

SITE PROBLEM
REPORT TRANSMITTAL

27

**** CLEARED ****

→ TO: Change Control For Distribution
S. H. Klein - Quality Assurance
Central Engineering Files
O. PUTERUBER - Task Engineer
J. A. LAUER - Project Manager

FILE: 13-14-369
CONTRACT NO: 620-00 14
SPR 369
TITLE ELECTROMATIC
RELIEF VALVE DAMAGE
DATE: 10-2-77
STATUS CODE C

- _____ L. C. Rogers - MET. ED. _____
- _____ F. R. Faist - TOLEDO _____
- _____ J. R. Bohart - Intl. Support _____
- _____ J. L. Donnell - OFR _____
- _____ E. A. Karrasch - Plant Integration _____

Attached is one copy of Site Problem Report No. 369 which was processed on Contract 620-00 14. Future contracts have been reviewed for the potential of a similar problem. This problem ~~is~~ is not considered applicable to other contracts _____.

REMARKS: _____

David Culbertson
NUCLEAR SERVICE SUPPORT ENGINEER

CLEARED

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POOR ORIGINAL

8001160515

1913 009

SITE PROBLEM REPORT

BABCOCK & WILCOX SPR #260

CUSTOMER Toledo Edison Company	ORIGINATOR F. R. Faist	DATE 10/3/77	DOC. ID. CONT. NO. 13-620-0014	SPR NO. 269	REV. NO. 0
VENDOR Crosby	P.L. NO. 003090LS	PART NO./TASK NO. GROUP NO. SEQ. NO. 28/041/005			
TITLE (MAX 30 CHARACTERS) Electromatic Relief Valve Failure			PROBLEM CONTACT C. C. England <i>C. C. England</i>		

DESCRIPTION OF PROBLEM:
See attached sheet.

For Information Only.

PROGRAM IDENTIFICATION

STATUS-ACTION TO DATE, INCLUDING PERSONS CONTACTED:
B&W Engineering aware of problem. Lynchburg (Spangler, et.al) aware of problem. TECo (Evans, Beyer) aware of problem.

FURTHER ACTION RECOMMENDED BY SITE PERSONNEL:
SPR submitted for information only. Valve will be tested in Mode 3 to confirm that repair work satisfactory and electrical circuitry working.

CLOSED

RESOLUTION:

INFORMATION ONLY

RESOLUTION

PREPARED BY <i>David H. Allison</i>	DATE 10-6-77	APPROVED BY	DATE
REVIEWED BY <i>John H. ...</i>	DATE 10-7-77	<i>J. A. Lewis</i>	10-7-77
COST CATEGORY <input type="checkbox"/> NORM <input checked="" type="checkbox"/> OTHER	FIELD CHANGE REQ <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	F.C.A. NO. NA	SIGNIF. DEFICIENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

COMPLETION

SITE COMPLETION REPORT:
Information only - valve repaired and to be tested.

INFORMATION ONLY

DEVIATIONS:
 NONE SPR REV NO.

DATE COMPLETED: 10/3/77

COMPLETED BY *C. C. England* **DATE** 10/3/77

J. R. ...

F. R. Faist 10/3/77

SHEET 2 OF 9

Description of Problem:

Following the steam and feedwater rupture which occurred on 10/20/68, steam and feedwater was isolated from the reactor. The pressure increased above 1100.

The electromagnetic relief valve lifted as required. The attached computer printout indicates that the valve opened at 1170 and released 2 times and then stuck open. The operators finally closed the relief valve upstream of this valve but not before 1100 pressure had impacted on the pipe.

This valve has been disassembled and the pilot valve (part # on attached sketch) was open. The stem of the subject valve was pulled and slightly bent (see attached vendor rep's report).

This valve, as well as the bonnet containing the disc actuator is being replaced from INCO stock under the direction of a Cresty service rep.

The probable cause of failure was traced to a missing relay (see attached copy of Sectional drawing). The missing relay would have held the valve open until 1100 pressure triggered relief valve action. With the relay missing, the valve would cycle open and closed about 1100 psi.

