January 12, 2004

Mr. H. L. Sumner, Jr.
Vice President - Nuclear
Hatch Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT 2 RE: ISSUANCE OF AMENDMENT (TAC NO. MB6953)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 181 to Renewed Facility Operating License NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit 2. The amendment consists of changes to the Technical Specification in response to your application dated December 4, 2002, as supplemented by letters dated June 24 and October 23, 2003.

The amendment revises the turbine building high temperature primary containment isolation value specified in Table 3.3.6.1-1, Item 1f, from 194 ^{o}F to 200 ^{o}F.

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,

/RA/

Steven D. Bloom, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-366

Enclosures:
1. Amendment No. 181 to NPF-5
2. Safety Evaluation

cc w/encls: See next page

January 12, 2004

Mr. H. L. Sumner, Jr.
Vice President - Nuclear
Hatch Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNIT 2 RE: ISSUANCE OF AMENDMENT (TAC NO. MB6953)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 181 to Renewed Facility Operating License NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit 2. The amendment consists of changes to the Technical Specification in response to your application dated December 4, 2002, as supplemented by letters dated June 24 and October 23, 2003.

The amendment revises the turbine building high temperature primary containment isolation value specified in Table 3.3.6.1-1, Item 1f, from 194 ^{o}F to 200 ^{o}F.

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,
/RA/
Steven D. Bloom, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-366

Enclosures:
1. Amendment No. 181 to NPF-5
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	OGC
PDII-1 R/F	ACRS
BBonser	GHill (2)
CHawes (hard copy)	
JNakoski	EHackett
TBoyce	AStubbs

*See previous concurrence NRR-058

OFFICE	PDII-1/PM	PDII-1/LA	SPLB/SC*	OGC*	PDII-1/SC
NAME	SBloom:as	CHawes	DSolorio	KKannler	JNakoski
DATE	1/8/04	1/8/04	12/02/03	1/06/04	1/9/04

OFFICIAL RECORD COPY

Package No.: ML040140264 TS: ML040130196
ADAMS Accession No.: ML040120713

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

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 RENEWED FACILITY OPERATING LICENSE

Amendment No. 181
Renewed 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) Renewed Facility Operating License No. NPF-5 filed by Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated December 4, 2002, as supplemented by letters dated June 24 and October 23, 2003, 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 Renewed Facility Operating License No. NPF-5 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 181 are hereby incorporated in the license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

John A. Nakoski, Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Change

Date of Issuance: January 12, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 181

RENEWED FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Remove	Insert
3.3-51	3.3-51

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 181 TO RENEWED FACILITY OPERATING LICENSE NPF-5

SOUTHERN NUCLEAR OPERATING COMPANY, INC., ET AL.

EDWIN I. HATCH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-366

1.0 INTRODUCTION

By letter dated December 4, 2002, as supplemented by letters dated June 24 and October 23, 2003, Southern Nuclear Operating Company, Inc. (Southern Nuclear, the licensee), et al., proposed a license amendment to change the Technical Specification (TS) for the Edwin I. Hatch Nuclear Plant, Unit 2 (HNP-2). The proposed change would revise the allowable value for the turbine area temperature high primary containment isolation setpoint specified in Table 3.3.6.1-1, item 1f from 194 °F to 200 °F. This change is desired because the current allowable value does not provide a sufficient margin from the operating temperature without compensatory measures. The present setpoint requires operating the two turbine building chillers in parallel, and a trip of one chiller may result in the trip of the operating chiller due to an increased load. The licensee would prefer to operate one chiller and have the other in standby. The standby chiller will auto start if the operating chiller trips. The proposed revision would allow such operation. The supplemental letters dated June 24 and October 23, 2003, provided clarifying information that did not change the scope of the December 4, 2002, application nor the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

Appendix A of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, General Design Criterion 54, “Piping Systems Penetrating Containment,” requires that “Piping systems penetrating primary reactor containment shall be provided with leak detection, isolation, and containment capabilities having redundancy, reliability, and performance capabilities which reflect the importance to safety of isolating these piping systems.”

