

50-269/270/287

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

TO: Mr. E. Case

FROM: Duke Power Co.
Charlotte, N.C. 28242
W. O. Parker, Jr.

DATE OF DOCUMENT
3-10-78

DATE RECEIVED
3-22-78

LETTER
 ORIGINAL
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PROP

INPUT FORM

NUMBER OF COPIES RECEIVED

1516200

DESCRIPTION Ltr trans the following: 1P

ENCLOSURE Description of a preliminary design concept & preliminary drawings of the over-pressure system modification..... 20P est.

REACTOR VESSEL OVERPRESSURIZATION
DISTRIBUTION PER G. ZECH 10-21-76

PLANT NAME: Oconee Units 1-2-3 JCM 3-31-78

~~1 ENCL~~ + 1 SET DRWG'S

Dist Per ROBERTA INGRAM 3/31/78 DRUGS TO FILES TO BE CHARGED

SAFETY FOR ACTION/INFORMATION OUT TO G. ZECH

BRANCH CHIEF: (7)
LIC. ASST:
PROJECT MANAGER:

REID

ALL OTHERS RECEIVE LTR'S
~~4-REID~~ ENCL ONLY.

INTERNAL DISTRIBUTION

REG FILE ~~W/DRWGS~~ - CHARGE OUT TO ZECH

NRC PDR
I & E (2)
OELD
GOSSICK & STAFF
BOSNAK
PAWLICKI
NOVAK
EISENHUT
SHAO
BAER
BUTLER
ZECH - see files

EXTERNAL DISTRIBUTION

CONTROL NUMBER

LPDR: WALHALLA SC.
TIC:
NSIC:
ACRS 16 CYS HOLDING/SENT TO LA CAT B

780900056

ma

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

March 10, 1978

TELEPHONE: AREA 704
373-4083

REGULATORY DOCKET FILE COPY

Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. R. Reid, Chief
Operating Reactors Branch #4

Reference: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287



Dear Sir:

In your February 2, 1978 letter, additional information was requested concerning a conceptual design of an overpressure protection system modification. Please find attached a description of a preliminary design concept and the preliminary drawings of the system modification.

This overpressure protection system is a conceptual design only. It is our position that installation of this system would not provide any significant, additional protection for the public's health and safety above that currently provided by installed protection systems and administrative procedures.

Very truly yours,

William O. Parker, Jr.
William O. Parker, Jr. *By [Signature]*

RLG:ge
Attachments

780900056

ATTACHMENT 1

OVERPRESSURE PROTECTION SYSTEM PRELIMINARY DESIGN CONCEPT

The purpose of this design concept is to describe an additional redundant means to prevent an overpressurization incident caused by High Pressure Injection System (HPI) actuation.

This design concept includes an alarm which activates upon reaching an RCS temperature above Minimum Pressurization Temperature (MPT) to alert the operator to activate the overpressure protection system. This alarm monitors reactor coolant system temperature. Once this system is activated, a pressure switch, located on the HPI system as shown on attached Figure 1, senses RCS pressure. If RCS pressure exceeds the limiting value of approximately 500 psi, the pressure switch closes to energize a relay which trips the breakers to the HPI pumps.

The overpressure protection system is activated by valving into service the pressure switch and operating an electrical key-lock switch (S45/1VB2) in the control room. The pressure switch is valved out during normal operation about MPT to prevent generation of the electrical signal indicating a high pressure condition. Both the pressure switch contact and the key-lock switch contact are required to energize the lock-out relay (1LOR/1VB2). During normal operation a fault in either the pressure switch or the key-lock switch will not cause the lock-out relay to be energized. Additionally, energizing the lock-out relay will not in itself cause a trip of the HPI pump breakers. The key-lock switch contact and the lock-out relay contact in the HPI pump breaker trip circuit must both be closed in order to trip the HPI pump by this means. Other trip features are not affected.

The following is a description of the series of events that would occur during a cooldown with this system installed:

Initial conditions: Normal cooldown in progress; HPI pump in operation to provide RCP seal water and RCS makeup water.

1. At a specific temperature above MPT, a warning alarm is energized. This statalarm monitors RCS temperature from an indicator located in the control room (See drawings OEE-118-31, -32).
2. After the alerting statalarm is energized and as directed by the station procedure for cooldown, the control operator activates the overpressure protection system. The HPI isolation valve, HP-26, is verified shut, its breaker racked out and tagged as required by the procedure. The overpressure protection system is activated by valving into service the pressure switch (See design Figure 1) and operating the key-lock switch. The overpressure protection system is now aligned for operation. As normal cooldown continues, if the setpoint of the pressure switch is not exceeded, a normal cold shutdown condition is achieved without further overpressure protection system actions.

3. However, if the setpoint of the pressure switch is exceeded, a pair of contacts in the circuit to the lock-out relay (1LOR/1VB2) are closed. See Elementary Diagram, H. P. Injection System, Overpressure Trip, OEE-XXX. Contacts S34/1VB2 2a, 2b had been previously closed by operation of the key-lock switch. Thus, lock-out relay, 1LOR/1VB2, is energized causing contacts in the trip circuit of each HPI pump breaker to close. See drawings OEE-117-47, -76, -62.

In this trip circuit, contacts from both the lock-out relay and the key-lock switch are required to energize the trip coil. (Contacts 1LOR/1VB2 1F, 1Fa and S45/1VB2 4a, 4b for HPI pump 1A; 1LOR/1VB2 2F, 2Fa and S45/1VB2 6a, 6b for 1B; 1LOR/1VB2 3F, 3Fa and S45/1VB2 8a, 8b for 1C).

4. When RCS pressure has been reduced below its reset value, the control operator must manually reset the lock-out relay. Upon doing this, the HPI pumps may be re-started.
5. When a heatup from cold shutdown commences, the overpressure protection system remains in operation until the deactivate alarm is energized. This statáalarm monitors RCS temperature and energizes at a specific temperature above MPT. Please see drawings OEE-118-29, -30. When directed by the station procedure for heatup, the control operator will deactivate the overpressure protection system by valving out of service the pressure switch and de-energizing the key-lock switch.

Elementary drawings have been provided for Unit 1 systems only; a similar design could be utilized for Unit 2 and Unit 3.

ATTACHMENT 2

PRELIMINARY DESIGN DRAWINGS

Location of pressure switch	Figure 1
"Activate" Statalarm	OEE-118-31, -32
Overpressure Trip (Lock-out Relay)	OEE-XXX
HPI Pump Motor Control Circuit, No. 1A	OEE-117-47
No. 1B	OEE-117-76
No. 1C	OEE-117-62
"De-activate" Statalarm	OEE-118-29, -30

