October 10, 1991

Docket No. 50-366

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Mr. W. G. Hairston, III
Senior Vice President -
Nuclear Operations
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: ISSUANCE OF AMENDMENT - EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 2 (TAC NO. 81559)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 115 to Facility Operating License No. NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit No. 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 13, 1991, as supplemented September 30, 1991.

The amendment revises the Hatch Unit 2 TS 3.3.6.6 on Traversing Incore Probe Operability Requirements.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance of the amendment will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

Kahtan N. Jabbour, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 115 to NPF-5
2. Safety Evaluation

cc w/enclosures:
See next page

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NAME	LBerry	KJabbour	MYoung	DMatthews
DATE	10/8/91	10/8/91	10/9/91	10/10/91

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DATED: October 10, 1991

AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NPF-5 - Hatch Nuclear Plant, Unit 2

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

October 10, 1991

Docket No. 50-366

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Senior Vice President -
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Georgia Power Company
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Kahtan N. Jabbour

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Office of Nuclear Reactor Regulation

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cc w/enclosures:
See next page

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

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-366

EDWIN I. HATCH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 115
License No. NPF-5

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Edwin I. Hatch Nuclear Plant, Unit 2 (the facility) Facility Operating License No. NPF-5 filed by Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees) dated September 13, 1991, as supplemented September 30, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-5 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 115, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: October 10, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 115

FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page are identified by Amendment number and contains vertical lines indicating the areas of change.

Remove Page	Insert Page
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INSTRUMENTATION

TRAVERSING INCORE PROBE SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.6.6. The traversing incore probe system shall be OPERABLE with:

a. Four* movable detectors, drives and readout equipment to map the core, and

b. Indexing equipment to allow all four* detectors to be normalized in a common location.

APPLICABILITY:

When the traversing incore probe is used for:

a. Recalibration of the LPRM detectors and

b. Monitoring the APLHGR, LHGR, or MCPR

ACTION:

With the traversing incore probe system inoperable preventing normalization of the TIP detectors, do not use the system for the above applicable monitoring or calibration functions for more than 31 EFPD following the last normalization. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.6.6. The traversing incore probe system shall be demonstrated OPERABLE by normalizing each of the above required detector outputs prior to or during use when required for the above applicable monitoring or calibration functions, if not performed within the previous 31 EFPD.

*Operability requirements can be met with three movable detectors until the end of Cycle 10.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE ~~DPR~~ NPF-5

GEORGIA POWER COMPANY, ET AL.

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 2

DOCKET NO. 50-366

1.0 INTRODUCTION

By letter dated September 13, 1991, as supplemented September 30, 1991, Georgia Power Company, et al. (GPC or the licensee), requested to change Technical Specification (TS) 3.3.6.6. The September 30, 1991, letter modified the TS such that the reduction in detectors would apply to Cycle 10 only. This change was within the scope of the action noticed and did not change the initial proposed no significant hazards consideration determination. Specifically, the proposed changes would require that three traversing incore probes (TIP) detectors be operable only for Cycle 10 as opposed to four which are currently required. The changes will permit data from operable symmetric TIP measurement locations to be substituted in the inoperable locations.

During a recent performance of rod maneuvers for the purpose of exchanging control sequences, it was discovered that the Hatch Unit 2 "C" TIP machine would not index properly due to a problem apparently associated with the indexing machine. Current TS 3.3.6.6 requires that all 31 TIP measurement locations be operable for the TIP systems to be operable for required periodic power distribution measurements. Thus, the reactor would have to be shut down for the required repair since the repair cannot be performed at power. The proposed TS change is intended to avoid such a shutdown, and only for Cycle 10, when suitable backup information is available.

The licensee stated, in its September 13, 1991, submittal that the problem will be corrected at the earliest shutdown, which will be no later than the end of the scheduled Unit 2 Fall 1992 refueling outage.

2.0 EVALUATION

2.1 Core Symmetry

Hatch Unit 2 has four gamma sensitive TIP machines that are used to periodically determine the power distribution in the core and to calibrate the Local Power Range Monitors (LPRMs). There are 31 TIP locations distributed in a symmetric radial pattern throughout the Hatch 2 core. All four TIP machines can transverse one common location in the center of the core in order to reconcile differences

associated with the various machines. During normal operation with a symmetric control rod pattern, the core power distribution is correspondingly symmetric, and symmetric TIP measurement locations provide similar information to within statistical differences which are accounted for in safety analyses and measured in the course of cycle startup tests. It is normal, approved practice to translate by symmetric transfers the information from measured locations to unmeasured locations when calculating, via the measurements and the process computer, the core power distribution.

When fuel bundles have been loaded in an octant symmetric pattern, and the rod pattern is octant symmetric, the radial and axial power shapes will be similar in both halves of the core. As a result, under these normal operating circumstances it would be acceptable to similarly supply data from operating symmetric locations to replace inoperable TIP location information.

