

BALTIMORE GAS AND ELECTRIC COMPANY

GAS AND ELECTRIC BUILDING
BALTIMORE, MARYLAND 21203

ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

November 9, 1979

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attn: Mr. Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Subject: Calvert Cliffs Nuclear Power Plant
Units Nos. 1 & 2, Dockets Nos. 50-317 & 50-318
Follow Up Actions Resulting from TMI-2 Incident

Gentlemen:

Mr. H. R. Denton's letter of 10/30/79 identifies control grade automatic initiation of auxiliary feed (NUREG 0578 Section 2.1.7a) as requiring "proposal review" by NRC prior to implementation. Your staff's initial review of modifications proposed in our letter of 10/19/79 resulted in comments telephoned to us on 10/26/79. This letter provides a description of our revised proposed modifications. Your approval of our design as submitted is required by 12/10/79 in order to maintain our schedule; of course, any changes to our design required by you will likely affect the completion date.

The existing auxiliary feedwater system is shown on enclosure No. 1. Note that the steam supply to the auxiliary feed pump turbines is under operator control through handswitches HS4070 and HS4071 located in the control room on the condensate and feedwater panel. To roll the auxiliary feed pump turbines the control room operator moves either or both handswitches to the open position. Enclosure No. 2 shows the schematic for control of MOV 4070. The schematic for control of MOV 4071 is similar. Control of feed flow rate is also remote manual through hand-indicating-controllers located on the condensate and feedwater panel in the control room. Each auxiliary feedwater regulating control valve and the speed of each auxiliary feed pump turbine is under operator control via a hand-indicating controller.

Design has been completed to modify the control of the motor operated auxiliary feed pump turbine steam supply valves. The proposed design change opens both steam supply valves when main feed to either steam generator drops below a minimum value, while retaining operator control of initiation of auxiliary feed. Enclosure No. 3 shows the proposed new control schematic for the steam supply MOV's. Note that new handswitches are needed. The auto start signals designated AFASAX and AFASBX on enclosure No. 3 are outputs from bistables installed in the main feed flow signal loops. These bistables are designated FY-1111B and FY-1121B on enclosure No. 5.

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7911130

297

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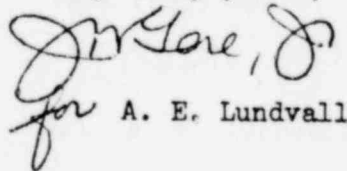
The auto start feature can be tested by the following procedure:

1. Operator verifies auxiliary feedwater regulating valves are closed.
2. Operator places main feed regulating system in manual.
3. A signal simulating feed flow is applied to the feed flow square root extractor through test jack J2. The corresponding flow rate is observable on the steam and feedwater flow recorder.
4. The test signal level is reduced to the bistable setpoint.
5. Bistable pick-up will open the steam supply valves and roll the aux feed pump turbines. Direct valve position indication is available in the control room (see enclosure No. 3). Annunciation of the auto start signal will also occur.

The consequences of automatically initiating auxiliary feed to a ruptured steam generator are still being evaluated by CE. Until this analysis is complete, we consider installation of an automatic feed initiation feature, which could be installed short-term, to be an unreviewed safety question. Our design, therefore, will provide automatic start of the pumps and immediate availability of feed; actual evaluation of steam generator condition and subsequent opening of auxiliary feed valve(s) must be done by the operator. This is justified by the following facts: (1) There is a trained operator whose sole dedicated function following a reactor trip is to operate the auxiliary feed system; (2) there is complete control of the auxiliary feed valves from the main control board; (3) there is approximately fifteen minutes available following a trip before auxiliary feed is required.

Because of schedule requirements, we would appreciate any comments as soon as possible, and will be happy to answer any questions as they arise.

Very truly yours,



for A. E. Lundvall, Jr.

cc: J. A. Biddison, Esquire
G. F. Trowbridge, Esquire
Mr. E. L. Conner, Jr. - NRC

1321 245



BECHTEL
GAITHERSBURG, MD.

