August 8, 1994

Docket No. 50-366

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Mr. J. T. Beckham, Jr.
Vice President - Plant Hatch
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Dear Mr. Beckham:

SUBJECT: ISSUANCE OF AMENDMENT - EDWIN I. HATCH NUCLEAR PLANT, UNIT 2 (TAC NO. M89923)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 134 to Facility Operating License NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit 2. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated July 19, 1994, as supplemented August 4, 1994.

The amendment revises TS 3.3.6.6, "Traversing Incore Probe System," for Hatch Unit 2 to permit the traversing incore probe (TIP) system to be considered operable with less than four operable TIP units.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance 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. 134 to NPF-5
2. Safety Evaluation

cc w/enclosures:
See next page
*See previous concurrence

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DATE	8/5/94	8/5/94	7/29/94	8/8/94	8/5/94

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 8, 1994

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Vice President - Plant Hatch
Georgia Power Company
P. O. Box 1295
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Kahtan N. Jabbour

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Project Directorate II-3
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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. 20555-0001

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. 134
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 the Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated July 19, 1994, as supplemented August 4, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 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. 134 , 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

Herbert N. Berkow, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: August 8, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 134

FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

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

Remove Pages	Insert Pages
3/4 3-57	3/4 3-57
-	3/4 3-57a
-	3/4 3-57b
B 3/4 3-4	B 3/4 3-4

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 required 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:

a. With one or more TIP measurement locations inoperable, required measurements may be performed as described in 1 or 2 below.*

1. TIP data for an inoperable measurement location may be replaced by data obtained from that string's redundant (symmetric) counterpart if the substitute TIP data were obtained from an operable measurement location and the control rod pattern is octant symmetric, provided the total TIP uncertainty for the present cycle has been measured to be less than 8.7 percent.

2. TIP data for an inoperable measurement location may be replaced by data obtained from the on-line core monitoring system (process computer) normalized with available operating measurements, provided the total number of simulated channels (measurement locations) does not exceed eight.

b. Otherwise, with the TIP system inoperable, do not use the system for the above applicable monitoring or calibration functions for more than 31 EFPD following the last normalization.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*Action a is applicable until the end of Cycle 12.

INSTRUMENTATION

TRAVERSING INCORE PROBE SYSTEM

LIMITING CONDITION FOR OPERATION

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.

(This page intentionally left blank.)

MONITORING INSTRUMENTATION (Continued)

3/4.3.6.4 POST-ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the post-accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess important variable following an accident.

3/4.3.6.5 SOURCE RANGE MONITORS

The source range monitors provide the operator with information on the status of the neutron level in the core at very low power levels during startup. At these power levels, reactivity additions should not be made without this flux level information available to the operator. When the intermediate range monitors are on scale adequate information is available without the SRMs and they can be retracted.

3/4.3.6.6 TRAVERSING INCORE PROBE SYSTEM

The OPERABILITY of the traversing incore probe system with the specified minimum complement of equipment ensures that the measurements obtained from use of this equipment accurately represent the spatial neutron flux distribution in the reactor core.

The specification allows use of substituted TIP data from symmetric channels, adjusted by the plant computer to remove machine and power level dependent biases, if the control rod pattern is symmetric. The source of substituted data may also be calculations performed by the on-line computer core monitoring system which are normalized to available real data. Symmetry is not required for substitution of calculated readings.

3/4.3.6.7 MCRECS ACTUATION INSTRUMENTATION

The OPERABILITY of the MCRECS ensures the necessary protective actions will be automatically initiated to provide protection for control room personnel.

3/4.3.6.8 (Deleted)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 134 TO FACILITY OPERATING LICENSE NPF-5

GEORGIA POWER COMPANY, ET AL.

EDWIN I. HATCH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-366

1.0 INTRODUCTION

By letter dated July 19, 1994, as supplemented August 4, 1994, Georgia Power Company, et al. (the licensee), proposed a license amendment to revise Technical Specification (TS) 3.3.6.6, "Traversing Incore Probe System," for the Edwin I. Hatch Nuclear Plant, Unit 2. The revision would permit the traversing incore probe (TIP) system to be considered operable with less than four operable TIP machines, and also allow the utilization of substitute TIP data for the inaccessible locations from either symmetric TIP locations or from normalized TIP data as calculated by the online core monitoring system. The August 4, 1994, letter provided additional information that did not change the scope of the July 19, 1994, application and initial proposed no significant hazards consideration determination.

During a recent performance of the normalization procedure for the TIP detectors, required to be performed every 31 effective full power days, it was discovered that the Hatch Unit 2 "D" TIP was stuck in channel 8, indicating a problem with the indexing mechanism. Current TS 3.3.6.6 requires that all four TIP detectors and their associated hardware be operable for the required periodic core power distribution measurements.

The indexing mechanism is located inside the primary containment (drywell), access to which is not possible at the present power level. Based on the last successfully performed local power range monitors (LPRMs) calibration, the next one is to be completed no later than August 9, 1994. If the surveillance is not performed by that time, it will be necessary to declare the average power range monitors (APRMs) inoperable and, thus, enter an immediate reactor shutdown in accordance with TS 3.3.1.b, Action 3. The proposed TS change is intended to avoid such a shutdown because suitable backup information is available.

