELLANEOUS SYSTEMS/EQUIPMENT PANEL (QPCP) SECTION 2, UNIT 1

PROJECT MANAGER: R. CLEVELAND
RELIANCE ORDER NO: 99AX400924
SCALE: 3"-1'0"
CUSTOMER ORDER NO: PAV-426

CUSTOMER: GEORGIA POWER CO.
PROJ. MGR APPROVED
Q.A. MGR APPROVED
DATE
DRAWN BY: E. SIMS DATE 2-17-92
DR. M-99X0924-E SH 5 OF 11

RELIANCE ELECTRIC CUSTOM CONTROLS
STONE MOUNTAIN GEORGIA 30083

SIZE E

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT.: N/A
PAGE: N/A
FIGURE: N/A

VERSION 12.0 DATE 5-14-07

REVISED BY SNC PER ABN-V00606, VER. 1.0

SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.

CAD MICROSTATION DFV/02 1X5AB01-00560.DGN

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

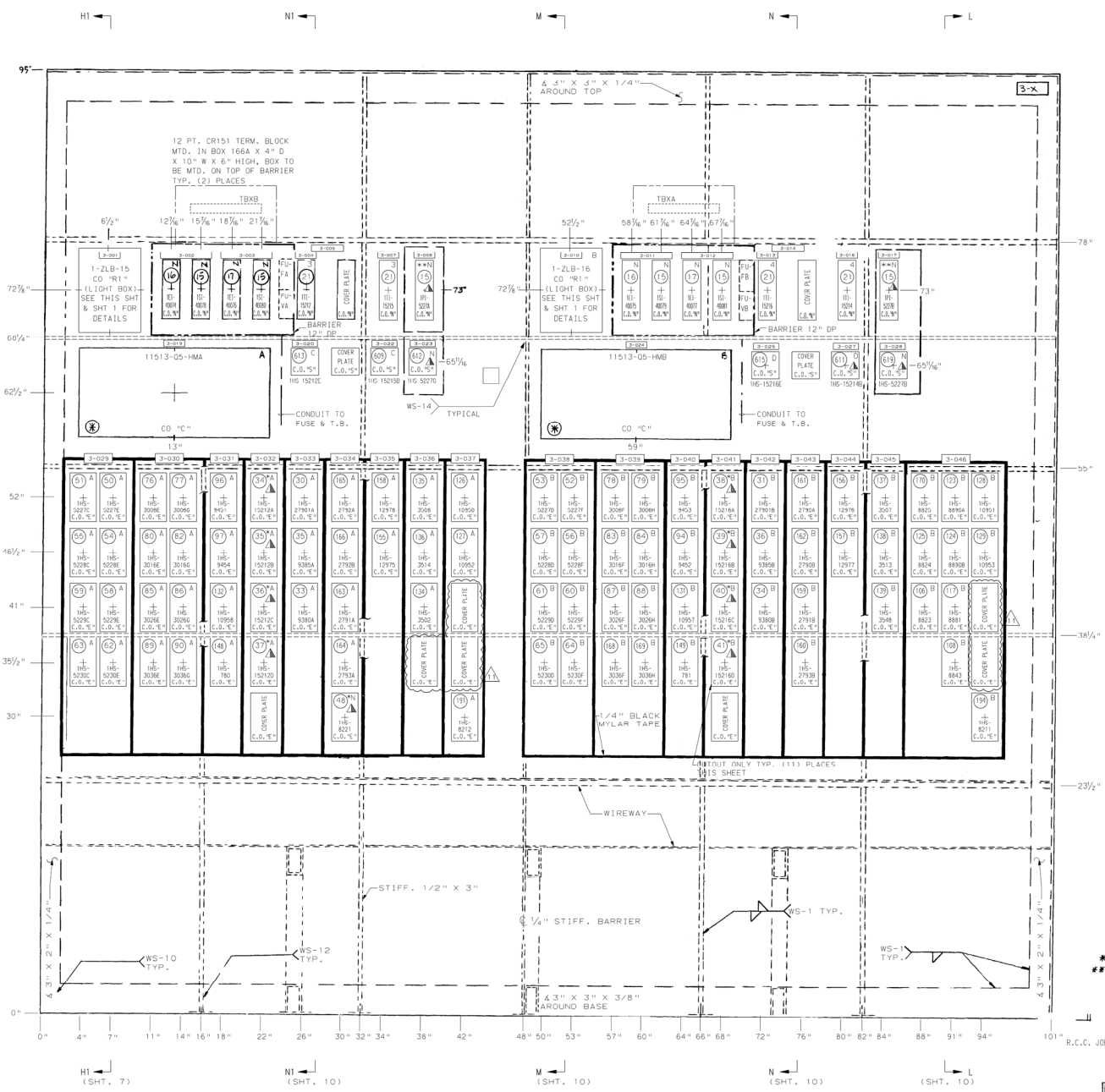
TITLE: MISCELLANEOUS SYSTEMS EQUIPMENT PANEL (QPCP) SECTION 2

BY	CHK'D	APPR.1	APPR.2
DFV	WMW	WLN	x

VENDOR: RELIANCE ELECTRIC P.O.# PAV-426

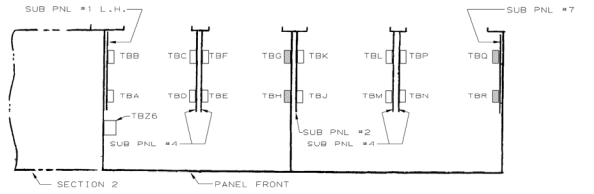
DRAWING NO. 1X5AB01-00560

SIZE E



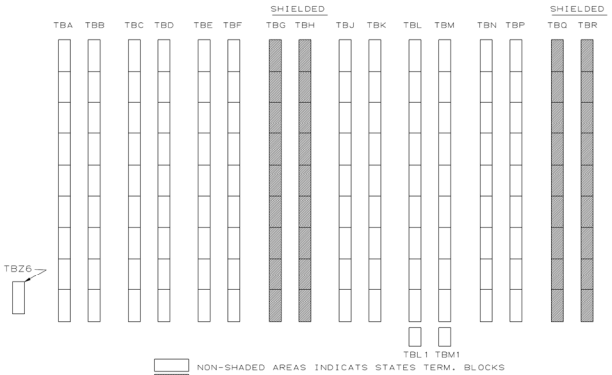
FRONT ELEVATION "SECTION 3"

△ - EQUIPMENT PURCHASED ON JOB # 10AX090097



"TOP VIEW" TERM. BLOCK ARRANGEMENT

(SEE SHT 11 FOR SUB PANEL DETAILS)



"ELEVATION" TERMINAL BLOCK ARRANGEMENT

3-001 1-ZLB-15

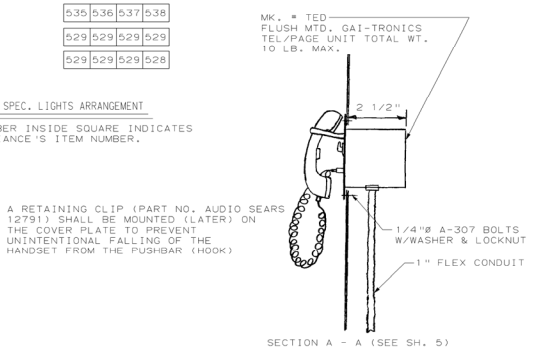
517	518	519	520
521	516	516	516
522	523	516	516
524	525	526	527
516	516	516	516
516	516	516	515

3-010 1-ZLB-16

530	531	532	533
534	529	529	529
529	529	529	529
535	536	537	538
529	529	529	529
529	529	529	528

MASTER SPEC. LIGHTS ARRANGEMENT

NOTE: NUMBER INSIDE SQUARE INDICATES RELIANCE'S ITEM NUMBER.



SECTION A - A (SEE SH. 5)
N.T.S.

* REFER TO SUMMARY OF MATERIALS BM-10X0097-A , BECHTEL LOG Nº 1X5AB01-1108

** REFER TO SUMMARY OF MATERIALS BM-10X0199-A BECHTEL LOG Nº AX5AB01-1136

REV NO	DESCRIPTION	DATE
15	ECO Nº 11530	
14	ECO 011564	
13	ECO 013961	
12	ECO 12742	
11	ECO 12932	
10	ECO 12919	
9	ECO NO. 9941	
8	ECO NO. 9934	
7	ECO NO 9918	
6	ECO NO. 9928	
5	ECO NO. 10812	
4	ECO NO. 10569	
3	ECO NO. 10249	
2	ECO NO. 1378	
1	ECO NO. 1333	
0	APPROVAL	

(DCNS-1) FERB-1718

TITLE: MISCELLANEOUS SYSTEMS/EQUIPMENT PANEL (QPCP) SECTION 3, UNIT 1

PROJECT MANAGER: B. CLEVELAND — SCALE: 3"=1'-0"

RELIANCE ORDER NO.: 93AX400924 — CUSTOMER ORDER NO.: PAV-426

CUSTOMER: BECHTEL

PROJ. MGR APPROVED: — Q.A. MGR APPROVED: — DATE:

DRAWN BY: E.SIMS DATE: 2-5-82 — DR NO: M-99X0924-F SH 8 OF 11

RELIANCE ELECTRIC COMPANY — CUSTOM CONTROLS — STONE MOUNTAIN, GEORGIA 30083

NUCLEAR SAFETY RELATED

CAD MICROSTATION LDT/01 — 1X5AB01-00563.DGN — Q

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A

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

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

REVISION 11 | DATE 2/17/04

REVISED BY SNC PER DCP 01-V1N0021

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

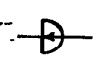
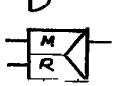
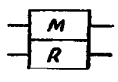
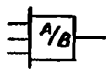
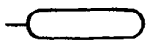
TITLE: MISCELLANEOUS SYSTEMS/EQUIPMENT PANEL (QPCP) SECTION 3

BY	CHK'D	APPR.1	APPR.2
LDT	WND	DEW	X

VENDOR: RELIANCE ELECTRIC — P.O.#/LINK

DRAWING NO. 1X5AB01-00563

SIZE E

FUNCTION	SYMBOL	MEANING
AND		OUTPUT EXISTS ONLY WHEN ALL INPUTS ARE PRESENT.
OR		OUTPUT EXISTS ONLY WHEN ANY INPUT IS PRESENT.
NOT		OUTPUT EXISTS ONLY WHEN THE INPUT IS NOT PRESENT.
TIME DELAY (ON DELAY)		OUTPUT EXISTS AFTER A TIME DELAY WHEN THE INPUT IS CONTINUOUSLY PRESENT. OUTPUT CEASES WHEN THE INPUT IS NOT PRESENT.
TIMED DELAY (OFF DELAY)		OUTPUT EXISTS WHEN THE INPUT IS PRESENT AND CONTINUES TO EXIST FOR A TIME AFTER THE INPUT CEASES
OFF RETURN MEMORY		MEMORY OUTPUT EXISTS WHEN THE MEMORY INPUT IS PRESENT AND CONTINUES TO EXIST UNTIL THE RESET INPUT IS PRESENT, EXCEPT UPON INTERRUPTION OF POWER, MEMORY OUTPUT DISAPPEARS.
RETENTIVE MEMORY		MEMORY OUTPUT EXISTS WHEN THE MEMORY INPUT IS PRESENT AND CONTINUES TO EXIST (ALSO UPON INTERRUPTION OF POWER) UNTIL THE RESET INPUT IS PRESENT. RESET OUTPUT EXIST ONLY WHEN THE MEMORY OUTPUT IS NOT PRESENT.
COINCIDENCE MATRIX		OUTPUT EXISTS ONLY WHEN AT LEAST A OUT OF B INPUTS ARE PRESENT.
SPECIAL		A FUNCTION WHICH PRODUCES AN OUTPUT UNDER SPECIAL CONDITIONS STATED IN OR ADJACENT TO THE SYMBOL.
LIGHT		R-RED - OPERATING, FLOWING, OR INCREASING G-GREEN - NOT OPERATING, NOT FLOWING, OR DECREASING A-AMBER- ELECTRICAL OR MECHANICAL PROTECTION TRIP W-WHITE- MONITOR B-BLUE - MISCELLANEOUS
ANNUNCIATOR		INPUT TO ANNUNCIATOR
ANNUNCIATOR		COMMON INPUT TO ANNUNCIATOR
COMPUTER		INPUT TO COMPUTER
DEMARCATION LINES		DASHED LINES INDICATE OUTLINED AREAS OF LOGIC THAT ARE SUPPLIED BY A STATED VENDOR, OR AS NOTED
CROSS REFERENCE		CROSS REFERENCE TO ANOTHER LOGIC DRAWING

GENERAL NOTES

1. PROCESS EQUIPMENT WILL CHANGE STATE WHEN A CHANGE IS INITIATED, AND WILL REMAIN IN THAT STATE UNTIL A CHANGE TO ANOTHER STATE IS INITIATED.
2. PROCESS EQUIPMENT WILL REMAIN IN, OR RETURN TO, THE ORIGINAL STATE AFTER A LOSS AND RESTORATION OF POWER, UNLESS OTHERWISE NOTED.
3. INHERENT EQUIPMENT INTERLOCKS, SUCH AS CIRCUIT BREAKER TRIP FREE AND REVERSING STARTER CROSS INTERLOCKS, ARE NOT SHOWN. EQUIPMENT CANNOT BE OPERATED WHEN PROTECTIVE INPUTS EXIST.
4. THE BLOCKING OF EQUIPMENT OPERATING CIRCUITS WHEN OVERLOAD OR GROUNDS OCCURS IS GENERALLY NOT SHOWN. SWITCHGEAR CIRCUITS WHICH USE LOCKOUT RELAYS FOR PROTECTIVE TRIPS AND ALL MCC CIRCUITS REQUIRE OPERATION OF A SWITCH AT THE SWITCHGEAR OR MCC TO RESET A PROTECTIVE TRIP. (2)
5. IF A CIRCUIT BREAKER HAS BEEN TRIPPED ON BUS VOLTAGE FAILURE, IT WILL NOT RECLOSE ON BUS VOLTAGE RESTORATION
6. THE TEST CONTROL SWITCHES AT THE SWITCHGEAR WHICH FUNCTION ONLY WHEN BREAKER IS IN THE TEST POSITION ARE NOT SHOWN. WHEN A CIRCUIT BREAKER IS IN THE TEST POSITION, REMOTE CONTROL IS CUT OFF.
7. FINAL INSTRUMENT SET POINTS ARE SHOWN ELSEWHERE. SET POINTS SHOWN ON SYSTEM CONTROL LOGIC DIAGRAMS ARE APPROXIMATE.
8. THE LOGIC TO SHOW THAT VALVE AND DAMPER POSITION LIGHTS ARE BOTH ON WHEN THE EQUIPMENT IS IN AN INTERMEDIATE POSITION IS NOT SHOWN.
9. MOTOR OPERATED VALVES GO TO FULLY OPEN OR FULLY CLOSED POSITION WITH MOMENTARY COMMAND UNLESS JOG PUSHBUTTON IS NOTED.
10. LIMIT AND TORQUE SWITCHES TO STOP VALVE AND DAMPER MOTOR ACTUATORS AT THE END OF TRAVEL ARE NOT SHOWN IN THE LOGIC. THE VALVE TYPE AND REQUIRED ACTIONS WILL BE NOTED ON THE DIAGRAM WHEN AVAILABLE.
11. THE HAND SWITCH FUNCTION ABBREVATION WILL BE USED ON SYSTEM CONTROL LOGIC DIAGRAMS AS FOLLOWS:
    (M)- MAINTAINED CONTACT SWITCH
    (P)- MOMENTARY CONTACT SWITCH

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL	ENG MGR
2	INC. ABN-20808.	6/2/95	CD	LJH	DMH		
1	REVISIONS	DATE	DR	CHK	APPV	DTL	DATE
0	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES				
NO.	REVISIONS	DATE	DR				

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM LEGEND

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN002-1	2

SIZE B 11x17

SPECIAL NOTES

1. SELECTED ENGINEERED SAFETY FEATURE EQUIPMENTS REQUIRED FOR (1) SHUTDOWN OF THE PLANT WILL HAVE TWO POINTS OF CONTROL, ONLY IF ONE OF THE POINTS IS IN THE CONTROL ROOM. A TRANSFER SWITCH ON THE SHUTDOWN PANEL SHALL DISABLE THE CONTROL ROOM POINT OF CONTROL WHEN THE TRANSFER SWITCH IS ON LOCAL POSITION. THIS CONDITION WILL BE ANNUNCIATED IN THE CONTROL ROOM.

2. THE THERMAL OVERLOAD PROTECTION DEVICE OF SAFETY RELATED MOTOR OPERATED VALVE SHALL BE BYPASSED AND TEMPORARILY PLACED IN FORCE ONLY WHEN THE VALVE MOTOR IS UNDERGOING PERIODIC OR MAINTENANCE TESTING.

GENERAL NOTES (CONT.)

12. THE FOLLOWING SAFETY SIGNALS ABBREVATIONS WILL BE USED ON SYSTEM CONTROL LOGIC DIAGRAMS.

- CI-A-A – CONTAINMENT ISOLATION-PHASE A-TRAIN A
- CI-A-B – CONTAINMENT ISOLATION-PHASE A-TRAIN B
- CI-B-A – CONTAINMENT ISOLATION-PHASE B-TRAIN A
- CI-B-B – CONTAINMENT ISOLATION-PHASE B-TRAIN B
- SI-A – SAFETY INJECTION SIGNAL-TRAIN A
- SI-B – SAFETY INJECTION SIGNAL-TRAIN B
- CVI-A – CONTAINMENT VENTILATION ISOLATION-TRAIN A
- CVI-B – CONTAINMENT VENTILATION ISOLATION-TRAIN B
- CRI-A – CONTROL ROOM ISOLATION-TRAIN A
- CRI-B – CONTROL ROOM ISOLATION-TRAIN B
- SLI-A – STEAM LINE ISOLATION-TRAIN A
- SLI-B – STEAM LINE ISOLATION-TRAIN B
- FI-A – FEEDWATER ISOLATION-TRAIN A
- FI-B – FEEDWATER ISOLATION-TRAIN B
- FHBI-A – FUEL HANDLING BUILDING ISOLATION TRAIN A
- FHBI-B – FUEL HANDLING BUILDING ISOLATION TRAIN B

13. THE FOLLOWING ABBREVATIONS WILL BE USED FOR CONTROL BOARDS, PANELS AND STATIONS. OTHERS REFER TO CONTROL PANEL LIST.

(1) 2X EQUIPT INDEX

- QMCB – MAIN CONTROL BOARD;
- QHVC – HVAC PANEL
- QPCP – MISC. SYSTEMS EQUIPMENT PANEL
- QSPS – SYSTEMS STATUS MONITOR PANEL
- PAFP – AUX FD WTR SHUTDOWN PNL; PAFT – AUX FD WTR TURB PNL.
- PRP – TURBINE PLANT SAMPLING
- PSDA – SHUTDOWN PANEL TRAIN A; PSDB – SHUTDOWN PANEL TRAIN B
- PNSS – NUCLEAR SERVICE WATER SAMPLE PANEL
- PDG1 – DIESEL GEN. PANEL NO. 1; PDG2 – DIESEL GEN. PANEL NO. 2
- PNSP – NUCLEAR SAMPLING SYSTEM PANEL
- PWHP – WASTE HOLD-UP PANEL
- PAFT – AUX FDWTR TURB PNL
- YTCN – TECHNICAL SUPPORT PNL
- L – LOCAL STATION
- ERF – EMERGENCY RESPONSE FACILITY

GENERAL NOTES (CONT)

14. THE BLOCKING OF AIR CIRCUIT BREAKER MANUAL STOP ACTIONS FROM THE CONTROL ROOM DURING ESF SEQUENCER OPERATION IS NOT SHOWN ON INDIVIDUAL LOGIC DIAGRAMS. REFER TO ELEMENTARY DIAGRAMS. (1)

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	R. E.	Q.A.E
3										
2										
1	REVISED SPECIAL NOTE 1 & GENERAL NOTE 13, 14	7-11-84	ETL	ALV						
0	ISSUED FOR CONSTRUCTION	1-4-79	NBD	FAL	MKK					

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM

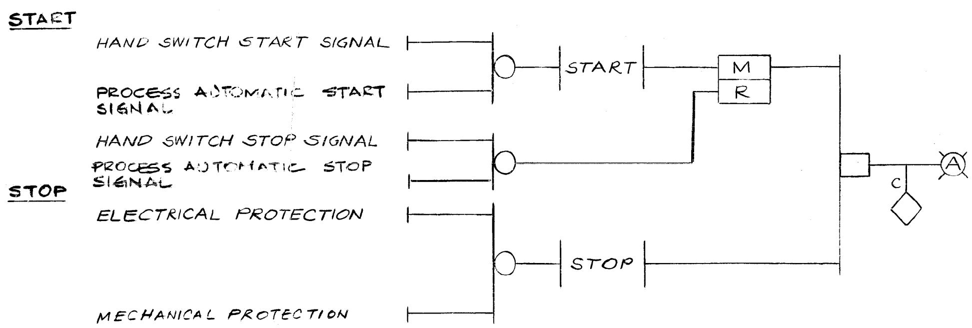
LEGEND

SCALE: NONE | DRAWING NO. 1X5DN002-2 | REV. 1

JOB NO. 9510

BM 9510

SIZE B 11 x 17



TYPICAL AUTOMATIC PROTECTION ALARM AND INDICATION

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
TYPICAL

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN002-3	0

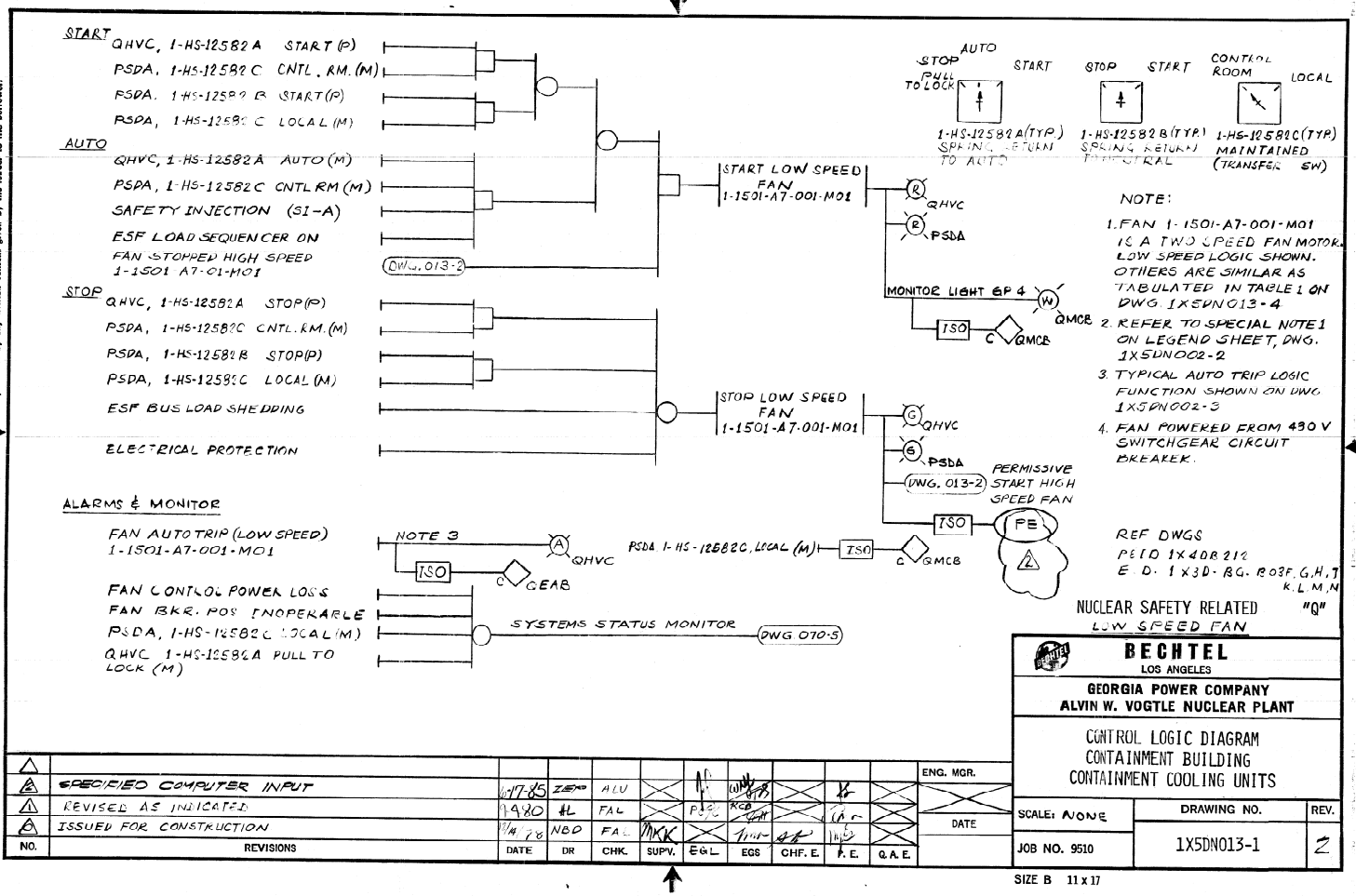
NO.	REVISIONS	DATE	DR	CHK.	SUP'V.		EGS	CHF. E.	P. E.	Q. A. E.
0	ISSUED FOR CONSTRUCTION	5-31-79	HL	FAL	MKV					

ENG. MGR.

DATE

BM 9510

SIZE B 11 x 17



NOTE:

1. FAN 1-1501-A7-001-M01 IS A TWO SPEED FAN MOTOR. LOW SPEED LOGIC SHOWN. OTHERS ARE SIMILAR AS TABULATED IN TABLE 1 ON DWG. 1X5DN013-4
2. REFER TO SPECIAL NOTE 1 ON LEGEND SHEET, DWG. 1X5DN002-2
3. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG. 1X5DN002-3
4. FAN POWERED FROM 480 V SWITCHGEAR CIRCUIT BREAKER.

REF DWGS
P&ID 1X40B212
E D. 1X3D-BG. B03F, G, H, J
K, L, M, N

NUCLEAR SAFETY RELATED "Q"
LOW SPEED FAN

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
4	SPECIFIED COMPUTER INPUT	6-17-85	ZEMO	ALV						
3	REVISED AS INDICATED	1980	HL	FAL						
2	ISSUED FOR CONSTRUCTION	11/4/78	NBD	FAL						

ENG. MGR. DATE

BECHTEL
LOS ANGELES

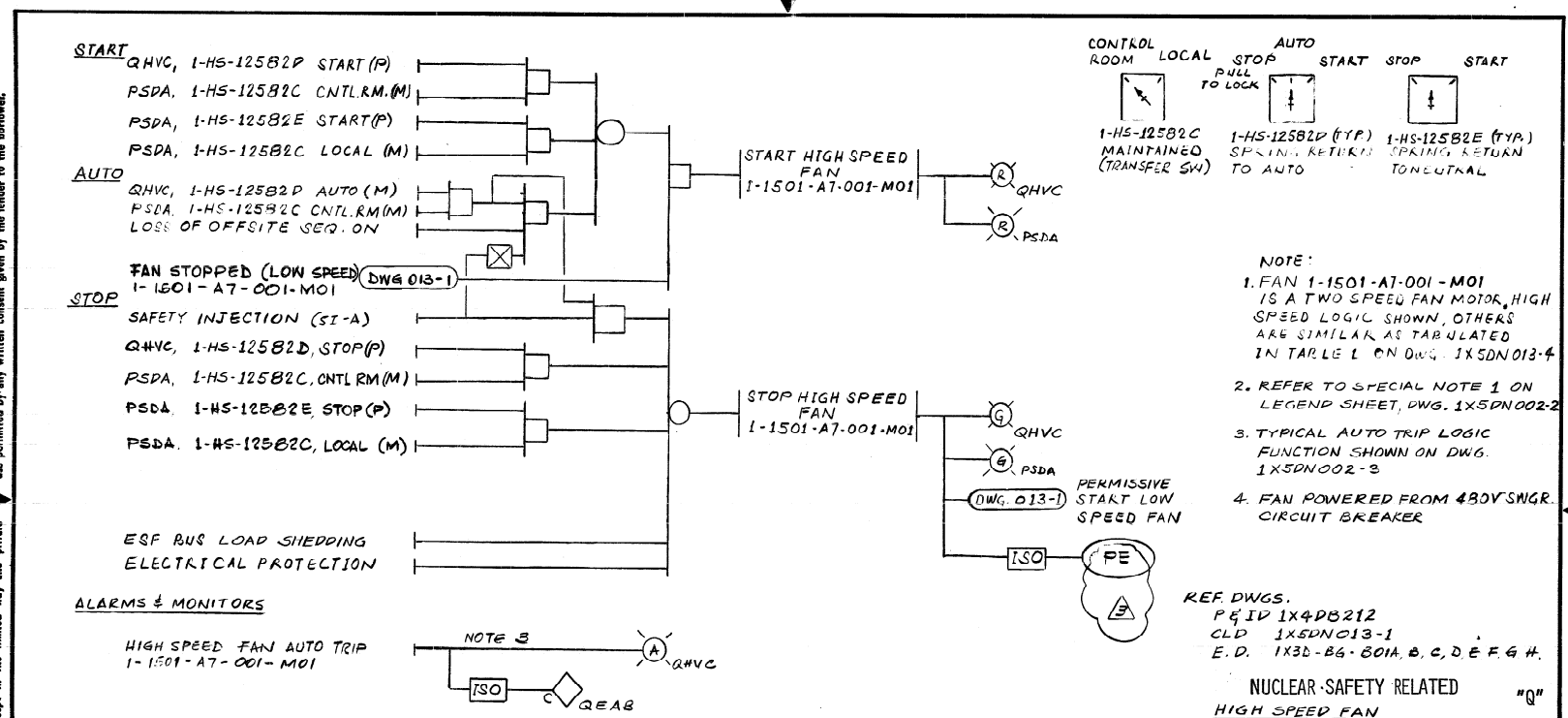
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTAINMENT BUILDING
CONTAINMENT COOLING UNITS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN013-1	2

SIZE B 11 x 17

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
6-17-85
DATE
CAMERA OPERATOR
SECTION SUPERVISOR



NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	R. E.	Q. A. E.
4	SPECIFIED COMPUTER INPUT	6-17-85	ZER	AIV						
3	ADDED INPUT INTLK. WITH SI	12-7-81	AV	FAL						
2	REVISED AS INDICATED	9-9-80	HL	FAL						
1	ISSUED FOR CONSTRUCTION	12/14/78	NBD	FAL						

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTAINMENT BUILDING
CONTAINMENT COOLING UNITS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN013-2	3

P&ID 212 REV.

SIZE B 11 x 17

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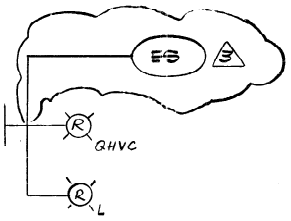
6-17-85
DATE: CAMERA OPERATOR SECTION SUPERVISOR

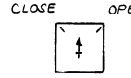
OPEN

L, 1-HS-2582G, OPEN (P) — OPEN DAMPER 1-HV-2582A — (R) QHVC, (R) L

CLOSE

L, 1-HS-2582G, CLOSE (P) — CLOSE DAMPER 1-HV-2582A — (G) QHVC, (G) L





1-HS-2582G SPRING RETURN TO NEUTRAL

NOTE:
1. DAMPER 1-HV-2582A SHOWN, OTHER DAMPERS LISTED IN TABLE 2 SIMILAR.
2. TABLE 1 LOGIC SHOWN IN DWG 1X5DN013-1 & 1X5DN013-2.
3. HAND SWITCHES LISTED IN TABLE 2 ARE LOCATED OUTSIDE THE CONTAINMENT.

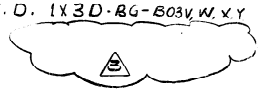
TABLE 1

TRAIN	EQUIP TAG NO.	LOW SPEED CNTL SW		TRANSF. SW	HIGH SPEED CNTL SW				SAFETY SIG.	PANEL
A	1-1501-A7-001-M01	1-HS-12582A	1-HS-12582B	1-HS-12582C	1-HS-12582D	1-HS-12582E			SI-A	PSDA
A	-002	-2582A	-2582B	-2582C	-2582D	-2582E				PSDA
B	-003	-12583A	-12583B	-12583C	-12583D	-12583E			SI-B	PSDB
B	-004	-2583A	-2583B	-2583C	-2583D	-2583E				PSDB
A	-005	-12584A	-12584B	-12584C	-12584D	-12584E			SI-A	PSDA
A	-006	-2584A	-2584B	-2584C	-2584D	-2584E				PSDA
B	-007	-12585A	-12585B	-12585C	-12585D	-12585E			SI-B	PSDB
B	-008	-2585A	-2585B	-2585C	-2585D	-2585E				PSDB

TABLE 2

DAMPER	HAND SW	TRAIN
1-HV-2582A	1-HS-2582G	A
2B	2H	
3A	3G	B
3B	3H	
4A	4G	A
4B	4H	
5A	5G	B
5B	5H	

REF. DWGS:
P&ID 1X4DB212
CLD 1X5DN013-1
1X5DN013-2
E.D. 1X3D-BG-B03V,W,X,Y



NUCLEAR SAFETY RELATED
EQUIPMENT LIST & FAN DAMPERS
"Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	R. E.	Q.A.E.	ENG. MGR.
5	SHOWN COMPUTER INPUT & DELETED REF. DWGS.	6-17-85	ZED	HLV							DATE
4	REVISED LOCATION OF INDICATING LIGHT & REF. DWGS.	12-8-81	AV	FAL		PCL	DCP				
3	REVISED AS INDICATED	3/1/80	HL	FAL		DJC	MKK				
2	ISSUED FOR CONSTRUCTION	12/15/78	NBD	FAL	MKK			AW			

BECHTEL
LOS ANGELES
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

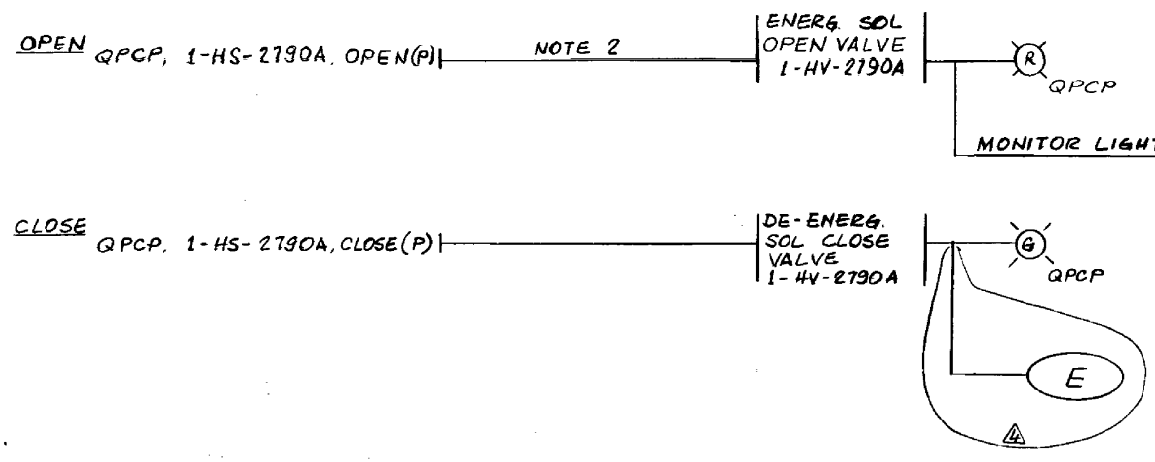
CONTROL LOGIC DIAGRAM
CONTAINMENT BUILDING
CONTAINMENT COOLING UNITS

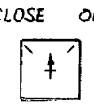
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN013-4	5

SIZE B 11 x 17

P&ID 212 REV 1 BM 9510

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
6-17-85
DATE: CAMERA OPERATOR SECTION SUPERVISOR





NOTE:

1. VALVE 1-HV-2790A SHOWN, OTHER VALVE LISTED IN TABLE 1 SIMILAR.
2. HAND SWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH
3. (4) VALVE 1-HV-8221 IS A NON 1E VALVE AND DOES NOTE REQUIRE MONITOR LIGHT ON QMCB.

REF. DWGS:
P&ID 1X4DB213-2
E.D 1X3D-BG-B05B,E

TABLE 1

SERVICE	TRAIN	SOL VALVE	SWITCH
HYDROGEN SAMPLE INLET - IRC	B	1-HV-2790A	1-HS-2190A
INLET - IRC	B	-2790B	-2790B
INLET - ORC	A	-2791A	-2791A
INLET - ORC	B	-2791B	-2791B
INLET - IRC	A	-2792A	-2792A
INLET - IRC	A	-2792B	-2792B
OUTLET - ORC	A	-2793A	-2793A
OUTLET - ORC	B	-2793B	-2793B
INLET - ORC	NOTE 3 (4)	-8221	-8221

NUCLEAR SAFETY RELATED "Q"
CNMT HYDROGEN SAMPLING

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTAINMENT AIR PURIFICATION AND CLEAN-UP SYSTEM

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.
3	ADDED SAMPLE VALVE FOR PASS HV-8221	9/1/82	HV	FAL		PCL			KT	
2	REVISED REF DWGS.	12-8-81	AT	FAL		PCL			IAT	
1	DEGRADED VALVE 1-HV-8221 PER DCN 3 ADDED ERF INPUT	3-27-84	ALV	FAL		PCL				
0	ISSUED FOR CONSTRUCTION	12/19/78	NBL	FAL	MKK			MP		

ENG. MGR. / DATE

SCALE: NONE | DRAWING NO. 1X5DN015-1 | REV. 4

JOB NO. 9510

SIZE B 11 x 17

BM 9510
P&ID 213-2 REV.1

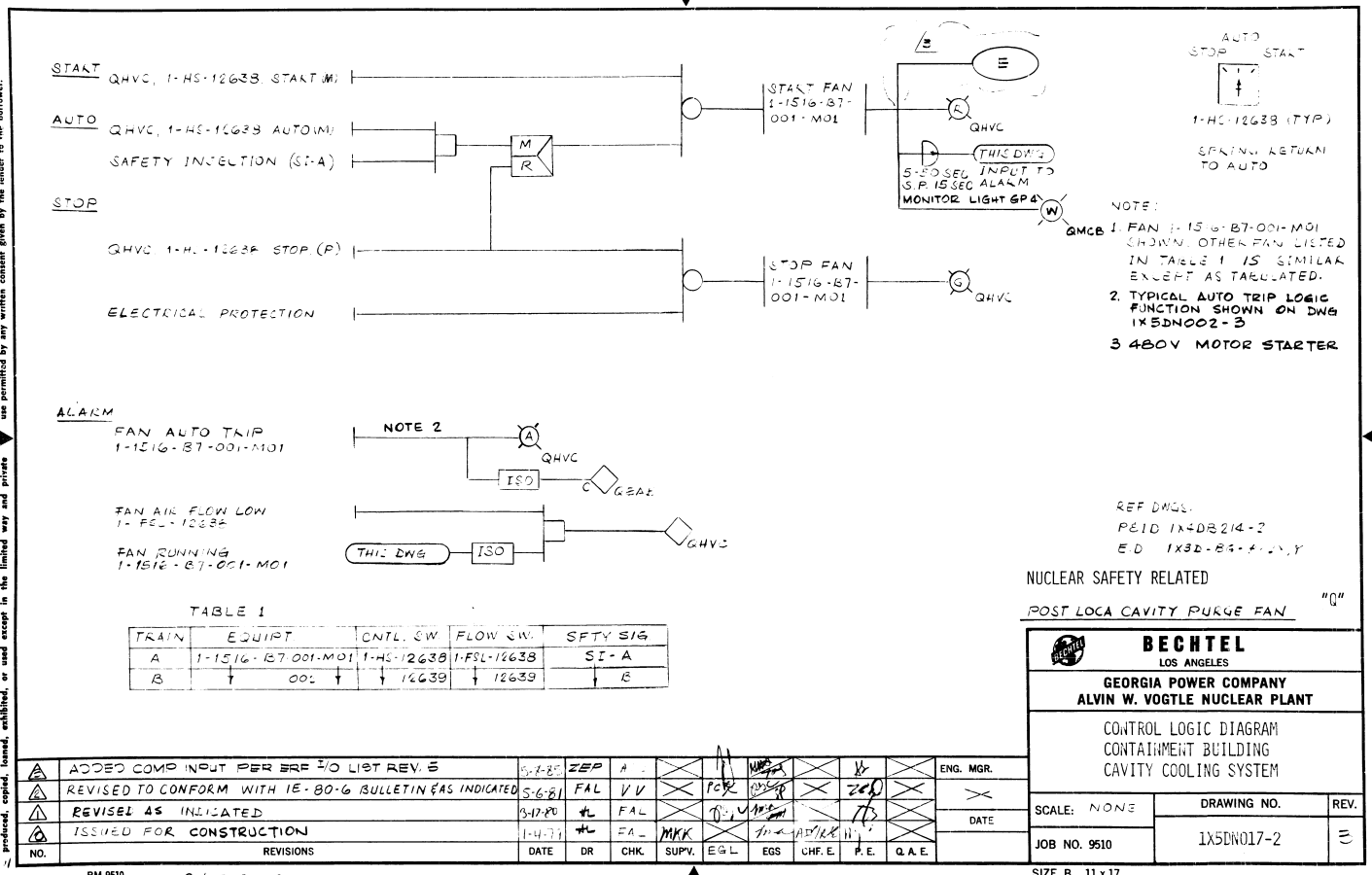


TABLE 1

TRAIN	EQUIPT	CNTL. SW.	FLOW SW.	SFTY SIG
A	1-1516-B7-001-M01	1-HS-12638	1-FSL-12638	SI-A
B	001	12639	12639	B

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.
5	ADDED COMP INPUT PER SRE I/O LIST REV. 5	5-1-85	ZEP	A						
4	REVISED TO CONFORM WITH IE-80-6 BULLETIN AS INDICATED	5-6-81	FAL	VV		FCK				
3	REVISED AS INDICATED	3-17-80	HL	FAL						
2	ISSUED FOR CONSTRUCTION	1-4-77	HL	FAL	MKK					

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

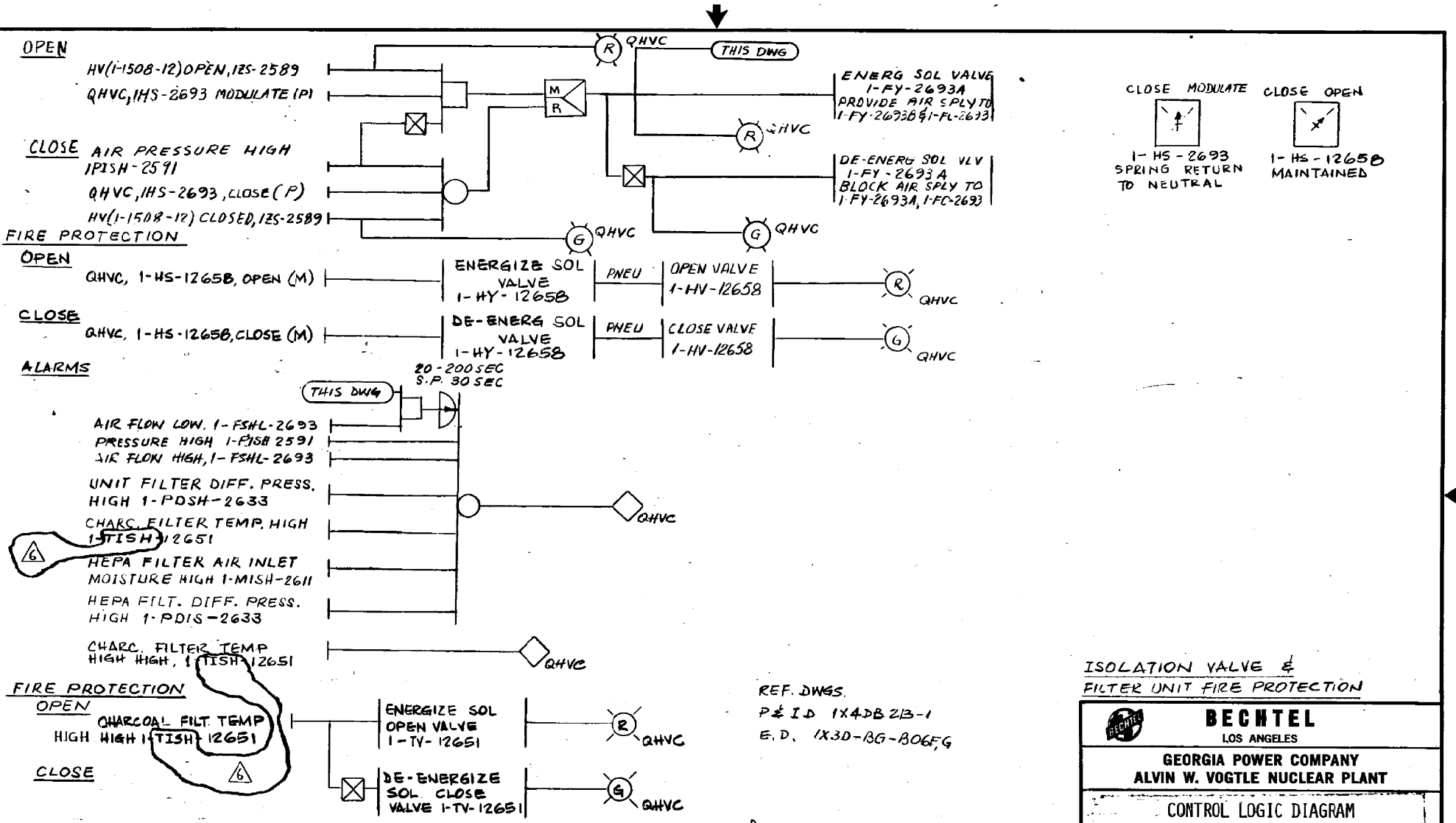
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTAINMENT BUILDING
CAVITY COOLING SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN017-2	5

SIZE B 11 x 17

BM 9510 P&ID REV 3



ISOLATION VALVE & FILTER UNIT FIRE PROTECTION

NO.	REVISIONS	DATE	DR	CHK.	ELEC	EGL	EGS	CHF. E.	P.E.	Q.A.E.	ENG. MGR.
6	CORRECTED TAG NO. 1-TISH-12651	3/6/85	AS	AIV							DATE
5	CORRECTED SW POS. AND GATE	1-7-85	ALV								
4	REVISED PER P&ID DCN 11	9-13-84	ETL	ALV							
3	ISSUED FOR CONSTRUCTION	1-4-74		FAL	MKK						

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

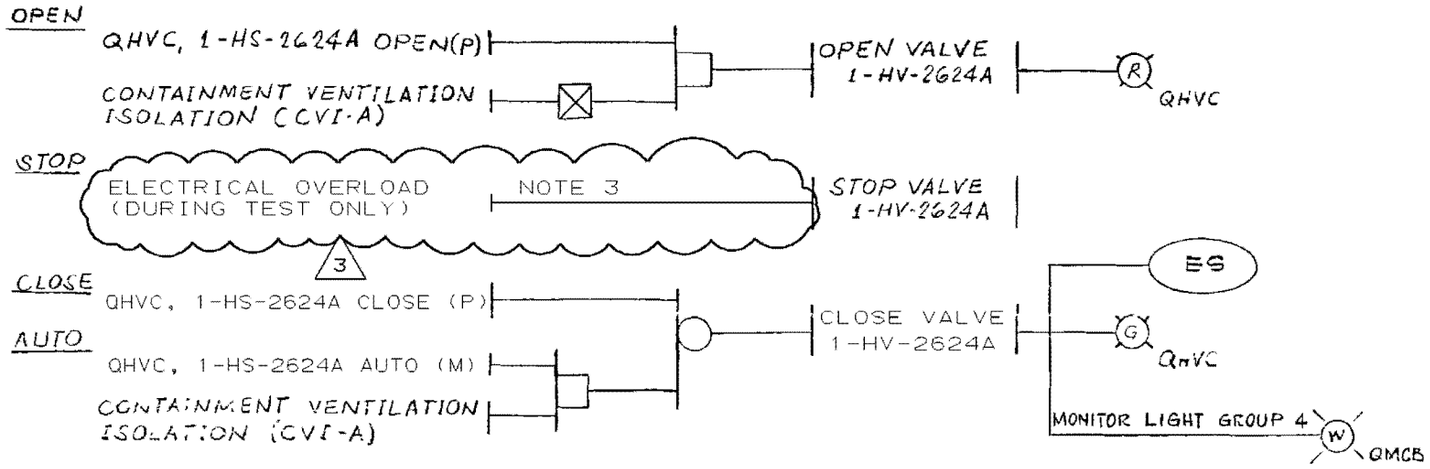
CONTROL LOGIC DIAGRAM
CONTAINMENT POST LOCA PURGE
EXHAUST DUCT ISOLATION VALVES

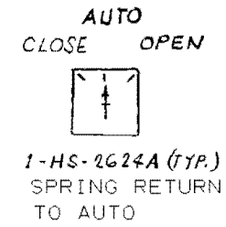
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN019-1	6

P&ID REV

SCANNED DATE: 11/19/91

SIZE B 11 x 17

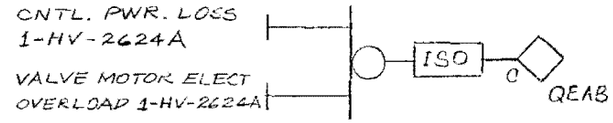




NOTE

1. VALVE 1-HV-2624A SHOWN. 1-HV-2624B SIMILAR.
2. VALVES LISTED IN TABLE 1 ARE BUTTERFLY VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
3. REFER TO SPECIAL NOTE 2 ON DWG 1X5DN002-2

VALVE NO.	TRAIN	SAFETY SIGNAL	SWITCH
1-HV-2624A	A	CVI-A	1-HS-2624A
⏚ -2624B	B	CVI-B	⏚ -2624B



REF. DWGS.
P & ID 1X4DB213-1
E.D. 1X3D-BG-B04A,4B

NUCLEAR SAFETY RELATED "Q"