END

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POOR ORIGINAL

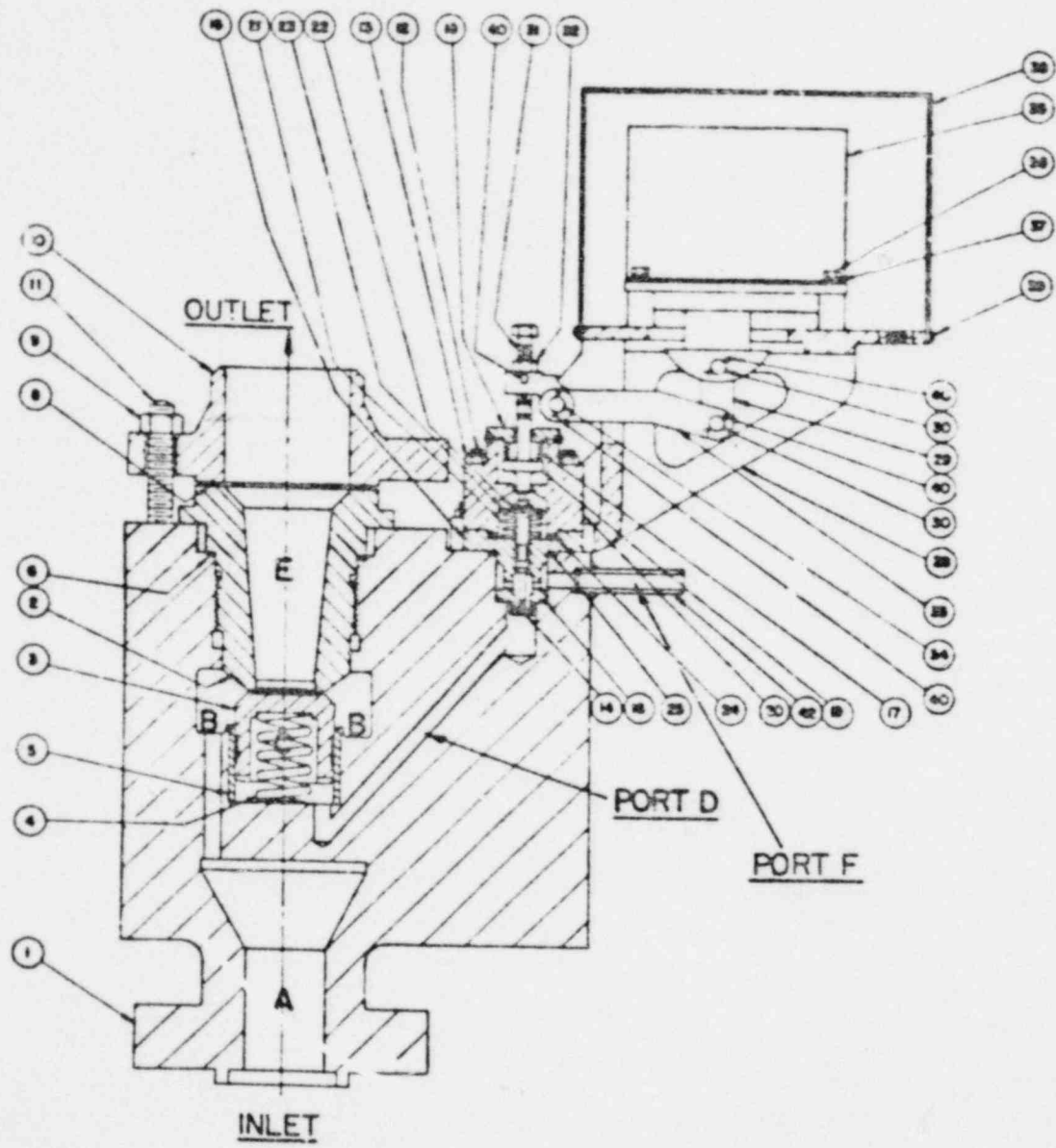


FIG. 1
 ASSEMBLY OF PRESSURMATIC
 VALVE STYLE HPV-SN

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21:20:14	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	NORM	
21:20:22	LINE	PRINTER	RETURN-TO-NORMAL		
21:20:17	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	OPEN	
21:20:18	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	NORM	
21:20:22	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	OPEN	
21:20:23	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	NORM	
21:21:45	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	OPEN	
21:21:56	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	NORM	
21:24:29	CONT	Z840	RPS, SFAS OR SFVCS CABINET DOOR	OPEN	
21:28:47	CONT	Q1R1	CRD CH RAD ANY TRIP DEVICE	TRIP	
21:28:47	CONT	Q1R6	CRD PROGRAMMER LAMP FAULT	YES	
21:29:51	NORM	T933	SG 1 DNCHR IN AVG TEMP	273.5	
21:30:21	HLD	T933	SG 1 DNCHR IN AVG TEMP	55555	
21:31:41	CONT	Q13R	CLV WST SYS OUT RAD	HIGH	
21:32:51	NORM	T933	SG 1 DNCHR IN AVG TEMP	273.5	
21:33:21	BAD	T933	SG 1 DNCHR IN AVG TEMP	55555	
21:34:20	CONT	Q5B1	MN STM LINE 1 ISO VLV SOLENOID	TRBL	
21:34:20	CONT	Q5B9	MN STM LINE 2 ISO VLV SOLENOID	TRBL	

21:34:44	LOW	L854	SG 2 SU RANGE LVL, 9A4 (IN)	23.83	24.00
21:34:44	LOW	P690	HSP 1 2ND STG HTG STM PRESS	-14.87	6.000
21:34:56	NORM	T640	RCP 2-2 DISCH CLG NR TEMP, RC4A3	562.8	
21:34:56	HIGH	T641	RCP 2-2 DISCH CLG NR TEMP, RC4A4	561.1	562.5
21:35:00	CONT	T712	RC CLG LOOP 1 VS 2 TEMP DIFF	HIGH	
21:35:16	CONT	L771	RC PRZR LVL	HILO	

21:35:20	CONT	L858	SG 2 FULL RANGE LVL	HILO	
