UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

JAN 17 1980

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In Reply Refer To:
RII:JPO
50-325, 50-324
50-400, 50-401
50-402, 50-403
50-261

Carolina Power and Light Company
ATTN: J. A. Jones
Senior Executive Vice President
and Chief Operating Officer
411 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

The enclosed IE Circular No. 80-01 is forwarded to you for information and if applicable necessary action in accordance to the attached General Electric Company Service Advice 721-162.2. No written response to this Circular is required. If you have any questions related to the subject, please contact this office.

Sincerely,

James P. O'Reilly
Director

Enclosures:
1. IE Circular No. 80-01
2. List of Recently Issued
IE Circulars

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

SSINS No.: 6830
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January 17, 1980

IE Circular No. 80-01

SERVICE ADVICE FOR GENERAL ELECTRIC INDUCTION DISC RELAYS

Alabama Power Company reported to the NRC on October 16, 1979 a potential problem with certain General Electric Company induction disc type protective relays. A higher than normal pick-up value was caused by petroleum jelly lubricant which under high temperature conditions can migrate to the backstop. At room temperature the lubricant can become adhesive and cause pickup values to be higher than setpoint values.

General Electric (GE) laboratory confirmed some higher than normal pickup values and recommended that users determine whether relays meeting the following criteria are in use at their facilities:

(1) Relay type: IAC, IAV, ICR, or IJCV, AND

(2) The relay date code (which is printed on a 3/4" x 3/8" sticker affixed to the relay cradle) has a number less than 50, followed by any of the following two letter codes:

    (a) Any first letter followed by H, J, K, L, or M; or

    (b) The letter combinations AN, BN, CN, DN, EN, DG, EG, FG, GG, HG, JG, KG, LG or MG.

    For example, 31GK would be considered, while 50 GK or 23HN would not be considered.

Experience has shown that the cleaning procedure recommended in GE Service Advice 721-162.1 may not in all cases remove all of the petroleum jelly which is lodged in place.

Based on the above, licensees are advised to apply G.E. Service Advice 721-162.2 (Enclosure A) to all relays that fall within the above two criteria.

No written response to this Circular is required. If you desire additional information regarding this matter contact the Director of the appropriate NRC Regional Office.

Attachment:
GE Service Advice 721-162.2

Attachment

General Electric Co.
SERVICE ADVICE 721-162.2
PROCEDURE FOR CORRECTING RELAYS WITH PETROLEUM JELLY LUBRICATED TIME DIALS

The relay time dial assembly can be removed, cleaned and reinstalled by the following procedure:

1. Remove relay cradle from case.

2. Record time dial position as found in your application.

3. Set the time dial to #10 position.

4. With relay oriented so that the disc is level, rotate the disc to the point the contacts just make. Now record the time required for the relay disc to reset from the point where the contacts make to the rest position at the 10 Time Dial with no current applied to the relay. (This information will be used to ensure that the pivot has been properly reinstalled.)

5. Remove the two self-tapping screws which hold the time dial hub in place.

6. Scribe a mark on the top pivot which will be used to later relocate its vertical position with respect to the frame.

7. Lossen the top pivot set screw about one turn and remove the top pivot.

8. a. While depressing the disc assembly, remove the time dial assembly by sliding to the front of relay. (There is a protrusion in the frame below the indentation near the set screw head which will inhibit smooth removal of the time dial. The time dial must be maneuvered downward somewhat in order to disengage the protrusion from the groove in the time dial.

8. b. On some relays the parts can be more easily removed by laying the relay cradle on its back and letting the time dial drop down while depressing the disc assembly. (Exercise care not to damage the back-up brush assembly while using this technique.)

   c. If a. or b. are not successful the lower jewel must be lowered. This can be done by loosening the set screw about one turn and then backing off the lower jewel exactly one turn. This should provide enough freedom of disc down-play to remove the dial. Relays requiring this procedure should be identified in order that the lower jewel can be returned to its exact previous position and be locked in place after the time dial is repositioned.

9. Examine all parts of the time dial assembly for the presence of petroleum jelly. The majority of the petroleum jelly will be found in the circular groove on the top side of the time dial.

10. Remove all traces of petroleum jelly from the parts using a Heptane saturated cotton swab. (See note 1) Be sure to clean the time dial backstop completely.

11. Remove all traces of petroleum jelly from the area on the metal frame against which the time dial mounts using a clean cotton swab saturated with Heptane.

12. Clean the back up brush assembly which rests against the time dial backstop by stroking with a Heptane saturated cotton swab. (Be careful not to damage the contacts by attempting to turn the disc CCW past the normal 10 time dial stopped position.)

13. When reinstalling the assembly be sure to place the dial at the #10 position.

14. Reposition lower jewel if disturbed during disassembly.

15. Replace the upper pivot at the level scribed previously and tighten set screw.

16. The disc shall have end-play (upward movement) which will be limited by the pivot. (The disc end-play shall not contact the magnetic assembly or the drag magnet.)

17. Recheck the time to reset at the #10 time dial position and see that it agrees with that previously recorded in step #4 and that no binding occurs.

18. Assure that the contacts make at the "0" setting of the time dial.

19. Place relay in its case.

20. Electrically check that the relay picks up within 5% of the tap value with the time dial at the "1/2" position.

21. Return time dial to original position recorded for your application.

If any problems are experienced with the relay then consult the applicable Instruction Book for details.

(NOTE 1): The suggested solvent to remove the lubricant is Heptane which is non-toxic, and represents a moderate fire hazard (intermediate between gasoline and paint thinner). It has a boiling point of 98°C. No smoking or open flames are permitted within 50 feet of an open container of Heptane, and all relay cleaning while using this solvent must be done in a well-ventilated area, perferably in a hood. Rubber gloves should be worn while cleaning.

IE Circular No. 80-01
January 17, 1980

Enclosure

RECENTLY ISSUED
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
80-01	Service Advice for General Electric Induction Disc Relays	1/17/80	All holders of Power Reactor OLs and CPs
79-25	Shcok Arrestor Strut Assembly Interference	12/20/79	All licensees and holders of power reactor CPs
79-24	Proper Installation and Calibration of Core Spray Pipe Break Detection Equipment on BWRs.	11/26/79	All Holders of a Power Reactor OL or CP
79-23	Motor Starters and and Contactors Failed to Operate	11/26/79	All Power Reactor Operating Facilities and Holders of Reactor CPs
79-22	Stroke Times for Power Operated Relief Valves	11/16/79	All Power Reactor Operating Facilities and all Utilities having a CP
79-21	Prevention of Unplanned Releases of Radioactivity	10/19/79	All holders of Power Reactor OLs and CPs
79-20	Failure of GTE Sylvania Relay, Type PM Bulletin 7305, Catalog 5U12-11-AC with a 12V AC Coil	9/24/79	All holders of Power Reactor OLs and CPs
79-19	Loose Locking Devices on Ingersoll-Rand Pumps	9/13/79	All Holders of Power Reactor OLs and CPs
79-18	Proper Installation of Target Rock Safety-Relief	9/10/79	All Holders of Power Reactor OLs and CPs
79-17	Contact Problem in SB-12 Switches on General Electric Company Metalclad Circuit Breakers	8/14/79	All Power Reactor Licensees with a CP and/or OL