



GENERAL ELECTRIC COMPANY, 41 WOODFORD AVENUE, PLAINVILLE, CONN. 06062

Phone (203) 747-7

CONTRACTOR
EQUIPMENT
BUSINESS
OPERATIONS

August 24, 1983

Mr. Richard C. DeYoung
Director of Office of Inspections
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Washington, D.C. 20555

Dear Mr. DeYoung:

The following information was recently requested by the United States Nuclear Regulatory Commission subsequent to my June 15, 1982, letter to you describing certain reportable occurrences. This information was not available at the time the initial report was filed.

Date of Determination of Reportable Occurrence:

The potential defects described in my June 15, 1982, letter were determined to be reportable on June 15, 1982.

8308300784 830824
PDR ADOCK 05000259
S PDR

IE19
11

Mr. R. C. DeYoung

-2-

August 24, 1983

Number and Location of Defective Components:**AKR-30 and AKR-50 Low Voltage Power Circuit Breakers:**

<u>Location</u>	<u>Quantity</u>
Palo Verde Wintersburg, Arizona	29
Pilgrim One Plymouth, Massachusetts	2
Washington Public Power Supply System Richland, Washington	278
Waterford Taft, Louisiana	66
Wolf Creek Burlington, Kansas	85
Callaway Fulton, Missouri	114
Hope Creek Salem, New Jersey	245
Tennessee Valley Authority	177
Vogtle Waynesboro, Georgia	48

Ground Break Relays:

<u>Location</u>	<u>Quantity</u>
Hope Creek Salem, New Jersey	39

Mr. R. C. DeYoung

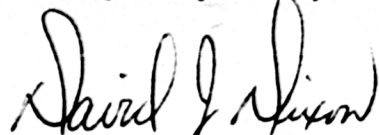
-3-

August 24, 1983

Also attached, as requested, is information that has been given to the purchaser of the affected products.

If you require any further information, please contact me.

Very Truly Yours,



David J. Dixon, Manager
Quality Assurance

cc: Mr. Uldis Potapovs, Chief
Vendor Program Branch
U.S. Nuclear Regulatory Commission-Region IV
611 Ryan Plaza Drive - Suite 1000
Arlington, Texas 76011

clt/Attach.
(2136P)

DISTRIBUTION EQUIPMENT DIVISION

SUBJECT

AKR-30 AND AKR-50 ELECTRICALLY OPERATED
LOW-VOLTAGE POWER CIRCUIT BREAKERS

TAB

175

NO.

9.11

SERVICE ADVICE

(FOR USE OF G-E EMPLOYEES ONLY)

The Distribution Equipment Division has recently determined that AKR-30 and AKR-50 electrically operated Low-Voltage Power Circuit Breakers may fail to close upon command due to certain defects which may exist in these devices. The causes of these possible failures have been traced to the following:

1. An improperly hardened closing spring prop.
1. A defective switch which is used in conjunction with the electrical closing circuitry.

ACTION TO BE TAKEN

I&SE Service Managers must acquaint their Service Engineers with the potential problem by reviewing the attached letters. All Nuclear Power Plants and customers with AKR circuit breakers in critical applications must be contacted. Care should be taken to ensure that Nuclear Power Plants receive the correct letter.

The text has been prepared for your use in such a manner that you can easily duplicate it on your letterhead, apply your signature, and mail it. The letters have been approved by the Distribution Equipment Division and should not be modified when mailing to customers.

Copies of each letter you send must be sent to the responsible sales engineers and to:

PREPARED BY

P. M. Piqueira

ISSUED BY

P. M. Piqueira

DATE

9/13/82

SUPERSEDES
ISSUE DATED

PAGE

1 of 5

DISTRIBUTION EQUIPMENT DIVISION

SUBJECT

AKR-30 and AKR-50 ELECTRICALLY OPERATED
LOW-VOLTAGE POWER CIRCUIT BREAKERS

TAB

175

NO.

9.11

SERVICE ADVICE

(FOR USE OF GE EMPLOYEES ONLY.)

J. A. Anderson
General Electric Company
Distribution Equipment Division
41 Woodford Avenue
Plainville, CT. 06062

The circuit breakers affected in Nuclear Power Plant applications are the same circuit breakers which were addressed in Service Advice 175-9.6 which was recently implemented. Consequently, it is the responsibility of I&SE to insure that all of the affected circuit breakers in Nuclear Power Plants are modified.

