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September 20, 1993

Docket Nos. 50-321
50-366

HL-3226
005118

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant
Request to Revise Technical Specifications:
Scram Discharge Volume Level Switch Surveillance Frequency

Gentlemen:

In accordance with the provisions of 10 CFR 50.90, as required by 10 CFR 50.59(c)(1), Georgia Power Company (GPC) hereby proposes a change to the Plant Hatch Units 1 and 2 Technical Specifications, Appendix A to Operating Licenses DPR-57 and NPF-5, respectively.

The request proposes a revision to the Units 1 and 2 Channel Functional Test frequency for the scram discharge volume float type level switches.

This submittal requests an extension of the Channel Functional Test surveillance interval for the Units 1 and 2 Scram Discharge Volume (SDV) float type level switches from quarterly to once per 18 months.

Enclosure 1 provides a detailed description of the proposed change and the circumstances necessitating the change.

Enclosure 2 describes the bases for our determination that the change does not involve a significant hazards consideration.

Enclosure 3 provides page change instructions for incorporating the proposed amendments. The proposed Technical Specifications pages and markups of the changes follow enclosure 3.

A General Electric report which supports the extension of the surveillance interval is also attached.

To allow time for procedure revisions and orderly incorporation into copies of the Technical Specifications, Georgia Power Company requests the proposed amendment, once approved by the NRC, be issued with an effective date of no later than 60 days from the date of issuance of this amendment.

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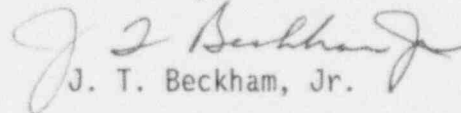
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U.S. Nuclear Regulatory Commission
September 20, 1993

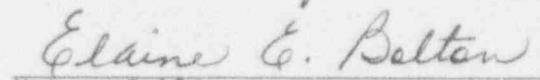
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Mr. J. T. Beckham, Jr. states that he is duly authorized to execute this oath on behalf of Georgia Power Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

Sincerely,


J. T. Beckham, Jr.

Sworn to and subscribed before me
this 20^d day of Sept. 1993


Notary Public

My Commission Expires: Aug. 8, 1995

OCV/cr
005118

Enclosures:

- 1) Description of Proposed Changes
- 2) Bases for Proposed Changes
- 3) Revision Insertion Instructions

Attachment: GENE 770-25-1092-1, September, 1993

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebnetter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

State of Georgia
Mr. J. D. Tanner, Commissioner - Department of Natural Resources

Enclosure 1

Edwin I. Hatch Nuclear Plant Request to Revise Technical Specifications: Scram Discharge Volume Level Switch Surveillance Frequency

Description of Proposed Change

This Technical Specifications revision request proposes that the frequency of the Channel Functional test for the Plant Hatch Units 1 and 2 Scram Discharge Volume (SDV) float type level switches (1&2C11-N013A-E) be extended from quarterly to once per eighteen months.

Instrument and Control personnel must perform the Channel Functional Test at the actual level switches. Typically, this involves about .5 man-rem of exposure per surveillance. To determine if the test interval could be lengthened, General Electric (GE) was asked to provide Georgia Power Company (GPC) with an analysis supporting the extension of the surveillance interval for the float type switches. This analysis concluded that it is technically acceptable to extend the surveillance interval on the float type level switches from quarterly to once per eighteen months.

The SDV is the volume created by a large U shaped line leading from each of the hydraulic control banks on each side of the reactor. These large pipe manifolds are designed to have enough volume to be able to accept all the water discharged from each individual control rod drive, with ample margin. The instrument volume provides the means for detecting water accumulation in the discharge column and automatically scrambling the reactor should the discharge volume start to fill.

During normal reactor operation, the discharge volume is open to atmospheric pressure. When a scram is initiated, the air operated vent and drain valves close and the volume accepts reactor water discharged from each of the control rod drives.

There are four level sensors on each side of the SDV that initiate a scram. On each side of the SDV, two of the four sensors are float type level indicators. The other two level sensors are thermal sensors and give a scram signal when hot water comes into contact with the temperature element. In addition, there are two level switches in the SDV that indicate high water level below the scram setpoint. One switch causes a control room alarm when its trip point is reached and the other switch causes a control rod block.

Enclosure 1
Description of Proposed Change

Two SDV scram failures were considered in the GE analysis. One a blockage of the SDV such that both sides of the SDV would fill, the second failure assumes that only one side of the SDV fills with water. In the second case, only four scram level sensors in the affected instrument volume would detect the level rise. For this reason, the second case failure was found to be more sensitive to the interval extension. The scram failure rate was determined to have increased (for both units) from $3.41\text{E-}10$ to $1.53\text{E-}09$ failures per year. The failure rates for the first case where the entire SDV is blocked were not as limiting.

The small increase in the scram failure rate probability is negligible, especially when compared to the expected reduction in personnel exposure. With a typical exposure of .5 man-rem per calibration per unit, extending the surveillance interval to once per refueling outage represents a total reduction of 5 man-rem per eighteen month period.