INSIDE CONTAINMENT ISOL VALVES

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

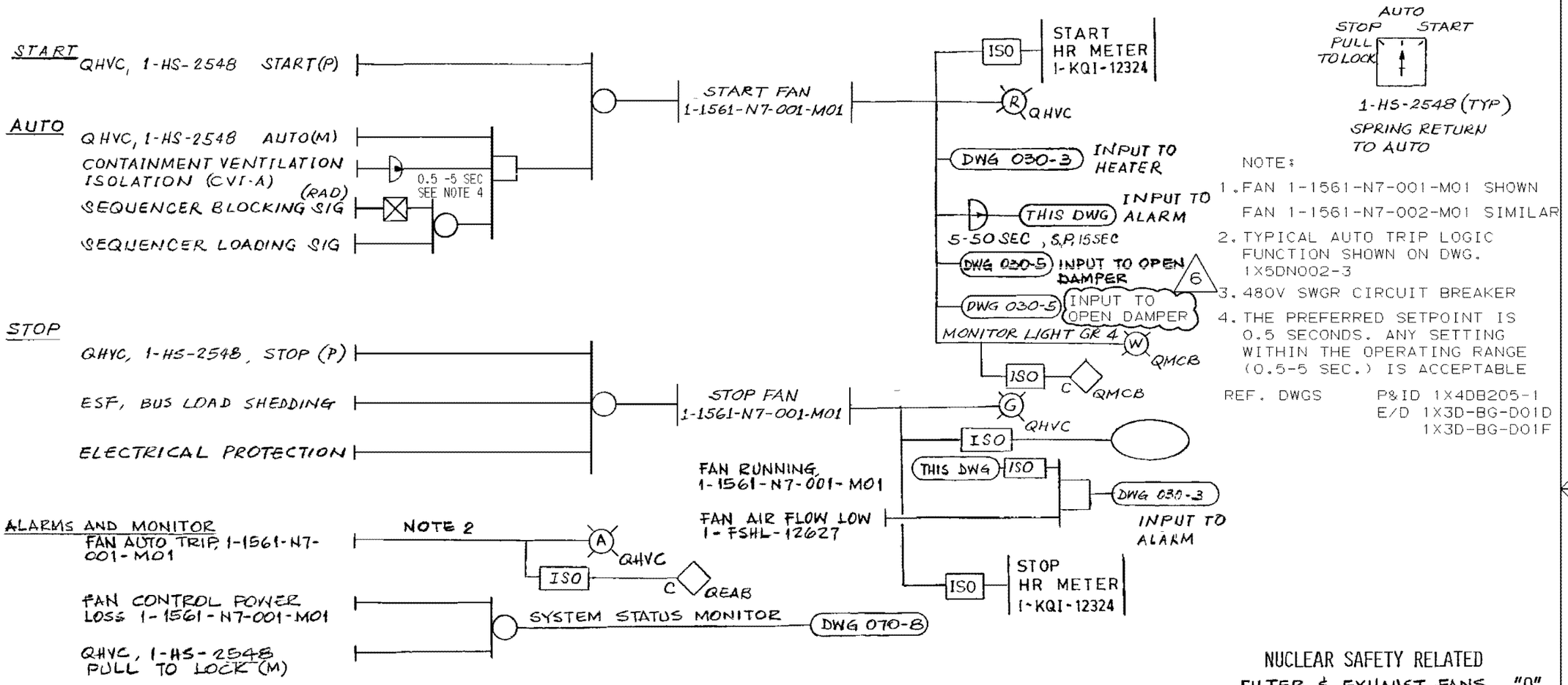
CONTROL LOGIC DIAGRAM CONTAINMENT POST LOCA PURGE EXHAUST DUCT ISOLATION VALVES

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
△						
△						
3	INCORPORATED PER DCP 95-V1N0035	12/5/97	CD	GLB	WFP	
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE | DRAWING NO. 1X5DN019-2 | REV 3

JOB NO. 10604

CAD NAME 15DN0192 SIZE B 11x17



NOTE:

1. FAN 1-1561-N7-001-M01 SHOWN
   FAN 1-1561-N7-002-M01 SIMILAR
2. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG. 1X5DN002-3
3. 480V SWGR CIRCUIT BREAKER
4. THE PREFERRED SETPOINT IS 0.5 SECONDS. ANY SETTING WITHIN THE OPERATING RANGE (0.5-5 SEC.) IS ACCEPTABLE

REF. DWGS P&ID 1X4DB205-1
E/D 1X3D-BG-D01D
1X3D-BG-D01F

NUCLEAR SAFETY RELATED
FILTER & EXHAUST FANS "Q"

TRAIN	FAN No	SWITCH	SFTY SIG	FLOW SW	HR METER
A	1-1561-N7-001-M01	1-HS-2548	CVI-A	1-FSHL-12627	1-KQI-12324
B	002	9	B	B	1 KQI 12325

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
6	INCORPORATED PER DCP 95-VAN0056	12-31-97	CD	WMW	EOG	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM PIPING PENETRATION ROOM FILTER AND EXHAUST UNITS

SCALE: NONE

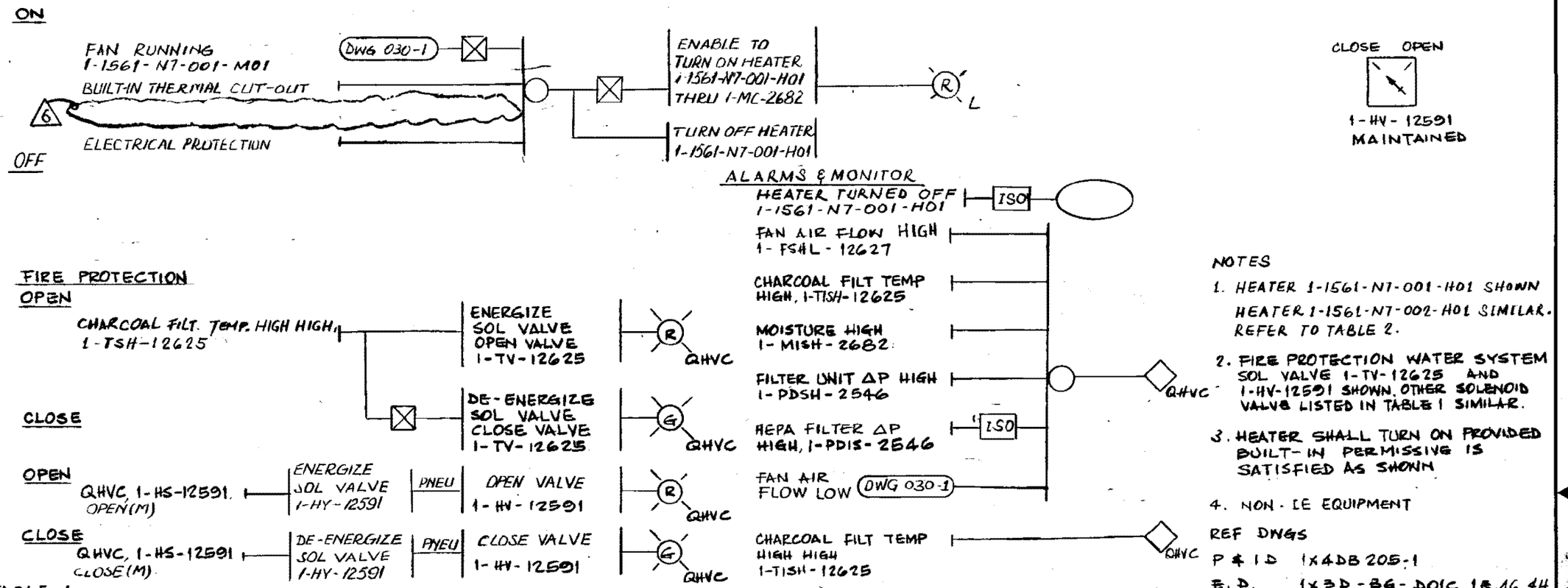
DRAWING NO. 1X5DN030-1

REV 6

JOB NO. 10604

CAD NAME 15DN0301

SIZE B 11x17



NOTES

1. HEATER 1-1561-N7-001-H01 SHOWN HEATER 1-1561-N7-002-H01 SIMILAR. REFER TO TABLE 2.
2. FIRE PROTECTION WATER SYSTEM SOL VALVE 1-TV-12625 AND 1-HV-12591 SHOWN. OTHER SOLENOID VALVE LISTED IN TABLE 1 SIMILAR.
3. HEATER SHALL TURN ON PROVIDED BUILT-IN PERMISSIVE IS SATISFIED AS SHOWN
4. NON-1E EQUIPMENT

REF DWGS

P & I D 1X4DB 205-1

E. D. 1X5D-BG-D01C, 1E, 4G, 4H

TABLE 1

FILT UNIT NO.	SOL VLV	TEMP SW	SOL VLV (NOTE 4)	HAND SW (NOTE 4)	MOIST SW	FLOW SW	UNIT ΔP SW	HEPA ΔP SW
1-1561-N7-001-000	1-TV-12625	1-TISH-12625	1-HV-12591	1-HS-12591	1-MISH-2682	1-FSHL-12627	1-PDSH-2546	1-PDIS-2546
002	4	4	0	0	3	8	7	7

NUCLEAR SAFETY-RELATED

ELECTRIC HEATING COIL "Q"

TABLE 2

TRAIN	HEATER NO	FAN RUNNING	MOIST. CNTL
A	1-1561-N7-001-H01	1-1561-N7-001-M01	1-MC-2682
B	-002-H01	002-M01	3

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	ENG. MGR.
6	DELETED FLOW SW. INPUT PER VIP AX4AJ01-400-6	2/6/87	ALV	ACG							DATE
5	ADDED HTR LIGHT PER DCN #22 ON P&ID	5-2-85	ZEP	ALV							
4	CORRECTED TAG NO AND PRESENTATION OF HTR ACTUATION	10 16 84	ALV	WJW							
6	ISSUED FOR CONSTRUCTION	3/7/79	HC	FAL	MKK						

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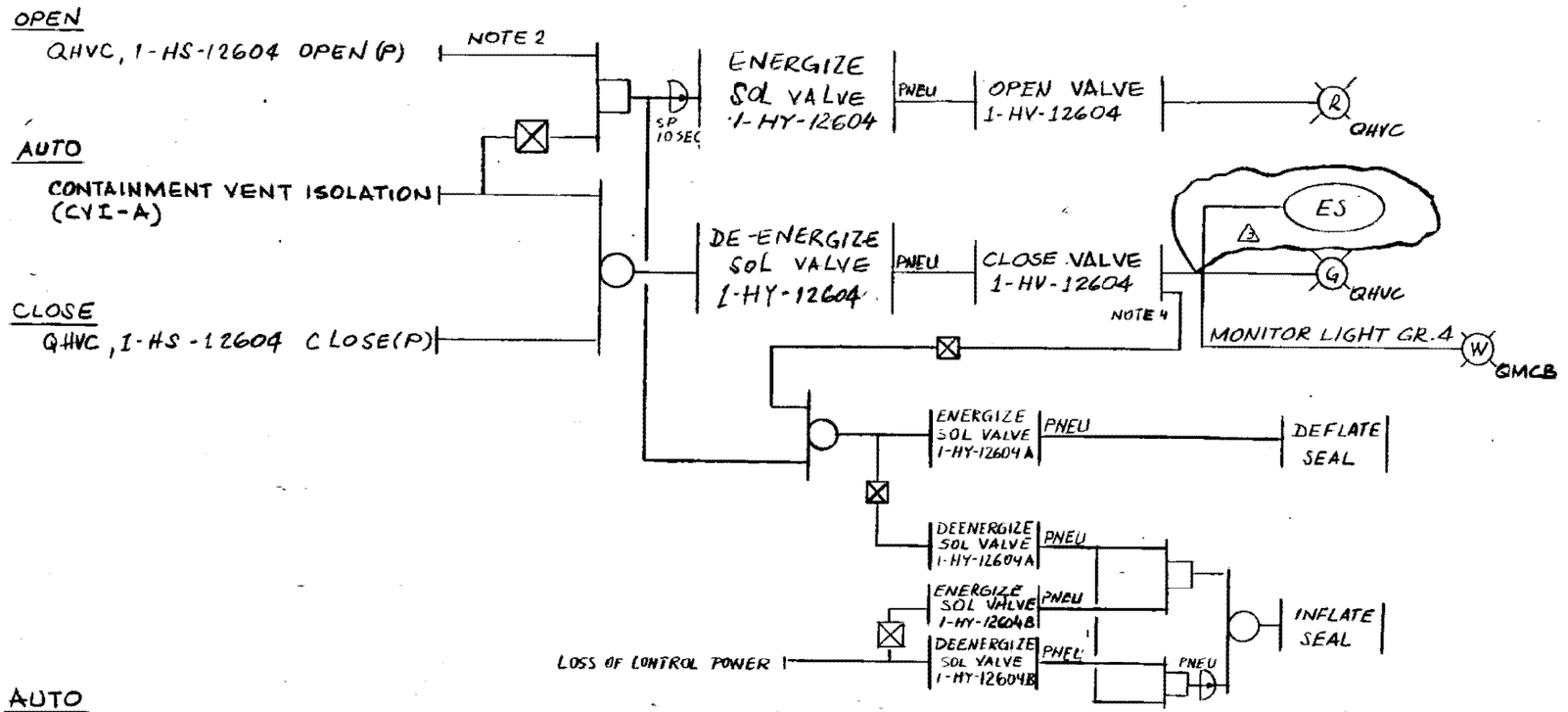
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

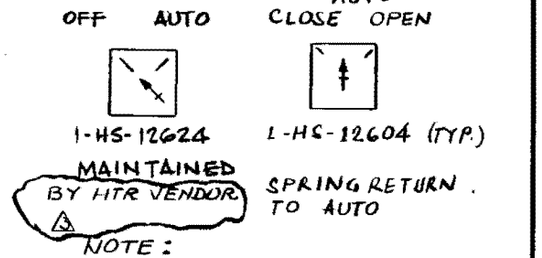
CONTROL LOGIC DIAGRAM
PIPING PENETRATION ROOM FILTER AND EXHAUST UNITS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN030-3	6

SIZE B 11 x 17

BM 9510 P&ID 205-1 REV.





NOTE:

1. VALVE 1-HV-12604 SHOWN. OTHER VALVES LISTED IN TABLE 1 SIMILAR.
2. TO OPEN VALVE, CONTROL SWITCH SHALL BE HELD ON OPEN POSITION UNTIL DAMPER IS FULLY OPEN TO ALLOW THE CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH.
3. ELECTRIC INFRARED HEATER 1-1561-U7-001 SHOWN 1-1561-U7-002 IS SIMILAR.
4. POSITION SWITCH CONTACT 33ac VALVE NOT FULLY CLOSED.

REF. DWGS.
P&ID 1X4DB 205-2
E.D. 1X3D-BG-D03X,Y, D04A,B

NUCLEAR SAFETY RELATED
ISOLATION VALVE & INFRARED HEATER
"Q"

TABLE 1

INFRARED HEATER	HAND SW	TEMP SW
1-1561-07-001	1-HS-12624	1-TIS-12624
1-1561-07-002	↓ 5	↓ 5

TABLE 2

TRN	VALVE	SOL VALVE	CNTL SW	SAFETY SIG	SEAL CNTL	DMPR. PROT
A	1-HV-12604	1-HY-12604	1-HS-12604	CVI-A	1-HY-12604A	1-HY-12604B
↓	5	5	5	↓	5	5
B	6	6	6	CVI-B	6	6
↓	7	7	7	↓	7	7

SCANNED DEC 1991

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	E G L	EGS	CHF. E.	P. E.	Q. A. E.	ENG. MGR. / DATE
3	ADDED COMPUTER INPUT PER I/O LIST REV 4	10-16-84	ALU								
2	ADDED CONTROL FOR QAD BUBLE TIGHT DAMPER PER DCN 6	5-11-84	ALU								
1	REVISED AS INDICATED	3-17-80	HL	FAL							
0	ISSUED FOR CONSTRUCTION	3-15-79	HL	FAL	MKK.						

BECHTEL
LOS ANGELES

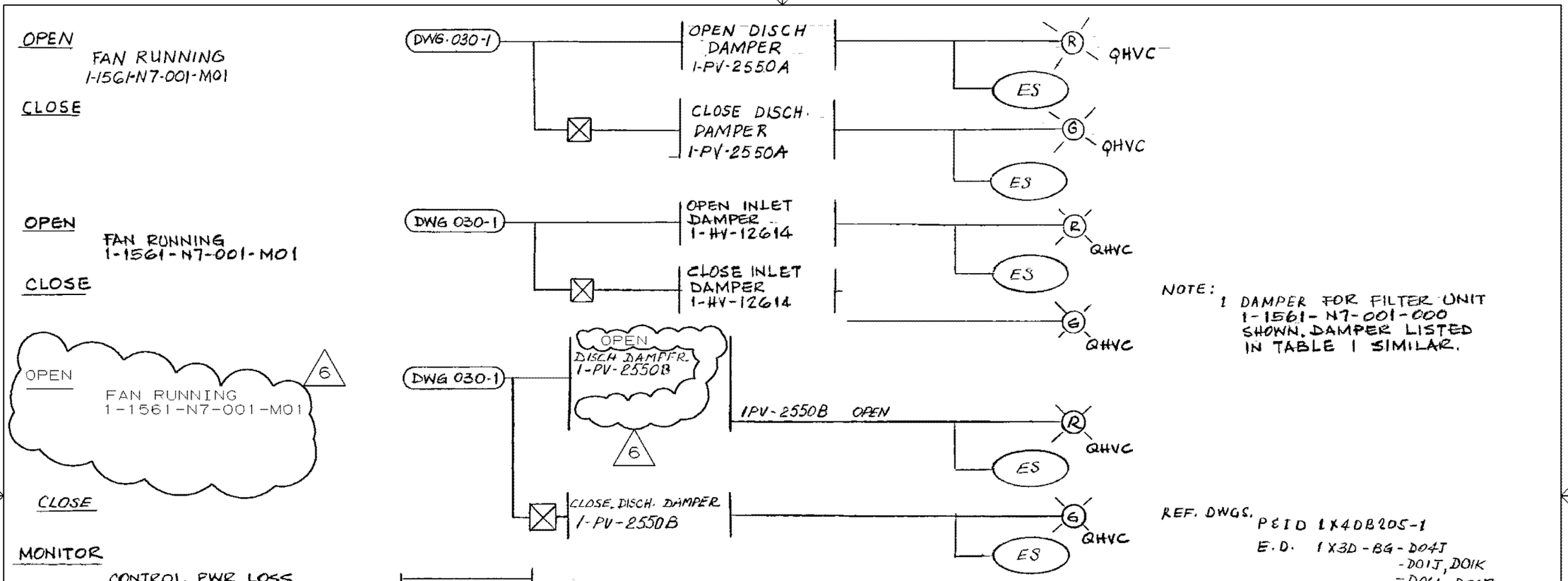
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
PIPING PENETRATION ROOM FILTER AND EXHAUST UNITS

SCALE: NONE	DRAWING NO. 1X5DN030-4	REV. 3
JOB NO. 9510		

SIZE B 11 x 17

BM 9510 P&ID REV 5



NOTE: 1 DAMPER FOR FILTER UNIT 1-1561-N7-001-000 SHOWN. DAMPER LISTED IN TABLE 1 SIMILAR.

REF. DWGS.
P&ID 1X4DB205-1
E.D. 1X3D-BG-D04J
-D01J, D01K
-D01L, D01M

NUCLEAR SAFETY RELATED
FAN INLET & OUTLET DAMPERS

"Q"

TABLE 1

TRAIN	FAN RUNNING	DISCH DAMPER	DISCH. DAMPER	INLET DAMPER	FILTER UNIT	ΔP SWITCH
A	1-1561-N7-001-M01	1-PV-2550A	1-PV-2550B	1-HV-12614	1-1561-N7-001-000	1-PDIS-2550
B	002	1A	1B	6	002	1-PDIS-2551

6

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

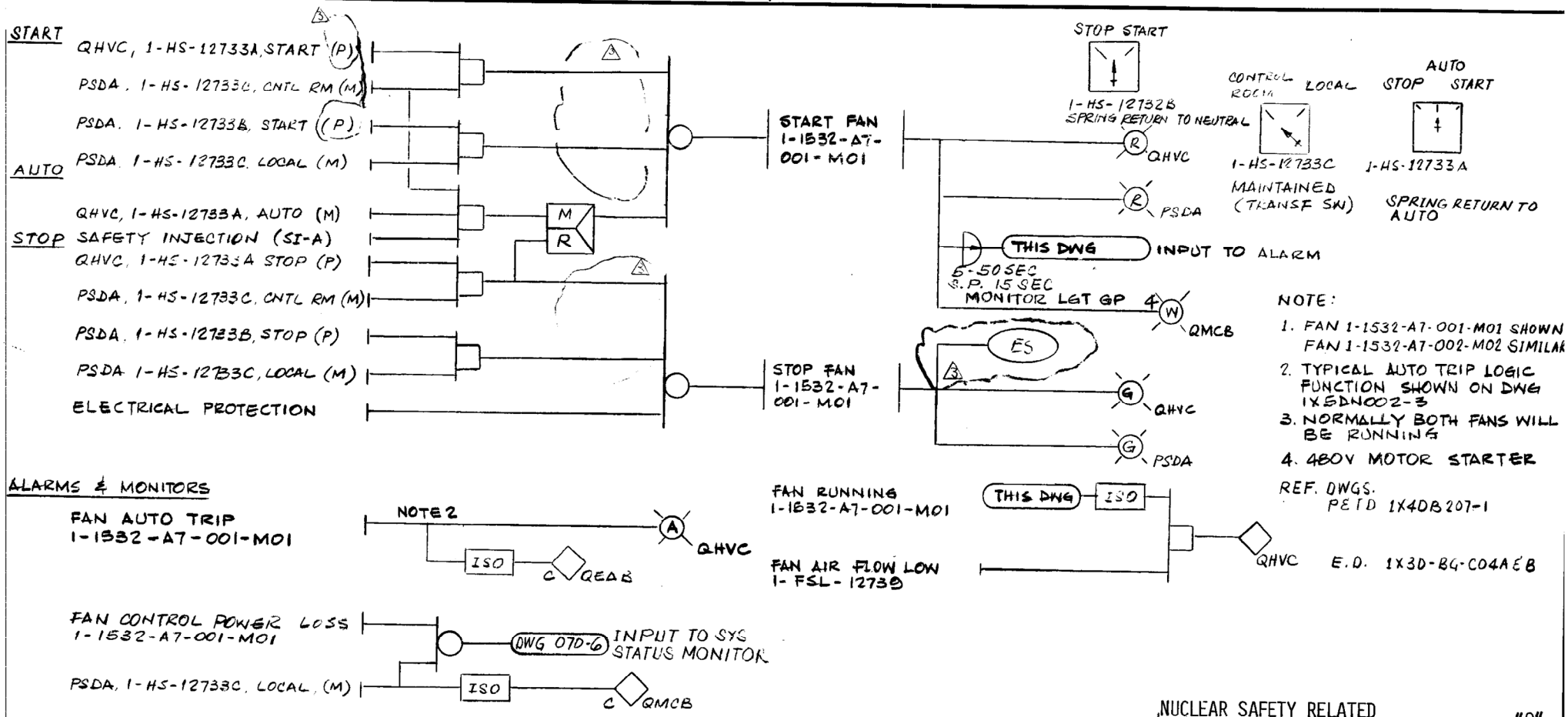
CONTROL LOGIC DIAGRAM

PIPING PENETRATION ROOM
FILTER AND EXHAUST UNITS

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
6	INCORPORATED PER DCP 95-VAN0056	12-31-97	CD	WMW	EOG	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE | DRAWING NO. 1X5DN030-5 | REV 6
JOB NO. 10604

CAD NAME 15DN0305 SIZE B 11x17



TRAIN	FAN	HAND SWITCH			FLOW SWITCH	SFTY SIG
A	1-1532-A7-001-M01	1-HS-12733A	1-HS-12733B	1-HS-12733C	1-FSL-12739	SI-A
B	002-	18A	18B	18C	24	SI-B

NUCLEAR SAFETY RELATED
ELECTRICAL EQUIPMENT SUPPLY FAN "Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
3	ADDED COMPUTER INPUT AND CLARIFY SW ACTION	1-7-85	ALV							
2	REVISED TO CONFORM WITH IE 80-06 BULLETIN	3-6-81	FAL							
1	REVISED AS INDICATED (COLD SHUTDOWN REQMT)	6-18-80	HL	FAL						
0	ISSUED FOR CONSTRUCTION	12/15/78	HL	FAL	MKK					

ENG. MGR.
DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTROL BUILDING
SAFETY FEATURES ELECTRICAL EQUIPMENT ROOM HVAC

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN044-1	3

SID REV 9

SIZE B 11 x 17

MODULATE

SAFETY INJECTION (SI-A)

ENABLE TO MODULATE VALVE 1-TV-12740 THRU 1-TIC-12740

CLOSE VALVE 1-TV-12740 △3

TABLE 1

VALVE	SFTY SIG.	TEMP CNTL
1-TV-12740	SI - A	1-TIC-12740
↓ 725	↓ B	↓ 725

NOTES:

1. VALVE 1-TV-12740 SHOWN OTHER VALVES LISTED IN TABLE 1 SIMILAR AS TABULATED

REF DWGS

P & ID 1X4DB207-1

V/P 1X4AJ20-356, 357 △3

NUCLEAR SAFETY RELATED

ESF CHILLED WATER VALVE "Q"

SCANNED DATE SEP 14 [illegible]

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	ENG. MGR.
△3	ADDED VALVE CLOSING SIGN AND REF DWGS	6-25-84	ALV	WLL							DATE
△2	REVISED REF. DWGS.	12-8-81	AV	FAL		PER					
△1	REVISED AS INDICATED.	3/28/80	HL	FAL							
△0	ISSUED FOR CONSTRUCTION	5-31-79	HL	FAL	MKK						

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTROL BUILDING
SAFETY FEATURES ELECTRICAL
EQUIPMENT ROOM HVAC

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN044-2	3

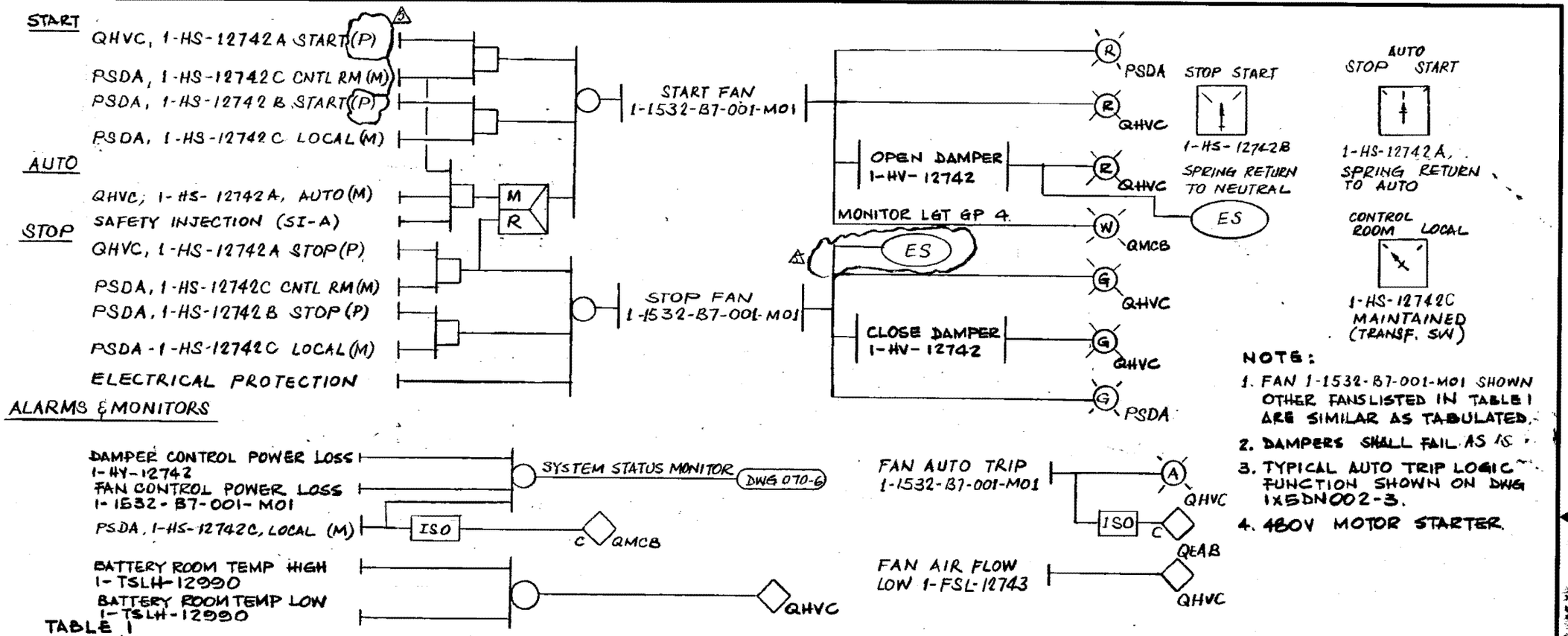
SIZE B 11 x 17

1-12-94

29

P&ID 207-1 REV. 3

JCH 9-14-91



NOTES:

1. FAN 1-1532-B7-001-M01 SHOWN OTHER FANS LISTED IN TABLE I ARE SIMILAR AS TABULATED.
2. DAMPERS SHALL FAIL AS IS.
3. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG 1X5DN002-3.
4. 480V MOTOR STARTER.

TABLE I

TRAIN	EQUIP. TAG NOS.	HAND SWITCH	FLOW SW.	DAMPER	ROOM TEMP	HAND SWITCH		SFTY SIG
A	1-1532-B7-001-M01	1-HS-12742A	1-FSL-12743	1-HV-12742	1-TSLH-12990	1-HS-12742B	1-HS-12742C	SI-A
B	002-	12727A	12728	12727	2	12727B	12727C	SI-B
A	003	12748A	12743	12748	1	12748B	12748C	SI-A
B	004	12749A	12728	12749	3	12749B	12749C	SI-B

REF. DWGS.

P&I.D. 1X4DB 207-1
E.D. 1X3D-BG-C04N, P, Q, R, S, T, U, V

NUCLEAR SAFETY RELATED "Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.	ENG. MGR.
3	REVISED REF DWGS & TAG NO	12-8-81	AV	FAL							DATE
2	ADDED COMPUTER INPUT AND CLARIFY SW ACTION	1-7-85	ALV								
1	CORRECTED NOTE 2 PER P&ID, REV 7, ADDED COMP INPUT	6-25-84	ALV								
0	ISSUED FOR CONSTRUCTION	12/15/78	HL	FAL	MKK						

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CONTROL BUILDING
SAFETY FEATURES BATTERY
ROOM EXHAUST FAN

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN045-1	5

SIZE B 11 x 17

P&ID 207-1 REV 9

JLH 9-14-91

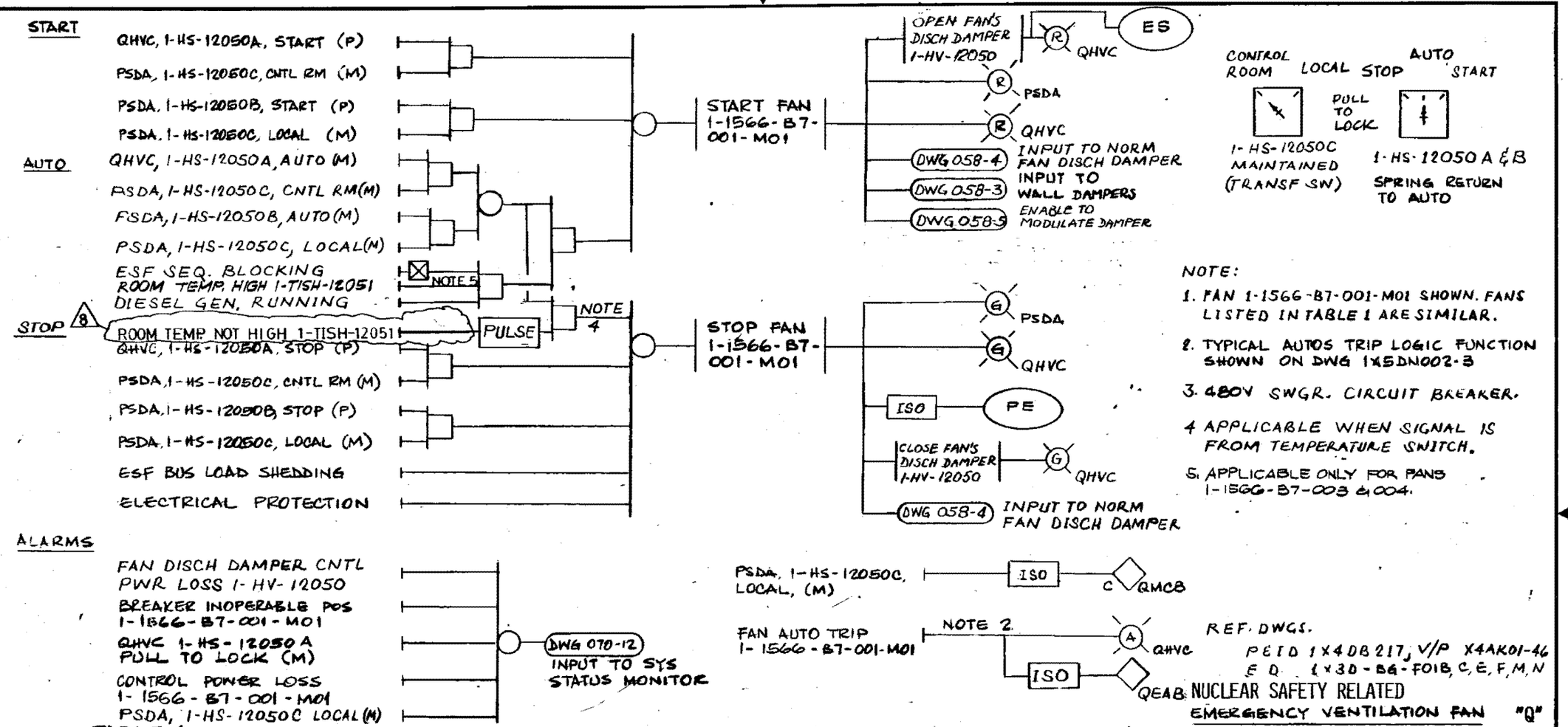


TABLE 1

TRAIN	FAN	HAND SW	HAND SW	TEMP. SW	ESF SEQ		DISCH DAMPER
A	1-1566-B7-001-M01	1-HS-12050A	1-HS-12050B&C	———	TRAIN A		1-HV-12050
↓	003	1A	1	1-TISH-12051	A		51
B	002	3A	3	———	B		53
↓	004	4A	4	1-TISH-12054	B		54

NO	REVISIONS	DATE	DR	CHK	RE	DM	DM	DM	PDM		ENG. MGR.
B	INCORP. ABN-01296	12 4 9	W.V.G.	RLW	CLQ	JJ					
A	ISSUED FOR CONSTRUCTION	4-10-19	HL	FAL	MKK						DATE
NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

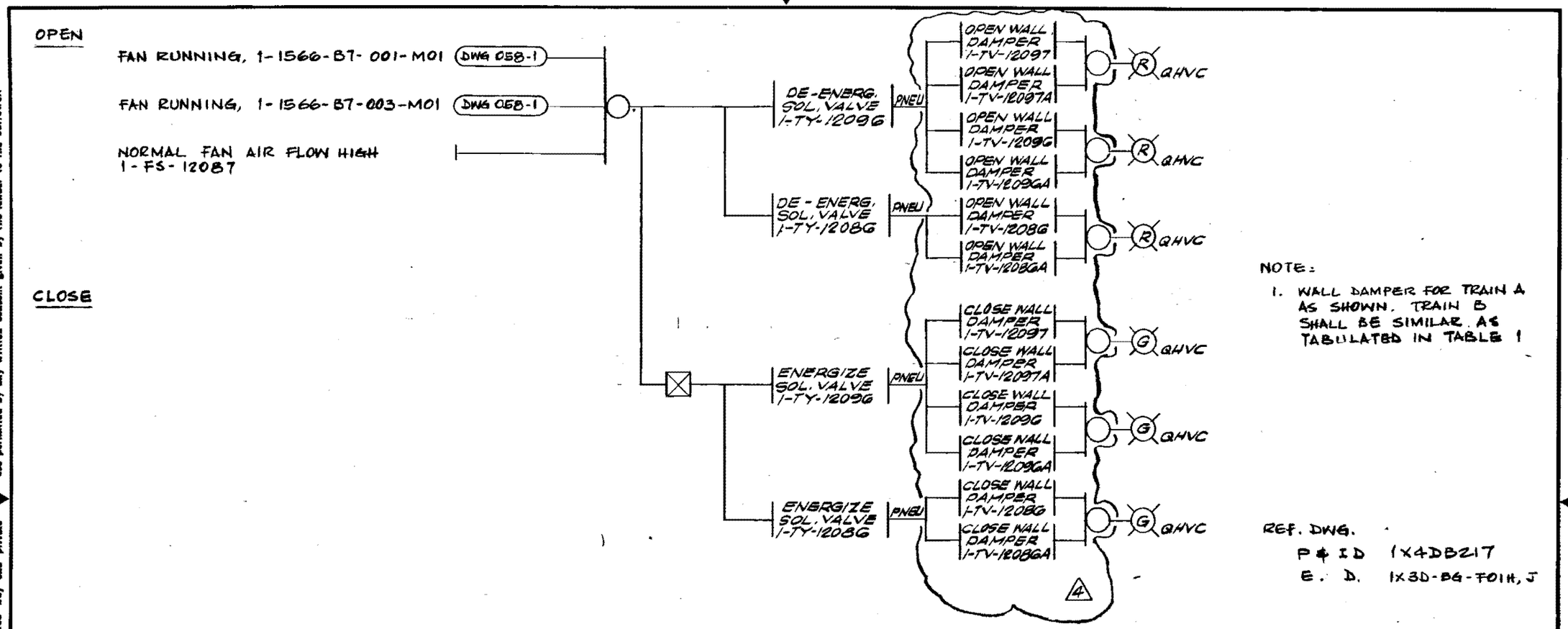
CONTROL LOGIC DIAGRAM
DIESEL GENERATOR BUILDING
HVAC SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN058-1	8

BM 9510
P&ID REV.

SCANNED DATE: 11/19/91

SIZE B 11 x 17



NOTE:

1. WALL DAMPER FOR TRAIN A AS SHOWN. TRAIN B SHALL BE SIMILAR AS TABULATED IN TABLE 1

REF. DWG.
P & I D 1X4DB217
E. D. 1X3D-B6-F01H, J

TABLE 1

SERVICE	TRAIN	SOL VALVE	WALL DAMPER	FAN RUNNING SIGNAL	FLOW SW
WALL DAMPER, 1-TV-12097, 1-TV 12096	A	1-TY-12096	1-TV-12096, 1-TV-12096A, 1-TV-12097, 1-TV-12097A	1-1566-B7-001-M01, 1-1566-B7-003-M01 (4)	1-FS-12087
1-TV-12086		12086	1-TV-12086, 1-TV-12086A		
1-TV-12098, 1-TV-12085	B	12098	1-TV-12098, 1-TV-12098A, 1-TV-12085, 1-TV-12085A	1-1566-B7-002-M01, 1-1566-B7-004-M01	1-FS-12088
1-TV-12099		12099	1-TV-12099, 1-TV-12099A		

4

NUCLEAR SAFETY RELATED

WALL DAMPERS "0"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
3	CHANGED DAMPER TO PNEUMATIC FROM MOTOR OPERATED	7-14-82	AV	FAL		PCK			JJT	
2	REVISED TAG NO	12-9-81	AV	FAL		PCK			JJT	
1	ADDED DOUBLE DMPR. PER DCN #10 ON P&ID 1X4DB217 & AS SHOWN	2-12-85	ZEP	ALV						
0	ISSUED FOR CONSTRUCTION	4-27-79	HL	FAL	MKK				TS	

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
DIESEL GENERATOR BUILDING
HVAC SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN058-3	4

BM 9510 P&ID 217

SCANNED DATE: 11/19/91

SIZE B 11 x 17

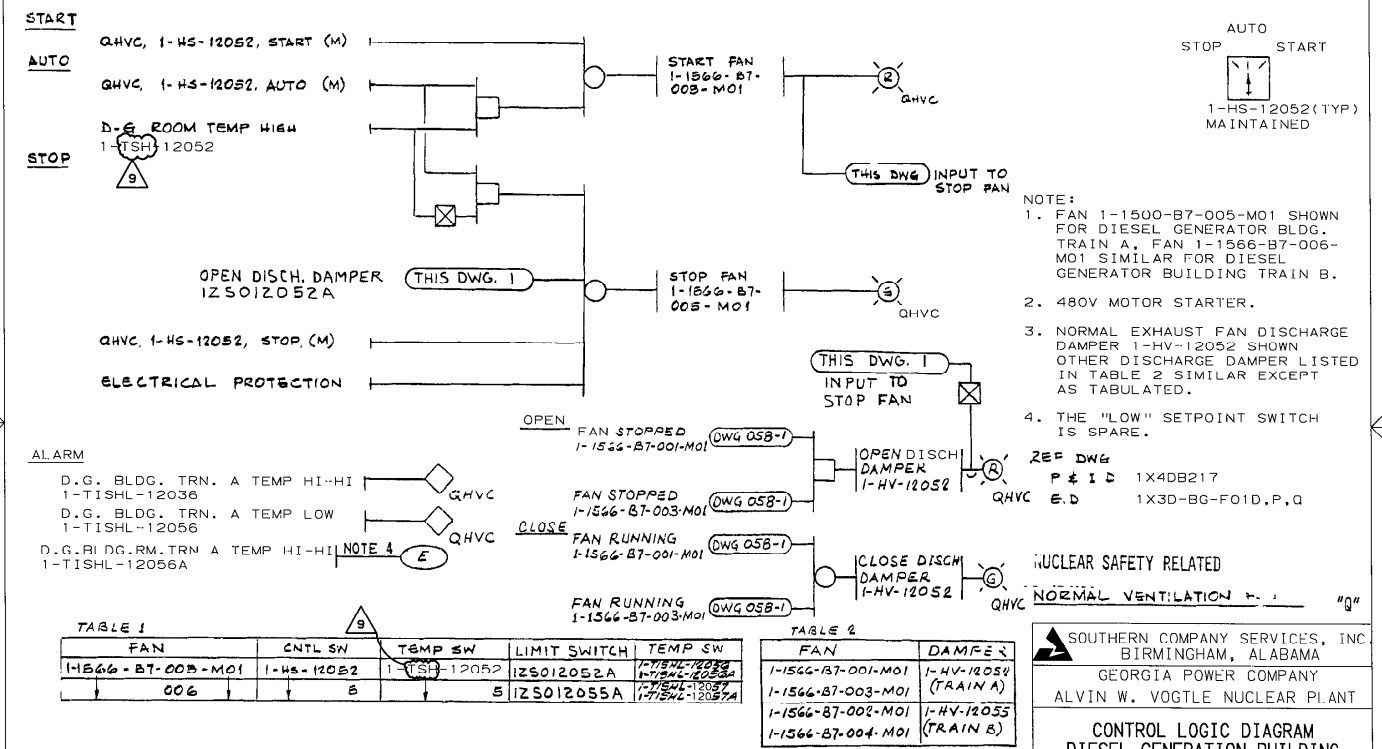


TABLE 1

FAN	CNTL SW	TEMP SW	LIMIT SWITCH	TEMP SW
1-1566-B7-003-M01	1-HS-12052	1-TSH-12052	1ZS012052A	1-TISHL-12056 1-TISHL-12036
006	5	5	1ZS012055A	1-TISHL-12057 1-TISHL-12057A

TABLE 2

FAN	DAMPER
1-1566-B7-001-M01	1-HV-12054 (TRAIN A)
1-1566-B7-003-M01	
1-1566-B7-002-M01	1-HV-12055 (TRAIN B)
1-1566-B7-004-M01	

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
9	INC. ABN-22216.	9/18/95	CD	LJE	EDT	
0	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES			

ENG MGR

DATE

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM DIESEL GENERATION BUILDING HVAC SYSTEM

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN058-4	9

SIZE B 11x17

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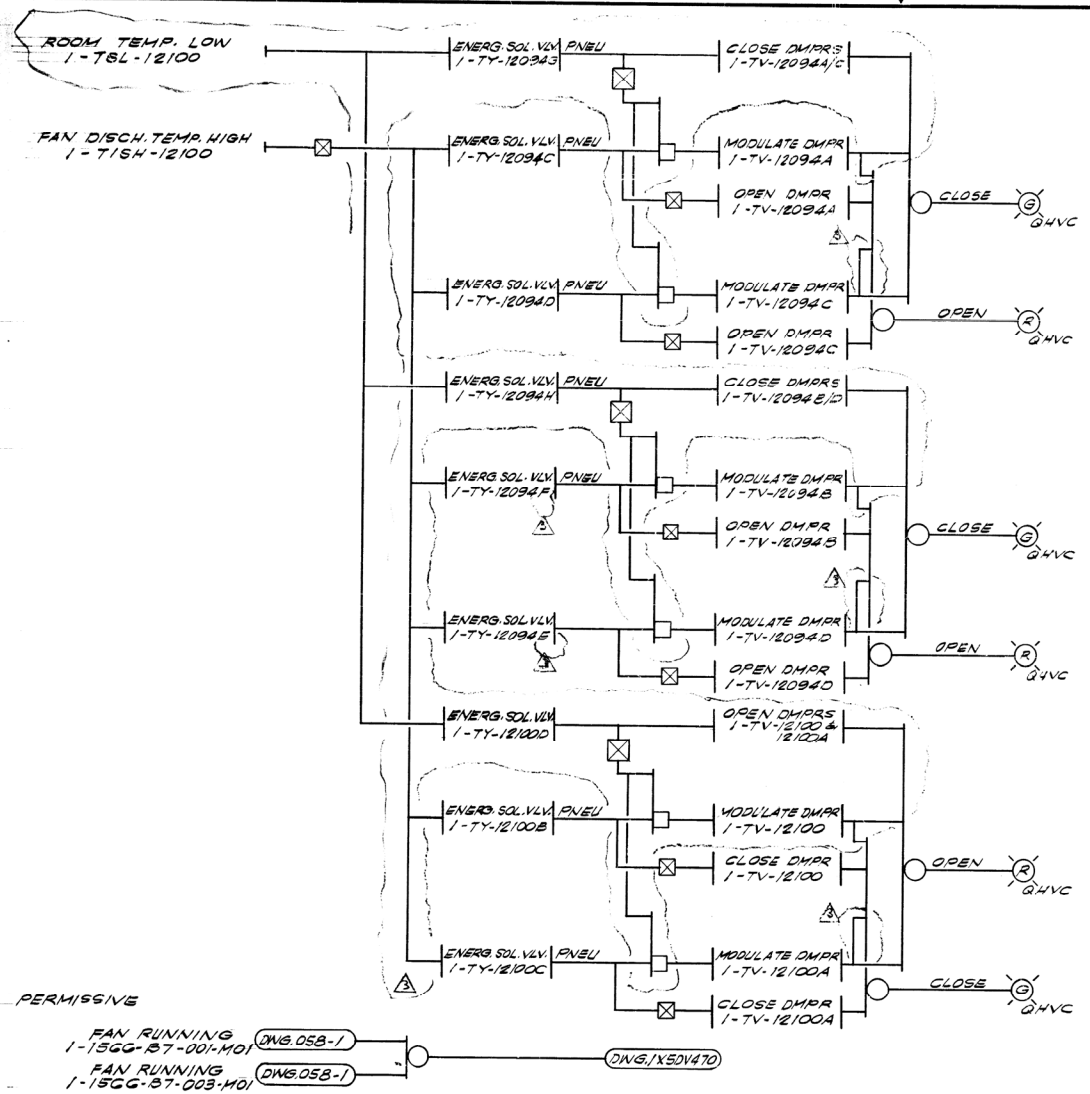


NOTE :

1. DAMPERS 1-TV-12094 & 1-TV-12100, SHOWN. OTHER DAMPERS LISTED IN TABLE 1 SIMILAR.
2. TEMP. SWITCHES ITSL-12100, ITSL-12101 AND SOL. VALVES ITY-12094G, H & ITY-12100D ARE POWERED FROM NON 1-E SOURCE.

