

March 8, 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, UNITS 1 AND 2 RE: ISSUANCE OF
AMENDMENTS (TAC NOS. MC0975 AND MC0976)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 239 to Renewed Facility Operating License DPR-57 and Amendment No. 182 to Renewed Facility Operating License NPF-5 for the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated October 3, 2003, as supplemented on February 9, 2004.

The amendments add a Limiting Condition for Operation (LCO) for the Linear Heat Generation Rate. The new LCO is included in Section 3.2, Power Distribution Limits. The proposed amendments would also change the recirculation loop LCO, Section 5.6.5, and the appropriate Bases.

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/

Christopher Gratton, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosures:

1. Amendment No. 239 to DPR-57
2. Amendment No. 182 to NPF-5
3. Safety Evaluation

cc w/encls: See next page

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Package: ML040700004
Enclosure 2: ML040690502

**See previous concurrence

*No major changes to SE

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Dated: March 8, 2004

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SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-321

EDWIN I. HATCH NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 239
Renewed License No. DPR-57

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Edwin I. Hatch Nuclear Plant, Unit 1 (the facility) Renewed Facility Operating License No. DPR-57 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 October 3, 2003, as supplemented on February 9, 2004, 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. DPR-57 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. 239, 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 30 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
Changes

Date of Issuance: March 8, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 239

RENEWED FACILITY OPERATING LICENSE NO. DPR-57

DOCKET NO. 50-321

Replace the following pages of the Appendix A Technical Specifications and associated Bases with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
i	i
1.1-3	1.1-3
---	3.2-4
3.4-1	3.4-1
5.0-19	5.0-19

BASES

<u>Remove</u>	<u>Insert</u>
i	i
B 3.2-1	B 3.2-1
B 3.2-2	B 3.2-2
B 3.2-3	B 3.2-3
B 3.2-4	B 3.2-4
---	B 3.2-9
---	B 3.2-10
---	B 3.2-11
---	B 3.2-12
B 3.4-2	B 3.4-2
B 3.4-3	B 3.4-3
B 3.4-4	B 3.4-4
B 3.4-5	B 3.4-5

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. 182
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 October 3, 2003, as supplemented on February 9, 2004, 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. 182, 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 at the start of Hatch 2/Cycle 19 for Unit 2.

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
Changes

Date of Issuance: March 8, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 182

RENEWED FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

Replace the following pages of the Appendix A Technical Specifications and associated Bases with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
i	i
1.1-4	1.1-4
---	3.2-4
3.4-1	3.4-1
5.0-19	5.0-19

BASES

<u>Remove</u>	<u>Insert</u>
i	i
B 3.2-1	B 3.2-1
B 3.2-2	B 3.2-2
B 3.2-3	B 3.2-3
B 3.2-4	B 3.2-4
---	B 3.2-9
---	B 3.2-10
---	B 3.2-11
---	B 3.2-12
B 3.4-2	B 3.4-2
B 3.4-3	B 3.4-3
B 3.4-4	B 3.4-4
B 3.4-5	B 3.4-5

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO
AMENDMENT NO. 239 TO RENEWED FACILITY OPERATING LICENSE DPR-57
AND AMENDMENT NO. 182 TO RENEWED FACILITY OPERATING LICENSE NPF-5
SOUTHERN NUCLEAR OPERATING COMPANY, INC., 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 3, 2003, as supplemented by letter dated February 9, 2004, Southern Nuclear Operating Company, (SNC, the licensee), submitted an application for proposed revisions to the Technical Specifications (TS) for the Hatch Nuclear Plant (Hatch), Units 1 and 2. The proposed revisions include adding a limiting condition for operation (LCO) for linear heat generation rate (LHGR) limit, and supporting changes in definitions, recirculation loops operating, core operating limits report (COLR), and bases. The supplemental letter provided clarifying information that did not change the scope of the October 3, 2003, application nor the initial proposed no significant hazards consideration determination.