21:35:23	CONT	Q5B1	MN STM LINE 1 ISO VLV SOLENOID	NORM	Closed
21:35:23	CONT	Q5B8	MN STM LINE 2 ISO VLV SOLENOID	NORM	
21:35:23	CONT	Z6B3	MN STM LINE 1 ISO VLV	CLOS	
21:35:23	CONT	Z6B6	MN STM LINE 2 ISO VLV	CLOS	

21:35:24	CONT	P480	HPT MN STM PRESS	HILO	
21:35:25	HIGH	T731	RC LOOP 2 HLG NR TEMP, RPS CH 4	559.1	555.3
21:35:25	NORM	T780	RCP 1-1 DISCH CLG NR TEMP, RC4B1	558.2	
21:35:26	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:26	CONT	P731	RC LOOP 2 HLG PRESS	HILO	①
21:35:27	CONT	P723	RC LOOP 1 HLG PRESS	NORM	
21:35:27	CONT	P731	RC LOOP 2 HLG PRESS	NORM	
21:35:29	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:29	CONT	P731	RC LOOP 2 HLG PRESS	HILO	②
21:35:29	CONT	P723	RC LOOP 1 HLG PRESS	NORM	
21:35:29	CONT	P731	RC LOOP 2 HLG PRESS	NORM	
21:35:30	CONT	P983	TURB STM SEAL HDR PRESS	LOW	
21:35:31	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:31	CONT	P731	RC LOOP 2 HLG PRESS	HILO	
21:35:32	HIGH	L769	RC PRZR AVG LVL (INH20)	222.5	213.3
21:35:32	CONT	P723	RC LOOP 1 HLG PRESS	NORM	
21:35:32	CONT	P731	RC LOOP 2 HLG PRESS	NORM	
21:35:34	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:34	CONT	P731	RC LOOP 2 HLG PRESS	HILO	④
21:35:35	CONT	P731	RC LOOP 2 HLG PRESS	NORM	
21:35:36	CONT	P723	RC LOOP 1 HLG PRESS	NORM	
21:35:36	CONT	Z003	AFPT 1 MN STM IN ISO VLV	NC	
21:35:36	CONT	X044	T-G MN STM & FH TURB TRI P	TRIP	
21:35:36	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:36	CONT	P731	RC LOOP 2 HLG PRESS	HILO	⑤
21:35:37	CONT	P731	RC LOOP 2 HLG PRESS	NORM	
21:35:38	CONT	Z006	AFPT 2 MN STM IN ISO VLV	NC	
21:35:38	CONT	P723	RC LOOP 1 HLG PRESS	NORM	
21:35:39	CONT	P723	RC LOOP 1 HLG PRESS	HILO	
21:35:39	CONT	P731	RC LOOP 2 HLG PRESS	HILO	⑥