It is also appropriate to mention that, in the early 1980s, the industry was having problems with damaged float assemblies in BWR scram discharge volumes. Per IEB 80-14, the NRC required BWRs to perform visual inspections of their floats and some crushed floats were found at Hatch. These problems were ultimately determined to be, at Hatch, the result of hydrodynamic forces present in the instrument volume. As a result, modifications were completed to the vent lines which resulted in the removal of these forces. Crushed floats have not been observed at Hatch since implementation of these modifications. Also, the previously mentioned four thermal detectors have been added and thus provide a redundant high level Reactor Protection System trip. These modifications and additions have substantially reduced the possibility of a crushed or bent float assembly resulting in a scram failure on high SDV level.

Overall, GPC believes the reduction in personnel exposure, coupled with the negligible change in scram failure rate, more than justifies extending the surveillance interval on these switches.

Enclosure 2

Edwin I. Hatch Nuclear Plant Request to Revise Technical Specifications: Scram Discharge Volume Level Switch Surveillance Frequency

Bases for Proposed Change

The commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment will not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated, 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety. Georgia Power Company has reviewed this proposed license amendment and determined its adoption will not involve a significant hazards consideration. The bases for this determination are as follows:

Bases for Proposed No Significant Hazards Consideration Determination:

The change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The requested change increases the interval for the SDV float type level switches from quarterly to once per eighteen months. No physical changes are being made to systems or equipment which would make the plant more vulnerable to any accident previously evaluated in chapters 14 and 15 of the Unit 1 and Unit 2 FSARs, respectively. Neither are changes being made concerning the operation of the plant as a result of this proposed amendment. Therefore, the probability of occurrence of the accidents described in chapters 14 and 15 of the Unit 1 and Unit 2 FSARs are not increased.

In addition, increasing the frequency of surveillance from quarterly to once per eighteen months does not increase the likelihood of inadvertent switch actuation; therefore, the probability of inadvertent reactor scrams is not increased.

These switches are not used for the mitigation of any previously analyzed accidents or transients and therefore, changing their frequency does not increase the consequences of these events.

Enclosure 2
Bases for Proposed Change

As documented in the specific GE analysis for Hatch (GENE 770-25-1092-1) the scram failure frequency increases from $3.41\text{E}-10$ per year to $1.53\text{E}-09$ per year. This is not a significant increase in the failure rate. Furthermore, this slight increase is justified by the man-rem exposure savings on plant personnel which will be realized by the less frequent surveillances.

If an actual failure to scram were to occur, the proposed change would not affect the operation of the Standby Liquid Control System (SBLC) (or any other system used to combat the failure to scram). Neither does the proposed change affect when and under what circumstances the SBLC would be initiated. The consequences of a failure to scram event would therefore not be increased.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously analyzed.

The float type level switches do not function to prevent accidents. Their purpose is to monitor the water level in the instrument volume to detect any abnormal filling of the SDV and to provide control room alarms, control rod blocks, and a reactor scram should the water level reach certain points. Also, this proposed change does not involve any physical changes to the switches or the instrument or discharge volumes. Neither are any physical changes or new modes of operation involved concerning the RPS, CRD or any other plant system.

For these reasons, the possibility of a new or different accident is not introduced.

3. The proposed amendment does not involve a significant reduction in the margin of safety.

There are four level sensors on each side of the SDV, two thermal switches and two float type switches (which are the concern in this submittal). There are also two more switches of the float type which provide control room annunciation and a control rod block. In their analysis for Hatch, GE performed an industry review of Magnetrol level switches to determine their failure rate. GE found, through the Nuclear Power Reliability Data System (NPRDS) that the failure rate for these switches being used in CRD system applications is $1.8\text{E}-6$ failures per hour; for all applications, the failure rate was $2.9\text{E}-6$ failures per hour. Even if the float type switches were to fail, the thermal switches could still trip the RPS and initiate a scram before the volume filled to beyond its capacity to accommodate scram water.

Enclosure 2
Bases for Proposed Change

Additionally, the Channel Calibration will continue to be performed at the current frequency; the proposed request only changes the frequency of the functional test. This amendment does not propose any change in the surveillances or the surveillance intervals for the thermal switches. Furthermore, the proposed extension of the float switch channel functional test interval does not significantly increase the probability of failure of the float type switches. As mentioned in the answer to question no. 1, the probability of a failure to scram event (as documented in the GE Hatch specific analysis) is increased only from $3.41\text{E-}10$ events per year to $1.53\text{E-}09$ events per year by extending the functional test interval from once per 3 months to once per eighteen months. This does not represent a significant reduction in the margin of safety.

The very small increase in the probability of a failure to scram event is acceptable because of the reduction in the radiation exposure of Instrument and Controls personnel performing the surveillance. The surveillance on these switches represents one of the highest sources of exposure for I&C personnel. The exposure received from this surveillance is about .5 man-rem per calibration. Extending the frequency of surveillance to once per 18 months would significantly decrease personnel exposure thus increasing the margin of personnel safety.