2.2 TIP Statistical Uncertainty

The current Hatch 2 process computer model has a "total core TIP uncertainty" comprised of a combination of LPRM, model, and TIP uncertainties. The licensee analyses showed that a low value in the TIP uncertainty (2.2 percent) is to be expected, since Hatch is using gamma detectors and geometry uncertainty components are expected to be small. Statistically combining the above uncertainties yields a total TIP uncertainty of 8.1 percent which is below the 8.7 percent limit referred to in the approved Topical Report NEDE-24011-P-A-10, "General Electric Standard Application for Reactor Fuel," dated February 1991. The submitted analyses show that the measured TIP uncertainty is well within the required limits.

2.3 Effect of Operation Without the "C" TIP Machine on Thermal Limits

Hatch Unit 2 has been operating in the octant symmetric "A" sequence since the beginning of this cycle (Cycle 10). In assessing the impact of the inoperable "C" TIP machine (or the absence of any one TIP machine) on the thermal limits, the licensee performed a simulation to determine if data obtained before the inoperability of the "C" TIP machine could be regenerated using symmetric pairs in place of the "C" machine locations. The results of the simulation showed that there is less than 0.2 percent difference in the Minimum Critical Power Ratio (MCPR), the linear heat generated, and the Maximum Axial Planar Linear Heat Generation Rate (MAPLHGR) calculations. This strongly suggests that the core is indeed operating in a highly symmetric configuration, and that the use of the substituted TIP readings will have a minimal effect on the thermal limit calculations. Further analyses indicated that the 3D power distributions have a nodal uncertainly of 2.4 percent and a fuel bundle uncertainty of 0.9 percent. LPRMs calibrated with substituted symmetric pairs will not impact the function of the LPRMs or any other instrument system (e.g., Average Power Range Monitor (APRM), Rod Block Monitor (RBM)) that use the LPRM signals as input. Moreover, the licensee will continue to operate the reactor in an octant symmetric core and a resulting cross core (diagonally) symmetric measurement location pattern; and the total core TIP uncertainty for the cycle will be less than 8.7 percent (standard deviation). Consequently, these systems will continue to accurately assess the power and thermal limits in the core.

Hatch Unit 2 intends to repair the present TIP inoperability problem at the first opportunity arising from shutdown for other causes. Thus, this change is approved only for Cycle 10 and the NRC staff finds it acceptable.

With regard to Section C of the applicability section of TS 3.3.6.6, the licensee requested that this section be deleted since the TIP system is no longer used for the readjustment of APRM gains or setpoints. Amendment 39, approved by the NRC in July of 1984, implemented the APRM/RBM Technical Specifications (ARTS) improvement program and removed the section on APRM setpoints. Thus, this change is administrative and is acceptable.

3.0 EXIGENT CIRCUMSTANCES

The Commission's regulations, 10 CFR 50.91, contain provisions for issuance of amendments when the usual 30-day public notice period cannot be met. One type of special exception is an exigency. An exigency is a case where the Commission and licensee need to act promptly and that time does not permit the Commission to publish a Federal Register notice allowing 30 days for prior public comment, and it is determined that the amendment involves no significant hazards consideration.

Under such circumstance, the Commission notifies the public in one of two ways: by issuing a Federal Register notice providing an opportunity for hearing and allowing at least two weeks for prior public comments, or by issuing a press release discussing the proposed changes, using the local media. In this case, the Commission used the first approach.

The licensee submitted the request for an amendment on September 13, 1991. It was noticed in the Federal Register on September 24, 1991 (56 FR 48218), at which time the staff proposed a no significant hazards consideration determination. The licensee requested that the amendment be issued no later than October 10, 1991.

The licensee stated that on September 8, 1991, during performance of rod maneuvers for the purpose of exchanging control rod sequences, it was discovered that the Hatch Unit 2 "C" TIP machine would not index properly due to a problem apparently associated with the indexing mechanism. correcting the problem requires access to the primary containment (drywell). However, with Unit 2 operating at 100% power, access is not possible at this time. The present TS requires four operable TIP machines for recalibration of the LPRM detectors every 31 Effective Full Power Days (EFPD). Performance of the core map within this period of time is necessary to maintain the validity and accuracy of the Periodic Core Performance Log (P1). P1 is the process computer program which calculates the MCPR, Linear Heat Generation Rate (LHGR), and Average Planar Linear Heat Generation Rate (APLHGR). Inability to determine compliance with these thermal limits per TS 3.2.1, 3.2.3, and 3.2.4 would require reducing core thermal power to less than 25%.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated, or (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. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

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

   The TIP system is not used to mitigate the consequences of or prevent any accident, nor are assumptions made in any accident analysis relative to the operation of the TIP system. Implementation of this proposed change will not change the function of any plant systems needed to prevent or mitigate the consequences of postulated accidents. Therefore, reducing the number of required Operable TIP machines from four to three and using substitute TIP traces for the calibration of LPRMs and the monitoring of thermal limits does not increase the probability of occurrence of a previously evaluated accident.