It is also the responsibility of I&SE to determine which AKR 30/50 circuit breakers in non-nuclear applications are considered to be critical and should be modified.

The decision to modify an affected circuit breaker, based upon its application, should be determined as a result of the experience gained in the implementation of Service Advice 175-9.6 and should also be made in conjunction with the responsible sales engineer. Only those customers which are to have circuit breakers modified should receive the attached letter.

After arranging with the customer to replace the affected parts, please contact Joe Anderson, Dial Comm 8*223-7524, Distribution Equipment Division, Product Service, for the needed material and all necessary instructions. As stated in the attached letter, replacement of the closing spring props and switches in Nuclear Plants is mandatory.

PREPARED BY

P. M. Piqueira

ISSUED BY

P. M. Piqueira

DATE

9/13/82

SUPERSEDES
ISSUE DATED

PAGE

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DISTRIBUTION EQUIPMENT DIVISION

SUBJECT

AKR-30 AND AKR-50 ELECTRICALLY OPERATED
LOW-VOLTAGE POWER CIRCUIT BREAKERS

TAB

175

NO.

9.11

SERVICE ADVICE

(FOR USE OF G E EMPLOYEES ONLY)

The I&SE office must notify Mr. J. A. Anderson when the necessary modifications at Nuclear Plants have been performed. All charges incurred by I&SE are to be billed to Distribution Equipment Division. It is anticipated that this Service Advice should not take more than four (4) hours per circuit breaker to implement and, if otherwise, the reasons should be indicated on the FSR.

When issuing an FSR for billing purposes, please reference Service Advice 175-9.11 and our special account number 421093.

If there are any questions in implementing this procedure, please contact Mr. J. A. Anderson.

DISTRIBUTION

List 1.31, Tabs: 1B, 2A, 2B, 2C, 2D, 2E.

PREPARED BY

P. M. Piqueira

ISSUED BY

P. M. Piqueira

DATE

9/13/82

SUPERSEDES
ISSUE DATED

PAGE

3 of 5

Our records indicate that you have low voltage switchgear containing General Electric electrically operated low voltage power circuit breakers in Nuclear Power Plant applications. It has come to our attention that electrically operated AKR-30 and AKR-50 circuit breakers manufactured before May, 1980, may contain a defective switch and an improperly heat treated part which, under certain conditions, could result in failure of the circuit breaker to close upon command.

Although we are unaware of any such failures of electrically operated AKR-30 and AKR-50 circuit breakers in Nuclear Power Plant applications, we intend to modify all affected breakers by replacing the affected parts at no cost to you.

We will contact you in the very near future to schedule the appropriate corrective action and whatever support you require will be provided by us at no cost to you.

Procedure 82-1
 Revision 0
 Page 1 of 2
 Prepared by R. A. Morris

Subject: Instruction for Replacement of Switchette on AKR 30/50
 Electrically Operated Circuit Breakers

Applies to: Breakers Classified As Nuclear Safety-related Class 1E

SEQUENCE	OPERATION/EXAMINATION OR TEST	PRODUCTION INITIAL/DATE	QUALITY INITIAL/DATE
1	See attached drawing (139C4619). Remove the switch (P17) from the bracket by removing the two round head screws (P18), lockwashers (P19), and nuts (P20).		
2	With switch dismounted, disconnect leads (Terminal Post 3 and 4) to its terminal.		
3	Install replacement switch care- fully pushing towards the link which operates it.		* _____
4	Install screws, lockwasers, nuts (P18, P19 and P20) and fully tighten to approximately 10 inch pounds to insure reliable opera- tion.		* _____
5	Check the continuity of the switch using an appropriate detector while pushing the closing solenoid armature closed.		* _____

* Indicates inspection verification
 required.