The licensee stated, in its July 19, 1994, submittal that the problem will be corrected at the earliest cold shutdown, which will be no later than the end of the scheduled Unit 2 fall 1995 refueling outage.

2.0 EVALUATION

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 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 the differences associated with the measurements from various machines.

Hatch Unit 2 employs an adaptive learning algorithm using online, as well as historical, core data inputs to improve power calculations within the reactor physics model. This is accomplished by effectively modifying the neutron leakage terms to force the calculated power distribution to match the measured power distribution as determined by the TIP system. Subsequent calculations use the adaptive coefficients and LPRM readings during monitoring between TIP measurements. The methodology is capable of calculating substitute normalized TIP data when measured TIP data are missing. This reactor physics methodology was used to study the effect of operating with a failure to scan strings assigned to a TIP machine due to a TIP machine failure. Detailed statistical comparisons of calculational results with all TIP machines operable, to calculational results with a TIP machine failure, showed a TIP machine out-of-service uncertainty of 1.8 percent. This small additional uncertainty, when combined with all the other uncertainties associated with the core monitoring, yields an overall uncertainty well below 8.7 percent. Thus, it was concluded that the plant can be operated indefinitely, including performance of an LPRM calibration, with a total of eight out-of-service TIP measurement locations. The 8.7 percent limit has been approved in Topical Report NEDE-24011-P-A-10, "General Electric Standard Application for Reactor Fuel," dated February 1991.

The proposed amendment would allow the utilization of substitute TIP data in lieu of data from inaccessible locations. The substitute data will be derived from either symmetric TIP locations or from normalized TIP data as calculated by the online core monitoring system. The action statement of TS 3.3.6.6 is modified to allow substitute TIP data to be utilized when data is not available.

The staff has reviewed the licensee's submittal and accepts the above justification that the TIP system, as supplemented by the online core monitoring system, will continue to accurately assess the core power and thermal limits. The NRC staff finds the proposed change acceptable until the next cold shutdown or the end of cycle 12, whichever occurs earlier.

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 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 circumstances, the Commission notifies the public in one of two ways: by using 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 July 19, 1994. It was noticed in the Federal Register on July 22, 1994 (59 FR 37516), at which time the staff proposed a no significant hazards consideration determination. The licensee requested that the amendment be issued prior to August 9, 1994.

In the July 19, 1994, submittal, the licensee stated that, on July 11, 1994, with Hatch Unit 2 operating at 100% rated thermal power, Plant Hatch shift personnel were performing the procedure for the TIP normalization required to be performed every 31 effective full power days. Nearing completion of the procedure, personnel were unable to place the "D" TIP into channel 9. It had apparently stuck in channel 8, indicating a problem with the indexing mechanism. The indexing mechanism is located inside the primary containment (drywell), access to which is not possible at the present power level. Based on the last successfully performed LPRM calibration, the next one is to be completed no later than August 9, 1994. If the surveillance is not performed by that time, it will be necessary to declare the APRMs inoperable and, thus, enter an immediate reactor shutdown in accordance with TS 3.3.1.b, Action 3.

The problem with the "D" TIP could not have been foreseen, although Plant Hatch has had problems with the indexing mechanism in the past. However, each problem is unique and has a different root cause. Subsequent to the discovery of the problem, efforts to return the "D" TIP to operable status were initiated. These efforts were led by the licensee's engineering staff with the onsite vendor representatives as well. The licensee has performed several tests which included verification of proper voltage to the indexer motor, verification of proper motor winding resistance as well as over-voltage tests on the indexing mechanism, and also conducted a reverse motor test in an attempt to free the indexer; however, this attempt was unsuccessful. The licensee's efforts to repair the TIP, without drywell access, were exhausted on Friday, July 15, 1994, and the proposed amendment was timely submitted.

Based on the above and pursuant to 10 CFR 50.91(a)(6), the staff has determined that exigent circumstances exist which warrant the issuance of this amendment before the expiration of the 30-day notice.

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 prevent, or mitigate the consequences of, any previously analyzed accident or transient, nor are any assumptions made in any accident analysis relative to the operation of the TIP system. No other safety related system is affected by this change.

   The use of substitute values from symmetric TIP locations or from calculations performed by the on-line computer core monitoring system does not affect the consequences of plant transients previously evaluated in the FSAR [Final Safety Analysis Report], because the total core TIP reading (nodal power) uncertainty is less than 8.7%. Thus, the MCPR [minimum critical power ratio] safety limit is not affected.

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

   The proposed change does not involve the installation of any new equipment, or the modification of any equipment designed to prevent or mitigate the consequences of accidents or transients. Therefore, the change has no effect on any accident initiator, and no new or different type of accidents are postulated to occur.

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

   The total core TIP reading uncertainties will remain within the assumptions of the licensing basis, thus, the margin of safety to the MCPR safety limits is not reduced. The ability of the computer to accurately represent nodal powers in the reactor core is not compromised. The ability of the computer to accurately predict the LHGR [linear heat generation rate], APLHGR [average planar linear heat generation rate], MCPR, and its ability to provide for LPRM calibration, is not compromised. Therefore, the margin of safety is not significantly 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 a requirement with respect to the installation or use of facility components 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 made a final determination that the amendment involves no significant hazards consideration. 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 Contributors: K. N. Jabbour
L. E. Phillips

Date: August 8, 1994