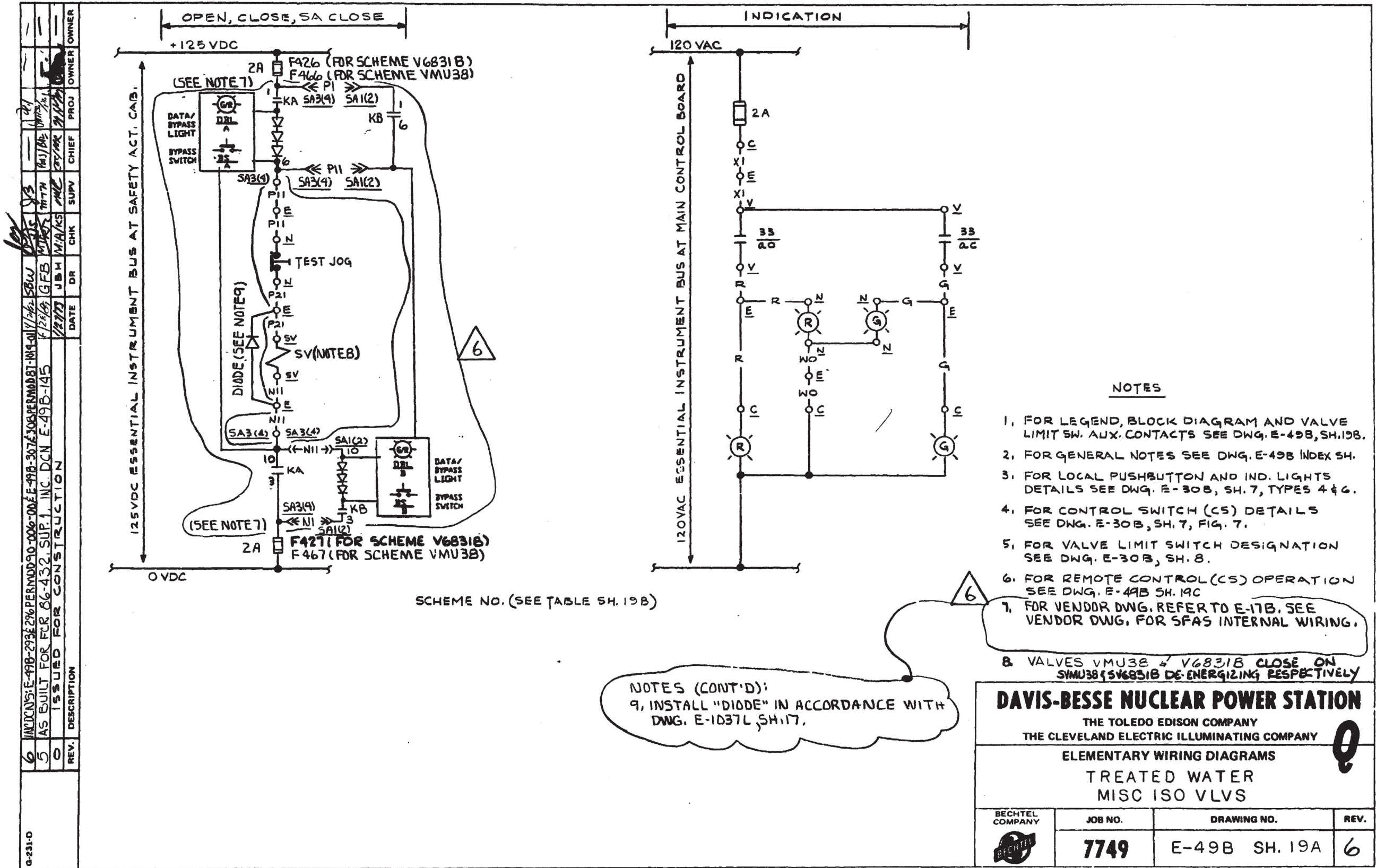
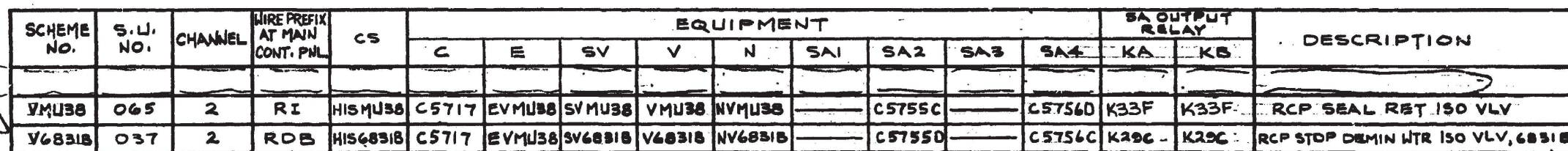
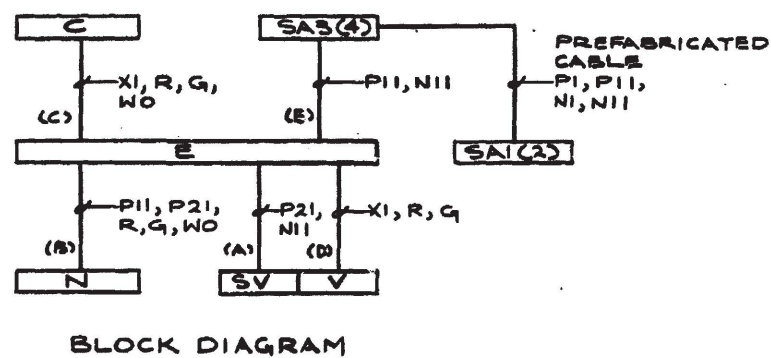






NOTE - SEE 54.12A FOR NOTES.



TREATED WATER
MISC ISO VLVS

REV

E-49B SH. 19B

7

OPERATOR

Kim Weibel 16X

REV.	DATE	CHK	DR	SUPV	CHIEF	PROJ	OWNER
4	11-26-75	JAC					
5	11-26-75	JAC					
6	11-26-75	JAC					

INC. DCN E-49B-251 PER MOD 89-0116 SUP. O
INC. DCN E-49B-304 PER MOD 90-0006 SUP. O
ISSUED FOR CONSTRUCTION

DESCRIPTION

REV.

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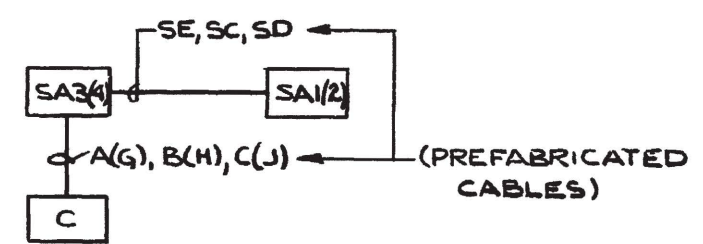
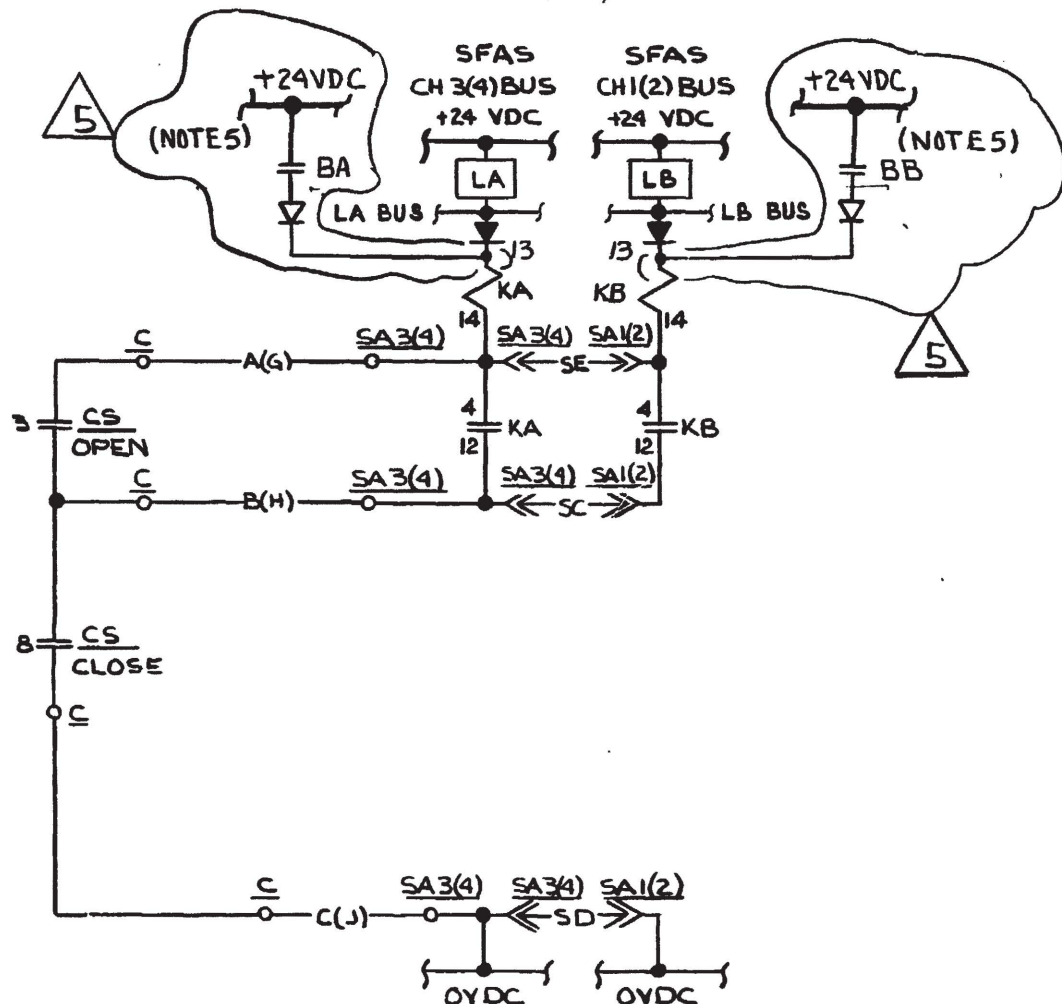
96

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BLOCK DIAGRAM

NOTES :

- 1. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR DWG. FOR SFA'S INTERNAL WIRING.
- 2. FOR GENERAL NOTES SEE DWG E49B INDEX SHEET
- 3. FOR DETAILS OF CONTROL SWITCH (CS) SEE DWG E30B, SH.7 FIG.7
- 4. DELETED
- 5. BYPASS. VOLTAGE IS DERIVED FROM THE STATION BATTERY. SEE DWG. E-30-339.

SCHEME NO.	SU. NO.	CH.	WIRE PREFIX AT MAIN CTRL BD	CS	EQUIPMENT						SA OUTPUT RELAY		DESCRIPTION
					C	F	SA1	SA2	SA3	SA4	KA	KB	
SF1747	05	2	R1	HISMU38	C5717	—	—	C5755C	—	C5756D	K33F	K33F	RCP SEAL RET ISO VLV

DAVIS-BESSE NUCLEAR POWER STATION

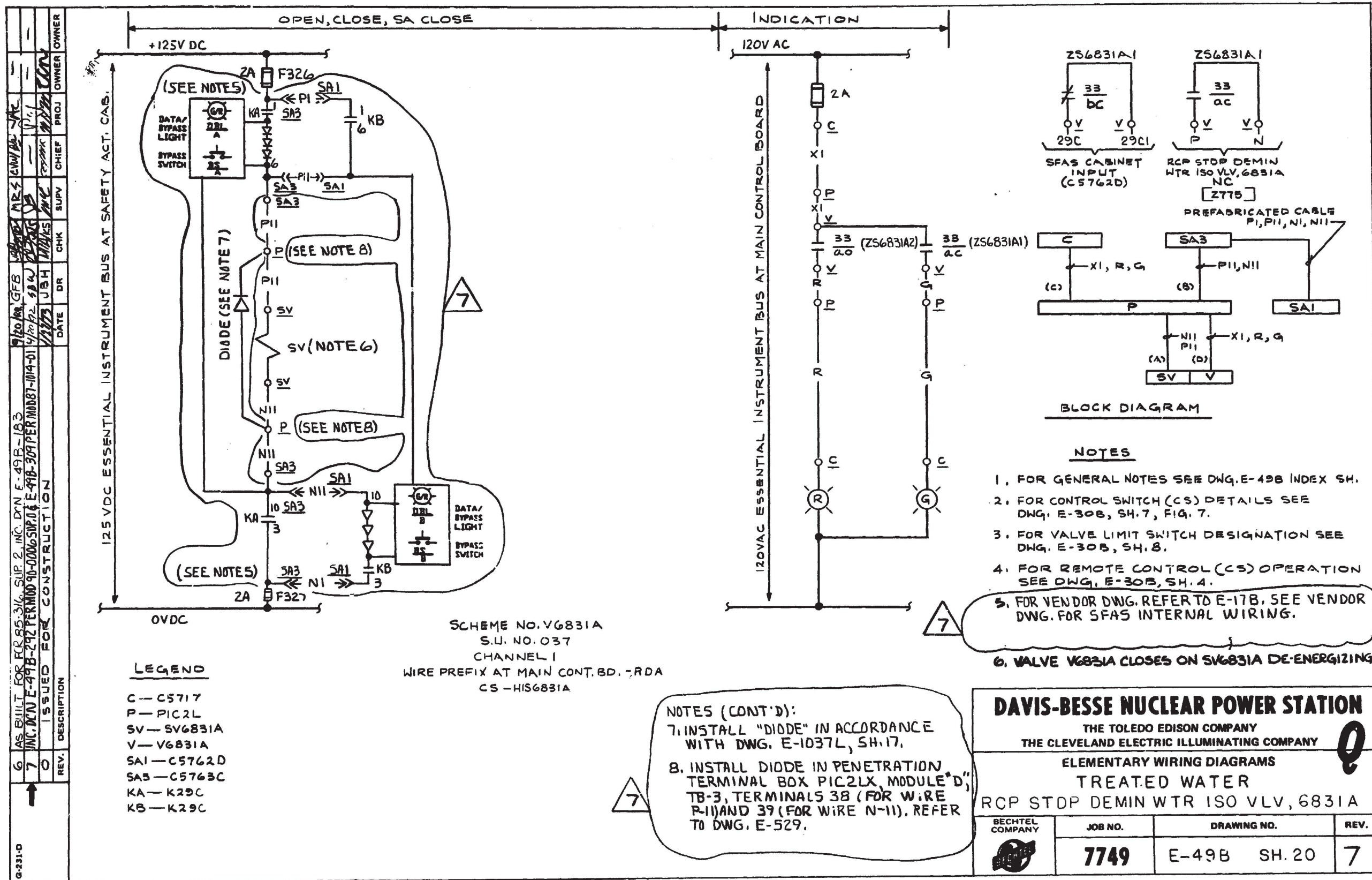
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

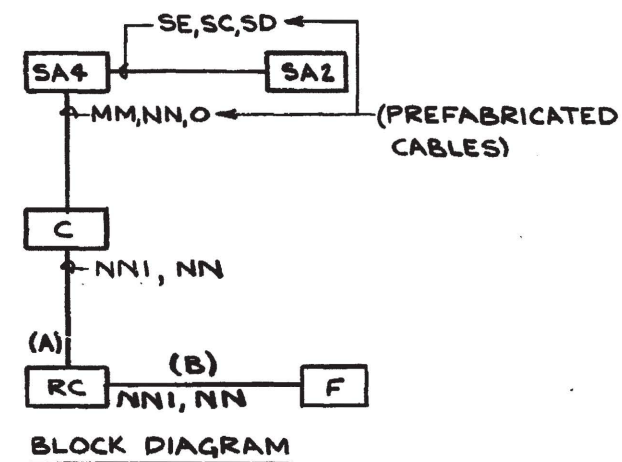
ELEMENTRY WIRING DIAGRAM
TREATED WATER
MISC ISOLATION VALVE

BECHTEL COMPANY	JOB NO. 7749	DRAWING NO. E-49B SH-19C	REV. 5
-----------------	-----------------	-----------------------------	-----------

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 8-25-92 OPERATOR [Signature]





1. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR
DWG. FOR SFAS INTERNAL WIRING.

2. FOR GENERAL NOTES SEE DWG E49B
INDEX SHEET
3. FOR DETAILS OF CONTROL SWITCH (CS)
SEE DWG E30B, SH.7, FIG.7
4. PSL CONTACT OPENS ON LOW-LOW PRESS.
AT AIR VOLUME TANK.
5. BYPASS VOLTAGE IS DERIVED FROM THE STATION
BATTERY. SEE DWG. E-30-339

SCHEME NO	S.U. NO	CH	WIRE PREFIX AT MAIN CTRL BD	CS	EQUIPMENT					SA OUTPUT RELAY		DESCRIPTION
					C	RC	F	SA2	SA4	KA	KB	
SF1744	65	2	LDI	HISMU03	CS717	RC3703	FPSLLMU03	C5755C	C5756C	K27A	K27A	RC LETDOWN ISOLATION VALVE

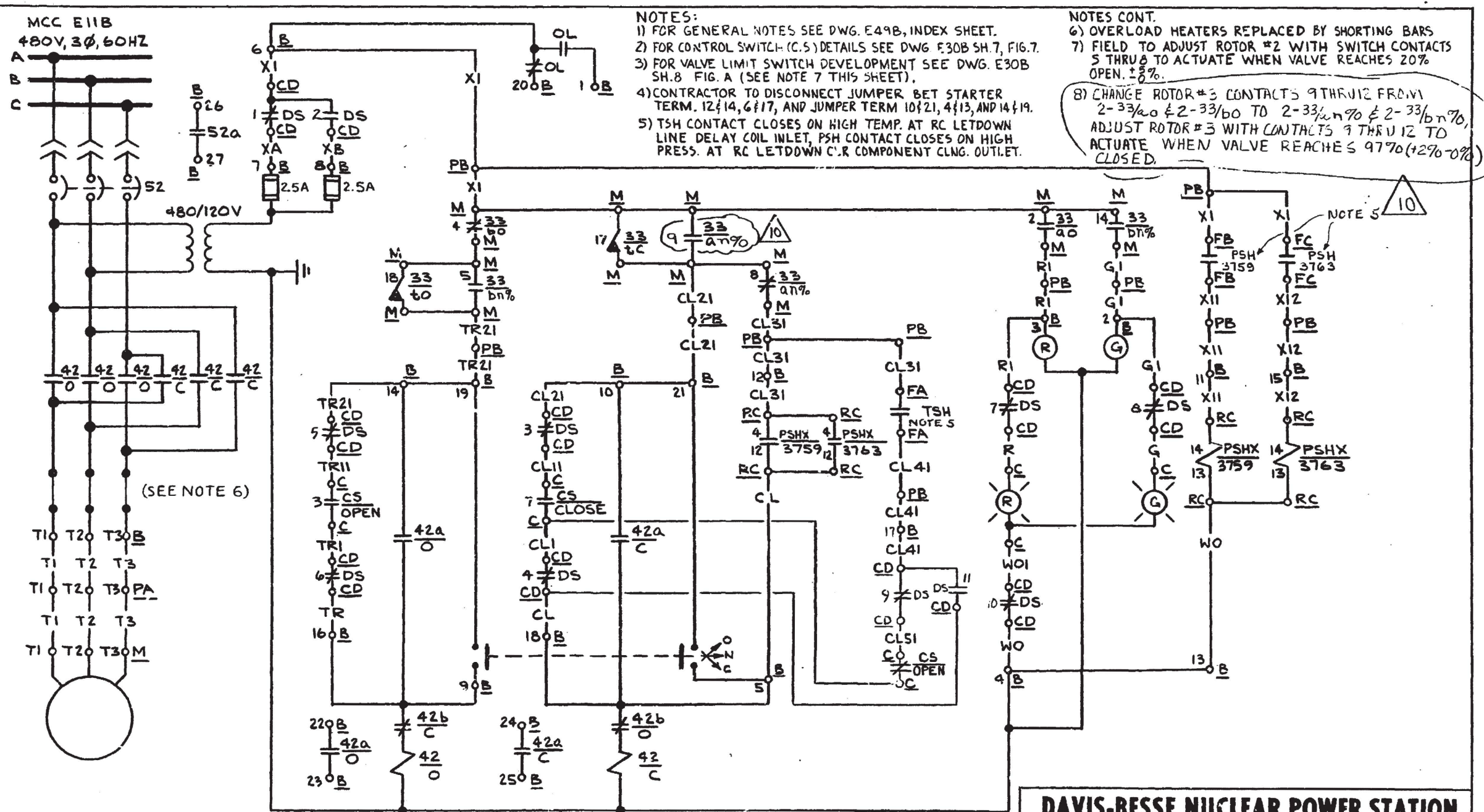
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTRY WIRING DIAGRAM
TREATED WATER
RC LETDOWN ISOLATION VALVE

	BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
		7749	E-49B SH-22C	9

LATE 8-25-72 OPERATOR

OPERATOR



SCHEME NO. BE1172

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS

TREATED WATER

RC LET DOWN CLRS IN VLV

**BECHTEL
COMPANY**

JOB NO.

DRAWING NO.

REV.

7749

E-49B SH-50A

10

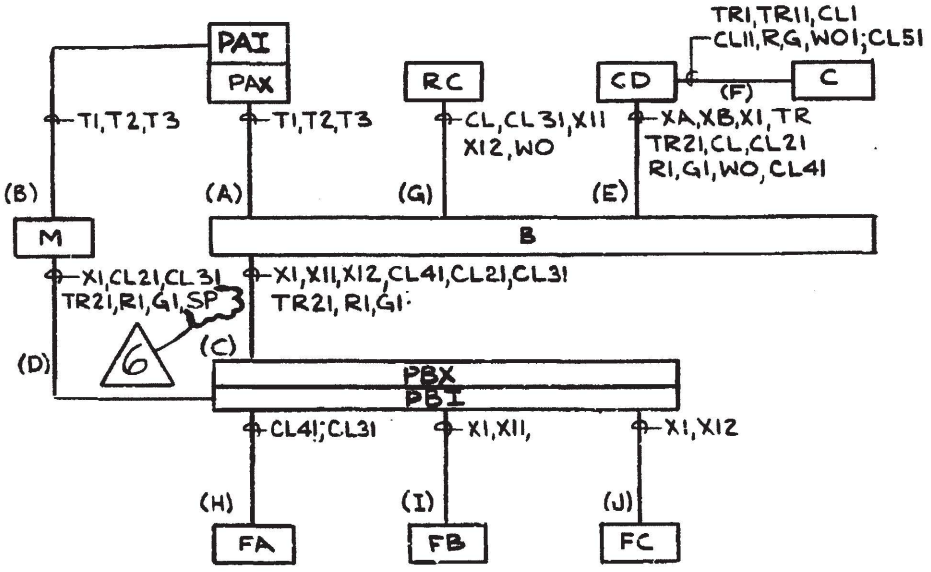
I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

10

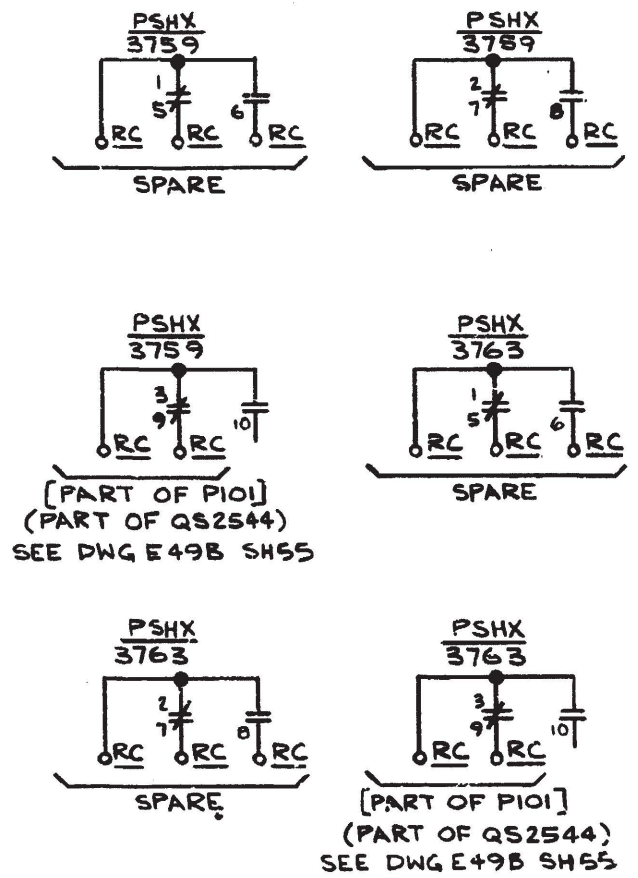
A

B

REV.	DESCRIPTION	DATE	CHK	SUPV	CHIEF	PROJ	OWNER
0	REDRAWN FROM SH 18 & ISSUED FOR CONSTRUCTION	9-25-74	CW	ATC	1/2		
5	"AS-BUILT" FOR ECR 86-031, REV A, SUPP 1, INC. DCN E-49B-82	10-22-83	MTF				
6	"AS-BUILT" FOR ECR 86-031, REV A, SUPP 1, INC. DCN E-49B-137	9-20-88	FJL				



BLOCK DIAGRAM



SCHEME NO.	MCC	S.U. NO	CHANN	WIRE PREFIX AT MAIN CONT. BD	CS	EQUIPMENT										DESCRIPTION
						C	CD	B	M	PAX(I)	PBX(I)	RC	FA	FB	FC	
BE1172	E11B	064	1	LB	WIS MU02B	C5703	CDE11B-1	BE1172	MV MU02B	PIP2MX11	PK2LX11	RC3801	FTSH 3745B	FPSH 3759	FPSH 3763	RC LET DOWN CLRS IN VLV

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAM
TREATED WATER
RC LET DOWN CLRS IN VLV

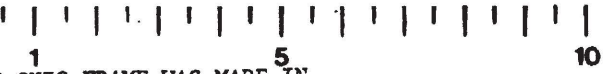
BECHTEL COMPANY

JOB NO.
7749

DRAWING NO.
E-49B SH-50B

REV.
6

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.



16X

INDEX				
SHEET NO.	LASTEST REV.	DESCRIPTION		
1A	5	COOLING WATER PUMP MOTORS.		
1B	5	COOLING WATER PUMP MOTORS.		
2	5	LOW LEVEL COOLING WATER TANK +1 FILL		
3A	18	CC PMP 2 (AD113)		Q
3B	18	CC PMP.2 (AD113)		Q
3C	11	CC PMP.1 (AC 113)		Q
3D	5	CC PMP.1 (AC 113)		Q
4A	19	CC PMP.3 (AD108)		Q
4B	17	CC PMP. 3 (AD108)		Q
4C	10	CC PMP. 3		Q
4D	10	CC PMP. 3		Q
4E	10	CC PMP. 3 (AC 108)		Q
4F	8	CC PMP.3 (AC 108)		Q
5A	2	DELETED		
5B	2	DELETED		
6A	9	CRD. CLR CIRC. PMP'S. 1 & 2		
6B	8	CRD. CLR CIRC. PMP'S. 1 & 2		
7A	12	CC IN ISO VLV. TO CRD 1567A.		Q
7B	6	CC IN ISO VLV TO CRD. 1567A.		Q
8A	13	CRDC BOOSTER PMP'S SUCTION VALVES		Q
8B	9	CRDC BOOSTER PMP'S. SUCTION VALVES		Q

(FOR CONTINUATION OF INDEX, SEE SH. 2)

8	4-17-75	ISSUED FOR CONSTRUCTION SH'S 12B, 15B & 23A TO 27 (REV 0), REVISED SH'S 3B, 4B, 15A & 22 (REV 1), SH'S 3A, 4A, 4C, 4D, 5A, 5B, 9B, 10B, 13A, 13B & 21A (REV 2), SH'S 7A, 9A, 10A, 11, 12A, 16 & 19 (REV 3), SH'S 6A, 6B, 8A & 8B (REV 4)	JA	APC	SNS	—	JER	con	—
7	2/20/75	ISSUED SH 22 (REV 0), SH 1A, 2 (REV 3)	JA	APC	SNS	—	JER	con	—
6	12/2/74	ISSUED SH 1B (REV 2)	LWB	APC/HKA	SNS	—	JE	L	—
5	7/2/74	ISSUED FOR CONSTRUCTION SH 15, REVISED AS NOTED SH'S 1B, 7B, 9B, 10B, 14, 20, 21A & 21B REV 1, 1A, 2, 7A, 9A, 10A, 11, 12, 16, 17, & 19 REV 2, 6A, 6B, 8A, & 8B REV 3	DVB	APC/KS	SNS	—	JER	con	—
4	6-24-73	DELETED SH 18, REVISED AS NOTED SH'S 1A, 2, 3A, 4A, 4C, 4D, 5A, 5B, 7A, 9A, 10A, 11, 12, 17 & 19 ALL REV 1 & SH'S 6A & 6B REV 2	STH	HAKS	SNS	—	JER	con	—
3	3/14/73	ISSUED FOR CONSTRUCTION SH'S 3A THRU 4D AND 21A & 21B ALL REV 0 REVISED AS NOTED SH'S 6A & 6B REV 1 AND 8A & 8B REV 2	STH	HAKS	SNS	—	JER	con	—
2	2/16/73	ISSUED FOR CONSTRUCTION SH'S 5A, 5B, 6A, 6B & 16 THRU 20 ALL REV 0 REVISED AS NOTED SH'S 8A, 8B, 13A & 13B ALL REV 1	STH	HAKS	SNS	—	JER	con	—
1	11/23/72	ISSUED FOR CONSTRUCTION SH'S 7A THRU 14 ALL REV 0	STH	HAKS	SNS	—	JER	con	—
0	9/17/72	ISSUED FOR CONSTRUCTION SH'S 1A, 1B & 21A REV 0	STH	HAKS	SNS	—	JER	con	—
REV	DATE	DESCRIPTION	DR	CHK	SUB	APP	DES	OWNER	OWNER

GENERAL NOTES.