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GENERAL ELECTRIC

139C4619

Procedure 82-1
 Rev. 0
 Page 2 of 2
 Drawing #139C4619

APPROVED FOR ISSUE	DATE	REVISION	REVISION

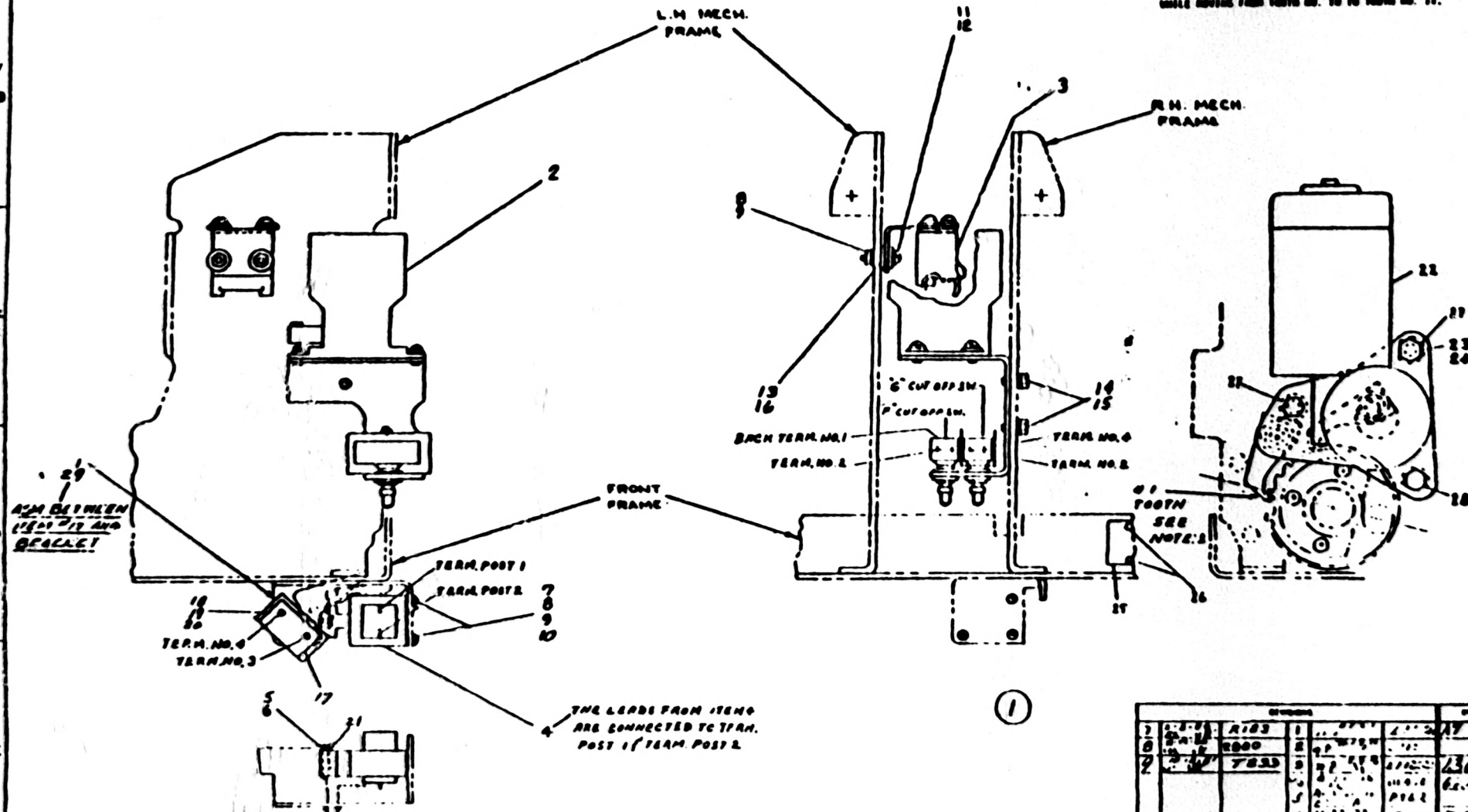
MOTOR OPERATED BRK CONTROLS

DATE: 11-1-58
 P/L ISSUED

NOTE: 1
 F. & S. MOTOR FRAME

ADDED NOTE NO. 1 HAS BEEN IDENTIFIED. TURN THE CAM-DRIVEN MOTOR OF THE MAINDRIVE FRAME AND COUNT THE STOPS AS THEY PASS THE HOLDING PAIR. BY USING A CONTINUOUSLY CLOSED, CLOSURE WHEN THE SWITCHES OPERATE AS THE ROTATED FRAME, THE NORMALLY OPEN "C" SWITCH ON THE LEFT WILL CLOSE, AND THE "S" SWITCH WILL OPEN.