TO BE ADDED FOR
RX VESSEL NDT OVER PRESS.
PROTECTION

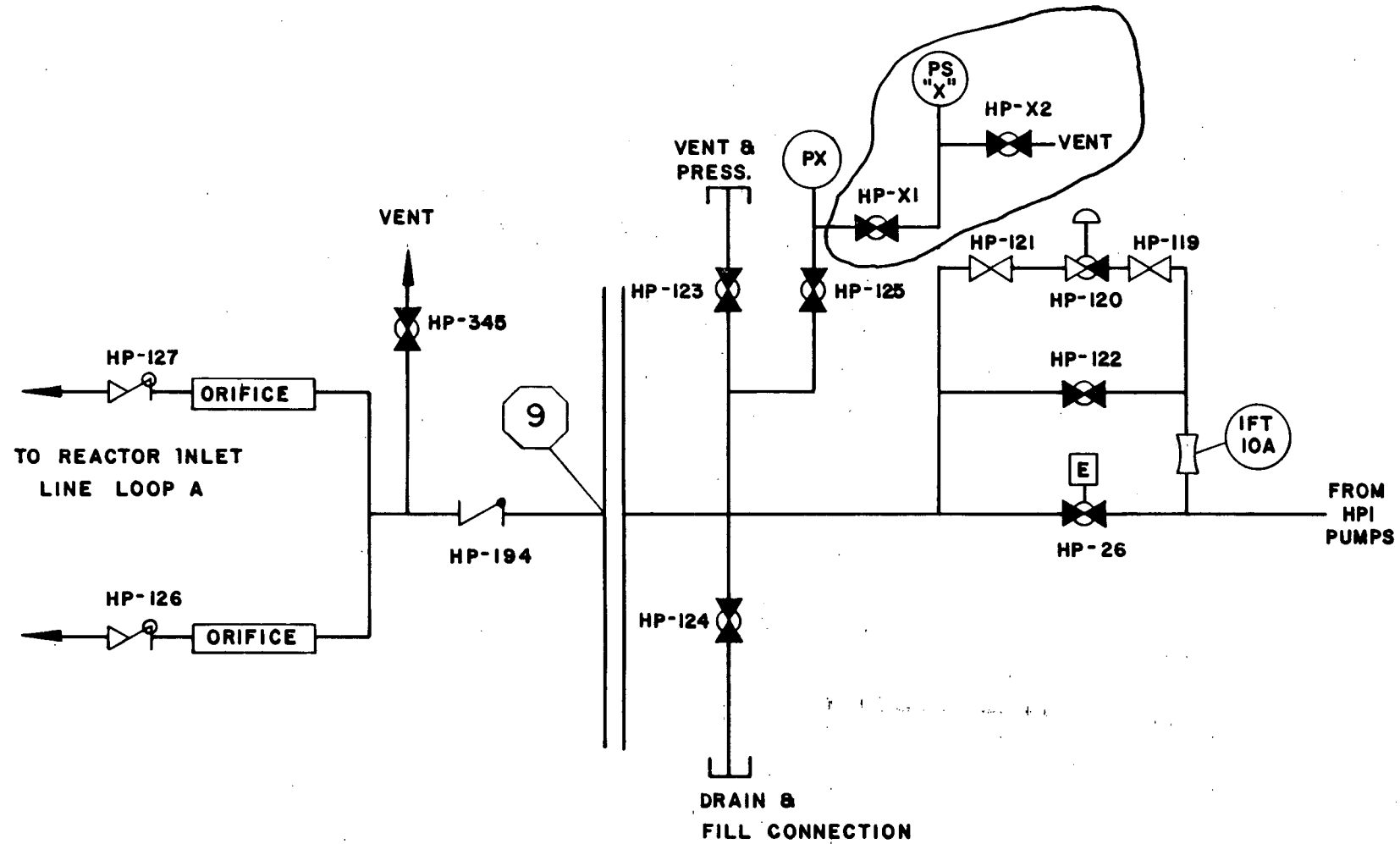


FIGURE 1

FWP A FLOW LOW	FWP A FLOW LOW LOW	FWP B FLOW LOW	FWP B FLOW LOW LOW	COND. SYSTEM CONTROL (P.R. 10.1.1.5)	ACTIVATE REACTOR VESSEL OVERPRESSURIZATION HPI PUMP TRIP SYSTEM
EL C74 SB Bus 1 Bkr Closed	EL C74 SB Bus 2 Bkr Closed	EL C75 SB Bus 1 Bkr Closed	EL C75 SB Bus 2 Bkr Closed	EL 4 KV Fdr Bkr S1 ₂ Closed	EL 4 KV Fdr Bkr S2 ₂ Closed
EL C74 Bus 1 Auto Trans block	EL C74 Bus 2 Auto Trans block	EL C75 Bus 1 Auto Trans block	EL C75 Bus 2 Auto Trans block	GW Interim Waste Gas Decay Tank IC-Press. Hi	GW Interim Waste Gas Decay Tank ID-Press. Hi
EL 13.8 KV Fdr Deenergized		EL 100 KV Fdr Deenergized		EL 4 KV Fdr Bkr S1 ₃ Closed	EL 4 KV Fdr Bkr S2 ₃ Closed
RC RCP 1A1 O.L. LIFT PUMP PRESS LOW	RC RCP 1A2 O.L. LIFT PUMP PRESS LOW	RC RCP 1B1 O.L. LIFT PUMP PRESS LOW	RC RCP 1B2 O.L. LIFT PUMP PRESS LOW	Decay Heat Cooler 1A Flow High	Decay Heat Cooler 1B Flow High

NOTES

1. NUMBERS SHOWN IN LOWER RIGHT HAND CORNER OF WINDOW ARE ALARM POINTS AND NOT TO BE ENGRAVED.
2. WINDOW SIZE 2" X 3". ENGRAVED WITH CHARACTER SIZE 12-1-4 PER LUNDELL ENGRAVING GUIDE
3. *-Indicates contact open in alarm condition.

“REFERENCE ONLY”

REF. DWGS.

OEE-118-32
0-714-Q

ALARM TABULATION
CONNECTION DIAGRAM - IVB2

13

13	ADDED REF. DWG.	LEM	CBK	9/25/75
12	Revise Per SMR 0-52-5	RCH	RCH	7/16/74
11	REV. WINDOWS 26, 27 & 28	RCH	RCH	7/12/74
10	REVISED WINDOWS 25 THRU 28 PER SMR TD # 0-26-5	RCH	RCH	12/17/73
9	ADDED WINDOW #5 - WA 0-197.	ACH	RCH	10/29/73
8	Rev. Window 1-4; WA 0-200	ACH	RCH	9/24/73
7	Added Windows 1-4 Per DCN 52	MHM	RCH	7/23/73
6	Added Windows 1-4 WA 0-165	ACH	RCH	8/13/73
5	Rev. Per WA 0-169	ACH	RCH	7-17-73
4	Rev 1516-7710 & 13-716	RCH	RCH	5-11-72
3	ADD NOTE #3 & * TO 1516-11412	RCH	RCH	7-2-71
2	Added * to 1516-13-16	RCH	RCH	4-11-71
1	MISC. REV.	RCH	RCH	11-20-70

DUKE POWER CO.			
OCONEE NUCLEAR STATION - I			
LIST			
STATALARM No ISA16			
VERT BD IVB2			
DRN.	JVB	8-15-70	CHKD. JVB 8-15-70
INSP.	JCH/RCH	10-5-70	APPR. JVB 10-5-70
SCALE	No: OEE-118-31		