- 1- FOR EXPLANATION OF EQUIPMENT & WIRING NUMBERS SEE 7749-11A. ELECTRICAL NUMBERING SYSTEM.
- 2- FOR MOTOR INFORMATION SEE 7749-E-12B. ELECTRICAL MOTOR LIST.
- 3- FOR CONTROL PANEL, M.C.C., DESCRIPTIONS SEE E-18B ELECTRICAL EQUIP LIST.
- 4- WIRE NO PREFIX MUST BE ADDED TO FORM COMPLETE WIRE NO. FOR THOSE WIRES AT MAIN CONTROL BOARD.
- 5- AUX. CONTROL RELAY IN SOLENOID OPER. VALVE CONTROL CIRCUITS TO BE COUCH TYPE 4AP44-AF.
- 6- NUMBER IN BRACKETS [] REPRESENTS COMPUTER INPUT NUMBER. NUMBERS IN PARENTHESIS () REPRESENT COMPUTER INPUT SOURCE NUMBER.

REFERENCE DRAWINGS

- E-5E- SH. 1 THRU 5. 480V MCC (NON-ESSENTIAL) ONE LINE DIAG.
- E-6E- SH. 1 & 2. 480V MCC (ESSENTIAL) ONE LINE DIAG.
- E-10A- STANDARD NOTES & SYMBOLS.
- E-14B- SOLENOID VALVE LIST
- E-30B- GENERAL GUIDES-ELEMENTARY DIAGRAMS.
- E-13B- ELECTRICAL EQUIPMENT LIST

THIS DWG. WAS REDRAWN/SCANNED ON CAD AND SUPERSEDES REVISION 50.

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
DRAWING INDEX

BECHTEL COMPANY

JOB NO

DRAWING NO

REV.

7749

E-50B

DWG INDEX
SHEET 1

52

INDEX				
SHEET NO.	LATEST REV.	DESCRIPTION		
9A	9	CC OUTLET	ISO VLV (INSIDE CTMT.)	Q
9B	6	CC OUTLET	ISO VLV (INSIDE CTMT.)	Q
10A	9	CC OUTLET	ISO VLV (OUTSIDE CTMT.)	Q
10B	5	CC OUTLET	ISO VLV (OUTSIDE CTMT.)	Q
11	7	CC FRM DH. CLR'S	OUT VLV'S	Q
12A	7	CC VLV TO MAKE UP PUMP		Q
12B	7	CC VLV TO MAKE UP PUMP		Q
13A	10	CC WTR TO LINE A(B)		Q
13B	4	CC WTR TO LINE A(B)		Q
14	4	CC SYSTEM MU VALVE		
15A	5	CC AUX EQUIP IN VLV		Q
15B	6	CC AUX EQUIP IN VLV		Q
16	7	DG JKT CLNG WTR HX'S	OUT VLV'S	Q
17	5	CNDS VACM PMP. CLR	IN VLV'S.	
18	1	DELETED		
19	9	RCP CLNG WTR. RET. VLV'S	TO CC WTR.	
20	5	CC SURGE TANK 1-1	TO ATMOSPHERE	
21A	11	CC IN ISO VLV TO CRD	1567B	Q
21B	4	CC IN ISO VLV TO CRD	1567B	Q
22	1	COMPUTER INPUT	AUX CRKTS	
23A	7	CC IN ISO VLV (INSIDE CTMT)		Q
23B	4	CC IN ISO VLV (INSIDE CTMT)		Q
24A	7	CC IN ISO VLV (OUTSIDE CTMT)		Q
24B	3	CC IN ISO VLV (OUTSIDE CTMT)		Q
25	4	CC SURGE TK LYL SW	AUX RELAYS	Q
26	7	ALARMS		
27	5	RCP CLNG WTR RET PRESS SW	AUX RELAYS	
28	5	CC LINES 1 & 2 VLV'S	AUX RELAYS	Q

FOR GENERAL NOTES AND REFERENCE DRAWINGS
SEE DWG E-50B DWG INDEX SH. 1

FOR REVISION DESCRIPTION SEE INDEX SHT. 3									
17	3-7-78	REVISED SH'S 23A, 24A (REV.3); SH'S 13A, 21A (REV.5); SH'S 7A, 9A, 10A, 19 (REV.6); SH 8A (REV.7); SH 6A (REV.9)	JZH	IM	SMC	-	APP	-	-
16	2-28-77	REVISED SH. 6B (REV.7); SH. 6A (REV.8)	R.W.S	APC	SMC/IM	-	SNS	-	-
15	12-3-76	ISSUED FOR CONSTRUCTION SH. 28 (REV.0); REVISED SH. 13A (REV.4); SH'S 3B, 4B (REV.6); SH'S 3A, 4A (REV.7)	R.W.S	APC	SMC	-	JW	CO	-
14	11-12-76	REVISED SH'S 1B, 14 (REV.3); SH'S 12B, 15B (REV.4); SH'S 3B, 4B, 4D, 16, 26 (REV.5); SH'S 3A, 4A (REV.6); SH. 6A (REV.7)	R.W.S	APC	SMC/IM	-	SNS	CO	-
13	8-9-76	REVISED SH. 26 (REV.4); SH. 4C (REV.5); SH. 8B (REV.7)	R.W.S	APC	SMC	-	SNS	-	-
12	6-16-76	REVISED SH. 27 (REV.2); SH'S 13A, 13B, 26 (REV.3); SH'S 2, 3B, 4B, 20 (REV.4); SH'S 3A, 4A, 19 (REV.5); SH'S 6A, 6B (REV.6)	R.W.S	APC	SMC/IM	-	SNS	CO	-
11	4-30-76	REVISED SH'S 23A, 23B, 24A, 25 (REV.2); SH'S 7B, 12B, 15B, (REV.3); SH'S 4C, 9B, 16, 21A (REV.4); SH'S 7A, 9A, 10A, 14 (REV.5); SH'S 8A, 8B, (REV.6)	R.W.S	APC	SMC/IM	-	SNS	-	-
10	10-24-76	REVISED SH. 25 (REV.1); SH'S 12B, 14, 15B, 26 (REV.2); SH'S 3B, 4B, 4C, 17, 20, (REV.3); SH'S 3A, 4A, 4D (REV.4); SH'S 6A, 6B (REV.5)	JA	APC	SMC	-	SNS	-	-
REV.	DATE	DESCRIPTION	DR.	CHK.	SUPV.	CHIEF	PROJ	OWNER	OWNER

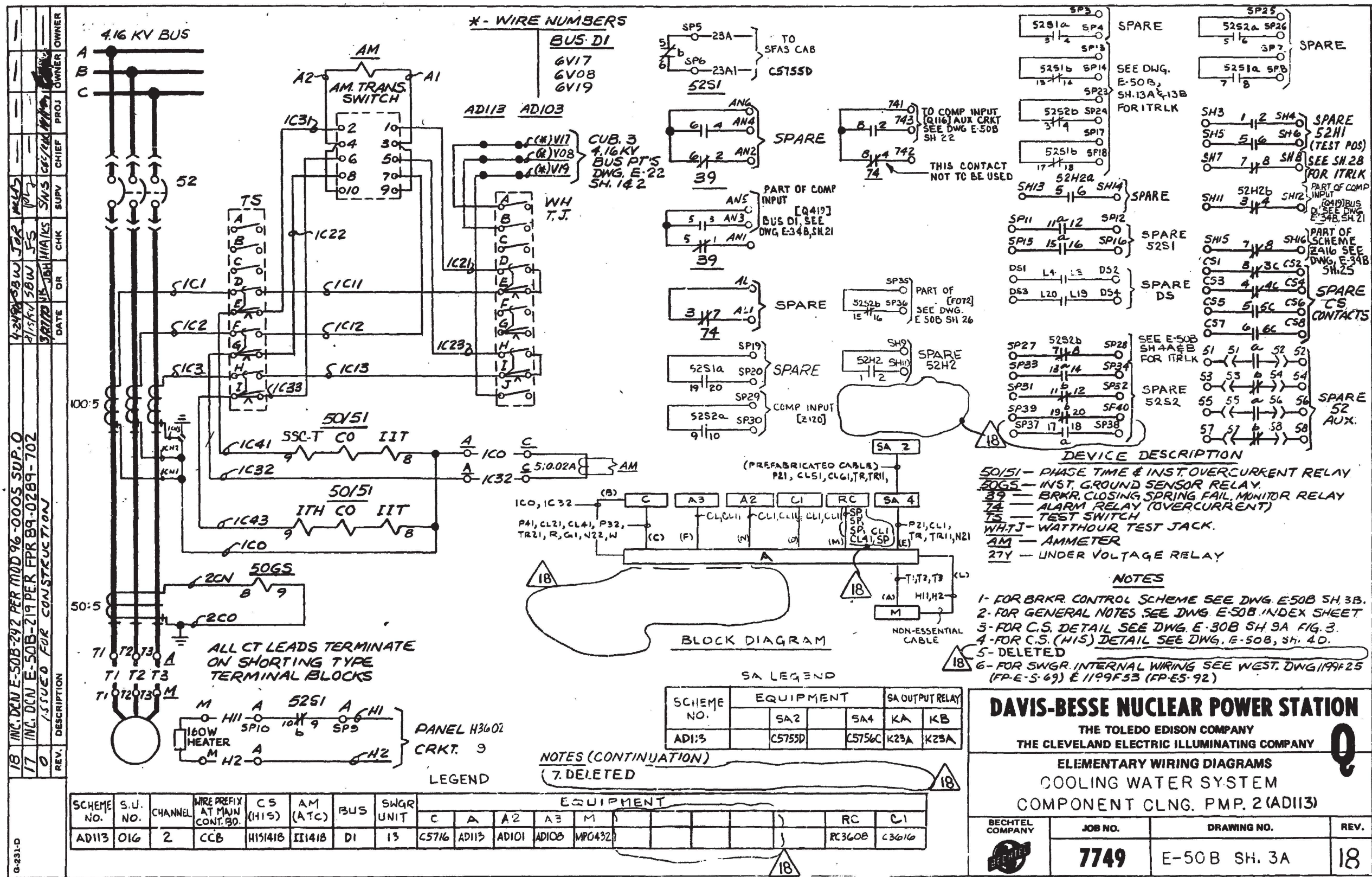
THIS DWG. WAS REDRAWN/SCANNED
ON CAD AND SUPERSEDES REVISION 50.

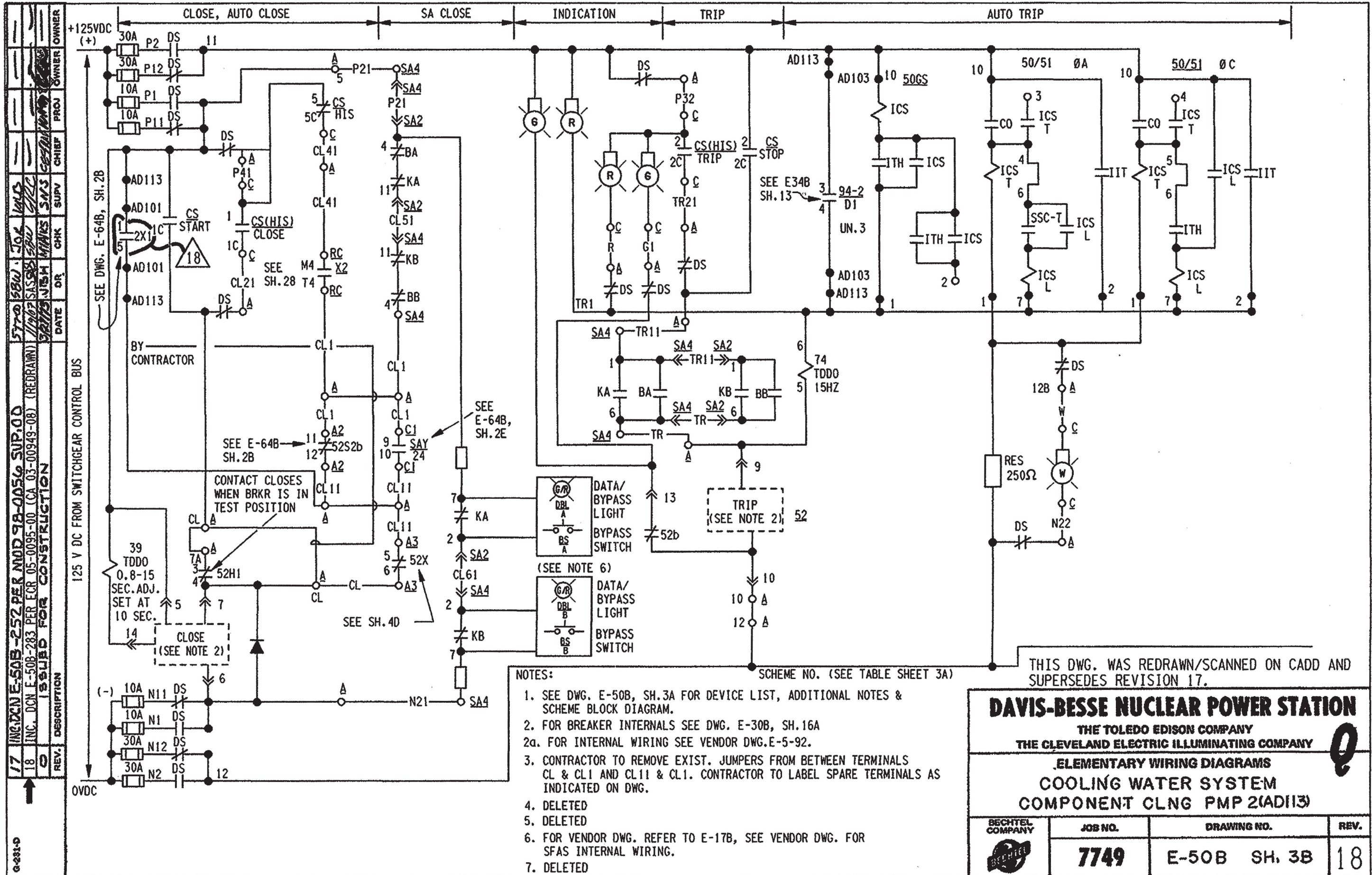
DAVIS-BESSE NUCLEAR POWER STATION			
THE TOLEDO EDISON COMPANY			
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY			
ELEMENTARY WIRING DIAGRAMS			
COOLING WATER SYSTEM			
DRAWING INDEX			
BECHTEL COMPANY	JOB NO	DRAWING NO	REV.
	7749	E-50B	DWG. INDEX SHEET 2
			52

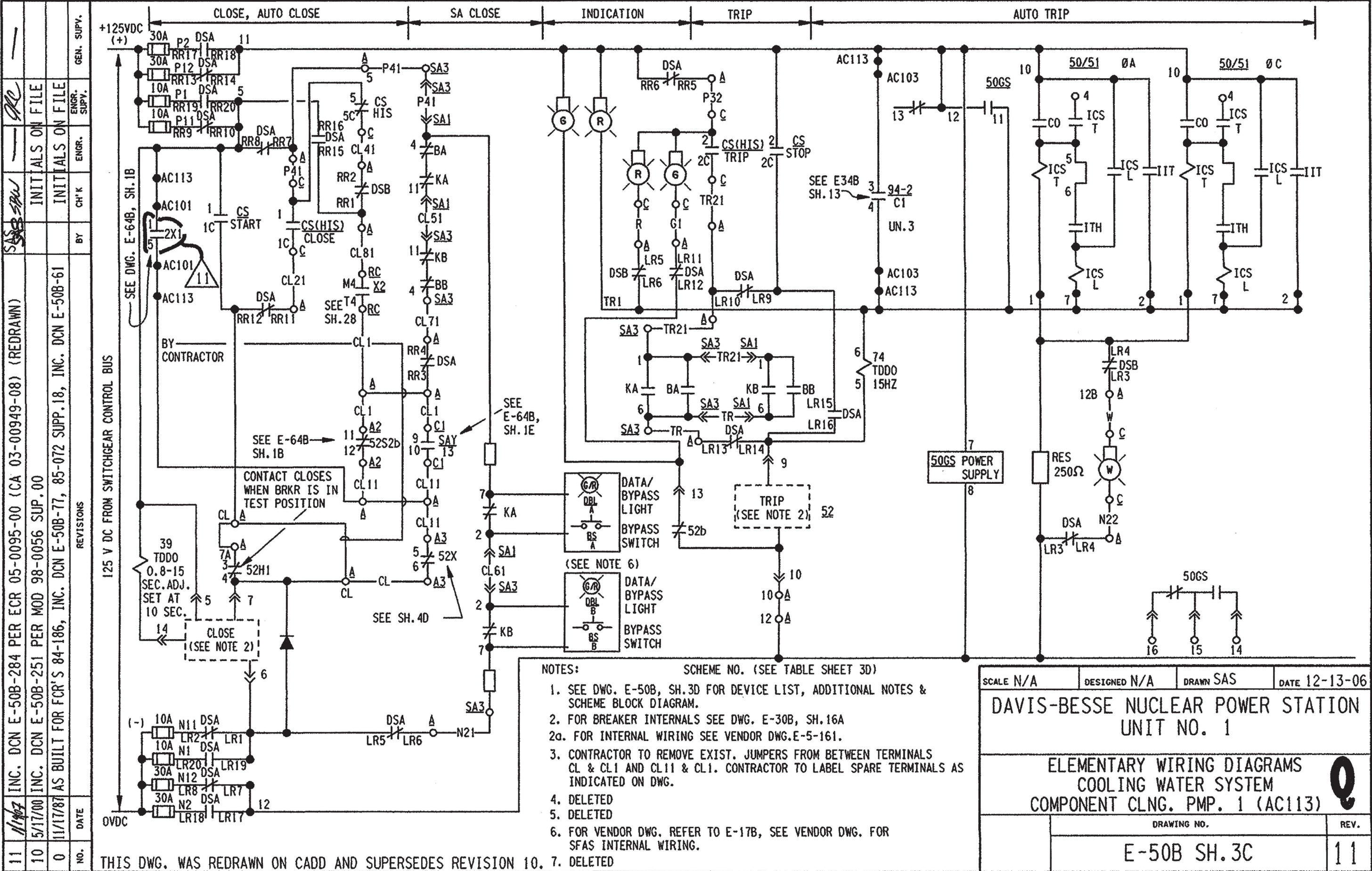
REV	DATE	DESCRIPTION	DR.	CHK	SUPV	CHIEF	PROJ	OWNER	OWNER
46	11/1/01	REVISED SH. 6B (REV. 8) AND SH. 16 (REV. 7)	SBW	JOR	Py	-	-	-	-
45	5-17-00	REVISED SH. 3B (REV. 17), SH. 3C AND SH. 13A (REV. 10), SH. 26 (REV. 7) AND SH. 28 (REV. 4)	SBW	JOR	MLB	-	-	-	-
44	9-11-98	REVISED SH. 3C (REV. 9) AND SH. 3D (REV. 5)	SBW	JOR	MLB	-	-	-	-
43	4-24-98	REVISED SH. 3A & 4A (REV. 18), SH. 3B (REV. 16), SH. 3C (REV. 8), SH. 3D (REV. 4), SH. 4B (REV. 15), SH. 4E (REV. 7), SH. 4F (REV. 6) & SH. 28 (REV. 3)	SBW	JOR	MLB	-	-	-	-
42	5/22/96	REVISED SHT'S: 1B & 4F (REV. 5); SH. 3B (REV. 15); SH. 3C (REV. 7); SH. 4A (REV. 17); SH. 4B (REV. 14); SH. 4D (REV. 9); SH. 4E (REV. 6) AND SH. 28 (REV. 2)	SBW	DVK	CER	-	-	-	-
41	10/9/94	REVISED SH. 3C (REV. 6)	FS	SBW	Py	-	-	-	-
40	8/15/94	REVISED SH. 3A (REV. 17) AND SH. 3B (REV. 14)	SBW	FS	Py	-	-	-	-
39	3/29/93	REVISED SH. 4C (REV. 8)	SBW	JBA	JJS	-	-	-	-
38	9/10/92	REVISED SHT'S: 16 (REV. 6) & 25 (REV. 4)	JOR	SBW	N.R.B.	-	Py	-	-
37	4/11/92	REVISED SHT'S: 3B & 4B (REV. 13), 3C, 4E & 10B (REV. 5), 7A (REV. 11), 7B, 9B, 11 & 15B (REV. 6), 8A (REV. 12), 8B, 9A, 10A & 19 (REV. 9), 12A, 12B, 23A & 24A (REV. 7), 15A, 21B & 23B (REV. 4), 21A (REV. 10) AND 24B (REV. 3)	SBW	JJS	B	-	Py	-	-
36	7/31/91	REVISED SHTS 2, 5B, 17 & 20 (REV. 5), SHT. 12B (REV. 6), SHT. 14 (REV. 4) AND SHT. 25 (REV. 3)	SBW	JJS	D	-	Py	-	-
35	4/9/91	INC. DCN E-50B-155 PER DCR 89-0359; REVISED SHT'S: 3A & 4A (REV. 16), 3B (REV. 12), 3C, 4E & 4F (REV. 4), 3D (REV. 3), 4D (REV. 2), 7A (REV. 10), 8A (REV. 18), 12A & 23A (REV. 6), 12B & 27 (REV. 5) AND 13A & 21A (REV. 9) GEN. UPDATE ADD REVISION NOTE TO INDEX SHT. 2	SBW	JJS	D	-	Py	-	-
34	5/19/90	REVISED SH. 3A & SH. 4A (REV. 15); SH. 4B (REV. 12); SH. 4C & SH. 4D (REV. 7); SH. 26 (REV. 6); SH. 4E & 4F (REV. 3)	ETL	MTF	SEF	-	Py	-	-
33	10/26/89	REVISED SH. 4B (REV. 11)	GFB	MTF	MTT	MLB	Py	-	-
32	8/11/89	REVISED SH. 1A (REV. 5); SH. 3A, 4A (REV. 14); SH. 3B (REV. 11); SH. 3C (REV. 3); SH. 3D, 4E, 4F (REV. 2); SH. 4B (REV. 10); SH. 28 (REV. 1)	ETL	MTF	S.K.	MLB	Py	-	-
31	8/23/88	REVISED SH. 3A (REV. 18), SH. 3B & SH. 8A (REV. 10), SH. 3C (REV. 2), SH. 7B & SH. 12A (REV. 5), SH. 13A, SH. 19, & SH. 21A (REV. 8), SH. 12A (REV. 8), SH. 7A (REV. 9), SH. 3D (REV. 1)	FIL	MTF	S.K.	MLB	Py	-	-
30	6/24/88	REVISED SH. 3A (REV. 12), 4A (REV. 13), 17 (REV. 4), 24A (REV. 6)	ETL	MTF	S.K.	MLB	Py	-	-
29	5/16/88	REVISED SHT. 3C (REV. 1); SHT. 4A (REV. 12); SHT. 4B (REV. 9); SHT. 4E (REV. 1); SHT. 4F (REV. 1)	JN	RK	S.K.	MLB	Py	-	-
28	5/4/88	REVISED SHT. 1B (REV. 4)	JN	LZ	S.K.	MLB	Py	-	-
27	12/22/87	REVISED SH. 3A, 3B, 9A, 10A (REV. 8), SH. 7B, 10B, 11B (REV. 4), SH. 8A (REV. 9), SH. 15, 13A, 19, 21A (REV. 7), SH. 7B, 23A, 24A (REV. 3), SH. 21B, 23B (REV. 3), SH. 24B (REV. 2)	GFB	RK	MLB	MLB	Py	-	-
26	11/17/87	REVISED SH. 3A (REV. 11), SH. 3B (REV. 9), SH. 4A (REV. 11), SH. 4B (REV. 8), SH. 4D (REV. 6). ISSUED SH. 3C, 3D, 4E & 4F (REV. 8)	JAD	MTF	MLB	MLB	Py	-	-
25	1-31-87	REVISED SH. 27 (REV. 4)	PJB	SGP	MLB	MLB	Py	-	-
24	1-12-87	REVISED SH. 27 (REV. 3)	LF	MLB	MLB	MLB	Py	-	-
52	3/4/84	REVISED SH. 4C (REV. 10) & SH'S. 15A & 28 (REV. 5)	SBW	MLB	RS	-	-	-	-
51	1-23-8	REVISED SH. 4C (REV. 9) (REDRAWN)			INITIALS ON FILE	-	-	-	-
50	1/19/07	REVISED SH. 3B (REV. 18), SH. 3C (REV. 11), SH. 4B (REV. 17), & SH. 4E (REV. 10)	SAS	SBW	ARC	-	-	-	-
49	9/15/95	REVISED SHT. 4D (REV. 10), SHT. 7A (REV. 12), SHT. 8A (REV. 13), SHT. 11 (REV. 7) & SHT. 21A (REV. 11)	EAL	SBW	CER	-	-	-	-
48	8-27-04	REVISED SH. 4E (REV. 9) & SH. 4F (REV. 8)	BT	SBW	MLB	-	-	-	-
47	3-24-03	REVISED SH. 4A (REV. 19), SH. 4B (REV. 16), SH. 4E (REV. 8); SH. 4F (REV. 7)	JOR	SBW	MLB	-	-	-	-
REV	DATE	DESCRIPTION	DR.	CHK	SUPV	CHIEF	PROJ	OWNER	OWNER

THIS DWG. WAS REDRAWN/SCANNED
ON CAD AND SUPERSEDES REVISION 50.