Previously, LHGR had been included in the Hatch TS. In 1987, the NRC staff approved Amendment 19 to General Electric licensing topical report NEDE-24011-P-A, entitled "General Electric Standard Application for Reactor Fuel (GESTAR II)," that allowed LHGR to be monitored as part of the average planar linear heat generation rate (APLHGR) TS. Accordingly, both Hatch Units removed LHGR from the TS. Monitoring and adhering to the APLHGR limits ensured compliance to the LHGR limit. Recently, the NRC staff approved Amendment 26 to GESTAR II, which describes improved nuclear methods. The improved methods increase the accuracy in core monitoring analyses that may result in separate monitoring of LHGR and APLHGR.

Following the NRC staff's approval of Amendment 26 to GESTAR 11, the licensee proposed to again add the LHGR limit to the TS. The licensee will add a LCO to address plant monitoring and limitation requirements for LHGR. The LCO will have required action statements as well as surveillance requirements. The LHGR provides protection against fuel cladding damage and failure for normal operation and anticipated operational occurrences (AOOs). The APLHGR provides protection for loss-of-coolant accident (LOCA) events. Since the current APLHGR bases encompass both aspects of AOOs and LOCA, the licensee will delete discussions related to AOOs from the APLHGR bases after adding a section of LHGR bases.

2.0 REGULATORY EVALUATION

The Commission's regulatory requirements related to the content of TSs are set forth in Title 10 of the *Code of Federal Regulation* (10 CFR) Section 50.36, "Technical Specifications." This regulation requires that the TSs include items in five specific categories. These categories include 1) safety limits, limiting safety system settings and limiting control settings, 2) limiting conditions for operation, 3) surveillance requirements, 4) design features, and 5) administrative controls. However, the regulation does not specify the particular TSs to be included in a plant's license.

Additionally, 10 CFR 50.36(c)(2)(ii) sets forth four criteria to be used in determining whether a LCO is required to be included in the TS. These criteria are as follows:

1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
4. A structure, system or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The LHGR satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii) and, therefore, should be included in the Hatch TSs.

10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 10 requires that the reactor core and associated coolant, control, and protective systems be designed with appropriate margin to assure that specified acceptable fuel design limits (SAFDLs) are not exceeded during normal operation and AOOs.

The fuel system consists of arrays of fuel rods including fuel pellets and tubular cladding, spacer grids, end plates, and reactivity control rods. The objectives of the fuel system safety review are to provide assurance that (1) the fuel system is not damaged as a result of normal operation and anticipated operational occurrences, (2) fuel system damage is never so severe as to prevent control rod insertion when it is required, (3) the number of fuel rod failures is not underestimated for postulated accidents, and (4) coolability is always maintained.

The NRC staff acceptance criteria are based on the NUREG-0800, "Standard Review Plan (SRP)," Section 4.2 "Fuel System Design." These criteria include three parts: (1) design bases that describe SAFDLs as depicted in General Design Criterion 10 to 10 CFR Part 50, Appendix A, (2) design evaluation that demonstrates that the design bases are met, and (3) testing, inspection, and surveillance plans that show that there are adequate monitoring and surveillance of irradiated fuel. The design bases include (1) fuel system damage, (2) fuel rod

failure, and (3) fuel coolability. The LHGR and APLHGR limits are part of the SAFDLs. As indicated above, the LHGR provides protection against fuel cladding damage and failure for normal operation and AOOs, and the APLHGR provides protection for LOCA events.

3.0 TECHNICAL EVALUATION

3.1 Linear Heat Generation Rate

The LHGR is defined as the power generated in a fixed length of fuel rod. The process computer routinely monitors LHGR on a six-inch-segment basis for each fuel rod in units of kilowatts per foot (kW/ft). The LHGR is monitored and limited to ensure that fuel thermal-mechanical design limits (e.g., 1 percent strain, fuel melting), which prevent fuel cladding failure, are not exceeded during normal operation and AOOs.