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21135141	CONT	P723	RC LOOP 1 HLG PRESS	NORM		
21135141	CONT	P731	RC LOOP 2 HLG PRESS	NORM		
21135141	CONT	QW99	AUX BLR SYS	TRBL		
21135142	CONT	T712	RC CLG LOOP 1 VS 2 TEMP DIFF	NORM		
21135142	LOW	P824	AUX STM 2J5W HOR PRESS	173.6	198.8	
21135142	CONT	P723	RC LOOP 1 HLG PRESS	HILO		
21135142	CONT	P731	RC LOOP 2 HLG PRESS	HILO		
21135143	BAD	P481	HPT SIDE 1 IN PRESS	-55555		②
21135143	BAD	P482	HPT SIDE 2 IN PRESS	-55555		
21135143	CONT	P731	RC LOOP 2 HLG PRESS	NORM		
21135144	CONT	P723	RC LOOP 1 HLG PRESS	NORM		
21135145	CONT	P723	RC LOOP 1 HLG PRESS	HILO		
21135145	CONT	P731	RC LOOP 2 HLG PRESS	HILO		
21135145	HIGH	P932	SG 1 OUT STM PRESS, PT1282	1322.	950.8	
21135145	NORM	P936	SG 2 OUT STM PRESS, PT12A1	929.3		
21135145	NORM	P937	SG 2 OUT STM PRESS, PT12A2	936.7		③
21135147	CONT	P723	RC LOOP 1 HLG PRESS	NORM		
21135147	CONT	P731	RC LOOP 2 HLG PRESS	NORM		
21135148	CONT	P723	RC LOOP 1 HLG PRESS	HILO		
21135148	CONT	P731	RC LOOP 2 HLG PRESS	HILO		
21135149	CONT	P723	RC LOOP 1 HLG PRESS	NORM		
21135149	CONT	P731	RC LOOP 2 HLG PRESS	NORM		
21135150	CONT	Z674	MN FW 1 STOP VLV	CLOS		
21135151	CONT	Z679	MN FW 2 STOP VLV	CLOS		VALVE
21135153	CONT	L828	AUX BLR DRUM LVL	HILO		SCRAMBLE STICK
21135155	HIGH	T773	RC PRZR PWR RLF OUT TEMP, RC12-1	251.4	280.8	←
21135155	HIGH	T788	RCP 1-1 DISCH CLG NR TEMP, RC481	569.9	568.7	
21136100	CONT	Q542	ICS SG 1 ON BTU LIMIT	NORM		
21136102	HIGH	T770	RC PRZR PRESS RLF OUT TMP, RC12-2	255.7	280.8	←
21136101	HIGH	T771	RC PRZR PRESS RLF OUT TMP, RC12-3	255.8	280.8	←
21136101	CONT	L885	SG 1 SU RANGE LVL	LOW		
21136104	CONT	Z888	AFP 1 DISCH VLV TO SG 1	OPEN		
21136104	CONT	Z810	AFP 2 DISCH VLV TO SG 2	OPEN		
21136106	CONT	T712	RC CLG LOOP 1 VS 2 TEMP DIFF	HIGH		
<hr/>						
21136107	CONT	Q180	CRD CH A/C ANY TRIP DEVICE	TRIP		
21136108	CONT	Q185	CRD MTR PWR	OFF		
21136108	CONT	Q263	CRD SAFETY RODS NOT WITHDRAWN	YES		
21136108	CONT	Q813	RPS CH 1 ROD WTHDRW INHBT	NORM		
21136108	CONT	Q821	RPS CH 2 ROD WTHDRW INHBT	NORM		
21136108	CONT	Q825	RFS CH 3 ROD WTHDRW INHBT	NORM		
21136111	CONT	Q837	RFS CH 4 ROD WTHDRW INHBT	NORM		
21136111	NORM	P932	SG 1 OUT STM PRESS, PT1282	936.8		
21136113	HIGH	P936	SG 2 OUT STM PRESS, PT12A1	971.8	950.8	
21136115	CONT	R831	SFAS CH 1 CHT RAD LOW	FAIL		
21136117	CONT	P723	RC LOOP 1 HLG PRESS	HILO		
21136117	CONT	P731	RC LOOP 2 HLG PRESS	HILO		Low
21136123	CONT	Y860	TURB BYPASS VLV 1-1	CLOS		
21136123	CONT	Y861	TURB BYPASS VLV 1-2	CLOS		
21136124	CONT	L878	SG 1 FULL RANGE LVL	HILO		
21136124	RAD	P478	HPT SIDE 1 IN PRESS (A)	-55555		
21136124	RAD	P479	HPT SIDE 2 IN PRESS (A)	-55555		
21136124	CONT	P874	RPS CH 4 RC LO PRESS	TRIP		
21136124	CONT	Q834	RPS CH 4 CH TRIP	TRIP		
21136125	CONT	Y862	TURB BYPASS VLV 1-3	CLOS		
21136125	CONT	P859	RPS CH 1 RC LO PRESS	TRIP		
21136125	CONT	P869	RPS CH 3 RC LO PRESS	TRIP		
21136125	CONT	Q810	RPS CH 1 CH TRIP	TRIP		
21136125	CONT	Q826	RPS CH 3 CH TRIP	TRIP		
21136126	CONT	P863	RPS CH 2 RC LO PRESS	TRIP		
21136126	CONT	Q818	RPS CH 2 CH TRIP	TRIP		
21136127	CONT	R835	SFAS CH 3 CHT RAD LOW	FAIL		
21136127	CONT	Y863	TURB BYPASS VLV 2-1	CLOS		