DAVIS-BESSE NUCLEAR POWER STATION			
THE TOLEDO EDISON COMPANY THE CLEVELAND ELECTRIC ILLUMINATING COMPANY			
ELEMENTARY WIRING DIAGRAM COOLING WATER SYSTEM DRAWING INDEX			
BECHTEL COMPANY	JOB NO 7749	DRAWING NO E-50B	REV. DWG INDEX SHEET 3 52

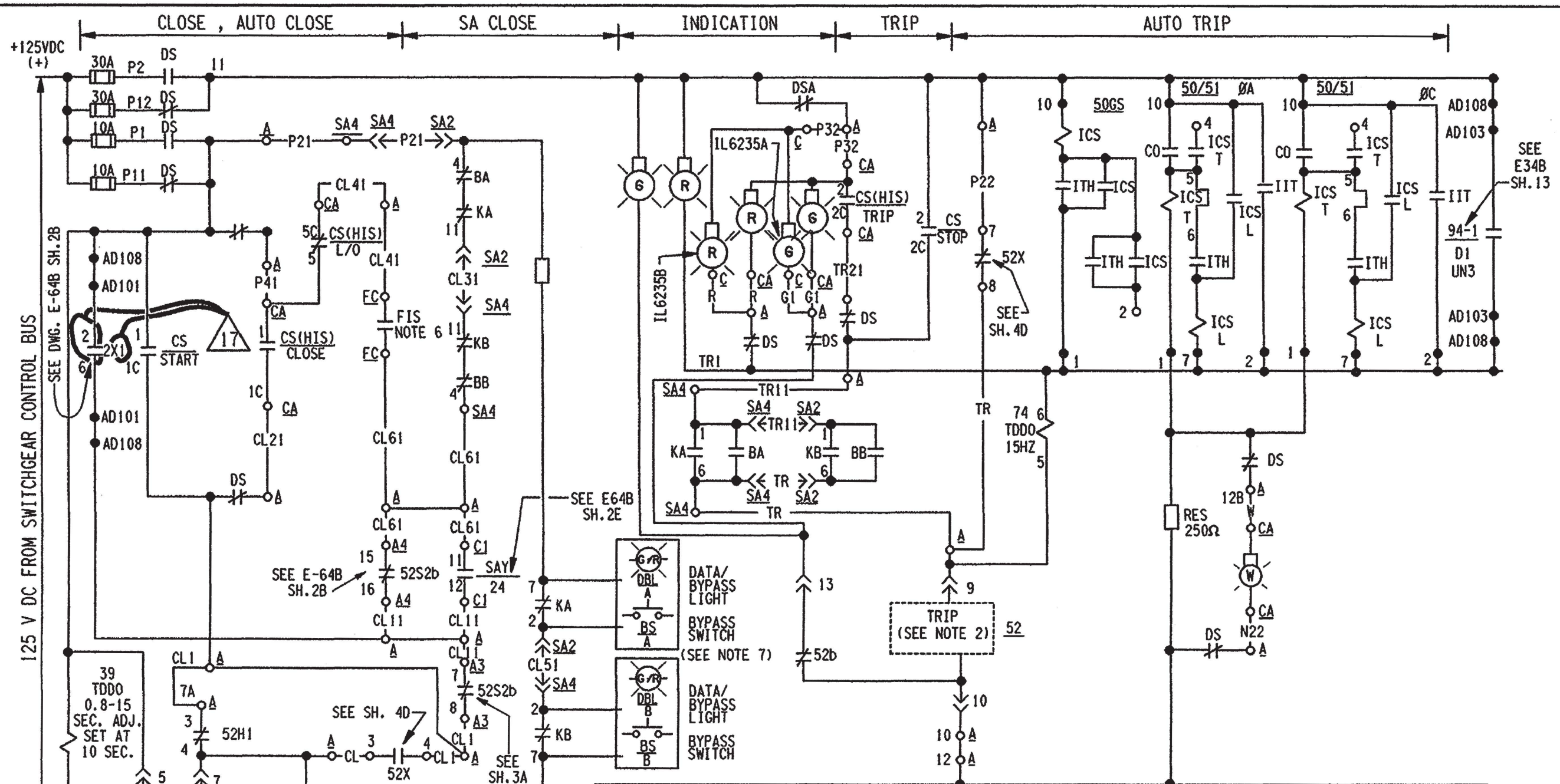








REVISIONS		BY	CHK'D	ENGR.	SUPV.	GEN. SUPV.
17	11/29/87	INC. DCN E-50B-285 PER ECR 05-0095-00 (CA 03-00949-08) (REDRAWN)	SAS	SAW		
16	03-24-03	INC. DCN E-50B-265 PER ECR 02-0517-00				
0	03-27-73	ISSUED FOR CONSTRUCTION				
NO.	DATE					



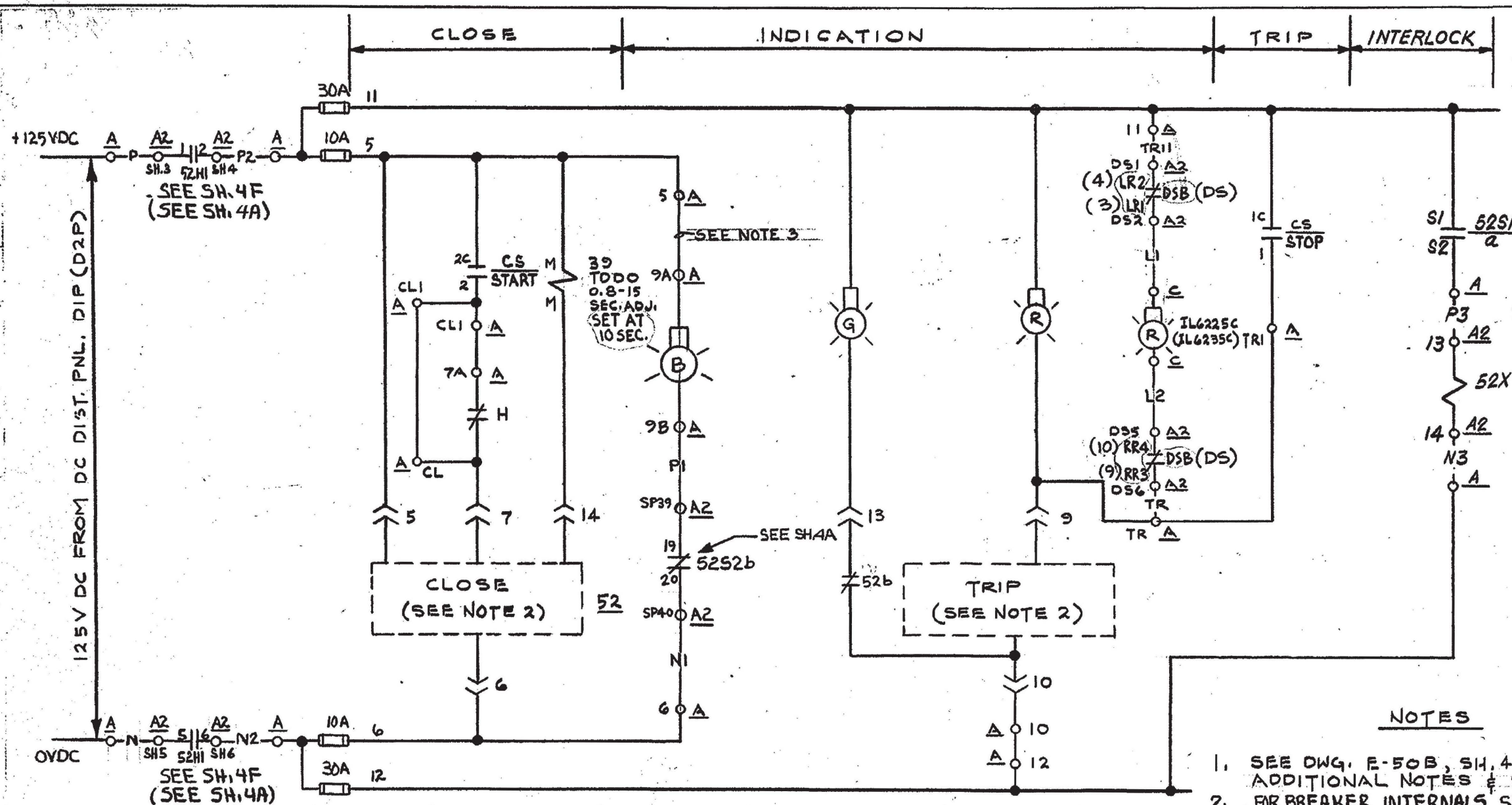
- NOTES:
1. SEE DWG. E-50B, SH. 4A, FOR DEVICE LIST, ADDITIONAL NOTES & SCHEME BLOCK DIAGRAM.
 2. FOR BREAKER INTERNALS SEE DWG. E-30B SHT. 16A.
 - 2a. FOR INTERNAL WIRING SEE VENDOR DWG. E-5-89.
 3. CONTRACTOR TO REMOVE EXIST. JUMPERS FROM BETWEEN TERMINALS CL & CL1 AND CL11 & CL1. CONTRACTOR TO LABEL SPARE TERMINALS AS INDICATED ON DWG.
 4. DELETED
 5. DELETED
 6. FIS CONTACT CLOSE ON LOW WTR. FLOW-MP0431.
 7. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.

SCHEME NO. (SEE TABLE SHEET 4A)

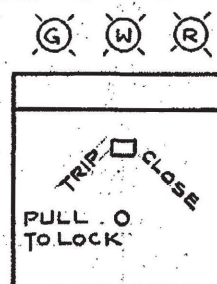
THIS DWG. WAS REDRAWN/SCANNED ON CADD AND SUPERSEDES REVISION 16.

SCALE NONE	DESIGNED	DRAWN SAS	DATE 12-01-06
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1			
ELEMENTARY WIRING DIAGRAM COOLING WATER SYSTEM COMPONENT CLNG PMP 3(AD108)			
DRAWING NO. E-50B SH. 4B			REV. 17

REV.	DESCRIPTION	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER	OWNER
10	INC.DCNE-50B-279 PER ECR 04-0378-00(CAO2-08075-00)	9/15/05	EAL	SBW	CEZ	—	—	—	—
9	INC.DCNE-50B-226 & 277 PER MOD 93-002B-00. AND E-50B-233 PER DORS-2117	5-12-96	SBW	DVK	DCM	—	—	—	—
0	ISSUED FOR CONSTRUCTION	3/27/73	JSH	MIA/KS	SN/JS	DES/RC	WJ/WH	—	—



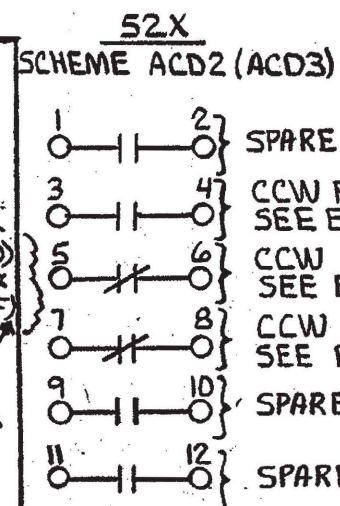
SCHEME NO. (SEE TABLE ON SH.4C)



CONTACTS HANDLE END				CLOSE	NORM AFTER CL	NORM AFTER TR	TRIP	PULL TO LOCK
ODD	EVEN							
0-10	0-10	1	X					
0-10	0-10	3	X				X	X
0-10	0-10	4	X					
0-10	0-10	5		X	X			
0-10	0-10	6		X	X	X		
0-10	0-10	7	X	X	X			
0-10	0-10	8	X	X	X			

SPRING RETURN

G.E. TYPE SBM
MODEL 10AA117
CONTROL SWITCH
TYP FOR HIS 1414 (SH3D)
HIS 1418 (SH. 3A)
AND HIS 1416A (SH4F)
HIS 1416B (SH. 4A)-7



1. SEE DWG. E-50B, SH. 4C FOR DEVICE LIST, ADDITIONAL NOTES & SCHEME BLOCK DIAG.
2. FOR BREAKER INTERNALS SEE DWG. E-30B SH. 16A.
- 2a. FOR INTERNAL WIRING SEE VENDOR DWG. E-38-3, E-38-4.
3. CONTRACTOR TO JUMPER TERMINALS 3A & 5, TR & TRI, CL & CLI AND LABEL SPARE TERMINALS AS INDICATED ON DWG.
4. SWITCH AND CONTACTS IN PARENTHESIS ARE FOR SCHEME AD10B

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
COMPONENT CLNG. PMP. 3

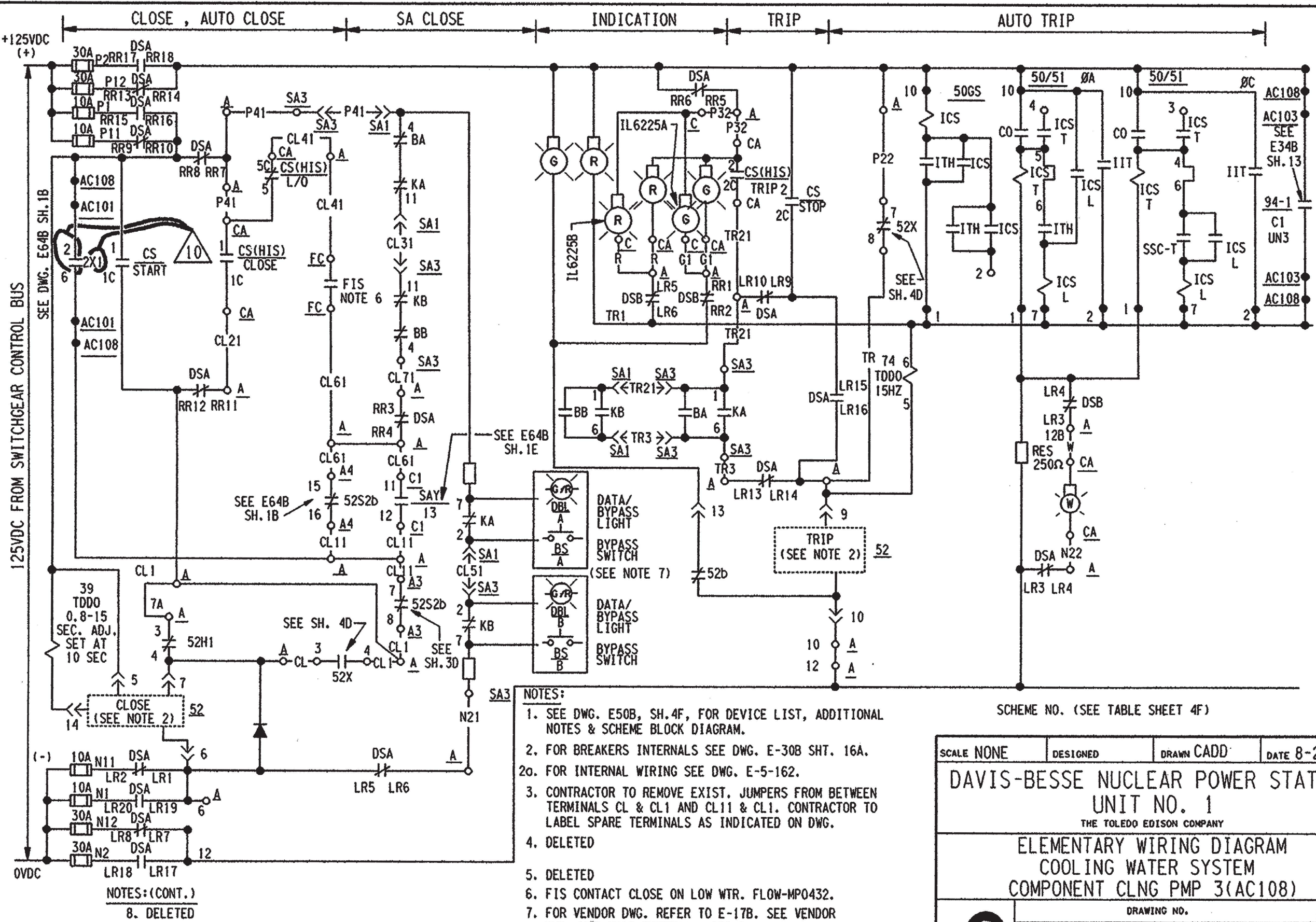
BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH. 4D	1C

NEWFAX 3/85 N58313

ED 7489

REVISIONS		BY	CHK'D	ENGR.	GEN. SUPV.
10	11/19/87	INC. DCN E-50B-286 PER ECR 05-0095-00 (CA 03-00949-08)			
9	8/27/04	INC. DCN E-50B-275 PER ECR 03-0568-00, REV.0			
8	3/24/03	INC. DCN E-50B-266 PER ECR 02-0517-00			
0	11-17-87	"AS BUILT" FOR FCR 84-186 INC. DCN E-50B-76	JLH	MTF	JAC

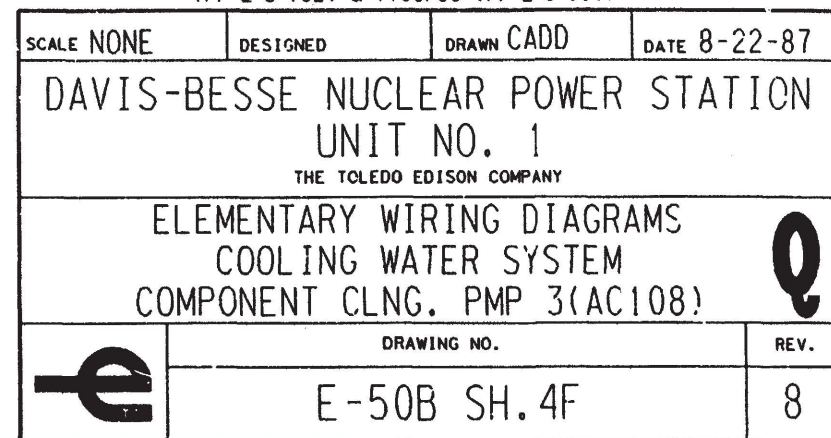
SA3	58W	"INITIALS ON FILE"	PWG	ENGR. SUPV.
SA3	58W	"INITIALS ON FILE"	JWK	ENGR.
SA3	58W	"INITIALS ON FILE"	JLH	BY



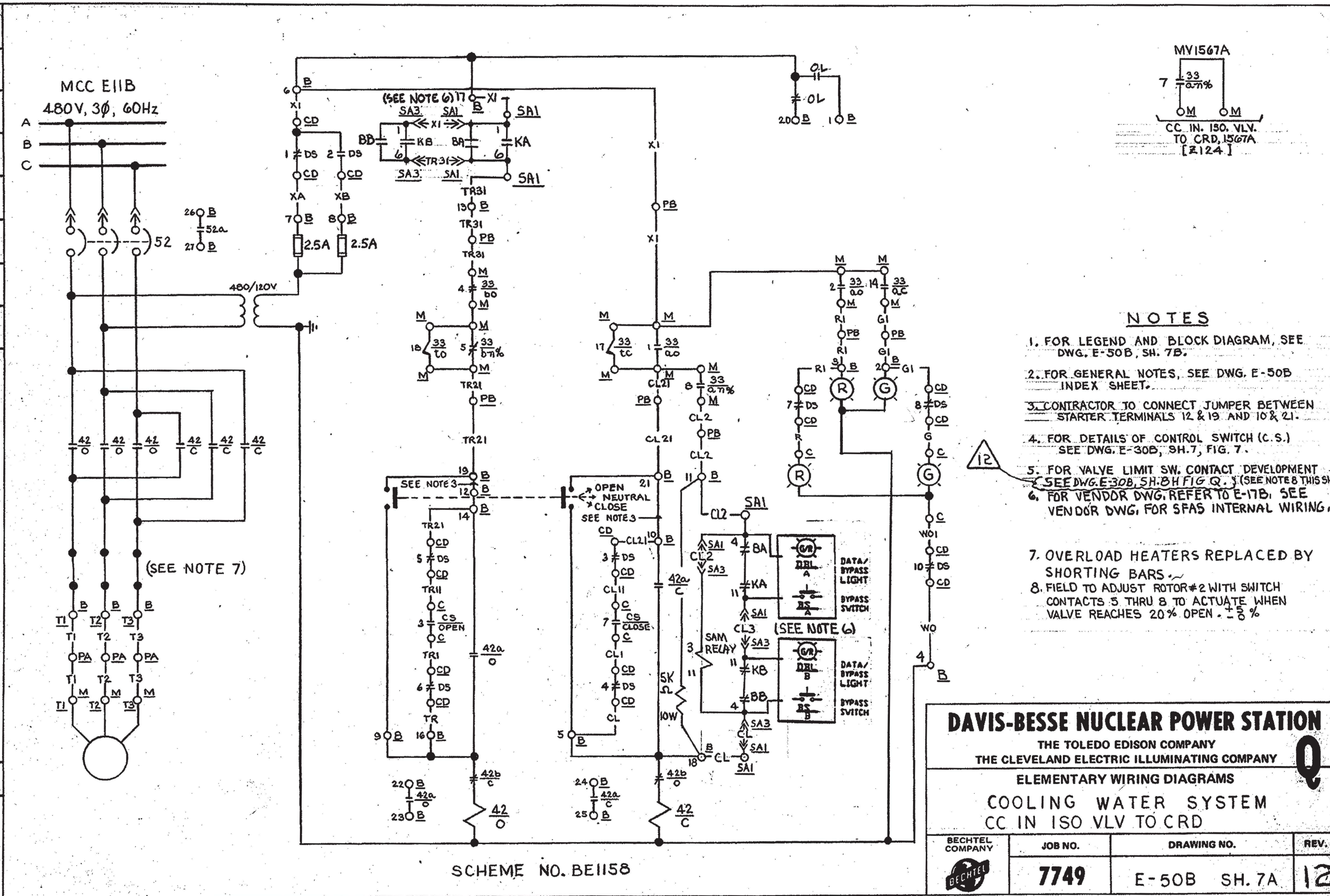
- NOTES:
1. SEE DWG. E50B, SH.4F, FOR DEVICE LIST, ADDITIONAL NOTES & SCHEME BLOCK DIAGRAM.
 2. FOR BREAKERS INTERNALS SEE DWG. E-30B SHT. 16A.
 - 2a. FOR INTERNAL WIRING SEE DWG. E-5-162.
 3. CONTRACTOR TO REMOVE EXIST. JUMPERS FROM BETWEEN TERMINALS CL & CL1 AND CL11 & CL1. CONTRACTOR TO LABEL SPARE TERMINALS AS INDICATED ON DWG.
 4. DELETED
 5. DELETED
 6. FIS CONTACT CLOSE ON LOW WTR. FLOW-MP0432.
 7. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.

SCHEME NO. (SEE TABLE SHEET 4F)

SCALE NONE	DESIGNED	DRAWN CADD	DATE 8-22-87
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAM COOLING WATER SYSTEM COMPONENT CLNG PMP 3(AC108)			
DRAWING NO. E-50B SH.4E			REV. 10



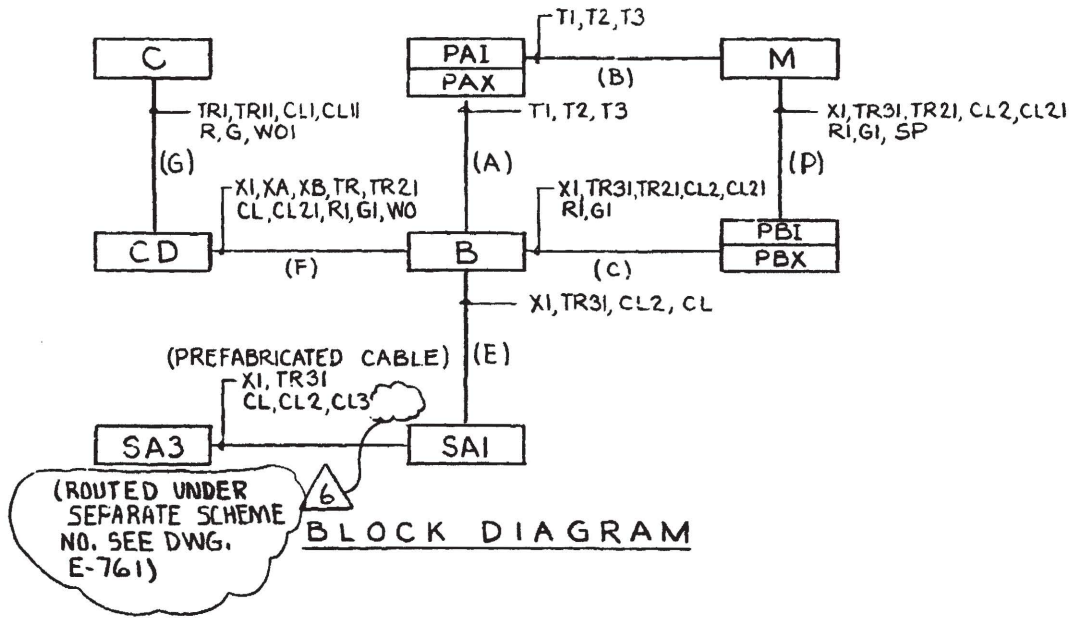
G-231-D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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6	INC. DCM E-50B-192 PER MUD 90-0006 SUP.D	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER	OWNER
5	AS BUILT FOR E-50B-192	8-23-88	FJL	SAW	WJL	WJL	WJL	WJL	WJL
0	ISSUED FOR CONSTRUCTION	11/22/91	APC	WJL	WJL	WJL	WJL	WJL	WJL
REV.	DESCRIPTION								

LEGEND

SCHEME NO.	MCC	S. U. NO.	CHANNEL NO.	WIRE PREFIX AT MAIN CTRL. BD.	C.S.	EQUIPMENT							SA OUTPUT RELAY		DESCRIPTION	
						C	CD	B	PAX(I)	PBX(I)	M	SAI	SA3	KA		KB
BE1158	E11B	16	1	IVA	HIS1567A	C5717	CDE1B-1	BE1158	PIP2MX(I)	PIC2LX(I)	MY1567A	C5762C	C5763D	K42C	K42C	CC IN. ISO. VLV. TO CRD. 1567A



DAVIS-BESSE NUCLEAR POWER STATION			
THE TOLEDO EDISON COMPANY THE CLEVELAND ELECTRIC ILLUMINATING COMPANY			
ELEMENTARY WIRING DIAGRAMS COOLING WATER SYSTEM CC IN ISO VLV TO CRD			
BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH. 7B	6

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE: 4-24-92 OPERATOR: [Signature] 16X

G-231-D



1. FOR LEGEND AND BLOCK DIAGRAM, SEE DWG. E-50B, SH. 6B.
2. FOR GENERAL NOTES SEE DWG. E-50B INDEX SHEET.
3. FOR DETAILS OF LOCAL PUSHBUTTONS AND IND. LIGHTS, SEE DWG. E-30B, SH. 7, TYPES 3, 4 & 6.
4. FOR DETAILS OF CONTROL SWITCH (C.S.) SEE DWG. E-30B, SH. 7, FIG. 7.
5. FOR VALVE LIMIT SW. CONTACT DEVELOPMENT, SEE DWG. E-30B SH. 8 FIG. 9 (SEE NOTE 10 THIS SHEET).
6. L.S.L./XI AUX CONTACT CLOSING ON LOW LOW LEVEL AT CC SURGE TK. SEE SH. 25
7. CONTRACTOR TO REMOVE JUMPER BETWEEN STARTER TERMINALS H & I 5.
8. FOR VENDOR DWG. REFER TO E-17B, SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.
9. OVERLOAD HEATERS REPLACED BY SHORTING BARS.
10. FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN $\pm 5\%$.
11. ADD LOCAL CONTROL SWITCH GUARD ASSEMBLY PER E-302A SH. 185A & B TO SWITCH NV13380 & NV13280.

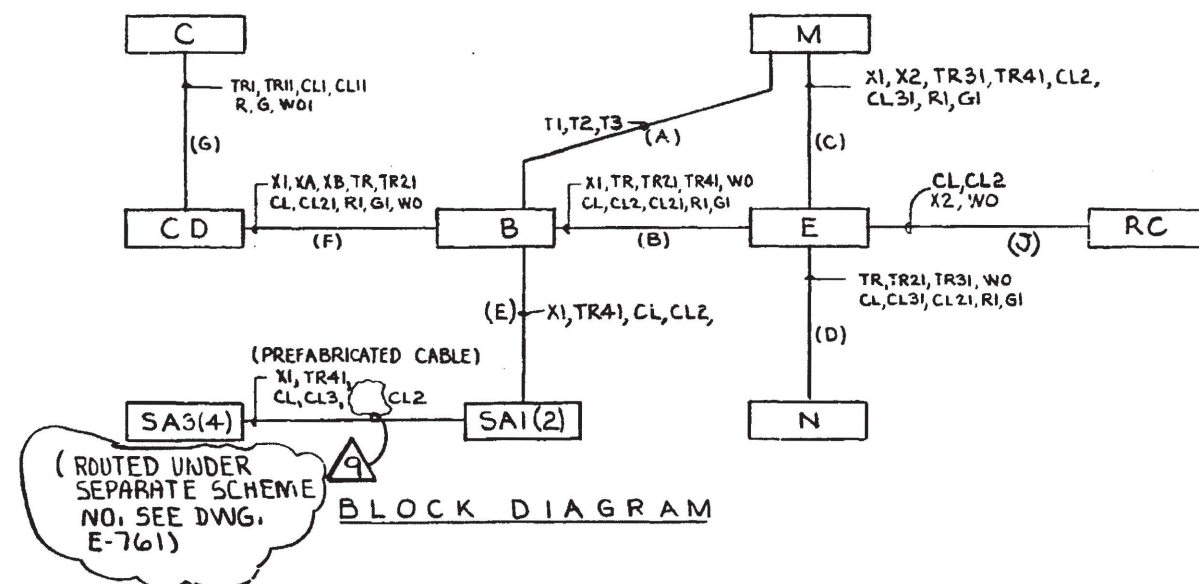
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CRDC BOOSTER PUMPS SUCTION VLVS

BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH 8A	13

SCHEME N°	MCC	S V N°	CHANNEL N°	WIRE PREFIX AT MAIN CTRL. BD.	CS	EQUIPMENT												SA OUTPUT RELAY		DESCRIPTION
						C	CD	B	E	M	N	SA1	SA2	SA3	SA4	RC	KA	KB		
BE1199	E11D	16	1	DPA	HIS132B	C5717	CDE11D	BE1199		EV1328D	MV1328D	NV1328D	C5762C	---	C5763D	---	RC3704	K42D	K42D	CRDC BOOSTER PMP 1 SUCTION VLV.
BF1133	F11A	16	2	DPB	HIS133B	C5717	CDF11A-1	BF1133		EV1338D	MV1338D	NV1338D	---	C5755C	---	C5756D	RC3705	K42D	K42D	CRDC BOOSTER PMP 2 SUCTION VLV.

RELAY DESCRIPTION		COIL LOCATION	TYPE	RELAY CONTACTS				
CC CRD BOOSTER PUMP 1 (2) SUCTION VLV'S AUXILIARY RELAY	33X1	E-50B SH-8A	COUCH TYPE 4AP	CONTACTS				
				FUNCTION	CRD CLR. CIRC. PMP 1&2 PERMISSIVE START (SEE SH-6A)	SPARE	SPARE	SPARE



THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CRDC BOOSTER PUMPS SUCTION VLV'S

	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH. 8B	9

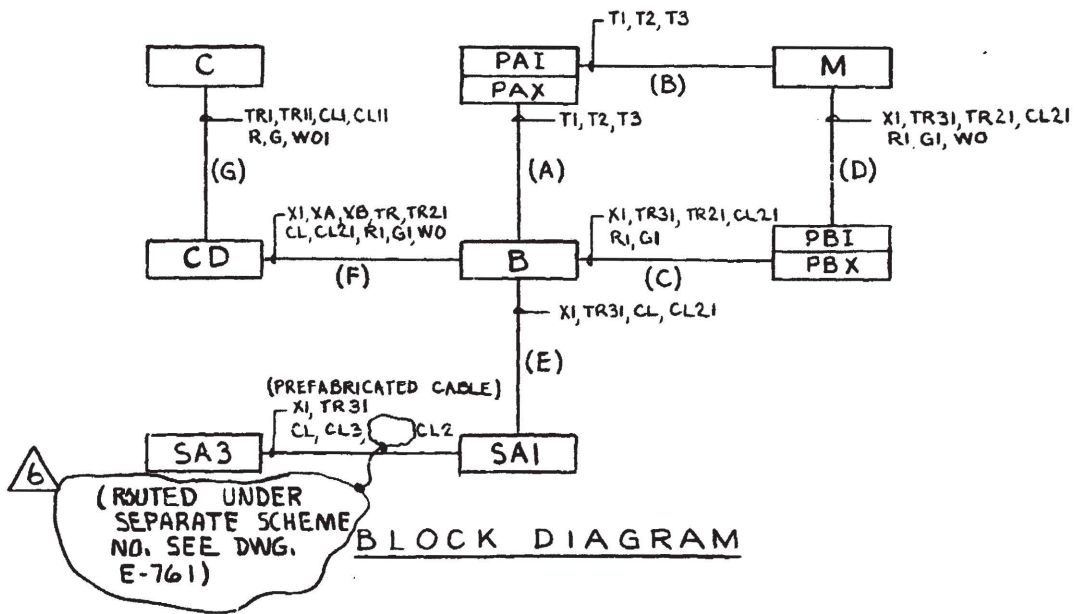
1 I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN
THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED
BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE RECORD(S)
SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 4-24-92 OPERATOR Smith, Willie #168

6	INC. DCN E-50B-190 PER MOD 90-0006 SUP'D	DATE	11/14/84	DR	APC	CHK	SVU	CHIEF	PROJ	OWNER	OWNER
5	AS-BUILT FOR ECR 85-0112 SUPP 1, INC DCN. E-50B-51	DATE	11/14/84	DR	APC	CHK	SVU	CHIEF	PROJ	OWNER	OWNER
0	ISSUED FOR CONSTRUCTION	DATE	11/14/84	DR	APC	CHK	SVU	CHIEF	PROJ	OWNER	OWNER

LEGEND

SCHEME NO.	MCC	S. U. NO.	CHANNEL NO.	WIRE PREFIX AT MAIN CTRL. BD.	C.S.	EQUIPMENT								SA OUTPUT RELAY		DESCRIPTION
						C	CD	B	PAX(I)	PBX(I)	M	SAI	SA3	KA	KB	
BE1173	E11B	16	1	COA	HIS1407A	C5717	CDE11B-2	BE1173	PIP2MX(I)	PIC2LX(I)	MV1407A	C5762C	C5763D	K42B	K42B	CC OUT. ISO. VLV. FRM. CTMT., 1407A



BLOCK DIAGRAM

DAVIS-BESSE NUCLEAR POWER STATION

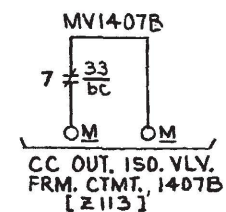
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC OUT ISO VLV (INSIDE CTMT)

BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH.9B	6

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 4-24-92 OPERATOR *Amelia Little* J6X



1. FOR LEGEND AND BLOCK DIAGRAM, SEE DWG. E-50B, SH. 10B.
2. FOR GENERAL NOTES SEE DWG. E-50B INDEX SHEET.
3. FOR DETAILS OF LOCAL PUSHBUTTONS AND IND. LIGHTS, SEE DWG. E-30B, SH. 7, TYPES 3, 4 & 6.
4. FOR DETAILS OF CONTROL SWITCH (C.S.) SEE DWG. E-30B, SH. 7, FIG. 7.
5. FOR VALVE LIMIT SW. CONTACT DEVELOPMENT SEE DWG. E-30B, SH. 8.
6. FOR VENDOR DWG. REFER TO E-17B, SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.
7. OVERLOAD HEATERS REPLACED BY SHORTING BARS.
8. ADD LOCAL CONTROL SWITCH GUARD ASSEMBLY PER E-302A SH. 16SA & B TO SWITCH NY1407B.

