UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 180 TO FACILITY OPERATING LICENSE DPR-57

AND AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NPF-5

GEORGIA POWER COMPANY, ET AL.

EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-321 AND 50-366

1.0 INTRODUCTION

By letter dated October 14, 1991 (Reference 1), Georgia Power Company, et al. (the licensee), requested amendments to Facility Operating License Nos. DPR-57 and NPF-5 for Edwin I. Hatch Nuclear Plant, Units 1 and 2. The proposed amendments would change the Technical Specifications (TS) and associated Bases related to the removal of the Rod Sequence Control System (RSCS), operation of the Rod Worth Minimizer (RWM), and correct minor administrative items associated with the above changes.

2.0 DISCUSSION

The RSCS restricts rod movement to minimize the individual worth of control rods to lessen the consequences of a Rod Drop Accident (RDA). Control rod movement is restricted through the use of rod select, insert, and withdrawal blocks. The RSCS is a hardwired (as opposed to a computer controlled), redundant backup to the RWM. It is somewhat independent of the RWM in terms of direct inputs and outputs but the two systems are similar and compatible and have the same intent. The RSCS and RWM are designed to monitor and block when necessary operator control rod selection, withdrawal and insertion actions, and thus assist in preventing significant control rod pattern errors which could lead to a control rod with a high reactivity worth (if dropped). A significant pattern error is one of several abnormal events all of which must occur to have an RDA which might exceed fuel energy density limit criteria for the event. It was designed only for possible mitigation of the RDA and is active only during low power operation (currently generally less than 10 or 20 percent power) when an RDA might be significant. It provides rod blocks on detection of a significant pattern error. It does not prevent an RDA. A similar pattern control function is also performed by the RWM, a computer controlled system. All reactors having an RSCS also have an RWM.

In August 1986, the BWR Owner's Group (BWROG) in cooperation with General Electric proposed an Amendment 17 to GESTAR II (References 2 and 3) which would eliminate the requirement for the RSCS and retain the RWM but lower the setpoint for turnoff (during startup) or turnon (during shutdown) from 20 to 10 percent. The NRC staff review concluded that the proposed changes were acceptable, and approved Amendment 17, but imposed several additional requirements which would be necessary to implement the changes. The staff safety analysis and the additional requirements were provided in an attachment to Reference 4.

The additional requirements were:

(1) The TS should require provisions for minimizing operations without the RWM system operable.

(2) The occasional necessary use of a second operator replacement should be strengthened by a utility review of relevant procedures, related forms and quality control to assure that the second operator provides an effective and truly independent monitoring process. A discussion of this review should accompany the request for RSCS removal.

(3) Rod patterns used should be at least equivalent to Banked Position Withdrawal Sequence (BPWS) patterns.

3.0 EVALUATION

The licensee has proposed changes to several TS and associated Bases related to three categories discussed above. (Reduction of the RWM setpoint to 10 percent has been previously approved for Hatch 1 and 2.) These changes are:

A. Elimination of the RSCS requirement.

B. Increased administrative control of RWM operability (intended to result in decreased use of the second operator as a substitute for the RWM). The licensee has also discussed the procedures for second operator actions, when required, to ensure independent monitoring of the control rod patterns. BPWS control rod patterns are already required by the TS. However, this requirement has been reemphasized in several of the TS changes.

C. Administrative changes deleting unnecessary text and reformatting, and error corrections.

The NRC staff review and basis for approval of the removal of the RSCS, as proposed by the licensee in sections of the submittal relating to topic A, is provided in Reference 4. The proposed changes fall within the scope of that staff review and approval. The present staff review of the proposed TS changes that implement these operational changes concludes that they are appropriate, clearly stated and are acceptable.

The licensee has increased the administrative control of the RWM, as required in the staff review of RSCS removal. The proposed revision to the TS requires the RWM to be operable at the beginning of each startup, with only one exception per year. This follows the pattern of previously approved RWM TS for BWR 3 operation (discussed in Reference 4) and previous reviews for RSCS removal (e.g., Limerick). These have been found to provide the desired improvement in reliability for the system. Also, as required, the TS and procedures for the use of a second operator (when the RWM is inoperable) have been reviewed by the licensee and have been discussed in the submittal, and appear from the staff review to provide a suitable independent check on the rod patterns. Finally, as required, the TS revision prescribes the use of rod patterns equivalent to the BPWS patterns approved in previous staff reviews to maintain low control rod reactivity worths. The changes and reviews are in accord with the staff requirements of Reference 4 and are acceptable, and the proposed changes to the TS and Bases appropriately implement the changes.

Hatch 1 and Hatch 2 TS have different formats, specification numbering and specification language, and therefore details of the changes are different. However, the content of the changes is similar. The principal changes are to the RWM and RSCS TS. Other changes are secondary, and primarily to accommodate the RSCS removal.

The following TS changes have been proposed and they are all acceptable.

(1) Hatch 1 and 2: The Index is changed because of changed or eliminated titles.

(2) Hatch 1 and 2: The Bases for Limiting Safety System Settings have references to the RSCS removed.

(3) Hatch 1: TS 3.3.B.1 has an administrative error corrected.

(4) Hatch 2: TS 3.1.3.6 has references to the RSCS removed.

(5) Hatch 2: TS 3/4.1.3.7 (Control Rod Position Indication) has requirements for the Full-in and Full-out indicators removed since they were only required for the RSCS.

(6) Hatch 1: TS 3/4.3.G.1, and Hatch 2: TS 3/4.1.4 (the RWM TS) have the improved requirements for administrative control, discussed above, added to the specification.

(7) Hatch 1: TS 3/4.3.G.2, and Hatch 2: TS 3/4.1.4.2 (the RSCS TS) are removed.

(8) Hatch 1: TS 3/4.3.G.2 is returned as a TS on Special Test Exceptions, and Hatch 2: TS 3/4.10.2 (Special Test Exception, "RSCS") is changed to "RWM" and all reference to the RSCS is removed. The previous RSCS relaxations of requirements for special tests are changed to second operator verification requirements.

(9) Hatch 1: Bases 3.3.G and J (References), and Hatch 2: Bases 3/4.1.4 (and related references) and 3/4.10.2 are changed to correspond to the revised TS.

In conclusion, the NRC staff has reviewed the reports submitted by the licensee for Hatch 1 and 2 proposing TS changes relating to the removal of the RSCS. Based on this review, we have concluded that appropriate documentation was submitted and the proposed TS changes satisfy staff positions and requirements in these areas. Operation in the modes proposed for Hatch 1 and 2 is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Georgia State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (57 FR 13132). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Howard J. Richings, NRR, SRXB

Date: May 20, 1992

REFERENCES

1. Letter and enclosures from J. T. Beckham, Georgia Power Company, to USNRC, dated October 14, 1991, "Request to Revise Technical Specifications to Eliminate the Rod Sequence Control System."

2. Letter and enclosures from T. A. Pickens, BWR Owners' Group to G. Lainas, NRC, dated August 15, 1986, "Amendment 17 to GE Licensing Topical Report NEDE-24011-P-A."

3. NEDE-24011-P-A-9, September 1988, "General Electric Standard Application for Reactor Fuel," (GESTAR II).

4. Letter from A. Thadani, NRC, to J. Charnley, General Electric, dated December 27, 1987, "Acceptance for Referencing of Licensing Topical Report NEDE-24011-P-A, Revision 8, Amendment 17."