3

REF. DWGS. :
P & I.D. 1X4DB217
E.D. 1X30-BG-F01K, L

OUTSIDE AIR AND RECIRCULATION DAMPERS

NUCLEAR SAFETY RELATED "Q"

TABLE 1

TRAIN	FAN	TEMP. CONTROLLER	LOOP DWG	WALL DAMPER	RECIRC. DAMPER	WALL DAMPER TEMP. SOL. VLV.	RECIRC. DAMPER TEMP. SOL. VLV.	TEMP. SW.
A	1-15GG-B7-001-M01 1-15GG-B7-003-M01	1-TIC-12100	1X5DV470	1-TV-12094A, C 1-TV-12094B, D	1-TV-12100 1-TV-12100A	1-TY-12094C -12094F -12094G	1-TY-12094D -12094E -12094H	1-TY-12100B -12100C -12100D	1-TISH-12100 1-TSL-12100
B	1-15GG-B7-002-M01 1-15GG-B7-004-M01	1-TIC-12101	1X5DV471	1-TV-12095A, C 1-TV-12095B, D	1-TV-12101 1-TV-12101A	-12095C -12095F -12095G	-12095D -12095E -12095H	-12101B -12101C -12101D	1-TISH-12101 1-TSL-12101

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.
2	REDRAWN PER CCP B1022GM, DCN #1	8-26-86	JEP	ALU			SGG			
1	ISSUED FOR CONSTRUCTION	7-14-82	(SEE MICROFILM FOR SIGNATURES)							

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

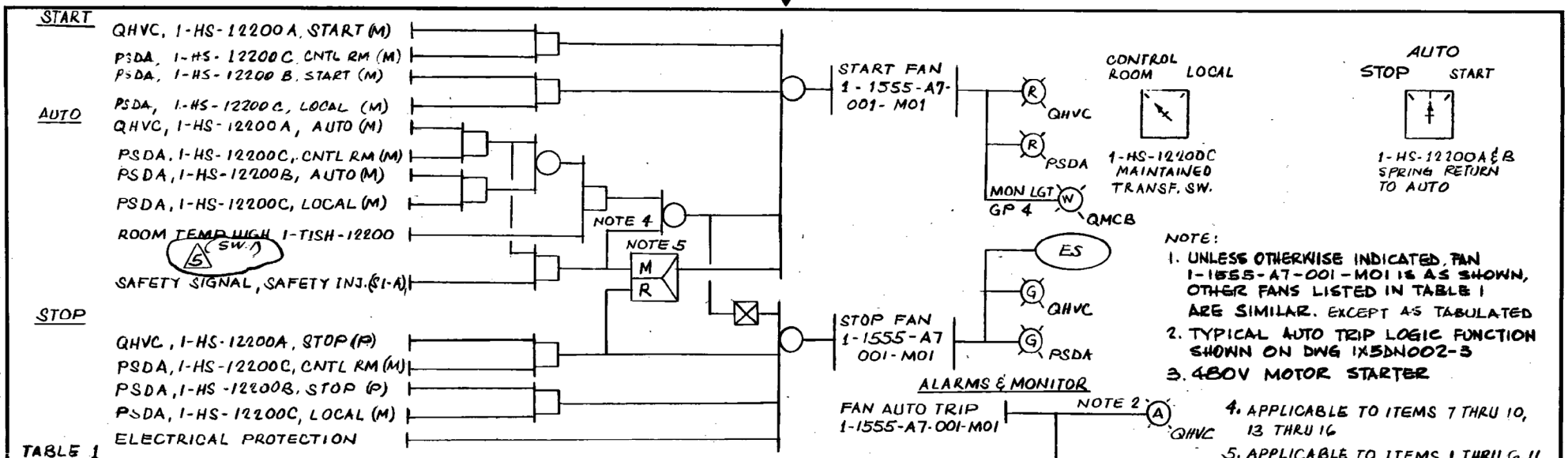
CONTROL LOGIC DIAGRAM
DIESEL GENERATOR BUILDING
HVAC SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN058-5	3

SIZE C 17X22

2/78 DIETERICH-POST 2112B .003 FILM FORM CM 9510

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL



NOTE:

1. UNLESS OTHERWISE INDICATED, FAN 1-1555-A7-001-M01 IS AS SHOWN, OTHER FANS LISTED IN TABLE 1 ARE SIMILAR. EXCEPT AS TABULATED
2. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG 1X5DN002-3
3. 480V MOTOR STARTER
4. APPLICABLE TO ITEMS 7 THRU 10, 13 THRU 16
5. APPLICABLE TO ITEMS 1 THRU 6, 11, 12, 17 & 18.
6. SET POINT FOR ALARM AND COMP. INPUT IS HIGHER THAN THE SET POINT FOR FAN ACTUATION. (5)

REF DWGS

P & I D 1X4DB228

E. D 1X3D-BG-D05A, B, C, D, E, F, G, H, J, K, N, P, Q, R, S, T, U, V

TABLE 1

ITEM	LOCATION	TEMP SW	TRAIN	FAN 1-1555-A7	HAND SWITCHES	SAFETY SIGNAL
1	ELECT SWGR & MCC RM	1-TISH-12200	A	001-M01	1-HS-12200A, B&C	SI-A
2		-12201	B	002-	-12201A, B&C	B
3		-12202	A	003-	-12202A, B&C	A
4		-12203	B	004-	-12203A, B&C	B
5		-12204	A	005-	-12204A, B&C	A
6		-12205	B	006-	-12205A, B&C	B
7	RHR PUMP ROOM	1-TSH-12206	A	007-	-12206A, B&C	1-1205-P6-001
8		-12212	B	008-	-12212A, B&C	-002
9	CNMT SPRAY PUMP ROOM	1-TISH-12207	A	009-	-12207A	1-1206-P6-001
10		-12213	B	010-	-12213A	-002
11	CCW PUMP ROOM	-12208	A	011-	-12208A, B&C	SI-A
12		-12214	B	012-	-12214A, B&C	B
13	CHARG PUMP ROOM	1-TSH-12209	A	013-	-12209A, B&C	1-1208-P6-002
14		1-TISH-12215	B	014-	-12215A, B&C	-003
15	SI PUMP ROOM	-12210	A	015-	-12210A	1-1204-P6-003
16		-12216	B	016-	-12216A	-004
17	SFP HE & PUMP ROOM	1-TSH-12211	A	017-	-12211A	SI-A
18		1-TISH-12217	B	018-	-12217A	B

NUCLEAR SAFETY RELATED

COOLER FANS

"Q"

NO.	REVISIONS	DATE	DR	CHK.		ENG. MGR.	EGS	CHF. E.	P&E.	Q.A.E.
3	ADDED COMPUTER INPUT PER 110 LIST REV. 4	10-16-84	ALV	JJ						
5	REVISED AS SHOWN & ADDED NOTE 6	2-22-85	ZEP	ALV						
4	CORRECTED TAG NOS PER DCN 9	1-17-85	ALV	W.H.						
0	ISSUED FOR CONSTRUCTION	1-12-79	HL	FAL	MKK		EGL			

BECHTEL LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
SAFETY FEATURE ROOM COOLERS

SCALE: NONE

DRAWING NO. 1X5DN065-1

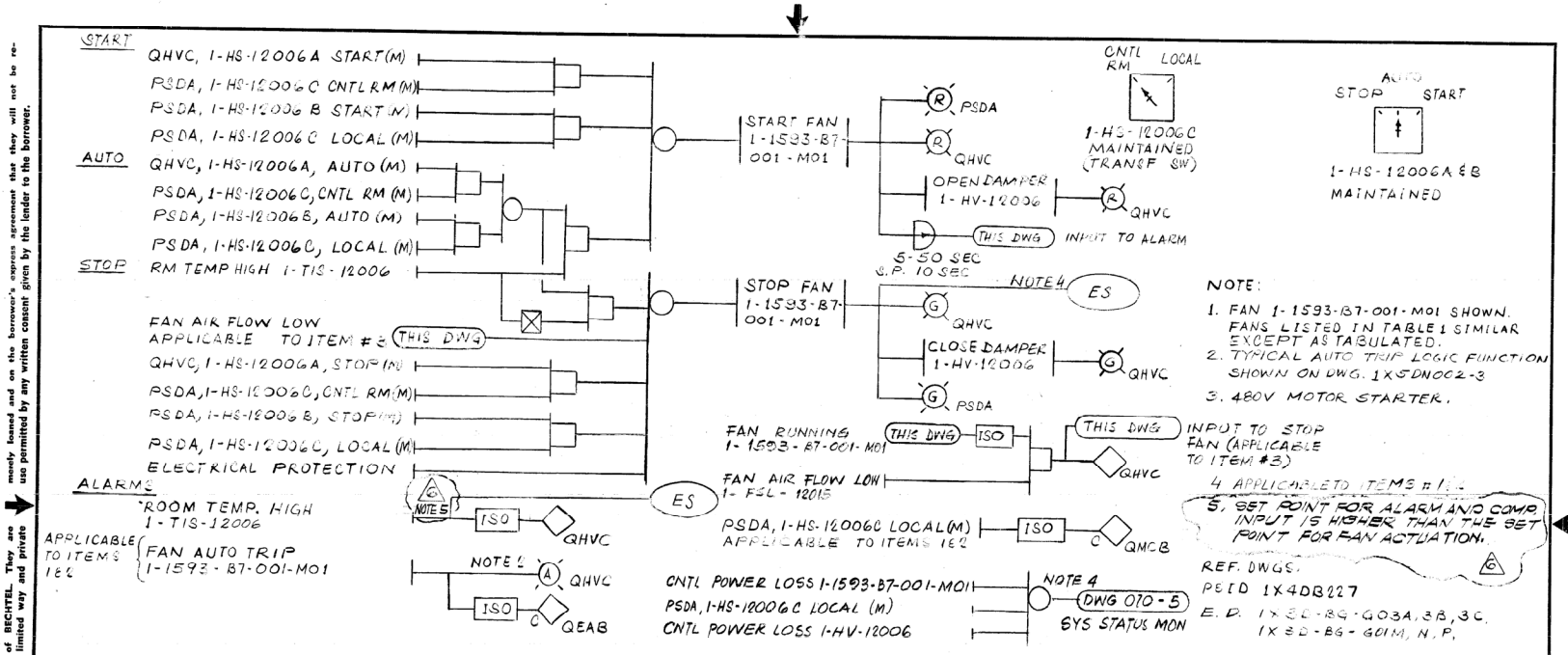
REV. 3

JOB NO. 9510

SIZE B 11 x 17

BM 9510

P&ID REV. 6



NOTE:
1. FAN 1-1593-B7-001-M01 SHOWN. FANS LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATED.
2. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG. 1X5DN062-3
3. 480V MOTOR STARTER.
4 APPLICABLE TO ITEMS # 1&2
5. SET POINT FOR ALARM AND COMP. INPUT IS HIGHER THAN THE SET POINT FOR FAN ACTUATION.

REF. DWGS:
P&ID 1X4DB227
E.D. 1X5D-BG-G03A,3B,3C.
1X5D-BG-G01M, N, P.

TABLE 1

ITEM	TRAIN	FAN NO.	HAND SW.	TEMP SW.	DAMPER	FLOW SW	HAND SW
1	A	1-1593-B7-001-M01	1-HS-12006A	1-TIS-12006	1-HV-12006	1-FSL-12015	1-HS-12006 B&C
2	B	002-M01	12005A	12005	12005	12014	1-HS-12005 B&C
3	—	003-M01	12004	12004	12004	12016	—

NUCLEAR SAFETY RELATED
VENTILATION FANS "Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.	ENG. MGR.
E	ADDED NOTE 5	2-8-85	ZEN	ALV							DATE
D	REVISED AS SHOWN	10-16-84	ALV								
C	ADDED COMPUTER INPUTS PER I/O LIST REV. 4	9-10-84	ALV								
B	ISSUED FOR CONSTRUCTION	5-3-79	NBD	FAL	MKK						

BM 9510

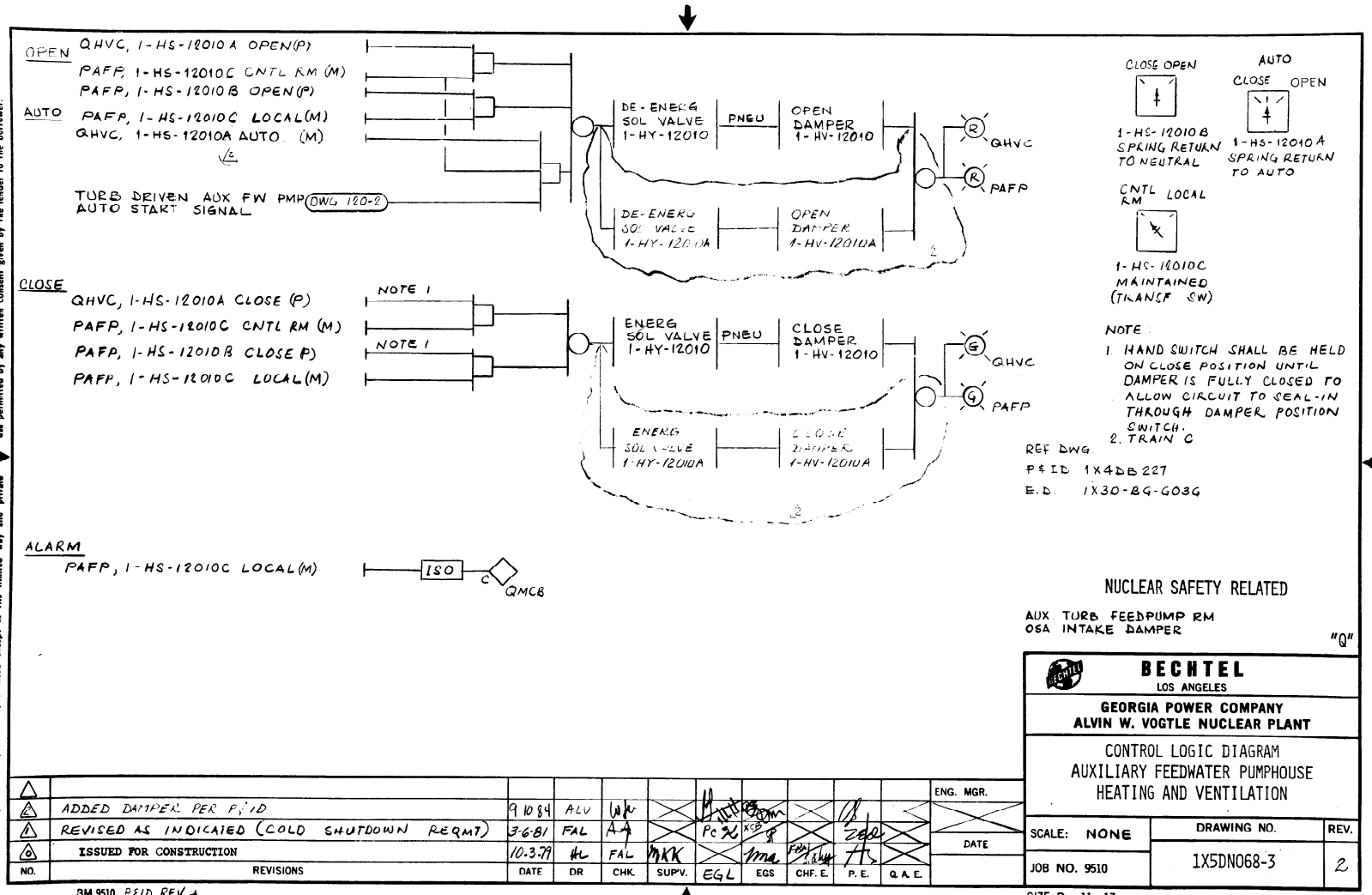
BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER PUMPHOUSE
HEATING AND VENTILATION

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1XBDN068-1	6

SIZE B 11 x 17



NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	ENG. MGR.
3											
2	ADDED DAMPER PER P&ID	9 10 84	ALV								
1	REVISED AS INDICATED (COLD SHUTDOWN REQMT)	3-6-81	FAL			PC 21	KCB 8				DATE
0	ISSUED FOR CONSTRUCTION	10.3.79	HL	FAL	MKK						

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

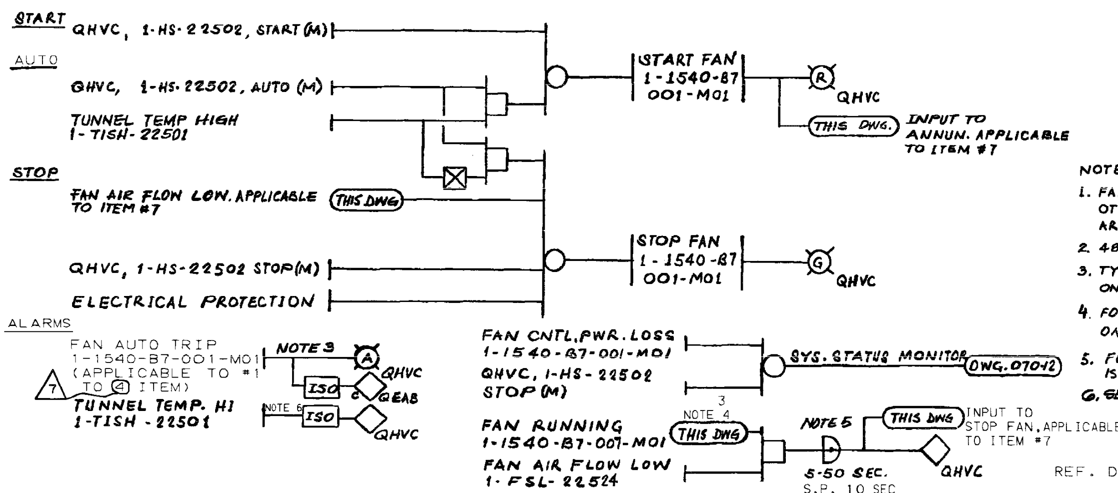
CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER PUMPHOUSE
HEATING AND VENTILATION

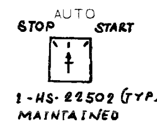
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN068-3	2

BM 9510 P&ID REV 4

SIZE B 11 x 17

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
DATE 9-10-84 CAMERA OPERATOR SECTION SUPERVISOR





NOTE

1. FAN 1-1540-B7-001-M01 SHOWN OTHER FANS LISTED IN TABLE 1 ARE SIMILAR AS TABULATED.
2. 480V MOTOR STARTER
3. TYPICAL LOGIC FUNCTION SHOWN ON DRAWING 1X5DN002-3.
4. FOR ITEM6 SEE FAN RUNNING INPUT ON DWG. 1X5DN863-4
5. FOR ITEM 6 TIME DELAY RELAY IS 1-10MIN, S.P. 4MIN
6. SET POINT FOR ALARM IS HIGHER THAN THE SET POINT FOR FAN ACTUATION.

REF. DWG.

P & ID 1X4DB238
E.D. 1X3D-BG-K01C, 1D, 1G

TABLE 1

ITEM	FUNCTION	TRAIN		FAN	CNTL. SW.	TEMP. SW.	FLOW SW
1	DIESEL GEN. PWR. CABLE TUN.	A	—	1-1540-B7-001-M01	1-HS-22502	1-TISH-22501	
2	DIESEL GEN. PWR. CABLE TUN.	B	—	-002	-22506	-22505	
3	NSCW TOWER PWR CABLE TUN.	A	—	-003	-22517	-22516	
4	NSCW TOWER PWR. CABLE TUN.	B	—	-004	-22520	-22519	
5							
6	TUNEL VENT FAN	—	—	1-1540-B7-006-M01	——	1-TISH-22513	1-FSL-22512
7	TURB. BLDG. CHASE TO CNTL. BLDG	—	—	1-1540-B7-007-M01	1-HS-22523	-22522	1-FSL-22524

NUCLEAR SAFETY RELATED "Q"

ELECTRICAL TUNNEL VENT FAN

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

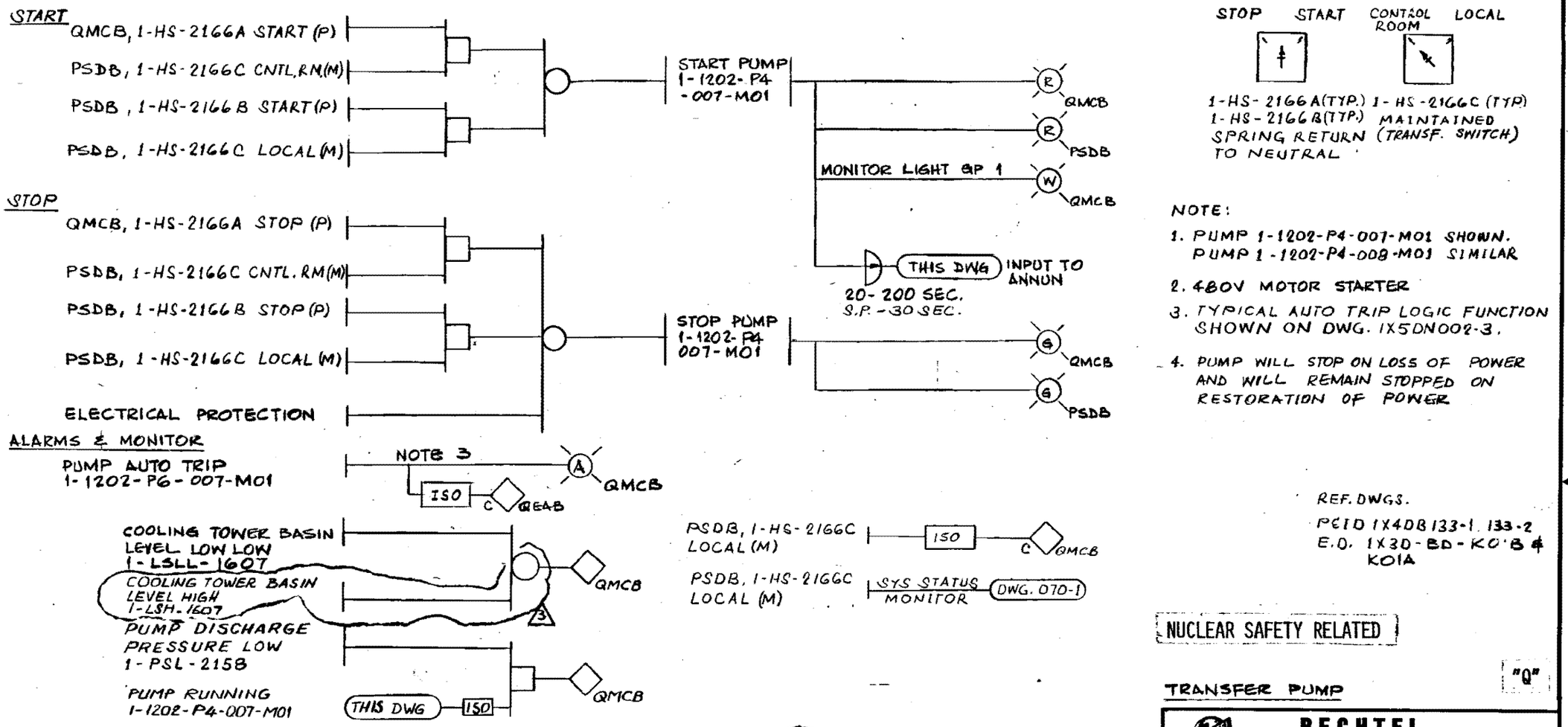
CONTROL LOGIC DIAGRAM TUNNEL VENTILATION SYSTEM

NO.	REVISIONS	DATE	DR	CHK	ELECT	EGL	EGS	CHF E	PE	QAE
7	INCORP. ABN-12461.	10-22-13	GIB							
	REVISIONS	DATE	DR	CHK	RE	DM	DM	DM	PDM	
0	ISSUED FOR CONSTRUCTION	3/7/79	SEE MICROFILM FOR SIGNATURES							

ENG MGR
DATE

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X5DN069-1
REV 7

SIZE B 11x17



NOTE:

1. PUMP 1-1202-P4-007-M01 SHOWN. PUMP 1-1202-P4-008-M01 SIMILAR
2. 480V MOTOR STARTER
3. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG. 1X5DN002-3.
4. PUMP WILL STOP ON LOSS OF POWER AND WILL REMAIN STOPPED ON RESTORATION OF POWER

REF. DWGS.
P&ID 1X4DB133-1, 133-2
E.D. 1X3D-BD-KO1B & KO1A

NUCLEAR SAFETY RELATED

"Q"

TRANSFER PUMP

TRAIN	PUMP	SWITCHES			PRESS SW	LVL SW	LVL SW
B	1-1202-P4-007-M01	1-HS-2166A	1-HS-2166B	1-HS-2166C	1-PSL-2158	1-LSLL-1607	1-LSH-1607
A	008	2167A	2167B	2167C	2159	1606	-1606

3

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
5	ADDED HIGH ALARM TO REFLECT THE ACTUAL DESIGN	3/21/85	ZEP	ALV						
4	ADDED TIME DELAY SET POINT & REVISED AS INDICATED	3-6-81	FAL	AAT		PCL				
1	REVISED AS INDICATED	2-15-79	HL	FAL						
0	ISSUED FOR CONSTRUCTION	2-15-79	HL	FAL	MKK					

ENG. MGR.

DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE COOLING TOWER
TRANSFER PUMPS

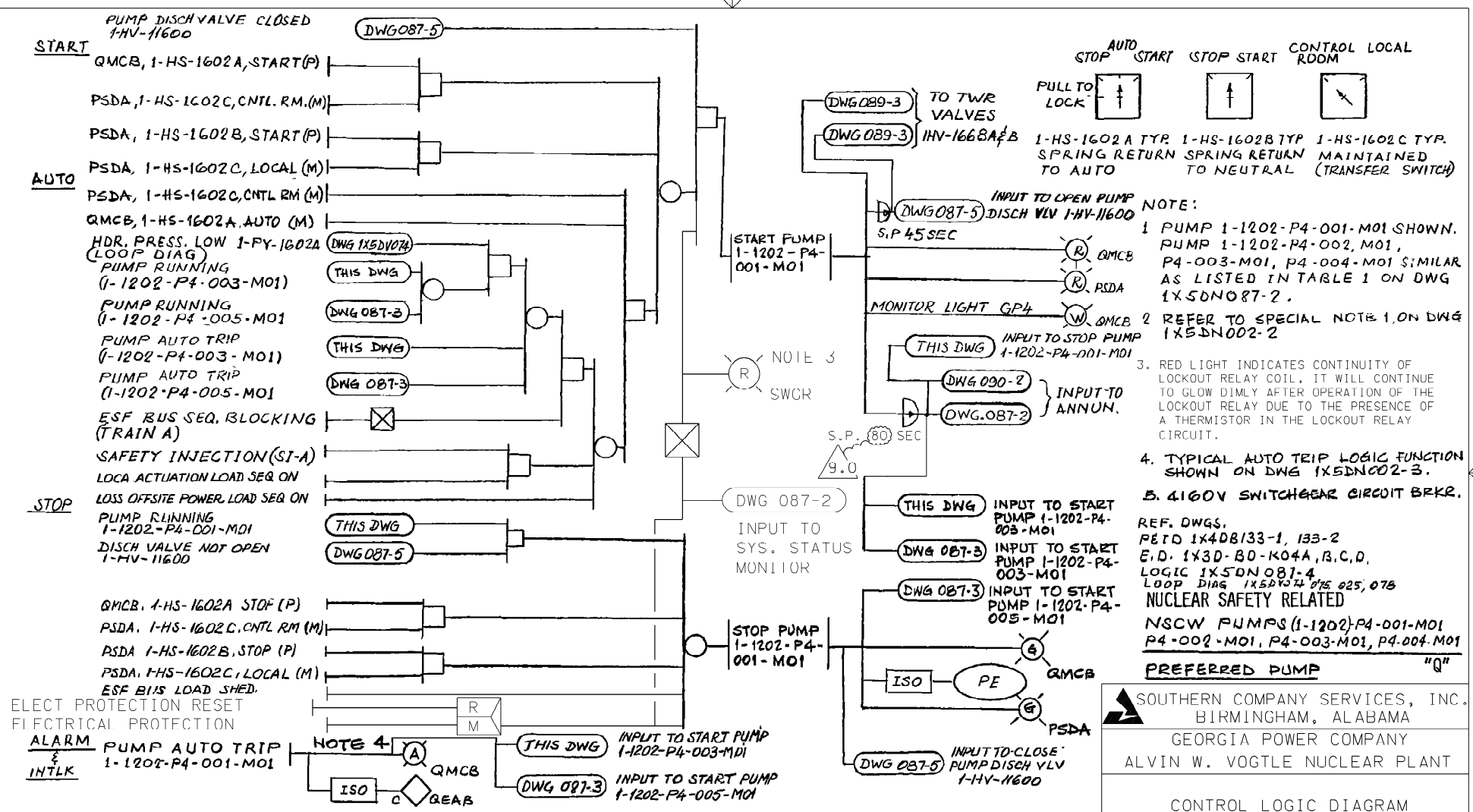
SCALE: NONE

DRAWING NO. 1X5DN086-1

REV. 3

JOB NO. 9510

SIZE B 11x17



NOTE:

1. PUMP 1-1202-P4-001-M01 SHOWN. PUMP 1-1202-P4-002, M01, P4-003-M01, P4-004-M01 SIMILAR AS LISTED IN TABLE 1 ON DWG 1X5DN087-2.
2. REFER TO SPECIAL NOTE 1, ON DWG 1X5DN002-2
3. RED LIGHT INDICATES CONTINUITY OF LOCKOUT RELAY COIL. IT WILL CONTINUE TO GLOW DIMLY AFTER OPERATION OF THE LOCKOUT RELAY DUE TO THE PRESENCE OF A THERMISTOR IN THE LOCKOUT RELAY CIRCUIT.
4. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG 1X5DN002-3.
5. 4160V SWITCHGEAR CIRCUIT BRKR.

REF. DWGS.
P&ID 1X4DB133-1, 133-2
E.I.D. 1X3D-B0-K04A, B, C, D,
LOGIC 1X5DN087-4
LOOP DIAG 1X5DV074 075, 025, 078

NUCLEAR SAFETY RELATED

NSCW PUMPS (1-1202)-P4-001-M01 P4-002-M01, P4-003-M01, P4-004-M01

PREFERRED PUMP "Q"

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING WATER PUMPS

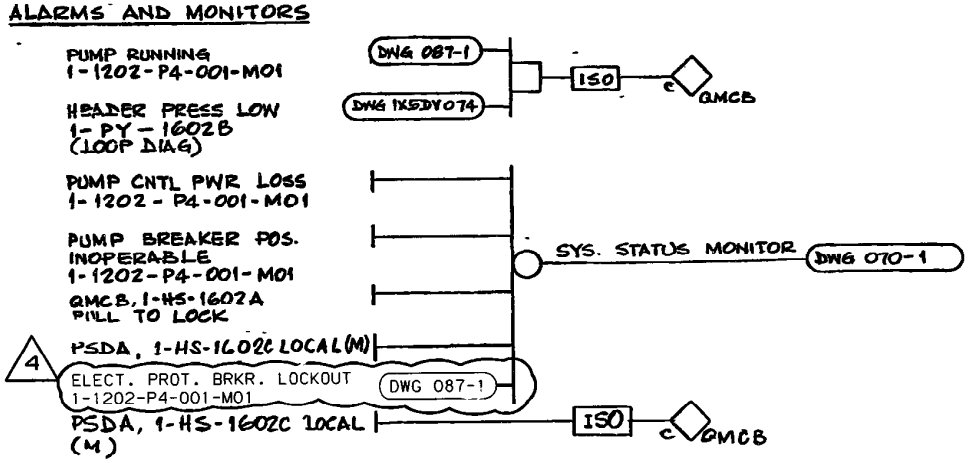
NO.	VERSIONS	DATE	DR	CHK	APPV
9.0	REVISED PER ABN-V00180, VER. 1.0	1/29/07	JLO	ELC	JMR

SCALE: NONE | DRAWING NO. 1X5DN087-1 | VER. 9.0

JOB NO. 10604

SIZE B 11x17

ALARMS AND MONITORS



NOTE:

1. TRAIN A ALARMS & MONITORS SHOWN, OTHER ALARMS & MONITORS, SIMILAR AS LISTED IN TABLE 1 & 2
2. OTHER LOGIC FUNCTION SHOWN ON DWG 1X5DN087-1, 1X5DN087-3.

TABLE 1

LOOP DWG 1X5DV-	TRAIN	PUMP NO	SAF. SIG.	SWITCHES			PRESS SW LOOP DIAG	PUMP RUNNING, ELEC OLVD	
-074	A	1-1202-P4-001-M01	SI-A	1-HS-1602A	1-HS-1602B	1-HS-1602C	1-PY-1602A&B	1-1202-P4-003-M01	1-1202-P4-005-M01
-075	B	-002	B	03A	03B	03C	03	004	006
-025	A	003	A	34A	34B	34C	56	001	005
-078	B	004	B	35A	35B	35C	57	002	006

TABLE 2

LOOP DWG 1X5DV	TRAIN	PUMP NO.	SAF. SIG	SWITCHES			PRESS SW LOOP DIAG	PUMP RUNNING, ELEC OLVD	
-076	A	1-1202-P4-005-M01	SI-A	1-HS-1608A	1-HS-1608B	1-HS-1608C	1-PY-1608A&B	1-1202-P4-001-M01	1-1202-P4-003-M01
-077	B	006	B	09A	09B	09C	09	002	004

REF DWGS:
PEID 1X4DB133-1 , 133-2
E.D 1X30-BD-K04A,B,C,D,E&F
LOOP DIAGRAM 1X5DV074,075,025,078,076,077

NUCLEAR SAFETY RELATED "Q"

ALARMS, MONITORS & EQUIP. LIST.

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4	INCORP. ABN-21049	11/29/95	MWD	WLM	EOL	
3	REVISIONS	DATE	DR			
0	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES			

ENG MGR

DATE

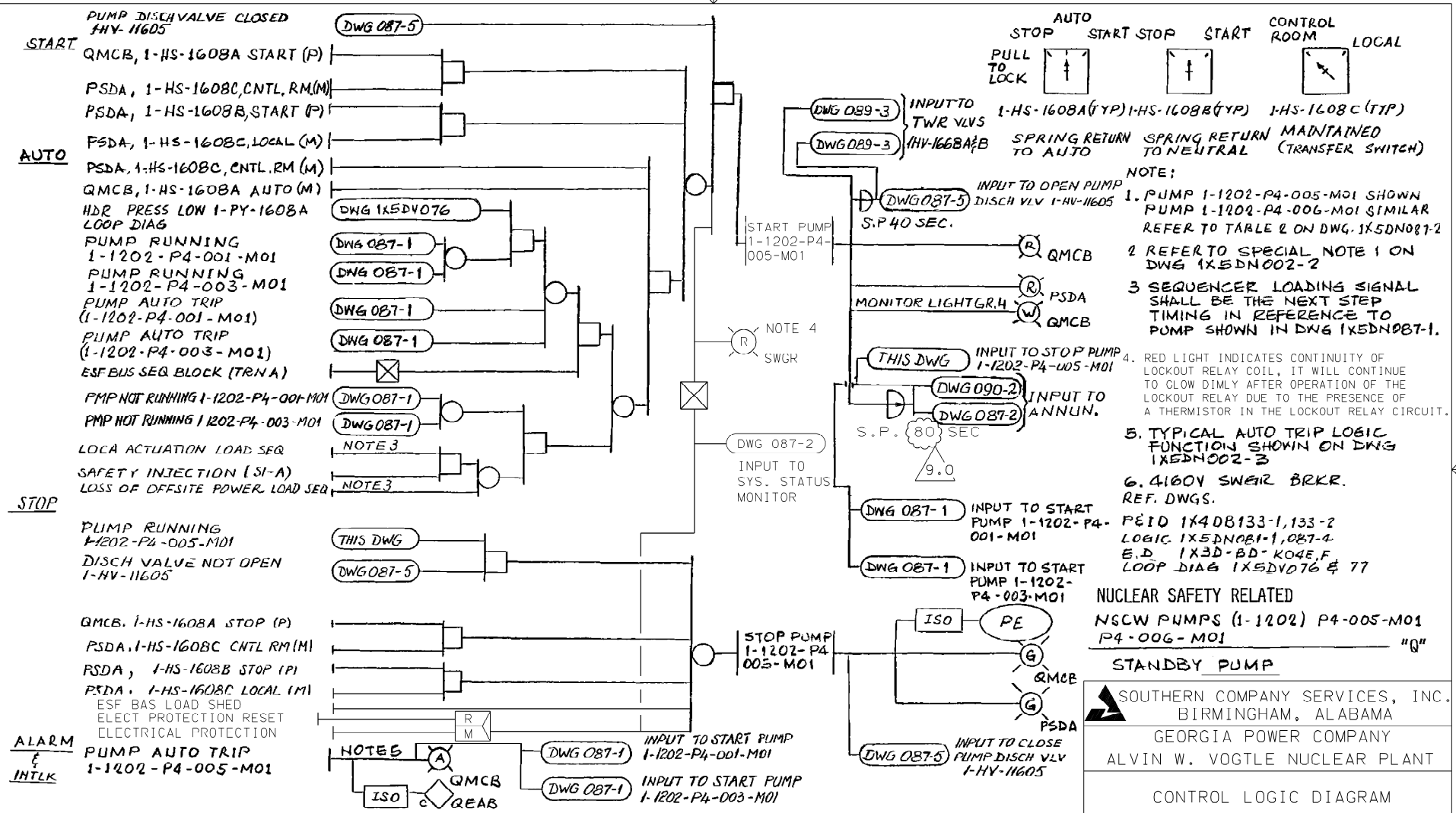
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM NUCLEAR SERVICE COOLING WATER PUMPS

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN087-2	4

SIZE D 11-13



NO.	VERSIONS	DATE	DR	CHK	APPV
9.0	REVISED PER ABN-V00480, VER. 1.0	1/29/07	JLO	ELC	JMR

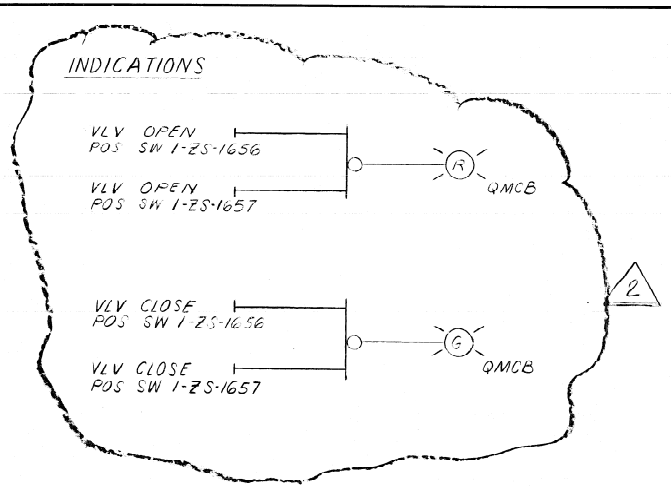
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING WATER PUMPS

SCALE: NONE	DRAWING NO.	VER.
JOB NO. 10604	1X5DN087-3	9.0

SIZE B 11x17



NOTE:
1. POSITION INDICATION SHOWN FOR MANUALLY OPERATED VALVE. OTHER POSITION INDICATION LISTED IN TABLE 1 SIMILAR.

REF. DWGS:
P&ID 1X4DB 133-1, 133-2
E.D. 1X5D-BD-K01E, K01F

TABLE 1

FUNCTION	VLV POS SW
COOLING TOWER BASIN MAKE UP TRAIN A	1-ZS-1656
	7
COOLING TOWER BASIN MAKE UP TRAIN B	8
	9

MANUAL MAKE-UP VALVE MONITOR

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.
3										
2	CORRECTED THE LIGHT POS INDICATION	7-24-84	ETL	7/24						
1	ADDED REF DWGS.	5-14-80	HL	FAL						
0	ISSUED FOR CONSTRUCTION	2-10-78	HL	FAL	MKK					

ENG. MGR. DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING WATER PUMPS

SCALE: NONE | DRAWING NO. 1X5DN087-4 | REV. 2
JOB NO. 9510

SIZE B 11 x 17

DM 9510

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
7-25-84 D. COLLINS CAMERA OPERATOR
SECTION SUPERVISOR

OPEN

NSCW PUMP RUNNING
1-1202-P4-001-M01 — DWG 087-1 — OPEN VALVE 1-HV-11600

- DWG 90-6 — INPUT TO CLOSE BLOWDOWN VLV
- (R) — QMCB (NOTE 4)

STOP

ELECTRICAL OVERLOAD (ONLY DURING PERIODIC TEST) — NOTE 3 — STOP VALVE 1-HV-11600

3

CLOSE

NSCW PUMP STOPPED
1-1202-P4-001-M01 — DWG 087-1 — CLOSE VALVE 1-HV-11600

- (G) — QMCB (NOTE4)
- DWG087-1 — PERMISSIVE INPUT TO NSCW TO START
- DWG087-1 — INPUT TO STOP NSCW PUMP

MONITOR & ALARM

VALVE 1-HV-11600
CONTROL POWER LOSS — SYSTEMS STATUS MONITOR — DWG 070-2

NOTE:

1. VALVE 1-HV-11600 SHOWN, OTHER VALVES LISTED IN TABLE 1 SIMILAR.
2. VALVES LISTED IN TABLE 1 ARE BUTTERFLY VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
3. SPECIAL NOTE 2 ON DWG 1X5DN002-2,
4. INPUT FROM STEM MOUNTED POSITION SWITCH

REF. DWGS:
P&ID 1X4DB133-1, 133 2
E.D 1X3D-BD-K04Y,,-K04Z

TABLE 1

TRAIN	VALVE	PUMP	DWG
A	1-HV-11600	1-1202-P4-001-M01	087-1
B	11607	2	
A	11606	3	
B	11613	4	
A	11605	5	087-3
B	11612	6	

VALVE CNTL POWER LOSS 1-HV-11600

VALVE MOTOR ELECT OVERLOAD 1-HV-11600

ISO — C — QEAB

NUCLEAR SAFETY RELATED

PUMP DISCHARGE VALVES "Q"

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM NUCLEAR SERVICE COOLING WATER PUMPS

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
3	INCORPORATED PER DCP 95-V1N0035	12-5-97	CD	GLB	WFP	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE

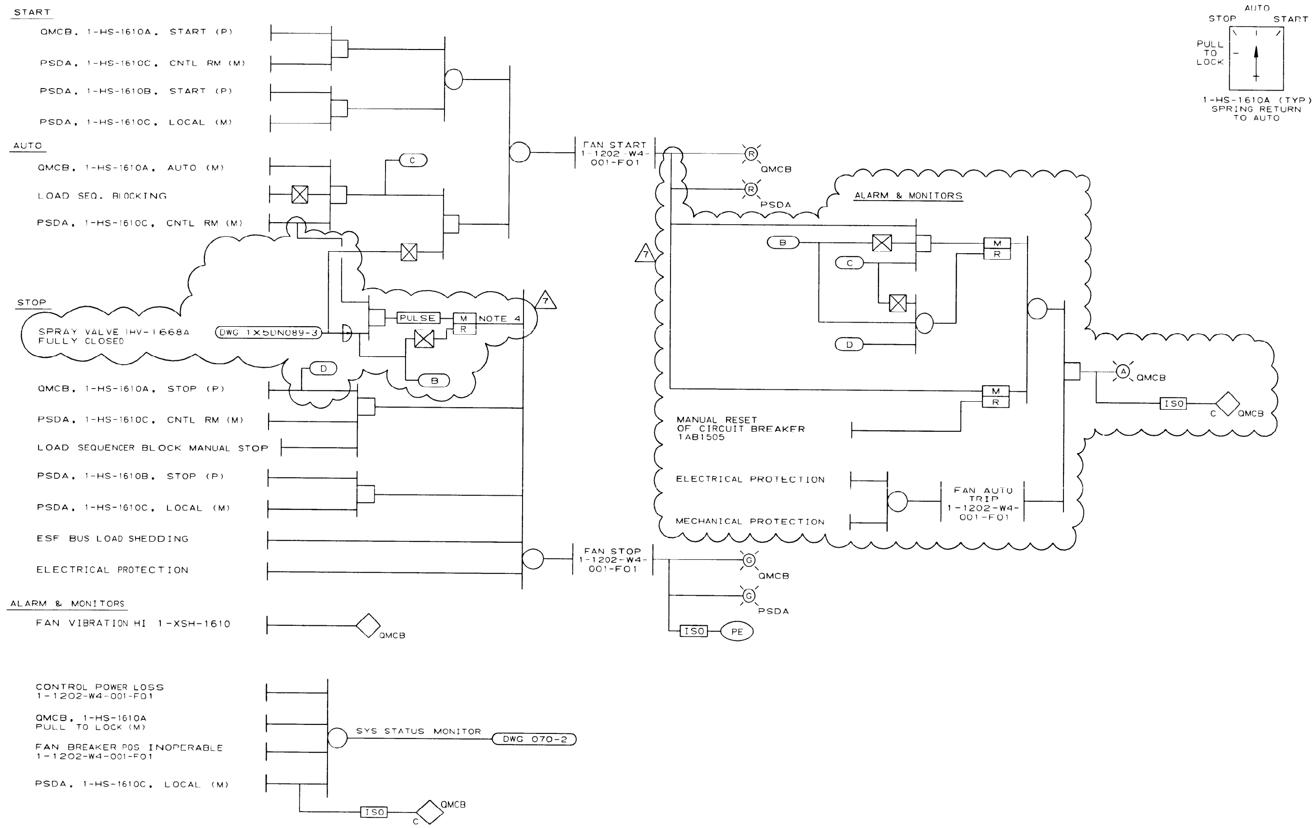
JOB NO. 10604

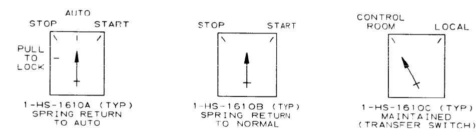
DRAWING NO. 1X5DN087-5

REV 3

CAD NAME 15DN0875

SIZE B 11x17





NOTES:

1. FAN 1-1202-W4-001-F01 SHOWN, FAN LISTED IN TABLE 1 SIMILAR.
2. 480V SWGR CIRCUIT BREAKER.
3. REFER TO SPECIAL NOTE 1 ON DWG 1X5DN002-2.
4. ONE PULSE SIGNAL IS GENERATED TO AUTO STOP THE FAN. FOR ANOTHER PULSE SIGNAL TO BE GENERATED TO AUTO STOP THE FAN THE SPRAY VALVE 1HV-1668A MUST BE IN THE NOT CLOSED POSITION.

REFERENCES:

P & I D 1X4DB133-1, 133-2

E.D. 1X3D-BD-K03A, 1X3D-BD-K03E, 1X3D-BD-K05U, 1X3D-BD-K05W

LOCATION 1X4DE328, 329

TABLE 1

TRAIN	CLG TOWER FANS	SWITCHES			VIBRATION SWITCHES	CIRCUIT BREAKER	SPRAY VALVE
A	1-1202-W4-001-F01	1-HS-1610A	1-HS-1610B	1-HS-1610C	1-XSH-1610	1AB1505	1HV-1668A
B	1-1202-W4-002-F01	1-HS-1611A	1-HS-1611B	1-HS-1611C	1-XSH-1611	1BB1605	1HV-1669A

NUCLEAR SAFETY RELATED
NSCW TOWER FANS

Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

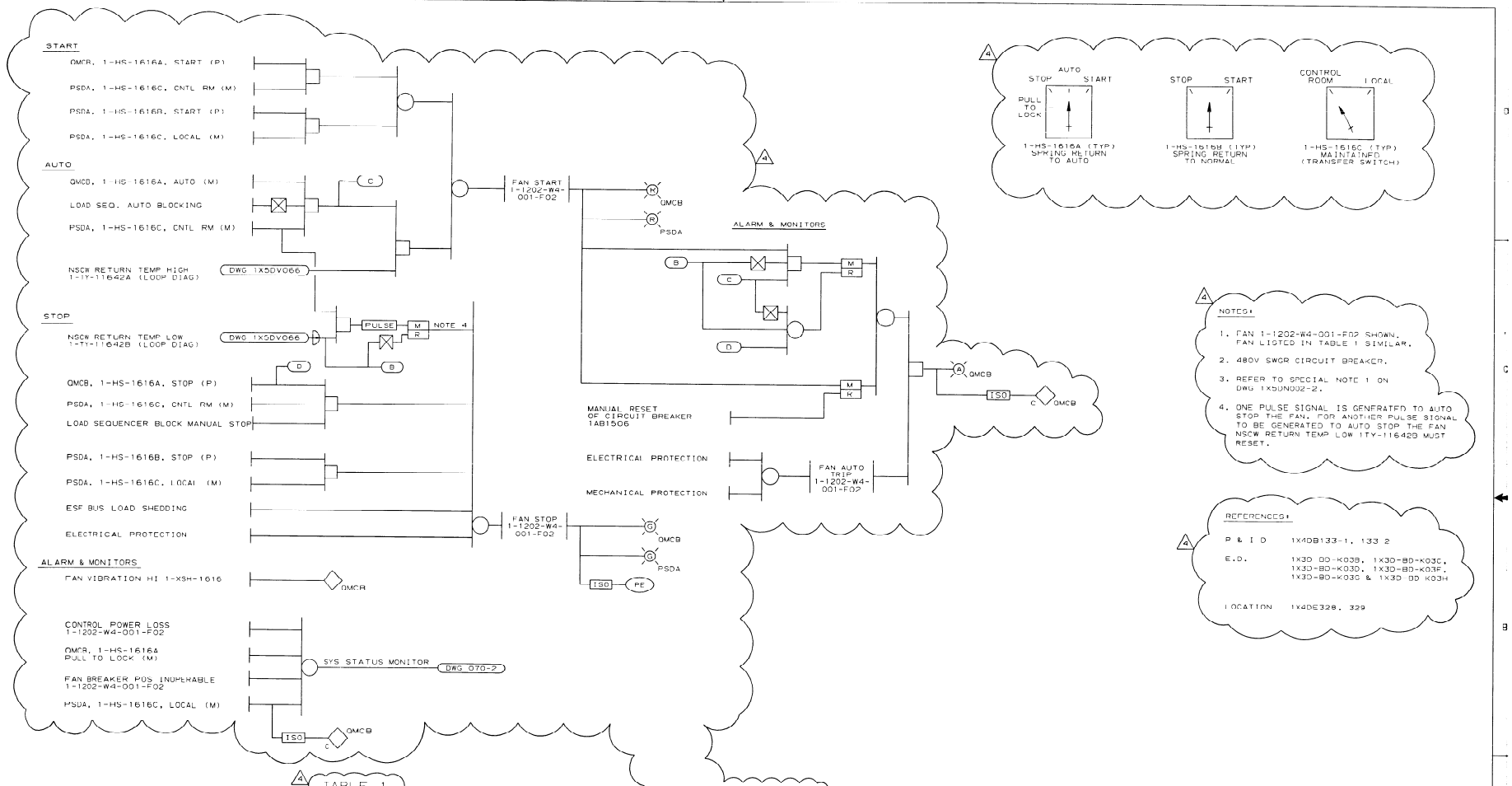
CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING TOWER SYSTEM

NO.	REVISIONS	DATE	DR	CHK	SUPV	EGL	EGS	CHFE	PE	QAE
7	INCORP. ABN-11637.	[illegible]	CIB	[illegible]	[illegible]					
0	ISSUED FOR CONSTRUCTION	2/15/78	SEE MICROFILM FOR SIGNATURES							

ENG. MGR.

SCALE: NONE | JOB NO. 10604 | DRAWING NO. 1X5DN089-1 | REV. 7

SIZE D 22X34



NOTES:

1. FAN 1-1202-W4-001-F02 SHOWN. FAN LISTED IN TABLE 1 SIMILAR.
2. 480V SWGR CIRCUIT BREAKER.
3. REFER TO SPECIAL NOTE 1 ON DWG 1X5DN002-2.
4. ONE PULSE SIGNAL IS GENERATED TO AUTO STOP THE FAN. FOR ANOTHER PULSE SIGNAL TO BE GENERATED TO AUTO STOP THE FAN NSCW RETURN TEMP LOW (TY-11642B MUST RESET.