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IN REPAIRS, REPAIRS, (CASE 2 KAPUSO), NO. 27 18 0271

9-27-77 Visual inspection of case (assembly) shows some evidence of leakage to the actuator. Mounting on the pilot valve.

9-28-77 Disassembled case. Pilot valve was clean. The O-ring on the nozzle and main valve was replaced. The Pilot valve was locked in the open position. This was done to foreign material trapped in the case of the nozzle and the gasket area. This material had been used in the main valve. The main valve was cleaned down in the guide area of the pilot valve nozzle. The P.V. Disc was coated with some acid to the extent that the metal bond was removed. The bottom of the base in the main valve at the end of the pilot valve was filled with a granular material. The whole system was packed with this material. The P.V. Disc was not removed from the actuator. The stem of the pilot valve was also replaced with a new stem. The mount adapter was also replaced with a new one.

9-29-77 Reassembled the main case. The nozzle on the Pilot valve inspected, the seat replaced, and all surfaces polished with solvent. The Pilot valve was flushed with mineral water and Spot Check cleaned to disolve the by-product. The Pilot valve was mounted on the actuator. The Pilot valve was inserted. It felt that could not be more of the actuator. Mount was removed and inspected. The main body was cleaned, by comparison to the original. A lecture was given to the factory. A part was taken to the site. The actuator mount was replaced.

NO. _____
OF _____

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POOR ORIGINAL

REPAIRS TO THE VALVE

4-20-08 The left side bearing was installed on the valve and bolted in place. GE (Cutler) repaired the valve. The valve will be installed later.

Observations -

The pilot valve was in an open position but the sign material binding the valve stem in the end area of the nozzle.

The left side detector do not had returned various valves, it is necessary by the company, probably some time damage.

The signs we see on the pilot valve may be due to the lack of proper control of operation. This opinion is based on the fact the left side valve operated to the 10 tons, it was damaged in the area of the keyhole & it indicates excessive discharge through the 4 1/2" valve, and water plus could have the possibility of being through the valve.

The electrical control of the valve should be checked to determine if failure exist in the area.