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC OUT ISO VLV (OUTSIDE CTMT)

 BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH.10A	9

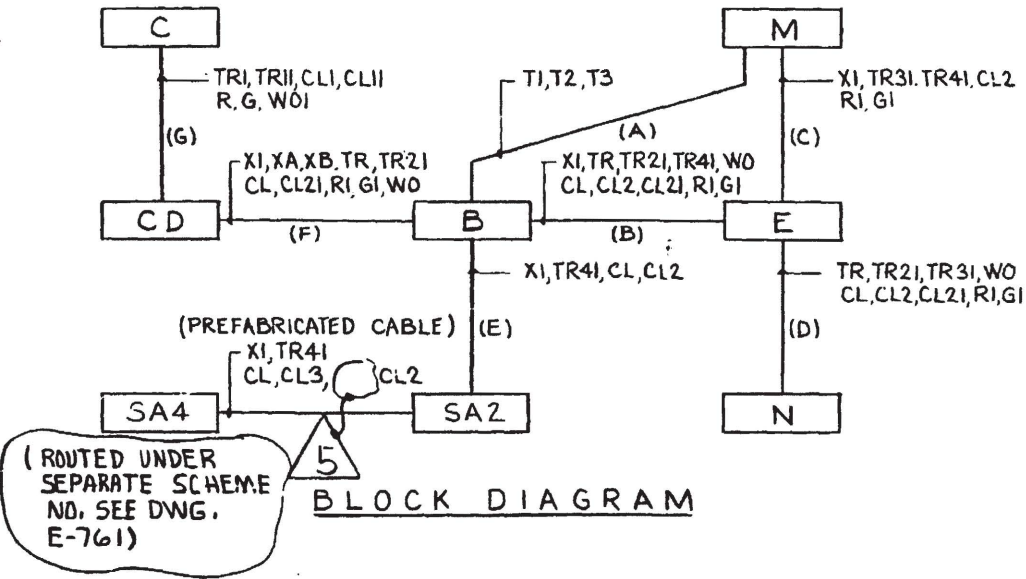
OPERATOR

AGENCY: Indy, Wiedle 16X

DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
4/12/83	GFB	MR	MR	MR	MR	MR
4/14/83	58W	MR	MR	MR	MR	MR
4/27/83	APC	MR	MR	MR	MR	MR
REV.	DESCRIPTION					
4	AS BUILT FOR RCR 85-012, SUPP 1; INC. DCN. E-50B-49					
5	INC. DCN. E-50B-203 PER MOD 90-0006 SUP.D					
0	ISSUED FOR CONSTRUCTION					

LEGEND

SCHEME NO.	MCC	S.U. NO.	CHANNEL NO.	WIRE PREFIX AT MAIN CTRL. BD.	C.S.	EQUIPMENT								SA OUTPUT RELAY		DESCRIPTION
						C	CD	B	E	M	N	SAZ	SA4	KA	KB	
BF1158	F11B	16	2	COB	HISI407B	C5717	CDF11B	BF1158	EV1407B	MY1407B	NY1407B	C5755C	C5756D	K42B	K42B	CC OUT. ISO. VLV. FRM. CTMT., 1407B



DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC OUT ISO VLV (OUTSIDE CTMT)

BECHTEL COMPANY

JOB NO.

DRAWING NO.

REV.

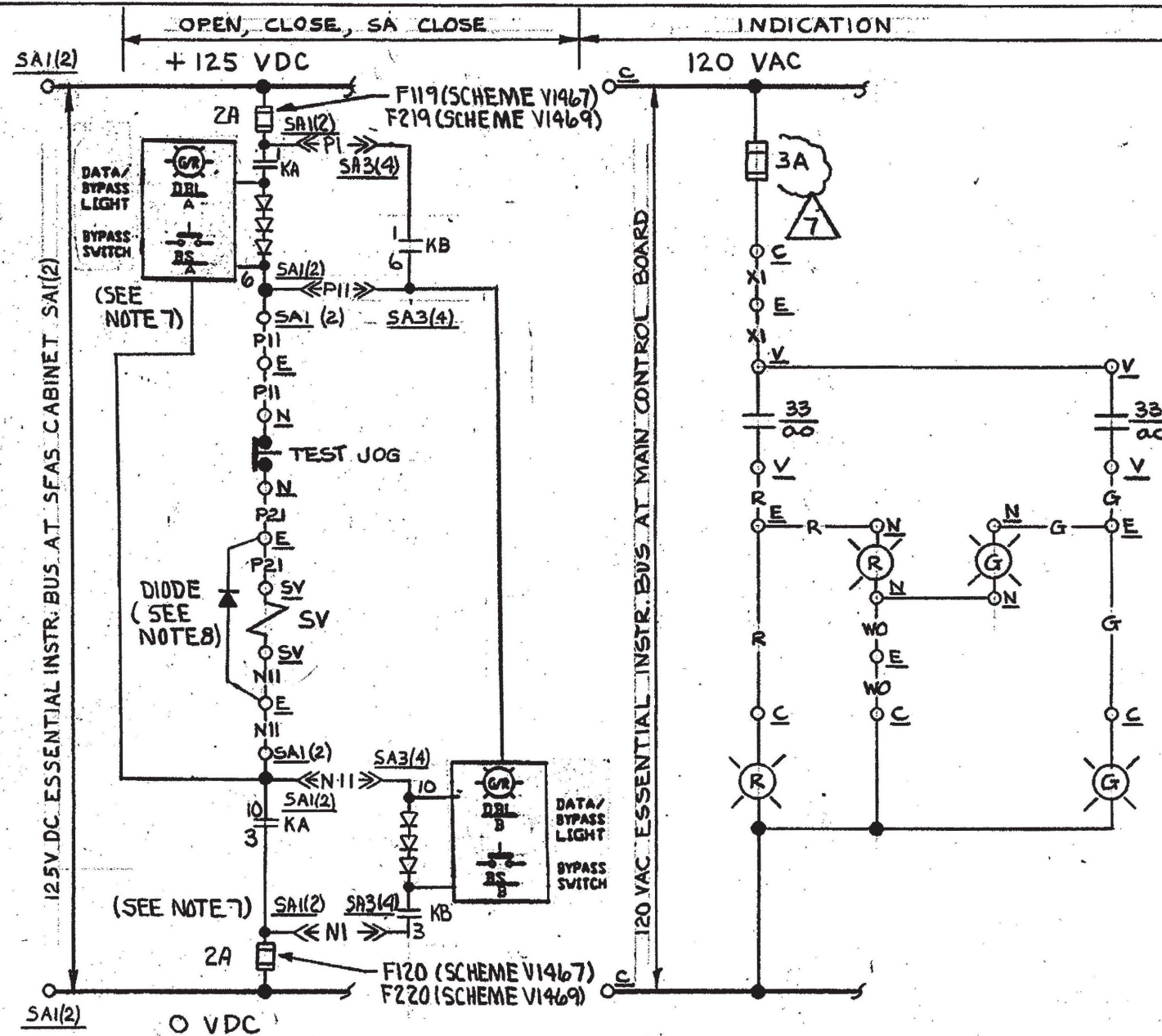
7749

E-50B SH.10B

5

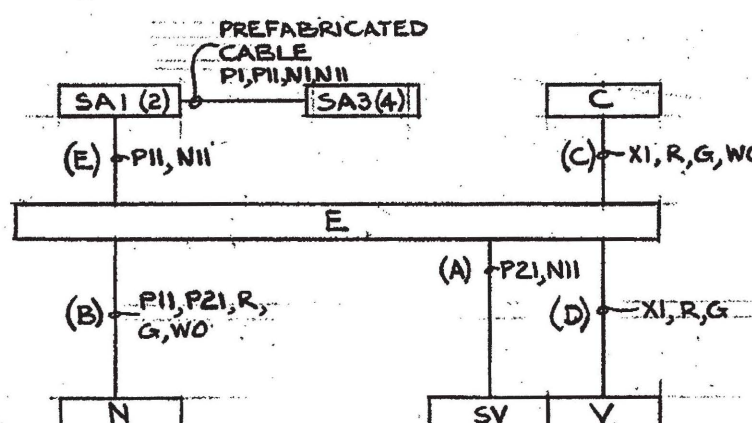
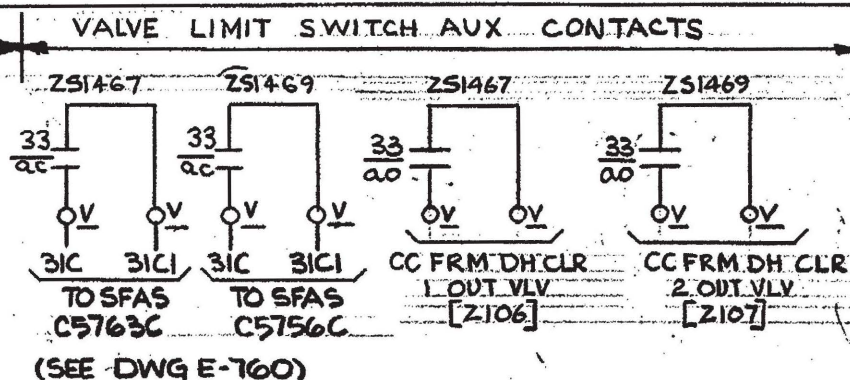
I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

REV.	DESCRIPTION	ISSUED FOR CONSTRUCTION	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
6	INC. DCN'S E-50B-1844197 PER MOD 90-0006 SUPD E-50B-2114212 PER MOD 87-1014-01	5/14/92	5/14/92	5/14/92	5/14/92	5/14/92	5/14/92	5/14/92	5/14/92
7	INC. DCN'S E-50B-277+278 PER ECR 04-0053-00 REV. 0	9/15/08	9/15/08	9/15/08	9/15/08	9/15/08	9/15/08	9/15/08	9/15/08
0	ISSUED FOR CONSTRUCTION	11/27/92	11/27/92	11/27/92	11/27/92	11/27/92	11/27/92	11/27/92	11/27/92



SCHEME NO. (SEE TABLE)

* - CONTROLLED VALVE HAS SAME NUMBER AS SOLENOID VALVE EXCEPT PREFIX "SV" IS REPLACED WITH "V"



BLOCK DIAGRAM

NOTES

1. FOR GENERAL NOTES SEE DRAWING INDEX E-50B.
2. FOR DETAILS OF LOCAL PUSHBUTTONS AND IND. LIGHTS SEE DRAWING E-30B, SH-7, TYPE 4 & 6.
3. FOR DETAILS OF CONTROL SWITCH "CS" SEE DRAWING E-30B, SH-7, FIG. 7.
4. FOR VALVE LIMIT SW. DESIGNATIONS SEE DWG E-30B, SH-8.
5. VALVES V1467 AND V1469 OPEN ON SV1467 & SV1469 DE-ENERGIZING, RESPECTIVELY.
6. FOR REMOTE OPERATION FROM MAIN CONTROL PANEL SEE DWG E16 SH-1 FIG. 1
7. FOR VENDOR DWG. REFER TO E-17B, SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.
8. INSTALL "DIODE" IN ACCORDANCE WITH DWG. E-1037L, SH.17

SCHEME NO.	SU NO.	CH NO.	WIRE PREFIX	CS	EQUIPMENT								SA OUTPUT RELAY		DESCRIPTION
					C	E	SV *	N	SA1	SA2	SA3	SA4	KA	KB	
V1467	016	1	DCA	H1S1467	C5716	EV1467	SV1467	NV1467	C5762C	—	C5763D	—	K31C	K31C	CC.FRM.DH.CLR.1 OUT.VLV.
V1469	016	2	DCB	H1S1469	C5716	EV1469	SV1469	NV1469	—	C5755C	—	C5756D	K31C	K31C	CC.FRM.DH.CLR.2 OUT.VLV.

DAVIS-BESSE NUCLEAR POWER STATION
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

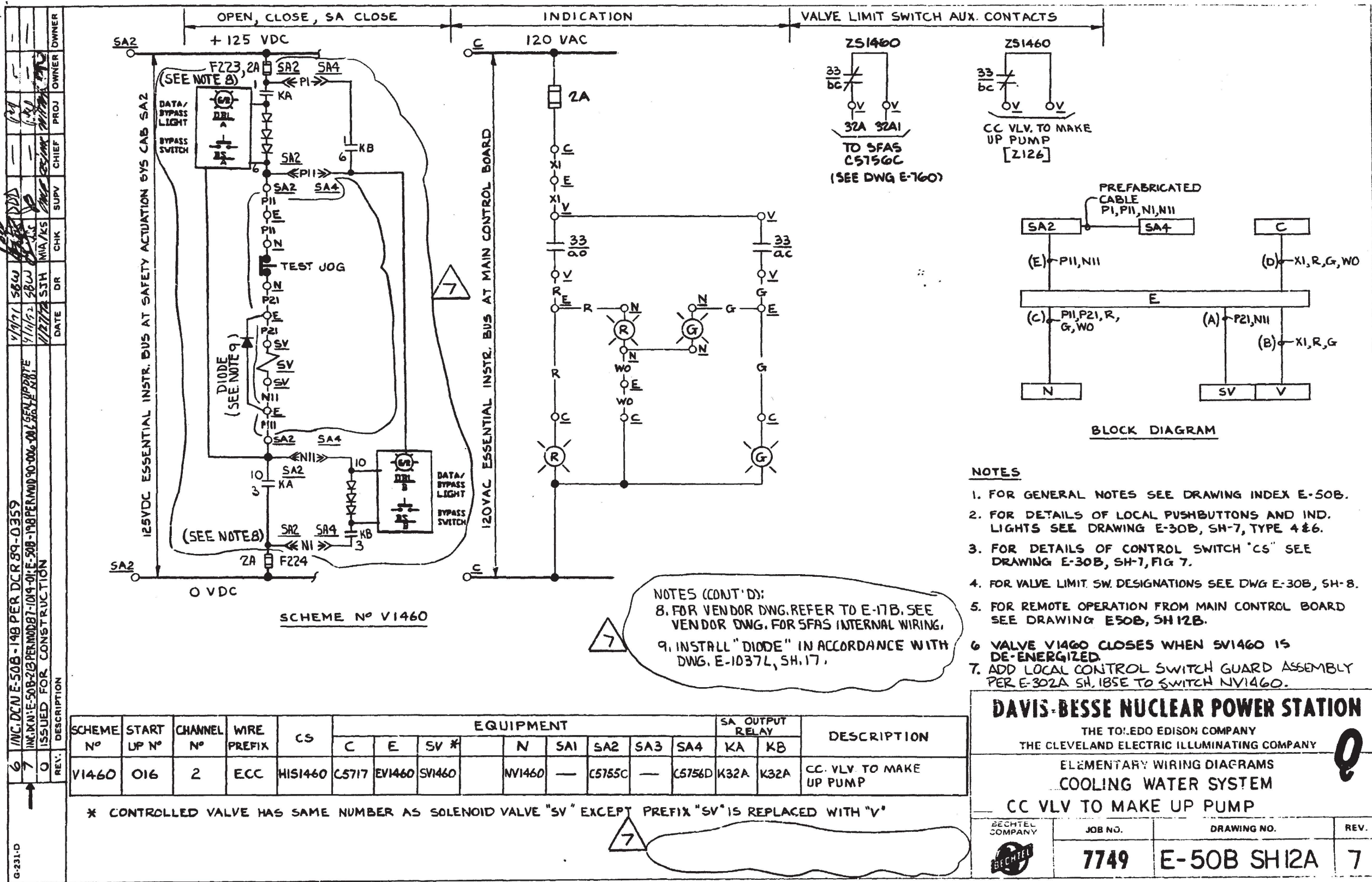
ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC FRM DH CLR'S OUT VLV'S

BECHTEL COMPANY

JOB NO.
7749

DRAWING NO.
E-50B SH-11

REV.
7



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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE: 4-24-92 OPERATOR: [Signature]

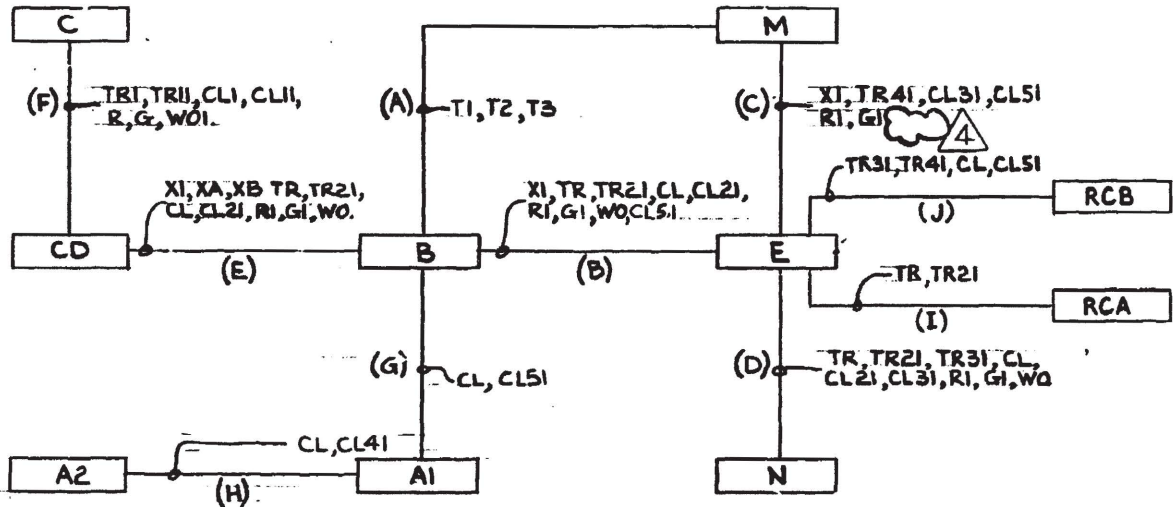
1 I CERTIFY THAT THIS IMAGE CONTAINED ON THIS FRAME WAS MADE IN
THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED
BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE RECORD(S)
SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.
DATE 4-24-92 OPERATOR And. Wiedli 16X

6-16-76	RWS	APC	ENCLOSURE	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
1	INCORPORATED 3RN 137E 1 REVISED AS NOTED	MS BUILT FOR PER 85-012 SUPP. 1 INC DCN E-50B-46	ISSUED FOR CONSTRUCTION	REV.	DESCRIPTION					
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LEGEND

SCHEME No	MCC	START UP No	CHANNEL	WIRE PREFIX	CS	EQUIPMENT								DESCRIPTION
						C	CD	B	E	M	N	A1	A2	
BE1161	E11D	016	1	CLA	HIS2645	C5720	CDE11D	BE1161	EV26450	MV26450	NV26450	AC113	AC108	CC RET HDR 1 FROM AUX. EQUIP.
BF1161	F11D	016	2	CLB	HIS2649	C5720	CDF11D	BF1161	EV26490	MV26490	NV26490	AD113	AD108	CC RET HDR 2 FROM AUX. EQUIP.
BE1226	E12A	016	1	WDA	HIS5095	C5720	CDE12A-1	BE1226	EV50950	MV50950	NV50950	AC113	AC108	CC HDR LINE 1 IN 150
BF1106	F11A	016	2	WDB	HIS5096	C5720	CDF11A-2	BF1106	EV50960	MV50960	NV50960	AD113	AD108	CC HDR LINE 2 IN 150
BE1227	E12A	016	1	WRA	HIS5097	C5720	CDE12A-1	BE1227	EV50950	MV50970	NV50970	AC113	AC108	CC HDR LINE 1 RET 150
BF1119	F11A	016	2	WRB	HIS5098	C5720	CDF11A-2	BF1119	EV50960	MV50980	NV50980	AD113	AD108	CC HDR LINE 2 RET 150

FOR SCHEME 4 NOTES SEE DRAWING E-50B SH-13A.



BLOCK DIAGRAM

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

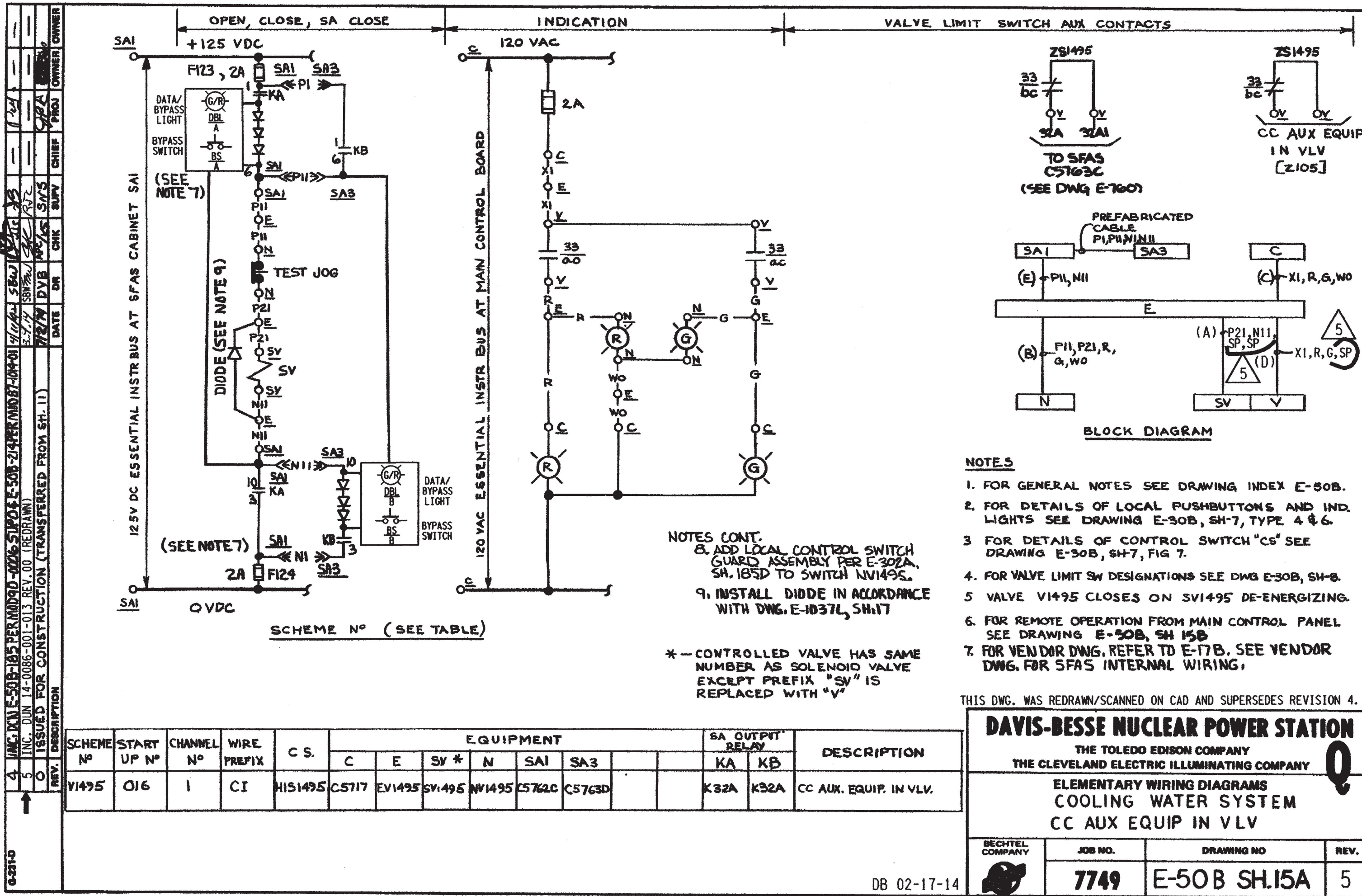
ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC WTR TO LINE A (B)

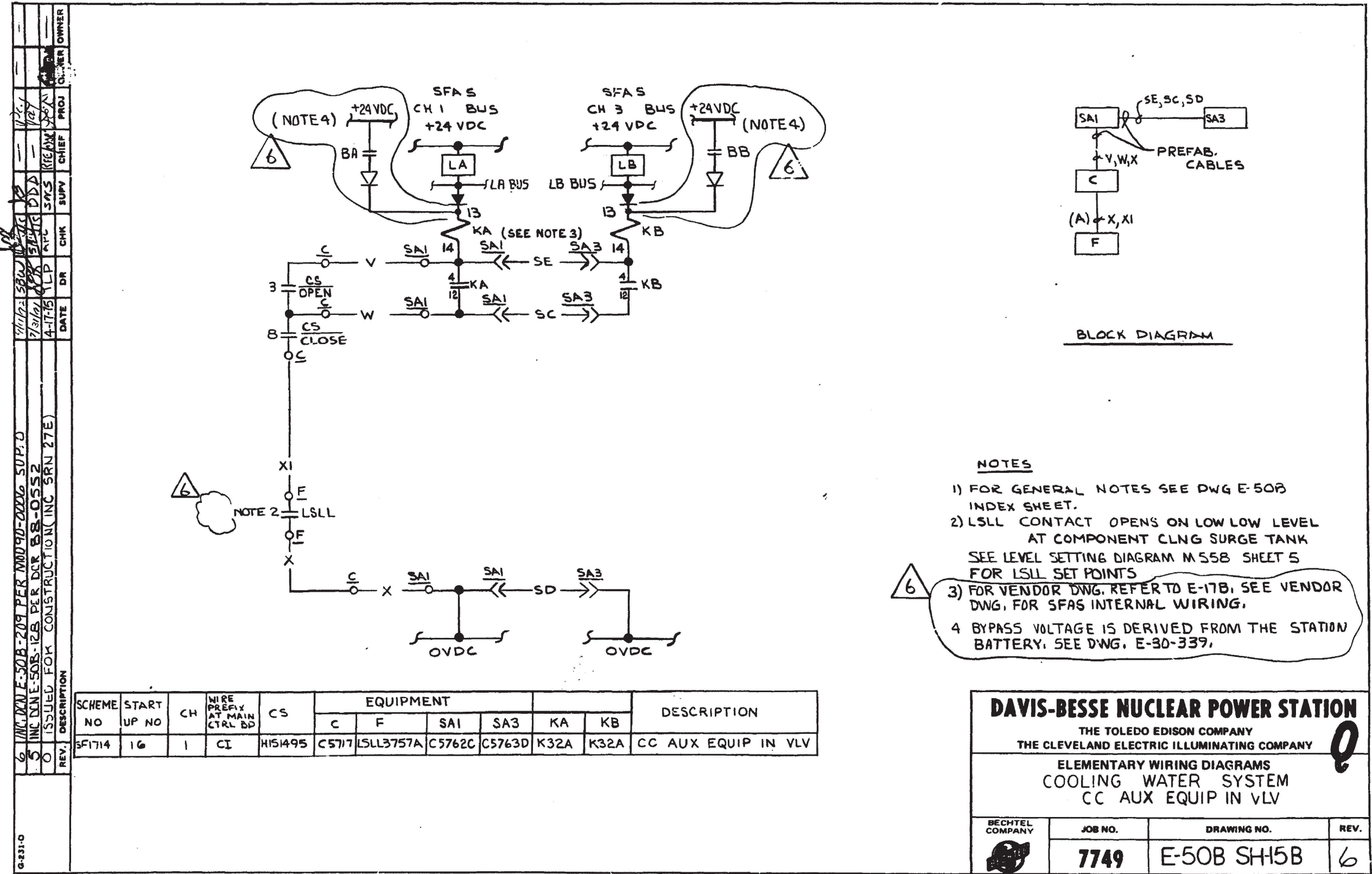
BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH-13B	4