REFERENCES:

P & I D	1X4DB133-1, 133 2
E.D.	1X3D BD-K03B, 1X3D-BD-K03C, 1X3D-BD-K03D, 1X3D-BD-K03F, 1X3D-BD-K03G & 1X3D-BD-K03H
LOCATION	1X4DE328, 329

TABLE 1

TRAIN	CLG TOWER FANS	SWITCHES			VIBRATION SWITCHES	TEMP SW	LOOP DIAGRAM	CIRCUIT BREAKER
A	1-1202-W4-001-F02	1-HS-1616A	1-HS-1616B	1-HS-1616C	1-XSH-1616	1-TY-11642A/B	1X5DV066	1AB1506
A	1-1202-W4-001-F03	1-HS-1622A	1-HS-1622B	1-HS-1622C	1-XSH-1622	1-TY-11643A/B	1X5DV067	1AB1513
A	1-1202-W4-001-F04	1-HS-1628A	1-HS-1628B	1-HS-1628C	1-XSH-1628	1-TY-11644A/B	1X5DV068	1AB1506
B	1-1202-W4-002-F02	1-HS-1617A	1-HS-1617B	1-HS-1617C	1-XSH-1617	1-TY-11647A/B	1X5DV070	1BB1606
B	1-1202-W4-002-F03	1-HS-1623A	1-HS-1623B	1-HS-1623C	1-XSH-1623	1-TY-11648A/B	1X5DV071	1BB1613
B	1-1202-W4-002-F04	1-HS-1629A	1-HS-1629B	1-HS-1629C	1-XSH-1629	1-TY-11649A/B	1X5DV072	1BB1608

NUCLEAR SAFETY RELATED
NSCW TOWER FANS

Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING TOWER SYSTEM

NO.	REVISIONS	DATE	DR	CHK	RE	DM	DM	DM	PDM	ENG. MGR.
4	INCORP. ADN-11636.	10-22-96	GLO							
3	REVISIONS	2/15/95	SEE MICROFILM FOR SIGNATURES							
2	ISSUED FOR CONSTRUCTION	DATE	DR	CHK	SUPV	CGL	EGS	CHFE	PE	QAE

SCALE: NONE | DRAWING NO. 1X5DN089-2 | REV. 4
JOB NO. 10604
SIZE D 22X34

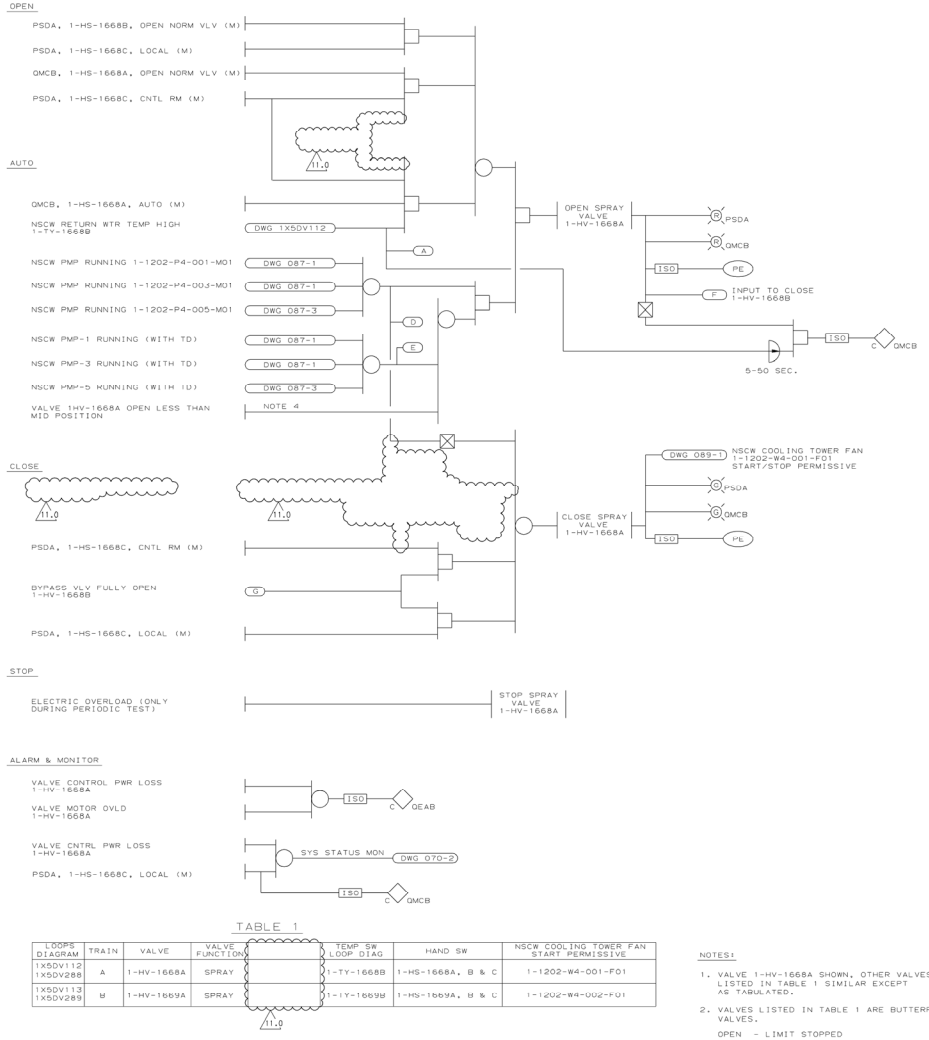


TABLE 1

LOOPS DIAGRAM	TRAIN	VALVE	VALVE FUNCTION	TEMP SW LOOP DIAG	HAND SW	NSCW COOLING TOWER FAN START PERMISSIVE
1X5DV112 1X5DV288	A	1-HV-1668A	SPRAY	1-TY-1668B	1-HS-1668A, B & C	1-1202-W4-001-F01
1X5DV113 1X5DV289	B	1-HV-1669A	SPRAY	1-TY-1669B	1-HS-1669A, B & C	1-1202-W4-002-F01

11.0

NOTES:

1. VALVE 1-HV-1668A SHOWN, OTHER VALVES LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATED.
2. VALVES LISTED IN TABLE 1 ARE BUTTERFLY VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
3. REFER TO SPECIAL NOTE NO. 2 ON DWG 1X5DN002-2.
4. VALVE MID POSITION ANGLE IS:
   10° FOR 1HV-1668A
   7.5° FOR 1HV-1669A

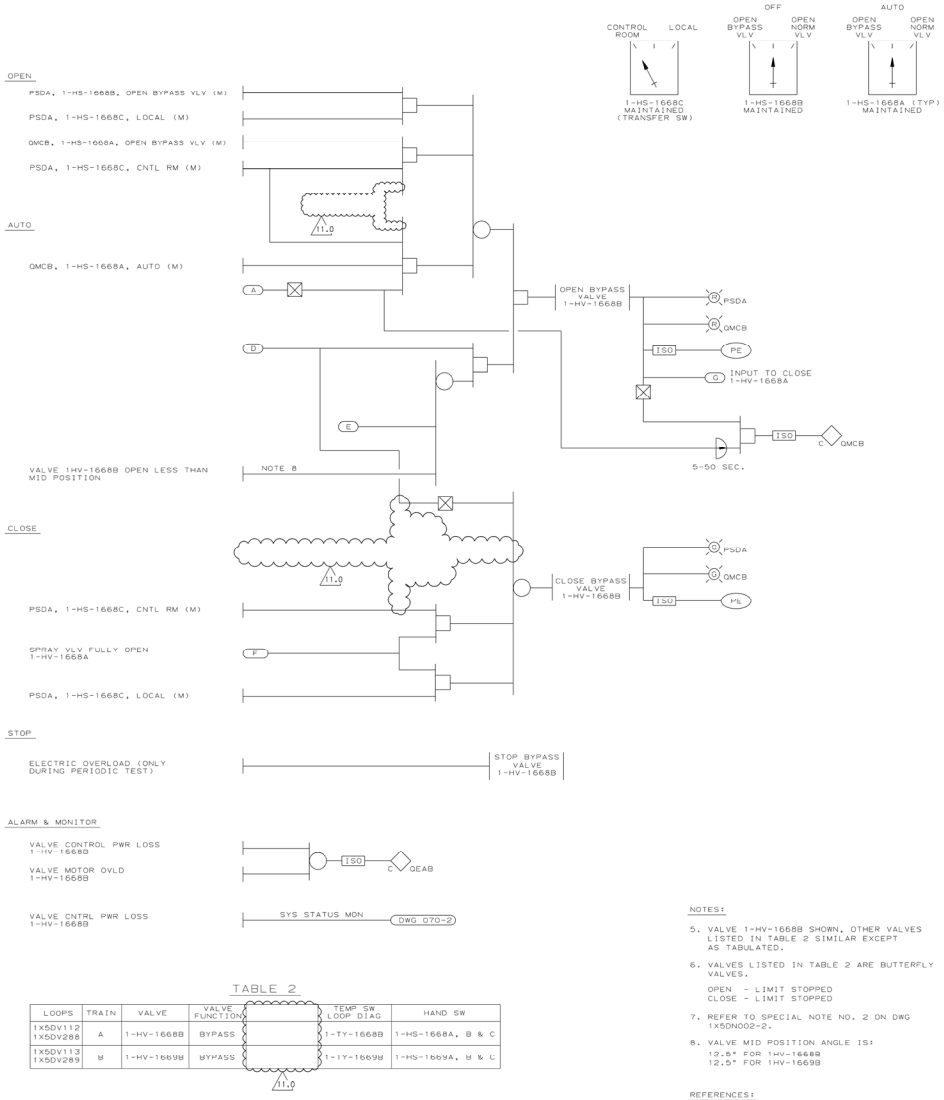


TABLE 2

LOOPS	TRAIN	VALVE	VALVE FUNCTION	TEMP SW LOOP DIAG	HAND SW
1X5DV112 1X5DV288	A	1-HV-1668B	BYPASS	1-TY-1668B	1-HS-1668A, B & C
1X5DV113 1X5DV289	B	1-HV-1669B	BYPASS	1-TY-1669B	1-HS-1669A, B & C

11.0

NOTES:

5. VALVE 1-HV-1668B SHOWN, OTHER VALVES LISTED IN TABLE 2 SIMILAR EXCEPT AS TABULATED.
6. VALVES LISTED IN TABLE 2 ARE BUTTERFLY VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
7. REFER TO SPECIAL NOTE NO. 2 ON DWG 1X5DN002-2.
8. VALVE MID POSITION ANGLE IS:
   12.5° FOR 1HV-1668B
   12.5° FOR 1HV-1669B

REFERENCES:

P & I D 1X4DB133-1, 133-8

E.D. 1X3D-BD-K05U, 1X3D-BD-K05V, 1X3D-BD-K05W, 1X3D-BD-K05X, 1X3D-BD-K03A & 1X3D-BD-K03E

LOOP DIAG. 1X5DV112, 113

LOCATION 1X4DE328, 329

COOLING TOWER SPRAY HEADER VALVES
NUCLEAR SAFETY RELATED Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE
COOLING TOWER SYSTEM

SCALE: NONE | DRAWING NO. 1X5DN089-3 | VER. 11.0

JOB NO.10604

NO.	VERSIONS	DATE	DR	CHK	APPV
11.0	REVISED PER ABN-V01148, VER. 1.0	7-7-08	Vep	ELC	JMR

SIZE E 34x44

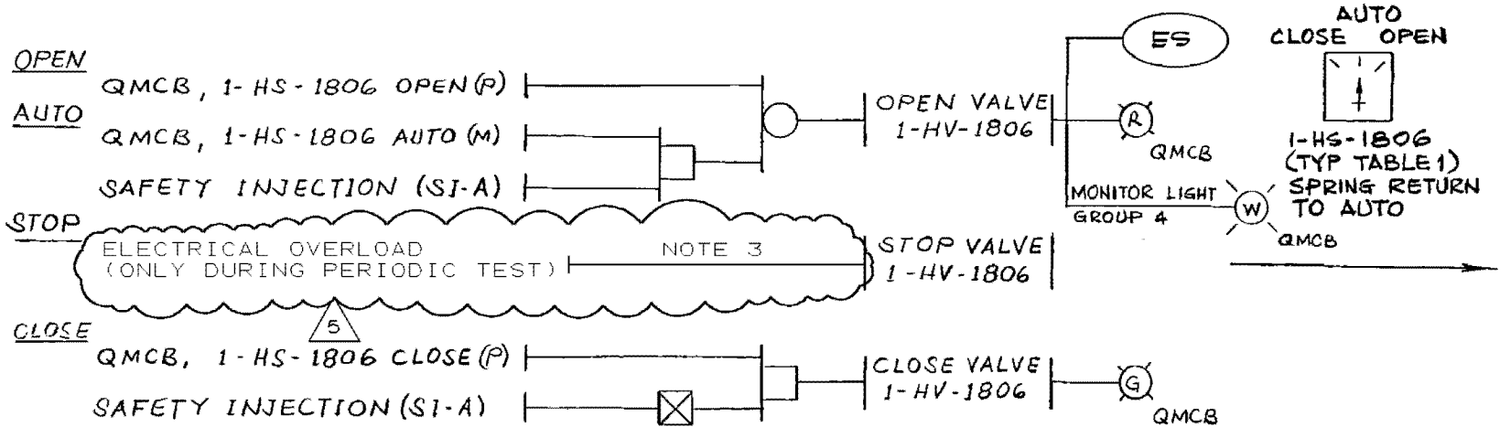


TABLE 1

TRAIN	EQUIPMENT TAG NOS.		SAFETY SIG.
A	1-HS-1806	1-HV-1806	SI-A
B	-1807	-1807	SI-B
A	-1808	-1808	SI-A
B	-1809	-1809	SI-B
A	-1822	-1822	SI-A
B	-1823	-1823	SI-B
A	-1830	-1830	SI-A
B	-1831	-1831	SI-B

MONITOR (TYPICAL FOR TABLE 1)

VALVE CONTROL POWER LOSS 1-HV-1806

SYSTEMS STATUS MONITOR DWG 070-1

VALVE CNTL PWR LOSS 1-HV-1806
VALVE MOTOR OVLD 1-HV-1806

ISO C QEAE

NOTE:

1. VALVES LISTED IN TABLE 1 ARE BUTTERFLY TYPE VALVES
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED

NUCLEAR SAFETY RELATED

CONTAINMENT COOLER ISOLATION VALVE Q

3. REFER TO SPECIAL NOTE 2 ON DWG 1X5DN002-2.

REF. DWGS
P&ID 1X4DB135-1,-2
E.D. 1X3D-BD-K04J,K,N,P,S,T,U,V,W & X

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
△						
△						
5	INCORPORATED PER DCP 95-V1N0035	12/5/97	CD	GLB	WFP	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM NUCLEAR SERVICE COOLING WATER SYSTEM AUXILIARIES AND ALARMS

SCALE: NONE

DRAWING NO. 1X5DN090-1

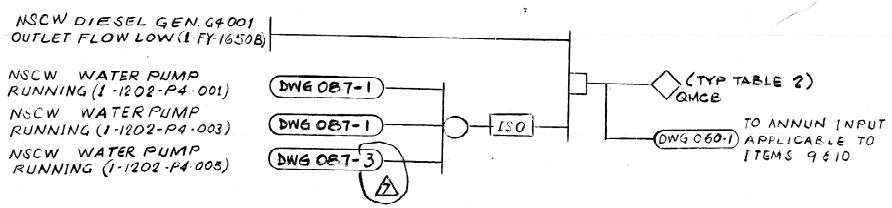
REV 5

JOB NO. 10604

CAD NAME 15DN0901 SIZE B 11x17

14.5K

ALARMS



REF DWGS.
P & I D. 1X4DB133-2, 134, 135-1&2
E.D. 1X3D-BD-K04A #
1X3D-BD-K04F

TABLE 2

ITEM NO.	ANNUN WINDOW LOCATION	SERVICE	FLOW SW	LOOP DIAG	NSCWS PUMP 1-1202- P4-001	P4-003	P4-005
1	QMCB	NSCW DIESEL GEN G4-001	1-FY-1650B	1X5DV082	2	4	6
2		2	1651B	33	2	4	6
3		CNTMT AIR CLR A 7-001/002	1818B	15	1	3	5
4		-003/004	1819B	16	2	4	6
5		-005/006	1820B	17	1	3	5
6		-001/008	1821B	18	2	4	6
7		RX CAVT CLG COIL -001	2132B	19	1	3	5
8		002	2133B	20	2	4	6
9	QHVC	ESF CHLR COND C7-001	1-FIS-1804	185	1	3	5
10		2	1803	186	2	4	6
11	QMCB	RHR PMP & MTR COOLER	1-FS-1746	—	1	3	5
12			1747	—	2	4	6

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.	
5	CORRECTED TAG #'S	12-13-84	HCV	[illegible]							ENG. MGR.
4	CORRECTED TAG NOS PER DCN E3 ON P&ID 134	9-11-84	EJL	HCV	X			X		X	
3	INCORPORATED DCN #1	1/21/87	ALV	[illegible]							DATE
2	ISSUED FOR CONSTRUCTION	12/3/86	HL	FAL	MKK						

BM 9510 P&ID 133-2 REV. 134 REV. P&ID 135-1 REV. 135-2 REV.

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ALARMS

BECHTEL
LOS ANGELES

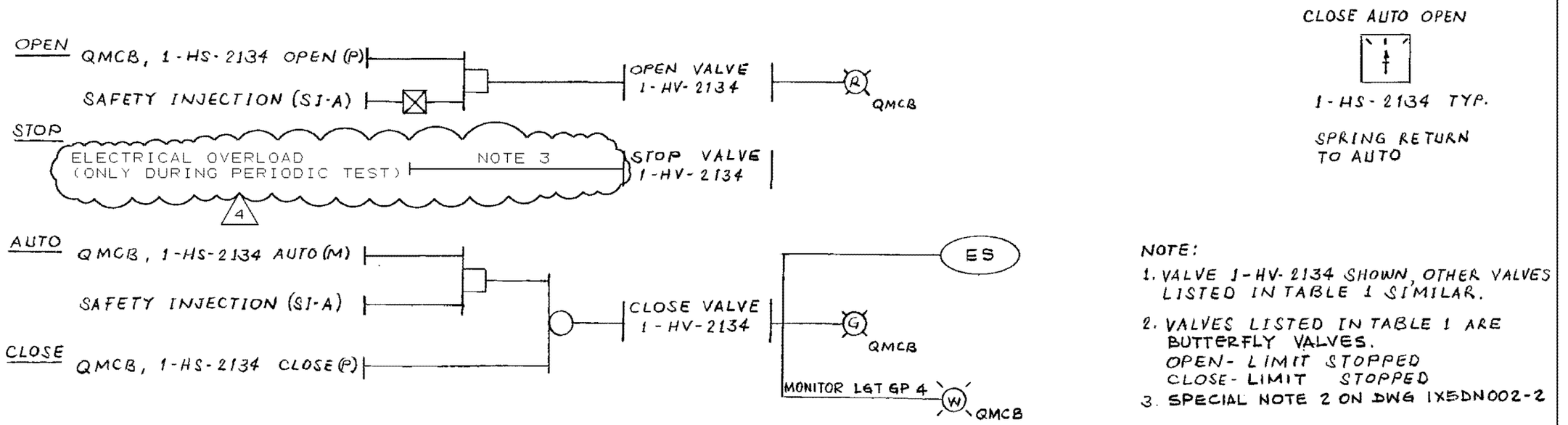
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE COOLING WATER
SYSTEM AUXILIARIES AND ALARMS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN090-2	7

SIZE B 11 x 17

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
DATE: 1-26-87 CAMERA OPERATOR SECTION SUPERVISOR



CLOSE AUTO OPEN

1-HS-2134 TYP.

SPRING RETURN TO AUTO

NOTE:

1. VALVE 1-HV-2134 SHOWN, OTHER VALVES LISTED IN TABLE 1 SIMILAR.
2. VALVES LISTED IN TABLE 1 ARE BUTTERFLY VALVES.
   OPEN- LIMIT STOPPED
   CLOSE- LIMIT STOPPED
3. SPECIAL NOTE 2 ON DWG 1X5DN002-2

MONITOR & ALARM

VALVE 1-HV-2134 CONTROL POWER LOSS — SYSTEMS STATUS MONITOR — DWG 070-1

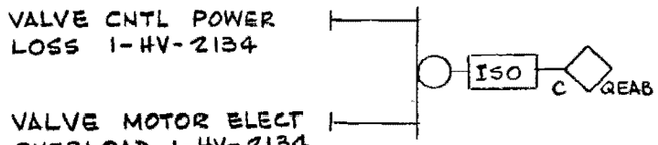
REF. DWGS.

P&ID 1X4DB135-1,2

E.D. 1X3D-BD-K04Q, K04R, K04L & K04M

TABLE 1

TRAIN	VALVE	SWITCH	SAFETY SIG
A	1-HV-2134	1-HS-2134	SI-A
B	-2135	-2135	SI-B
A	-2138	-2138	SI-A
B	-2139	-2139	SI-B



NUCLEAR SAFETY RELATED

REACTOR CAVITY AND CRDM COOLING COIL ISOLATION VALVES Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM NUCLEAR SERVICE COOLING WATER SYSTEM AUXILIARIES AND ALARMS

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4	INCORPORATED PER DCP 95-V1N0035	12/5/97	CD	GLB	WFP	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE

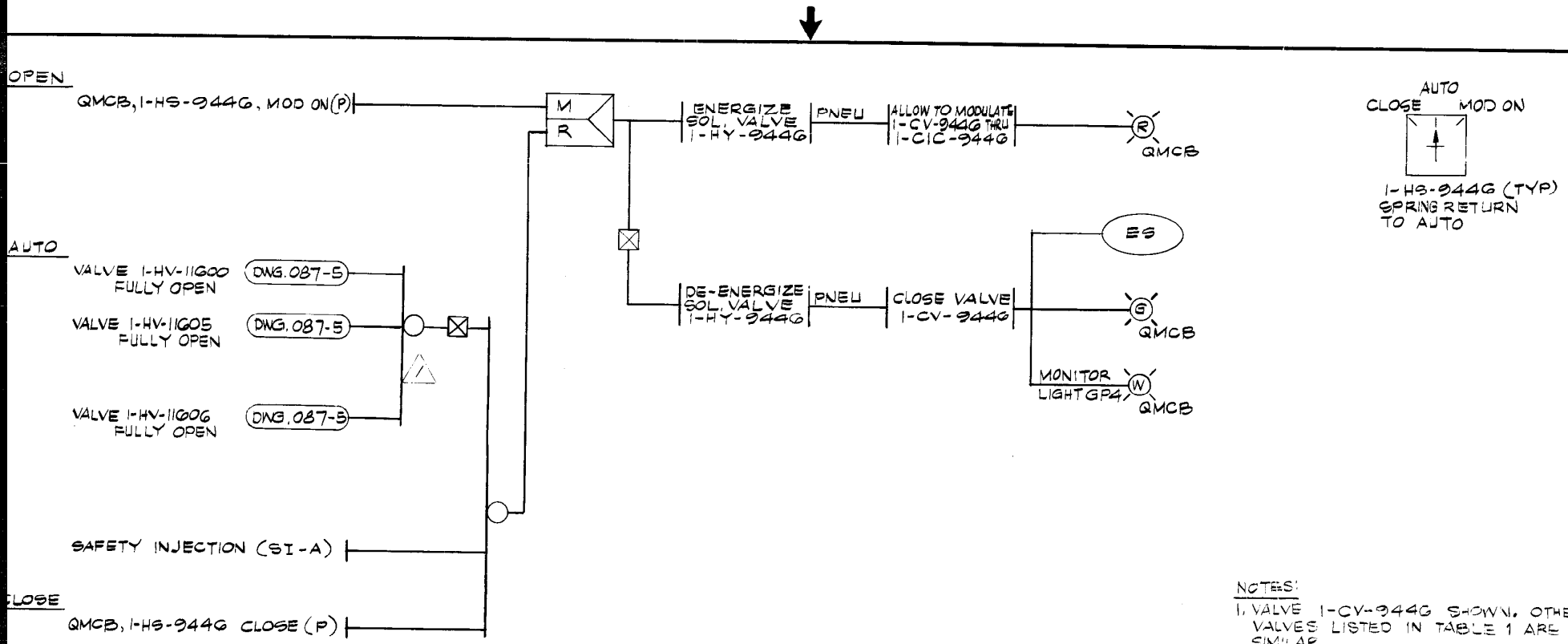
JOB NO. 10604

DRAWING NO. 1X5DN090-3

REV 4

CAD NAME 15DN0903

SIZE B 11x17



NOTES:
1. VALVE 1-CV-9446 SHOWN. OTHER VALVES LISTED IN TABLE 1 ARE SIMILAR.

REF. DWGS.:
P&ID 1X4DB133-1,2
E.D. 1X3D-BD-K04J,K

TABLE 1

TRAIN	SWITCH	VALVE	SOL. VALVE NOS.	SFTY SIG.	CONTR.	NSCW DISCH. VALVES
A	1-HS-9446	1-CV-9446	1-HY-9446	SI-A	1-CIC-9446	1-HV-11600, 11605, 11606
B	↓ -9447	↓ -9447	↓ -9447	SI-B	↓ -9447	1-HV-11607, 11612, 11613

2

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.	ENG. MGR.
3	DELETED NOTE PER DCN #1	1/21/87	ALV								DATE
2	CHANGED RESET LOGIC, ADDED NOTES.	1-7-86	ZEP	ALV							
1	ISSUED FOR CONSTRUCTION	3/29/85	ZEP								

NSCW TOWER BLOWDOWN VALVE "Q"

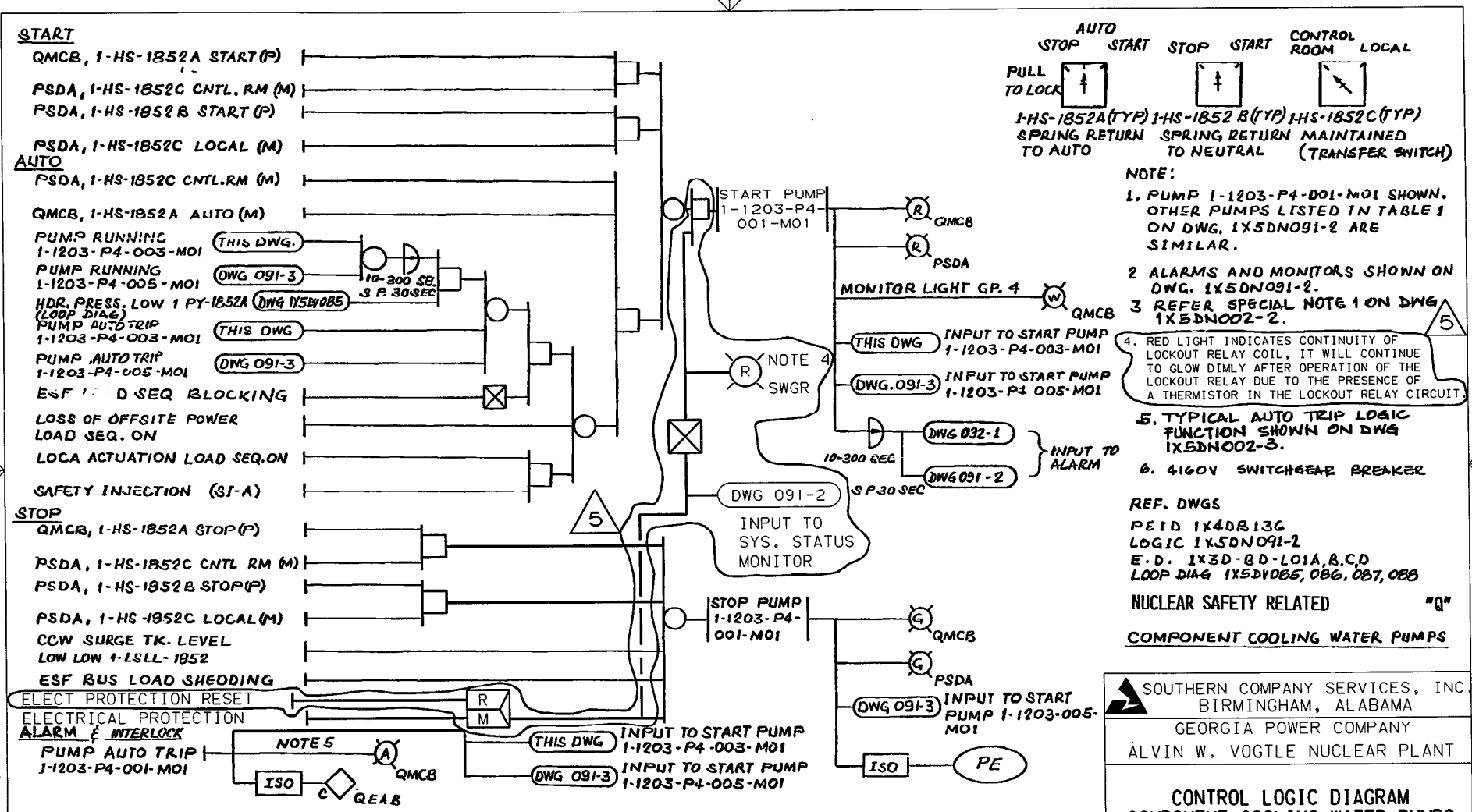
BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
NUCLEAR SERVICE COOLING WATER
SYSTEM AUXILIARIES AND ALARMS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN090-6	2

BM 9510



NO	REVISIONS	DATE	DR	CHK	APPV	DTL
5	INCORP. ABN-21051	11/30/95	MWD	WLM	EDZ	
0	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES			

ENG MGR

DATE

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM COMPONENT COOLING WATER PUMPS

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN091-1	5

ALARMS

PUMP RUNNING 1-1203-P4-001-M01 (DWG 091-1)
HEADER PRESS LOW 1-PY-1852B (LOOP DIAG) (DWG 1X5DN085)
→ ISO → C → QMCB

CCW SURGE TANK LEVEL LOW LOW (1-LSLL-1852)
→ ISO → C → QMCB

PSDA, 1-HS-1852C LOCAL, (M)
→ ISO → C → QMCB

MONITORS

ELECT. PROT. BRKR. LOCKOUT 1-1203-P4-001-M01 (DWG 091-1) — 3
PSDA, 1-HS-1852C, LOCAL (M)
CONTROL POWER LOSS 1-1203-P4-001-M01
QMCB, 1-HS-1852A PULL TO LOCK (M)
PUMP BREAKER INOPERABLE POSITION 1-1202-P4-001-M01
→ SYSTEM STATUS MONITOR (DWG 070-3)

NOTE:
1. TYPICAL ALARMS AND MONITORS SHOWN, OTHER DEVICES LISTED IN TABLE 1 AND 2 SIMILAR.
2. TABLE 1 LOGIC SHOWN ON DWG. 1X5DN091-1 AND TABLE 2 LOGIC SHOWN ON DWG. 1X5DN091-3.

TABLE 1

TRAIN	PUMP NO. (1-1203-)	SAFETY ACT. SIG.	SWITCHES			PRESS SW LOOP DIAG	LEVEL SW	PUMP START/OVLD. (1-1203-)	
A	P4-001-M01	SI-A	1-HS-1852A	1-HS-1852B	1-HS-1852C	1-PY-1852A/B	1-LSLL-1852	P4-003-M01	P4-005-M01
B	P4-002-M01	SI-B	1853A	1853B	1853C	1853A/B	-1853	P4-004-M01	P4-006-M01
A	P4-003-M01	SI-A	1854A	1854B	1854C	1854A/B	1854	P4-001-M01	P4-005-M01
B	P4-004-M01	SI-B	1855A	1855B	1855C	1855A/B	1855	P4-002-M01	P4-006-M01

TABLE 2

TRAIN	PUMP NO. (1-1203-)	SAFETY ACT. SIG	SWITCHES			PRESS SW LOOP DIAG	LEVEL SW	PUMP START/OVLD. (1-1203-)	
A	P4-005-M01	SI-A	1-HS-1856A	1-HS-1856B	1-HS-1856C	1-PY-1856A/B	1-LSLL-1856	P4-001-M01	P4-003-M01
B	P4-006-M01	SI-B	1857A	1857B	1857C	1857A/B	1857	P4-002-M01	P4-004-M01

REF. DWGS
P&ID 1X4DB136
LOGIC 1X5DN091-1, 091-3
E.D 1X3D-BD-LO1A,B,C,D,E,F
LOOP DIAG 1X5DV085, 086, 087, 088, 089, 090

NUCLEAR SAFETY RELATED

ALARMS, MONITOR AND EQPT. LIST "Q"

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
3	INCORP. ABN-21052	11/29/95	MWD	WLM	EBL	
2	REVISIONS					
1	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES			
0	REVISIONS	DATE	DR			

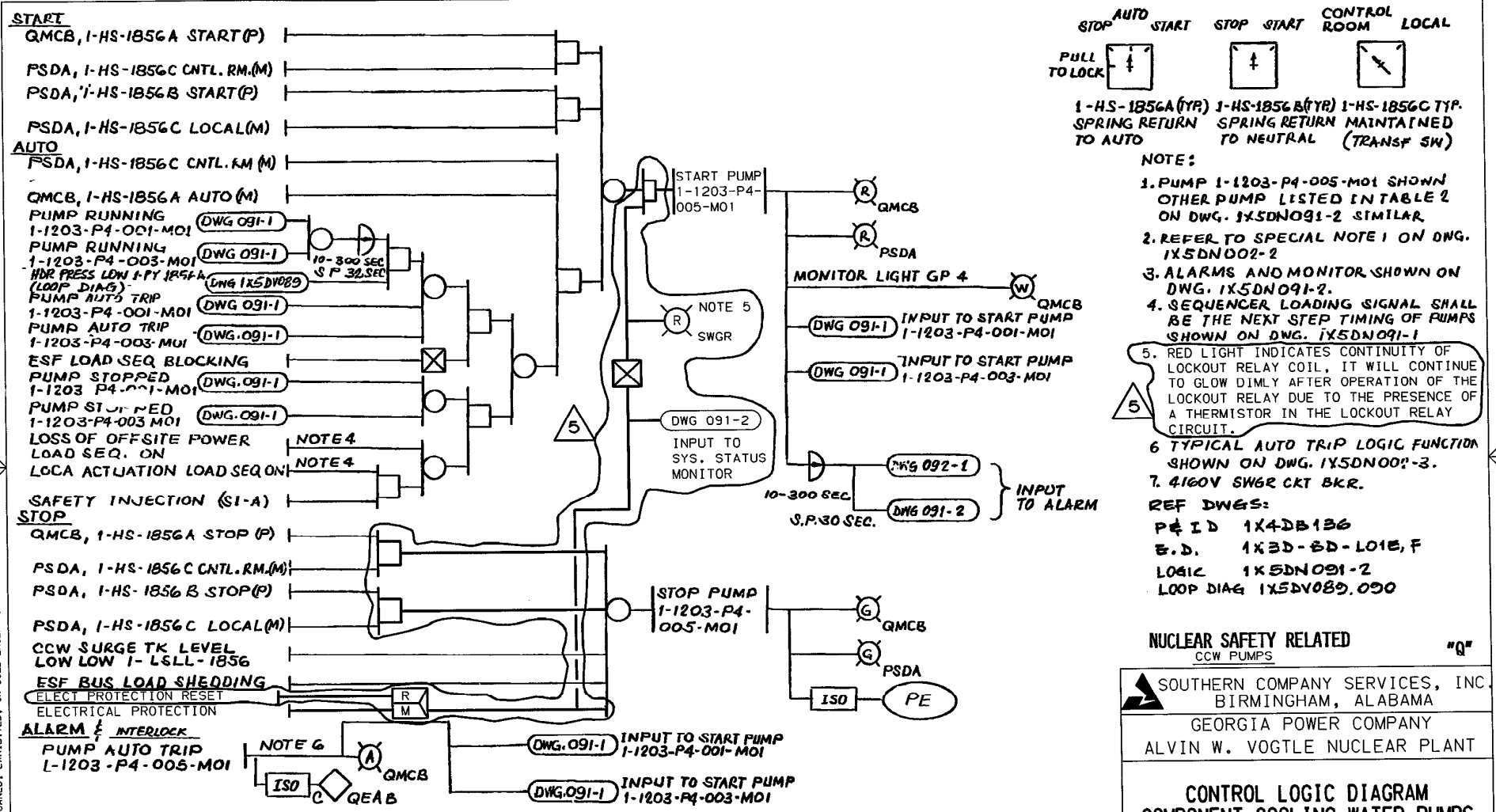
ENG MGR
DATE

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM COMPONENT COOLING WATER PUMPS

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X5DN091-2
REV 3



STOP AUTO START STOP START CONTROL ROOM LOCAL

PULL TO LOCK

1-HS-1856A (TYP) SPRING RETURN TO AUTO

1-HS-1856B (TYP) SPRING RETURN TO NEUTRAL

1-HS-1856C TYP. MAINTAINED (TRANSF SW)

NOTE:

1. PUMP 1-1203-P4-005-M01 SHOWN OTHER PUMP LISTED IN TABLE 2 ON DWG. 1X5DN091-2 SIMILAR.
2. REFER TO SPECIAL NOTE 1 ON DWG. 1X5DN002-2
3. ALARMS AND MONITOR SHOWN ON DWG. 1X5DN091-2.
4. SEQUENCER LOADING SIGNAL SHALL BE THE NEXT STEP TIMING OF PUMPS SHOWN ON DWG. 1X5DN091-1
5. RED LIGHT INDICATES CONTINUITY OF LOCKOUT RELAY COIL, IT WILL CONTINUE TO GLOW DIMLY AFTER OPERATION OF THE LOCKOUT RELAY DUE TO THE PRESENCE OF A THERMISTOR IN THE LOCKOUT RELAY CIRCUIT.
6. TYPICAL AUTO TRIP LOGIC FUNCTION SHOWN ON DWG. 1X5DN002-3.
7. 4160V SWGR CKT BKR.

REF DWGS:

P & I D 1X4DB136

E.D. 1X3D-BD-L01E, F

LOGIC 1X5DN091-2

LOOP DIAG 1X5DV089, 090

NUCLEAR SAFETY RELATED "Q"

CCW PUMPS

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM COMPONENT COOLING WATER PUMPS

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
5	INCORP. ABN-21053	11/30/95	MWD	WLM	EOZ	
4	REVISIONS	DATE	DR			
0	ISSUED FOR CONSTRUCTION		SEE MICROFILM FOR SIGNATURES			

ENG MGR

DATE

SCALE: NONE

JOB NO. 10604

DRAWING NO. 1X5DN091-3

REV 5

OPEN — QMCB, 1-HS-1850 OPEN (M)

AUTO — QMCB, 1-HS-1850 AUTO (M)

CCW SURGE TANK LEVEL LOW 1-LSL-1850

→ OPEN VALVE 1-LV-1850 → (R) QMCB

STOP — TORQUE PROTECTION

ELECTRICAL OVERLOAD

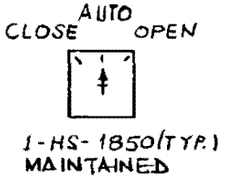
→ STOP VALVE 1-LV-1850

CLOSE — QMCB, 1-HS-1850 CLOSE (M)

AUTO — QMCB, 1-HS-1850 AUTO (M)

CCW SURGE TANK LEVEL HIGH 1-LSH-1850

→ CLOSE VALVE 1-LV-1850 → (G) QMCB



1-HS-1850 (TYP.)
MAINTAINED

TABLE 1

VALVE	SWITCH	LEVEL SW	
1-LV-1850	1-HS-1850	1-LSH-1850	1-LSL-1850
↓ 1851	↓ 1851	↓ 1851	↓ 1851

NOTE:

1. VALVE 1-LV-1850 SHOWN, 1-LV-1851 SIMILAR.
2. VALVE LISTED IN TABLE 1 ARE GATE VALVES
   OPEN - LIMIT STOPPED
   CLOSE - TORQUE STOPPED

ALARMS

CCW SURGE TANK LEVEL LOW 1-LSL-1850 → ◇ QMCB

RHR HEAT EXH TRN A CCW FLOW LOW 1-FSHL-1928 (4) → ISO → QMCB

CCW PMPS DISCH HDR FLOW LOW 1-FY-1876 → 1X5DV026 → ISO → QMCB

RHR PUMP GLAND HEAT EXCH. CCW FLOW LOW 1-FSL-1936

PUMP RUNNING 1-1203-P4-001-M01 → DWG. 091-1

PUMP RUNNING 1-1203-P4-003-M01 → DWG 091-1

PUMP RUNNING 1-1203-P4-005-M01 → DWG. 091-3

→ ISO → QMCB

FLOW SW	PUMP	FLOW SW
1-FSHL-1928	1-1203-P4-001-M01	
1-FSL-1936	-003	1-FY-1876 (LOOP DIAG 026)
	-005	
1-FSHL-1929	-002	
1-FSL-1937	-004	1-FY-1877 (LOOP DIAG 027)
	-006	

(4)

REF. DWG.

P&ID 1X4DB136 & 137

E.D. 1X3D-BD-L016, L01K, L01A, L01E

LOOP DIAG 1X5DN026, 027

NORMAL MAKE-UP VALVE

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	R.E.	Q.A.E.	
3	ADDED ALARM INPUT PER P&ID 137 DCN 11	8-3-92	HT	FAL		RCG					ENG. MGR.
2	ADDED ALARM INPUT AND REVISED AS INDICATED	7-9-91	FAL	V.V.		PCG					
1	INCORPORATED DCN #1	2-26-91	RBR	ALJ							DATE
0	ISSUED FOR CONSTRUCTION	1-12-17	HL	FAL	MKK						

BECHTEL
LOS ANGELES

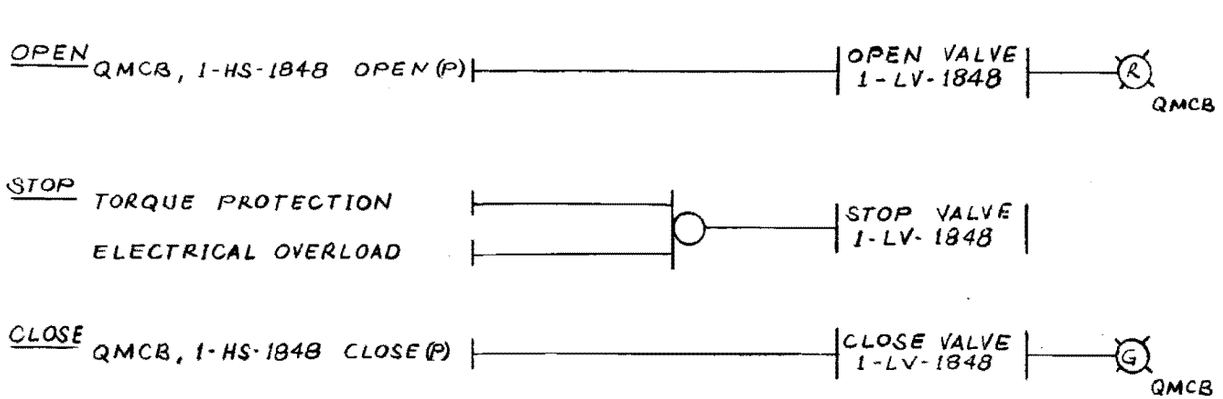
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

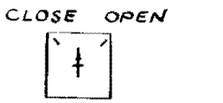
CONTROL LOGIC DIAGRAM
COMPONENT COOLING SYSTEM
AUXILIARIES AND ALARMS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN092-1	4

P&ID 136 REV. 2
137 REV. 7 DCN 11

SIZE B 11 x 17





1-HS-1848 (TYP.)

SPRING RETURN TO NEUTRAL

NOTE:

1. VALVE 1-LV-1848 SHOWN. 1-LV-1849 SIMILAR.
2. VALVES LISTED IN TABLE 1 ARE GATE VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - TORQUE STOPPED

TABLE 1

VALVE	SWITCH
1-LV-1848	1-HS-1848
↓ 1849	↓ 1849

REF. DWGS
P&ID 1X4DB136
E.D. 1X3D-BD-L01H, L01M

SCAN ID DATE

BACK-UP MAKE-UP VALVE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
COMPONENT COOLING SYSTEM
AUXILIARIES AND ALARMS

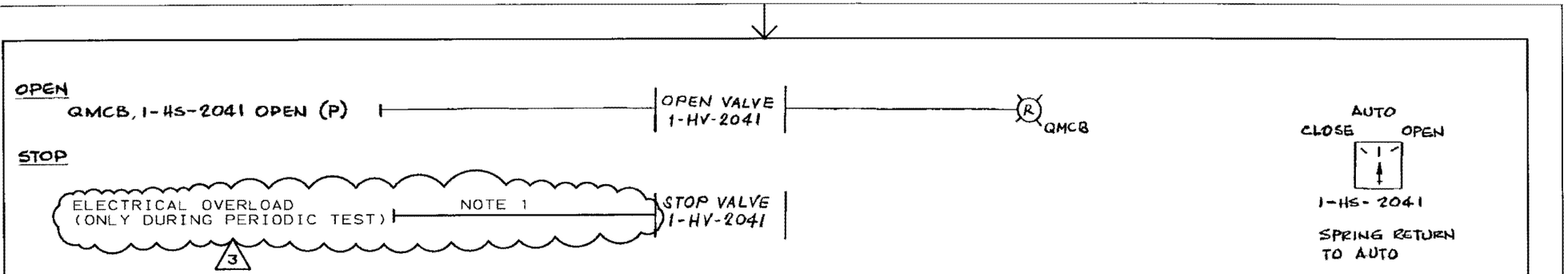
NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.
2										
1										
1	ADDED REF DWGS.	3-18-80	HL	FAL						
0	ISSUED FOR CONSTRUCTION	1-12-79	HL	FAL	MKK					

ENG. MGR.
DATE

SCALE: NONE
JOB NO. 9510
DRAWING NO. 1X5DN092-2
REV. 1

BM 9510

SIZE B 11 x 17



NOTE:

1. REFER TO SPECIAL NOTE 2 ON DWG 1X5DN002-2
2. VALVE IS A GATE VALVE
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
3. VALVE 1-HV-2041 POWERED FROM TRAIN B

REF DWGS
P&ID 1X4DB138-2
E.D. 1X3D-BD-L03P
LOOP DIAG 1X5DV060

NUCLEAR SAFETY RELATED "Q"

REACTOR COOLANT PUMPS THERMAL BARRIER ACCWS OUTLET HEADER VALVE

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
3	INCORP. PER DCP 95-V1N0022.	9/23/96	CD	[illegible]	SM	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

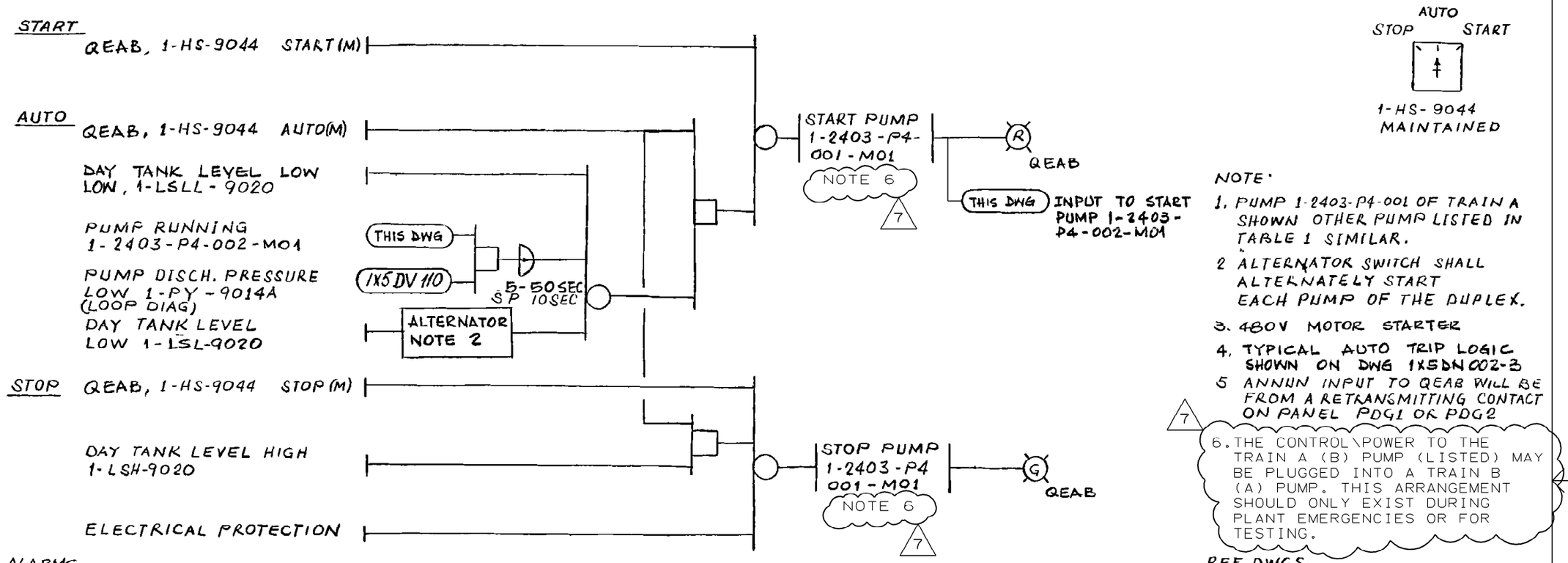
CONTROL LOGIC DIAGRAM AUXILIARY COMPONENT COOLING WATER AUXILIARIES

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN094-3	3

CAD NAME ~~15N94003~~ SIZE B 11x17

k:\vog\abn\incorp\dom\15n94003.dgn Sep. 21, 1996 14:40:34

15DN0943



ALARMS

PUMP AUTO TRIP 1-2403-P4-001-M01 — NOTE 4 — A — QEAB; ISO — C — QEAB

CONTROL POWER LOSS 1-2403-P4-001-M01
QEAB, 1-HS-9044 STOP(M)
SYS STATUS MONITOR — DWG 070-12

STORAGE TANK LEVEL HIGH, 1-LIS-9022
STORAGE TANK LEVEL LOW, 1-LIS-9022
NOTE 5 — QEAB; PDG2

DAY TANK LEVEL HIGH, 1-LSHL-9018
DAY TANK LEVEL LOW 1-LSHL-9018
NOTE 5 — QEAB; PDG2

NOTE:

1. PUMP 1-2403-P4-001 OF TRAIN A SHOWN OTHER PUMP LISTED IN TABLE 1 SIMILAR.
2. ALTERNATOR SWITCH SHALL ALTERNATELY START EACH PUMP OF THE DUPLEX.
3. 480V MOTOR STARTER
4. TYPICAL AUTO TRIP LOGIC SHOWN ON DWG 1X5DN002-3
5. ANNUN INPUT TO QEAB WILL BE FROM A RETRANSMITTING CONTACT ON PANEL PDG1 OR PDG2
7
6. THE CONTROL\POWER TO THE TRAIN A (B) PUMP (LISTED) MAY BE PLUGGED INTO A TRAIN B (A) PUMP. THIS ARRANGEMENT SHOULD ONLY EXIST DURING PLANT EMERGENCIES OR FOR TESTING.

REF. DWGS.
P&ID 1X4DB170-1,170-2
E D 1X3D-BH-G01X, G01Z, G02B & G02D
LOOP DIAG. 1X5DV110,111,106 & 107

NUCLEAR SAFETY RELATED "Q"

FUEL OILSTORAGE TK PUMP

TABLE 1

TRN	PANEL	PUMP	SWITCH	DAY TK. LEVEL SW.	STOR. TK. LEVEL SW.	PRESS. SW. (LOOP DIAG)
A	PDG2	1-2403-P4-001-M01	1-HS-9044	1-LSHL-9018	1-LIS-9022	1-PY-9014A
		-002	-9046	1-LSH, 1-LSL, 1-LSLL 9020		9014B
B	PDG4	003	9045	1-LSHL-9019	1-LIS-9023	9015A
		004	9047	1-LSH, 1-LSL, 1-LSLL 9021		9015B

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
7	INCORP. PER DCP 99-V1N0058	12/22/03	JGM	TSL	DEW	X

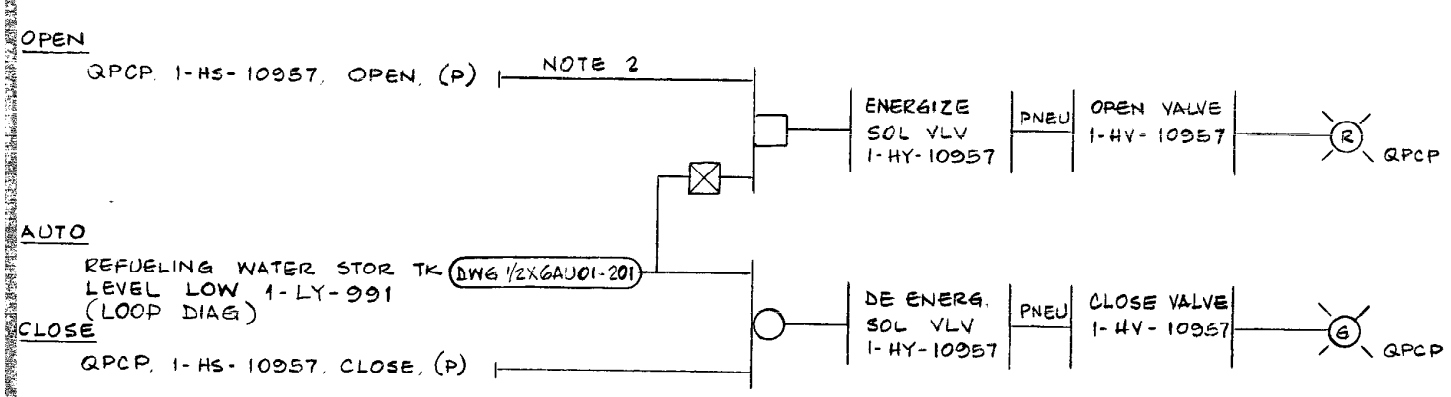
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

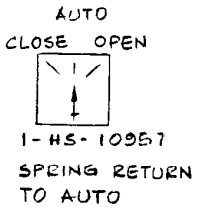
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM DIESEL GENERATOR FUEL OIL SYSTEM

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN107-1	7

SIZE B 11x17





NOTE:

1. VALVE 1-HV-10957 SHOWN VALVES LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATE
2. HAND SWITCH SHALL BE HELD IN OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH

REF. DWGS.

P&ID 1X4DB121

E.D. 1X3D-BD-D058 (4)

LOOP DIAG 1/2XGAU01-201

TABLE 1.