The HNP-2 Improved TSs (ITSs) states that the ambient temperature monitoring instrumentation allowable value is chosen to detect a leak equivalent to between 1 percent and 10 percent of rated steam flow. The Unit 2 Final Safety Analysis Report (FSAR) indicates the same detection capability for the main steam line space temperature leak detection system. Therefore, the criterion for the turbine building area leak detection is to be able to detect a leak equivalent of from 1 percent to 10 percent of rated main steam flow.

3.0 TECHNICAL EVALUATION

The licensee stated in its December 4, 2002, submittal, that prior to the implementation of the HNP-2 ITS in 1995, the allowable value for the turbine building area temperature was 200 °F. The licensee also states that this allowable value was supplied by General Electric, and that the supporting analysis for this value could not be located. As a result, a calculation was performed in 1986 that used the TS allowable value of 200 °F as the analytical limit. The calculation was performed only to confirm that the existing normal trip setpoint was adequate. Upon implementation of the ITS, the calculation was referenced as the basis for the analytical limit of 200 °F. Based on the 200 °F analytical limit, the TS allowable value was revised to 194 °F.

The licensee is seeking to revise the main steam line isolation trip setpoint TS allowable value for the turbine building area back to 200 °F. This is based on the turbine area temperatures calculated in Southern Company Services' calculation SMNH-94051, "Turbine Building Leak Detection," dated January 18, 1995. Calculation SMNH-94051, submitted as part of this license amendment request, uses the GOTHIC 4.0 computer code to calculate the transient temperature response in the open space at the northeast end of the turbine building due to postulated steam leaks. The area modeled by the code provides an unrestricted boundary to mass and energy flow in the turbine building. The leak modeled is 1 percent of rated main steam flow. This leakage will cause a significant rise in local temperatures, but, it is not large enough to result in significant pressurization of the turbine building. GOTHIC 4.0 is a general purpose thermal-hydraulics computer program developed by Numerical Application, Inc., for the Electric Power Research Institute, and has previously been approved, on a case specific basis for use in licensing applications, such as containment analysis. The Nuclear Regulatory Commission (NRC) staff determined that the use of the GOTHIC code in this particular application is acceptable for HNP-2.

The NRC staff found, in its review of the licensee's submittals, that the turbine area initial temperatures used were not based on measured data. Therefore, the NRC staff issued a request for additional information (RAI) to the licensee asking for further justification for the initial temperature values used in the calculation. The licensee, in its response letter dated October 23, 2003, stated that the steam leak results in a rapid temperature rise and a new end state condition that is dominated by steam properties, since most of the air is displaced by steam. Thus, the initial conditions would have a minimal effect on the end state conditions. The licensee also included, as part of its response an estimate of the relative contribution of the steam leak to the overall heat load based on the initial steady state heat loads in the area prior to the leak, and the heat load to the turbine area that results from the energy addition to the area due to the postulated leak.

The licensee calculated the transient temperature response for a 1 percent rated main steam leak occurring at the inlet elbow of the southernmost steam line in the condenser bay. The licensee chose this location based on the leak's proximity to detection instrumentation, the leak's proximity to boundaries through which large energy losses will occur, and preliminary runs modeling leaks at various locations along the steam lines. This location was judged by the licensee to be the location at which a leak would be least likely to produce a sufficient temperature rise to be detected by the leak detection instrumentation. Based on the NRC staff's review of the calculation submitted by the licensee, the NRC staff agrees that the leak location assumed by the licensee is appropriate for leak detection purposes because it results in the minimum temperature increase in the nodal volumes surrounding the leak.

The NRC staff reviewed the calculated estimate of the heat load to the turbine area that was included in the licensee's October 23, 2003, response to the NRC staff RAI question number 3b. The NRC staff does not agree with the licensee's calculated heat load. However, because the licensee subsequently provided the NRC staff with calculation SMNH-94051, the heat load estimate provided in the licensee's RAI response was not needed, and was not used by the NRC staff in its review. Based on the NRC staff's review of calculation SMNH-94051, the NRC staff agrees with the licensee that the energy release from the postulated leak is large enough so that the endpoint is not highly dependent on the initial condition.