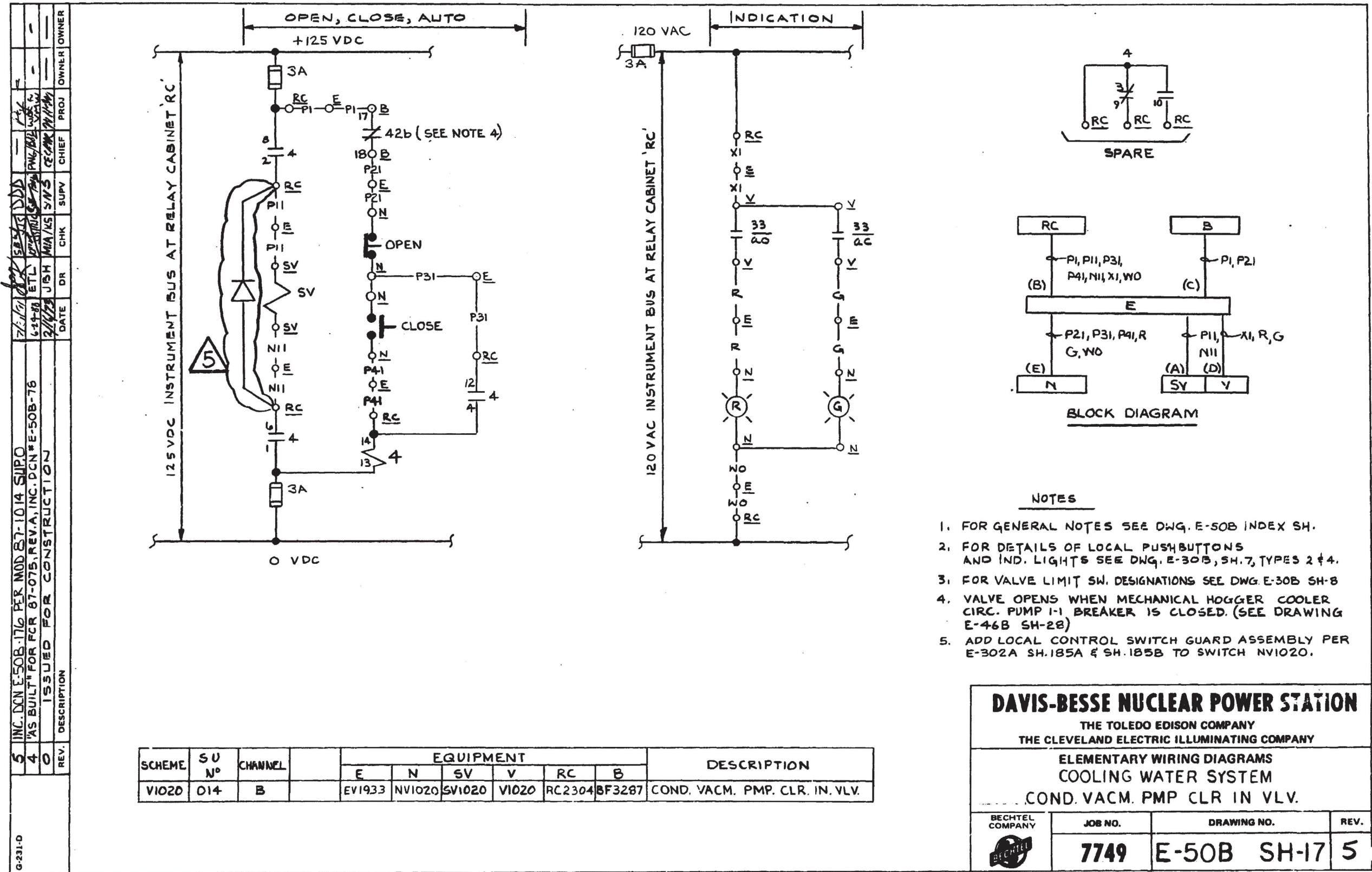
I CERTIFY THAT THE IMAGE CONTAINED ON THIS FRAME WAS MADE IN THE NORMAL AND REGULAR COURSE OF BUSINESS, ON THE DATE STATED BELOW AND THAT IT IS AN ACCURATE REPRODUCTION OF THE RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

17520-87

16X



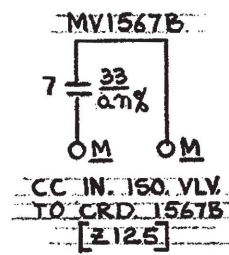
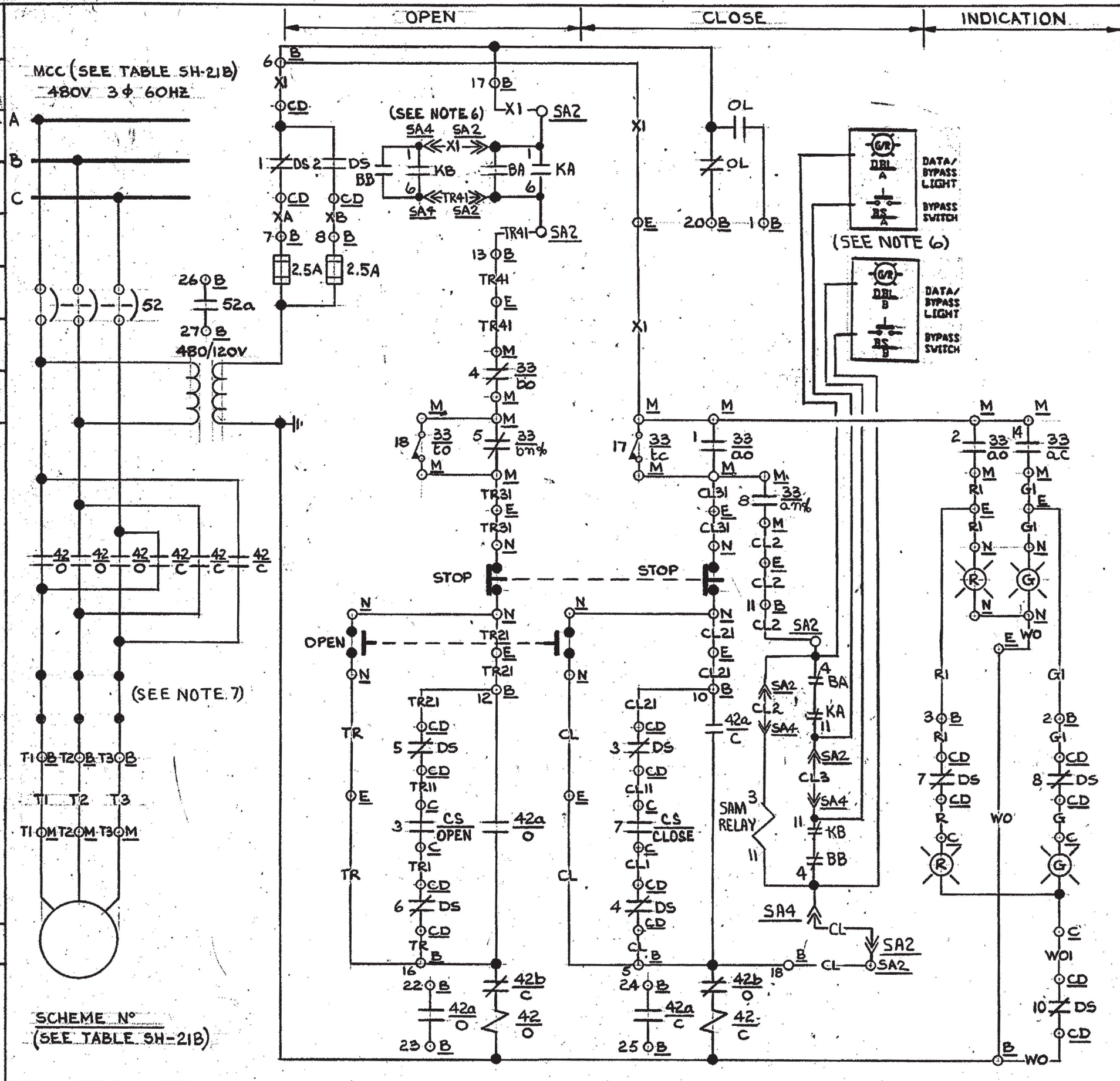




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DATE 8-8-91 OPERATOR Sharon Sutton 16X

REV.	DESCRIPTION	DATE	CHK	SUPV	CHIEF	PROJ	OWNER
10	INC. DCN E-50B-204 PER MOD 90-0006 SUPV	5/14/72	SB	SB	SB	SB	SB
11	INC. DCN E-50B-280 PER ECROS-0284-00 (CA03-0353-002)	9/15/83	EAL	SB	SB	SB	SB
0	ISSUED FOR CONSTRUCTION	5/27/73	INITIALS	ON	FILE		



NOTES

1. FOR LEGEND BLOCK DIAGRAM SEE DWG N° E-50B SH-21B
2. FOR GENERAL NOTES SEE DRAWING INDEX E-50B.
3. FOR LOCAL PUSHBUTTONS AND INDICATING LIGHT DETAILS SEE DRAWING E-30B, SH-7, TYPES 3, 4 & 6.
4. FOR DETAILS OF CS SEE DWG. E-30B, SH-7, FIG. 7.
5. FOR VALVE LIMIT SWITCH DEVELOPMENT SEE DRAWING N° E-30B, SH-8, FIG. Q (SEE NOTE 8 THIS SHEET)
6. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.
7. OVERLOAD HEATERS REPLACED BY SHORTING BARS.
8. FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU. 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN. $\pm 5\%$
9. ADD LOCAL CONTROL SWITCH GUARD ASSEMBLY PER E-302A SH. 185A & B TO SWITCH NV1567B.

DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS

COOLING WATER SYSTEM

CC IN. ISO. VLV. TO CRD. 1567B

BECHTEL COMPANY



JOB NO.

7749

DRAWING NO.

E-50B SH-21A

REV.

11

DAVIS-BESSE NUCLEAR POWER STATION

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

COOLING WATER SYSTEM

CC IN ISO. VLV TO CRD 1567B

**BECHTEL
COMPANY**

JOB NO.

DRAWING NO.

REV.

7749

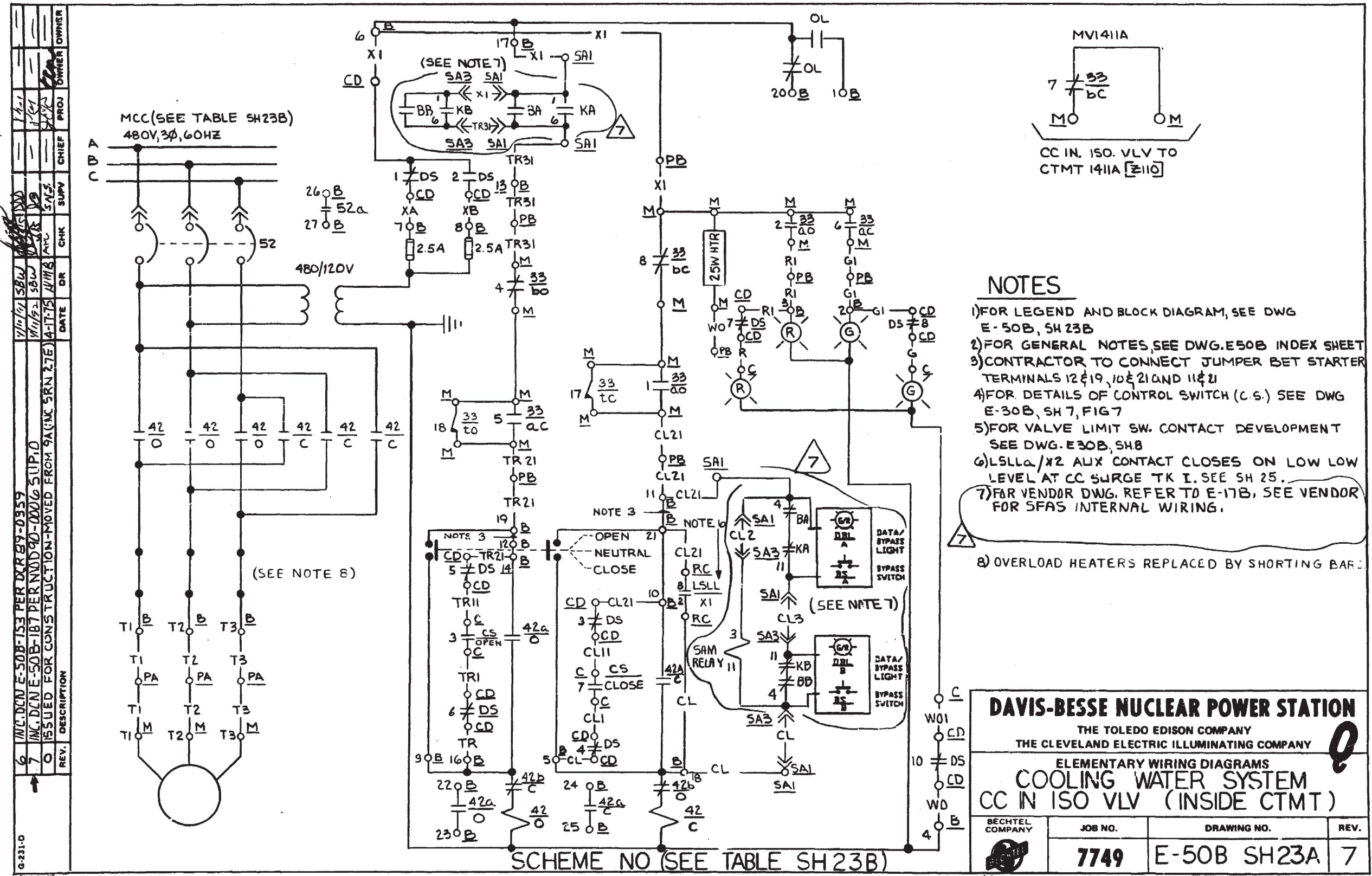
E-50B SH-21B

4

1 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 RECORD(S)
SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE **4-24-92** OPERATOR

REPRODUCTION OF THIS RECORD(S)
AGREEMENT. *John W. Little* 16X



NOTES

- 1) FOR LEGEND AND BLOCK DIAGRAM, SEE DWG E-50B, SH 23B
- 2) FOR GENERAL NOTES, SEE DWG. E50B INDEX SHEET
- 3) CONTRACTOR TO CONNECT JUMPER BET STARTER TERMINALS 12 & 19, 10 & 21 AND 11 & 21
- 4) FOR DETAILS OF CONTROL SWITCH (C.S.) SEE DWG E-30B, SH 7, FIG 7
- 5) FOR VALVE LIMIT SW. CONTACT DEVELOPMENT SEE DWG. E30B, SH 8
- 6) LSLLA/X2 AUX CONTACT CLOSSES ON LOW LOW LEVEL AT CC SURGE TK I. SEE SH 25.
- 7) FOR VENDOR DWG. REFER TO E-17B, SEE VENDOR FOR SFAS INTERNAL WIRING.

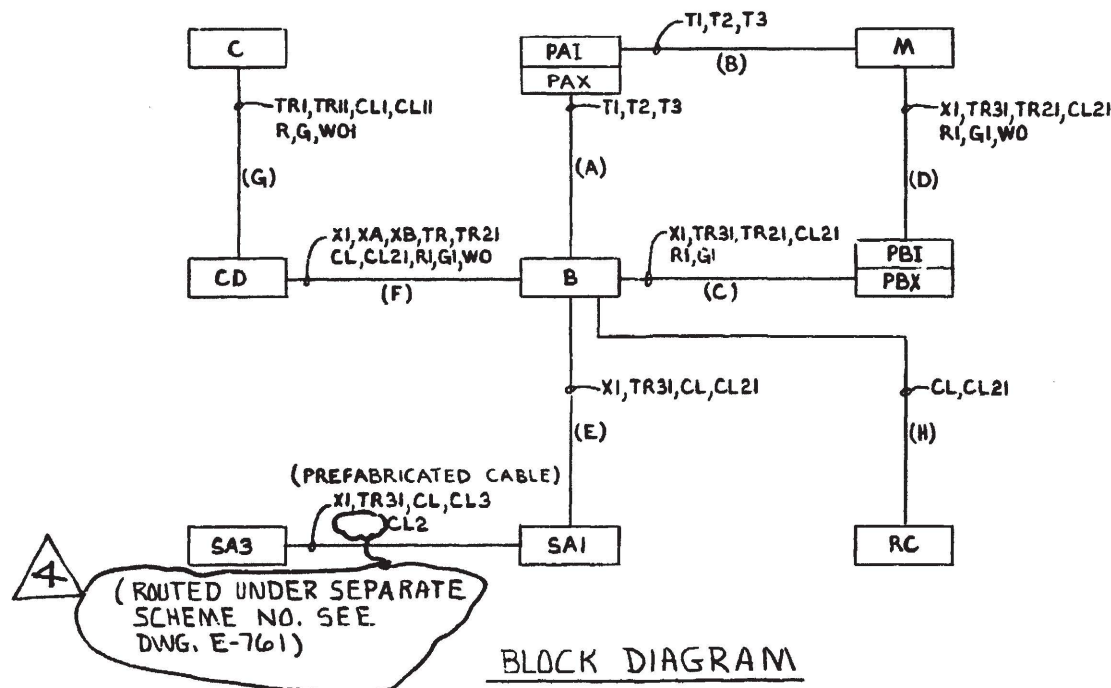
8) OVERLOAD HEATERS REPLACED BY SHORTING BAR.

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 4-24-92 OPERATOR John Widdle 16X

REV.	DESCRIPTION	DATE	CHK	SUPV	CHIEF	PROJ	OWNER
4	INC. DCN E-50B-188 PER MOD 90-0006 SUP. 0	4/14/92	SBW	WJ	WJ	WJ	WJ
3	WAS BUILT FOR FOR 85-0112 SUPP. 1 INC. DCN E-50B-52	1/12/87	GFB	WJ	WJ	WJ	WJ
0	ISSUED FOR CONSTRUCTION - MOVED FROM S45B (INC. SRN 27E)	4-17-75	RWS	WJ	WJ	WJ	WJ

SCHEME Nº	MCC	S. U. Nº	CHANNEL Nº	WIRE PREFIX AT MAIN CTRL. BD.	C.S	EQUIPMENT								SA OUTPUT RELAY		DESCRIPTION	
						C	CD	B	PAX (I)	PBX (I)	M	RC	SAI	SA3	K1		K2
BE1176	E11B	16	1	CIA	WISI411A	C5717	CDE11B-1	BE1176	PIP2MX(I)	PIC2LX(I)	MVI411A	RC3704	C5763C	C5763D	K42A	K42A	CC IN ISO. VLV. TO CTMT., 1411A



DAVIS-BESSE NUCLEAR POWER STATION

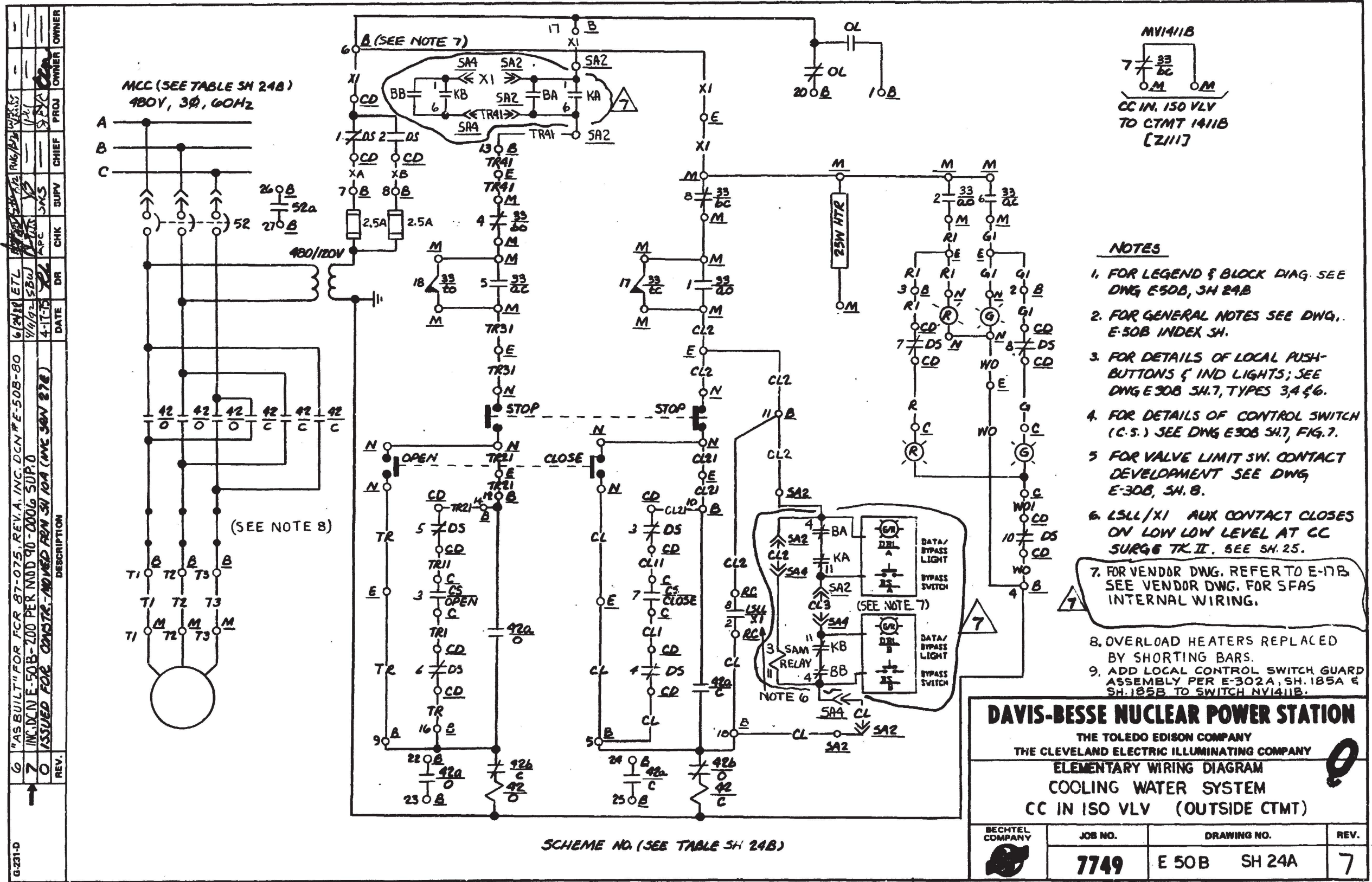
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAM
COOLING WATER SYSTEM
CC IN ISO VLV (INSIDE CTMT)

BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E-50B SH23B	4

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 4-24-92 OPERATOR *Smith, Willie* #16X

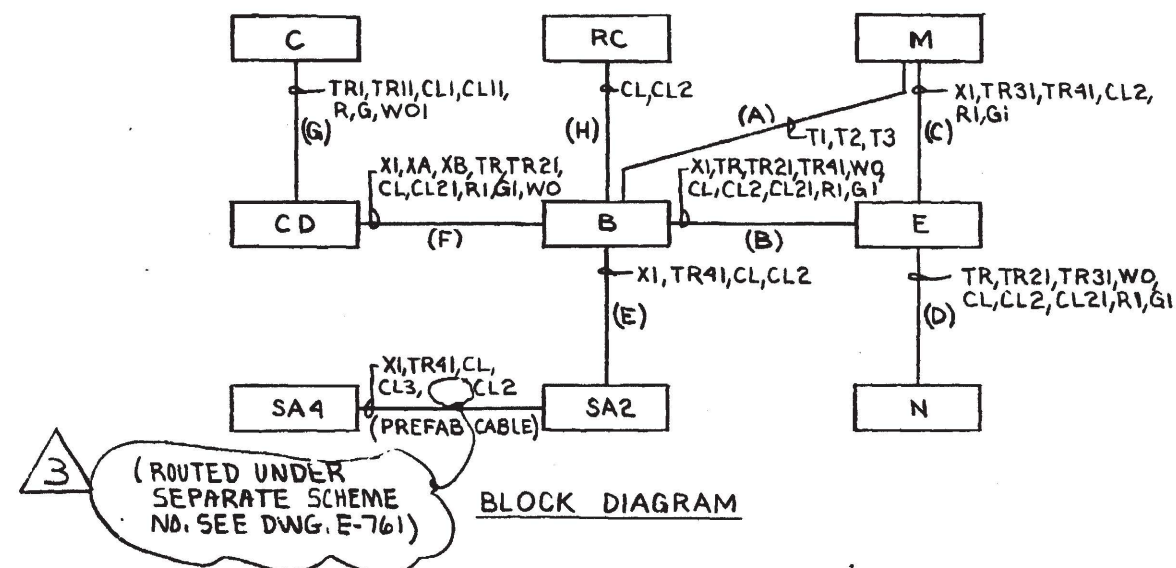


- NOTES**
1. FOR LEGEND & BLOCK DIAG. SEE DWG E50B, SH 24B
 2. FOR GENERAL NOTES SEE DWG. E-50B INDEX SH.
 3. FOR DETAILS OF LOCAL PUSH-BUTTONS & IND LIGHTS; SEE DWG E30B SH.7, TYPES 3,4 & 6.
 4. FOR DETAILS OF CONTROL SWITCH (C.S.) SEE DWG E30B SH.7, FIG.7.
 5. FOR VALVE LIMIT SW. CONTACT DEVELOPMENT SEE DWG E-30B, SH. 8.
 6. LSL/XI AUX CONTACT CLOSING ON LOW LOW LEVEL AT CC SURGE TK. II. SEE SH. 25.
 7. FOR VENDOR DWG. REFER TO E-17B. SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.
 8. OVERLOAD HEATERS REPLACED BY SHORTING BARS.
 9. ADD LOCAL CONTROL SWITCH GUARD ASSEMBLY PER E-302A, SH. 185A & SH. 185B TO SWITCH NV1411B.

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 4-24-92 OPERATOR *John Wille* 16X

SCHEME NO.	MCC	S.U. NO.	CH. NO.	WIRE PREFIX AT MAIN CTRL BD	C. S.	EQUIPMENT								SA OUTPUT RELAY		DESCRIPTION	
						C	CD	B	E	M	N	RC	SA2	SA4	K1		K2
BF1159	FI1B	16	2	C1B	H1S1411B	C5717	CDF11B	BF1159	EV1411B	MV1411B	NV1411B	RC3705	C5755C	C5756D	K42A	K42A	CC IN. ISO. VLX TO CTMT., 1411B



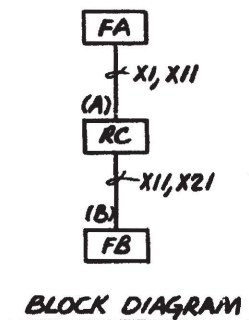
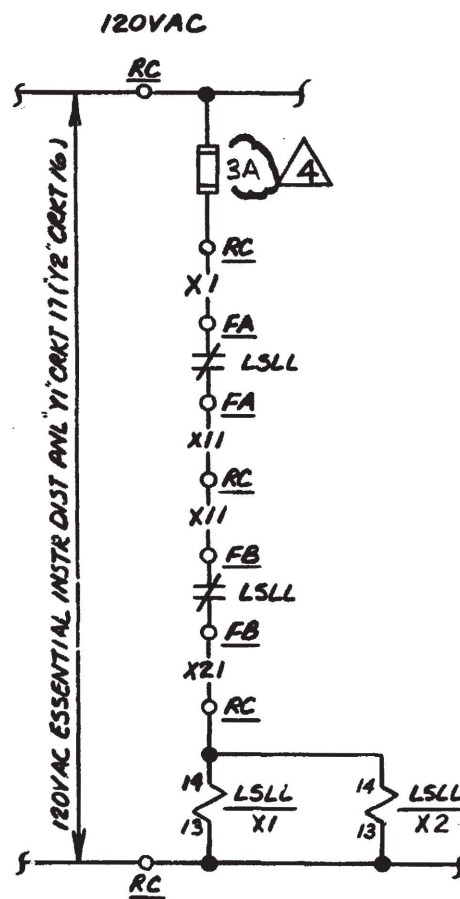
ELEMENTARY WIRING DIAGRAMS
COOLING WATER SYSTEM
CC IN ISO VLV (OUTSIDE CTMT)

REV.

3

OPERATOR

AGEMENT. South, Willie #16X



CONTACTS	RELAY			
	SCHEME LR3757		SCHEME LR3758	
	LSLL/X1	LSLL/X2	LSLL/X1	LSLL/X2
	a CONTACT SCHEME BE1199 SH.8A	b CONTACT SCHEME BE1226 SH.13A	a CONTACT SCHEME BF1133 SH.8A	b CONTACT SCHEME BF1100 SH.13A
	a CONTACT SCHEME BE1176 SH.23A	b CONTACT SCHEME BE1227 SH.13A	a CONTACT SCHEME BF1159 SH.24A	b CONTACT SCHEME BF1119 SH.13A
	b CONTACT SCHEME BE1161 SH.13A	a CONTACT SCHEME BE1226 SH.13A	b CONTACT SCHEME BF1161 SH.13A	a CONTACT SCHEME BF1106 SH.13A
	a CONTACT SCHEME BE1161 SH.13A	a CONTACT SCHEME BE1227 SH.13A	a CONTACT SCHEME BF1161 SH.13A	a CONTACT SCHEME BF1119 SH.13A

1. FOR GENERAL NOTES SEE DWG. E308 INDEX SH.
2. LSL CONTACT CLOSURES ON LOW LOW LEVEL
AT CC SURGE TK. SEE LEVEL SETTING
DIAGRAM M558 SHEET 5 FOR LSL SET POINTS

SCHEME NO	SU NO	CH	EQUIPMENT			DESCRIPTION
			FA	FB	RC	
LR3757	16	1	FLSLL3757B	FLSLL3757C	RC3709	CC SURGE TK I LVL SW AUX RELAY
LR3758	16	2	FLSLL3758B	FLSLL3758C	RC3705	CC SURGE TK II LVL SW AUX RELAY

DAVIS-BESSE NUCLEAR POWER STATION THE TOLEDO EDISON COMPANY THE CLEVELAND ELECTRIC ILLUMINATING COMPANY			
ELEMENTARY WIRING DIAGRAM COOLING WATER SYSTEM CC SURGE TK LVL SW AUX RELAYS			
BECHTEL COMPANY 	JOB NO.	DRAWING NO.	REV.
	7749	E50B SH 25	4

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 RECORD(S) SUBMITTED TO NUCLEAR RECORDS MANAGEMENT.