TRAIN	VALVE	HAND SWITCH	LEVEL SWITCH (LOOP DIAG)	SOLENOID VALVE
B	1-HV-10957	1-HS-10957	1-LY-991	1-HY-10957
A	↓ 10958	↓ 10958	↓ 990	↓ 10958

(2)

NUCLEAR SAFETY RELATED

ISOLATION VALVES "Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.	ENG. MGR.
2	ADDED SOLENOID VALVES TO TABLE 1	2-8-85	AS	ALV							
1	ADDED REF. DWG	7-9-81	FAL	V.V							DATE
0	ISSUED FOR CONSTRUCTION	12-6-79	HL	FAL							

BECHTEL LOS ANGELES

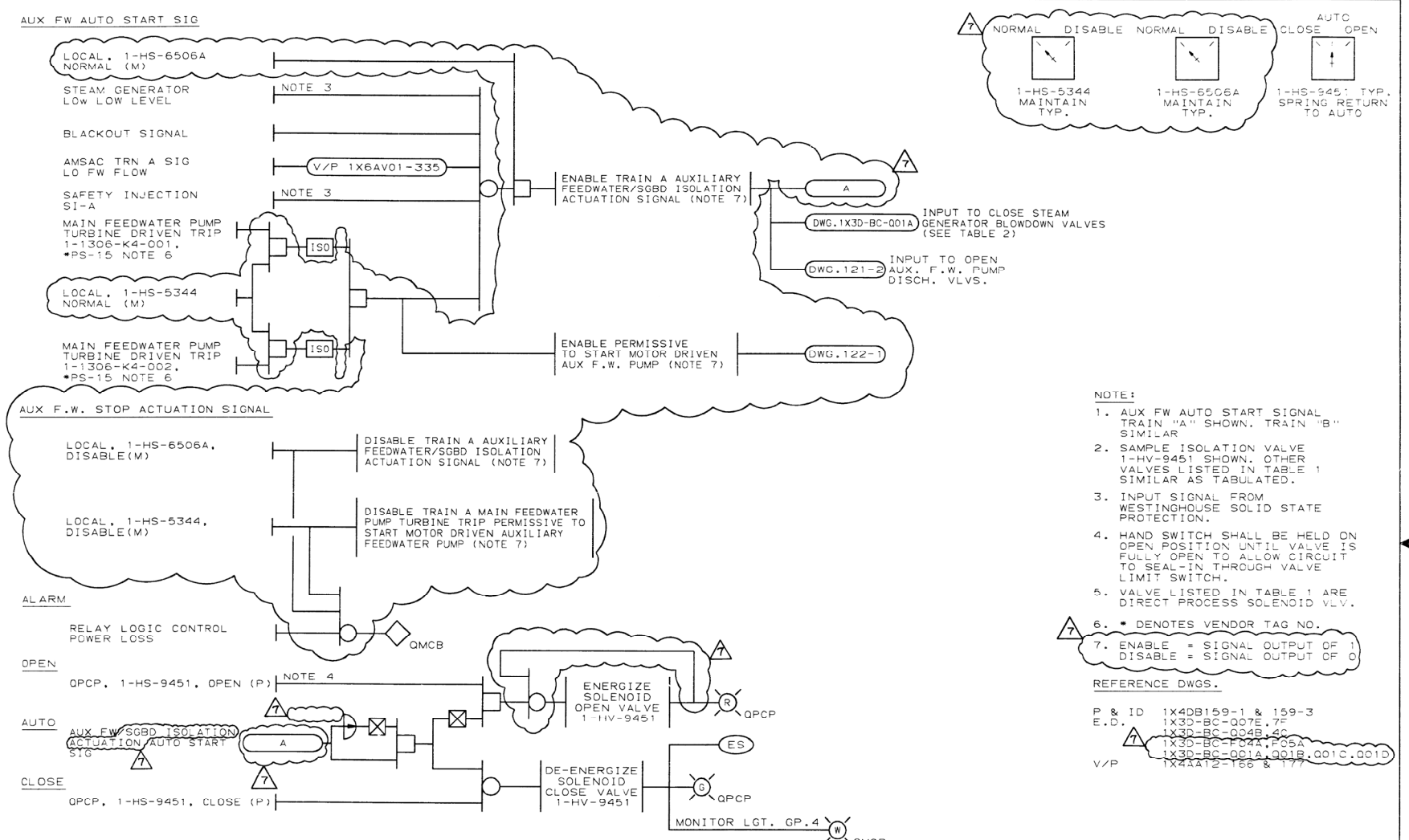
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
REFUELING WATER SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN114-4	2

SIZE B 11 x 17

BM 9510



NOTE:

1. AUX FW AUTO START SIGNAL TRAIN "A" SHOWN. TRAIN "B" SIMILAR
2. SAMPLE ISOLATION VALVE 1-HV-9451 SHOWN. OTHER VALVES LISTED IN TABLE 1 SIMILAR AS TABULATED.
3. INPUT SIGNAL FROM WESTINGHOUSE SOLID STATE PROTECTION.
4. HAND SWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL-IN THROUGH VALVE LIMIT SWITCH.
5. VALVE LISTED IN TABLE 1 ARE DIRECT PROCESS SOLENOID VLV.
6. * DENOTES VENDOR TAG NO.
7. ENABLE = SIGNAL OUTPUT OF 1
   DISABLE = SIGNAL OUTPUT OF 0

REFERENCE DWGS.

P & ID 1X4DB159-1 & 159-3
E.D. 1X3D-BC-Q07E,7F
1X3D-BC-Q04B,4C
1X3D-BC-F04A,F05A
1X3D-BC-Q01A,Q01B,Q01C,Q01D
V/P 1X4AA12-166 & 177

TABLE 1

TRAIN	VALVE	HAND SW.
A	1-HV-9451	1-HS-9451
B	9452	9452
B	9453	9453
A	9454	9454

TABLE 2

SOL VLV TRAIN A	SOL VLV TRAIN B	SG. BLOW DOWN VALVES	E/D
1-HY-7603E	1-HY-7603J	1-HV-7603A	1X3D-BC-Q01A
F	K	B	-Q01B
G	L	C	-Q01C
H	M	D	-Q01D

TABLE 3

TRAIN	SAFETY RELATED HAND SWITCH	NON-SAFETY RELATED HAND SWITCH
A	1-HS-6506A	1-HS-5344
B	1-HS-6506B	1-HS-5345

AUX FW AUTO SIG & STM GEN SAMPLE ISO VLV

NUCLEAR SAFETY RELATED Q

NO.	REVISIONS	DATE	DR	CHK	SUPV	EGL	EGS	CHFE	PE	QAE
4	INCORP. ABN-11574.	10-22-93	CIB	MJD						
3	REVISIONS	DATE	DR	CHK	RE	DM	DM	DM	PDM	
2	ISSUED FOR CONSTRUCTION	3/9/79	SEE MICROFILM FOR SIGNATURES							
1	REVISIONS	DATE	DR	CHK	SUPV	EGL	EGS	CHFE	PE	QAE

ENG. MGR. / DATE

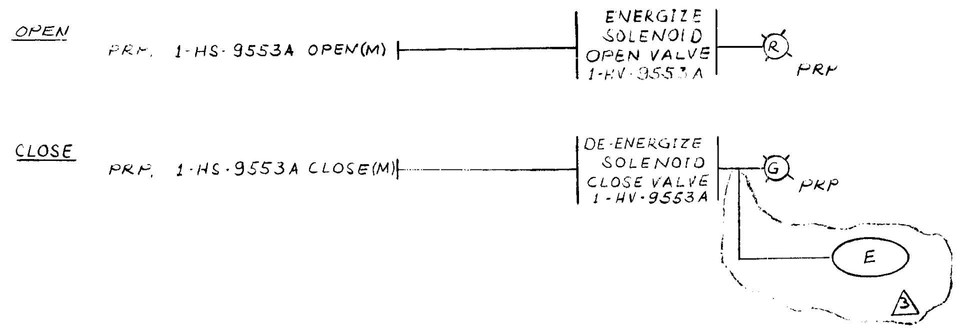
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

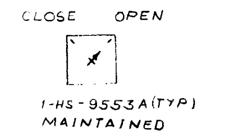
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
STEAM GENERATOR BLOWDOWN
AND SAMPLE SYSTEM

SCALE: NONE | DRAWING NO. 1X5DN117-1 | REV. 7
JOB NO. 10604

SIZE C 17X22





NOTE:
1. PROCESS SOLENOID VALVE 1-HV-9553A SHOWN. OTHER SOLENOID VALVES LISTED IN TABLE 1 ARE SIMILAR.

REF. DWGS
P&ID 1X4DB159-1 & 159-3
E.D. 1X3D-BC-Q035,T

TABLE 1

VALVE	CNTL. SW.
1-HV-9553A	1-HS-9553A
9553B	9553B
9554A	9554A
9554B	9554B
9555A	9555A
9555B	9555B
9556A	9556A
9556B	9556B

SAMPLING VALVES

NO.	REVISIONS	DATE	DR	CHK.	SUP'V.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
3	SHOWN COMP INPUT PER I/O LIST REV 5 (NO PHYSICAL IMPACT)	3/27/85	ZEP	AIV						
2	REVISED REF. DWGS	12-8-81	AL	FAL						
1	CHANGED REF DWGS	1-10-80	HL	FAL						
0	ISSUED FOR CONSTRUCTION	3-9-79	NED	FAL	MKK					

ENG. MGR.
DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
STEAM GENERATOR BLOWDOWN
AND SAMPLE SYSTEM

SCALE: NONE
JOB NO. 9510
DRAWING NO. 1X5DN117-2
REV. 3

SIZE B 11x17

BM 9510 P&ID 159-1 REV -3

9 8 7 6 5 4 3 2 1

OPEN — QPCP, 1-HS-5194, OPEN, (P) — NOTE 2 — ENERGIZE SOL VALVE 1-HY-5194 — PNEU — OPEN VALVE 1-HV-5194 — (R) QPCP

CLOSE — QPCP, 1-HS-5194, CLOSE (P) — DE-ENERGIZE SOL VALVE 1-HY-5194 — PNEU — CLOSE VALVE 1-HV-5194 — (G) QPCP, (E), (3)

CLOSE OPEN

1-HS-5194 (TYP)

SPRING RETURN TO NEUTRAL

NOTE:

1. VALVE 1-HV-5194 SHOWN, OTHER VALVES LISTED IN TABLE 1 ARE SIMILAR.
2. HAND SWITCH SHALL BE HELD IN OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE LIMIT SWITCH.

TABLE 1

SERVICE	HAND SWITCH	SOL VALVE	VALVE
CHEMICAL FEED	1-HS-5194	1-HY-5194	1-HV-5194
	5	5	5
	6	6	6
	7	7	7
WET LAYUP	1-HS-5278	1-HY-5278	1-HV-5278
	79	79	79
	80	80	80
	81	81	81

REF:

P & I D 1X4DB159-1, 159-3 & 168-3 (2)

E. D. 1X3D-BC-C04N, QC04A

STM GEN CHEM FEED & WET LAYUP VALVE

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
3	SHOWN COMP INPUT PER I/D LIST REV 5 (NO PHISICAL IMPACT)	3/27/85	ZEP	ALV		PCL				
2	ADDED REF DWG	12 8 81	AJF	FAL						
1	ADDED REF. DWGS.	1-10-80	HL	FAL						
0	ISSUED FOR CONSTRUCTION	4 17 79	HL	FAL	MKK					

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
STEAM GENERATOR BLOWDOWN
AND SAMPLE SYSTEM

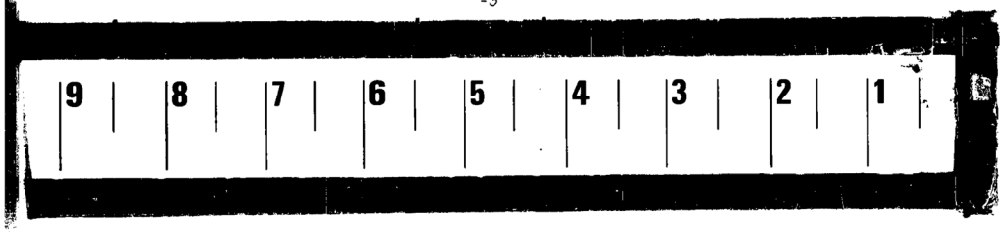
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN117-3	3

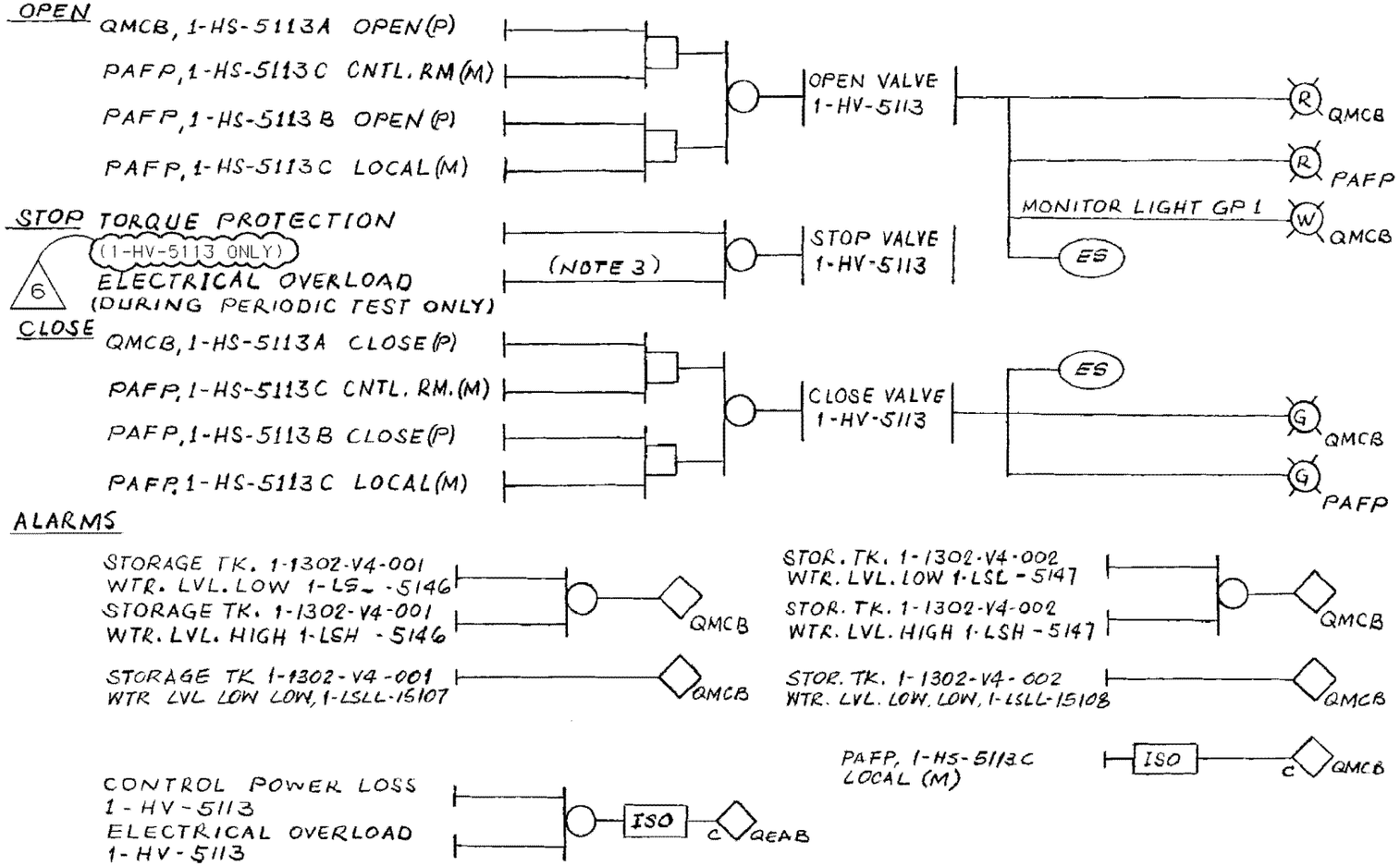
SIZE B 11x17

BM 9510 P&ID 159-1 REV. -3 P&ID 168-3 REV.

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.

3/27/85 DATE — CAMERA OPERATOR — SECTION SUPERVISOR





CONTROL ROOM

CLOSE OPEN — LOCAL

1-HS-5113A
1-HS-5113B
SPRING RETURN TO NEUTRAL

1-HS-5113C
MAINTAINED (TRANSFER SWITCH)

NOTE:

1. VALVE 1-HV-5113 SHOWN. OTHER VALVE LISTED IN TABLE 2 ARE SIMILAR.
2. REFER TO SPECIAL NOTE 1 ON DWG. 1X5DN002-2.
3. REFER TO SPECIAL NOTE 2 ON DWG. 1X5DN002-2.
4. VALVES LISTED IN TABLE 2 ARE BUTTERFLY VALVES
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED
5. VALVE 1-HV-5113 HAS A D.C. MOTOR OTHERS ARE A.C. MOTORS.

REF. DWGS.
P&ID 1X5DN161-1 & 2
E.D. 1X3D-BC-F02C, D, B

TABLE 2

SERVICE	TRAIN	VALVE	SWITCHES			PANEL
AUX. FW PUMP TURB. DRIVEN	C	1-HV-5113	1-HS-5113A	1-HS-5113B	1-HS 5113C	PAFP
AUX. FW PUMP MOTOR DRIVEN	B	5118	5118A	5118B	5118C	PSDB
AUX. FW PUMP MOTOR DRIVEN	A	5119	5119A	5119B	5119C	PSDA

NUCLEAR SAFETY RELATED
PUMP SUCTION VALVE
Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

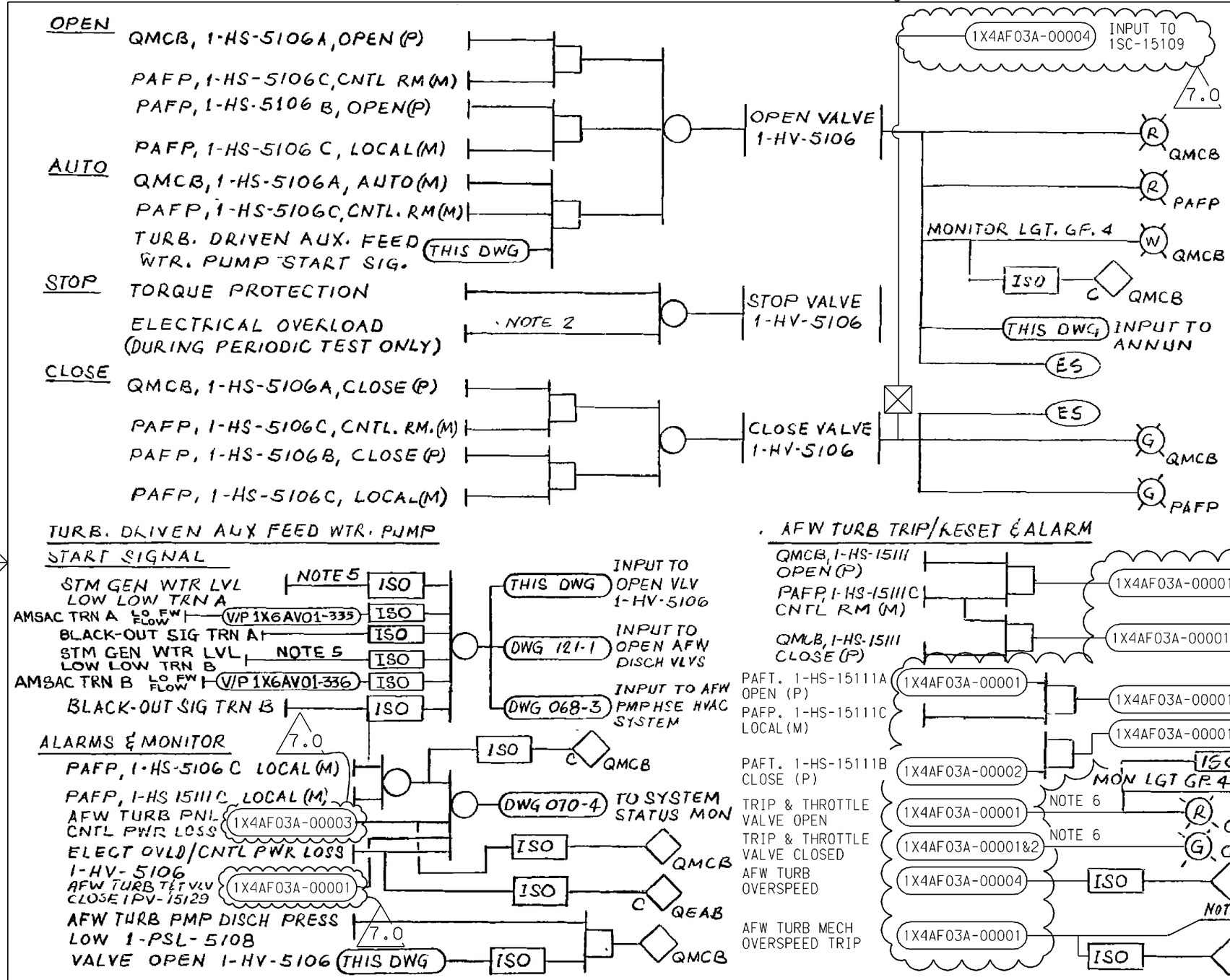
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM AUXILIARY FEEDWATER SYSTEM

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
6	INCORPORATED PER DCP 95-V1N0035	12-5-97	CD	GLB	WFP	X
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X5DN120-1
REV 6

CAD NAME 15DN1201 SIZE B 11x17



NO.	VERSION	DATE	DR	CHK	APPV	DTL
7.0	REVISED PER ABN 1019003501J023, VER. 3.0	8-2-05	LPM	ELC	DEW	X

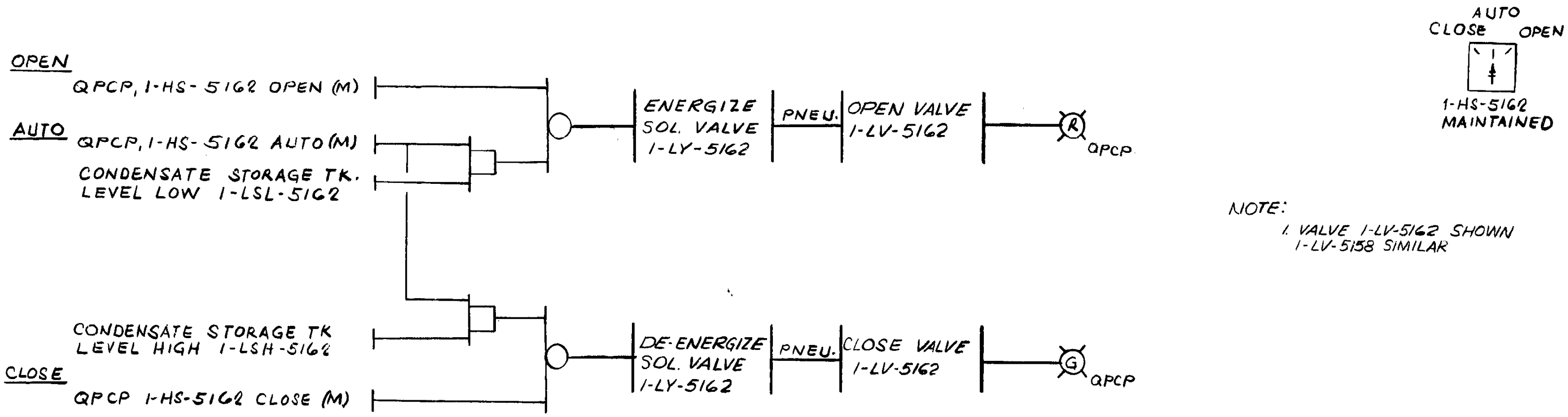
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER SYSTEM

SCALE: NONE	DRAWING NO.	VER.
JOB NO. 10604	1X5DN120-2	7.0

SIZE B 11x17



NOTE:
1. VALVE 1-LV-5162 SHOWN
1-LV-5158 SIMILAR

REF. DWGS:
P&ID 1X4DB161-1
E.D. 1X3D-BC-F02E, F

COND. STOR. TANK	VALVE	SOL. VALVE	LEVEL SW.	LEVEL SW.	HAND SW.
1-1302-V4-002	1-LV-5162	1-LY-5162	1-LSH-5162	1-LSL-5162	1-HS-5162
↓ -001	↓ -5158	↓ -5158	↓ -5158	↓ -5158	↓ 5158

CONDENSATE TANK MAKE-UP VALVE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER SYSTEM

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.
1	ADDED REF DWGS.	1-10-80		FAL						
0	ISSUED FOR CONSTRUCTION	3-15-79	NBD	FAL	MKK.					

ENG. MGR.
DATE

SCALE:
JOB NO. 9510
DRAWING NO. 1X5DN120-3
REV. 1

BM 9510
SIZE B 11 x 17

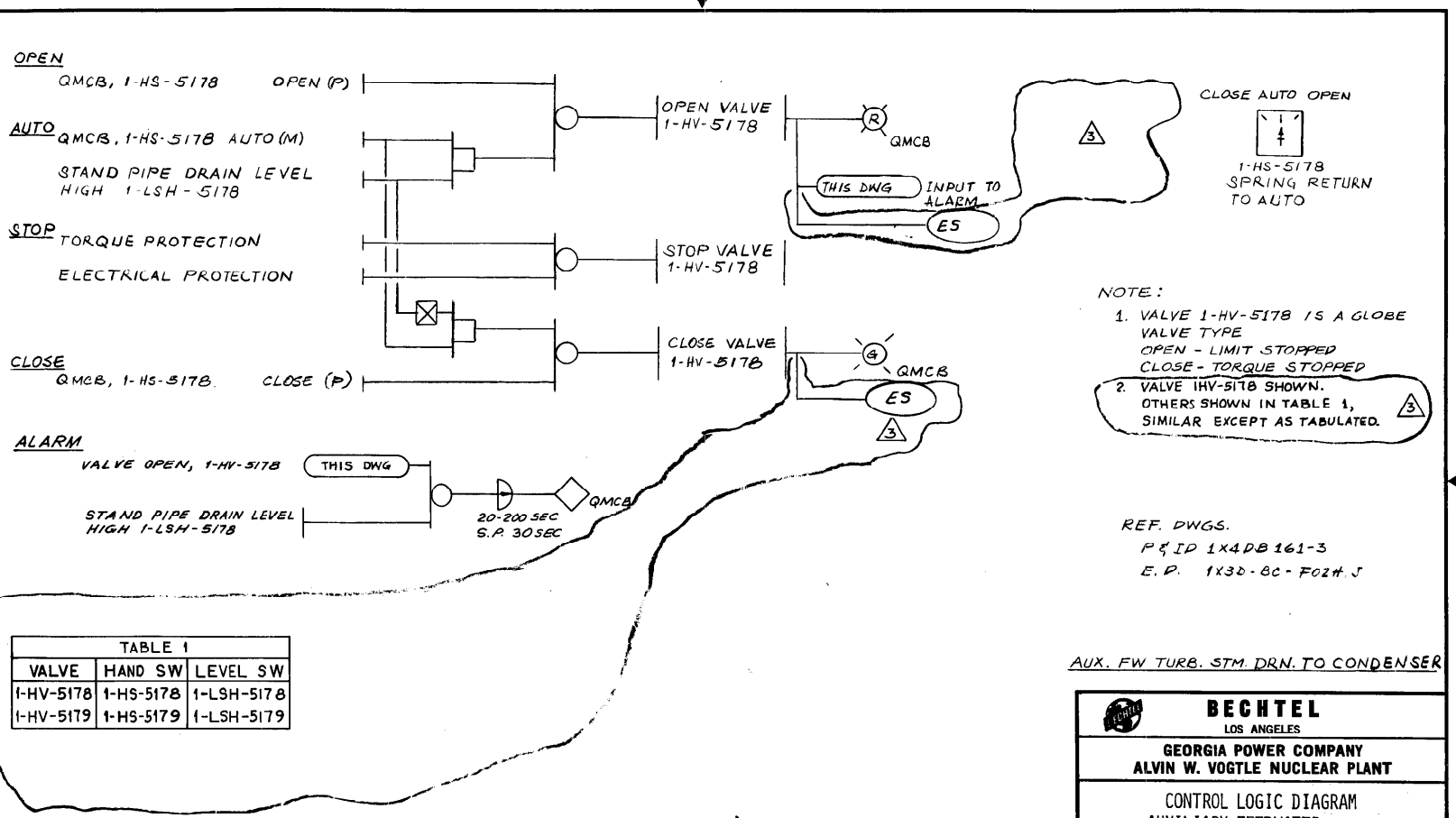


TABLE 1		
VALVE	HAND SW	LEVEL SW
1-HV-5178	1-HS-5178	1-LSH-5178
1-HV-5179	1-HS-5179	1-LSH-5179

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
5	REVISED AS SHOWN PER P&ID 1X4DB161-3, DCN NO. 25	11-14-84	CA							
4	CHANGED VALVE HV-5181 FROM MOV TO SOLENOID VALVE.	7-9-81	FAL	V.V.		PCL				
3	REVISED 1-HV-5178 CLOSE INPUT & ANNUN INPUT	1-10-80	HL	FAL		GDC				
2	ISSUED FOR CONSTRUCTION	4-17-79	NBD	FAL	MKK				MRI	

ENG. MGR. | DATE

BECHTEL
LOS ANGELES

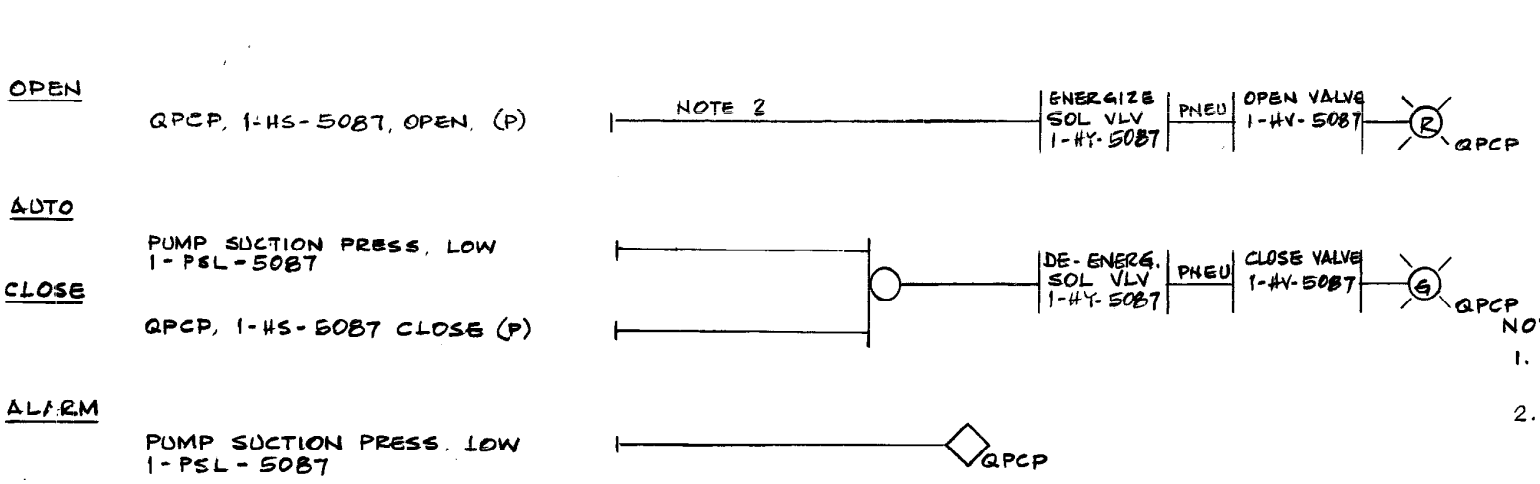
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

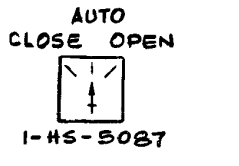
CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN120-5	3

SIZE B 11 x 17

BM 9510





NOTE:

1. VALVE 1-HV-5087 SHOWN, 1-HV-5088 IS SIMILAR.
2. TO OPEN VALVE, CONTROL SWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW THE CIRCUIT TO SEAL-IN THROUGH VALVE POSITION SWITCH. AND TO RESET PRESSURE SWITCH AFTER LINE IS DEPRESSURIED.

REF DWG

P&ID 1X4DB161-1
E.D. 1X3D-BC-F02M

TABLE 1

VALVE	SWITCH	SOL VLV	PRESS SW
1-HV-5087	1-HS-5087	1-HY-5087	1-PSL-5087
8	8	8	8

VACUUM DEGASIFIER ISOL. VALVE

NO.	REVISIONS	DATE	DR	CHK.	SUP'V.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	ENG. MGR.
4	CORRECTED REF. DWG.	2-15-85	ZBP	ALV							
3	REVISED OPEN INPUT, NOTE 2 AND ADDED REF DWGS	1-10-80	HL	FAL							DATE
2	ISSUED FOR CONSTRUCTION	4-6-79	HL	FAL	MKK			JBM	MRT		

BECHTEL
LOS ANGELES

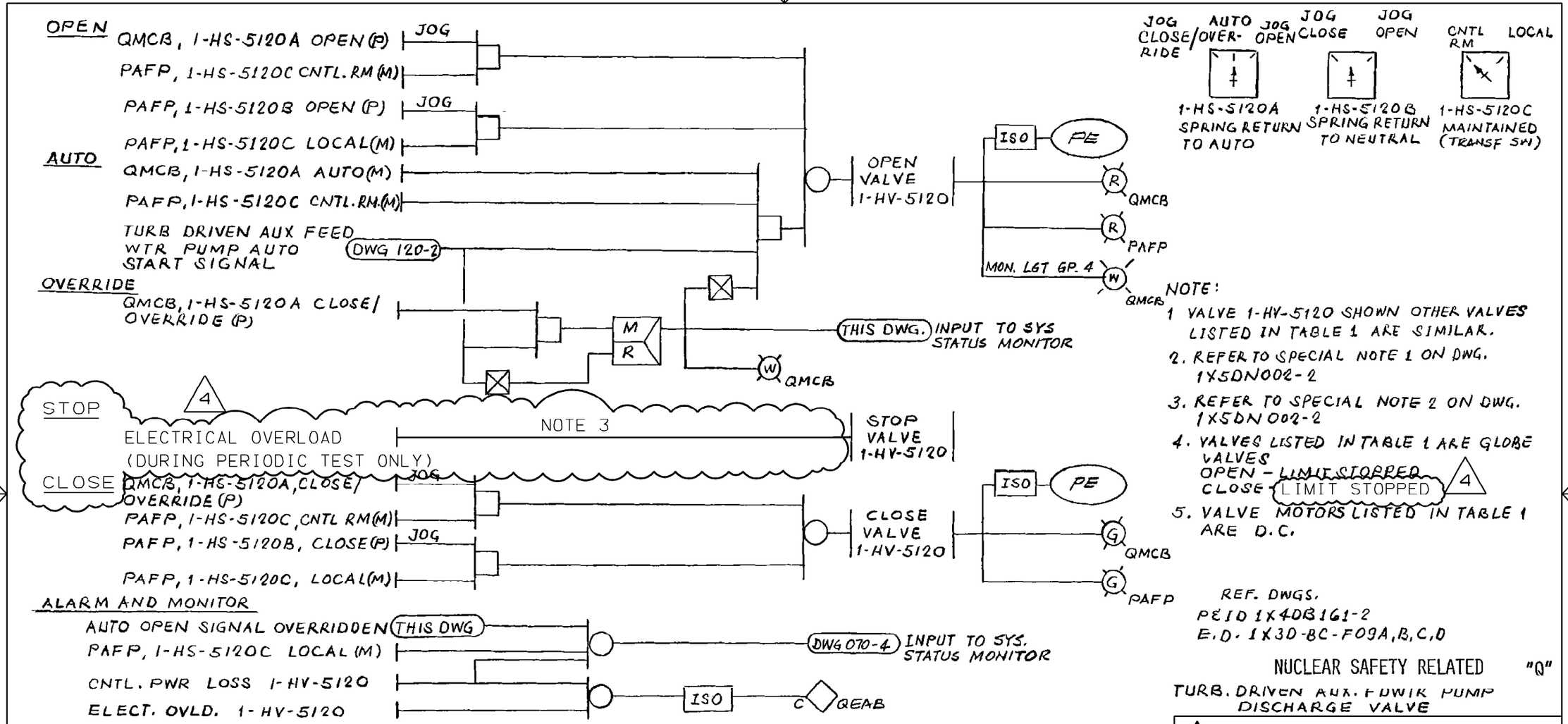
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN120-6	2

BM 9510

SIZE B 11 x 17



NOTE:

1. VALVE 1-HV-5120 SHOWN OTHER VALVES LISTED IN TABLE 1 ARE SIMILAR.
2. REFER TO SPECIAL NOTE 1 ON DWG. 1X5DN002-2
3. REFER TO SPECIAL NOTE 2 ON DWG. 1X5DN002-2
4. VALVES LISTED IN TABLE 1 ARE GLOBE VALVES
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED (4)
5. VALVE MOTORS LISTED IN TABLE 1 ARE D.C.

REF. DWGS.
P&ID 1X4DB161-2
E.D. 1X3D-BC-F09A,B,C,D

NUCLEAR SAFETY RELATED "Q"

TURB. DRIVEN AUX. FDWTR PUMP DISCHARGE VALVE

TABLE 1

TRAIN	PUMP NO	VALVE	SWITCHES		
		1-HV-5120	1-HS-5120A	1-HS-5120B	1-HS-5120C
C	1-1302-P4-001-000	5122	5122A	5122B	5122C
		5125	5125A	5125B	5125C
		5127	5127A	5127B	5127C

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM

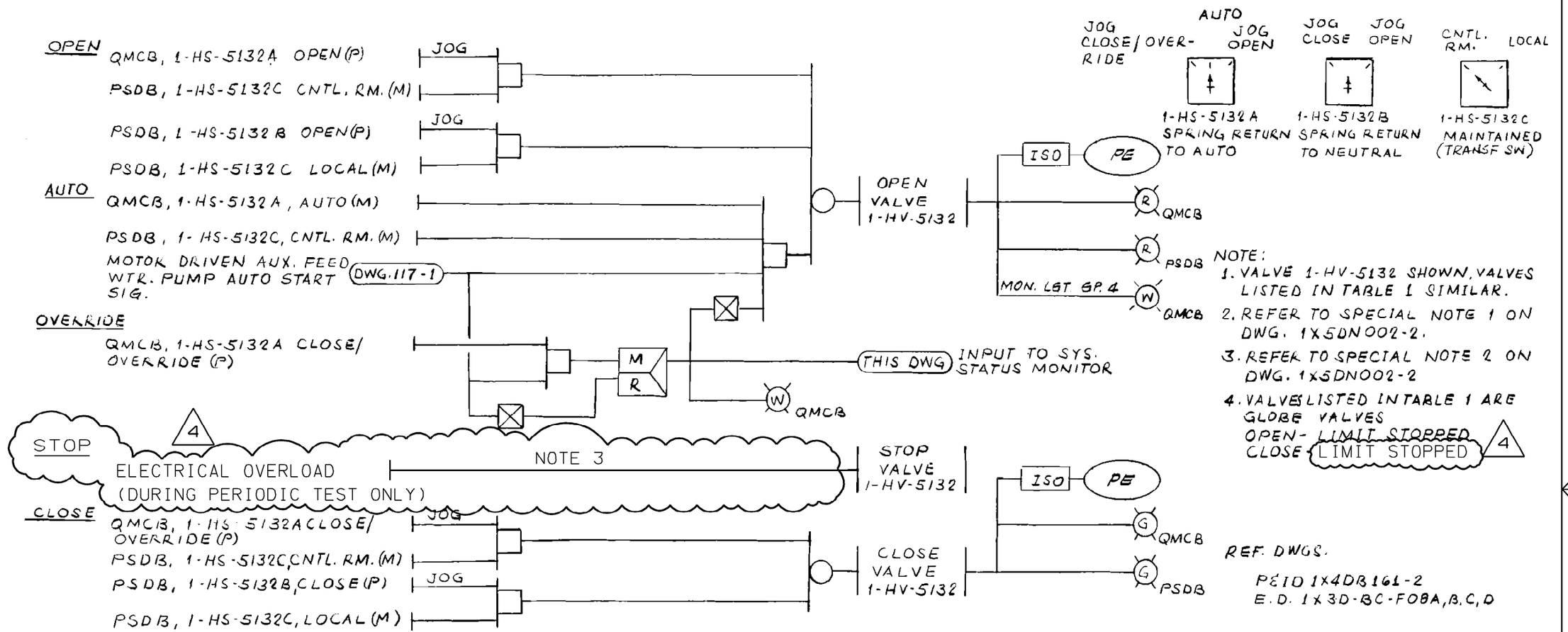
AUXILIARY FEEDWATER VALVES TO STEAM GENERATOR

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4	INCORP. PER DCP 98-V1N0025	04/16/02	PM	TSL	RBH	

SCALE: NONE | DRAWING NO. 1X5DN121-1 | REV 4

JOB NO. 10604

SIZE B 11x17



NOTE:
1. VALVE 1-HV-5132 SHOWN, VALVES LISTED IN TABLE 1 SIMILAR.
2. REFER TO SPECIAL NOTE 1 ON DWG. 1X5DN002-2.
3. REFER TO SPECIAL NOTE 2 ON DWG. 1X5DN002-2
4. VALVES LISTED IN TABLE 1 ARE GLOBE VALVES
   OPEN - LIMIT STOPPED
   CLOSE - LIMIT STOPPED

REF. DWGS.
P&ID 1X4DB161-2
E.D. 1X3D-BC-F08A,B,C,D

NUCLEAR SAFETY RELATED "Q"
MOTOR DRIVEN AUX. FDWTR. PUMPS DISCHARGE VALVE

TABLE 1

TRAIN	PUMP NO.	VALVE	SWITCHES		
			1-HS-5132A	1-HS-5132B	1-HS-5132C
B	1-1302-P4-002-M01	1-HV-5132	1-HS-5132A	1-HS-5132B	1-HS-5132C
		5134	5134A	5134B	5134C
A	1-1302-P4-003-M01	5137	5137A	5137B	5137C
		5139	5139A	5139B	5139C

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4	INCORP. PER DCP 98-V1N0025	04/16/02	PM	TSL	RBH	

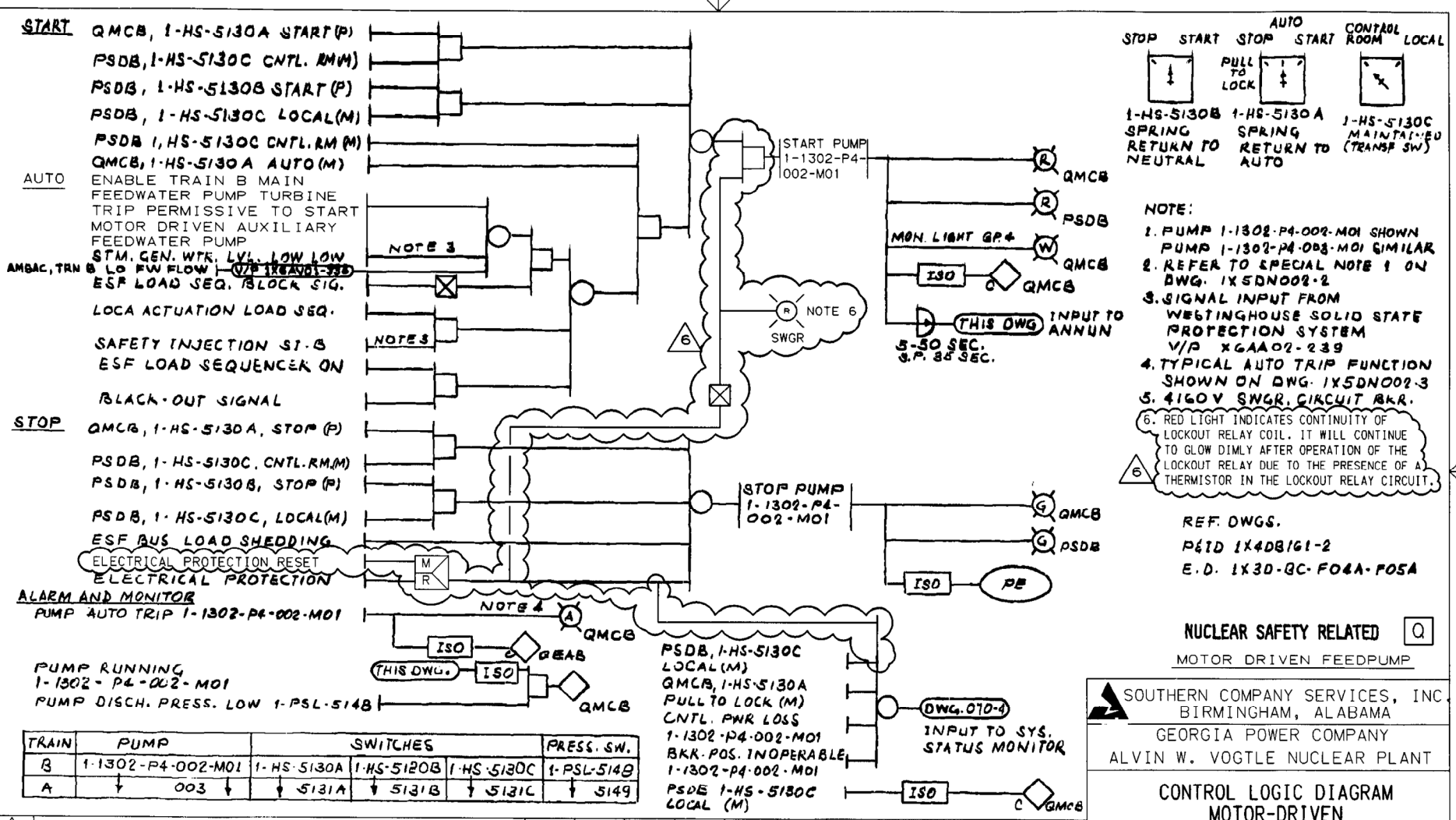
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AUXILIARY FEEDWATER VALVES TO STEAM GENERATOR

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN121-2	4

SIZE B 11x17



NOTE:

1. PUMP 1-1302-P4-002-M01 SHOWN PUMP 1-1302-P4-003-M01 SIMILAR
2. REFER TO SPECIAL NOTE 1 ON DWG. 1X5DN002-2
3. SIGNAL INPUT FROM WESTINGHOUSE SOLID STATE PROTECTION SYSTEM V/P XGAA02-239
4. TYPICAL AUTO TRIP FUNCTION SHOWN ON DWG. 1X5DN002-3
5. 4160 V SWGR. CIRCUIT BKR.
6. RED LIGHT INDICATES CONTINUITY OF LOCKOUT RELAY COIL. IT WILL CONTINUE TO GLOW DIMLY AFTER OPERATION OF THE LOCKOUT RELAY DUE TO THE PRESENCE OF A THERMISTOR IN THE LOCKOUT RELAY CIRCUIT.

REF. DWGS.