DRAWING CHANGE NOTICE

JOB NO.	DRAWING NO.	REV. NO.
11865	6750 IE-79 SH. 27B	X
DCN NUMBER		DATE
IE-79-2006		10-12-79
PROJECT APPROVAL		
<i>JMS</i>		

OTHER DOCUMENTS AFFECTED BY THIS CHANGE:

N/A

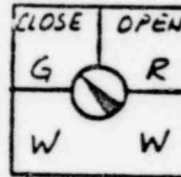
REASON FOR CHANGE: FCR 79-1035 UNIT NO 1

THIS DCN VOIDS DCN IE-79-2005

REF: BG&E# 61-079-B

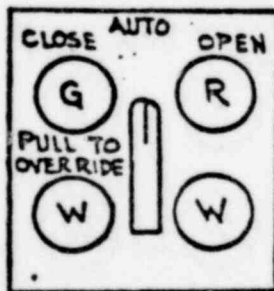
DISPOSITION OF AFFECTED MATERIAL REWORK SCRAP USE AS IS AS NOTED N/A

CONTACTS	POSITIONS		
	NO	CLOSE	OPEN
1-2	X		
3-4			X
5-6	X		
7-8			X



IHS4070 USED AT IC03
HONEYWELL TYPE CHC 910AEA011
MAINTAINED CONTACTS

BEFORE



ELECTROSWITCH
CAT. NO. 20LD

SPRING RETURN FROM
CLOSE & OPEN TO AUTO
PULL TO OVERRIDE IN
CLOSE
PISTOL GRIP HANDLE

CONTACT HANDLE END	PULL TO OVERRIDE	CLOSE	AUTO	OPEN
10 — — 02	X			
30 — — 04		X		
50 — — 06			X	
70 — — 08				X
90 — — 010	X			
110 — — 012			X	

IHS4070 & IHS4071 USED AT IC03

POOR ORIGINAL AFTER

1321 246

Enclosure #3

REVIEWED WITHOUT	ARCHITECTURAL	CIVIL	CONTROLS SYSTEMS	ELECTRICAL	PLANT DESIGN	MECHANICAL
	N/A	N/A		BTR	N/A	N/A

170-D 5/79 (Form G-238)