ELECTRICAL DRAWERS SHOULD OPERATE THE SWITCHES WHILE MOVING FROM POSITION NO. 10 TO POSITION NO. 11.



ARM BETWEEN
 ITEM 17 AND
 29

FRONT
 FRAME

THE LEADS FROM ITEM 4
 ARE CONNECTED TO TERM.
 POST 1 & TERM. POST 2.

REVISION				DATE	
1	11-1-58	R183	1	11-1-58	11
2	11-1-58	R800	2	11-1-58	13
3	11-1-58	7833	3	11-1-58	13
4	11-1-58		4	11-1-58	13
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27	11-1-58		27	11-1-58	13
28	11-1-58		28	11-1-58	13
29	11-1-58		29	11-1-58	13

139C4619	139C4619
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Subject: Instruction on Replacement of Closing Spring Prop
 on AKR 30/50 Electrically Operated Breakers

Applies to: Breakers Classified As Nuclear Safety-related Class 1E

SEQUENCE	OPERATION/EXAMINATION OR TEST	PRODUCTION INITIAL/DATE	QUALITY INITIAL/DATE
1	Roll breaker out on extended rails or remove breaker and place on workbench.		
2	Remove escutcheon from breaker.		
3	See attached drawing 139C4619. Remove fasteners holding "W" anti- pump relay (P3) to its support.		
4	Remove two head screws (P14) and lock washers (P15) holding "X" relay support bracket to right hand mechanism side frame.		
5	Remove dismounted components from between the mechanism side plates. It will <u>not</u> be necessary to disconnect any leads. See photograph, Figure 1.		
6	See photograph, Figure 2. Remove the charge-discharge indicator from its post on the left hand mechanism side frame.		
7	See photograph, Figure 1. With a screwdriver, remove retaining ring from the right hand end of pin which supports the cut-off switch operator. This pin is directly above the pin which supports the closing spring prop.		
8	See NOTE. Remove cut-off switch operator by drifting the supporting pin to the left.		
<p style="text-align: center;">NOTE</p> <p>Check arrangement of spacers and retainers before removal so that they may be reinstalled in the proper sequence.</p>			

Procedure 82-2
 Rev. 0
 Page 2 of 5
 Prepared by R. A. Morris

SEQUENCE	OPERATION/EXAMINATION OR TEST	PRODUCTION INITIAL/DATE	QUALITY INITIAL/DATE
9	See photograph, Figure 3. Remove retaining ring from right end of pin which supports the closing spring prop.		
10	See photograph, Figure 4. Drift pin to the left until the prop is free and remove it.		*
11	See NOTE. As pin is moved back to its normal position, the components should be placed on the pin in the sequence of new prop, torsion spring, large spacer, and then the small spacer on the outside of the mechanism side place.		
NOTE The replacement of the torsion spring can be made easier by tying the partially wound spring with string as shown in <u>Figure 5</u> . After it is in place on the pin, the string may be cut and removed.			*
12	Reassemble the other dismounted components in the reverse order of their removal.		*
* Indicates verification inspection required.			

DEPT. 10						PAGE 10	
2	1000	1000	1	1000	1000	1000	1000
3	1000	1000	2	1000	1000	1000	1000
4	1000	1000	3	1000	1000	1000	1000
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47	1000	1000	46	1000	1000	1000	1000
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50	1000	1000	49	1000	1000	1000	1000