   The change in power distribution determination in the process computer does not affect the consequences of anticipated operational occurrences (transients) described in the FSAR since the MCPR safety limit is not violated during the events. Provided the control rods are positioned in an "A" sequence and the total core TIP uncertainty for the cycle is less than or equal to 8.7%, neither the MCPR operating limit nor the safety limit need to be increased. The 8.7% uncertainty factor is the number used in the MCPR safety limit analysis (NEDE-24011-P-A-10, ["]General Electric Standard Application for Reactor Fuel," February, 1991). The current total core TIP uncertainty has been determined to be 8.1%, which does not exceed the 8.7% requirement.

   Hatch Unit 2 has been operating in the octant symmetric "A" sequence since the beginning of the cycle. To provide an assessment of operating with the "C" TIP machine out of service, a simulation was performed to calculate the [e]ffect on thermal limits if a state point obtained before the inoperability of the "C" TIP was recalculated using the symmetric pairs in place of the "C" machine locations. The results of this simulation [shown elsewhere in the licensee's submittal dated September 13, 1991], indicate that the core is operating in a highly symmetric manner and that use of the substitute TIP readings will have a minimal affect on thermal limit calculations. Hatch Unit 2 will continue to be operated in the "A" sequence for the duration of the "C" TIP outage. Plant procedures will be revised to reflect this.

Therefore, since the total core TIP uncertainty is acceptable and operation of Hatch Unit 2 will continue in the "A" sequence throughout the duration of the "C" TIP outage, reducing the number of required Operable TIP machines from four to three does not decrease the margin of safety to the MCPR operating and safety limits and the radiological dose consequences for previously analyzed accidents are not increased.

The proposed change which removes the reference to the APRM setpoint is an administrative change. It reflects the fact that we [the licensee] no longer adjust the APRM trip or the APRM gain for high peaking factors. This change was made in 1984 and was done as part of the APRM/RBM [Rod Block Monitor] Technical Specification (ARTS) improvement program. Since neither plant operation nor equipment is being affected, this change does not increase the probability of occurrence of the consequences of a previously evaluated accident.

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

Using substitute TIP traces and changing the Hatch 2 Technical Specifications such that the TIP system is operable with three movable detectors does not change the basic operation of the plant. Nor does it change the operation of any safety related plant equipment.

Although the Process Computer will be operating differently in the calculation of core thermal limits, the difference only involves the assignment of incoming data to various arrays for the calculation of nodal powers, thermal limits, etc. Furthermore, the process computer is not required for the safe shutdown of the plant nor is is used for the mitigation of consequences of accidents. Therefore, changing this Technical Specification such that the TIP system is operable with three TIP machines does not increase the likelihood of an accident occurring different from any analyzed in the FSAR.

The proposed change removing the reference to APRM setpoint adjustment is administrative in nature, reflecting how the plant is actually operated. No changes to plant equipment or operation result from it, therefore, the probability of any accident occurring is not increased.

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

The margin of safety for some of the accidents analyzed in the FSAR is the Technical Specification fuel cladding integrity (MCPR) safety limit. This safety limit ensures that at least 99.9% of the fuel rods in the core will avoid transition boiling during an anticipated operational occurrence (transient). As documented in General Electric Generic Licensing Topical Report, GESTAR-II, the MCPR safety limit is based, in part, on a statistical combination of uncertainties in key parameters, including total core TIP uncertainty. As long as the total uncertainty

is less than or equal to what was used to calculate the original MCPR safety limit (8.7%), the margin of safety is unchanged. Substitute TIP traces can be used to monitor thermal limits and calibrate LPRMs only if the core is loaded symmetrically and is operating with a symmetric, "A" sequence rod pattern.

The margin of safety is not reduced as a result of using this method because we [the licensee] have shown that the total core TIP uncertainty is less than 8.7% of the Hatch Unit 2 core is being operated in the "A" rod sequence. Unit 2 will continue to be operated in the "A" rod sequence at least until the return of the "C" TIP machine to service. Plant procedures will be revised to reflect this.

The proposed change to eliminate reference to the APRM setpoint adjustment is administrative in nature. No changes to plant equipment or plant operation results, thus the margin of safety is not reduced.

Based upon the above considerations, the NRC staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

5.0 STATE CONSULTATION

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

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 48218). Accordingly, the amendment meets 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 amendment.

7.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: A. C. Attard, SRXT/DST

Date: October 10, 1991