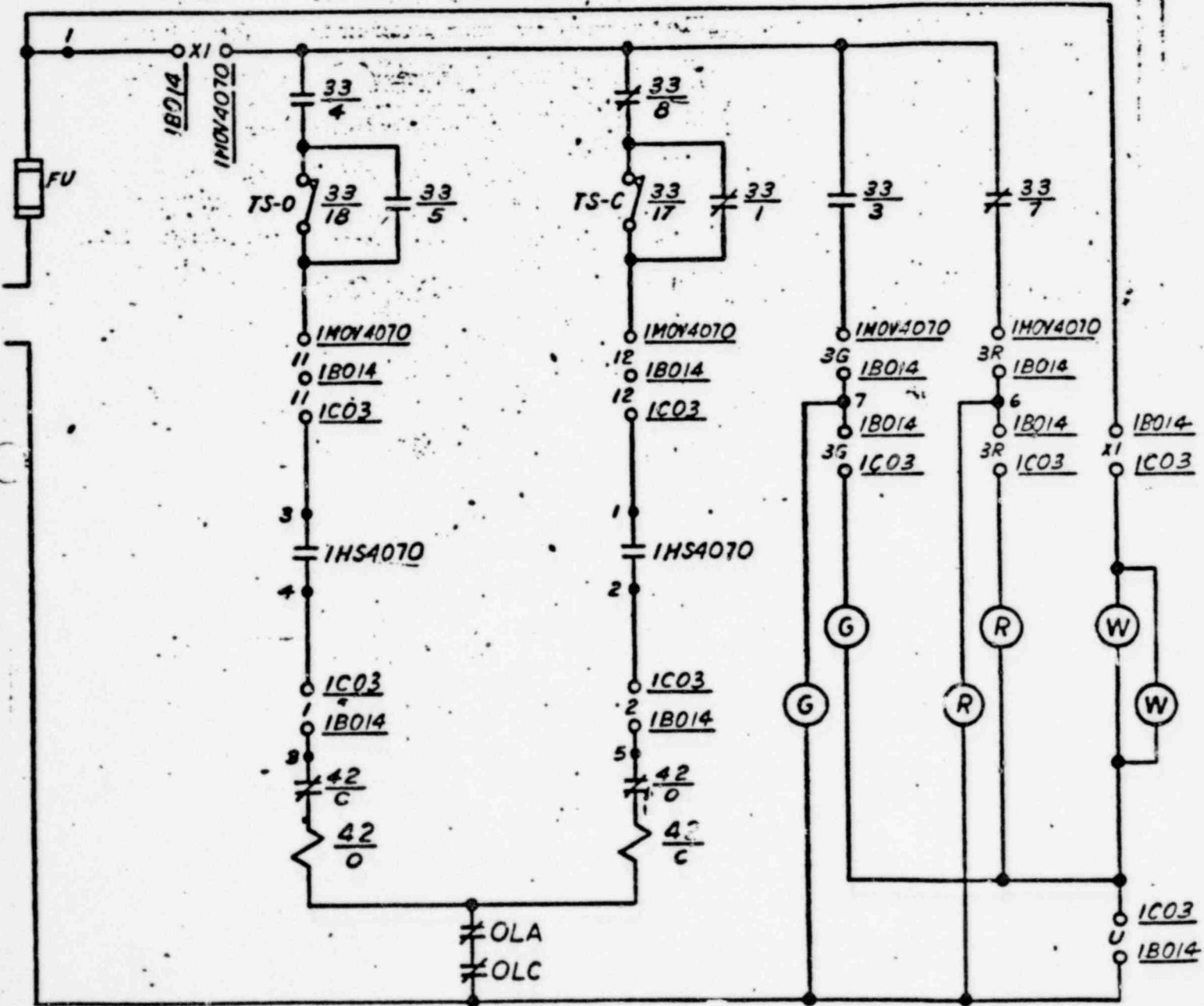
DRAWING CHANGE NOTICE



BECHTEL
GAITHERSBURG, MD.

JOB NO. 11865	DRAWING NO. 6750 1E-79 SH. 27B	REV NO. <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
DCN NUMBER 1E-79-2006	DATE 10-12-79	
CONTINUATION SHEET		
PAGE 2 OF 4		