14. Rev. Per SMR-998
Imp. Date:

WEB

ALARM	ACTUATOR	TAG #	LOCATION OF ACTUATOR
1	FWP A Recirc. Flow Pr. Sw.	IPS43	Pneu. instr. Rock-Cable Rm.
2	FWP A Recirc. Flow Pr. Sw.	IPS295	Pneu. instr. Rock-Cable Rm.
3	FWP B Recirc. Flow Pr. Sw.	IPS44	Pneu. instr. Rock-Cable Rm.
4	FWP B Recirc. Flow Pr. Sw.	IPS296	Pneu. instr. Rock-Cable Rm.
5	Timing Relay	IDIA20A	Misc. Term. Cab. #IMC2
6	R.C. INLET TEMP. HIGH-LOW SIGNAL MONITOR		
7	4KV BKR SK1 CONTACT	52S/e	4KV SWGR BIT-5
8	" SK2 "	"	" BIT-9
9	" SL1 "	"	" BIT-9
10	" SL2 "	"	" BIT-5
11	" SL1 "	"	" BIT-8
12	" SL2 "	"	" BIT-6
13	" SK1 AUTO-MAN SW.	SK1	AUX. BD. #21B3
14	" SK2 " " "	SK2	" " "
15	" SL1 " " "	S301	" " "
16	" SL2 " " "	S300	" " "
17	Interim Waste Gas Decay Tank 1 Pr. Sw.	S210	1 Bldg. (Col. 4-4 EL. 201' 5")
18	Interim Waste Gas Decay Tank 10 Pr. Sw.	S211	10 Bldg. (Col. 2-4 EL. 201' 6")
19	TIME DELAY RELAY	IDUVX	MISC. TERM. CAB. #IMTC4
20			
21	TIME DELAY RELAY	27CT5	MISC. TERM. CAB. #IMTC4
22			
23	4KV SK1 SL2 CONTACT	52S/e	4KV SWGR BIT-7
24	" SK2 "	"	" BIT-7
25	T.M. DELAY & AUX. RELAY (TD9)	1A10 PX	4KV SWGR ITA3
26	T.M. DELAY & AUX. RELAY (TD10)	1A20 PX	4KV SWGR ITB3
27	T.M. DELAY & AUX. RELAY (TD11)	1B10 PX	4KV SWGR ITA4
28	T.M. DELAY & AUX. RELAY (TD12)	1B20 PX	4KV SWGR ITB4
29	D.H. #1001A FLOW HIGH PRESSURE SWITCH	IPS374	Q-65, EL. 776'
30	D.H. #1001B FLOW HIGH PRESSURE SWITCH	IPS375	Q-70, EL. 776'

8
10
9

NOTES

1,1516-INDICATES NUMBER OF STATALARM; 1,2,AND ETC. INDICATE WINDOW NO.

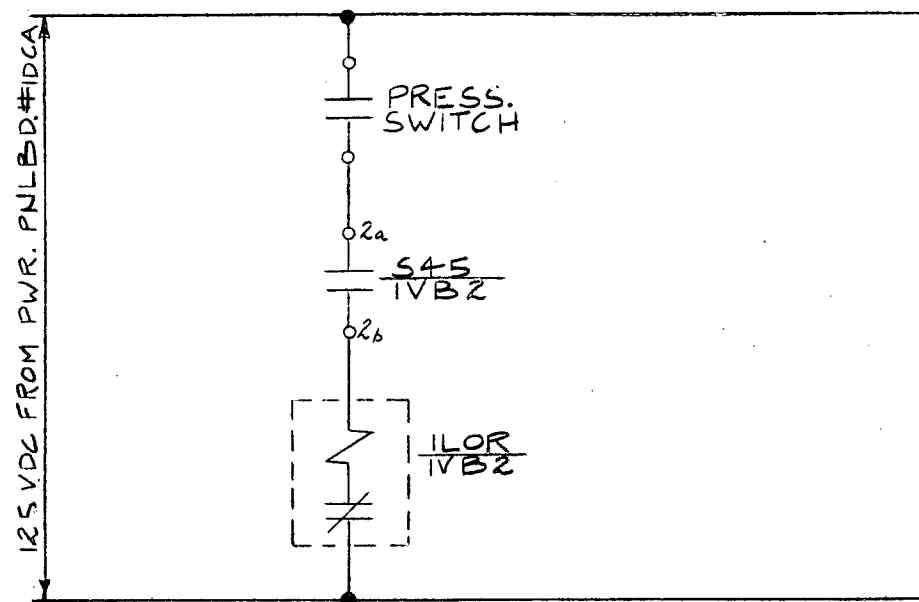
“REFERENCE ONLY”

NO.	REVISION	CHKD	APPR	DATE
9	Added 1516-17-18	RCH	RCH	7/22/74
8	Added 1516-5, WA 6-147	RCH	RCH	1/24/73
7	Rev. Windows 1-4, WA 6-200	RCH	RCH	9/10/73
6	Added Windows 1-4 Per 21-52	RCH	RCH	7/1/73
5	Added Windows 1-4 Per 21-45	RCH	RCH	5/2/73
4	Rev. Per WA 6-167	RCH	RCH	7/17/73
3	Added 1516-12-26	RCH	RCH	
2	Added 1516-11-1	RCH	RCH	
1	MISC. REV.	RCH	RCH	

DUKE POWER CO.				
OCONEE NUCLEAR STATION - I				
LIST				
STATALARM No ISA16				
VERT BU # IVB2				
DRN.	GMM	10-5-73	CHKD.	RCH
INSP.	JPH/RCH	10-5-70	APPR.	RCH
SCALE				No. OEE - 118 - 32

Rev. Per SMR-99B
Imp. Date:

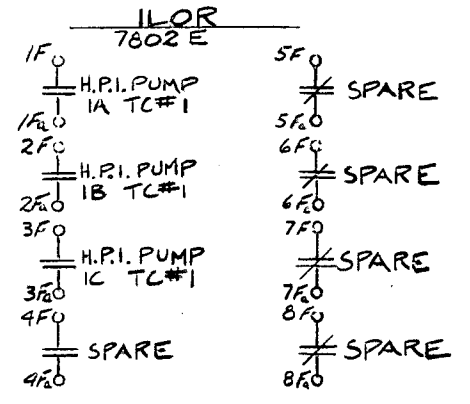
WEB



CONTROL SWITCH NO. 545

CONTACTS		OFF	ON	FUNCTION
1a-1b	3a-3b	X		SPARE
2a-2b	4a-4b		X	H.P. TRIP SYS.
3a-3b	5a-5b	X		SPARE
4a-4b	6a-6b		X	H.P.I. PUMP IA
5a-5b	7a-7b	X		SPARE
6a-6b	8a-8b		X	H.P.I. PUMP IB
7a-7b	9a-9b	X		SPARE
8a-8b	10a-10b		X	H.P.I. PUMP IC
9a-9b	11a-11b	X		SPARE
10a-10b	12a-12b		X	