P&ID 1X4DB161-2

E.D. 1X3D-BC-F04A-F05A

NUCLEAR SAFETY RELATED Q

MOTOR DRIVEN FEEDPUMP

TRAIN	PUMP	SWITCHES			PRESS. SW.
B	1-1302-P4-002-M01	1-HS-5130A	1-HS-5120B	1-HS-5130C	1-PSL-5148
A	↓ 003	↓ 5131A	↓ 5131B	↓ 5131C	↓ 5149

NO.	REVISIONS	DATE	DR	CHK	SUPV	EGL	EGS	CHF E	PE	QAE
6	INCORP. ABN-20848	5/17/95	LVL	JMM	LFG					
5	REVISIONS	DATE	DR	CHK	APPV	DTL				
0	ISSUED FOR CONSTRUCTION	2/28/79		SEE MICROFILM FOR SIGNATURES						

ENG MGR

DATE

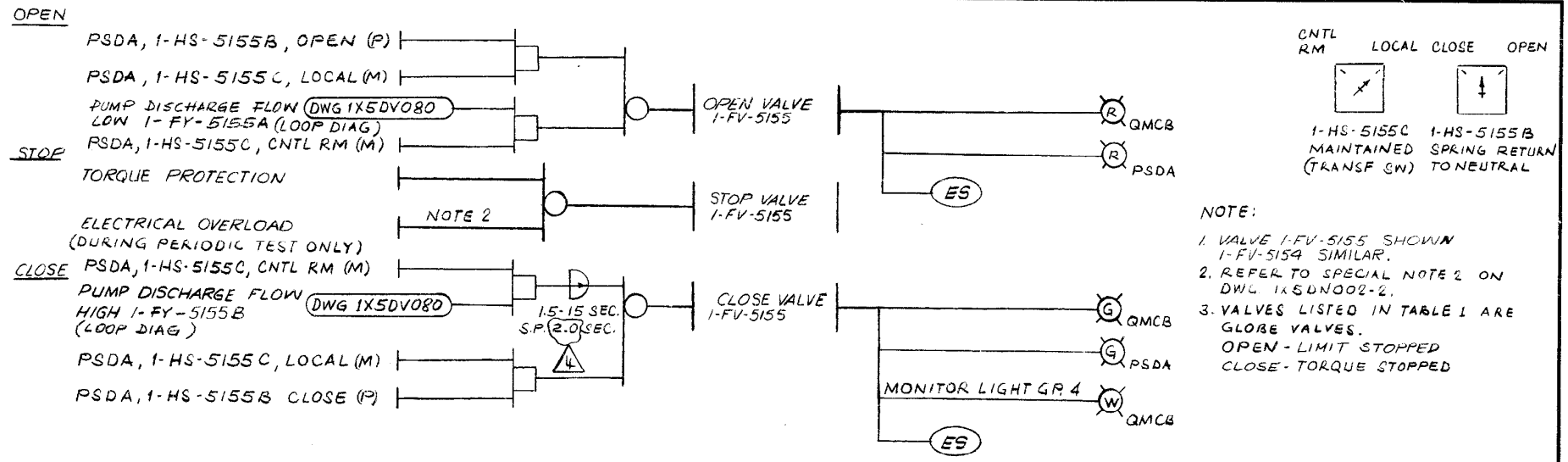
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM MOTOR-DRIVEN AUXILIARY FEEDWATER PUMPS

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN122-1	6

SIZE B 11x17



NOTE:

1. VALVE 1-FV-5155 SHOWN 1-FV-5154 SIMILAR.
2. REFER TO SPECIAL NOTE 2 ON DWG. 1X5DN002-2.
3. VALVES LISTED IN TABLE 1 ARE GLOBE VALVES.
   OPEN - LIMIT STOPPED
   CLOSE - TORQUE STOPPED

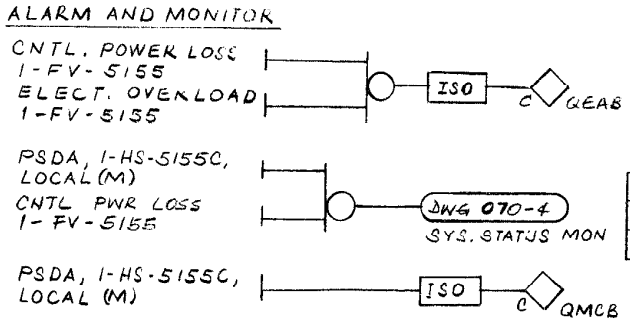


TABLE 1

TRAIN	HAND SWITCH	VALVE	FLOW SW (LOOP DIAG)	
A	1-HS-5155 B&C	1-FV-5155	1-FY-5155A	1-FY-5155B
B	5154 B&C	5154	5154A	5154B

REF. DWGS.
P&ID 1X4DB161-2
E.D. 1X3D-BC-F04B, F05B
LOOP DIAG 1X3D1073 & 080

NUCLEAR SAFETY RELATED "Q"

PUMP MINI FLOW VALVE

NO.	REVISIONS	DATE	DR.	CHK.	RPE	DM	ODPM	DPM	DPM	
3	ADDED COMPUTER INPUT PER I/O LIST REV. 5	2-15-85	ZEP	ACV						ENG. MGR.
4	INCORP. ABN 86-VIE007A001	10/22/87	TJS	SJP	JBP		RPZ			
2	ISSUED FOR CONSTRUCTION	2-28-79	NRD	FAL	MKK					DATE
NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM

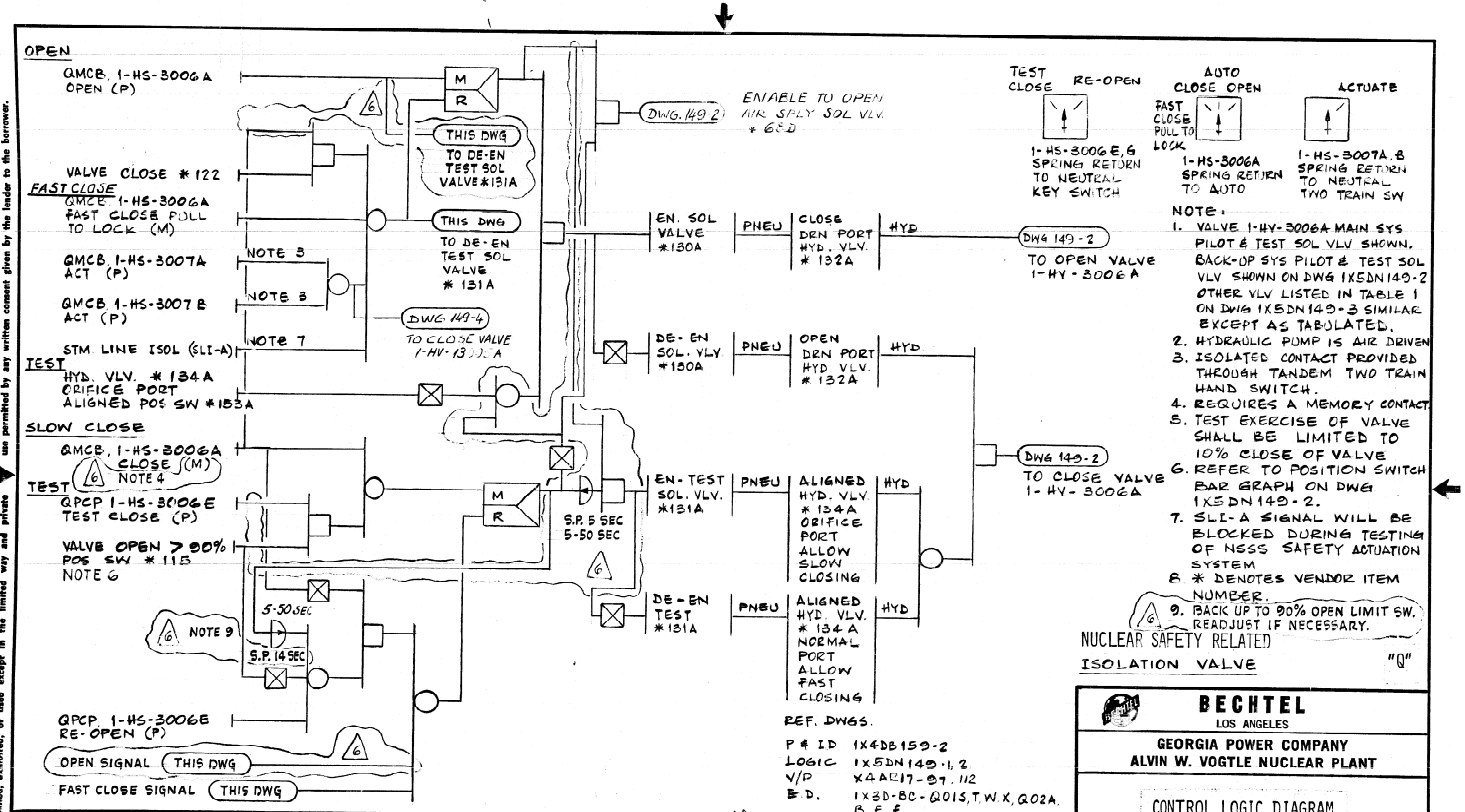
MOTOR-DRIVEN AUXILIARY FEED-WATER PUMPS

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN122-2	4

SIZE B 11 x 17

BM 9510

14.5X



NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
6	INCORPORATED DCN #1	10-31-86	RBR	ALW						
5	CLARIFIED "FAST CLOSE" FUNCTION (EDITORIAL ONLY)	6-11-86	ALV							
4	REVISED AS SHOWN	1-17-85	ALV							
6	ISSUED FOR CONSTRUCTION	5-31-79		FAL	PK					

ENG. MGR. | DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

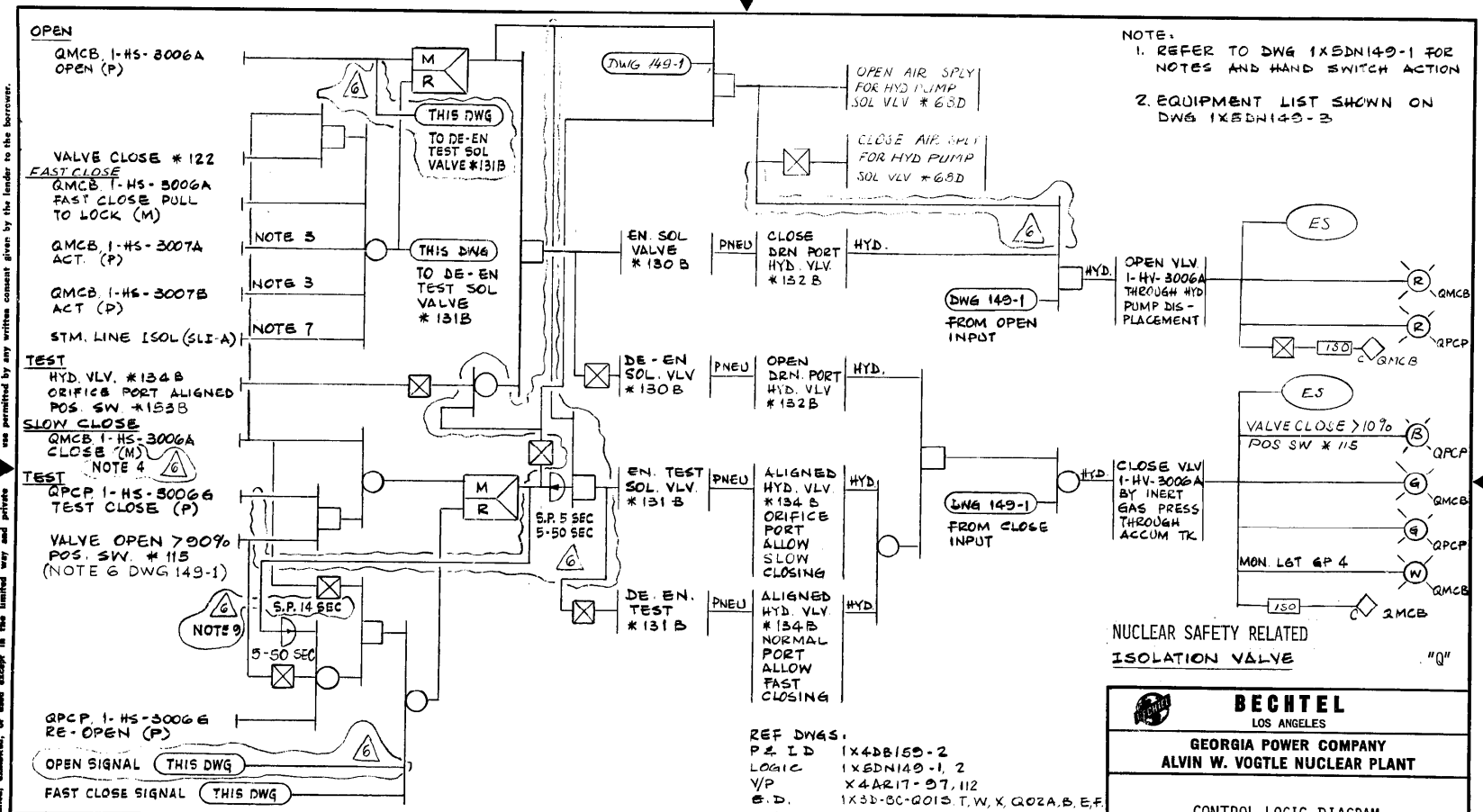
CONTROL LOGIC DIAGRAM
MAIN STEAM SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN149-1	6

SIZE B 11 x 17

BM 9510

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
10-21-86
DATE:
CAMERA OPERATOR
SECTION SUPERVISOR



NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.
6	INCORPORATED DCN #1	10-30-86	RBR	AJJ						
5	CLARIFIED "FAST CLOSE" FUNCTION (EDITORIAL ONLY)	6-11-86	ALV							
4	REVISED AS SHOWN	1-17-85	ZEP							
3	ISSUED FOR CONSTRUCTION	5-31-79		FAL	PK					

ENG. MGR. / DATE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

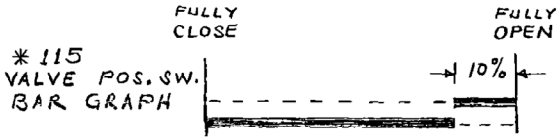
CONTROL LOGIC DIAGRAM
MAIN STEAM SYSTEM

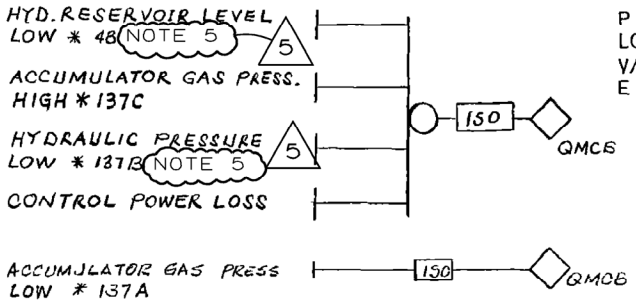
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN149-2	6

SIZE B 11 x 17

BM 9510

ALARMS AND MONITORS





REF DWGS

P & ID	1X4DB159-2
LOGIC	1X5DN149-1,2
V/P	X4AR17-97, 101
E.D.	1X3D-BC-Q01S,T,W,X Q02A,B,E,F

TABLE 1

TRAIN	SFTY SIG.	VALVE	HAND SW MAIN AND BACK-UP SYSTEM	HAND SW. MANUAL ISOL. ACTUATION	TEST SW MAIN SYS.	TEST SW. BACK-UP	SOL VALVE MAIN SYS.	SOL. VALVE BACK-UP SYS.	HYD. VALVE MAIN SYS.	HYD VALVE BACK-UP SYS	SOL.VLV TEST EXERC. MAIN SYS.	SOL VLV. TEST EXERC. BACK UP SYS.	HYD ORIFICE VALVE MAIN SYS.	HYD. ORIFICE VALVE BACK-UP SYS	HYD. ORIFICE VLV POS. SW MAIN SYS	HYD ORIFICE VLV. POS. SW BACK UP SYS.	TEST EXERC POS SW.	VALVE POS SW	HYD RSVR LEVEL SWITCH	HYD PRESS SWITCH	ACCUM GAS PRESS SWITCH	AIR SUPPLY SHUT OFF SOL VLV
A	SLI-A	1-HV-3006A	1-HS-3006A	1-HS 3007A 1-HS-3007B	1-HS-3006E	1-HS-3006G	*130A	*130B	*132A	*132B	*131A	*131B	*134A	*134B	*153A	*153B	*115	*122	* 48	*137B	*137A	*68D
B	-B	-3006B	-3006B		-3006F	-3006H																
A	-A	-3016A	-3016A		-3016E	-3016G																
B	-B	-3016B	-3016B		-3016F	-3016H																
A	-A	-3026A	-3026A		-3026E	-3026G																
B	-B	-3026B	-3026B		-3026F	-3026H																
A	-A	-3036A	-3036A		-3036E	-3036G																
B	-B	-3036B	-3036B		-3036F	-3036H																

VALVE	OPEN POSITION SWITCH		TEST POSITION SWITCH		CLOSE POSITION SWITCH	
	VENDOR	BECHTEL	VENDOR	BECHTEL	VENDOR	BECHTEL
1HV-3006A	* 111	1ZSO-3006A	* 115	1ZSOT-3006A	* 122	1ZSC-3006A
1HV-3006B		1ZSO-3006B		1ZSOT-3006B		1ZSC-3006B
1HV-3016A		1ZSO-3016A		1ZSOT-3016A		1ZSC-3016A
1HV-3016B		1ZSO-3016B		1ZSOT-3016B		1ZSC-3016B
1HV-3026A		1ZSO-3026A		1ZSOT-3026A		1ZSC-3026A
1HV-3026B		1ZSO-3026B		1ZSOT-3026B		1ZSC-3026B
1HV-3036A		1ZSO-3036A		1ZSOT-3036A		1ZSC-3036A
1HV-3036B		1ZSO-3036B		1ZSOT-3036B		1ZSC-3036B

NOTE.

1. LOGIC SHOWN ON DWG. 1X5DN149-1 & 2
2. * DENOTES VENDOR ITEM NUMBER.
3. VALVE BAR GRAPH POSITION SWITCH SOLID LINE DENOTES CONTACT CLOSED.
4. REFER TO DWG 1X5DN149-1 FOR OTHER NOTES
5. THE HYD RESV LEVEL LOW SWITCH AND HYD PRESSURE LOW SWITCH ARE NOT SAFETY RELATED. SEE CALC. X5CFEMA1816. (5)

NUCLEAR SAFETY RELATED

EQUIPMENT LIST AND ALARM

Q

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

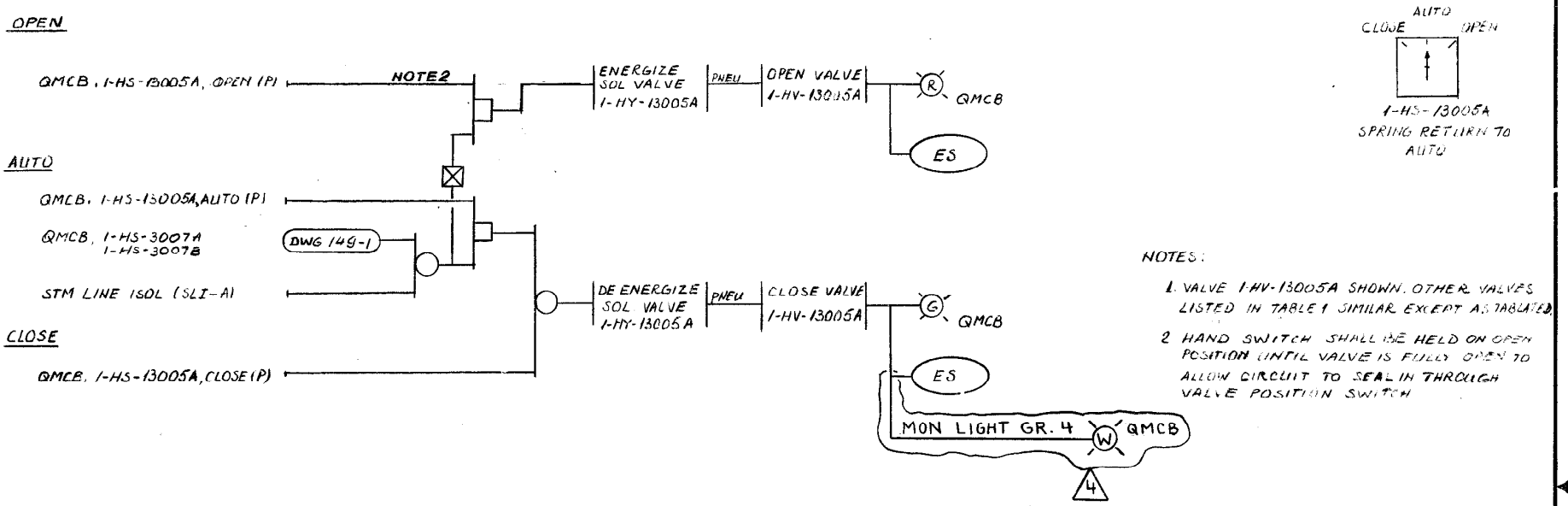
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
MAIN STEAM SYSTEM

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
5	INCORP. PER ABN-50579	7-16-98	ELC	EOG	MWD	
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				

SCALE: NONE | JOB NO. 10604 | DRAWING NO. 1X5DN149-3 | REV 5

CAD NAME 15DN1493 SIZE B 11x17



NOTES:

1. VALVE 1-HV-13005A SHOWN. OTHER VALVES LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATED.
2. HAND SWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH.

REF DWGS
P&ID 1X4DB15[illegible]-2
E.D. 1X3D-BC-Q02H, J, 4

TABLE 1

HAND VALVE	HAND SWITCH	SAFETY SIGNAL	SOLENOID VALVE
1-HV-13005A	1-HS-13005A	SLI-A	1-HY-13005A
↓ B	↓ B	-B	↓ B
1-HV-13006A	1-HS-13006A	-A	1-HY-13006A
↓ B	↓ B	-B	↓ B
1-HV-13007A	1-HS-13007A	-A	1-HY-13007A
↓ B	↓ B	-B	↓ B
1-HV-13008A	1-HS-13008A	-A	1-HY-13008A
↓ B	↓ B	-B	↓ B

MSIV BYPASS VALVES

NUCLEAR SAFETY RELATED "Q"

NO.	REVISIONS	DATE	DR	CHK.	RPE	DM	ODPM	DPM	DPM
4	REV. TO INC. DCN 1	10-24-84	JLH	[illegible]	JBP		[illegible]		
3	CLARIFY HS INPUT	SEE MICROFILM FOR SIGNATURES							
0	ISSUED FOR CONSTRUCTION	5-25-84	ALV	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.

ENG. MGR. DATE

BECHTEL LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

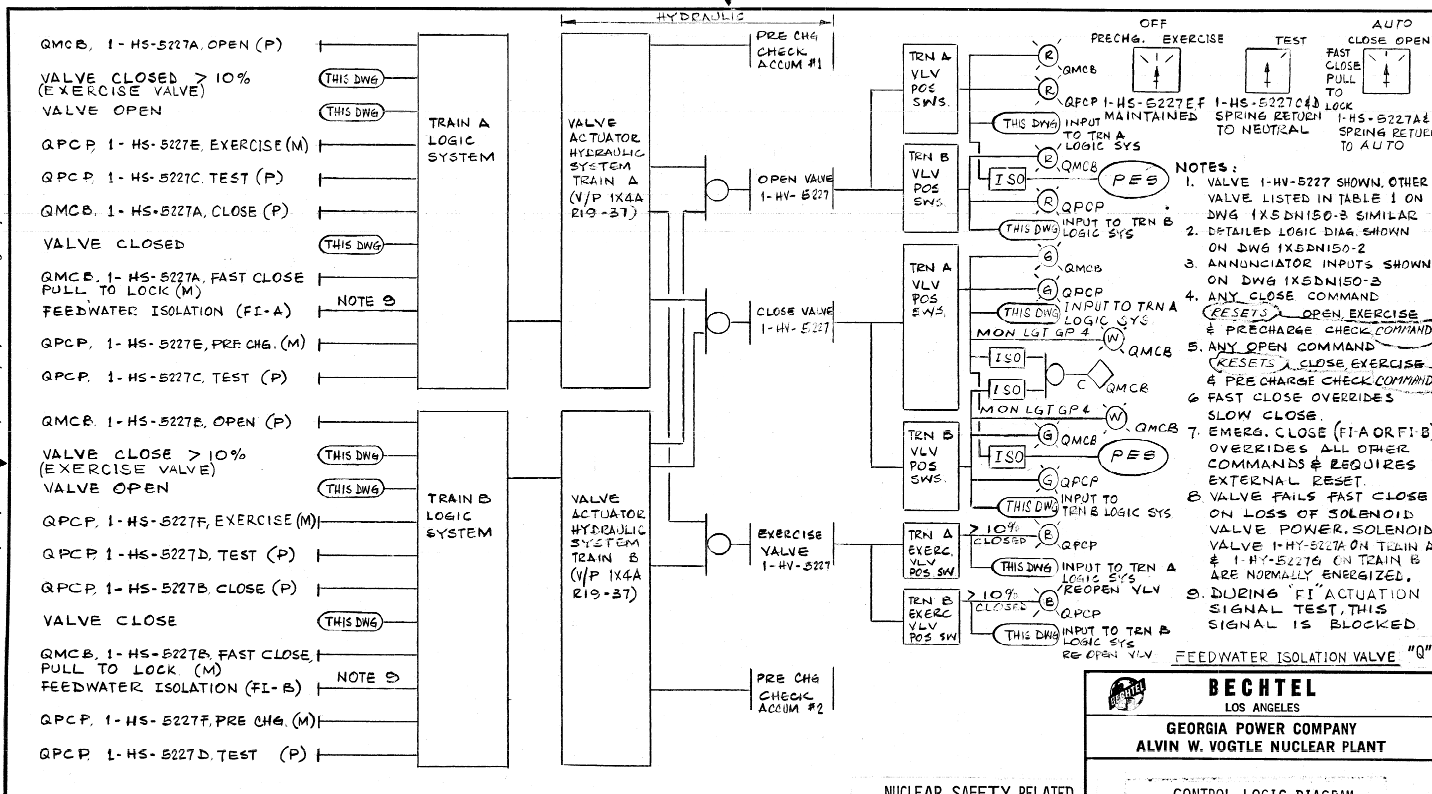
CONTROL LOGIC DIAGRAM
MAIN STEAM SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN149-4	4

BM 9510

SIZE B 11 x 17

14.5X



NUCLEAR SAFETY RELATED

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

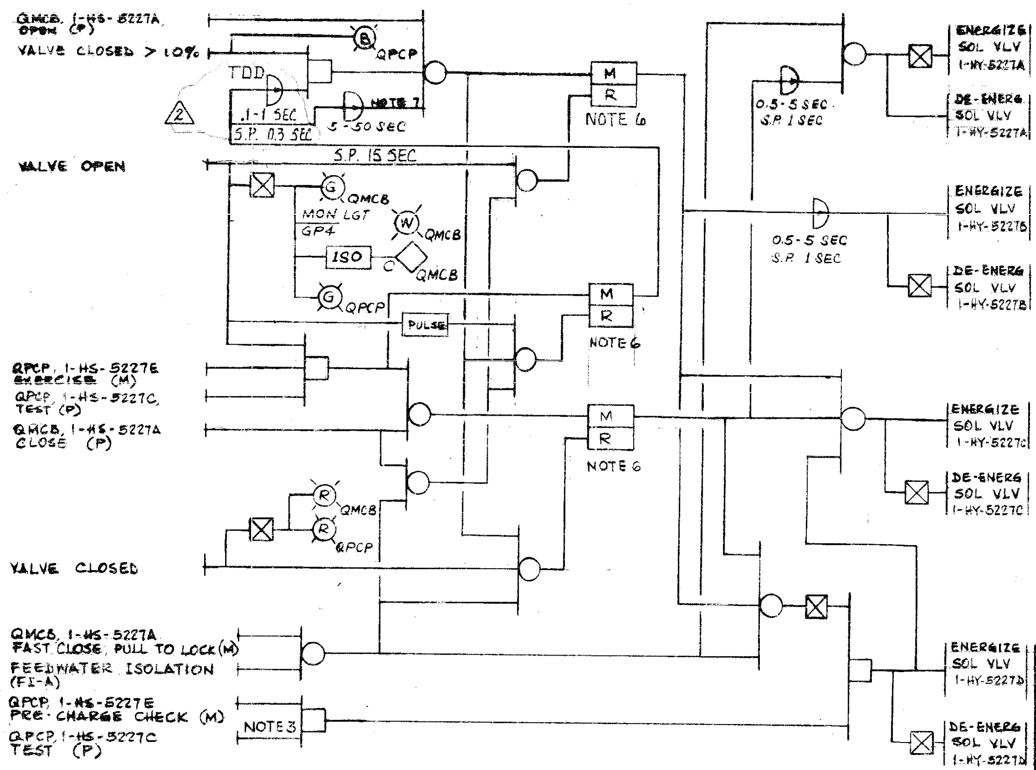
CONTROL LOGIC DIAGRAM
MAIN FEEDWATER SYSTEM

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.
5	ADDED "AUTO" POSITION ON HS CONTROL AND ERF INPUT	5-16-86	FAL	VH						
4	CORRECTED NOTES 4 & 5	6-11-86	ALV							
3	SHOWN COMP INPUT TRN A PER ERF I/O LIST REV. 5	2-12-85	ZEP							
0	ISSUED FOR CONSTRUCTION	3/27/80	HL							

ENG. MGR.
DATE

SCALE: NONE
JOB NO. 9510
DRAWING NO. 1X5DN150-1
REV. 5

BM 9510 FEID REV.
SIZE B 11 x 17



NOTES:
1. VALVE 1-HV-5227 LOGIC TRAIN A SHOWN, TRAIN B SIMILAR. OTHER VALVES LISTED IN TABLE 1 ON DWG 1X5DN150-3.
2. HAND SWITCH POSITION SHOWN ON DWG 1X5DN150-1.
3. HOLD DURING PRECHARGE ACCUMULATOR PRESSURE CHECK AND THEN RELEASE.
4. SOLENOID VALVES ARE 125VDC.
5. SEQUENCE OF OPERATION SHOWN IN TABLE 2 ON DWG 1X5DN150-3
6. RESET HAS PRIORITY OVER MEMORY
7. TIME DELAY SHALL BE SET MORE THAN THE TIME THE VALVE REACHES 10% CLOSE FROM FULLY OPEN POSITION. THIS TIME DELAY SIGNAL IS A BACK-UP TO TEST EXERCISE.

REF. DWGS.
P&ID 1X4DB168-3
E.D. 1X3D-BC-C06C, 6D, 7C, 7D, 8C, 8D, 9C, 9D
V/P 1X4AR19-37, 39 & 57

NUCLEAR SAFETY RELATED "Q"

FEEDWATER ISOLATION VALVE

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
MAIN FEEDWATER SYSTEM

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN150-2	2

SIZE B 11 x 17

NO.	REVISIONS	DATE	DR.	CHK	RPE	DM	ODPM	DPM	DPM		ENG. MGR.
3	INCORP. ABN 87-V1E207A001	[illegible]	M.W.D.	[illegible]	[illegible]						
2	ADDED TIME DELAY SET POINT & REVISED AS INDICATED	7-9-81	FAL	V.V.		[illegible]	[illegible]		[illegible]		
1	ISSUED FOR CONSTRUCTION	3/31/80	[illegible]	FAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		DATE
NO.	REVISIONS	DATE	DR.	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q.A.E.	

BM 9510

TABLE 1 (EQUIPMENT LIST)

VALVE	HAND SWITCHES			SOLENOID VALVES				SFTY ACT	TRAIN	HYDRAULIC PRESS SW	AIR RESERV. PRESS SW	HYD. TK LVL SW	HYD. PRESS. RELIEF VLV.
1-HV-5227	1-HS-5227A	1-HS-5227C	1-HS-5227E	1-HY-5227A	1-HY-5227B	1-HY-5227C	1-HY-5227D	FI-A	A	1-PS-5227A	1-PS-5227B	1-LS-5227	1PSV-5227C
	27B	27D	27F	27G	27H	27J	27K	B	B		27C		1PSV-5227D
28	28A	28C	28E	28A	28B	28C	28D	A	A	28A	28B	28	1PSV-5228C
	28B	28D	28F	28G	28H	28J	28K	B	B		28C		1PSV-5228D
29	29A	29C	29E	29A	29B	29C	29D	A	A	29A	29B	29	1PSV-5229C
	29B	29D	29F	29G	29H	29J	29K	B	B		29C		1PSV-5229D
30	30A	30C	30E	30A	30B	30C	30D	A	A	30A	30B	30	1PSV-5230C
	30B	30D	30F	30G	30H	30J	30K	B	B		30C		1PSV-5230D

4

NOTES.
1. TABLE 2 SHOWS VALVE 1-HV-5227 SOLENOID VALVE'S SEQUENCE OF OPERATION, OTHER VALVES SIMILAR
2. E - ENERGIZE
   D - DE-ENERGIZE
   TD - TIME DELAY
3. LOGIC DIAGRAM SHOWN ON DWG 1X5DN150-1 & 2
4. ANNUNCIATOR INPUTS FOR VALVE 1-HV-5227 SHOWN OTHER VALVES ALARM INPUT SIMILAR AS LISTED IN TABLE 1.

TABLE 2 (SEQUENCE OF OPERATION)

CONTROL ACTION	STEP	SOLENOID VALVE STATUS (TRAIN A)				SOLENOID VALVE STATUS (TRAIN B)			
		1-HY-5227A	1-HY-5227B	1-HY-5227C	1-HY-5227D	1-HY-5227G	1-HY-5227H	1-HY-5227J	1-HY-5227K
SLOW OPEN	FULL CLOSE	E	D	D	D	E	D	D	D
	OPENING		TD, E	E			TD, E	E	
	FULL OPEN		D	D			D	D	
SLOW CLOSE	FULL OPEN								
	CLOSING	TD, D		E		TD, D		E	
	FULL CLOSE	E		D		E		D	
FAST OR EMERG CLOSE	FULL OPEN								
	CLOSING	D				D			
	FULL CLOSE								
EXERCISE 10% VALVE STROKE	FULL OPEN	E				E			
	CLOSING	TD, D		E		TD, D		E	
	RE-OPEN	E	TD, E			E	TD, E		
	FULL OPEN		D	D			D	D	
ACCUM INERT GAS PRE CHG CHECK	OPEN OR CLOSE								
	ACCUM HYDR FLUID DRN			E	E			E	E
	RECHG ACCUM HYDR FLUID			D	D			D	D

ALARMS

VALVE HYDRAULIC PRESS HIGH 1-PS-5227A → QMCB

TRAIN A AIR RESERVOIR PRESS LOW 1-PS-5227B
TRAIN B AIR RESERVOIR PRESS LOW 1-PS-5227C
→ QMCB

HYDRAULIC TANK LEVEL LOW, 1-LS-5227 → QMCB

REF DWGS:
P&ID 1X4DB168-3
E.D. 1X3D-BC-C06C, 6D, 7C, 7D, 8C, 8D, 9C, 9D

NUCLEAR SAFETY RELATED "Q"

ALARMS & EQUIPMENT LIST

NO.	REVISIONS	DATE	DR	CHK	APPV	DTL
4	INCORP. PER DCP 00-V1N0045	12-12-03	RCR	RBH	DEW	X

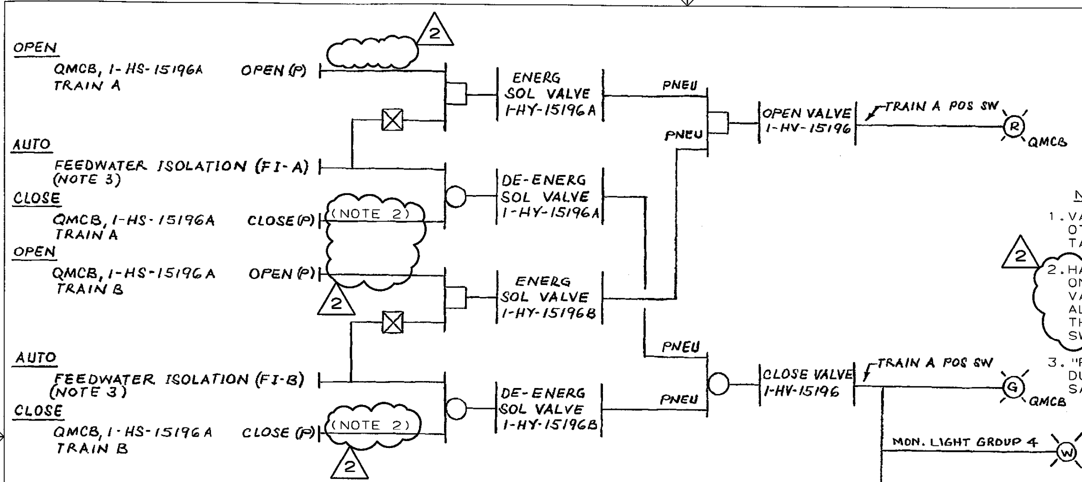
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM MAIN FEEDWATER SYSTEM

SCALE: NONE	DRAWING NO.	REV
JOB NO. 10604	1X5DN150-3	4

SIZE B 11x17



AUTO
CLOSE OPEN

1-HS-15196A
SPRING RETURN TO AUTO (TWO TRAIN TANDEM SW)

NOTES:

1. VALVE 1-HV-15196 SHOWN OTHER VALVES LISTED IN TABLE 1 SIMILAR.
2. HANDSWITCH SHALL BE HELD ON CLOSE POSITION UNTIL VALVE IS FULLY CLOSED TO ALLOW CIRCUIT TO DE-ENERGIZE THROUGH VALVE POSITION SWITCHES (TRAIN A & B).
3. "FI" SIGNAL WILL BE BLOCKED DURING TESTING OF NSSS SAFETY ACTUATION SYSTEM.

TABLE 1

TRAIN	SFTY SIG	SOL VALVE	VALVE	HANDSWITCH	SERVICE
A	FI-A	1-HY-15196A	1-HV-15196	1-HS-15196A	STM GEN.001
B	B	15196B			
A	A	15197A	15197	15197A	002
B	B	15197B			
A	A	15198A	15198	15198A	003
B	B	15198B			
A	A	15199A	15199	15199A	004
B	B	15199B			

REF. DWGS
P&ID 1X4DB168-3
E D 1X3D-BC-C04P

MAIN FDWTR ISOLATION BYPASS VALVE

NUCLEAR SAFETY RELATED "Q"

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
MAIN FEEDWATER SYSTEM

REV	DESCRIPTION	DATE	DR	CHK	APPV	DTL
2	INCORP. ABN-87-V1E0311A001	4/11/96	GS	RB	EDH	
	REVISIONS	DATE	DR	CHK	APPV	DTL
0	ISSUED FOR CONSTRUCTION	SEE MICROFILM FOR SIGNATURES				
	REVISIONS					

ENG MGR
DATE

SCALE: NONE
DRAWING NO. 1X5DN150-4
REV 2
JOB NO. 10604
SIZE B 11x17

k:\vog\archive\abn\15dn1504.dgn Apr. 8, 1996 13:12:32

OPEN

QMCB, 1-HS-15214 OPEN (P) NOTE 1

AUTO

AB, CVCS. LETDOWN HX RM R-A07
HIGH TEMP. 1-TY-15214D (1X5DV202)

AB, CVCS VLV GALLERY RM R-A08
HIGH TEMP 1-TY-15214F (1X5DV203)

AB, PIPE PENET RM R-A09
HIGH TEMP 1-TY-15214G (1X5DV204)

CLOSE

QMCB, 1-HS-15214 CLOSE (P)

ENERGIZE SOL VALVE 1-HY-15214 | PNEU | OPEN VALVE 1-HV-15214 | (R) QMCB

DE-ENERG SOL VALVE 1-HY-15214 | PNEU | CLOSE VALVE 1-HV-15214 | (G) QMCB

AUTO

CLOSE OPEN

1-HS-15214
SPRING RETURN TO AUTO

NOTES.

1. HANDSWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH.
2. TRAIN B POWER SUPPLY.

ALARM

AB, CVCS LETDOWN HX RM R-A07
HIGH TEMP 1-TY-15214J (1X5DV202)

AB, CVCS VLV GALLERY RM R-A08
HIGH TEMP 1-TY-15214K (1X5DV203)

AB, PIPE PENET RM R-A09
HIGH TEMP 1-TY-15214L (1X5DV204)

(C) QPCP

REF DWGS.
P & ID 1X4DB114
E. D. 1X3D-BD-C015.

NUCLEAR SAFETY RELATED "Q"

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EE&L	EGS	CHF. E.	P. E.	Q.A.E.	
3	INPUT PARAMETER CHANGED FROM FY-15214A TO PY-15214A PER P&ID	6-13-83	AV	FAL		PC					ENG. MGR.
2	INCORPORATED DCN #1 (YFCRB-4353)	9-17-80	ALV	NCB		PC	JGG		WHK		
1	CHANGED SWITCH ACTION PER PROCESS REQUIREMENTS	4-2-81	ALV	FAL		PC					DATE
0	ISSUED FOR CONSTRUCTION	1-29-80	FAL	XCB		PC			ZER		

BM 9510 P&ID REV.

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

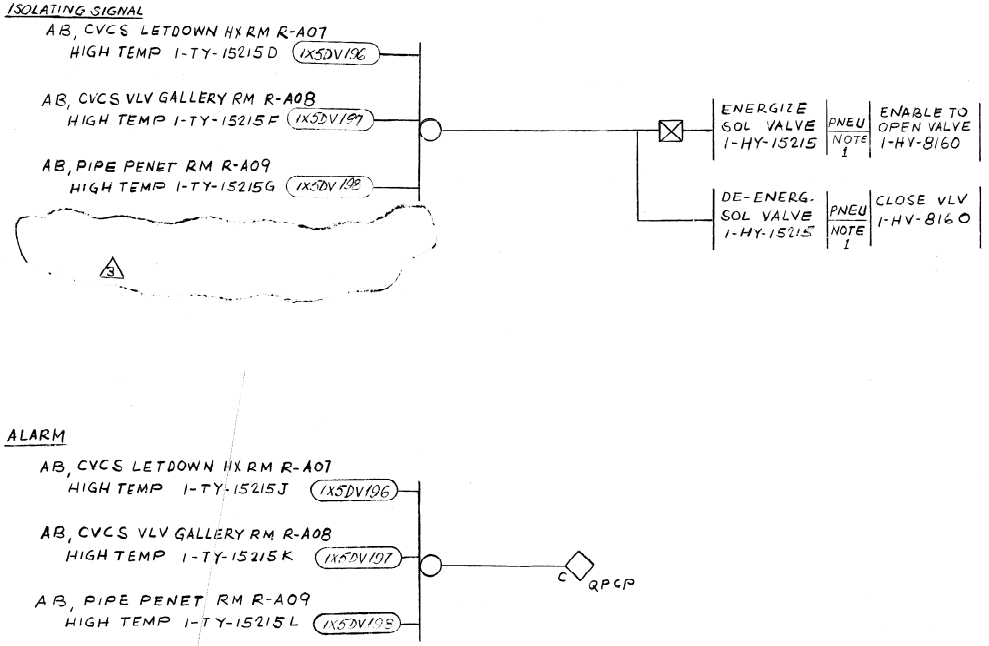
CONTROL LOGIC DIAGRAM
CVCS LETDOWN HX INLET
PIPE BREAK ROOM PROTECTION

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN151-1	5

SIZE B 11 x 17

ILN 9-14-91

4-11-84



NOTES

1. ANOTHER SOLENOID VALVE 1-HY-8160 SHALL BE ENERGIZED TO OPEN VALVE 1-HV-8160 AND DE-ENERGIZED TO CLOSE, REFER TO DWG 1X3D-BD-C04A.
2. TRAIN A POWER SUPPLY.

REF DWGS

P&ID 1X4DB114

E.D. 1X3D-BD-C01R.

NUCLEAR SAFETY RELATED "Q"

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
CVCS LETDOWN HX INLET
PIPE BREAK ROOM PROTECTION

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.
4	INCORPORATED DCN #1 -YFCRF-4854	9/17/86	ALL	NCB						
3	CHANGED SWITCH FUNCTION PER PROCESS REQUIREMENTS	4-2-84	AW	FAL		PCL				
2	INPUT PARAMETER CHANGED FROM FY-15215A TO PY-15215 PER P&ID	6-13-83	AW	FAL		PCL				
1	ISSUED FOR CONSTRUCTION	11/5/82	AW	FAL		PCL				

ENG. MGR. / DATE

SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DW151-2	3

BM 9510 P&ID REV

SIZE B 11 x 17

OPEN

QPCP, 1-HS-15212A OPEN (P) — NOTE 2

AUTO

- AB, PIPE PENET RM R-B08 HIGH TEMP 1-TY-15212E — 1X5DV209
- AB, PULL OUT AREA RM R-C106 HIGH TEMP 1-TY-15212F — 1X5DV210
- AB, VESTIBULE AREA RM R-C107 HIGH TEMP 1-TY-15212G — 1X5DV211
- AB, SGB HX RM R-C108 HIGH TEMP 1-TY-15212H — 1X5DV212
- SG1 BLOWDOWN LINE HIGH FLOW 1-FY-15212A — 1X5DV228

ENERGIZE SOL VALVE 1-HY-15212A — PNEU — OPEN VALVE 1-HV-15212A — (R) QPCP

DE-ENERG SOL VALVE 1-HY-15212A — PNEU — CLOSE VALVE 1-HV-15212A — (G) QPCP

CLOSE

QPCP, 1-HS-15212A CLOSE (P)

ALARM

- AB, PIPE PENET RM R-B08 HIGH TEMP 1-TY-15212J — 1X5DV209
- AB, PULL OUT AREA RM R-C106 HIGH TEMP 1-TY-15212K — 1X5DV210
- AB, VESTIBULE AREA RM R-C107 HIGH TEMP 1-TY-15212L — 1X5DV211
- AB, SGB HX RM R-C108 HIGH TEMP 1-TY-15212M — 1X5DV212

△2 — (C) QPCP

AUTO
CLOSE OPEN

1-HS-15212A SPRING RETURN TO AUTO

NOTES:

1. VALVE 1-HV-15212A SHOWN. OTHER VALVES LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATED
2. HANDSWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH.

REF. DWGS.

P & ID 1X4DB179-1, 159-1, 159-3
LOOP DIAG. 1X5DV228, 230, 232, 234
E.D. 1X3D-BC-Q01J

NUCLEAR SAFETY RELATED "Q"

TABLE 1

SERVICE	TRAIN	SOL VALVE	VALVE	HAND SW.	TEMP SW	FLOW SW.
SG 1 BLOWDOWN LINE	A	1-HY-15212A	1-HV-15212A	1-HS-15212A	1-TY-15212 E, F, G & H	1-FY-15212A
2	A	-15212B	-15212B	-15212B		-15212B
3	A	-15212C	-15212C	-15212C		-15212C
4	A	-15212D	-15212D	-15212D		-15212D

NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P. E.	Q. A. E.	ENG. MGR. / DATE
△3	DELETED MONITORING LIGHTS. VALVES NOT CONSIDERED CNMT. ISOLATION	10-18-82	AS	FAL		PCS					
△2	DELETED PRESSURE PARAMETER AND ADDED ISOLATION VALVE	6-25-82	AS	FAL		PCS					
△1	REVISED PER REF P&ID REV. 5 MARKED-UP	2-8-82	FAL			PCS					
△0	ISSUED FOR CONSTRUCTION	12-21-80	FAL	KSB		PCS					

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

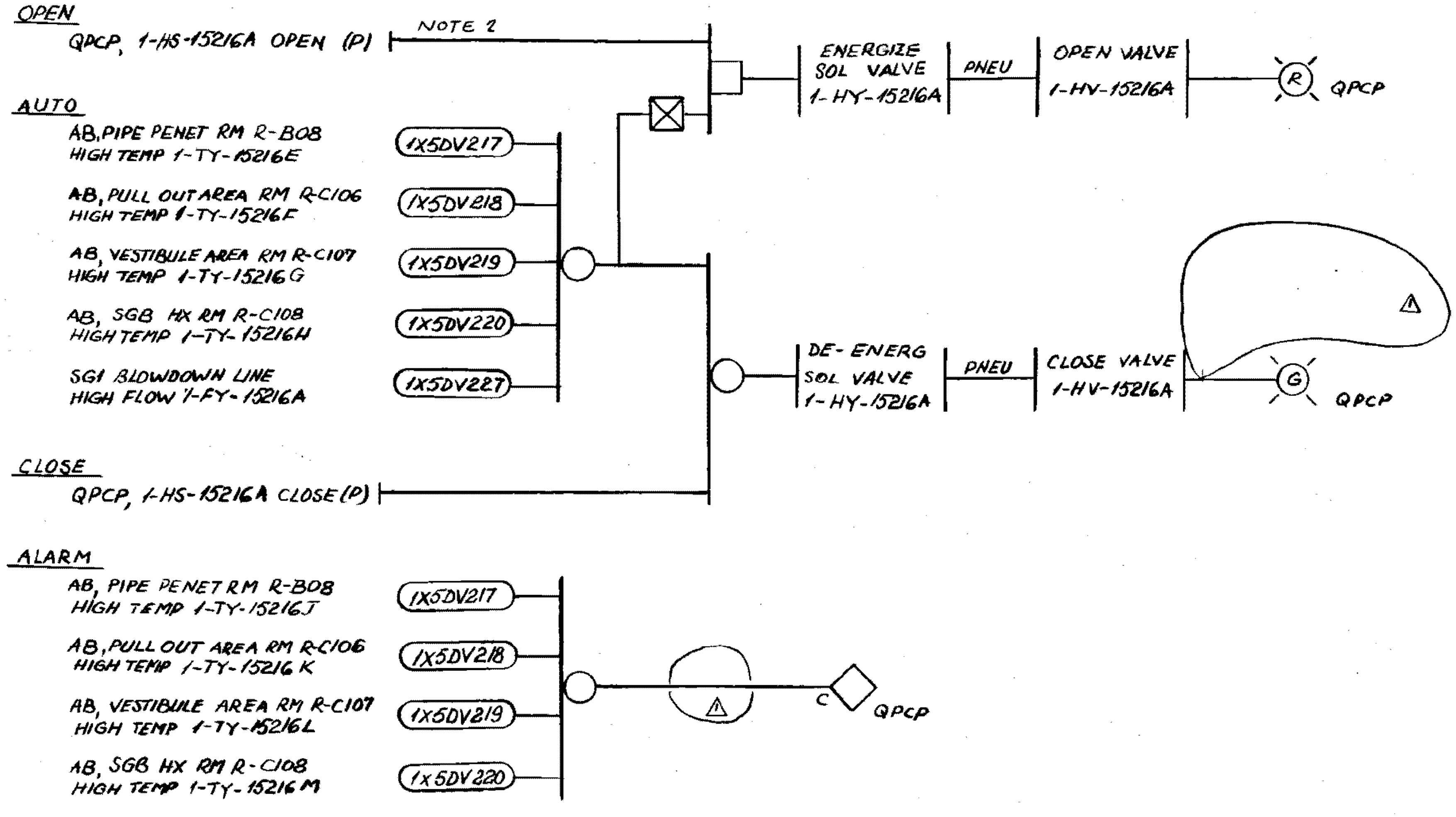
CONTROL LOGIC DIAGRAM
AB STM GEN BLOWDOWN
PIPE BREAK ROOM PROTECTION

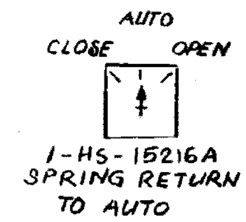
SCALE: NONE	DRAWING NO.	REV.
JOB NO. 9510	1X5DN152-1	3

BM 9510 P&ID 179-1 REV. 5, 159-1 REV 7, 159-3 REV. 1

SIZE B 11 x 17

11-14-94





NOTES.

1. VALVE 1-HV-15216A SHOWN. OTHER VALVES LISTED IN TABLE 1 SIMILAR EXCEPT AS TABULATED.
2. HANDSWITCH SHALL BE HELD ON OPEN POSITION UNTIL VALVE IS FULLY OPEN TO ALLOW CIRCUIT TO SEAL IN THROUGH VALVE POSITION SWITCH.

REF. DWGS.

P & ID 1X4DB179-1, 159-1, 159-3
LOOP DIAG. 1X5DV227, 229, 231 & 233
E.D. 1X3D-BC-Q01K

TABLE 1

SERVICE	TRAIN	SOL VALVE	VALVE	HAND SW.	TEMP SW.	FLOW SW.
SG 1 BLOWDOWN LINE	B	1-HY-15216A	1-HV-15216A	1-HS-15216A	1-TY-15216 E, F, G & H	1-FY-15216A
2	B	-15216B	-15216 B	-15216B		-15216 B
3	B	-15216 C	-15216 C	-15216C		-15216 C
4	B	-15216D	-15216D	-15216D		-15216D

SCANNED DATE SEP 1 4 1991

NUCLEAR SAFETY RELATED "Q"

BECHTEL
LOS ANGELES

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

CONTROL LOGIC DIAGRAM
AB STM GEN BLOWDOWN
PIPE BREAK ROOM PROTECTION

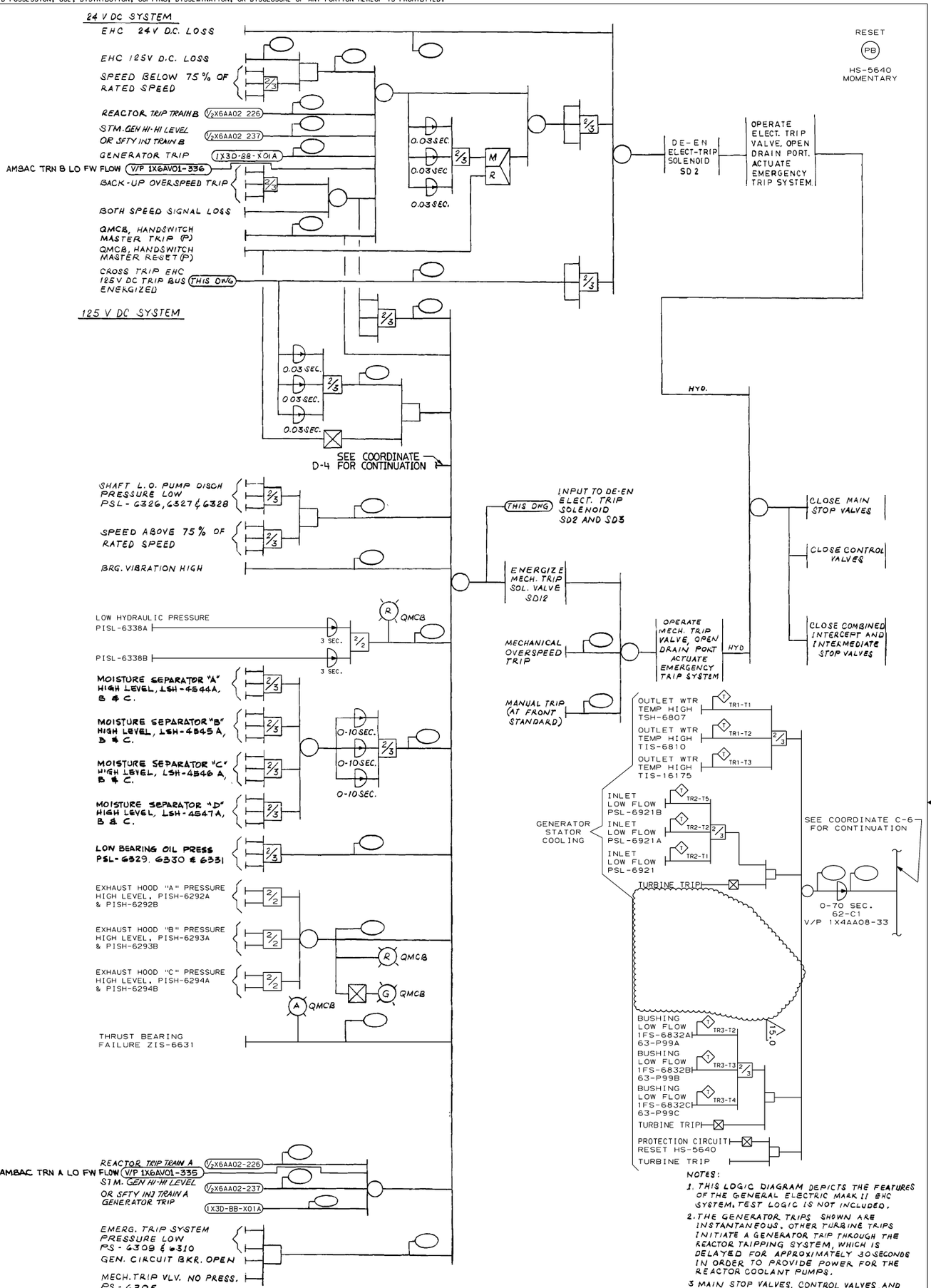
NO.	REVISIONS	DATE	DR	CHK.	SUPV.	EGL	EGS	CHF. E.	P.E.	Q.A.E.
3										
2										
1	DELETED MONITORING LIGHTS. VALVES NOT CONSIDERED CNMT. ISOLATION	10-18-82	AV	FAL		PCK	DBC		JW	
0	ISSUED FOR CONSTRUCTION	6-25-82	AV	FAL		PCK	DBC	JD	127	

ENG. MGR.
DATE

SCALE: NONE
JOB NO. 9510
DRAWING NO. 1X5DN152-2
REV. 1

BM 9510

SIZE B 11 x 17



NOTES:

1. THIS LOGIC DIAGRAM DEPICTS THE FEATURES OF THE GENERAL ELECTRIC MARK II EHC SYSTEM. TEST LOGIC IS NOT INCLUDED.
2. THE GENERATOR TRIPS SHOWN ARE INSTANTANEOUS. OTHER TURBINE TRIPS INITIATE A GENERATOR TRIP THROUGH THE REACTOR TRIPPING SYSTEM, WHICH IS DELAYED FOR APPROXIMATELY 30 SECONDS IN ORDER TO PROVIDE POWER FOR THE REACTOR COOLANT PUMPS.
3. MAIN STOP VALVES, CONTROL VALVES, AND COMBINED AND INTERMEDIATE STOP VALVES POSITION ARE INDICATED BY PERCENTAGE INDICATORS.
4. PROVIDE ANNUNCIATOR INPUT FOR CONTROL POWER LOSS ON CUSTOMER TRIP ISOLATION LOGIC (TRAIN A & B)
5. THE SYMBOL ◇ REPRESENTS INTERPOSING TARGET RELAYS WHICH ARE LOCATED ON THE HYDROGEN AND STATOR WATER COOLING SYSTEM CONTROL PANEL (HSC).