OPEN CLOSE INDICATION



SCHEME 1B1414
VALVE SHOWN IN FULL OPEN POSITION

POOR ORIGINAL

BEFORE

1321 217

SEE PAGE 3 FOR AFTER

22-1274

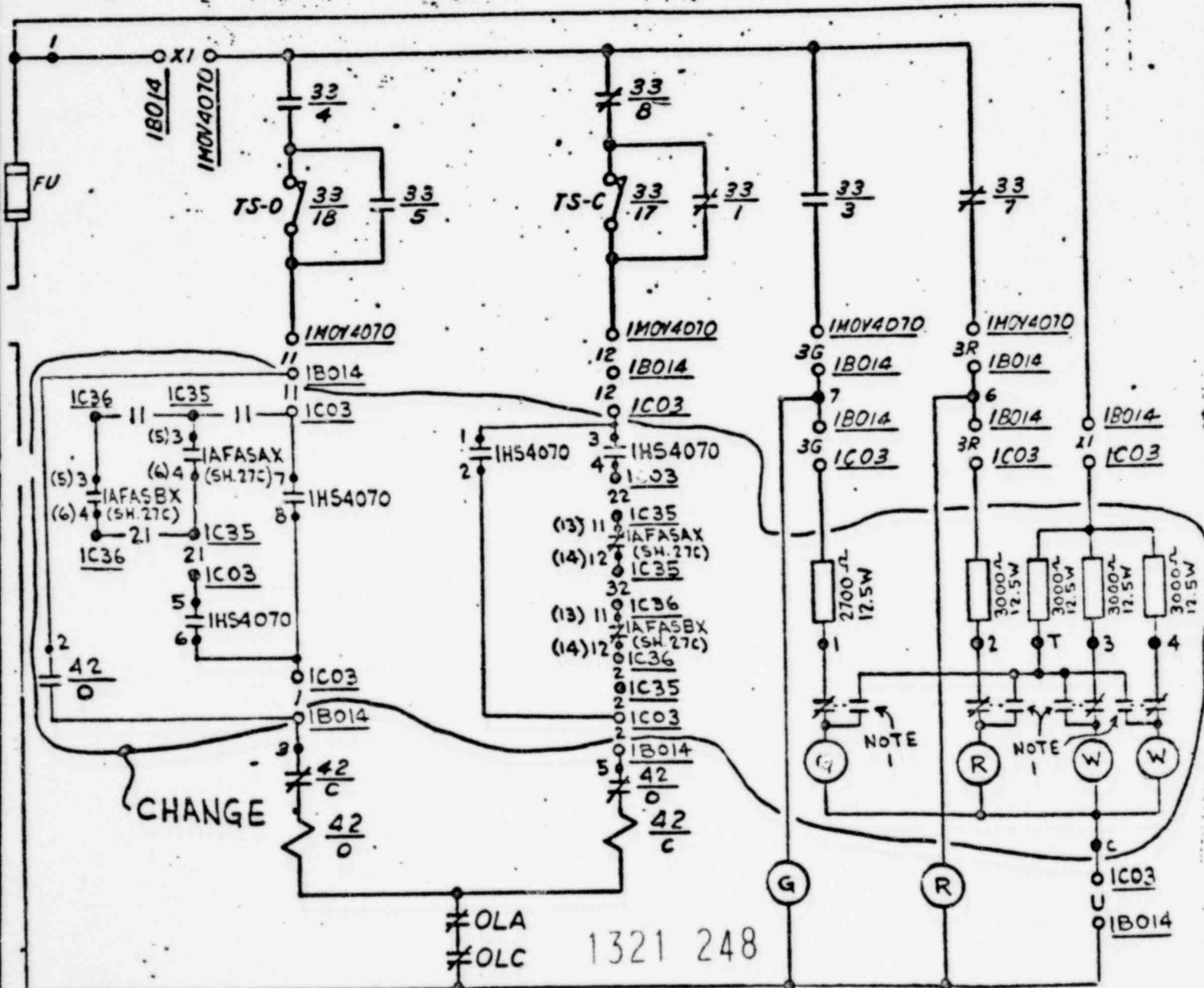
DRAWING CHANGE NOTICE



BECHTEL
GAITHERSBURG, MD.

JOB NO.	DRAWING NO.	REV. NO.
11865	6750 IE-79, SH 27B	
DCN NUMBER	DATE	
IE-79-2006	10-12-79	
CONTINUATION SHEET		
PAGE 3 OF 4		