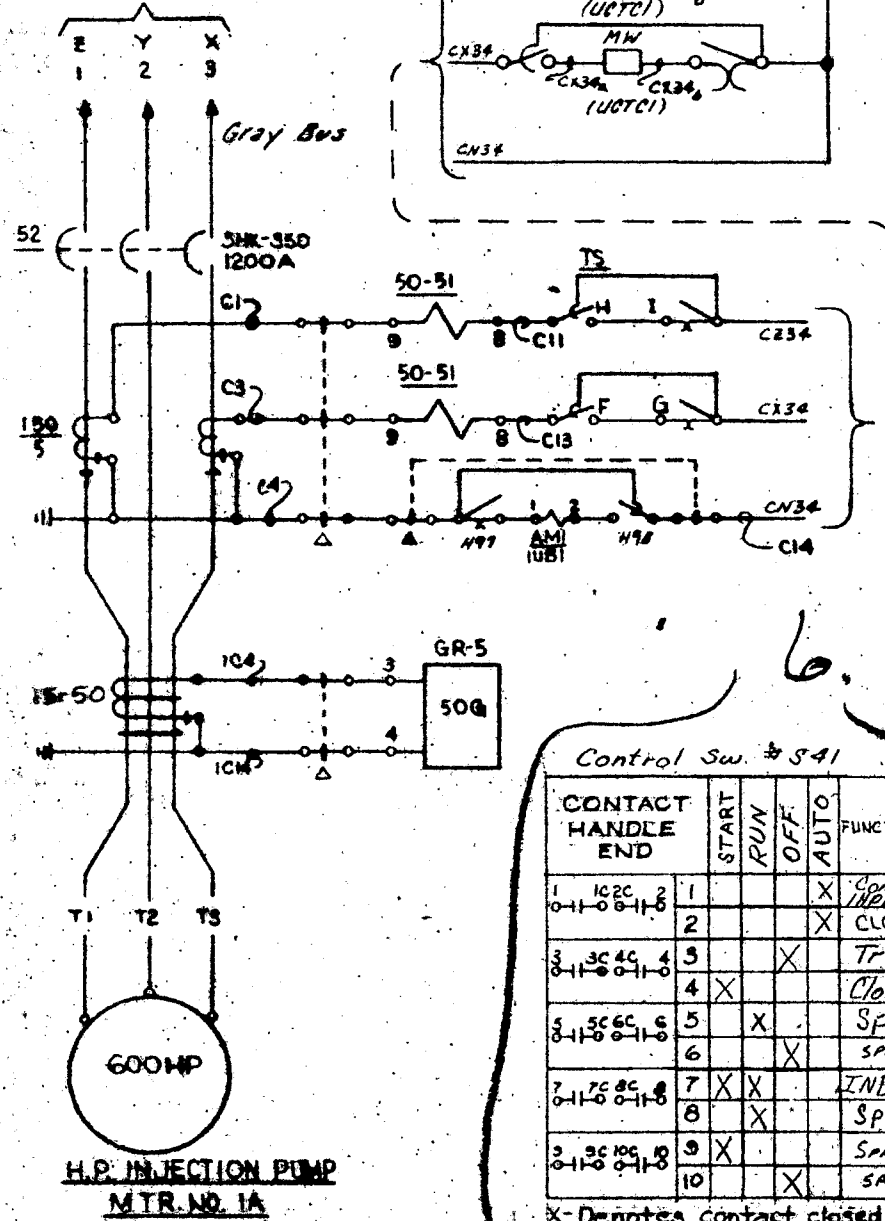
X INDICATES CONTACT CLOSED



“REFERENCE ONLY”

							DUKE POWER COMPANY OCONEE NUCLEAR STATION		
							ELEMENTARY DIAGRAM H.P. INJECTION SYSTEM OVERPRESSURE TRIP		
DESIGNER	DEB	DATE	2-21-78	INSP.		DATE			
DRAWN	DEB	DATE	2-21-78	INSP.		DATE			
CHECKED	WEB	DATE	3-1-78	APPR.		DATE			
NO.	REVISIONS	CHKD	APPR	DATE	CIVIL	ELEC.	MECH.	INSPECTED	
							DWG. NO. OEE-		REV

0-751-B
4KV SWGR N#ITC
UNIT NO. 9
OM-302-86 Sh#2

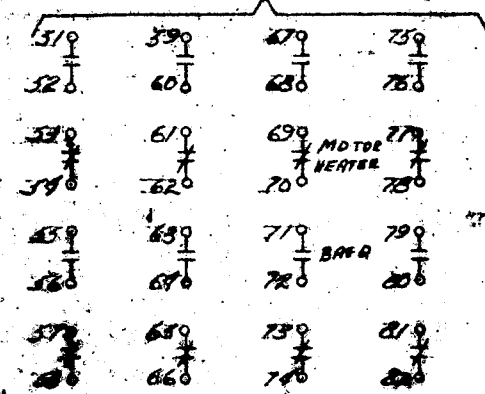


Control Sw. # S41

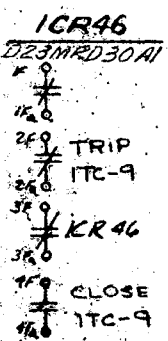
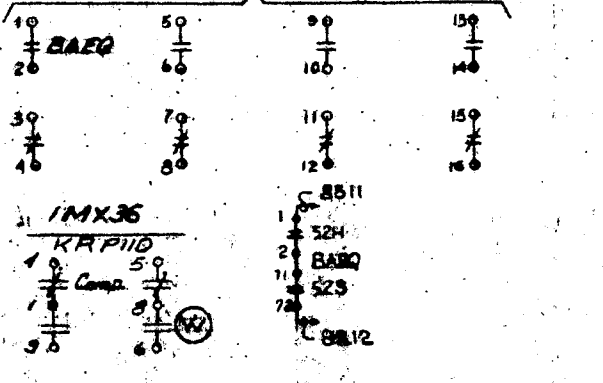
CONTACT HANDLE END	START	RUN	OFF	AUTO	FUNCTION
1 1C2C 2 0-1-0-0-1-0				X	Comp. (NO. 560)
2				X	CLOSE
3 3C4C 4 0-1-0-0-1-0			X		TRIP
4	X				Close
5 5C6C 6 0-1-0-0-1-0		X			Spare
6			X		SPARE
7 7C8C 8 0-1-0-0-1-0	X	X			IND. LT.
8			X		Spare
9 9C10C 10 0-1-0-0-1-0	X				SPARE
10			X		SPARE

X Denotes contact closed
Spring Return To "Normal"

Auxiliary Contacts 52S (CST) (MOC)



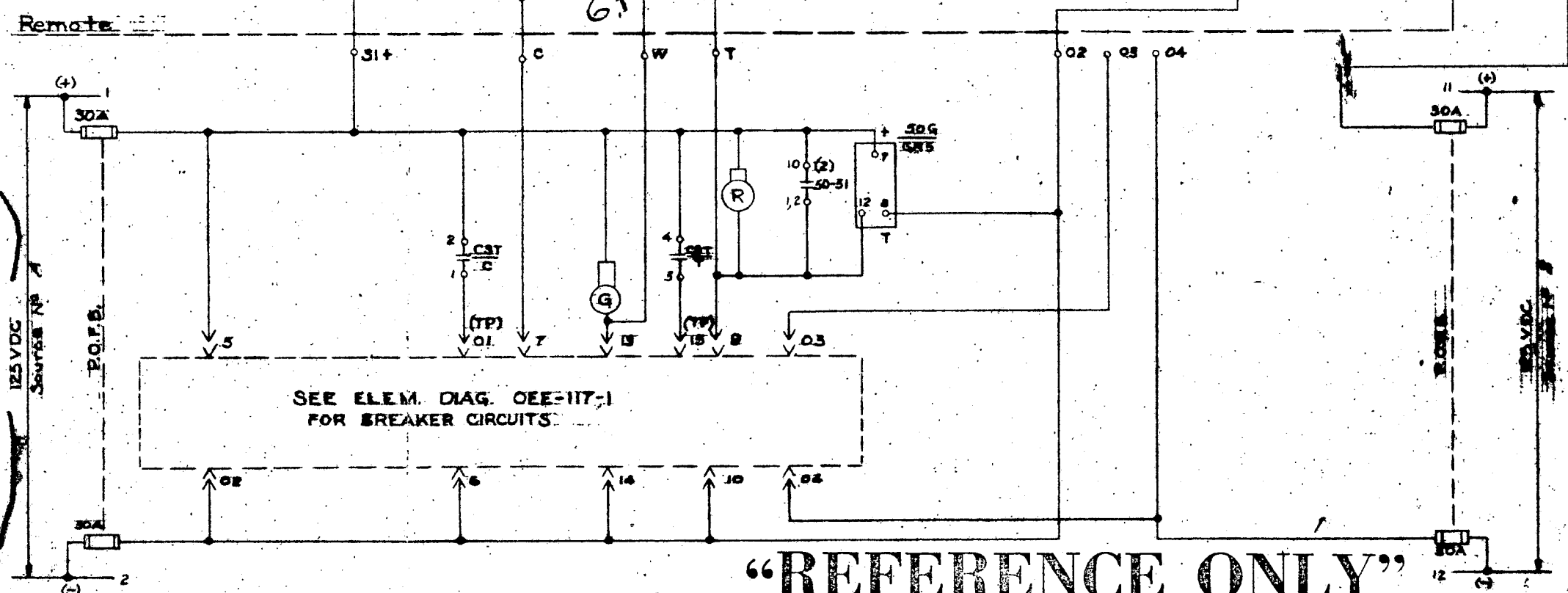
Auxiliary Contacts 52M (TOC) Bkt. in Test Position