DATE 9-15-92 OPERATOR Sharon Lusk

REPRODUCTION OF THE RECORD(S).
MANAGEMENT. *16X*

NO.	DATE	REVISIONS	BY	CH'K	ENGR.	ENGR. SUPV.	GEN. SUPV.
100	3/4/14	REVISED SH. 21A (REV. 12), SH. 21B (REV. 6), & SH. 50 (REV. 2)			"INITIALS	ON FILE"	
99	8/3/12	REVISED SH. 46A (REV. 10)			"INITIALS	ON FILE"	
98	5/6/12	REVISED SH. 12 (REV. 15), & SH. 13 (REV. 16), SH. 17A (REV. 19) & SH. 45C (REV. 11)			"INITIALS	ON FILE"	
104	4-20-20	REVISED SH. 43C (REV. 11) & SH. 58 (REV. 8)	SAP	SMI	5/12	JHR	---
103	3/10/18	REVISED SH. 21A (REV. 13)			"INITIALS	ON FILE"	
102	6/15/16	REVISED SH. 45C, 46C & 48C (REV. 12) & SH. 47C (REV. 13) & GEN. UPDATE DRAWING INDEX SHEET 1, IN NOTE 2 REVISE DWG. "E-128" TO "E-12B" WHICH IS THE CORRECT DWG. NUMBER FOR ELECTRICAL MOTOR LIST. IN REFERENCE DRAWINGS REVISE "E-301A" TO "E-1037P", E-301A WAS SUPPERSEDED BY DWG. E-1037P. GEN. UPDATE REVISIONS ARE PER ASSOCIATED DOCUMENTS & FILENET. & GEN. DRFTG. STANDARDS.			"INITIALS	ON FILE"	
101	06/16/14	REVISED SH. 45A (REV. 9)			"INITIALS	ON FILE"	

[illegible]

GENERAL NOTES

1. FOR EXPLANATION OF EQUIPMENT & WIRING NUMBERS SEE E-11A ELECTRICAL NUMBERING SYSTEM.
2. FOR MOTOR INFORMATION SEE E-12B ELECTRICAL MOTOR LIST.
3. FOR CONTROL PANEL AND M.C.C. DESCRIPTIONS SEE E-13B ELECTRICAL EQUIPMENT LIST.
4. FOR SOLENOID VALVE INFORMATION SEE E-14B SOLENOID VALVE LIST.
5. WIRE NUMBER PREFIX MUST BE ADDED TO FORM COMPLETE WIRE NUMBER FOR THOSE WIRES AT MAIN CONTROL BOARD.
6. NUMBER IN BRACKETS [] REPRESENTS COMPUTER INPUT NUMBER. NUMBER IN () REPRESENTS COMPUTER INPUT SOURCE NUMBER.
7. FOR HIGH-LOW PRESSURE SWITCHES, PSHL-RC2-1, ETC., CONTACTS ARE SHOWN BY FUNCTION AS PSH OR PSL ON THE DRAWINGS. PSH/XXX CONTACTS CLOSE ON HIGH PRESSURE AND PSL/XXX CONTACTS CLOSE ON LOW PRESSURE.

REFERENCE DRAWINGS

- E-5 480V M.C.C. ONE LINE DIAGRAM
- E-6 250/125VDC & 480V M.C.C. (ESSENTIAL) ONE LINE DIAGRAM
- E-10A STANDARD NOTES AND SYMBOLS.
- E-30B GENERAL GUIDES FOR ELEMENTARY DIAGRAMS
- E-1037P GROUNDING STANDARDS AND DETAILS

THIS DRAWING WAS REDRAWN ON CAD & SUPERSEDES REV.64.

SCALE NONE	DESIGNED GB	DRAWN JFA	DATE 11-10-93
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAMS REACTOR COOLING SYSTEM DRAWING INDEX			Q
	DRAWING NO.		REV.
	E-52B	DRAWING INDEX SHEET 1	104

INDEX			
SHEET No.	LATEST REV.	DESCRIPTION	
24A	16	DH. NORM. SUCT. VLV.	Q
24B	13	DH. NORM. SUCT. VLV.	Q
24C	14	DH. NORM. SUCT. VLV.	Q
24D	9	DH. NORM. SUCT. VLV.	Q
25A	9	DH. REMOVAL CLR. 1 & 2 OUT & BY-PASS VLV.	Q
25B	5	DH. REMOVAL CLR. 1 & 2 OUT & BY-PASS VLV.	Q
26A	17	HP INJ. VLV.	Q
26B	5	HP INJ. VLV.	Q
27	11	CF TANK 1 & 2 ISO VLV'S	Q
27A	6	CF TANK 1 & 2 ISO VLV'S POS. IND	Q
28	11	CF TANK 1 & 2 SAMPLE & VENT VLV.	Q
29A	6	CF TANK 1 & 2 FILL LINE VENT TO WASTE GAS	Q
29B	6	CF TANK 1 & 2 FILL LINE VENT TO WASTE GAS	Q
30A	13	RCP SEAL RETURN VLV	Q
30B	10	RCP SEAL RETURN VLV	Q
31	4	QUENCH TK. TO VENT HEADER	-
32	5	PRZR. QUENCH TK SMPL. ISO. VLV.	Q
33	6	PRZR. QUENCH TK SMPL. ISO. VLV.	Q
34	5	PRZR. QUENCH TK OUT ISO VLV	Q
35	6	PRZR. QUENCH TK OUT ISO VLV	Q
36	6	PRZR. QUENCH TK IN ISO VLV	Q
37	6	PRZR. QUENCH TANK TO RCDT	-
38	7	PRZR. QUENCH TANK MU PUMP IN	-
39	9	RCDT LIQUID & GAS ISO VLV	Q
40	6	RCDT LIQUID & GAS ISO VLV	Q
41	5	RC DRN TK GASEOUS WST OUT	-
42A	9	PRZR HEATERS	-
42B	6	PRZR HEATERS	-
42C	5	PRZR HEATERS	-
42D	10	PRZR HEATERS	-
42E	9	PRZR HEATERS	-
42F	8	PRZR HEATERS	-
42G	2	DELETED	-
42H	7	PRZR HEATERS	-
42J	1	PRZR HEATERS	-
43A	4	PRZR HEATERS	Q
43B	6	PRZR HEATERS	Q
43C	11	PRZR HEATERS	Q
43D	4	PRZR HEATERS	Q
44A	10	PRZR HEATERS	-
44B	9	PRZR HEATERS	-
45A	9	RCP MOTOR MP361 AC CIRCUIT	-
45B	6	RCP MOTOR MP361 CIRCUIT BREAK CONTROL	-
45C	12	RCP MOTOR MP361 SWGR AUX SWCHS & MISC INSTR CRKTS	-
45D	6	RCP MOTOR MP361 BRKR CTRL AUXILIARY RELAYS	-
45E	13	RCP MOTOR MP361 TEMPERATURE ELEMENTS	-
45F	11	RCP MOTOR MP361 AUX. RELAYS	Q
46A	10	RCP MOTOR MP362 AC CIRCUIT	-

104

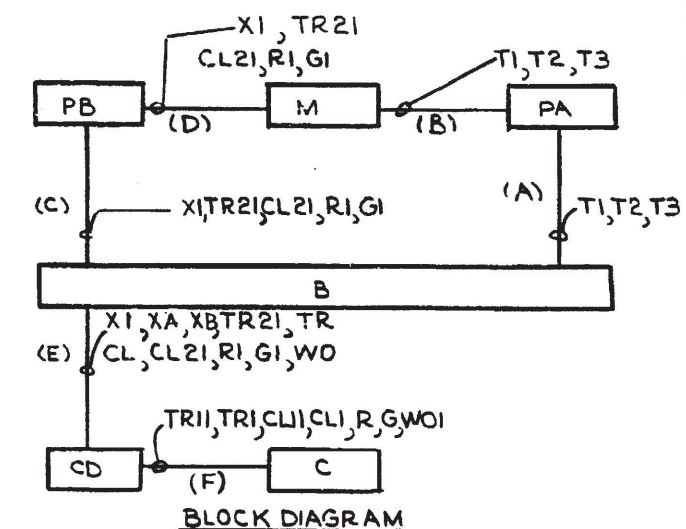
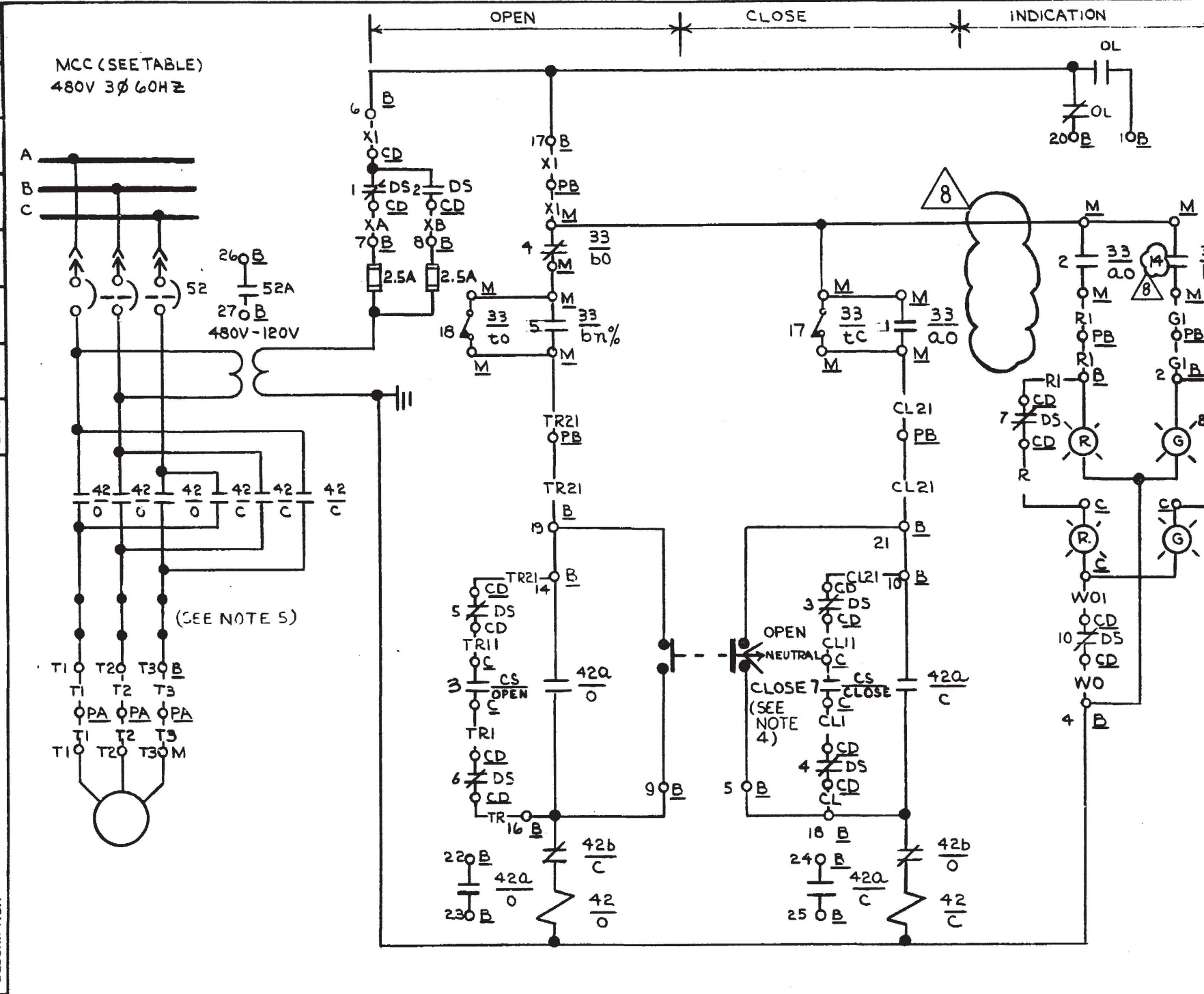
INDEX			
SHEET No.	LATEST REV.	DESCRIPTION	
46B	6	RCP MOTOR MP362 CIRCUIT BREAKER CONTROL	-
46C	12	RCP MOTOR MP362 SWGR AUX SWCHS & MISC INSTR CRKTS	-
46D	6	RCP MOTOR MP362 BRKR CTRL AUX. RELAYS	-
46E	13	RCP MOTOR MP362 TEMPERATURE ELEMENTS	-
46F	11	RCP MOTOR MP362 AUX. RELAYS	Q
47A	9	RCP MOTOR MP363 AC. CIRCUIT	-
47B	6	RCP MOTOR MP363 CIRCUIT BREAKER CONTROL	-
47C	13	RCP MOTOR MP363 SWGR AUX SWCH & MISC INSTR CRKTS.	-
47D	7	RCP MOTOR MP363 BRKR CTRL AUXILIARY RELAYS	-
47E	14	RCP MOTOR MP363 TEMPERATURE ELEMENTS	-
47F	9	RCP MOTOR MP363 AUXILIARY RELAYS	Q
48A	8	RCP MOTOR MP364 AC. CIRCUIT	-
48B	6	RCP MOTOR MP364 CIRCUIT BREAKER CONTROL	-
48C	12	RCP MOTOR MP364 SWGR AUX SWCH & MISC INSTR CRKTS.	-
48D	6	RCP MOTOR MP364 BRKR CTRL AUXILIARY RELAYS	-
48E	13	RCP MOTOR MP364 TEMPERATURE ELEMENTS	-
48F	9	RCP MOTOR MP364 AUXILIARY RELAYS	Q
49	13	RCP MONITOR CIRCUIT	Q
50	2	RC PRZR SPRAY BYPASS VALVE	-
51	7	BORATED WTR RECIRC PUMP	-
52	6	BORATED WTR RECIRC SUCT VLV	-
53	9	DH REMOVAL CLR 1 & 2 OUT XOVER	Q
54A	2	ANNUC & COMP INPUTS	-
54B	4	ANNUC & COMP INPUTS	-
54C	2	ANNUC & COMP INPUTS	-
54D	7	ANNUC & COMP INPUTS	-
54E	1	REACTOR COOLING SYS. PRZR. HTR. SOURCE FAULT ANNUN. REFLASH	-
54F	1	REACTOR COOLING SYS. PRZR. HTR. SOURCE FAULT ANNUN. REFLASH	-

- NOTES:
- 1. FOR GEN. NOTES & REF. DWGS. SEE E-52B DWG. INDEX SH. 1 FOR CONTINUATION SEE INDEX SH. 3.
 - 2. REVISIONS 71 AND 72 OF THIS INDEX SHEET NOT ISSUED

THIS DRAWING WAS REDRAWN ON CAD & SUPERSEDES REV. 64.

SCALE NONE	DESIGNED GB	DRAWN JFA	DATE 11-10-93
DAVIS-BESSE NUCLEAR POWER STATION			
UNIT NO. 1			
THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAMS			
REACTOR COOLING SYSTEM			
DRAWING INDEX			
	DRAWING NO.		REV.
	E-52B	DRAWING INDEX SHEET 2	104

REV.	DESCRIPTION	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
0	ISSUED FOR CONSTRUCTION	12/26/70	DR	CHK	SUPV	CHIEF	PROJ	OWNER
1	AS BUILT FOR FOR 86-031 REV. A, INC. DCNE-52B-308	12/26/70	DR	CHK	SUPV	CHIEF	PROJ	OWNER



- NOTES**
1. FOR GENERAL NOTES SEE DRAWING E 52 B INDEX SHEET.
 2. FOR VALVE LIMIT SWITCH CONTACT DEVELOPMENT SEE DWG. E 30 B, SH-8 FIG. A (SEE NOTE 6 THIS SHEET.)
 3. FOR DETAILS OF CONTROL SWITCH (CS) SEE DRAWING E 30 B, SH-7, FIG. 7.
 4. FIELD TO INSTALL SAFETY LOCK-OFFS WITH LOCKS ON MCC SELECTOR SWITCHES. LOCK-OFFS TO BE FOR CENTER LOCK, WESTINGHOUSE STYLE # OT2SCI.
 5. OVERLOAD HEATERS REPLACED BY SHORTING BARS.
 6. FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN $\pm 5\%$.

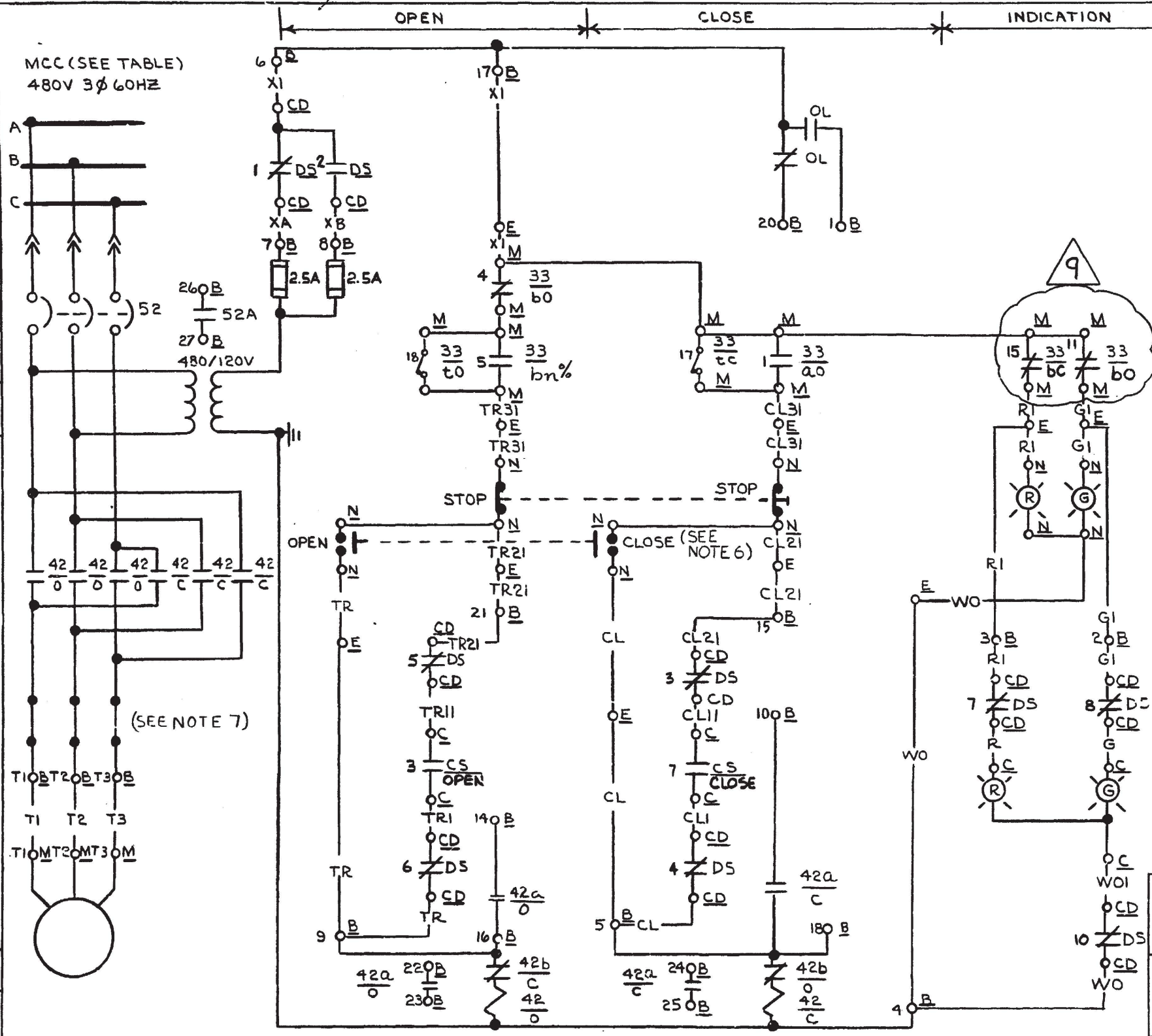
DAVIS-BESSE NUCLEAR POWER STATION
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
REACTOR COOLING SYSTEM
PRZR SPRAY LINE ISO VLV

BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E52B - SH - 1	8

SCHEME	MCC	SU NO	CHANNEL	WIRE PREFIX	CS	EQUIPMENT NUMBERS						DESCRIPTION
						C	CD	B	M	PA	PB	
BE1155	E11B	49	1	SIA	HIS2735	C5705	CDE11B-1	BE1155	MV27350	PIP2M	PIC2L	PRZR SPRAY LINE ISO VLV

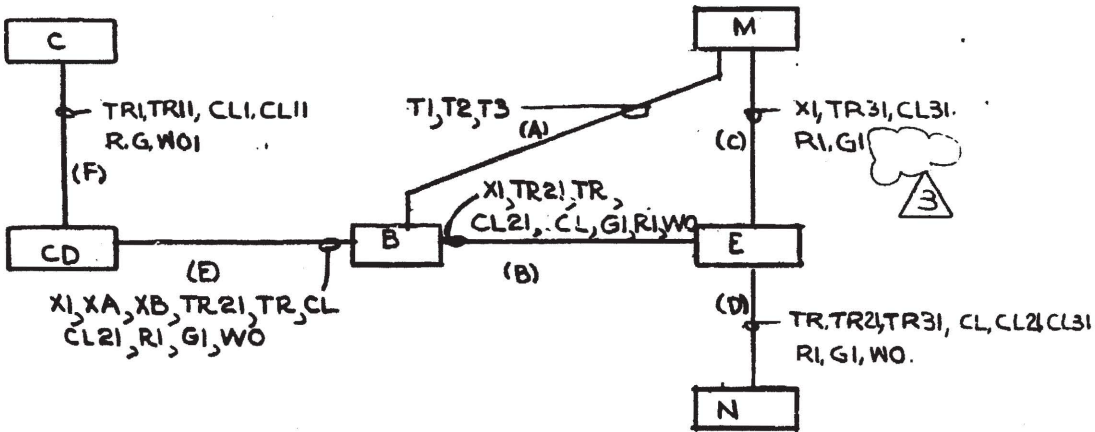
OWNER	PROJ	CHIEF	SUPV	CHK	DATE	REV.	DESCRIPTION
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17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104
105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120
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161	162	163	164	165	166	167	168
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353	354	355	356	357	358	359	360
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585	586	587	588	589	590	591	592
593	594	595	596	597	598	599	600
601	602	603	604	605	606	607	608
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737	738	739	740	741	742	743	744
745	746	747	748	749	750	751	752
753	754	755	756	757	758	759	760
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849	850	851	852	853	854	855	856
857	858	859	860	861	862	863	864
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897	898	899	900	901	902	903	904
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961	962	963	964	965	966	967	968
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977	978	979	980	981	982	983	984
985	986	987	988	989	990	991	992
993	994	995	996	997	998	999	1000



- NOTES**
1. FOR SCHEME & BLOCK DIAGRAM SEE DRAWING E52B, SH-2B.
 2. FOR GENERAL NOTES SEE DRAWING INDEX E52B.
 3. FOR LOCAL PUSHBUTTONS AND INDICATING LIGHTS DETAILS SEE DRAWING E 30-B, SH-7, TYPES 3, 4 & 6.
 4. FOR DETAILS OF CS SEE DWG E 30B, SH-7 FIG. 7.
 5. FOR VALVE LIMIT SW DEVICE SEE DWG E 30B, SH-8, FIG. A (SEE NOTE 8 THIS SHEET)
 6. FIELD TO INSTALL COVER PLATE WITH LOCK ON "OPEN-CLOSE" CONTROL STATION.
 7. OVERLOAD HEATERS REPLACED BY SHORTING BAR.
 8. FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN, +5% -0%.

DAVIS-BESSE NUCLEAR POWER STATION			
THE TOLEDO EDISON COMPANY THE CLEVELAND ELECTRIC ILLUMINATING COMPANY			
ELEMENTARY WIRING DIAGRAMS			
REACTOR COOLING SYSTEM PRZR SPRAY LINE ISO VLV			
BECHTEL COMPANY	JOB NO.	DRAWING NO.	REV.
	7749	E52B - SH-2A	9

1-21-76 RWS	12/13/82 GFB	12/16/72 DMC	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
1-21-76 RWS	12/13/82 GFB	12/16/72 DMC	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
2	RE/ISSUED AS NOTED	3	"AS BUILT" FOR ECR 85-0112, SUPP. 1. INC. DCN E-52B-265	ISSUED FOR CONSTRUCTION	REV.	DESCRIPTION			
0									



SCHEME NO	MCC	SU NO	CHANNEL	WIRE PREFIX	CS	EQUIPMENT NUMBERS						DESCRIPTION
						C	CD	B	M	E	N	
BF1125	FI1A	49	2	SIB	HS2736	C5705	CDFI1A-2	BF1125	MV27360	EV27360	NV27360	PRZR SPRAY LINE ISO VLV

DAVIS-BESSE NUCLEAR POWER STATION
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
REACTOR COOLING SYSTEM
PRZR SPRAY LINE ISO VLV

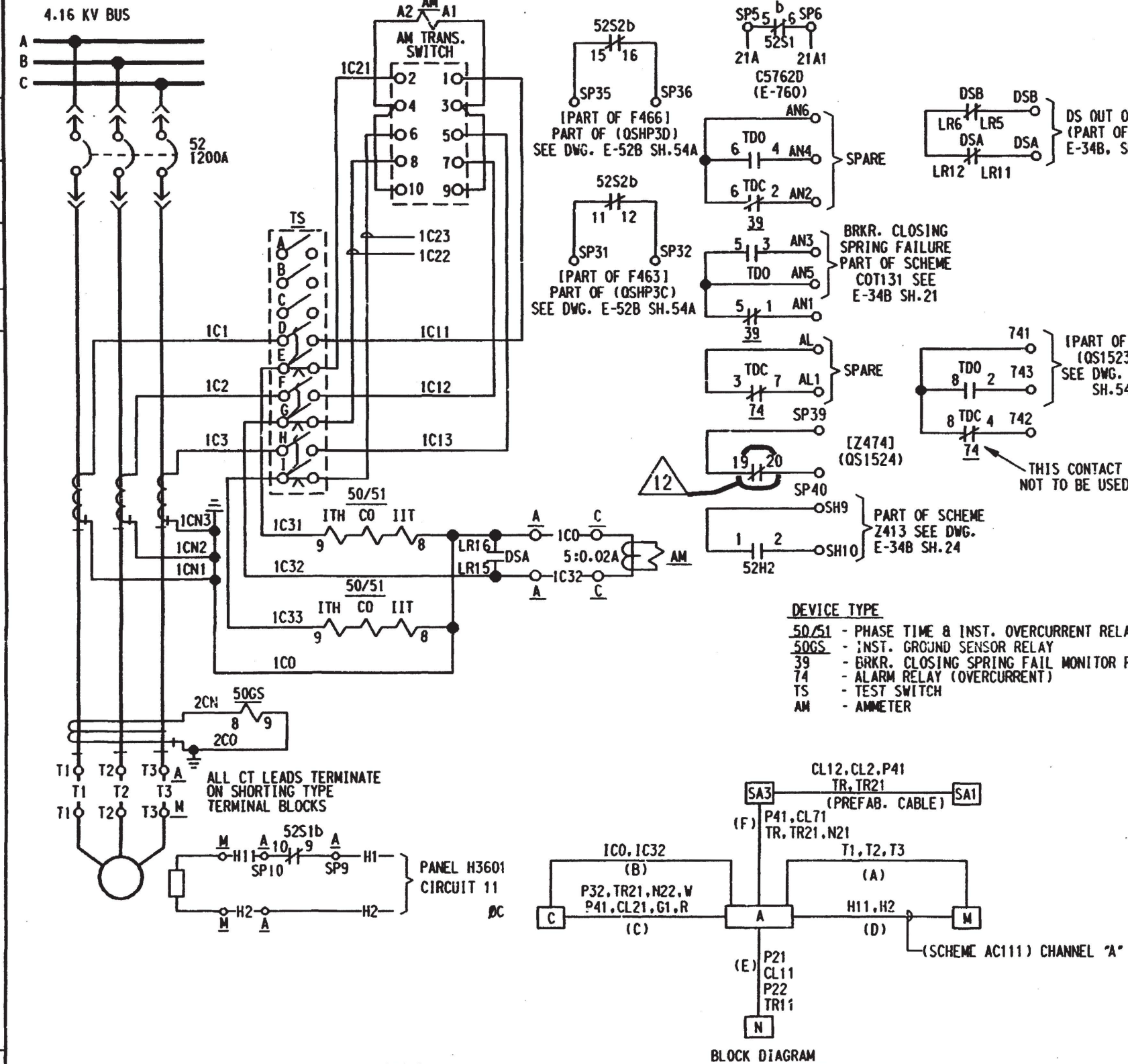
BECHTEL COMPANY

JOB NO.
7749

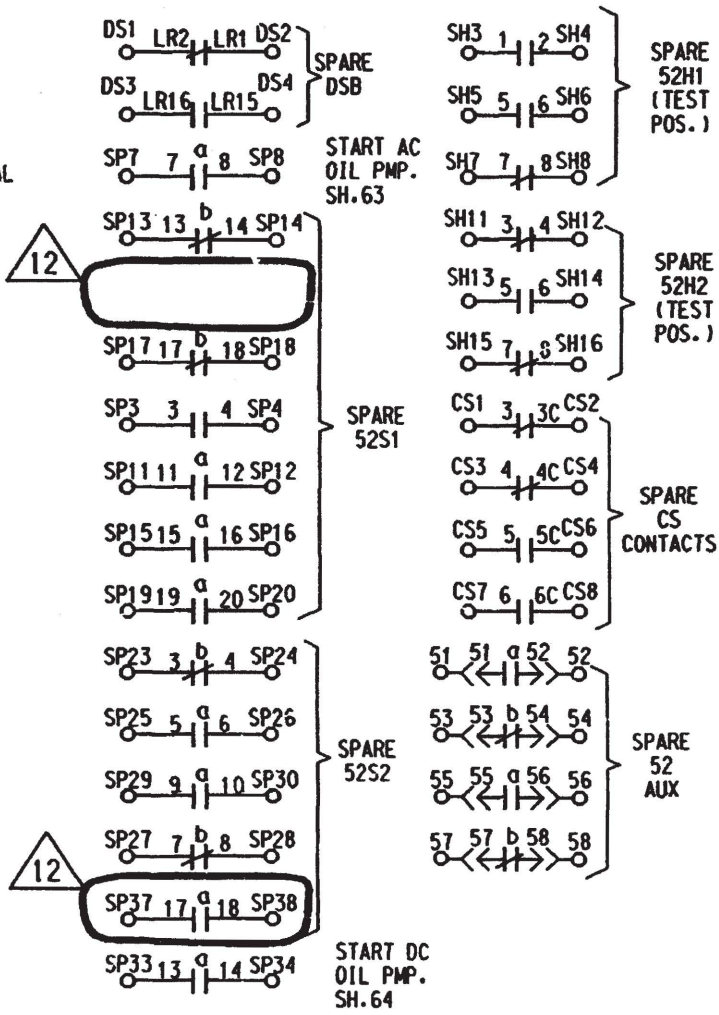
DRAWING NO.
E52B - SH - 2B

REV.
3

12	12-7-82	GEN. UPDATE REF. DCM E-52B-851 PER DDR 02-0976 (CR 01-2466)	JOR	SBW	INITIALS ON FILE	INITIALS ON FILE	WJK	JUS	BUC	PWG	ENGR. SUPV.	JAC	GEN. SUPV.
11	3/3/90	INC. DCM E-52B-498 PER DCR 88-0515											
10	9/8/88	"AS BUILT" FOR MOD 87-1114, INC. DCM E52B-451											
9	11/23/87	"AS BUILT" FOR FCR 84-186, INC. DCM E52B-346											
NO.	DATE	REVISIONS	BY	CHK	ENGR.	ENGR.	ENGR.	ENGR.	ENGR.	ENGR.	ENGR.	ENGR.	ENGR.