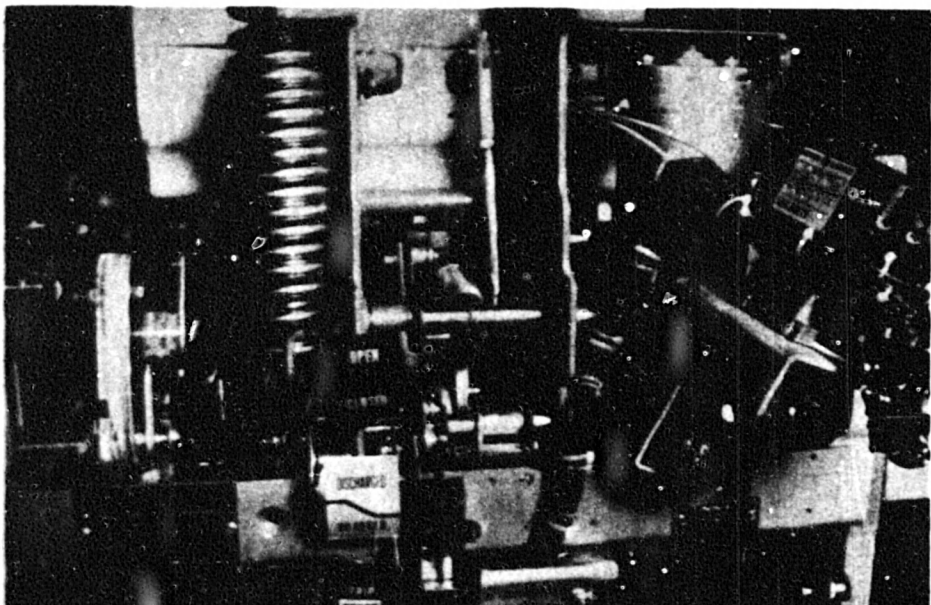


Fig. 1

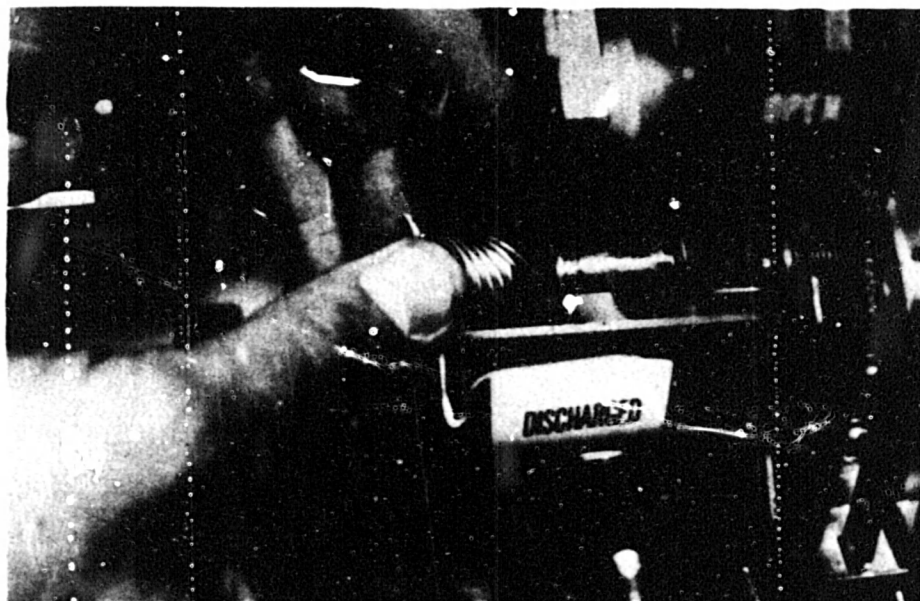


Fig. 2

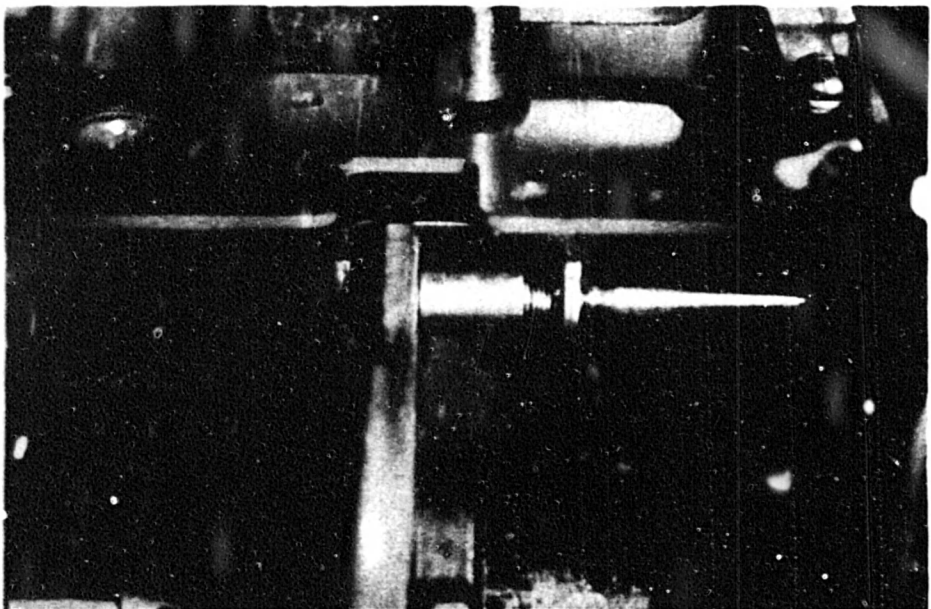


Fig. 3

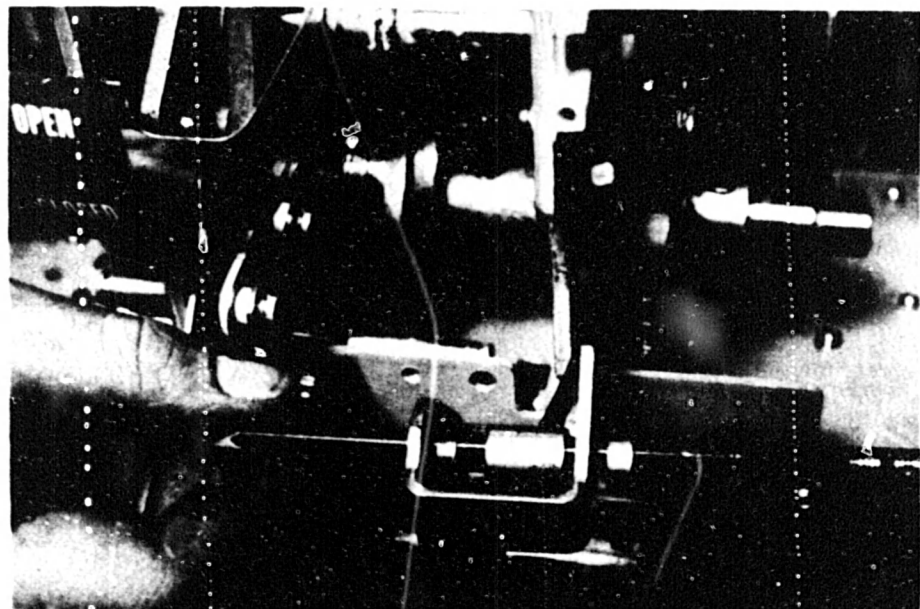


Fig. 4

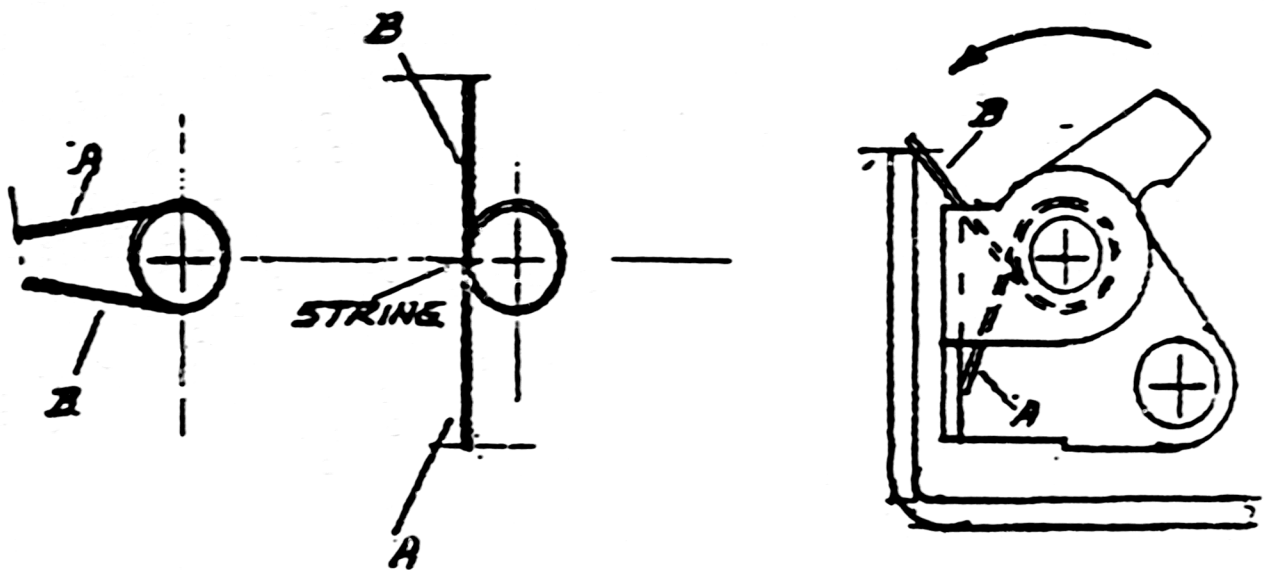


Fig. 5

DISTRIBUTION EQUIPMENT DIVISION

SUBJECT

GROUND BREAK RELAY SYSTEM

TAB

175

NO.

9.12

SERVICE ADVICE

(FOR USE OF GE EMPLOYEES ONLY)

The Distribution Equipment Division has recently encountered a limited number of instances where Ground Break Relay Components, catalog numbers TGSRI2 and TGSRI2Z, may cause the associated circuit breaker to trip without a ground fault having occurred. This erroneous command results from a latent manufacturing defect in the Silicon Controlled Rectifier which is used in the Ground Break Relay.

ACTION TO BE TAKEN

I&SE Service Managers must acquaint their Service Engineers with the potential problem by reviewing the attached letter. Customers with Ground Break Relays in critical applications must be contacted and arrangements made to change out the relays affected.

The text of the attached letter has been prepared for your use in such a manner that you can easily duplicate it on your letterhead, apply your signature, and mail it. The letter has been approved by the Distribution Equipment Division and should not be modified when mailing to customers.