CONTROL SW. # CST

CONTACT HANDLE END	START	RUN	OFF	AUTO	FUNCTION
1 1C2C 2 0-1-0-0-1-0				X	Comp. (NO. 560)
2				X	CLOSE
3 3C4C 4 0-1-0-0-1-0			X		TRIP
4	X				Close
5 5C6C 6 0-1-0-0-1-0		X			Spare
6			X		SPARE
7 7C8C 8 0-1-0-0-1-0	X	X			IND. LT.
8			X		Spare
9 9C10C 10 0-1-0-0-1-0	X				SPARE
10			X		SPARE

X Denotes contact closed



"REFERENCE ONLY"

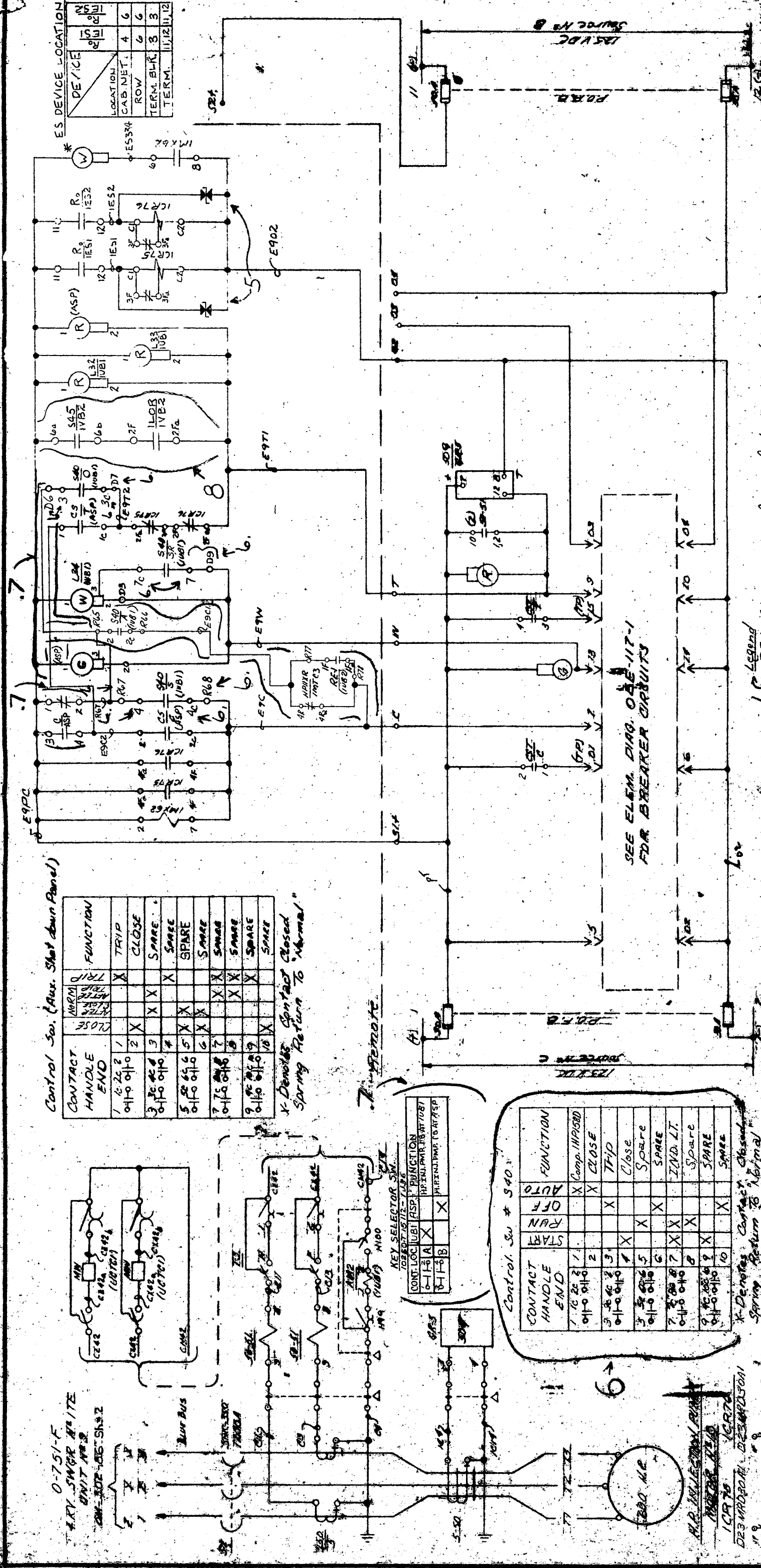
LEGEND:
 RE-2 - Closes on Loss of main Feeder Bus Voltage (OEE 117-15)
 ES - ES Odd Channels Relay Cabinet
 BAEQ - Bailey Engrd. ~~Safeguard~~ Equipment
 HPIIXR - Total RC Seq. Inj. Flow Aux. Relay (QES-150-11)

E.S. Position - Pump Running Channel-1

NO.	REVISION	CHG	APPR.	DATE
7	REV. PER SMR-998 IMP. DATE:	WEB		
6	Added HPIIXR & RE-2	BW		5-28-70
5	Revised Diode (0-59)	BW		3-16-70
4	Various Minor Revisions	BW		9-12-69
3	Revised as indicated	CEP		7-2-69
2	ADDED WIRE NUMBERS	CEP		6-16-70
1	ADDED TERMINALS	CEP		11-17-70

DUKE POWER CO.				
OCONEE NUCLEAR STATION-1 ELEMENTARY DIAGRAM 4160V. SWITCHGEAR # ITC UNIT #9 H.P. INJECTION PUMP MOTOR NO.1A				
DRN.	FURR	8-11-69	CHKD.	CEP
INSP.	REH	1-2-70	APPR.	BW
SCALE				No. OEE-117-47

5.



