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Georgia Power

the southern electric system

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U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

REFERENCE:
RII: JFO
50-321/50-366
I&E Bulletin
84-02

ATTENTION: Mr. James P. O'Reilly

GENTLEMEN:

The following information is provided as requested in I & E Bulletin 84-02, which was issued March 12, 1984.

Summary of Bulletin subject(s):

The purpose of I&E Bulletin 84-02 is to request that licensees and Construction Permit holders provide the NRC with their plans, including schedules, for replacing HFA relays in the Reactor Protection System and other safety related systems. In addition, licensees are asked to provide information concerning plans to upgrade surveillance and to justify continued operation in the interim.

Actions in Bulletin for all holders of Operating Licenses:

"Since GE asserts that the new Century Series HFA relay has been successfully tested to the environmental and seismic requirements specified in the IEEE-323-1974 and IEEE-344-1975 Standards, this relay, or one of equal qualification, may be an acceptable replacement for Lexan/Nylon HFA relays now in service at many nuclear power plants. However, the licensee is responsible for determining that all safety grade equipment in the plant, including relays, is qualified for its intended service. That is, the licensee must establish and document that the service life and reliability of the relay is acceptable, and that the relays have been qualified for the environmental and seismic conditions that each device may encounter at its installed location in the plant."

1. Plants in Operation

Item a. "Develop plans and schedules for replacing (1) nylon or Lexan coil spool-type HFA relays used in normally energized safety-related applications and (2) nylon coil spool-type HFA relays used in normally de-energized safety-related applications. The replacement relays and any replacements

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Item a. (Continued):

made in the future should meet the requirements of the applicable IEEE standards. The replacement program for energized and de-energized relays should be performed on a "best efforts" basis during plant outages of sufficient duration. The entire replacement program should be completed within two years from the date of this bulletin. (March 12, 1986)

The replacement schedule should consider the following recommended priority:

Nylon or Lexan normally energized in the reactor trip system.

Nylon or Lexan normally energized in other safety-related applications.

Nylon normally de-energized in the reactor trip system.

Nylon normally de-energized in other safety-related applications."

Response to Item a:

Replacement of the existing Plant Hatch HFA relays is scheduled for the Unit 1, 1984 refueling outage (RPS relays only) and the Units 1 and 2, 1985 refueling outages. The priority will be to replace normally energized HFA relay coils first, with replacement of de-energized coils following. Replacement will be with GE Century Series HFA relays, or equivalent, which have been fully qualified for usage at Plant Hatch.

Item b. "During the period before relay replacement, develop and implement surveillance plans that include:

- (1) Monthly functional tests of all reactor trip system normally energized relays that verify relay contacts change state when the relay coil is de-energized;
- (2) Visual inspections of all safety-related normally energized relays as soon as practical upon receipt of this bulletin. Thereafter, similar inspections should be accomplished in conjunction with the monthly functional test. These visual inspections should verify that relay coils are not deteriorating (e.g., inspect coil bobbins for visible cracks or melting), and should confirm cleanliness of the relay pole pieces."

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Response to Item b:

- (1) All reactor trip system normally energized relays are currently tested at least once per month using the following procedures:
 - a. HNP-1/2-3001 - High Reactor Pressure Instrumentation FT&C.
 - b. HNP-1/2-3002 - High Drywell Pressure Instrument (RPS) FT&C.
 - c. HNP-1/2-3003 - Reactor Water Level (RPS) FT&C.
 - d. HNP-1/2-3004 - High Scram Discharge Volume Level Float Switch Instrument FT&C.
 - e. HNP-1/2-3005 - Main Steamline High Radiation Instrument FT&C.
 - f. HNP-1/2-3006 - MSIV Closure Instrument Functional Test.
 - g. HNP-1/2-3007 - Turbine Stop Valve Fast Closure Instrument FT&C.
 - h. HNP-1/2-3008 - Turbine Stop Valve Instrument Function Test.
 - i. HNP-1/2-3052 - IRM Instrument Functional Test.
 - j. HNP-1/2-3054 - APRM Instrument FT&C.
 - k. HNP-1/2-3013 - Reactor Manual Scram Functional Test.

- (2) A visual inspection of the end flange of coil bobbins/spools of all safety-related normally energized relays on both units was performed by the cognizant System Engineer on June 13, 1984, to verify that the relay coils were not deteriorating. The inspection revealed no major visible cracks or signs of melting. Also, cleanliness around the relay pole pieces was confirmed.

A procedure for performing visual inspections on both units will be issued by August 25, 1984. During the interim, the cognizant System Engineer will perform visual inspections on the normally energized relays on both units once a month. Also, he will provide a status report on the inspection to the Regulatory Compliance group. The procedural instructions will be based on the recommendations of GE SIL No. 44, Supplement 4.

- Item c. "Provide a basis for continuing operation for the period of time until the normally energized relays are replaced. This basis should include a discussion of those measures addressed in Items 1a and 1b and any other preventive and/or corrective measures taken or planned."

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Response to Item c:

As is noted in both the subject I & E Bulletin and also in the appropriate GE SILs, the primary cause of HFA relay failure is aging of the coil insulation. Since aging of the coil typically results in visible degradation of the insulation well before relay failure actually occurs, GPC has determined that the monthly program of visual inspections and functional tests described in the Responses to Items "a" and "b" above are adequate to ensure that the functions of safety-related equipment will not be compromised by degraded HFA relays. Site personnel involved in the inspection and maintenance of these devices have been thoroughly briefed on identification of preliminary coil degradation symptoms, and also on the importance of the interim inspection program. Furthermore, the interim period prior to replacement of these relays is estimated to be less than 3 months for the Hatch-1 RPS relays and less than 18 months for other Hatch-1 relays and less than 1 year for Hatch-2 based on current refueling outage scheduling.

Sincerely yours,

CT More for

L. T. Gucwa

CBS

xc: J. T. Beckham, Jr.
H. C. Nix, Jr.
Senior Resident Inspector