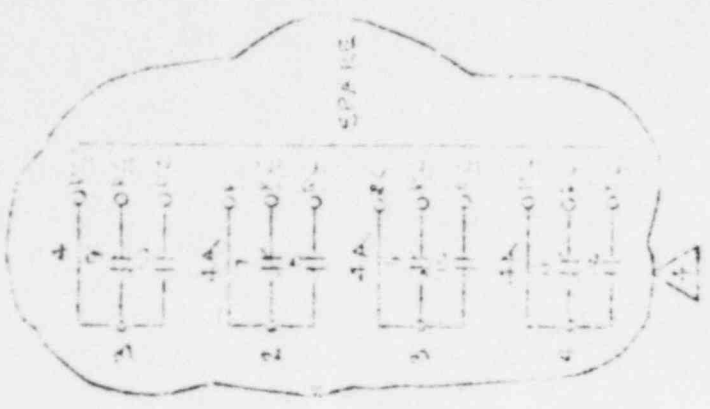
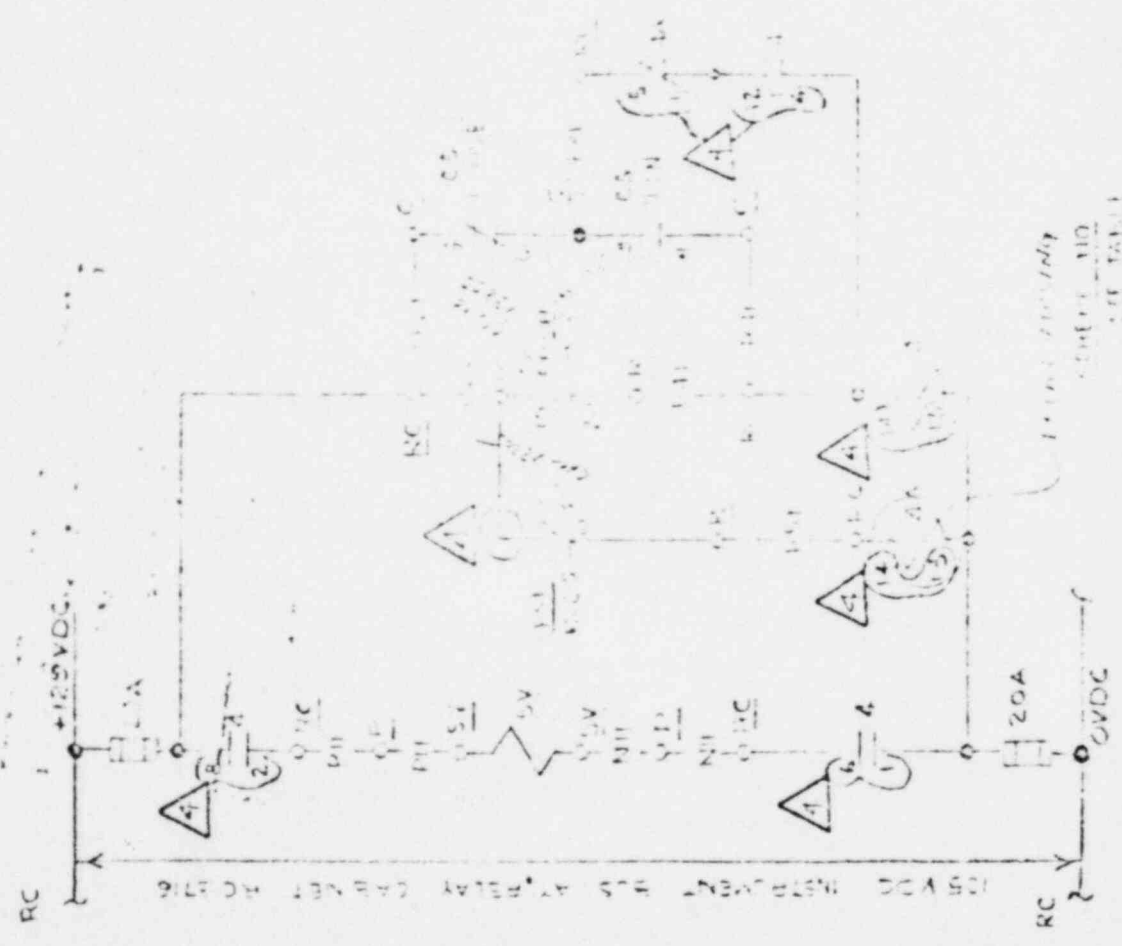
W. H. Long
4-20-08

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DATE	BY	CHK	BY	CHK	BY	CHK	BY	CHK	BY

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