Legend
 RE-1 - Closes on Loss of main feeder Bus Voltage (E9E-117-1)
 ASP - Auxiliary Shutdown Panel
 * - ES Evac-Oil Channels Relay
 BAEG - Bailey Engrd. Sump Guard Comp. (E9E-150-1)
 HPMR - Total AC Seal In Flow Alarm Relay (E9E-150-1)

REV.	PER SMR-98 IMP. DATE:	WJB	9/24/73
8	Added Key Sel. Sw. Per W.A. 70-178	WJB	9/24/73
7	Added HPIXR REL	WJB	5/21/72
6	Revised Diodes (10-89)	WJB	3/16/72
5	Misc REV	WJB	4/22/71
4	Change Tech. Cell & Lim. over Amps	WJB	9/17/71
3	REVISED CONTROL SWITCH	WJB	4/15/71
2	Added ES Device	WJB	1/15/71
1	Original	WJB	1/15/71

NO.	REVISION	DATE	BY
8	REVISED CONTROL SWITCH	4/15/71	WJB
7	Added ES Device	1/15/71	WJB
6	Revised Diodes (10-89)	3/16/72	WJB
5	Misc REV	4/22/71	WJB
4	Change Tech. Cell & Lim. over Amps	9/17/71	WJB
3	REVISED CONTROL SWITCH	4/15/71	WJB
2	Added ES Device	1/15/71	WJB
1	Original	1/15/71	WJB

Control Sw. (Aux. Shutdown Panel)

CONTACT HANDLE END	TRIP	FUNCTION
1 0-10 0-10	X	TRIP
2 0-10 0-10	X	CLOSE
3 0-10 0-10	X	SPARE
4 0-10 0-10	X	SPARE
5 0-10 0-10	X	SPARE
6 0-10 0-10	X	SPARE
7 0-10 0-10	X	SPARE
8 0-10 0-10	X	SPARE
9 0-10 0-10	X	SPARE
10 0-10 0-10	X	SPARE

X - Denotes Contact Closed Spring Return to Normal

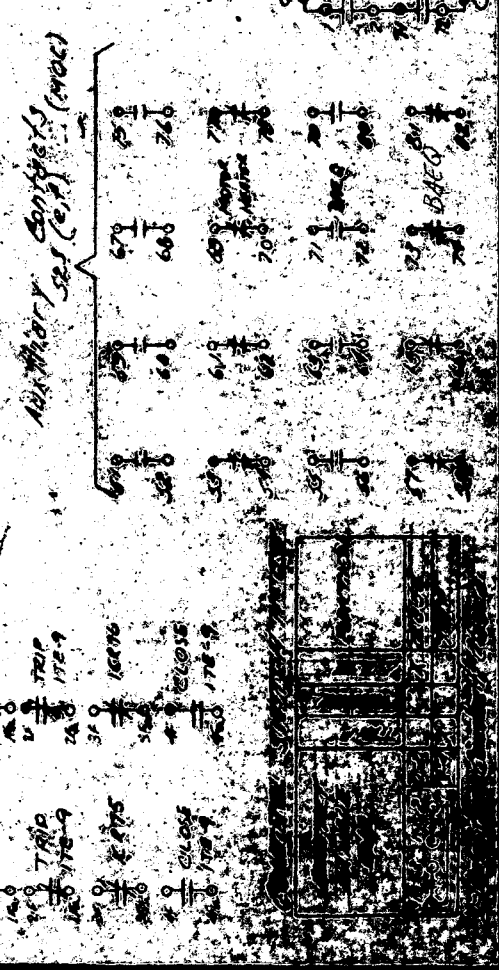
KEY SELECTOR SW.

CONT. LOC. (UBI)	ASP.	FUNCTION
1-3	X	HP ENL. PWR. TO AT ASP
4-6	X	HP ENL. PWR. TO AT ASP
7-9	X	HP ENL. PWR. TO AT ASP

Control Sw # 940

CONTACT HANDLE END	FUNCTION
1 0-10 0-10	X Comp. HPSBD
2 0-10 0-10	X CLOSE
3 0-10 0-10	X TRIP
4 0-10 0-10	X Close
5 0-10 0-10	X SPARE
6 0-10 0-10	X SPARE
7 0-10 0-10	X IND. LT.
8 0-10 0-10	X SPARE
9 0-10 0-10	X SPARE
10 0-10 0-10	X SPARE

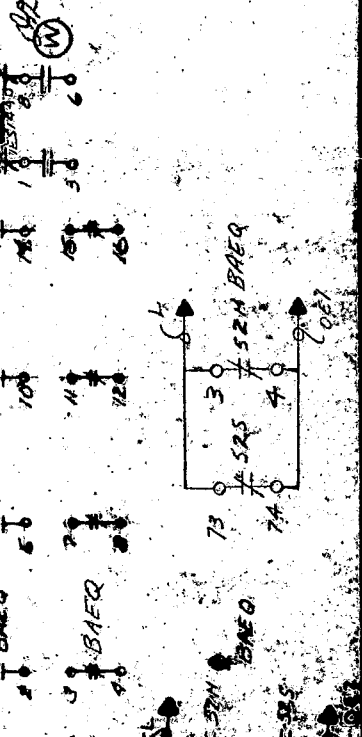
X - Denotes Contact Closed Spring Return to Normal



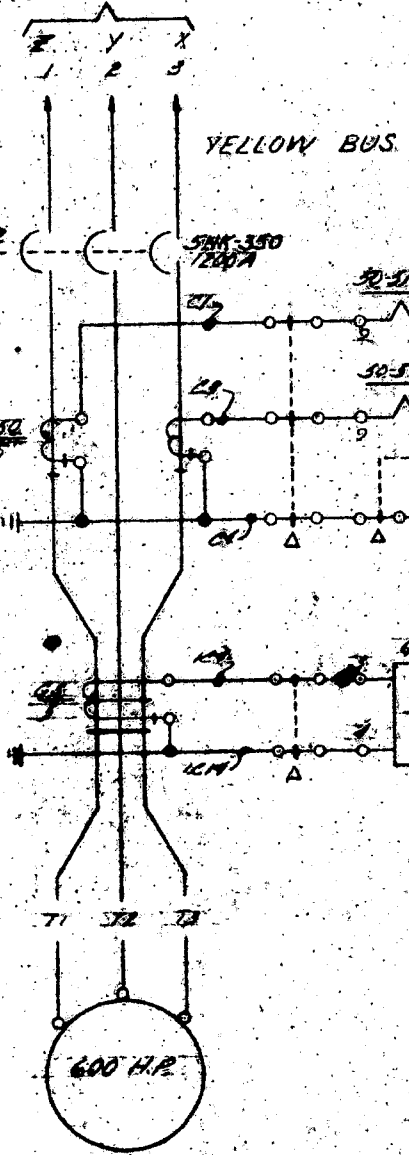
DUKE POWER CO.
 OCOONEE NUCLEAR STATION
 ELEMENTARY SYSTEM
 H.P. INJECTION PUMP MOTOR CONTROL

REV.	PER SMR-98 IMP. DATE:	WJB	9/24/73
8	Added Key Sel. Sw. Per W.A. 70-178	WJB	9/24/73
7	Added HPIXR REL	WJB	5/21/72
6	Revised Diodes (10-89)	WJB	3/16/72
5	Misc REV	WJB	4/22/71
4	Change Tech. Cell & Lim. over Amps	WJB	9/17/71
3	REVISED CONTROL SWITCH	WJB	4/15/71
2	Added ES Device	WJB	1/15/71
1	Original	WJB	1/15/71