Copies of each letter you send must be sent to the responsible sales engineers and to:

J. A. DiBattista
General Electric Company
Distribution Equipment Division
41 Woodford Avenue
Plainville, CT 06062

PREPARED BY

P. M. Piqueira

ISSUED BY

P. M. Piqueira

DATE

11/3/82

SUPERSEDES
ISSUE DATED

PAGE

1 of 3

DISTRIBUTION EQUIPMENT DIVISION

SUBJECT

GROUND BREAK RELAY SYSTEM

TAB

175

NO.

9.12

SERVICE ADVICE

(FOR USE OF G.E. EMPLOYEES ONLY)

It is the responsibility of I&SE to determine which Ground Break Relays are considered to be critical and should be replaced. The decision to replace an affected relay, based upon its' application, should be made in conjunction with the responsible sales engineer.

After arranging with the customer to replace the affected relays, please contact Joe DiBattista, Dial Comm 8*223-7236, Distribution Equipment Division, Product Service, for the replacement relays. As stated in the attached letter, replacement of the Ground Break Relays in Nuclear Power Plants is mandatory. The I&SE office must notify Mr. J. A. DiBattista when the necessary work at Nuclear Plants have been performed. All charges incurred by I&SE are to be billed to Distribution Equipment Division. When issuing an FSR for billing purposes, please reference Service Advice 175-9.12 and our special account number 421012.

If there are any questions in implementing this procedure, please contact Mr. J. A. DiBattista.

DISTRIBUTION:

List 1.31, Tabs: 2A, 2B, 3C.

PREPARED BY

P. M. Piqueira

ISSUED BY

P. M. Piqueira

DATE

11/3/82

SUPERSEDES
ISSUE DATED

PAGE

2 of 3

According to our records, you purchased General Electric Ground Break Relays, catalog numbers TGSR12 and TGSR12Z, between January, 1978 and June, 1982. We have recently encountered a limited number of instances where Ground Break Relays have caused their associated circuit breakers to trip without a ground fault having occurred. The cause of this failure has been traced to a latent manufacturing defect in one of the components used on the Ground Break Relays.

While the number of identified failures is small, we urge that these relays be replaced in all equipment which are used in critical applications such as hospitals, stand-by breakers, generator breakers, alternate source breakers, etc.

The General Electric Company will supply parts and technical supervision to aid in replacing the affected Ground Break Relays.