

April 17, 1997

Mr. H. L. Sumner, Jr.  
Vice President  
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Company, Inc.  
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SUBJECT: ISSUANCE OF AMENDMENTS - EDWIN I. HATCH NUCLEAR PLANT,  
UNIT 2 (TAC NO. M97383)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 148 and 149 to Facility Operating License NPF-5 for the Edwin I. Hatch Nuclear Plant, Unit 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated December 3, 1996, as supplemented by letters dated January 27 and April 4, 1997.

The amendments revise Technical Specification 2.1.1.2 to change the Safety Limit Minimum Critical Power Ratio based on the cycle-specific analyses of Cycle 13 of a non-equilibrium core of all General Electric (GE) 9 fuel with varying enrichments and Cycle 14 of a non-equilibrium mixed core of GE13 and GE9 fuel.

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,

ORIGINAL SIGNED BY:

Kahtan N. Jabbour, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

DFol

Docket No. 50-366

Enclosures: 1. Amendment Nos. 148 and 149 to NPF-5  
2. Safety Evaluation

cc w/encls: See next page

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DOCUMENT NAME: G:\HATCH\97383.AMD

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NAME	K.JABBOUR:cn	L.BERRY	LPHILLIPS	MYOUNG	H.BERKOW
DATE	4/16/97	4/17/97	4/17/97	4/17/97	4/17/97
COPY	(YES) NO	(YES) NO	YES NO	YES NO	YES NO

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

April 17, 1997

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Sincerely,

*Kahtan N. Jabbour*

Kahtan N. Jabbour, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-366

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2. Safety Evaluation

cc w/encls: See next page

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

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

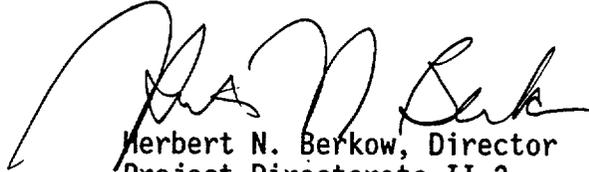
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 148  
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, and Southern Nuclear Operating Company, Inc. (Southern Nuclear), acting for themselves, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated December 3, 1996, as supplemented by letters dated January 27 and April 4, 1997, 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:
- (2) Technical Specifications
- The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 148 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 for Cycle 13 is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: April 17, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 148

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 is identified by Amendment number and contains vertical lines indicating the areas of change.

For Cycle 13

Remove

2.0-1

Insert

2.0-1

## 2.0 SAFETY LIMITS (SLs)

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### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure  $< 785$  psig or core flow  $< 10\%$  rated core flow:

THERMAL POWER shall be  $\leq 25\%$  RTP.

2.1.1.2 With the reactor steam dome pressure  $\geq 785$  psig and core flow  $\geq 10\%$  rated core flow:

MCPR shall be  $\geq 1.08$  for two recirculation loop operation or  $\geq 1.09$  for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System (RCS) Pressure SL

Reactor steam dome pressure shall be  $\leq 1325$  psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager, the corporate executive responsible for overall plant nuclear safety, and the offsite review committee.

(continued)

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

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

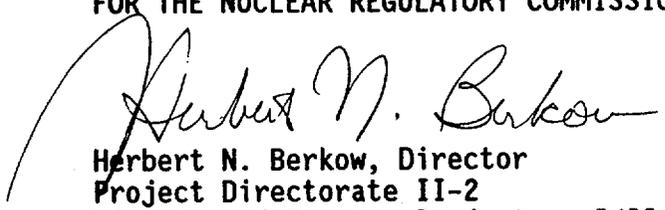
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 149  
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, and Southern Nuclear Operating Company, Inc. (Southern Nuclear), acting for themselves, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated December 3, 1996, as supplemented by letters dated January 27 and April 4, 1997, 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:
- (2) Technical Specifications
- The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 149 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 upon startup in Cycle 14.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: April 17, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 149

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 is identified by Amendment number and contains vertical lines indicating the areas of change.

For Cycle 14

Remove

2.0-1

Insert

2.0-1

## 2.0 SAFETY LIMITS (SLs)

---

### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq$  25% RTP.