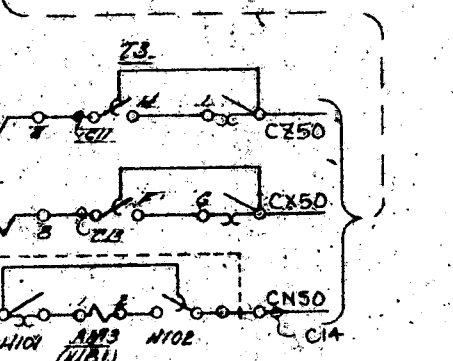
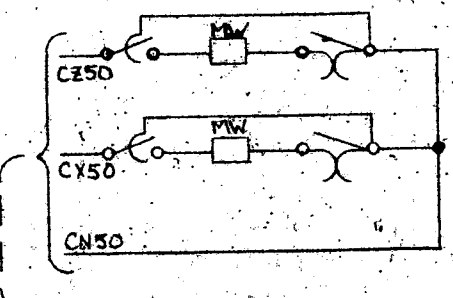
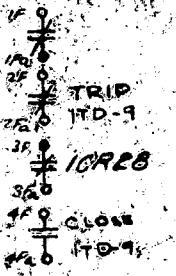
NO.	REVISION	DATE	BY
8	REVISED CONTROL SWITCH	4/15/71	WJB
7	Added ES Device	1/15/71	WJB
6	Revised Diodes (10-89)	3/16/72	WJB
5	Misc REV	4/22/71	WJB
4	Change Tech. Cell & Lim. over Amps	9/17/71	WJB
3	REVISED CONTROL SWITCH	4/15/71	WJB
2	Added ES Device	1/15/71	WJB
1	Original	1/15/71	WJB



0-751-D
4 KV SWGR N°17D
UNIT N°9
DM-302-B6 Sh=2



H.P. INJECTION PUMP
MOTOR NO. 10
10CR2B
DEBARD 50A



Control Sw # 939

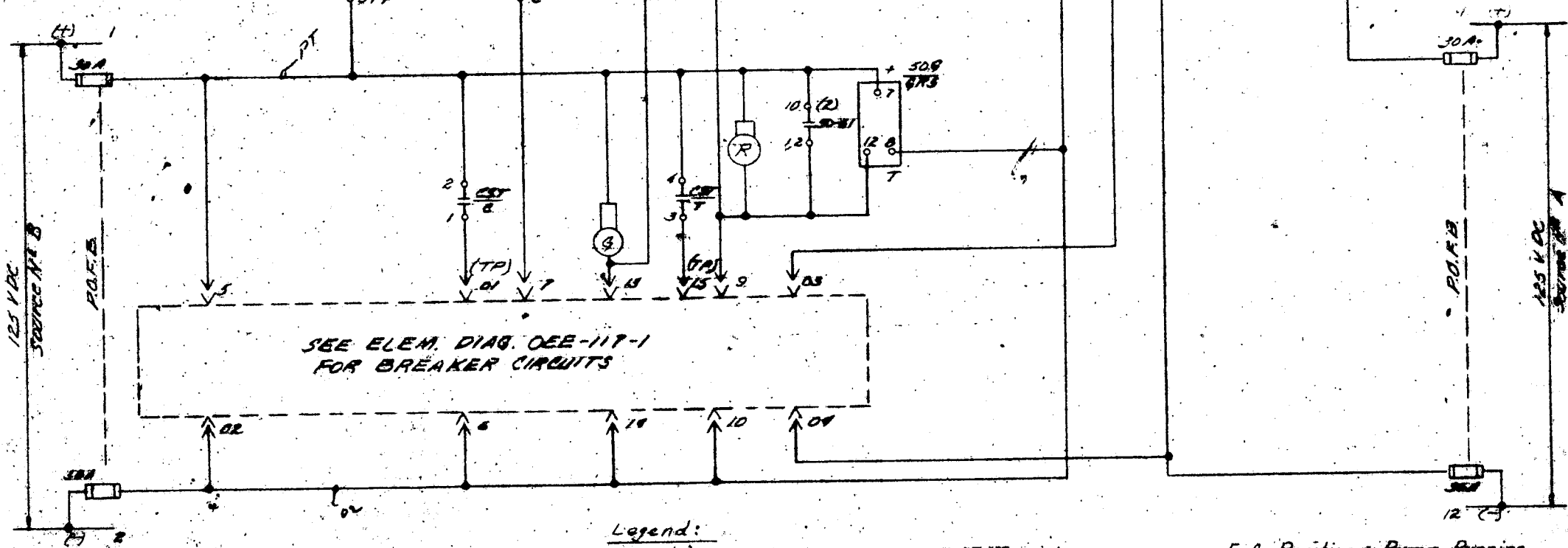
CONTACT HANDLE END	NO	NC	COMMON	FUNCTION
1 1020 2				TRIP
3 3040 4	X			CLOSE
5 5060 6		X	X	Spare
7 7080 8		X	X	Ind. Lt.
9 9010 10		X	X	Spare

X Denotes Contact Closed Spring Return To Normal

ES Device Location

Device	PO Contact	BAEQ
Cabinet	6	9
Rm	6	8
Term. Blk.	1	1
Terminal	11, 12	12

Remote

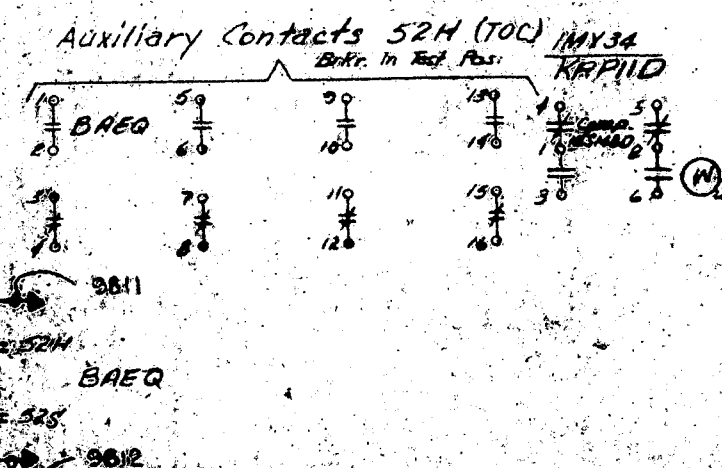
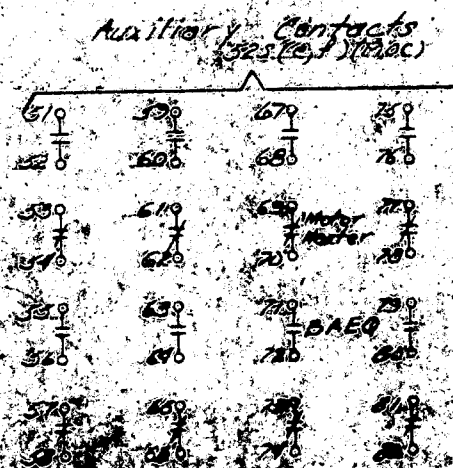


SEE ELEM. DIAG. OEE-117-1 FOR BREAKER CIRCUITS

Legend:
BAEQ Bailey Eng'd. Safeguard Equipment
ES Even Channels Relay Cabinet

E.S. Position - Pump Running Channel - 2

66 REFERENCE ONLY



NO.	REVISION	CHG	APPR.	DATE
7	REV. PER SMR-998 IMP DATE:	WEB		
6	Revised Diodes (0-89)	BLM		3/8/92
5	Revised As noted	BWM		8/27/91
4	Rel. 10CR2B to N° 539	NEN		12/7/91
3	ADDED TRANSDUCER CKT	CEB		1/6/90
2	Revised as noted	CEB		11/2/89
1	Added terminal points	CEB		5/3/70