REF. DWGS
V/P 1X4AA11-445 UP TO 454
INST LOOP DIAG 1X5DV094.95.96

NO.	DESCRIPTION	DATE	DR	CHK	APPV	DTL
15.0	REVISED PER ABN 1049001501J011, VER 1.0	8/18/09	RBH	MWD	JMR	

VERSIONS

NUCLEAR SAFETY RELATED Q

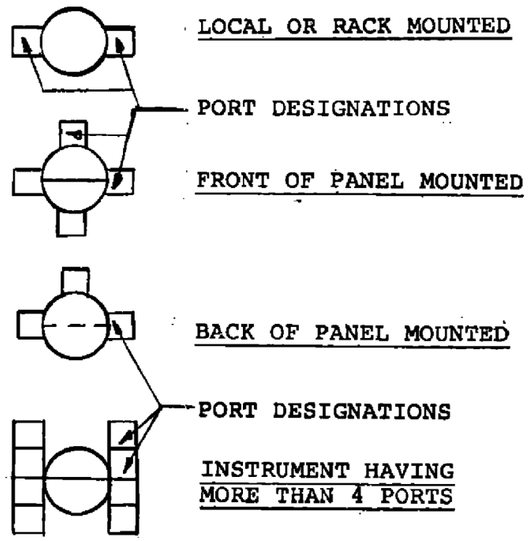
SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

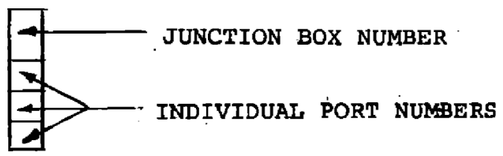
GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

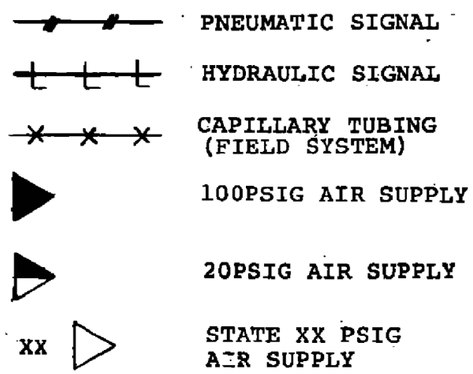
CONTROL LOGIC DIAGRAM
MAIN TURBINE TRIPPING SYSTEM

SCALE: NONE
JOB NO. 10604
DRAWING NO. 1X5DN203-1
VER. 15.0
SIZE D 22X34

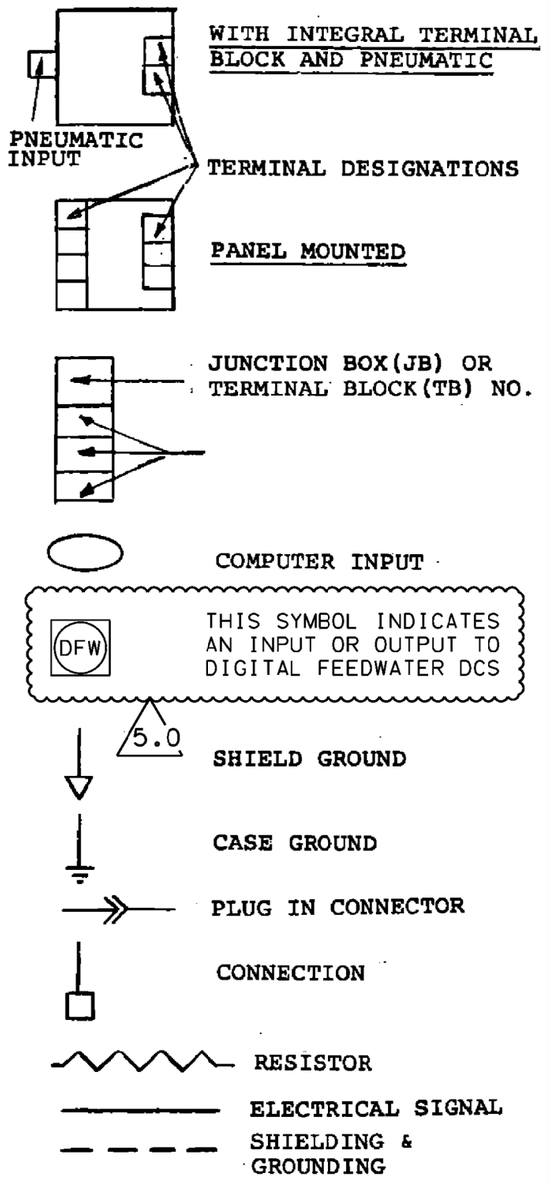
PNEUMATIC INSTRUMENTS







ELECTRONIC INSTRUMENTS



GENERAL NOTES

1. For symbols & abbreviations not covered, refer to:
   a. P&ID Drawing 1X5DV 101 & 1X5DV102
   b. ISA Standard S5.4-1976, Instrument Loop Diagrams.
2. All equipment numbers, line numbers, and instrument tag numbers have a Unit 1 prefix, unless otherwise noted.
3. All computer output signals are 24 VDC nominal, unless otherwise noted.
4. All shield wire to be grounded at the process cabinets, unless otherwise noted.
5. All pneumatic signals are 3-15 PSIG, unless otherwise noted.
6. All resistors are 100 OHM, one watt, one percent tolerance, unless otherwise noted.
7. Information shown on individual loop diagrams includes field instrument, panels/process rack connections, hard-wired indicators/recorders, and transfer switches.
8. Applicable secondary loop information (alarms, computer points, and control interlocks) i.e., cabling information termination information, location number information, can be found on the cross reference drawing identified on the individual loop diagrams, or in the EE-580 Data Base.
9. All loop instruments are direct acting unless otherwise noted.
10. For all OIM stations manual actuation of "RAISE" button opens the valve to increase the process variable, and actuation of "LOWER" button closes the valve to decrease the process variable, unless otherwise noted.

BISTABLE

Process variable normally less than set point or reference. Comparator energizes on increase.

Process variable normally less than set point or reference. Comparator de-energizes on increase.

Process variable normally greater than set point or reference. Comparator energizes on decrease.

Process variable normally greater than set point or reference. Comparator de-energize on decrease.

NOTES ON OUTPUT RELAY ACTION

Output ralay state (A) or (B) 

All cabinet outputs from bistable driven relays shall be unpowered isolated dry contacts. Contact state is identified sa follows:

(A) Contact open with bistable de-energized.
(B) Contact closed with bistable de-energized.

- AC Source

- Substract, difference

- Output equals square root of input

- Algebric summation or totalize

- Cabinet mounted card

SOUTHERN COMPANY SERVICES, INC.
BIRMINGHAM, ALABAMA

GEORGIA POWER COMPANY
ALVIN W. VOGTLE NUCLEAR PLANT

INSTRUMENT LOOP DIAGRAM LEGEND

NO.	VERSIONS	DATE	DR	CHK	APPV
5.0	REVISED PER ABN 1039002501J173, VER 1.0	07/26/13	DCP	MWD	JMR

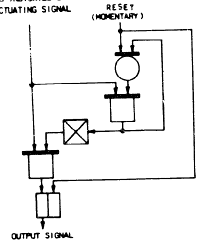
SCALE: NONE	DRAWING NO.	VER.
JOB NO. 10604	1X5DV002	5.0

SIZE B 11x17

7243D07 SHEET - 1

LOGIC SYMBOLS

SYMBOL	LOGIC FUNCTION	DESCRIPTION
	OR	A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN ONE INPUT (OR MORE) EXISTS.
	NOT	A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN THE INPUT DOES NOT EXIST.
	AND	A DEVICE WHICH PRODUCES AN OUTPUT ONLY WHEN EVERY INPUT EXISTS
2/3	COINCIDENCE (2 OUT OF 3 SHOWN)	A DEVICE WHICH PRODUCES AN OUTPUT WHEN THE PRESCRIBED NUMBER OF INPUTS EXIST (EXAMPLE 2 INPUTS MUST EXIST FOR AN OUTPUT).
	ADJUSTABLE TIME DELAY (ACTUATING)	A DEVICE WHICH PRODUCES AN OUTPUT FOLLOWING DEFINITE INTENTIONAL TIME DELAY AFTER RECEIVING AN INPUT.
	OFF RETURN MEMORY	A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT, EXCEPT UPON INTERRUPTION OF POWER IT RETURNS TO THE OFF CONDITION.
	RETENTIVE MEMORY	A DEVICE WHICH RETAINS THE CONDITION OF OUTPUT CORRESPONDING TO THE LAST ENERGIZED INPUT (ALSO UPON INTERRUPTION OF POWER).
L R	RETENTIVE MEMORY WITH ACTUATION BLOCK	A DEVICE HAVING RETENTIVE MEMORY AND ACTUATION SIGNAL BLOCK LOGIC FUNCTIONS AS INDICATED BY THE DIAGRAM BELOW.



SYMBOL	LOGIC FUNCTION	DESCRIPTION
ANALOG INPUT / CONTROL LOGIC INPUT / ANALOG OUTPUT	ANALOG GATE	A DEVICE WHICH PERMITS AN ANALOG SIGNAL TO PASS IN AN ISOLATED CIRCUIT IF THE CONTROL LOGIC INPUT EXISTS.

— — — — SCOPE OF SUPPLY DEMARCATION

———— REDUNDANCY DEMARCATION

ADDITIONAL SYMBOLS

GEORGIA POWER COMPANY
PLANT: VOGTLE ELECTRIC GENERATING PLANT
UNITS: 1 & 2 SPIN: AASFEDC3
STATUS: APPROVED
CERTIFICATION LTR. NO. GP-14217
AUTHORITY: J. L. TAIN
ENGR. LTR. NO. EP/SA-54490

- PB 143A ← INSTRUMENT CHANNEL BISTABLE
- ← OUTPUT INDICATOR
  - BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER IS GREATER THAN THE SETPOINT VALUE.
  - BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER IS LESS THAN THE SETPOINT VALUE.
  - BISTABLE OUTPUT IS A LOGIC "1" WHEN THE MEASURED PARAMETER DEVIATES FROM THE NORMAL VALUE BY MORE THAN THE SETPOINT AMOUNTS.
  - OR OR — SAME AS ABOVE EXCEPT WITH AN AUTOMATICALLY ADJUSTED SETPOINT
  - OR OR — SAME AS ABOVE EXCEPT WITH REQUIRED HYSTERESIS
- 27 ← NON-INSTRUMENT BISTABLE
- ← OUTPUT INDICATOR (SAME AS EXPLAINED ABOVE)
- A 2 ← ALARM ANNUNCIATOR (ALARMS ON THE SAME SHEET WITH THE SAME SUBSCRIPT SHARE A COMMON ANNUNCIATOR WINDOW)
- R ← REACTOR TRIP "FIRST OUT" ANNUNCIATOR
- T ← TURBINE TRIP "FIRST OUT" ANNUNCIATOR
- T ← INDICATOR LAMP
  A - ACTUATION STATUS LIGHTS, T - TRIP STATUS LIGHTS,
  P - PERMISSIVE STATUS LIGHTS, B - BYPASS STATUS LIGHTS
- C ← COMPUTER INPUT
  ← ERF COMPUTER INPUT
  LOGIC INFORMATION TRANSMISSION
- – – – – ANALOG INFORMATION TRANSMISSION
- I ← ANALOG DISPLAY
  I - ANALOG INDICATOR, R - RECORDER, R2 - RECORDER 2 PEN,
  R3 - RECORDER 3 PEN, R8 - RECORDER 8 POINT
- Σ ← ANALOG SUMMER

GENERAL NOTES: (FOR ALL SHEETS)

1. IN ALL LOGIC CIRCUITS, THE INDICATED ACTUATION OF A SYSTEM OR DEVICE OCCURS WHEN A LOGIC "1" SIGNAL IS PRESENT. EXCEPT WHERE INDICATED OTHERWISE, ALL BISTABLES ARE "DE-ENERGIZE TO ACTUATE" SUCH THAT A LOGIC 1 SIGNAL IS DEFINED TO BE PRESENT WHEN THE BISTABLE OUTPUT VOLTAGE IS OFF.
2. EXCEPT WHERE INDICATED OTHERWISE, THE FOLLOWING IS TRUE: ALL LOGIC CIRCUITS ARE REDUNDANT THAT IS EVERY LOGIC CIRCUIT SHOWN HAS A DUPLICATE LOCATED IN A SEPARATE CABINET. ALL INSTRUMENT CHANNELS, BISTABLES, ANNUNCIATORS, COMPUTER INPUTS, AND INDICATOR LAMPS ARE NOT REDUNDANT. MANUAL CONTROLS DO NOT HAVE REDUNDANT ACTUATORS, BUT DO HAVE REDUNDANT CONTACTS WHERE LOGIC IS REDUNDANT. ALL INDICATOR LAMPS, ANNUNCIATORS, AND COMPUTER INPUTS ARE CONNECTED TO BOTH TRAINS (WHERE LOGIC IS REDUNDANT) SO THAT A SIGNAL IN EITHER TRAIN WILL ACTUATE.
3. WHENEVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED.
4. THIS SET OF DRAWINGS ILLUSTRATES THE FUNCTIONAL REQUIREMENTS OF THE REACTOR CONTROL AND PROTECTION SYSTEM, INCLUDING ENGINEERED SAFEGUARDS. THESE DRAWINGS DO NOT REPRESENT ACTUAL HARDWARE IMPLEMENTATION. FOR HARDWARE IMPLEMENTATION, REFER TO THE FOLLOWING LIST:

FUNCTIONAL DIAGRAM	BLOCK OR WIRING DIAGRAM
REACTOR PROTECTION SYSTEM (SHEETS 1 TO 8 AND 15 TO 17)	DRAWING NUMBERS: 1081H85, 7244D42, 5655D49, 5655D50, 5655D51, 1189E15, 271C683, 8757D64
REACTOR CONTROL SYSTEM (SHEETS 9 TO 14 AND 18 TO 20)	DRAWING NUMBERS: 5655D52, 7244D42, 271C683

5. THIS SET OF DRAWINGS IS IDENTICAL FOR UNITS 1 AND 2 EXCEPT FOR THE TAG NUMBERS. FOR UNIT 1 TAG NUMBERS ADD A "1" EXAMPLE: 1PB-455E. FOR UNIT 2 TAG NUMBERS ADD A "2". EXAMPLE: 2PB-455E.

DEVICE FUNCTION LETTERS AND NUMBERS

FB	FLOW CHANNEL
LB	LEVEL CHANNEL
NC	NUCLEAR CHANNEL
PB	PRESSURE CHANNEL
RC	RADIATION CHANNEL
SB	SPEED CHANNEL
TB	TEMPERATURE CHANNEL
ZB	POSITION CHANNEL
20	ELECTRIC OPERATED VALVE
27	UNDERVOLTAGE RELAY
33	POSITION SWITCH
52	AC CIRCUIT BREAKER
63	PRESSURE SWITCH
71	LEVEL SWITCH
80	FLOW SWITCH
81	UNDERFREQUENCY RELAY

LOGIC SYMBOLS (CONT.)

SYMBOL	LOGIC FUNCTION	DESCRIPTION
TRACK/STORE	TRACK/STORE UNIT	A DEVICE WHICH PRODUCES AN OUTPUT EQUAL TO THE ANALOG INPUT WHEN THE CONTROL LOGIC INPUT DOES NOT EXIST. WHEN THE CONTROL LOGIC INPUT EXISTS, THE OUTPUT IS EQUAL TO THE VALUE OF THE ANALOG INPUT THAT EXISTED AT THE TIME THE LOGIC INPUT WAS ACTUATED.
	VARIABLE TIME DELAY (ACTUATING)	A DEVICE WHICH PRODUCES AN OUTPUT FOLLOWING A TIME DELAY WHICH IS EQUAL TO THE ANALOG INPUT
	ADJUSTABLE TIME DELAY (DEACTUATING)	A DEVICE WHICH PRODUCES AN OUTPUT COINCIDENT WITH THE INPUT AND MAINTAINS THE OUTPUT FOR A DEFINITE INTENTIONAL TIME DELAY AFTER THE INPUT IS REMOVED.

INDEX

TITLE	SH. NO.	SUBS		
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NUCLEAR INSTR. PERMISSIVES AND BLOCKS	4	2	2	2
PRIMARY COOLANT SYSTEM TRIP SIGNALS	5	6	6	6
PRESSURIZER TRIP SIGNALS	6	6	6	6
STEAM GENERATOR TRIP SIGNALS	7	5	6	6
SAFEGUARDS ACTUATION SIGNALS	8	10	11	11
ROD CONTROLS & ROD BLOCKS	9	6	6	6
STEAM DUMP CONTROL	10	4	4	4
PRESSURIZER PRESSURE CONTROL	11	5	5	5
PRESSURIZER HEATER CONTROL	12	5	5	5
FEEDWATER CONTROL & ISOLATION	13	5	5	5
FEEDWATER CONTROL & ISOLATION	14	5	5	5
AUXILIARY FEEDWATER PUMPS STARTUP	15	6	7	7
TURBINE TRIPS, RUNBACKS & OTHER SIGNALS	16	5	6	7
PRESSURIZER PRESS. RLF. SYS. (TRAIN A)	18	2	2	2
PRESSURIZER PRESS. RLF. SYS. (TRAIN B)	19	2	2	2
PRESSURIZER LEVEL CONTROL	20	2	2	2
SAFEGUARDS ACTUATION SIGNALS (CONT SUB)	21	-	1	1

* SHEET 17 DELETED

WESTINGHOUSE PROPRIETARY DATA

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
INDEX AND SYMBOLS

DWN. P HEARN
7243D07 SHEET - 1
DO NOT SCALE

SUB	CHANGES
10	GAE/GBE-300, ECN-33020, REVISED SUB BLOCK
11	GAE/GBE-300, ECN-33535, REVISED SUB BLOCK, S. HOLLERAN
12	GAE/GBE-300, ECN-33722, REVISED SUB BLOCK
13	GAE/GBE-300, ECN-34109, REVISED SUB BLOCK, CHANGES CIRCLED, OHARA 7-27-87
14	GAE/GBE-300, ECN-34476, REVISED INDEX, OHARA 1-26-89

11 10 9 8 7 6 5 4 3 2 1

SUB-STANDARD ORIGINAL
NOT SUITABLE FOR LEGIBLE REPRODUCTION

VOGTLE ELECTRIC GENERATING PLANT — JOB NO. 9510
EQUIPMENT TAG NO. N/A
STARTUP DESIGNATION NO. N/A
ACTIVITY NO. N/A
SYSTEM NO. N/A
CATEGORY NO. N/A
RETROFITTING REQUIRED ☐ YES ☒ NO

DISTRIBUTION TO: FOR: REVIEW
- MECHANICAL
- HVAC
- EQUIPMENT
- PROCESS
- CONTROL SYSTEMS
- ELECTRICAL
  WIRING
  CONDUIT
- HAZARDS
- CIVIL/STRUCTURAL
- NUCLEAR
- STRESS/PLANT DESIGN
  CODES AND STANDARDS
- ARCHITECTURAL
- STARTUP
- CONSTRUCTION
- NOT REQ'D BY ENGRG
- CLIENT
- EQUIP. QUALIFICATION
- M & QS
- WESTINGHOUSE

IDENTIFYING TITLE OF THIS DOCUMENT
FUNCTIONAL DIAGRAM INDEX AND SYMBOLS

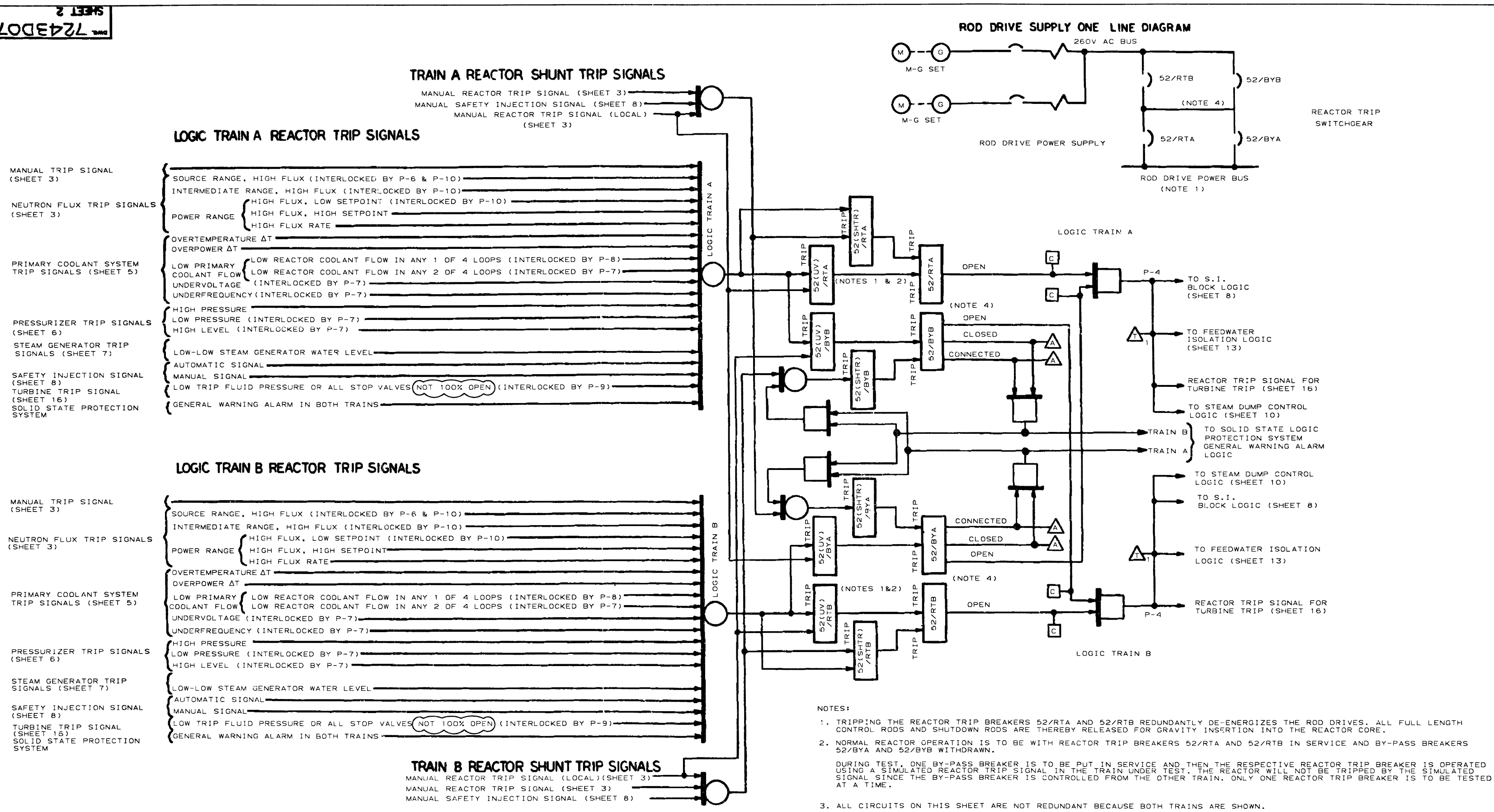
Bechtel Log No.
1X6AA02-225-

IMPORTANT
Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.

DATE RECEIVED 2-10-89

DOCUMENT STATUS
1 ☐ WORK MAY PROCEED
2 ☐ REVISE AND RESUBMIT WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED
3 ☐ REVISE AND RESUBMIT WORK MAY NOT PROCEED.
4 ☐ INFORMATION ONLY DISTRIBUTION REQ'D? ☐ YES
5 ☐ RESUBMIT — NOT ACCEPTABLE FOR MICROFILM. WORK MAY PROCEED

CAMERA OPERATOR
SECTION SUPERVISOR
DATE



NOTES:

1. TRIPPING THE REACTOR TRIP BREAKERS 52/RTA AND 52/RTB REDUNDANTLY DE-ENERGIZES THE ROD DRIVES. ALL FULL LENGTH CONTROL RODS AND SHUTDOWN RODS ARE THEREBY RELEASED FOR GRAVITY INSERTION INTO THE REACTOR CORE.
2. NORMAL REACTOR OPERATION IS TO BE WITH REACTOR TRIP BREAKERS 52/RTA AND 52/RTB IN SERVICE AND BY-PASS BREAKERS 52/BYA AND 52/BYB WITHDRAWN.

   DURING TEST, ONE BY-PASS BREAKER IS TO BE PUT IN SERVICE AND THEN THE RESPECTIVE REACTOR TRIP BREAKER IS OPERATED USING A SIMULATED REACTOR TRIP SIGNAL IN THE TRAIN UNDER TEST. THE REACTOR WILL NOT BE TRIPPED BY THE SIMULATED SIGNAL SINCE THE BY-PASS BREAKER IS CONTROLLED FROM THE OTHER TRAIN. ONLY ONE REACTOR TRIP BREAKER IS TO BE TESTED AT A TIME.
3. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT BECAUSE BOTH TRAINS ARE SHOWN.
4. OPEN/CLOSED INDICATION FOR EACH TRIP BREAKER AND EACH BYPASS BREAKER IN CONTROL ROOM.

7 ABN-05114 REDRAWN BY SCS AND ISSUED TO INCORP. ABN-05114

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS PITTSBURGH PA U.S.A.
TITLE GEORGIA POWER CO ALVIN W. VOGTLE UNITS 1 & 2 FUNCTIONAL DIAGRAMS REACTOR TRIP SIGNALS
DWG 7243D07
SHEET 2
DO NOT SCALE
1X6AA02-226-7

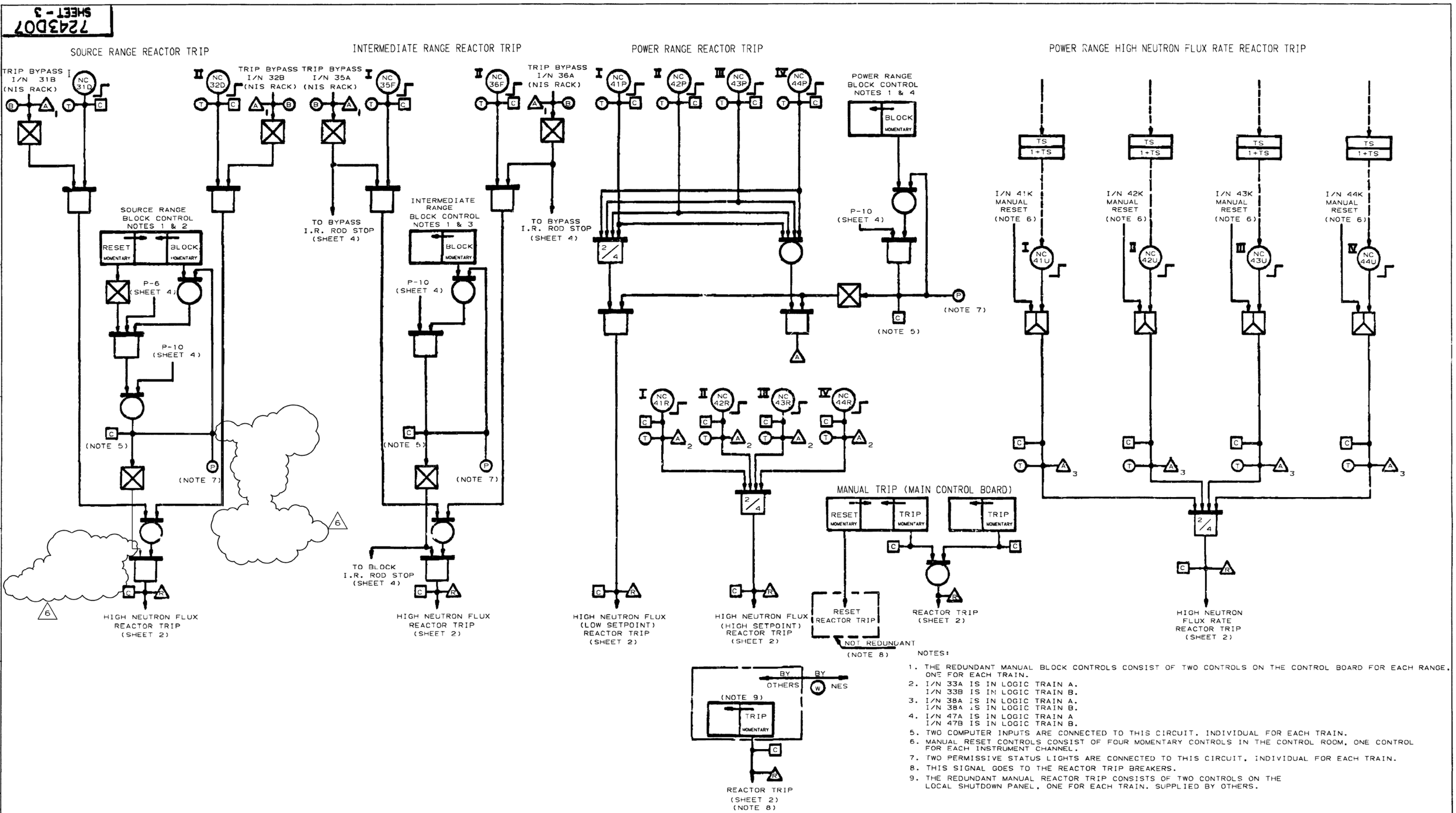
DWG 7243D07 SHEET 2

Southern Company Services, Inc.

DOCUMENT STATUS

PLANT: VOGTLE
1X6AA02-226-9
FUNCTIONAL DIAGRAMS REACTOR TRIP SIGNALS
(REDRAWN AND REVISED BY SCS TO INCORPORATE ABN-05114)
VENDOR: WE
P.O.:

11 10 9 8 7 6 5 4 3 2



NOTES:

1. THE REDUNDANT MANUAL BLOCK CONTROLS CONSIST OF TWO CONTROLS ON THE CONTROL BOARD FOR EACH RANGE, ONE FOR EACH TRAIN.
2. I/N 33A IS IN LOGIC TRAIN A. I/N 33B IS IN LOGIC TRAIN B.
3. I/N 38A IS IN LOGIC TRAIN A. I/N 38A IS IN LOGIC TRAIN B.
4. I/N 47A IS IN LOGIC TRAIN A. I/N 47B IS IN LOGIC TRAIN B.
5. TWO COMPUTER INPUTS ARE CONNECTED TO THIS CIRCUIT. INDIVIDUAL FOR EACH TRAIN.
6. MANUAL RESET CONTROLS CONSIST OF FOUR MOMENTARY CONTROLS IN THE CONTROL ROOM, ONE CONTROL FOR EACH INSTRUMENT CHANNEL.
7. TWO PERMISSIVE STATUS LIGHTS ARE CONNECTED TO THIS CIRCUIT. INDIVIDUAL FOR EACH TRAIN.
8. THIS SIGNAL GOES TO THE REACTOR TRIP BREAKERS.
9. THE REDUNDANT MANUAL REACTOR TRIP CONSISTS OF TWO CONTROLS ON THE LOCAL SHUTDOWN PANEL. ONE FOR EACH TRAIN. SUPPLIED BY OTHERS.

5	GAE	GBE-300	ECN-34937	CHANGES CIRCLED REDRAWN AND RE-ISSUED BY SCS TO INCORP. ABN-11479

NO.	REVISIONS	DATE	DR	CHK	APPV
6	INCORPORATED PER DCP 96-V1N0044	05/12/99	ELC	EOG	GLB

SCS REVISIONS

DOCUMENT STATUS CODE 1

1X6AA02-00227-9

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURG, PA. U.S.A.

DRWN R HEARN

TITLE: GEORGIA POWER CO. ALVIN W. VOGTLE UNITS 1 & 2 FUNCTIONAL DIAGRAMS NUCLEAR INSTR. & MANUAL TRIP SIGNALS

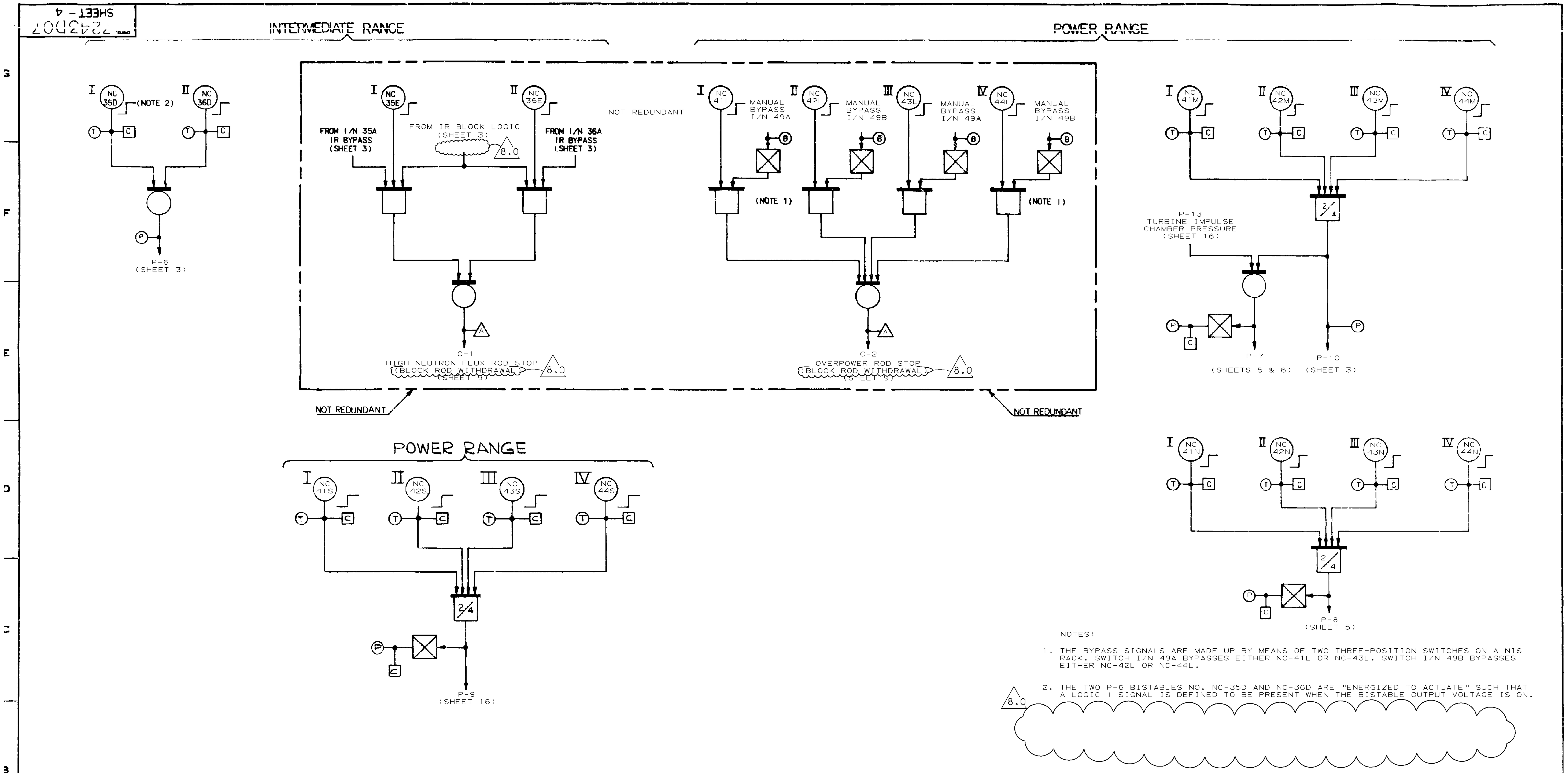
7243D07 SHEET 3

DO NOT SCALE

REV 6

SIZE "D"

CAD NAME 16A02227



NOTES:

1. THE BYPASS SIGNALS ARE MADE UP BY MEANS OF TWO THREE-POSITION SWITCHES ON A NIS RACK. SWITCH I/N 49A BYPASSES EITHER NC-41L OR NC-43L. SWITCH I/N 49B BYPASSES EITHER NC-42L OR NC-44L.

2. THE TWO P-6 BISTABLES NO. NC-35D AND NC-36D ARE "ENERGIZED TO ACTUATE" SUCH THAT A LOGIC 1 SIGNAL IS DEFINED TO BE PRESENT WHEN THE BISTABLE OUTPUT VOLTAGE IS ON.

1	SO SAE/SBE-300 D 906528/906527
2	SAE/GBE-300 ECN-31242 REV 5 CIRCLED YEARS 7-13-78

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

DFTM. P HEARN

TITLE: GEORGIA POWER CO
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
NUCLEAR INSTR. PERMISSIVES & BLOCKS

7243D07
SHEET - 4
SUB X2

DIMENSIONS IN INCHES — DO NOT SCALE

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

CAD MICROSTATION CYN 02 — 1X6AA02-00228.DGN

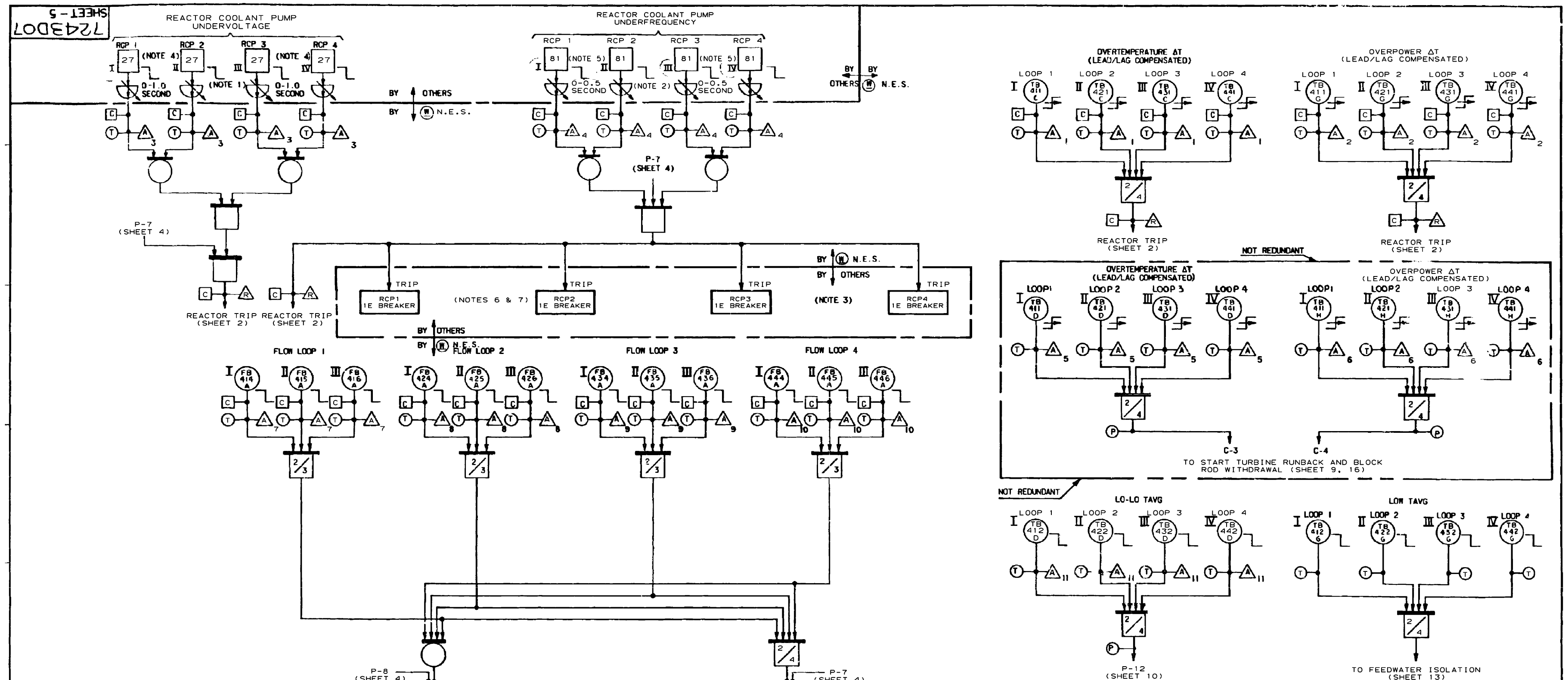
Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1

VERSION 8.0 DATE 11/04/09
REVISED BY SNC PER ABN-V01192, VER. 2.0.
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

TITLE:
FUNCTIONAL DIAGRAMS
NUCLEAR INSTRUMENT PERMISSIVES & BLOCKS

BY	CHK'D	APPR.1	APPR.2
CYN	RKF	PML	

VENDOR: WESTINGHOUSE P.O.#:
DRAWING NO. 1X6AA02-00228
SIZE D



NOTES

1. THE SETPOINT OF THE UNDERVOLTAGE RELAYS SHOULD BE ADJUSTABLE BETWEEN 60% AND 80% OF NOMINAL VOLTAGE, WITH THE ADJUSTABLE TIME DELAY SET TO ITS MINIMUM VALUE. THE UNDERVOLTAGE DETECTOR SHOULD HAVE A TIME RESPONSE OF LESS THAN 0.2 SECONDS. THE ADJUSTABLE DELAY SHOULD ALLOW AN ADDITIONAL INTENTIONAL DELAY BETWEEN 0 TO 1.0 SECOND.

2. THE SETPOINT OF THE UNDERFREQUENCY RELAYS SHOULD BE ADJUSTABLE BETWEEN 54 Hz AND 59 Hz. WITH THE ADJUSTABLE TIME DELAY SET TO ITS MINIMUM VALUE. THE UNDERFREQUENCY DETECTOR SHOULD HAVE A TIME RESPONSE OF LESS THAN 0.1 SECONDS. THE ADJUSTABLE DELAY SHOULD ALLOW AN ADDITIONAL INTENTIONAL DELAY BETWEEN 0 TO 0.5 SECONDS.

3. THE MAXIMUM ALLOWABLE RCP BREAKER TRIP TIME DELAY IS 0.1 SECONDS.

4. THE UNDERVOLTAGE SENSORS (POTENTIAL TRANSFORMERS) MUST BE LOCATED ON THE MOTOR SIDE OF THE RCP CIRCUIT BREAKERS TO DETECT THE TRIP OF THE RCP CIRCUIT BREAKERS IN ADDITION TO BUS UNDERVOLTAGE.

5. THE UNDERFREQUENCY SENSORS MAY BE LOCATED ON THE MOTOR SIDE OF THE RCP CIRCUIT BREAKERS.

11.0 6. REACTOR COOLANT PUMPS NUMBER 1 AND 3 MUST BE ON BUS 1NAA. REACTOR COOLANT PUMPS NUMBER 2 AND 4 MUST BE ON BUS (1NAB.)

7. REFER TO BECHTEL DRAWING SK-3-619 FOR DETAILED LOGIC FOR RCP BREAKERS.

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.
TITLE: GEORGIA POWER CO.
ALVIN W. VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
PRIMARY COOLANT SYSTEM TRIP SIGNALS
SCALE ~ | 7243D07
DIMENSIONS IN INCHES | SHEET-5
DO NOT SCALE | SUB 1456

CAD MICROSTATION | LPM/03 | 1X6AA02-00229.DGN

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT
UNIT NO. 1

VERSION 11.0 | DATE 3-4-11

REVISED BY SNC PER ABN-V02456, VER. 1.0

SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.

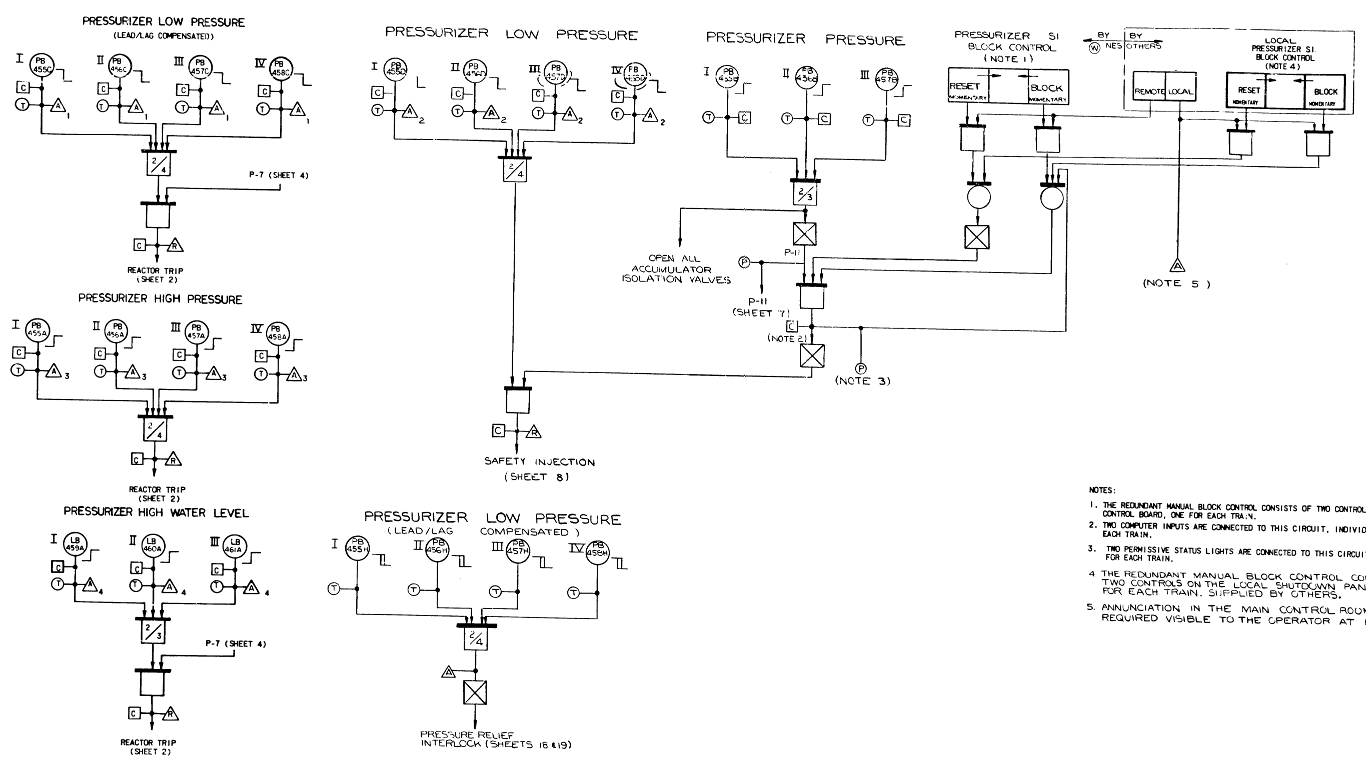
TITLE: FUNCTIONAL DIAGRAMS PRIMARY COOLANT SYSTEM TRIP SIGNALS

BY	CHK'D	APPR.1	APPR.2
LPM	MLH	AAN	

VENDOR: WESTINGHOUSE | P.O.#:

DRAWING NO. 1X6AA02-00229

SIZE D



NOTES:

1. THE REDUNDANT MANUAL BLOCK CONTROL CONSISTS OF TWO CONTROLS ON THE CONTROL BOARD, ONE FOR EACH TRAIN.
2. TWO COMPUTER INPUTS ARE CONNECTED TO THIS CIRCUIT, INDIVIDUAL FOR EACH TRAIN.
3. TWO PERMISSIVE STATUS LIGHTS ARE CONNECTED TO THIS CIRCUIT, INDIVIDUAL FOR EACH TRAIN.
4. THE REDUNDANT MANUAL BLOCK CONTROL CONSISTS OF TWO CONTROLS ON THE LOCAL SHUTDOWN PANEL, ONE FOR EACH TRAIN. SUPPLIED BY OTHERS.
5. ANNUNCIATION IN THE MAIN CONTROL ROOM IS REQUIRED VISIBLE TO THE OPERATOR AT MCB.

GEORGIA POWER COMPANY
PLANT: ALVIN W. VOGTLE NUCLEAR PLANT
UNITS: 1 & 2 SFIN: AASFETCS
STATUS: APPROVED
CERTIFICATION LTR. NO. GP-9146
AUTHORITY: J. L. VOTA
ENGR. LTR. NO. EP/SA-47348

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
PRESSURIZER TRIP SIGNALS

DFTM. P. HEARN 5/10/73

7243D07
SHEET - 6

DO NOT SCALE

VOGTLE ELECTRIC GENERATING PLANT — JOB NO. 9510

EQUIPMENT TAG NO. various
STARTUP DESIGNATION NO. various
ACTIVITY NO. various
SYSTEM NO. various
CATEGORY NO. NA

RETROFITTING REQUIRED ☐ YES ☒ NO

DISTRIBUTION TO: FOR: REVIEW / INFO.
- MECHANICAL
- HVAC
- NSSS
- BOP
- CONTROL SYSTEMS ✓
- ELECTRICAL ✓
- WIRING
- CONDUIT
- HAZARDS
- CIVIL/STRUCTURAL
- NUCLEAR
- STRESS/PLANT DESIGN
- CODES AND STANDARDS
- ARCHITECTURAL
- STARTUP
- CONSTRUCTION
- NOT REQ'D BY ENGRG
- CLIENT
- EQUIP. QUALIFICATION
- M & QS
- WESTINGHOUSE

IDENTIFYING TITLE OF THIS DOCUMENT: Functional diag.

Bechtel Log No. 1 X6AA02-230-8

IMPORTANT

Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.