With the approval of Amendment 26 to GESTAR II, the licensee proposed to add a new LCO related to the LHGR limit to the power distribution section of the TS as LCO 3.2.3. The LCO addresses plant monitoring and limitation requirements of the LHGR. The LCO contains required actions, completion times, and surveillances. Like the existing APLHGR and minimum critical power ratio (MCPR) LCOs, the proposed LHGR limit is applicable at a reactor power greater than 24 percent. Consequently, inability to meet the LHGR limit within the specified completion time will require that the power be reduced to below 24 percent. The surveillance requirements include the frequency of surveillance.

The NRC staff reviewed and determined that the proposed LHGR limit is consistent in format and content with to the previously approved LHGR limit that was removed from the TS after the approval of Amendment 19 to GESTAR II.

Based on the NRC staff's review, the staff finds the proposed LHGR limit for Hatch, Units 1 and 2 to be acceptable.

3.2 TECHNICAL SPECIFICATION CHANGES

The proposed TS changes include: (1) LHGR definition, (2) LHGR limit, (3) recirculation loops operating, (4) COLR, and (5) bases.

3.2.1 Section 1.1 Definitions, Linear Heat Generation Rate

The licensee proposed to add a definition of LHGR in the TS. Since the definition is consistent with the technical evaluation in Section 3.1, the NRC staff concludes that the proposed definition is acceptable for Hatch, Units 1 and 2.

3.2.2 Section 3.2.3 Linear Heat Generation Rate, LCO 3.2.3

The proposed LCO 3.2.3 establishes required actions, completion times, and surveillances for the LHGR limit at a reactor power greater than 24 percent. Failure to meet the LHGR limit within the specified completion time will result in a power reduction to below 24 percent. Based on the NRC staff evaluation in Section 3.1, the NRC staff concludes that proposed LCO 3.2.3 is acceptable for Hatch, Units 1 and 2.

3.2.3 Section 3.4.1 Recirculation Loops Operating, LCO 3.4.1

LCO 3.4.1 addresses reactor operation under one or two recirculation loops. Reactor operation with one recirculation loop is more limiting than operation with two recirculation loops. In addition to the existing APLHGR limit, MCPR limit, and reactor protection system requirements, the licensee adds a line item of LHGR limit to the LCO 3.4.1. The line item addresses the LHGR limit that may need to be adjusted when the reactor is operating with one recirculation loop due to proposed LCO 3.2.3. The NRC staff concludes that modification of the LHGR limit in LCO 3.4.1 to adjust for plant operating conditions is acceptable for Hatch, Units 1 and 2.

3.2.4 Section 5.6.5 Core Operating Limits Report

Pursuant to TS 5.6.5.a, core operating limits shall be established prior to each reload cycle and shall be documented in the COLR. The proposed LCO 3.2.3 states that all LHGRs shall be less than or equal to the limits specified in the COLR. The licensee proposed to add the LHGR limit in Section 5.6.5 COLR. Since it is consistent with the COLR requirement, the NRC staff concludes that the proposed LHGR limit in Section 5.6.5 COLR is acceptable for Hatch, Units 1 and 2.

3.2.5 Bases

The licensee indicated that the APLHGR bases section is revised to remove discussions on AOOs that are related to the LHGR limit. The licensee then created a separate LHGR bases section to address the LHGR limit. The NRC staff reviewed these bases and determined that they are consistent with standard TS requirements in NUREG-1433. The NRC staff finds that the bases revisions are acceptable for Hatch, Units 1 and 2.

3.3 TECHNICAL EVALUATION CONCLUSION

The NRC staff has reviewed the licensee's request of proposed revisions to the TS for Hatch, Units 1 and 2. Based on the NRC staff's evaluation, as set forth above, the staff concludes that the proposed TS revisions meet the criteria of Section 4.2 of the SRP and 10 CFR 50.36(c)(2)(ii), and are, therefore, 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 a requirement with respect to the installation or use of facility components 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 (68 FR 64138). 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: S. Wu, SRXB

Date: March 8, 2004

Edwin I. Hatch Nuclear Plant

cc:

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