- DEVICE TYPE**
- 50/51 - PHASE TIME & INST. OVERCURRENT RELAY
 - 50GS - INST. GROUND SENSOR RELAY
 - 39 - BRKR. CLOSING SPRING FAIL MONITOR RELAY
 - 74 - ALARM RELAY (OVERCURRENT)
 - TS - TEST SWITCH
 - AM - AMMETER



- NOTES:**
1. FOR BRKR. CONTROL SCHEME SEE DWG. E-52B SH.5B.
 2. FOR GENERAL NOTES SEE DWG. E-52B INDEX SHEET.
 3. FOR C.S. DETAIL SEE DWG. E-30B SH.9A FIG. 3.
 4. FOR C.S. (HIS) DETAIL SEE DWG. E-30B SH.9 FIG. 2.
 5. FOR P.B. DETAIL SEE DWG. E-30B SH.7 FIG. 1, TYPE 1.
 6. FOR SWGR. INTERNAL WIRING SEE WEST. DWG. 1199F24 (FP-E-5-58) & 1199F53 (FP-E-5-92).

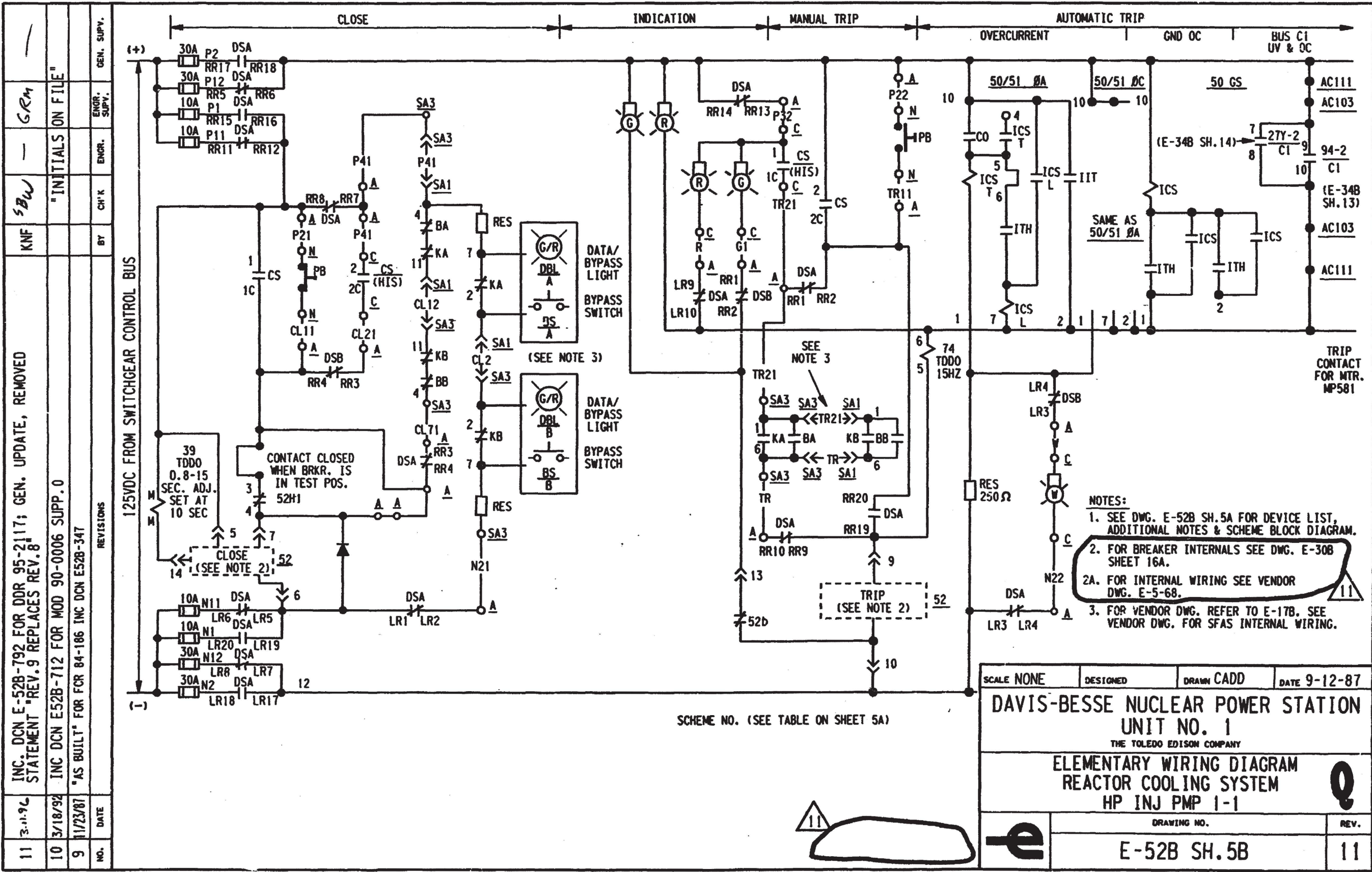
LEGEND															
SCHEME NO.	SU NO.	CHANNEL	WIRE PREFIX AT MAIN CONT. BD.	BUS	SWGR UNIT	CS (HIS)						AM	SA OUTPUT RELAY		
							C	A	M	N	SA1	SA3	(ATC)	KA	KB
AC111	052	1	HPA	C1	11	HIS1524	C5716	AC111	MP0581	NP0581	C5762D	C5763C	111524	K21A	K21A

REV. 9 REPLACES REV. 8

SCALE NONE	DESIGNED	DRAWN CADD	DATE 9/12/87
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAMS REACTOR COOLING SYSTEM HP INJ PMP 1-1			
DRAWING NO. E-52B SH.5A			REV. 12

NEWFAX 3/85 N50313

ED 7489



INC. DCN E-52B-792 FOR DOR 95-2117; GEN. UPDATE, REMOVED STATEMENT "REV. 9 REPLACES REV. 8"

INC DCN E52B-712 FOR MOD 90-0006 SUPP. 0

"AS BUILT" FOR FCR 84-186 INC DCN E52B-347

NO.	DATE
11	3-11-96
10	3/18/92
9	11/23/87

REVISIONS

BY

CHK

ENGR.

ENGR. SUPV.

GEN. SUPV.

SCHEME NO. (SEE TABLE ON SHEET 5A)

SCALE NONE

DESIGNED

DRAWN CADD

DATE 9-12-87

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NO. 1

THE TOLEDO EDISON COMPANY

ELEMENTARY WIRING DIAGRAM

REACTOR COOLING SYSTEM

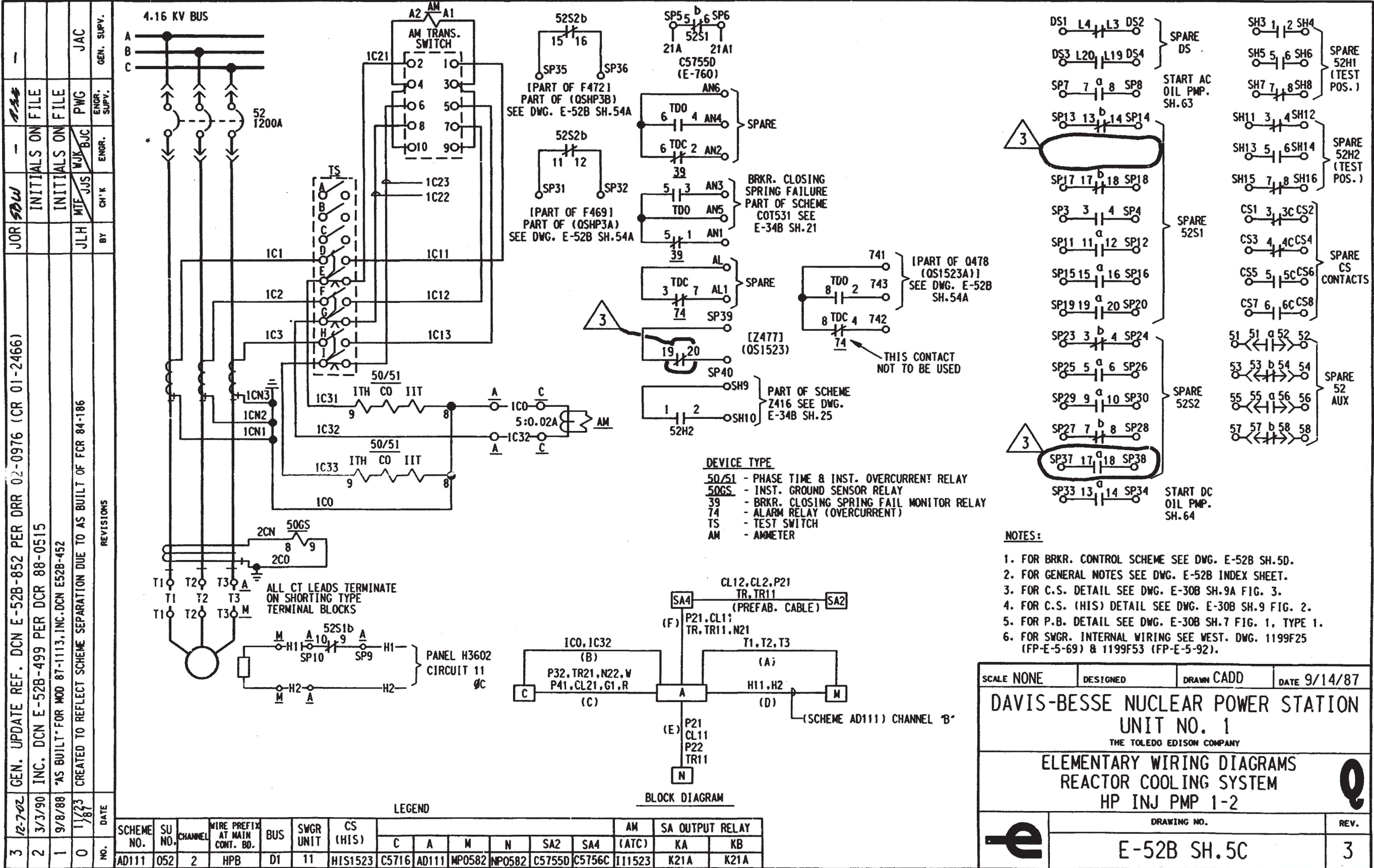
HP INJ PMP 1-1

DRAWING NO.

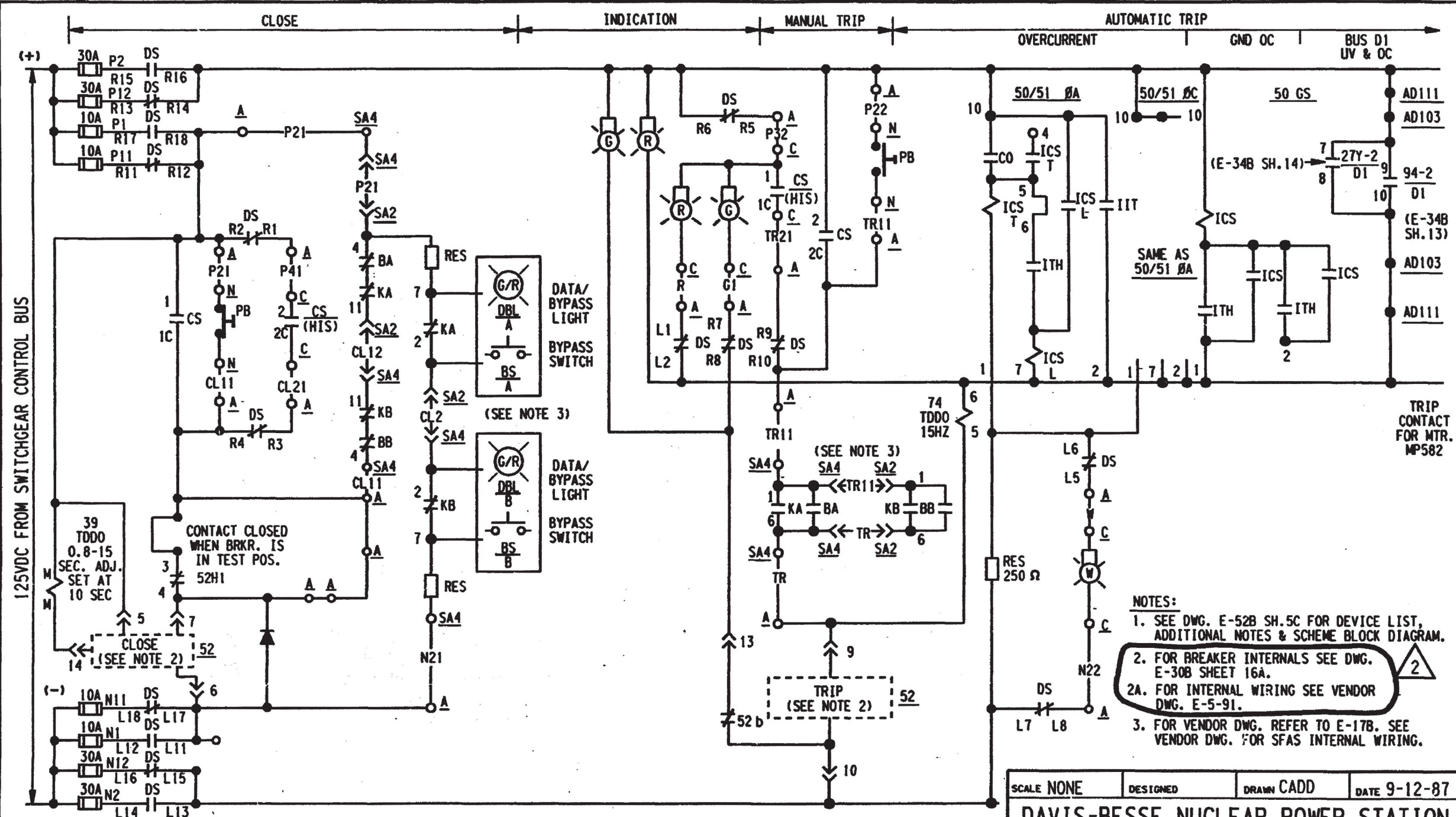
E-52B SH. 5B

REV.

11

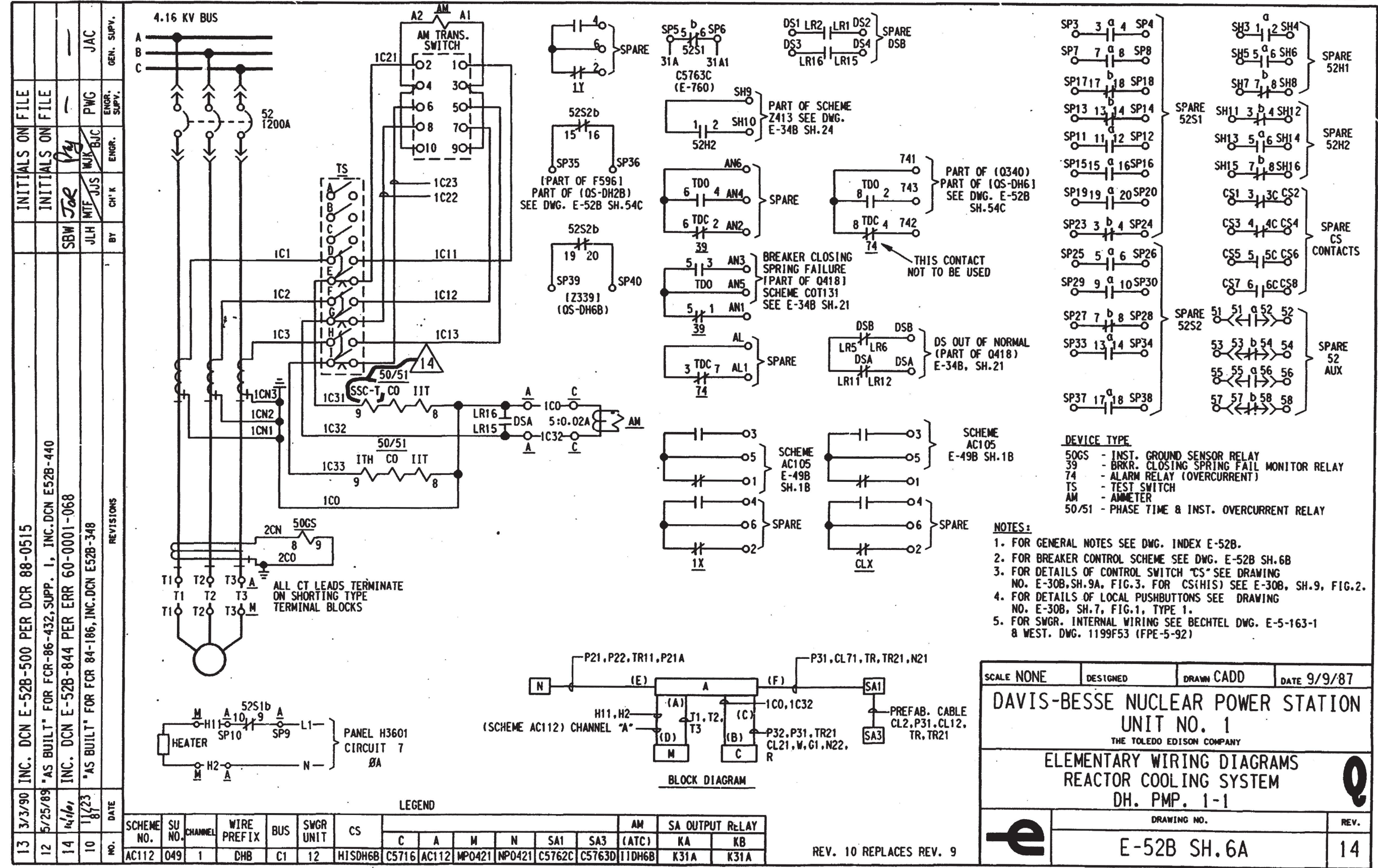


SCALE NONE	DESIGNED	DRAWN CADD	DATE 9/14/87
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAMS REACTOR COOLING SYSTEM HP INJ PMP 1-2			
DRAWING NO. E-52B SH.5C			REV. 3

[illegible]

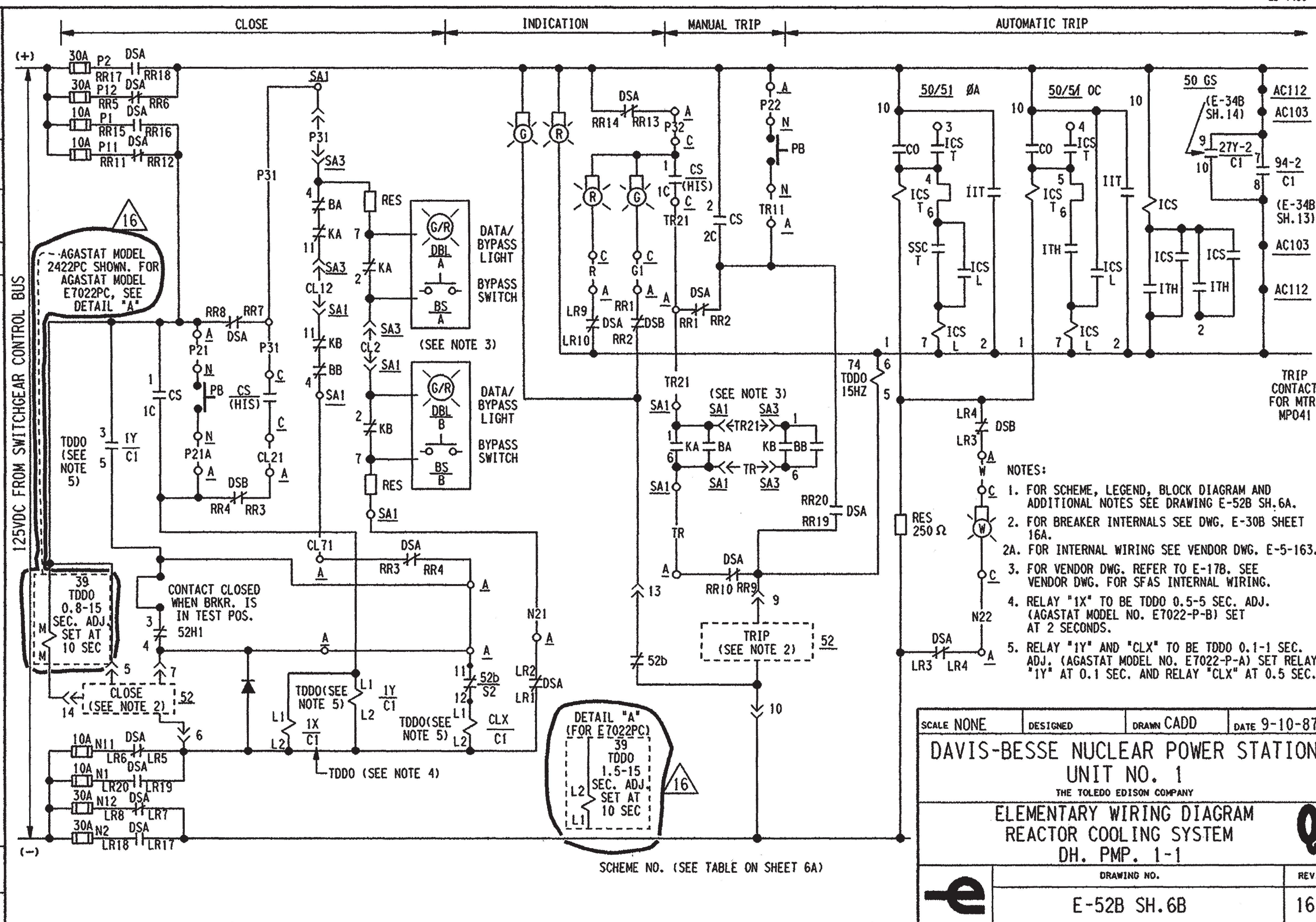
SCHEME NO. (SEE TABLE ON SHEET 5C)

SCALE NONE	DESIGNED	DRAWN CADD	DATE 9-12-87
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAM REACTOR COOLING SYSTEM HP INJ PMP 1-2			Q
	DRAWING NO.		REV.
	E-52B SH.5D		2



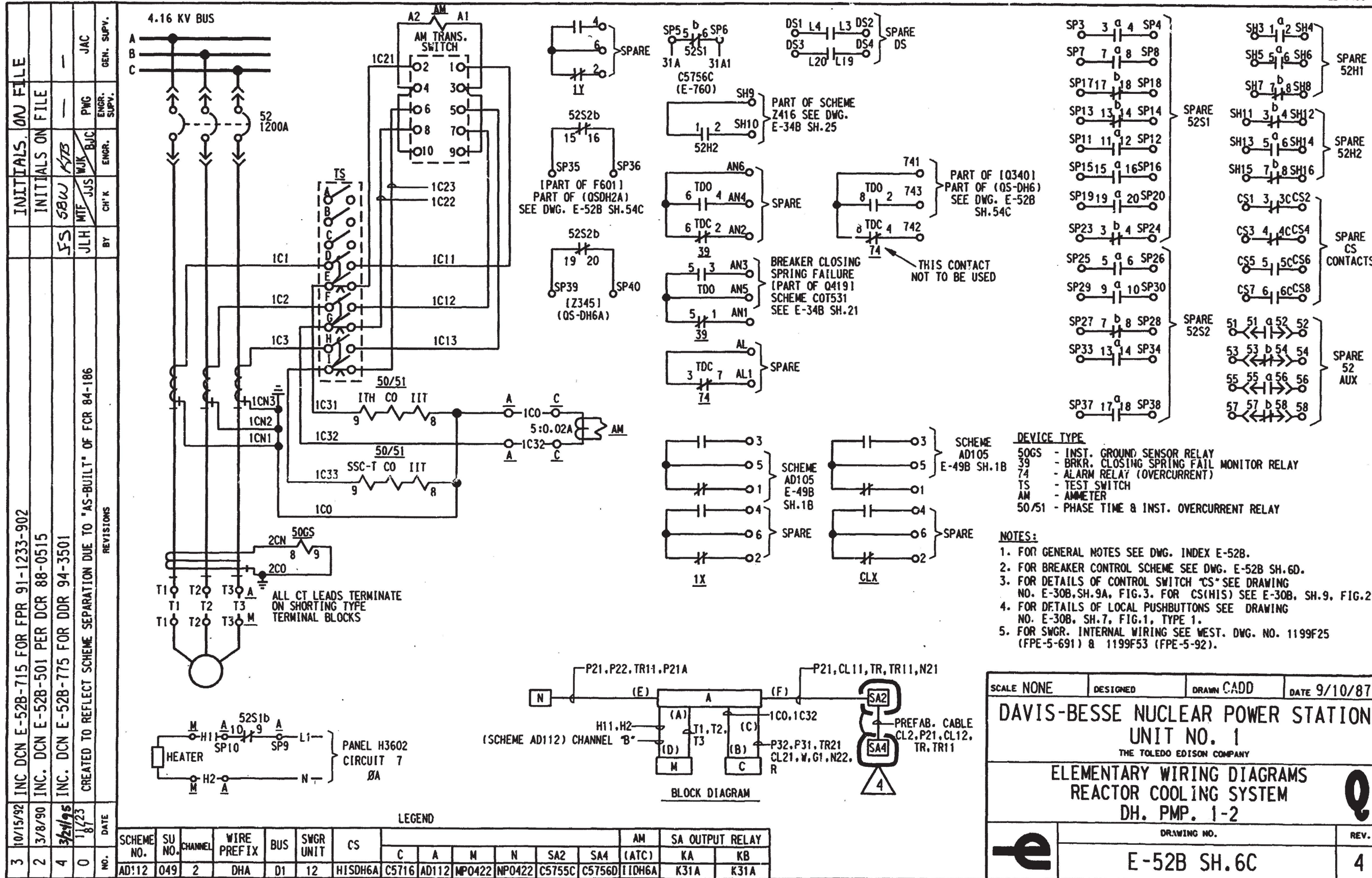
SCALE NONE	DESIGNED	DRAWN CADD	DATE 9/9/87
DAVIS-BESSE NUCLEAR POWER STATION UNIT NO. 1 THE TOLEDO EDISON COMPANY			
ELEMENTARY WIRING DIAGRAMS REACTOR COOLING SYSTEM DH. PMP. 1-1			
	DRAWING NO.		REV.
	E-52B SH.6A		14