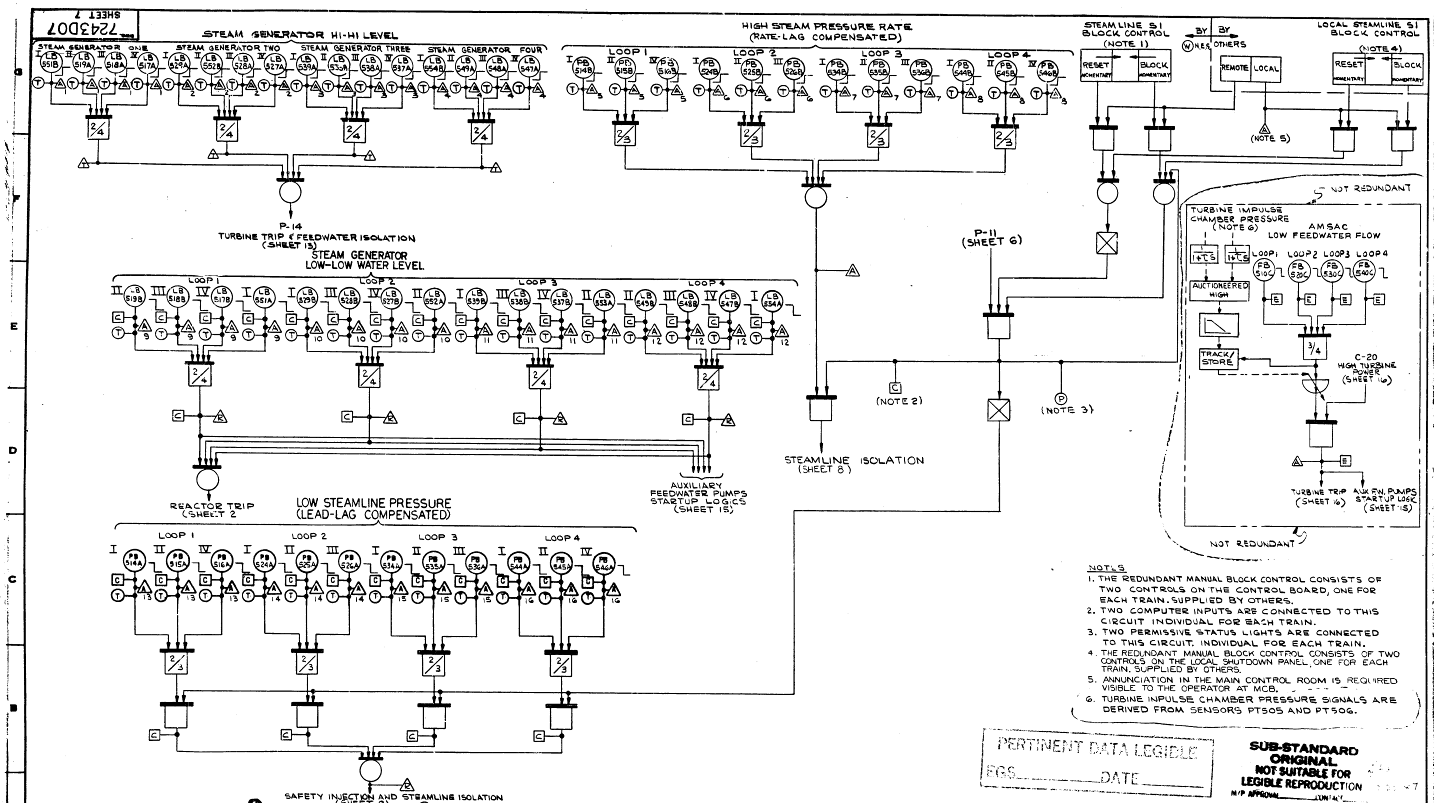
DATE RECEIVED 3-14-85

DOCUMENT STATUS
1☒ WORK MAY PROCEED
2☐ REVISE AND RESUBMIT WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED
3☐ REVISE AND RESUBMIT WORK MAY NOT PROCEED
4☐ INFORMATION ONLY DISTRIBUTION REQ'D? ☐ YES
M☐ RESUBMIT – NOT ACCEPTABLE FOR MICROFILM, WORK MAY PROCEED

DATE 5/3/85

PF-5987 (9510) 9/84

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL



NOTES

1. THE REDUNDANT MANUAL BLOCK CONTROL CONSISTS OF TWO CONTROLS ON THE CONTROL BOARD, ONE FOR EACH TRAIN. SUPPLIED BY OTHERS.
2. TWO COMPUTER INPUTS ARE CONNECTED TO THIS CIRCUIT INDIVIDUAL FOR EACH TRAIN.
3. TWO PERMISSIVE STATUS LIGHTS ARE CONNECTED TO THIS CIRCUIT. INDIVIDUAL FOR EACH TRAIN.
4. THE REDUNDANT MANUAL BLOCK CONTROL CONSISTS OF TWO CONTROLS ON THE LOCAL SHUTDOWN PANEL, ONE FOR EACH TRAIN. SUPPLIED BY OTHERS.
5. ANNUNCIATION IN THE MAIN CONTROL ROOM IS REQUIRED VISIBLE TO THE OPERATOR AT MCB.
6. TURBINE IMPULSE CHAMBER PRESSURE SIGNALS ARE DERIVED FROM SENSORS PT505 AND PT506.

PERTINENT DATA LEGIBLE
FGS ______ DATE ______

SUB-STANDARD ORIGINAL
NOT SUITABLE FOR LEGIBLE REPRODUCTION

PLANT: VOGTLE ELECTRIC GENERATING PLANT
UNITS: 1 & 2
STATUS: APPROVED
CERTIFICATION LTR. NO. GP-13060
AUTHORITY: R. S. HOWARD
ENGR. LTR. NO. EP/SA-93512

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.
TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
STEAM GENERATOR TRIP SIGNALS
DFTR. P. HEARN
7243D07
SHEET 7
DO NOT SCALE

Revisions: GAE/GBE-300; ECN-31242; ECN 31969 REV. CIRCLED; REVISIONS CIRCLED 7-27-78; GAE/GBE-300 ECN-32713 REV. CIRCLED; GAE/GBE-300 ECN-34109 CHANGES CIRCLED

BECHTEL NOTE (APPLICABLE TO UNIT 1 ONLY):
THIS DRAWING DESCRIBES PHYSICAL WORK TO BE ACCOMPLISHED BY N/A THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE REFERENCED DOCUMENT. THE WORK IS BEING IMPLEMENTED BY PROJECT DOCUMENT:

I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE DOCUMENT SUBMITTED TO MICROGRAPHICS.
GPC PLANT VOGTLE CONSTR MICROGRAPHICS
DATE 1/04/88
CAMERA OPERATOR
SECTION SUPERVISOR

16X

VOGTLE ELECTRIC GENERATING PLANT	JOB NO. 9510
EQUIPMENT TAG NO.	
STARTUP DESIGNATION NO.	
ACTIVITY NO.	
SYSTEM NO.	
CATEGORY NO.	
RETROFITTING REQUIRED ☐ YES ☒ NO	

DISTRIBUTION TO: FOR: REVIEW / INFO.
- MECHANICAL
- HVAC
- EQUIPMENT
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- CONTROL SYSTEMS
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- CONDUIT
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- CIVIL/STRUCTURAL
- NUCLEAR
- STRESS/PLANT DESIGN
- CODES AND STANDARDS
- ARCHITECTURAL
- STARTUP
- CONSTRUCTION
- NOT REQ'D BY ENGRG
- CLIENT
- EQUIP. QUALIFICATION
- M & QS
- WESTINGHOUSE

IDENTIFYING TITLE OF THIS DOCUMENT

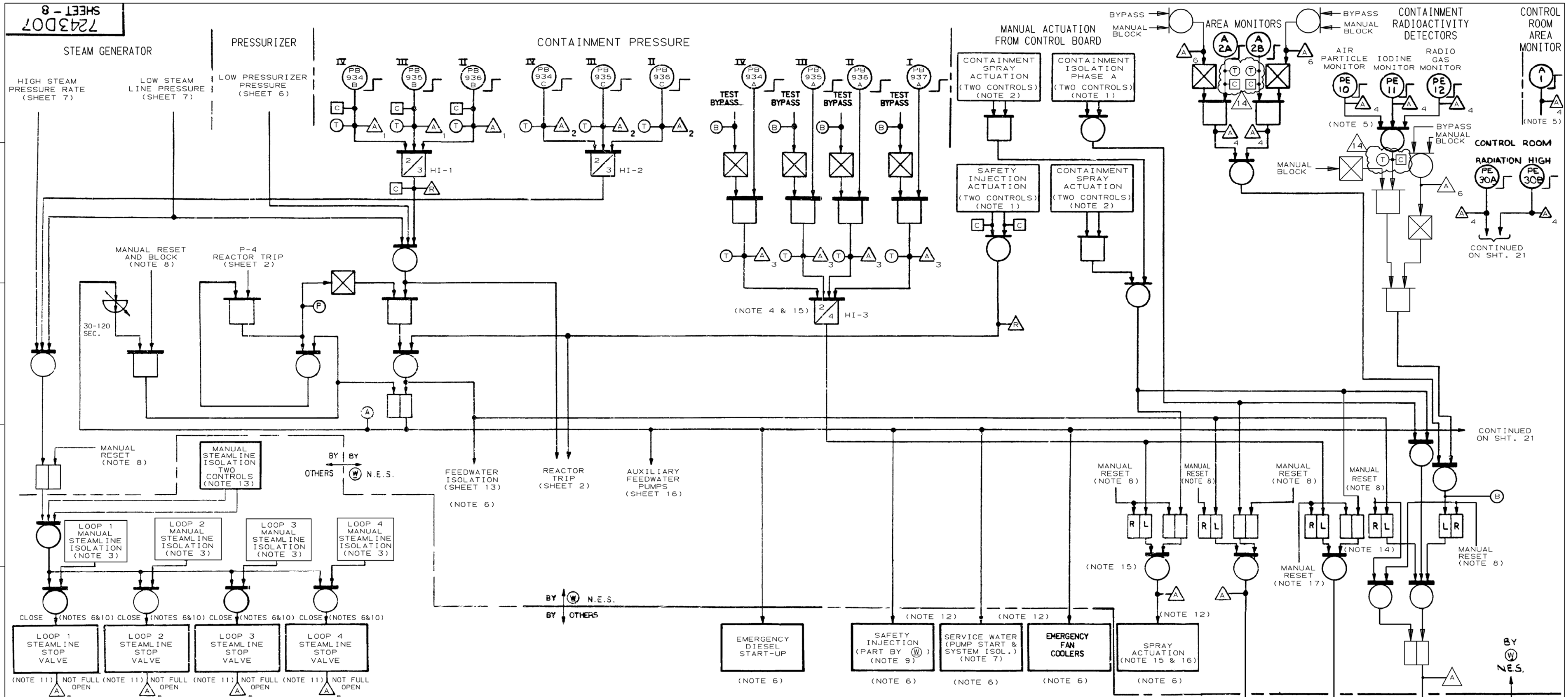
Bechtel Log No. 1 X6AA02-231-E

IMPORTANT
Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.

DATE RECEIVED 12-9-87
SIGNED
DATE 12-23-87

DOCUMENT STATUS
1 ☒ WORK MAY PROCEED
2 ☐ REVISE AND RESUBMIT WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED
3 ☐ REVISE AND RESUBMIT. WORK MAY NOT PROCEED.
4 ☐ INFORMATION ONLY DISTRIBUTION REQ'D? ☐ YES
M ☐ RESUBMIT – NOT ACCEPTABLE FOR MICROFILM, WORK MAY PROCEED.

PP-9987 (9510) 12/83



NOTES:

1. TWO MOMENTARY CONTROLS ON THE CONTROL BOARD, OPERATING EITHER CONTROL WILL ACTUATE.
2. THE MANUAL SPRAY ACTUATION CONSISTS OF FOUR MOMENTARY CONTROLS, ACTUATION WILL OCCUR ONLY IF TWO ASSOCIATED CONTROLS ARE OPERATED SIMULTANEOUSLY.
3. ONE CONTROL PER LOOP ON THE CONTROL BOARD.
4. CONTAINMENT PRESSURE BISTABLES FOR SPRAY ACTUATION ARE ENERGIZE-TO-ACTUATE (OTHER BISTABLES ARE DE-ENERGIZE-TO-ACTUATE).
5. CIRCUITRY IS NOT PART OF THE SAFEGUARDS SYSTEM, AND IS NOT SAFETY RELATED, HOWEVER, CIRCUITRY IS INPUT TO THE SAFEGUARS SYSTEM THERFORE ISOLATION MUST BE PROVIDED.
6. COMPONENTS ARE ALL INDIVIDUALLY SEALED IN (LATCHED), SO THAT LOSS OF THE ACTUATION SIGNAL WILL NOT CAUSE THESE COMPONENTS TO RETURN TO THE CONDITION HELD PRIOR TO THE ADVENT OF THE ACTUATION SIGNAL.
7. SERVICE WATER SYSTEM ISOLATION IS USED ONLY IF REQUIRED.
8. THE REDUNDANT MANUAL RESET CONSISTS OF TWO MOMENTARY CONTROLS ON THE CONTROL BOARD, ONE FOR EACH TRAIN.
9. SAFETY INJECTION SEQUENCE REQUIREMENTS (IF SEQUENCING IS NECESSARY) ARE SPECIFIED BY Ⓦ NUCLEAR ENERGY SYSTEMS.
10. ALSO CLOSES THE BYPASS VALVE IN PARALLEL WITH THE ASSOCIATED STEAM LINE STOP VALVE.
11. LIGHTS SHOULD BE PROVIDED IN THE CONTROL ROOM FOR EACH STEAM LINE STOP VALVE TO INDICATE WHEN THE VALVE IS FULLY CLOSED OR FULLY OPEN.
12. THE ACTUATION MAY BE DELAYED AND SEQUENCED IF THE EMERGENCY DIESEL POWER CAPABILITY IS LESS THAN THE TOTAL LOAD WITH ALL SYSTEMS STARTING. THE TIME DELAY(S), IF USED, MAY NOT EXCEED THE MAXIMUM STARTING TIME REQUIREMENTS FOR EACH SYSTEM.
13. TWO CONTROLS ON THE CONTROL BOARD. OPERATING EITHER CONTROL WILL ACTUATE.
14. SOME ENGINEERED SAFEGUARDS FUNCTIONS ARE NOT WITHIN THE FUNCTIONAL DESIGN SCOPE OF Ⓦ NUCLEAR ENERGY SYSTEMS BUT ONLY SHOWN ON THIS SHEET AS THE FUNCTIONS ARE BUILT IN THE Ⓦ SUPPLIED EQUIPMENT.
15. THE 2 OUT OF 4 COINCIDENCE, MEMORY, AND "OR" LOGIC ARE DUPLICATED WITHIN EACH TRAIN. SEPARATE OUTPUT RELAYS ARE ALSO PROVIDED IN EACH TRAIN. TO MINIMIZE FALSE CONTAINMENT SPRAY ONE OUTPUT RELAY SHOULD START THE PUMPS WHILE ANOTHER SHOULD OPEN THE SYSTEM VALVES.
16. THE SEQUENCE TO LOAD THE CONTAINMENT SPRAY SYSTEM ON THE EMERGENCY DIESEL POWER SHOULD BE INDEPENDENT OF THE SEQUENCE TO LOAD THE SAFETY INJECTION SYSTEM. IF THE CONDITIONS OF NOTE 12 APPLY THE SEQUENCE INTERLOCK SHOULD BE SUCH THAT SPRAY WILL START WITHIN THE REQUIRED TIME INDEPENDENT OF THE SAFETY INJECTION SIGNAL STATUS.
17. CONTAINMENT ISOLATION PHASE B IS NOT USED. THE INITIATION LOGIC AND MANUAL RESET ACTION FOR CONTAINMENT ISOLATION PHASE B SHOWN ON THIS SHEET IS FOR INFORMATION ONLY.

NO.	REVISIONS	DATE	DR	CHK	APPV
14	INCORPORATED PER DCP 97-V1N0067	11-16-00	ELC	TSL	GLB

SCS REVISIONS

DOCUMENT STATUS CODE 1

1X6AA02-00232-17

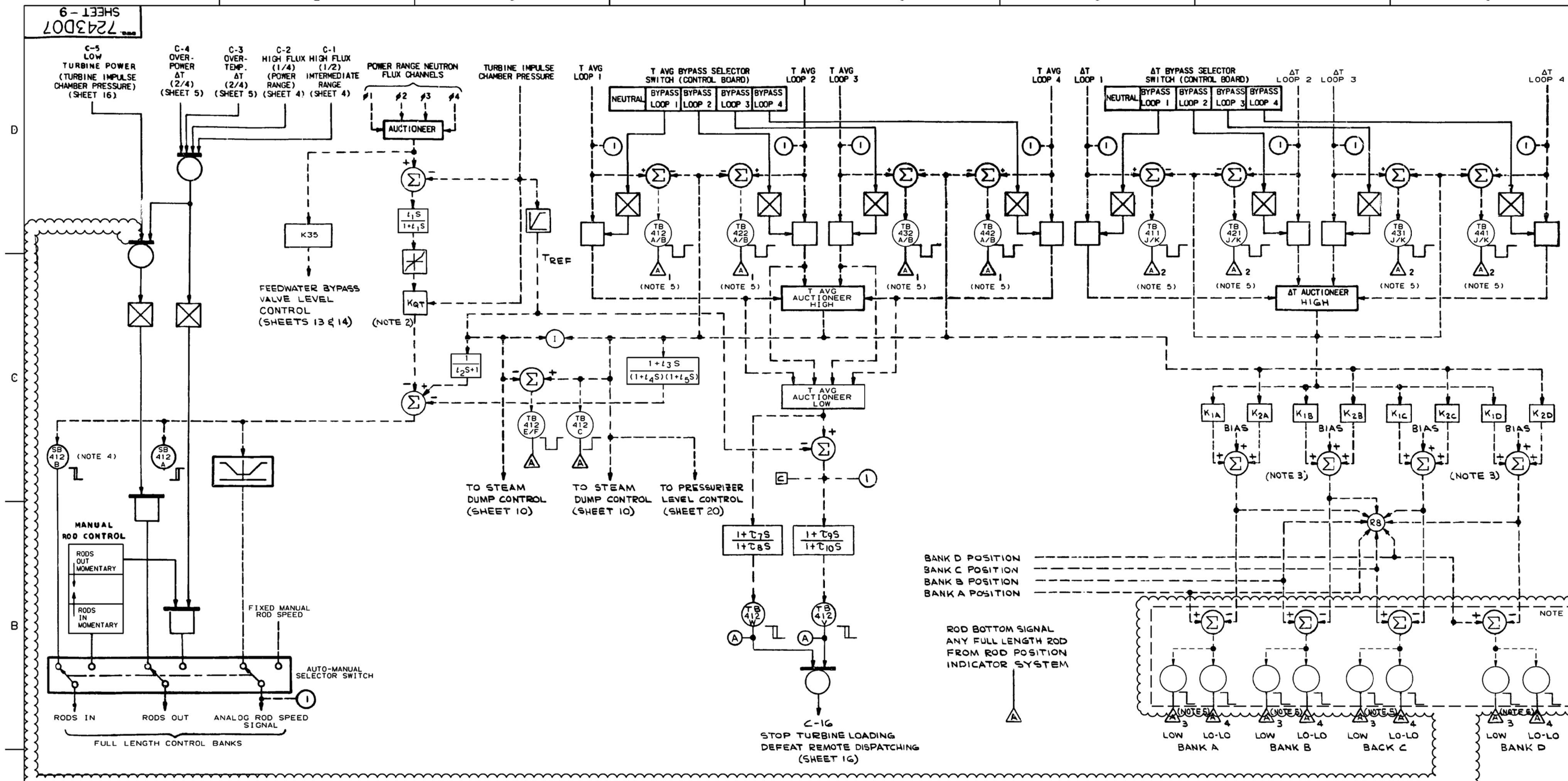
DFTM. R HEARN

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

TITLE: GEORGIA POWER CO.
ALVIN W. VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAM
SAFEGUARD ACTUATION SYSTEM

SCALE
DIMENSIONS IN INCHES
DO NOT SCALE

7243D07
SHEET - 8
SUB 13



NOTES:

1. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT.
2. KQT MAY VARY INVERSELY PROPORTIONAL TO LOAD WITH A FIXED LIMIT OR MAY VARY IN TWO DISCRETE STEPS WITH BREAK POINTS AT 30 TO 50% AND 60 TO 80% TURBINE LOAD.
3. THE SUMMER OUTPUTS HAVE FIXED MANUALLY ADJUSTABLE UPPER LIMITS.
4. THE ROD DIRECTION BISTABLES NO. SB-412A AND SB-412B ARE "ENERGIZED TO ACTUATE". SB-412A (RODS OUT) OUTPUT IS NOT USED.
5. ALARM 1, ALARM 2, ALARM 3 AND ALARM 4 MUST HAVE REFLASH CAPABILITY.
6. COMPUTER ALGORITHM IS USED FOR COMPARATOR NETWORK.

12.0

–	GAE/GBE-300 B 906628/906627	
2	GAE/GBE-300 ECN-30394	REVISED DEPICTION FOR ROD CONTROL SWITCH. REVISED NOTE 5. P. HEARN 7-18-74
3	GAE/GBE-300 ECN-31242	REVISIONS CIRCLED 7-26-78 7-27-78
4	GAE/GBE-300 ECN-31496	CHANGES CIRCLED. 11/3/79
5	GAE/GBE-300 ECN-33069	REV. CIRCLED 8/18/81
6	GAE/GBE-300 ECN-33555	REVISION CIRCLED S. HOLLERAN 11/20/85

DFTM. P HEARN 5/1/73
CHKD.
DES. ENG.
MFG. ENG.
MTLS. ENG.
APP.
APP.
APP.
DFTS. SUPV.
NEXT ASSY.
REF. DWG.

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAM
ROD CONTROLS & ROD STOPS

SCALE
DIMENSIONS IN INCHES
DO NOT SCALE

7243D07
SHEET - 9

SIZE "D"

CAD MICROSTATION	JL0/02

1X6AA02-00233.DGN

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A

VERSION 12.0 DATE 9/18/14

REVISED BY SNC PER ABN 1081846201J240, VER. 1.0

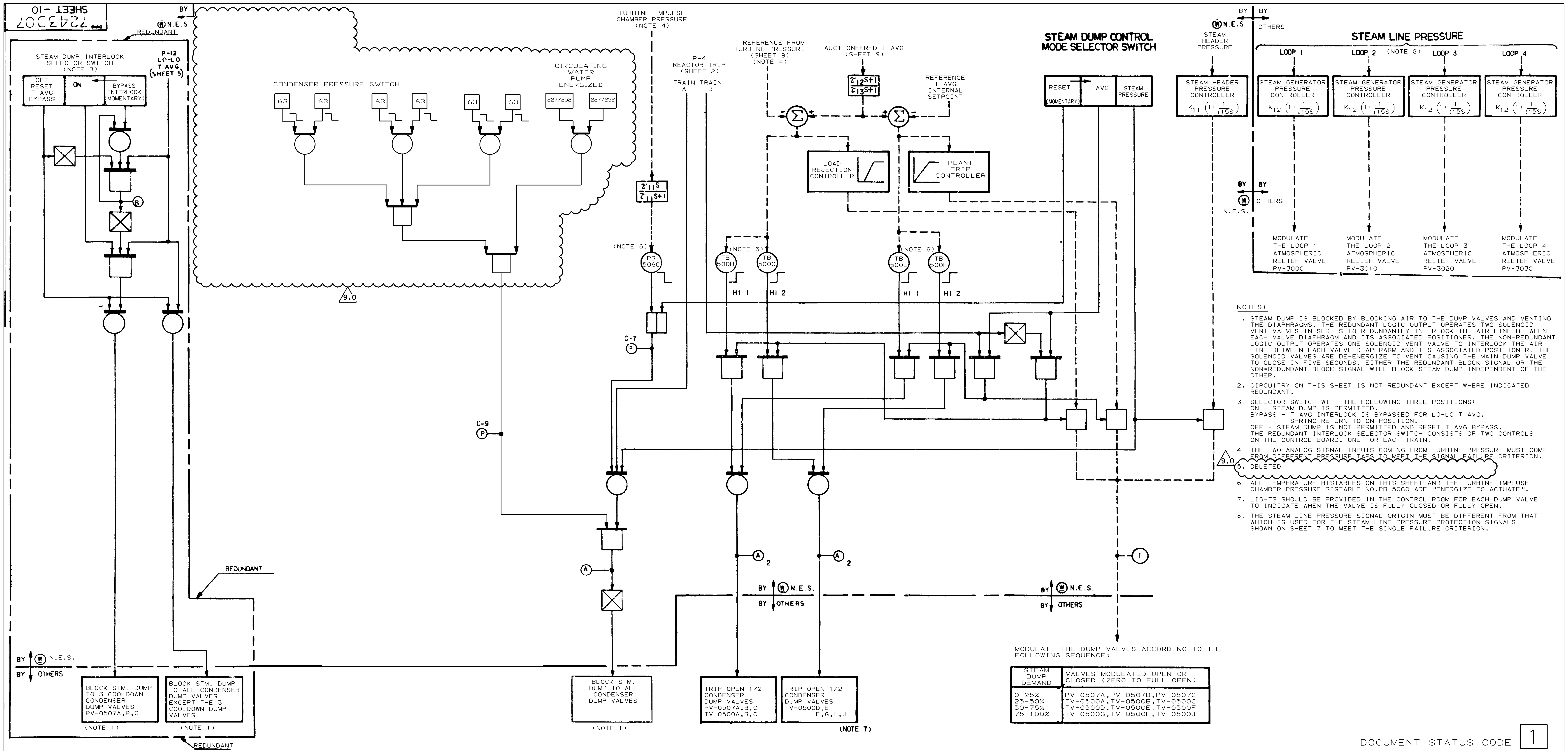
BY	CHK'D	APPR.1	APPR.2
JLO	CYN	TSL	X

Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT
UNIT NO. 1

TITLE:
FUNCTIONAL DIAGRAM
ROD CONTROLS & ROD STOPS

VENDOR: WESTINGHOUSE ELEC P.O.#:

DRAWING NO. 1X6AA02-00233



NOTES:

1. STEAM DUMP IS BLOCKED BY BLOCKING AIR TO THE DUMP VALVES AND VENTING THE DIAPHRAGMS. THE REDUNDANT LOGIC OUTPUT OPERATES TWO SOLENOID VENT VALVES IN SERIES TO REDUNDANTLY INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAGM AND ITS ASSOCIATED POSITIONER. THE NON-REDUNDANT LOGIC OUTPUT OPERATES ONE SOLENOID VENT VALVE TO INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAGM AND ITS ASSOCIATED POSITIONER. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT CAUSING THE MAIN DUMP VALVE TO CLOSE IN FIVE SECONDS. EITHER THE REDUNDANT BLOCK SIGNAL OR THE NON=REDUNDANT BLOCK SIGNAL WILL BLOCK STEAM DUMP INDEPENDENT OF THE OTHER.
2. CIRCUITRY ON THIS SHEET IS NOT REDUNDANT EXCEPT WHERE INDICATED REDUNDANT.
3. SELECTOR SWITCH WITH THE FOLLOWING THREE POSITIONS:
   ON - STEAM DUMP IS PERMITTED.
   BYPASS - T AVG INTERLOCK IS BYPASSED FOR LO-LO T AVG. SPRING RETURN TO ON POSITION.
   OFF - STEAM DUMP IS NOT PERMITTED AND RESET T AVG BYPASS.
   THE REDUNDANT INTERLOCK SELECTOR SWITCH CONSISTS OF TWO CONTROLS ON THE CONTROL BOARD. ONE FOR EACH TRAIN.
4. THE TWO ANALOG SIGNAL INPUTS COMING FROM TURBINE PRESSURE MUST COME FROM DIFFERENT PRESSURE TAPS TO MEET THE SIGNAL FAILURE CRITERION.
5. DELETED
6. ALL TEMPERATURE BISTABLES ON THIS SHEET AND THE TURBINE IMPLUSE CHAMBER PRESSURE BISTABLE NO.PB-5060 ARE "ENERGIZE TO ACTUATE".
7. LIGHTS SHOULD BE PROVIDED IN THE CONTROL ROOM FOR EACH DUMP VALVE TO INDICATE WHEN THE VALVE IS FULLY CLOSED OR FULLY OPEN.
8. THE STEAM LINE PRESSURE SIGNAL ORIGIN MUST BE DIFFERENT FROM THAT WHICH IS USED FOR THE STEAM LINE PRESSURE PROTECTION SIGNALS SHOWN ON SHEET 7 TO MEET THE SINGLE FAILURE CRITERION.

MODULATE THE DUMP VALVES ACCORDING TO THE FOLLOWING SEQUENCE:

STEAM DUMP DEMAND	VALVES MODULATED OPEN OR CLOSED (ZERO TO FULL OPEN)
0-25%	PV-0507A,PV-0507B,PV-0507C
25-50%	TV-0500A,TV-0500B,TV-0500C
50-75%	TV-0500D,TV-0500E,TV-0500F
75-100%	TV-0500G,TV-0500H,TV-0500J

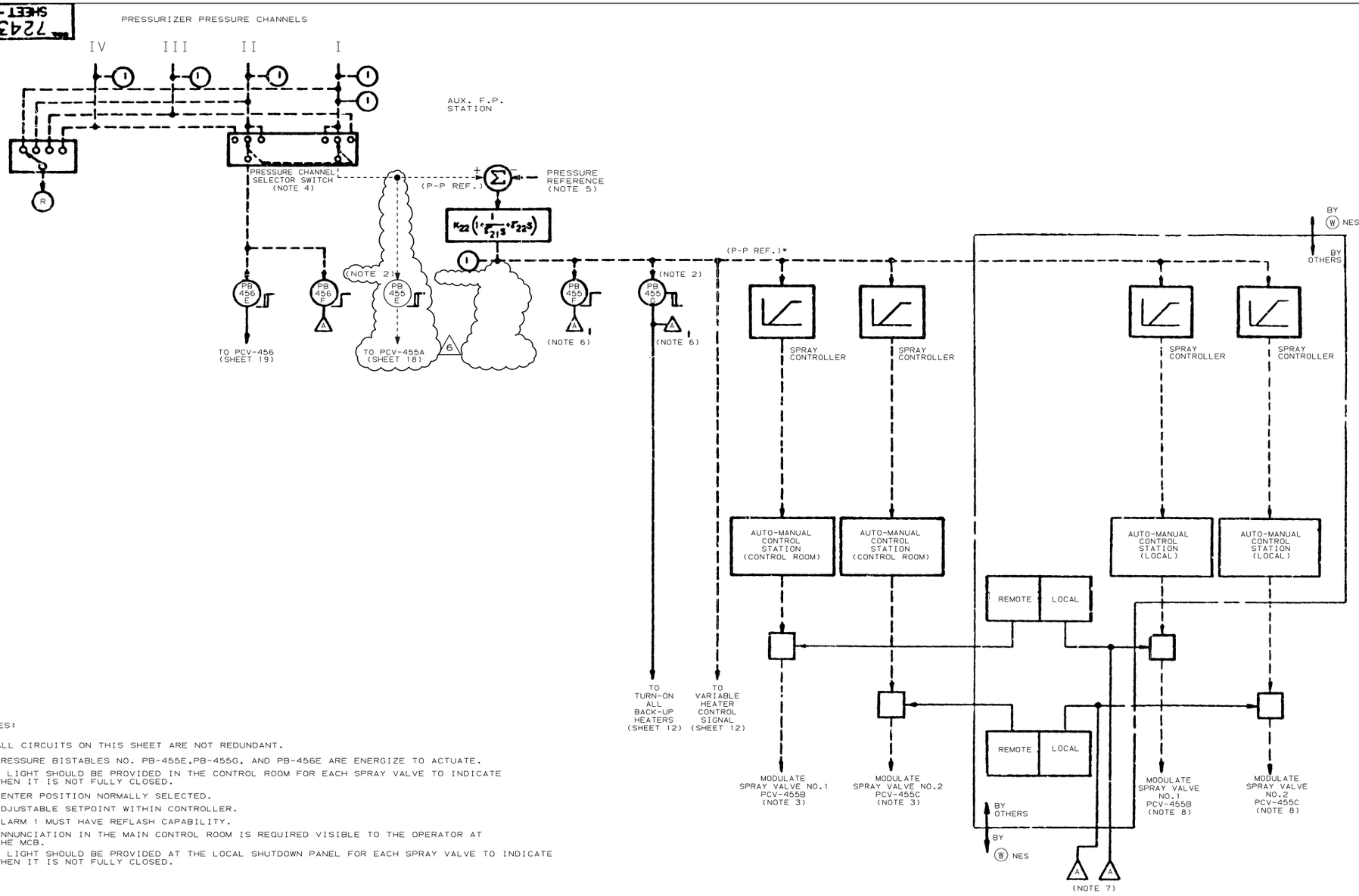
DOCUMENT STATUS CODE 1

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.
DFTR. P HEARN
TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
STEAM DUMP CONTROL
SCALE
DIMENSIONS IN INCHES
DO NOT SCALE
7243D07
SHEET - 10

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A
TAB/SECT. N/A
PAGE N/A
FIGURE N/A
VERSION 9.0 DATE 10-14-05
REVISED BY SNC PER ABN-80649, VER. 1.0
SEE MICROFILM FOR PREVIOUS VER. SIGNATURES.

BY	CHK'D	APPR.1	APPR.2
DFV	WBJ	ASK	x

CAD MICROSTATION DFV/01 1X6AA02-00234.DGN
Southern Nuclear Operating Company, Inc.
FOR
VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1
TITLE: FUNCTIONAL DIAGRAMS STEAM DUMP CONTROL
VENDOR: WESTINGHOUSE ELEC P.O.#: -
DRAWING NO. 1X6AA02-00234



NOTES:

1. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT.
2. PRESSURE BISTABLES NO. PB-455E,PB-455G, AND PB-456E ARE ENERGIZE TO ACTUATE.
3. A LIGHT SHOULD BE PROVIDED IN THE CONTROL ROOM FOR EACH SPRAY VALVE TO INDICATE WHEN IT IS NOT FULLY CLOSED.
4. CENTER POSITION NORMALLY SELECTED.
5. ADJUSTABLE SETPOINT WITHIN CONTROLLER.
6. ALARM 1 MUST HAVE REFLASH CAPABILITY.
7. ANNUNCIATION IN THE MAIN CONTROL ROOM IS REQUIRED VISIBLE TO THE OPERATOR AT THE MCB.
8. A LIGHT SHOULD BE PROVIDED AT THE LOCAL SHUTDOWN PANEL FOR EACH SPRAY VALVE TO INDICATE WHEN IT IS NOT FULLY CLOSED.

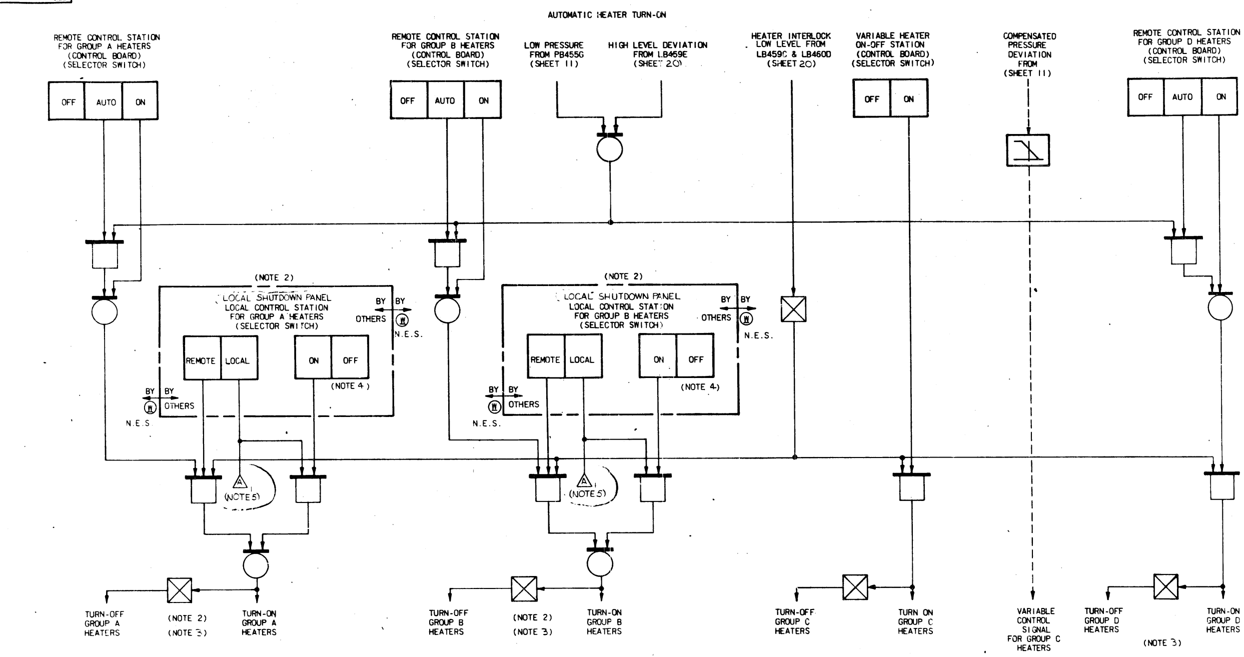
NO.	REVISIONS	DATE	DR	CHK	APPV
6	INC. PER DCP 98-V1N0061	11-06-00	CD	EOG	MWD
	SCS REVISIONS				

DOCUMENT STATUS CODE 1

1X6AA02-00235-9

Westinghouse Electric Corporation
GEORGIA POWER CO.
ALVIN W. VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAMS
PRESSURIZER PRESSURE CONTROL
7243D07 SHEET-11
SUB 1 2 3 4 5 6

SHEET - 12 7243D07



NOTES:

1. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT.
2. GROUP A AND GROUP B HEATERS MUST BE ON SEPARATE VITAL POWER SUPPLIES WITH THE LOCAL CONTROL SEPARATED SO THAT ANY SINGLE FAILURE DOES NOT DEFEAT BOTH.
3. BACK UP HEATER STATUS INDICATION IN CONTROL ROOM.
4. PRECAUTIONS SHOULD BE TAKEN TO AVOID MANUAL HEATER OPERATION, WHICH WOULD CAUSE HEATER DAMAGE, IF THE WATER LEVEL UNCOVERS THE HEATERS.
5. ANNUNCIATION IN THE MAIN CONTROL ROOM IS REQUIRED TO BE VISIBLE TO THE OPERATOR AT THE MAIN CONTROL BOARD.

GEORGIA POWER COMPANY
PLANT: ALVIN W. VOGTLE NUCLEAR PLANT
UNITS: 1 & 2
STATUS: APPROVED
CERTIFICATION LTR. NO. GP-5709
AUTHORITY: J. L. VOTA
ENGR. LTR. NO. EP/SA-36110

MICROFILM QUALITY ACCEPTABLE

DFTM.	P HEARN	'73	
CHKR.			
DES. ENG.	[signature]	7/12/73	
MFG. ENG.			
MTLS. ENG.			
APP.	[signature]	'73	
APP.			
APP.			
DFTG. SUPV.	[signature]		

Westinghouse Electric Corporation
NUCLEAR ENERGY SYSTEMS, PITTSBURGH, PA., U.S.A.

TITLE: GEORGIA POWER CO.
ALVIN W VOGTLE UNITS 1 & 2
FUNCTIONAL DIAGRAM
PRESSURIZER HEATER CONTROL

SCALE
DIMENSIONS IN INCHES
DO NOT SCALE
7243D07
SHEET - 12
SUB 2345

IT	CHANGE
1	GAE/GBE-300
2	GAE/GBE-300 ECN-9863 REVISIONS CIRCLED
3	GAE/GBE-300 ECN-31242 REVS CIRCLED
4	GAE/GBE-322 ECN 31969 REV CIRCLED B STEMMLER 8/11/81
5	GAE/GBE-300 ECN-32037 CHANGES CIRCLED P. Gallo 2/8/82

DISTRIBUTION TO: FOR: REVIEW INFO
MECHANICAL
BALANCE OF PLANT
BOILER/NSSS
PLANT UTILITIES
PLANT DESIGN
CONTROL SYSTEMS ✓
ELECTRICAL ✓
WIRING
CONDUIT
MOS
PAINTING & COATINGS
CIVIL/STRUCTURAL
NUCLEAR
STRESS
ARCHITECTURAL
STARTUP
CONSTRUCTION
NOT REQ'D BY ENGRG
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Resub for micro film quality

Bechtel Log No.
1 X6AA02-236-7

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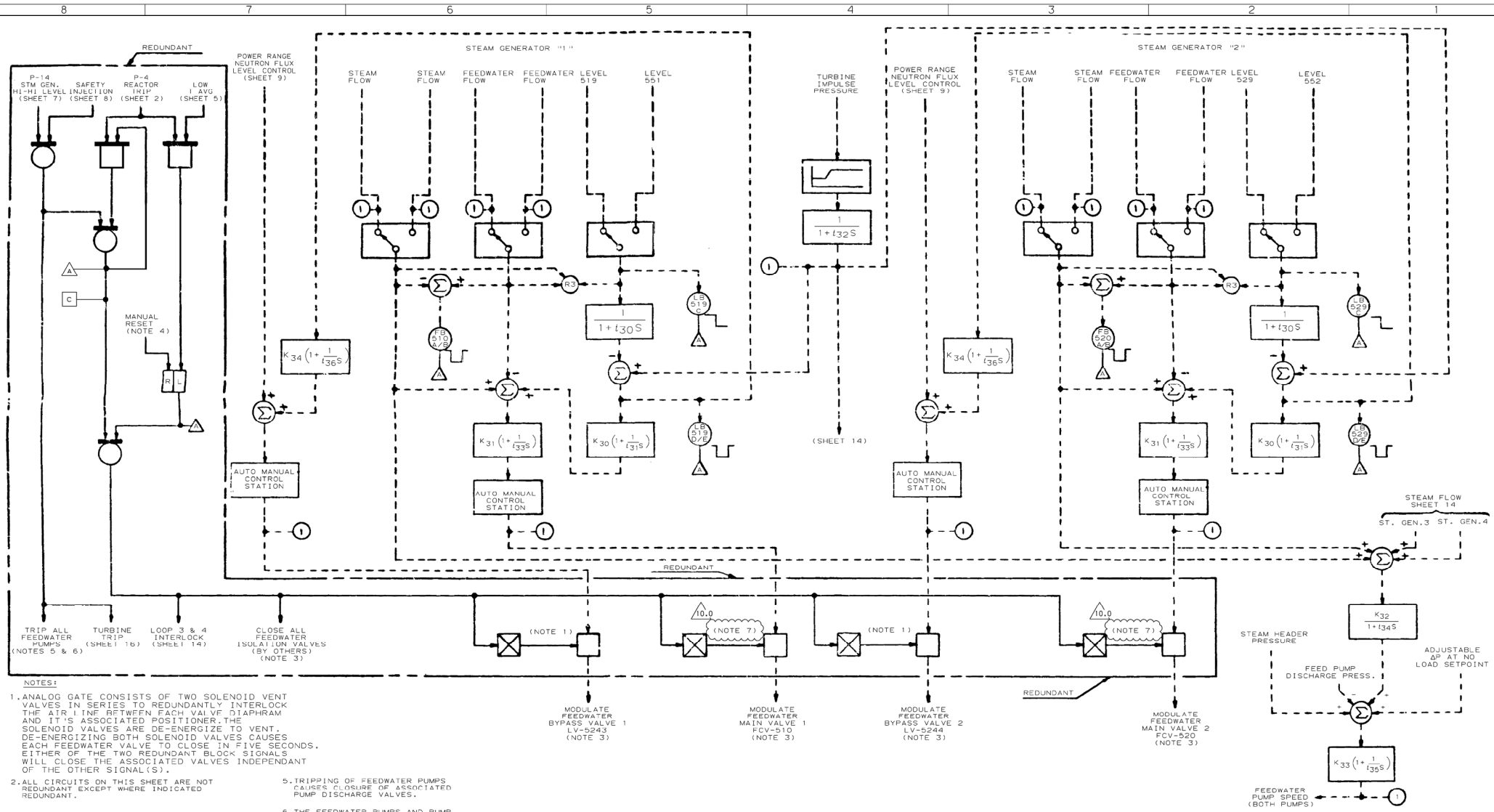
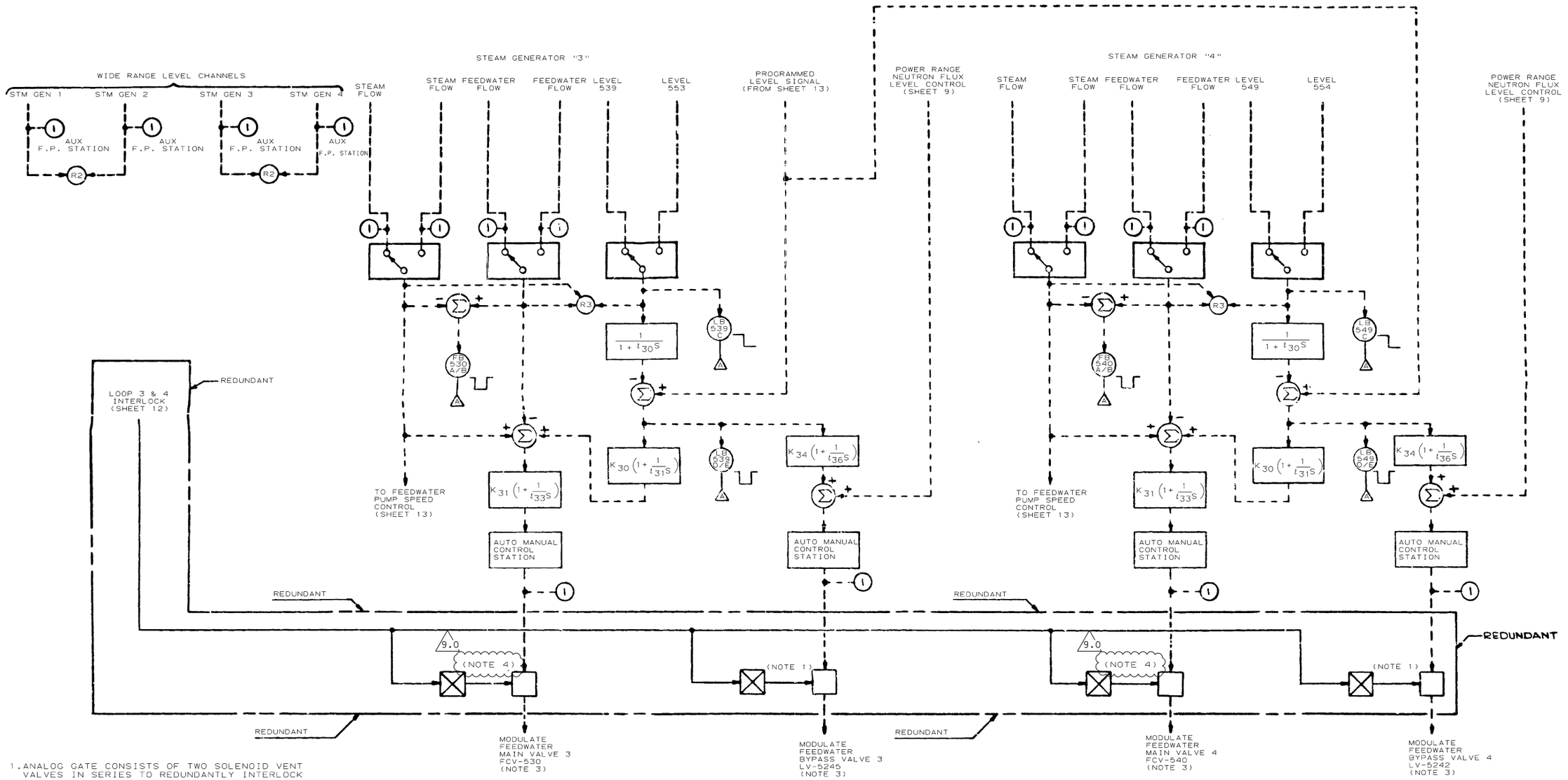
DATE RECEIVED 4-9-82
DOCUMENT STATUS
1 ☒ WORK MAY PROCEED
2 ☐ REVISE AND RESUBMIT. WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED
3 ☐ REVISE AND RESUBMIT. WORK MAY NOT PROCEED
4 ☐ INFORMATION ONLY
DISTRIBUTION REQ'D? YES



NOTES:

1. ANALOG GATE CONSISTS OF TWO SOLENOID VENT VALVES IN SERIES TO REDUNDANTLY INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAM AND IT'S ASSOCIATED POSITIONER. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT. DE-ENERGIZING BOTH SOLENOID VALVES CAUSES EACH FEEDWATER VALVE TO CLOSE IN FIVE SECONDS. EITHER OF THE TWO REDUNDANT BLOCK SIGNALS WILL CLOSE THE ASSOCIATED VALVES INDEPENDANT OF THE OTHER SIGNAL(S).
2. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT EXCEPT WHERE INDICATED REDUNDANT.
3. OPEN/SHUT INDICATION FOR EACH FEEDWATER VALVE IN CONTROL ROOM.
4. THE REDUNDANT MANUAL RESET CONSISTS OF TWO MOMENTARY CONTROLS ON THE CONTROL BOARD, ONE FOR EACH TRAIN.
5. TRIPPING OF FEEDWATER PUMPS CAUSES CLOSURE OF ASSOCIATED PUMP DISCHARGE VALVES.
6. THE FEEDWATER PUMPS AND PUMP DISCHARGE VALVES ARE SUPPLIED BY OTHERS.
7. ANALOG GATE CONSISTS OF TWO SOLENOID VALVES. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT. DE-ENERGIZING BOTH SOLENOID VALVES CAUSES EACH FEEDWATER VALVE TO CLOSE IN FIVE SECONDS. 10.0

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A	CAD MICROSTATION TSL/01 — 1X6AA02-00237.DGN
TAB/SECT. N/A; PAGE N/A; FIGURE N/A	Southern Nuclear Operating Company, Inc. FOR VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1
VERSION 10.0 — DATE 01/11/08	TITLE: FUNCTIONAL DIAGRAM FEEDWATER CONTROL & ISOLATION
REVISED BY SNC PER ABN-V00442, VER.3.0	
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.	
BY: TSL — CHK'D: RBH — APPR.1: JMR — APPR.2:	VENDOR: WESTINGHOUSE — P.O.#: PAV-00370
	DRAWING NO. 1X6AA02 00237 — SIZE D



1. ANALOG GATE CONSISTS OF TWO SOLENOID VENT VALVES IN SERIES TO REDUNDANTLY INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAM AND IT'S ASSOCIATED POSITIONER. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT. DE-ENERGIZING BOTH SOLENOID VALVES CAUSES EACH FEEDWATER VALVE TO CLOSE IN FIVE SECONDS. EITHER OF THE TWO REDUNDANT BLOCK SIGNALS WILL CLOSE THE ASSOCIATED VALVES INDEPENDANT OF THE OTHER SIGNAL(S).

2. ALL CIRCUITS ON THIS SHEET ARE NOT REDUNDANT, EXCEPT WHERE INDICATED "REDUNDANT"

3. OPEN/SHUT INDICATION FOR EACH FEEDWATER VAVLE IN CONTROL ROOM

4. ANALOG GATE CONSISTS OF TWO SOLENOID VALVES. THE SOLENOID VALVES ARE DE-ENERGIZE TO VENT. DE-ENERGIZING BOTH SOLENOID VALVES CAUSES EACH FEEDWATER VALVE TO CLOSE IN FIVE SECONDS. 9.0

FOR INFORMATION ONLY

THIS DWG. IS REFERENCED IN VENDOR MANUAL: N/A				CAD MICROSTATION TSL/01 — 1X6AA02-00238.DGN
TAB/SECT. N/A; PAGE N/A; FIGURE N/A				Southern Nuclear Operating Company, Inc. FOR VOGTLE ELECTRIC GENERATING PLANT UNIT NO. 1
VERSION 9.0 DATE 01/11/08				TITLE: FUNCTIONAL DIAGRAM FEEDWATER CONTROL & ISOLATION
REVISED BY SNC PER ABN-V00442, VER.3.0				
SEE MICROFILM FOR PREVIOUS REV. SIGNATURES.				
BY	CHK'D	APPR.1	APPR.2	VENDOR: WESTINGHOUSE — P.O.#: PAV-00370
TSL	RBH	JMR		DRAWING NO. 1X6AA02-00238

SIZE D