DUKE POWER CO.			
OCONEE NUCLEAR STATION-1			
ELEMENTARY DIAGRAM			
4160V SWITCHGEAR UNIT N°9			
H.P. INJECTION PUMP MOTOR NO. 10			
DRN.	1/2-70	CHKD.	CEB
INSP.	1-2-70	APPR.	CEB
SCALE		No. OEE-117-62	

EL Normal Source Volt Monit Logic Test 1	EL SU Source Volt Monit Logic Test 2	EL SB Bus SB1, Volt Monit Logic Test 3	EL SB Bus SB2, Volt Monit Logic Test 4	EL MF Bus E1, Under Voltage 5	FL Load Shed Incomplete 6
EL Norm Source Volt Monit Logic DC Pwr Lost 7	EL SU Source Volt Monit Logic DC Pwr Lost 8	EL SB Bus SB1, Volt Monit Logic DC Pwr Lost 9	EL SB Bus SB2, Volt Monit Logic DC Pwr Lost 10	EL MF Bus E2, Undervoltage 11	EL M LDR ... V inc ... A Out 12
EL Norm Source Volt Monit Logic Undervoltage 13	EL SU Source Volt Monit Logic Undervoltage 14	EL SB Bus SB1, Volt Monit Logic Undervoltage 15	EL SB Bus SB2, Volt Monit Logic Undervoltage 16	DE-ACTIVATE REACTOR VESSEL OVERPRESSURIZATION HPI PUMP TRIP SYSTEM 17	EL M LDR ... V inc ... A Out 18
EL L Shed-Trans Chnl A Logic DC Pwr Lost 19	EL L Shed-Trans Chnl A Logic Norm Source Test 20	EL L Shed Trans Chnl A Logic SU Source Test 21	EL Load Shed Chnl A Logic initiate 22	EL Trans To SB Chnl A Logic Test 23	EL Trans To SB Chnl A Logic initiate 24
EL Retrans To SU Chnl A Logic Test 25	EL Retrans To SU Chnl A Logic initiate 26	EHC THRUST BEARING WEAR TRIP BYPASSED * 27	EL Keo Emerg Start Chnl A Logic Test 28	EL Keo Emerg Start Chnl A Logic DC Pwr Lost 29	EL Sw. ... Confir med Chnl A Logic 30

NOTES

- NUMBERS SHOWN IN LOWER RIGHT HAND CORNER OF WINDOW ARE ALARM POINTS AND NOT TO BE ENGRAVED.
- WINDOW SIZE 2" X 3". ENGRAVED WITH CHARACTERS SIZE 12-1-4. PER LUNDELL ENGRAVING GUIDE

REF. DWGS.

0EE-118-30

ALARM TABULATION

0-14-9

Control Diagram

3

"REFERENCE ONLY"

DUKE POWER CO.			
OCONEE NUCLEAR STATION - I			
LIST			
STATALARM NO 15A15			
VERT ED #1V2			
6	REV. PER SMR-998 IMP. DATE: 4-2-75	WEB	
5	REV. PER SMR-750 IMP. DATE: 8-12-77		
4	REV. PER SMR-0-248-D REV 1 IMP. DATE: 4-2-75	RHW	4/9/75
3	REV. PER SMR 0-248-D	RHW	9/30/74
2	Add 1 1515-12 512	RHW	6-23-72
1	MISC. REV.	RHW	11-0-70
NO.	REVISION	CHKD	APPR DATE
DRN.	JVB	CHKD.	JVB E-15 73
INSP.	JEH/RCA 10-5-70	APPR	10 5-70
SCALE			No. OEE-118-29

ALARM	ACTUATOR	TAG #	LOCATION OF ACTUATOR
1	11" SGU CE UNDERVOLT. TEST RELAYS	RTNA _{B,C}	EMERG. PWR. SW. PNL # 1EPSLPI
2	SU	RTEA _{B,C}	"
3	SB1, UNDERVOLT. TEST RELAYS	RTSA _{A,B,C}	EMERG. PWR. SW. PNL # 1EPSLPC
4	SB2,	RTSCA _{B,C}	"
5	MAIN FDR BUS #1 UNDERVOLTAGE AUX. RELAY	27B1IX	EMERG. PWR. SW. PNL # 1EPSLPI
6	LOAD SHED INIT RELAY & BKR "2" CONTACTS	RLS1X & 2X	1EPSLPI & 4KV SWGR ITC, ITD, ITE
7	NORM. CKT. DC PWR RELAYS	RNA _{A,B,C}	EMERG. PWR. SW. PNL # 1EPSLPI
8	SU	REA _{A,B,C}	"
9	SB1,	RSA1A _{B,C}	" #1EPSLP2
10	SB2,	RSA2A _{B,C}	"
11	MAIN FDR. BUS #2 UNDERVOLT. AUX. RELAY	27B2IX	" #1EPSLPI
12	TV timer Off		Monitor Relay Pnl
13	NORM. SOURCE UNDERVOLT RELAYS	27NX _{A,B,C}	EMERG. PWR. SW. PNL # 1EPSLPI
14	SU	27EX _{A,B,C}	"
15	SB1, UNDERVOLT AUX RELAYS	27SX1 _{A,B,C}	" #1EPSLP2
16	SB2,	27SX1 _{2A,B,C}	"
17	R.C. INLET TEMP. HIGH-LOW SIGNAL MONITOR		
18	TV timer Off		Monitor Relay Pnl
19	LOAD SHED CKT LOSS OF DC RELAY CH. A	RLA1	EMERG. PWR SW. PNL #1EPSLPI
20	CH. A TEST SEL. SWS.	TSSIN & 2N	"
21	CH. A) "	TSSIE & 2E	"
22	CHA LOAD SHED AUX. RELAY	RLS1X	"
23	CHA TEST SEL. SW.	TSS3N	"
24	CHA TRANSF. TO SB BUS RELAY	SBC1A _{A,B,C}	"
25	TEST SEL. SW (S1) LOGIC)	TSS1A	EMERG. PWR SW. LOGIC PNL #1EPSLP2
26	RETRANSF. TO SU SOURCE RELAY	STD1A _{A,B,C}	"
27	KEY SWITCH TWTBY		CONTROL BOARD #1UB2
28	MANUAL LINE START RELAY - CH A	KA	EMERG. PWR. SW. LOGIC PNL #1EPSLP3
29	LOSS OF DC CONTROL PWR RELAY - CH A	8ESA	"
30	SWING BELLEVID AUX RELAY - CH A	ST11	"

4 & 5, 7

REF. DWG. 0-718-2 INCL 2, 3

6

NOTES
1, 1, 1, 5 - INDICATES NUMBER OF STATALARM; 1, 2, AND ETC. INDICATE WINDOW NO.

“REFERENCE ONLY”

DUKE POWER CO.				
OCONEE NUCLEAR STATION - I LIST STATALARM No 15A15 VERT BD # 1VB2				
DRN.	5-2	CHKD.	RJA	10-5-77
INSP.	JEA/RY 10-5-77	APPR.	DMA	10-5-77
SCALE	No. OEE - 118 - 30			
NO.	REVISION	CHKD	APPR	DATE
7	REV. PER SMR-998	WEB		
6	IMP. DATE: 8-12-77			
5	REV. PER SMR-758			
4	IMP. DATE: 8-12-77			
3	REV. PER SMR-6-246-D			
2	REV. PER SMR-6-246-D			
1	MISC. REV.			