OPEN CLOSE INDICATION



SCHEME IBO14

VALVE SHOWN IN FULL OPEN POSITION

POOR ORIGINAL

AFTER

- NOTES:
1. PUSHING IN ON LIGHT CHANGES CONTACT STATE
 2. TERMINAL NOS IN () PERTAIN TO SCH. IBO414

ADD

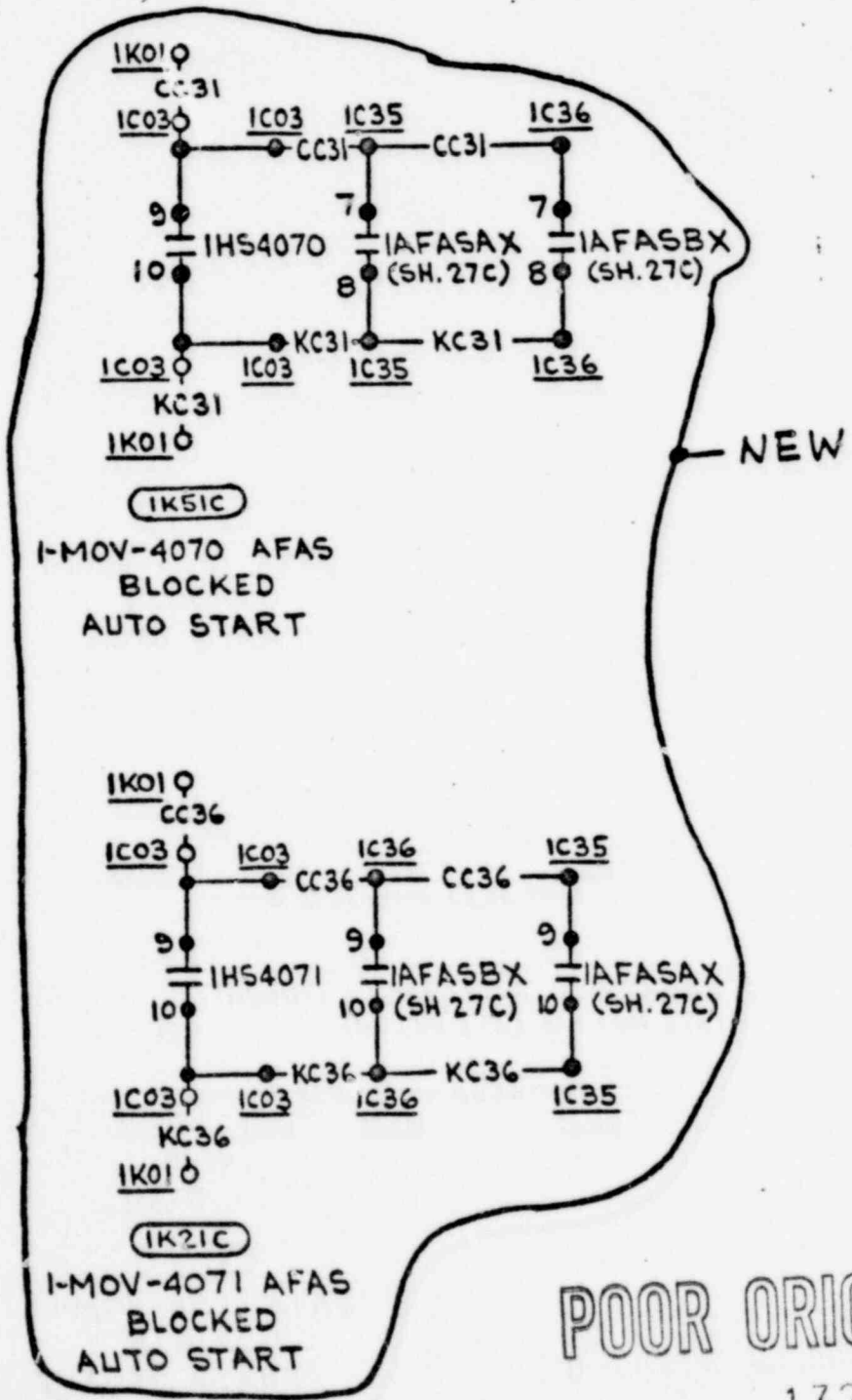
13-13-74



BECHTEL
GAITHERSBURG, MD.

DRAWING CHANGE NOTICE

JOB NO.	DRAWING NO.	REV. NO.
11865	6750 IE-79 SH.27B	
DCN NUMBER	DATE	
IE-79-2006	10-12-79	
CONTINUATION SHEET		
PAGE 4 OF 4		



POOR ORIGINAL

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02-13-74

DRAWING CHANGE NOTICE (0)



BECHTEL
GAITHERSBURG, MD.