2.1.1.2 With the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.12 for two recirculation loop operation or  $\geq$  1.14 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System (RCS) Pressure SL

Reactor steam dome pressure shall be  $\leq$  1325 psig.

---

### 2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager, the corporate executive responsible for overall plant nuclear safety, and the offsite review committee.

(continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NOS. 148 AND 149 TO FACILITY OPERATING LICENSE DPR-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 3, 1996, as supplemented by the letters dated January 27 and April 4, 1997, Georgia Power Company, and Southern Nuclear Operating Company, Inc., et al. (the licensee) proposed changes to the current Technical Specifications (TS) for the Edwin I. Hatch Nuclear Plant (HNP), Unit 2 for Cycle 13 (H2C13) and Cycle 14 (H2C14). The proposed changes include the Minimum Critical Power Ratio (MCPR) safety limits based on the cycle-specific analysis of H2C13 of a non-equilibrium core of all General Electric 9 (GE9) fuel with varying enrichments and H2C14 of a non-equilibrium mixed core of GE13/GE9 fuel. The January 27 and April 4, 1997, letters provided additional information that did not change the scope of the December 3, 1996, application and the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee requested changes to the HNP Unit 2 Technical Specifications for Cycle 13 and Cycle 14 in accordance with 10 CFR 50.90. The proposed revisions of Technical Specification 2.1.1.2 are described below.

The safety limit MCPR (SLMCPR) in TS 2.1.1.2 is proposed for H2C13 to change from 1.06 to 1.08 for operation with two recirculation loops and from 1.07 to 1.09 for single loop operation (SLO), and for H2C14 to change from 1.06 to 1.12 for operation with two recirculation loops and from 1.07 to 1.14 for SLO when the reactor steam dome pressure > 785 psig and core flow > 10% rated core flow based on the cycle-specific analysis performed by GE for both H2C13 and H2C14 operation. The cycle-specific parameters were used including the actual core loading, the most limiting permissible control blade patterns, actual bundle parameters, and the full-cycle exposure range.

The staff has reviewed the proposed TS changes, which are based on the analyses performed using HNP Unit 2 cycle-specific inputs and approved methodologies including GESTAR II (NEDE-24011-P-A-11, Sections 1.1.5 and 1.2.5) and NEDO-10985-A, January 1977, for both single and dual loop operation. Because the R-factor methodology referenced in NEDE-24011-P-A-11 is not applicable to the part-length GE13 fuel, an improved R-factor methodology described in NEDC-32505P, "R-Factor Calculation Method for GE11,

GE12 and GE13 Fuel," November 1995 was used. The improved R-factor calculation method uses the same NRC-approved equation stated in GESTAR (NEDE-24011-P-A) with the correction factors to account for the peaking factor effects due to the part-length-rod design. The staff has reviewed the R-factor calculation method for the GE13 and the relevant information provided in the proposed Amendment 25 to GESTAR II, NEDE-24011 (which is under staff review) and the supplemental information dated January 27, 1997, in response to the staff request for additional information during a telephone conference on January 10, 1997. The staff has found that the methodologies discussed above apply to the Hatch design and the justification for analyzing and determining the SLMCPR of 1.08 and 1.09 (SLO) for the H2C13 and of 1.12 and 1.14 (SLO) for the H2C14 operation are acceptable since (1) H2C13 core has a flatter R-factor distribution, a higher batch fraction, and a higher enrichment than that of the generic GE9 core; and (2) H2C14 mixed core of GE13/GE9 has a flatter R-factor distribution and a higher enrichment than that of the generic GE13 core.

Based on its review, the staff concludes that the changes to the TS are acceptable for the H2C13 and H2C14 applications since the changes are analyzed based on the NRC-approved method, and the new values will ensure that greater than 99 percent of the fuel rods will avoid transition boiling, thus, preserving fuel cladding integrity.

### 3.0 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.

### 4.0 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 (62 FR 4349 dated January 29, 1997). 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.

## 5.0 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: T. Huang

Date: April 17, 1997