The NRC staff also requested that the licensee provide relevant information concerning any time response requirements for detection of the steam leak. The licensee, in its response, stated that no credit is taken for the turbine building temperature instruments in any transient or accident analysis in the FSAR, and, therefore, there is no time response requirement. Although there is no requirement to detect the steam leak within a specific time limit, the NRC staff notes that the detection time will be short. The licensee's calculation shows that for a 1 percent steam leak, the temperature response is such that the analytical limit will be reached and exceeded in a matter of minutes after the onset of the leak.

The NRC staff has reviewed the calculation provided by the licensee. The calculation used by the licensee is based on winter operations which is conservative and appropriate for leak detection purposes. The leak is postulated to occur near a boundary that allows energy to be lost across the boundary. In addition, the leak is also postulated to occur in an area in which the spacing between detectors is greatest. Based on the review of the calculation the NRC staff finds that the licensee's calculation represents the "worst case" for leak detection purposes.

The NRC staff has also reviewed the time-dependent temperature profiles contained in calculation SMNH-94051 to determine the acceptability of the proposed new turbine area allowable value. The end point temperature in the node containing the detector is calculated to be 226 °F. This temperature is reached within 5 minutes of the onset of the leak, and is significantly higher than the proposed revised allowable value (200 °F), and its corresponding analytical limit (207 °F). Based on the resultant end point temperature, and the margin that exists between the calculated temperature and the analytical limit, the NRC staff finds the revised allowable value to be acceptable.

The licensee stated that no safety-related components are located in the vicinity of the turbine building in which ambient temperatures are monitored. Therefore, the allowable value change will not result in an adverse environmental impact of safety-related systems, structures or components.

The NRC staff concludes, based on the considerations discussed above, that the proposed change to the allowable value for the turbine area temperature high primary containment isolation setpoint is acceptable. The change in turbine area temperature high primary containment isolation setpoint allowable value does not impact on the ability of the turbine area leak detection system to detect a steam leak of 1 percent rated flow as specified in the plant FSAR, and does not result in an adverse environmental impact on safety-related systems, structures, or components.

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 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 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 (68 FR 2807). 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: A. Stubbs

Date: January 12, 2004

cc:

Laurence Bergen
Oglethorpe Power Corporation
2100 East Exchange Place
P.O. Box 1349
Tucker, GA 30085-1349

Mr. R. D. Baker
Manager - Licensing
Southern Nuclear Operating
Company, Inc.
P. O. Box 1295
Birmingham, Alabama 35201-1295

Resident Inspector
Plant Hatch
11030 Hatch Parkway N.
Baxley, Georgia 31531

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE., Suite 1252
Atlanta, Georgia 30334

Steven M. Jackson
Senior Engineer - Power Supply
Municipal Electric Authority
of Georgia
1470 Riveredge Parkway, NW
Atlanta, Georgia 30328-4684

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
244 Washington St., S. W.
Atlanta, Ga. 30334

Arthur H. Domby, Esq.
Troutman Sanders
Nations Bank Plaza
600 Peachtree Street, NE, Suite 5200
Atlanta, GA 30308-2216

Chairman
Appling County Commissioners
County Courthouse
Baxley, Georgia 31513

Mr. J. B. Beasley, Jr.
Executive Vice President
Southern Nuclear Operating
Company, Inc.
P. O. Box 1295
Birmingham, Alabama 35201-1295

Mr. G. R. Frederick
General Manager, Edwin I. Hatch
Nuclear Plant
Southern Nuclear Operating
Company, Inc.
U.S. Highway 1 North
P. O. Box 2010
Baxley, Georgia 31515

Mr. K. Rosanski
Resident Manager
Oglethorpe Power Corporation
Edwin I. Hatch Nuclear Plant
P. O. Box 2010
Baxley, Georgia 31515