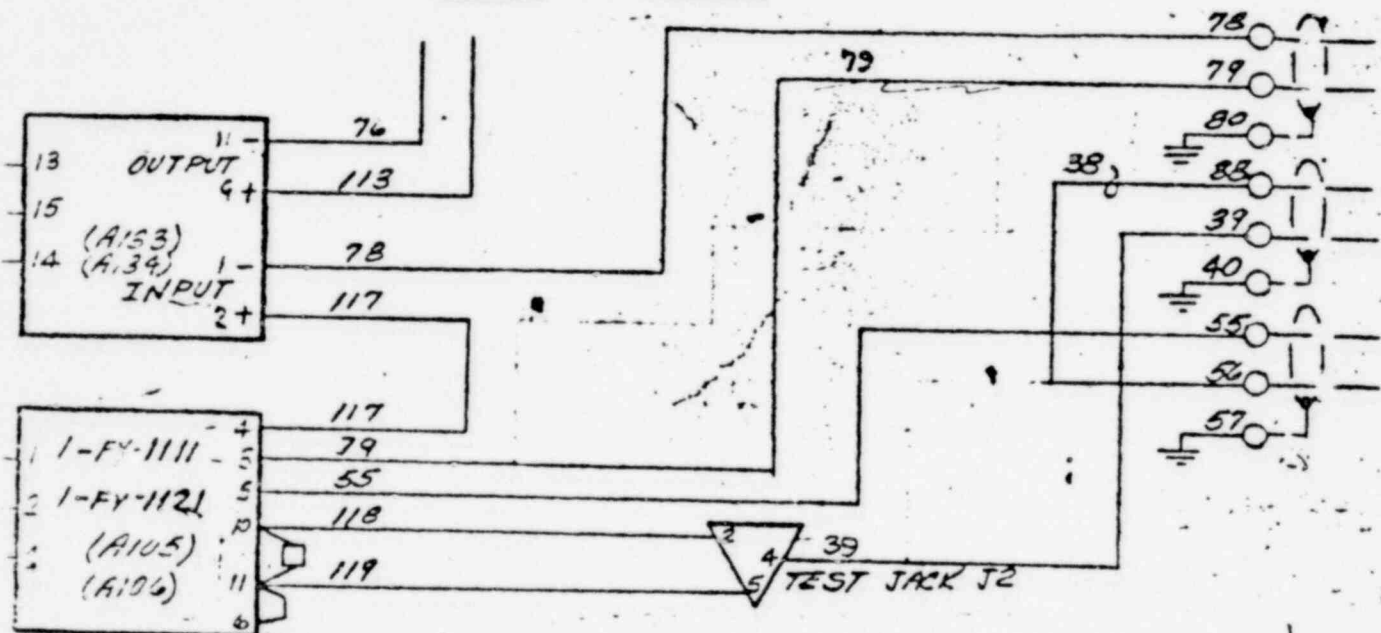
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DCN NUMBER M-633-2-2000	DATE 10-4-79	
PROJECT APPROVAL <i>JMS</i>		

OTHER DOCUMENTS AFFECTED BY THIS CHANGE: N/A

REASON FOR CHANGE: FCR 79-1035 UNIT NO. 1
(REF MFR# WD56E2456) ✓

DISPOSITION OF AFFECTED MATERIAL: REWORK SCRAP USE AS IS AS NOTED N/A

1C35 & 1C36



BEFORE

SEE PAGE 2 FOR AFTER

12856-01

POOR ORIGINAL

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Ref: Enclosure #4
Enclosure #5