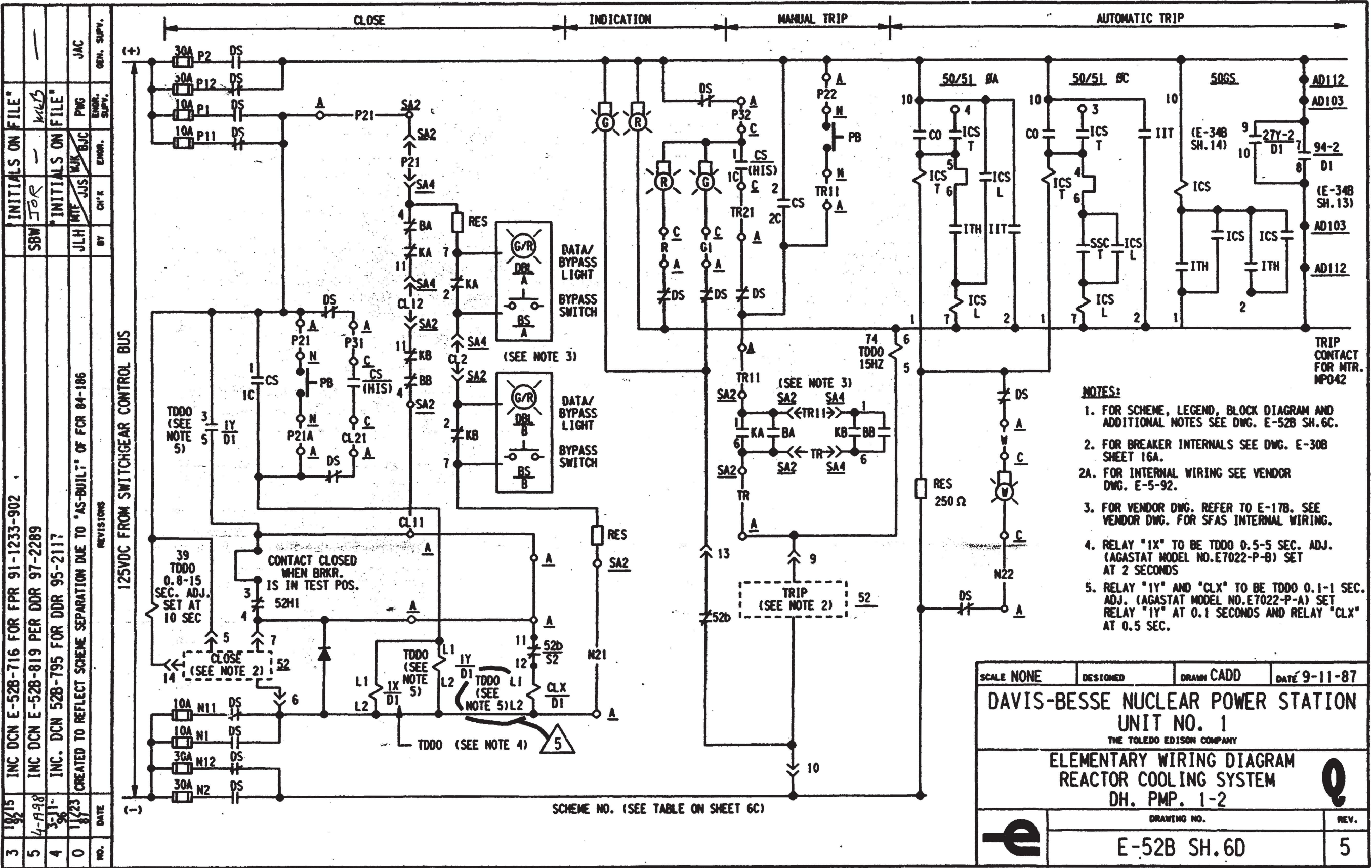
16	01/05/84	INC. DCN E-52B-919 PER ECP 06-0018-00	SAS	SAW	—	JBS	—
15	11/1/01	INC DCN E52B-845 PER ERR 60-0001-068			"INITIALS ON FILE"		
14	4-19-98	INC. DCN E-52B-818 FOR DDR 97-2289			"INITIALS ON FILE"		
10	11/23/81	"AS BUILT" FOR FCR 84-186, INC.DCN E52B-349	JLH	MTF JJS	WJK	BJC	PWG
NO.	DATE		BY	CH'K	ENGR.	ENGR. SUPV.	GEN. SUPV.
		REVISIONS					

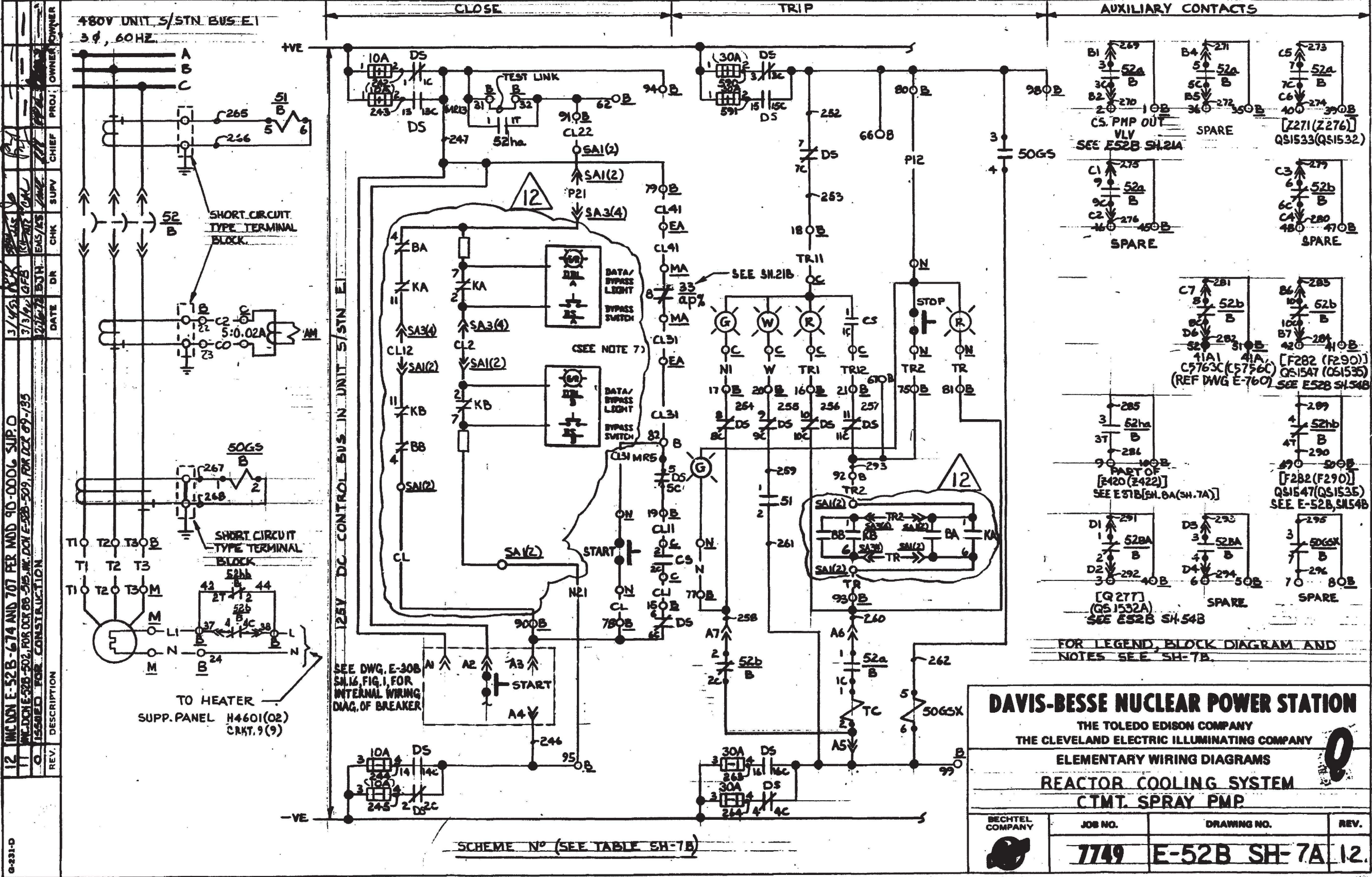


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DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS

REACTOR COOLING SYSTEM

CTMT. SPRAY PMP

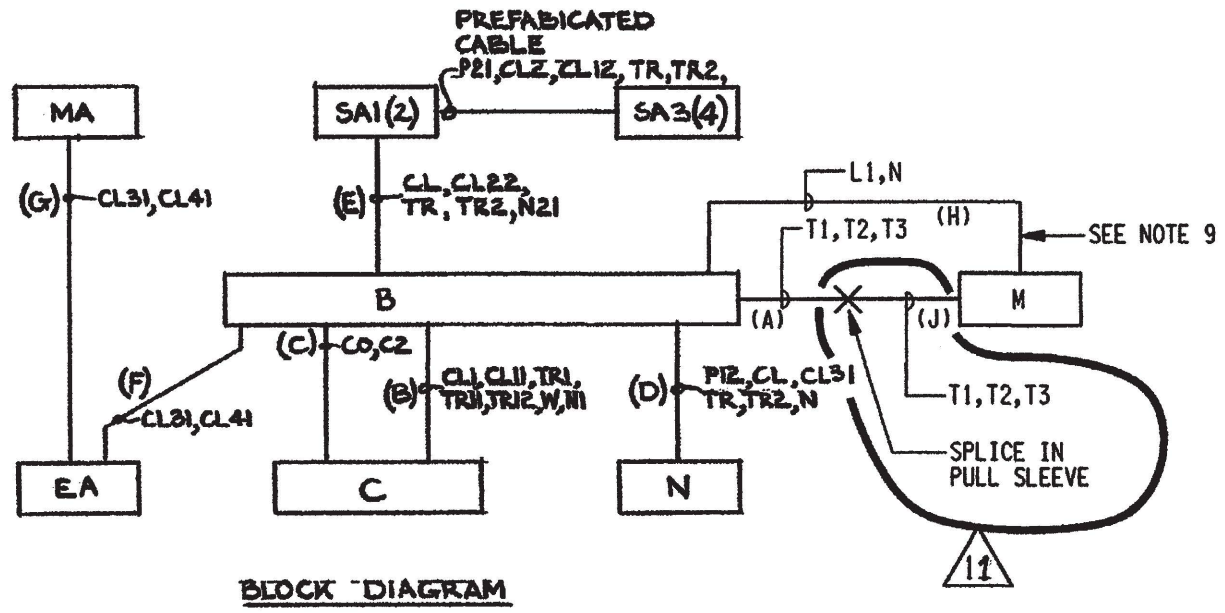
BECHTEL COMPANY

JOB NO. 7749

DRAWING NO. E-52B SH-7A

REV. 12.

INC. DUN 09-0740-001-018 REV.00 & GENERAL UPDATE CHANGE "E-30" TO "E-30B" IN NOTE 4. PER REVIEW OF DWG. E-30B, SH.9. (REDRAWN)	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
4/7/10	5/18/10	10	10	10	10	10	10
ISSUED FOR CONSTRUCTION							
REV	DESCRIPTION						
11	10	10	10	10	10	10	10



- NOTES:
1. FOR GENERAL NOTES SEE DRAWING E-52B INDEX SHEET.
 2. FOR SCHEME AND AUXILIARY CONTACTS SEE SH.7A.
 3. FOR DETAILS OF LOCAL PUSHBUTTONS SEE DRAWING E-30B, SH.7, TYPE 3.
 4. FOR DETAILS OF CONTROL SWITCH "CS" SEE DRAWING E-30B, SH.9, FIG. 2
 6. FOR LOCAL INDICATING LIGHTS G.E. CR2940 FORM UC212B2 (RED) AND UC212C2 (GREEN)
 7. FOR VENDOR DWG. REFER TO E-17B, SEE VENDOR DWG. SFAS INTERNAL WIRING.
 9. "H" CABLE IS CHANNEL A FOR SCHEME BE111 AND CHANNEL B FOR SCHEME BF111.

LEGEND

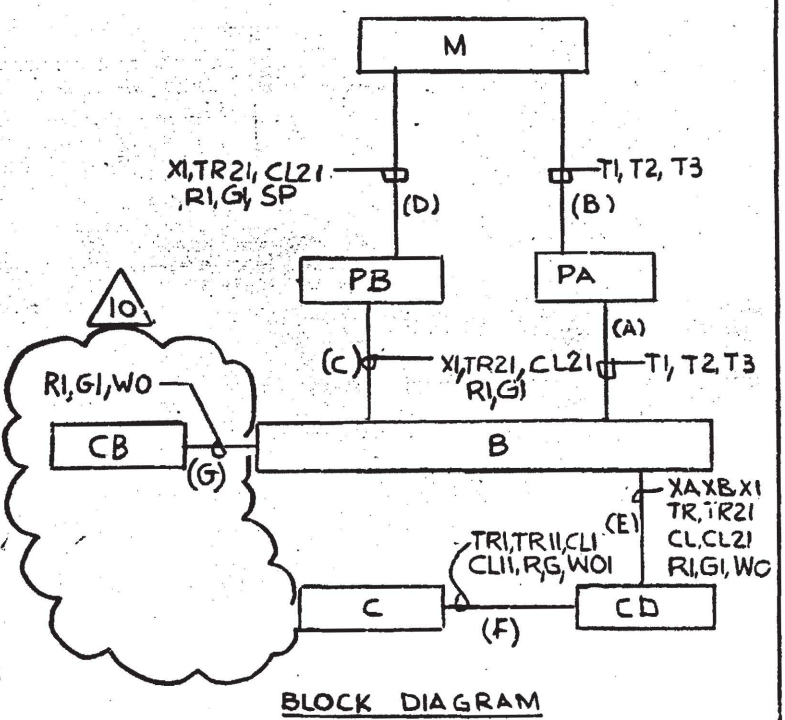
SCHEME N°	UNIT SYN. UP	START UP N°	CHANNEL	MIN CTRL. BOARD WIRE PREFIX	SWGR WIRE PREFIX	AM	CS	EQUIPMENT								SA OUTPUT RELAY			
								C	B	M	N	EA	MA	SA1	SA2	SA3	SA4	KA	KB
BE111	EI	061	1	SPA	1	II 1533	HS1533	C5716	BE111	MP056	NP056	EVI530	MVI530	C5762C	—	C5763D	—	K41A	K41A
BF111	FI	061	2	SPB	2	II 1532	HS1532	C5716	BF111	MP056	NP056	EVI530	MVI530	—	C5755C	—	C5756D	K41A	K41A

THIS DRAWING WAS REDRAWN/SCANNED ON CAD AND SUPERSEDES REV.10.

DAVIS-BESSE NUCLEAR POWER STATION
THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
REACTOR COOLING SYSTEM
CTMT. SPRAY PMP.

BECHTEL COMPANY	JOB NO 7749	DRAWING NO E-52B SH-7B	REV 11
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- # NOTES
- 1 FOR GENERAL NOTES SEE INDEX SH E52B
 - 2 FOR DETAILS OF 'CS' SEE E 30B SH-7 FIG-7
 - 3 FOR LIMIT SW DEVELOPMENT SEE E 30B SH-8. FIG. A (SEE NOTE 5 THIS SHEET)
 - 4 OVERLOAD HEATERS REPLACED BY SHORTING BARS.
 - 5 FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN. $\pm 5\%$

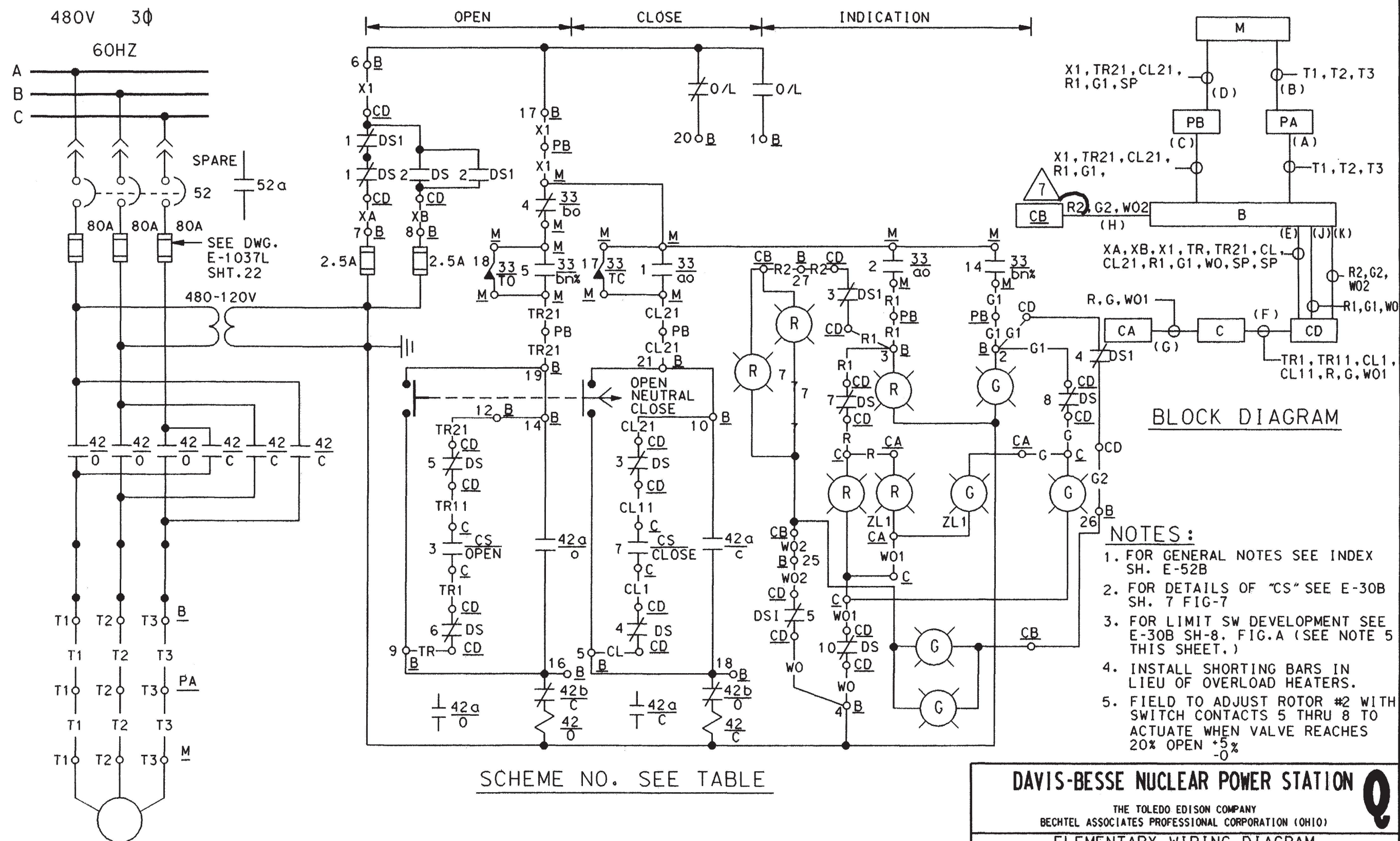
DAVIS-BESSE NUCLEAR POWER STATION

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS

REACTOR COOLING SYSTEM

PRZR VAPOR & LQD SMPL VLV



SCHEME NO.	MCC	SU NO.	CHAN- NEL	WIRE PREFIX	CS	ZL1	EQUIPMENT NUMBERS								DESCRIP- TION
							C	CA	CB	CD	B	M	PA	PB	
BF1126	F11A	64	2	VS	HIS0239A	ZL239 AA	C5705	C5798	C1708	CDF11A-1	BF1126	MV0239A	P2P5F	P2C5G	PRZR VAPOR SMPL VLV

DAVIS-BESSE NUCLEAR POWER STATION

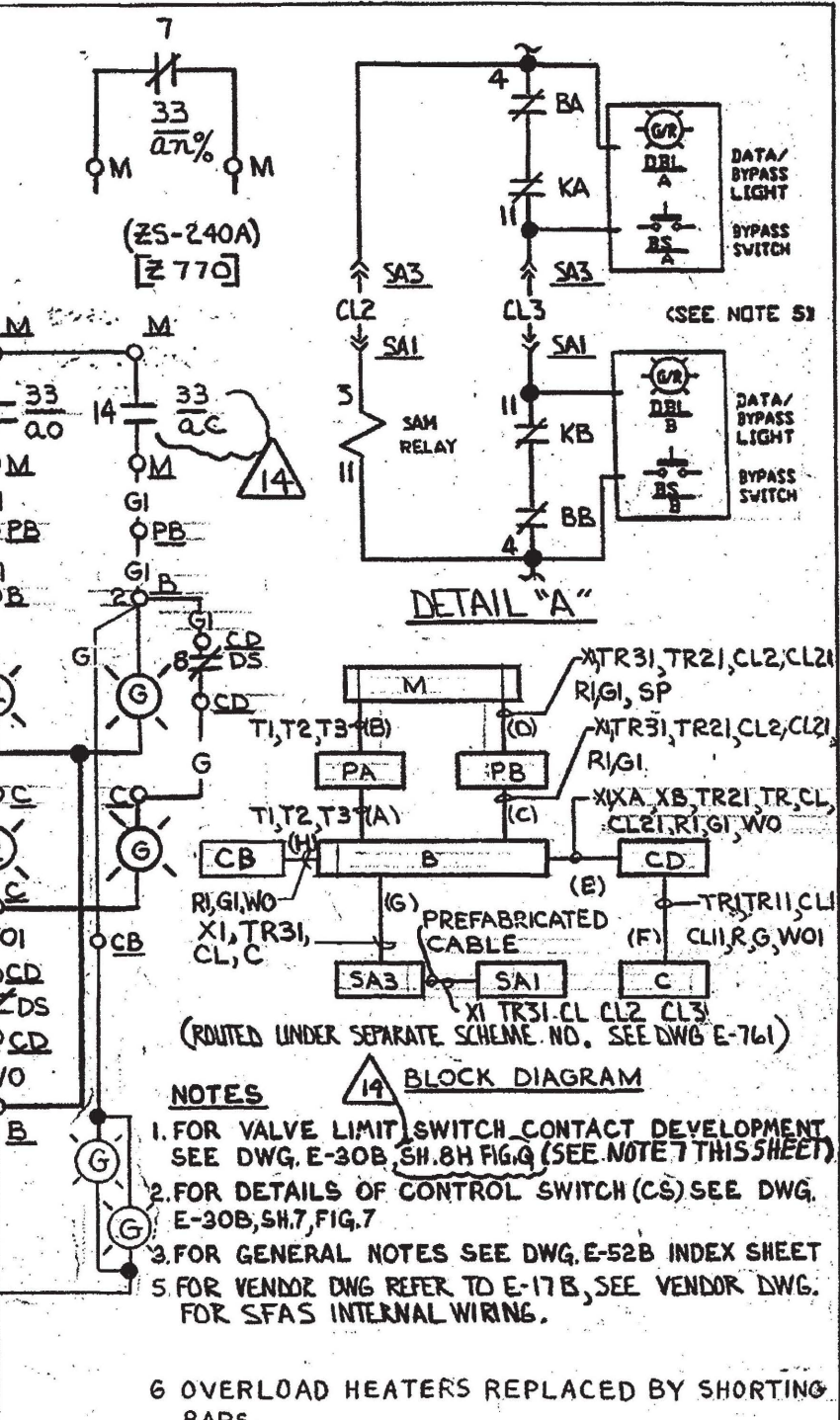
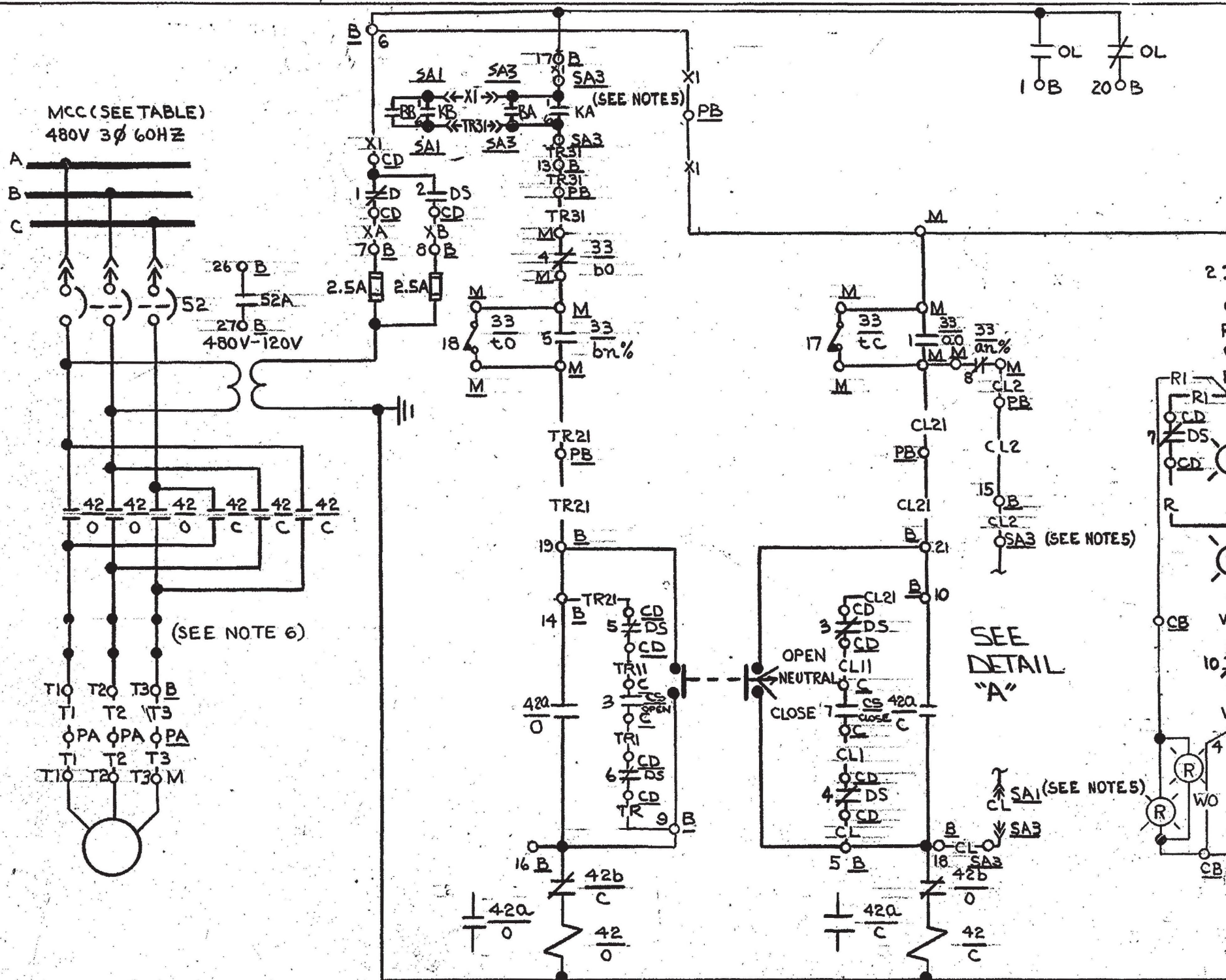
THE TOLEDO EDISON COMPANY
BECHTEL ASSOCIATES PROFESSIONAL CORPORATION (OHIO)

ELEMENTARY WIRING DIAGRAM

REACTOR COOLANT SYSTEM
PRZR VAPOR SMPL VLV

	JOB NO.	DRAWING NO.	REV.
	12501	E52B SH.14A	7

REV.	DESCRIPTION	DATE	DR	CHK	SUPV	CHIEF	PROJ	OWNER
14	INC. DUN'S E-52B-900+90 PER ECR 05-020400 (CA 03-09353-02)	9-15-05	SBW	JOR	CEM			
13	INC. DUN'S E-52B-646 PER MOD 90-0006 SUP. O.	3/14/02	SBW	WIS	VP			
0	ISSUED FOR CONSTRUCTION	3/27/02	DME	ENKYS	SN'S			



- NOTES**
1. FOR VALVE LIMIT SWITCH CONTACT DEVELOPMENT SEE DWG. E-30B, SH. 8H FIG. 9 (SEE NOTE 7 THIS SHEET)
 2. FOR DETAILS OF CONTROL SWITCH (CS) SEE DWG. E-30B, SH. 7, FIG. 7
 3. FOR GENERAL NOTES SEE DWG. E-52B INDEX SHEET
 5. FOR VENDOR DWG REFER TO E-17B, SEE VENDOR DWG. FOR SFAS INTERNAL WIRING.

6 OVERLOAD HEATERS REPLACED BY SHORTING BARS.

DAVIS-BESSE NUCLEAR POWER STATION
 THE TOLEDO EDISON COMPANY
 THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

ELEMENTARY WIRING DIAGRAMS
 REACTOR COOLING SYSTEM
 PRZR SMPL ISO VLV

BECHTEL COMPANY	JOB NO. 7749	DRAWING NO. E52B-SH-15	REV. 14
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SCHEME	MCC	SU NO	CHANNEL	WIRE PREFIX	CS	EQUIPMENT NUMBERS									SA OUTPUT RELAY	
						C	CD	B	M	PA	PB	SA3	SA1	CB	KA	KB
BE1181	E11B	64	1	PSA	HIS0240A	C5717	CDE11B-2	BE1181	MV0240A	PIP2M	PIC2L	C5763C	C5762D	C1708	K27.E	K27.E

NOTES: (CONT'D.)

7. FIELD TO ADJUST ROTOR #2 WITH SWITCH CONTACTS 5 THRU 8 TO ACTUATE WHEN VALVE REACHES 20% OPEN. +5% -0%