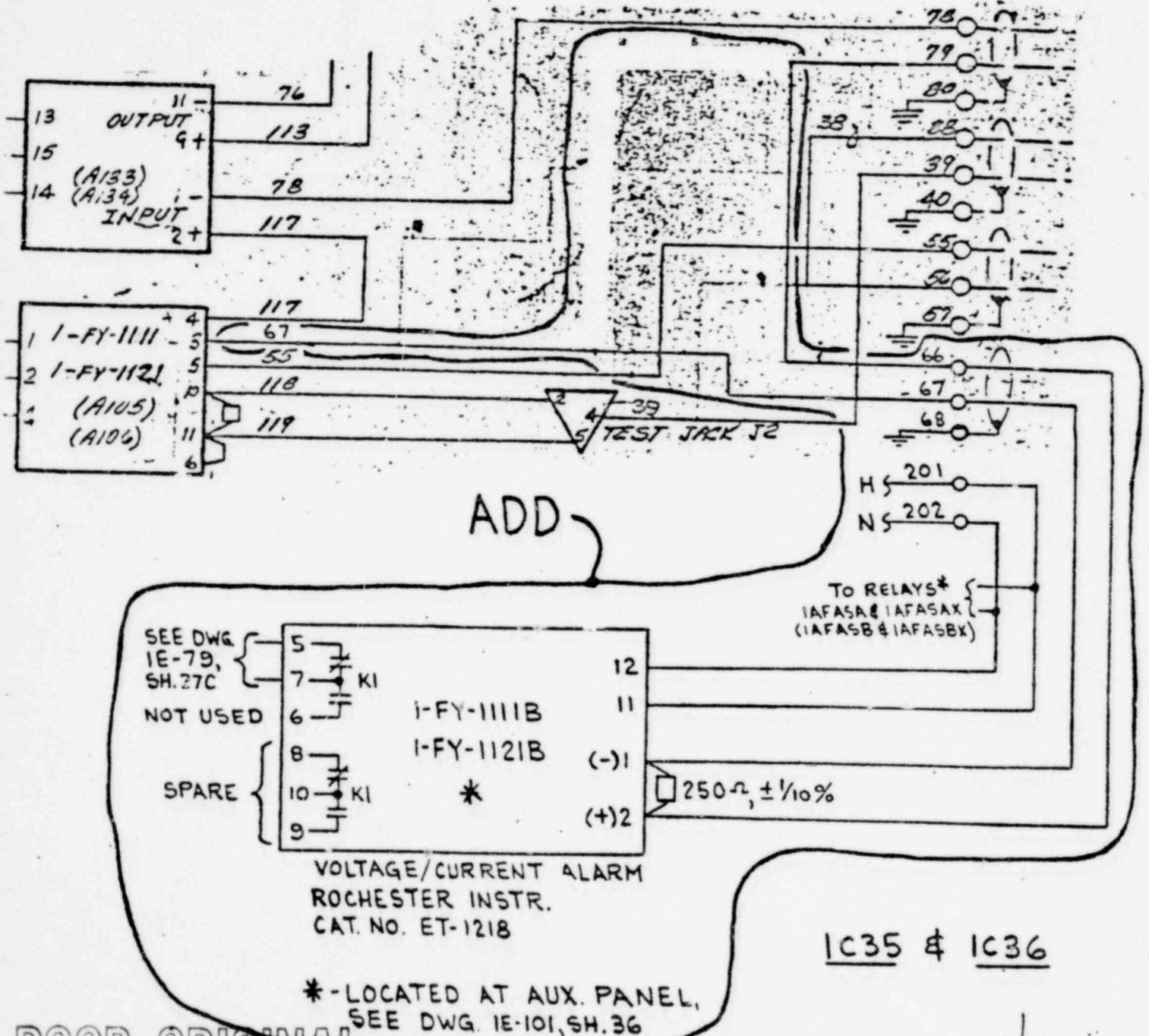
REVIEWED WITHOUT COMMENT	ARCHITECTURAL N/A	CIVIL N/A	CONTROLSYSTEMS NA	ELECTRICAL <i>BIR</i>	PLANT DESIGN N/A	MECHANICAL N/A
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BECHTEL
GAITHERSBURG, MD.

DRAWING CHANGE NOTICE

JOB NO.	DRAWING NO.	REV NO.
11865	6750 M-633-2	X
DCN NUMBER M-633-2-2000		DATE 18-4-71
CONTINUATION SHEET		
PAGE 2 of 4		



ADD

IC35 & IC36

* - LOCATED AT AUX. PANEL,
SEE DWG. IE-101, SH. 36

POOR ORIGINAL

AFTER

SEE PAGE 1 FOR BEFORE

1321 251

1.02-1374

DOCUMENT/ PAGE PULLED

ANO. 7911130304

NO. OF PAGES 1

REASON:

PAGE ILLEGIBLE:

HARD COPY FILED AT: PDR CF

OTHER _____

BETTER COPY REQUESTED ON ___/___/___

PAGE TOO LARGE TO FILM:

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1321 252