

January 5, 2006

Mr. H. L. Sumner, Jr.
Vice President - Nuclear
Hatch Project
Southern Nuclear Operating
Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 RE: ISSUANCE OF
AMENDMENTS (TAC NOS. MC5109 AND MC5110)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 247 to Renewed Facility Operating License DPR-57 and Amendment No. 191 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 (TS) in response to your application dated November 12, 2004, as supplemented September 2 and September 16, 2005.

The amendments revise TS 3.1.7, "Standby Liquid Control (SLC) System," for Hatch, Units 1 and 2. The proposed amendments would update Figure 3.1.7-1 and 3.1.7-2 of the Units 1 and 2 TS to reflect the increased concentration of Boron-10 in the solution. Conforming revisions to Bases B 3.1.7, "Standby Liquid Control (SLC) System" are also included.

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, Sr. Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosures:

1. Amendment No. 247 to DPR-57
2. Amendment No. 191 to NPF-5
3. Safety Evaluation

cc w/encls: See next page

January 5, 2006

Mr. H. L. Sumner, Jr.
Vice President - Nuclear
Hatch Project
Southern Nuclear Operating
Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 RE: ISSUANCE OF
AMENDMENTS (TAC NOS. MC5109 AND MC5110)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 247 to Renewed Facility Operating License DPR-57 and Amendment No. 191 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 (TS) in response to your application dated November 12, 2004, as supplemented September 2 and September 16, 2005.

The amendments revise TS 3.1.7, "Standby Liquid Control (SLC) System," for Hatch, Units 1 and 2. The proposed amendments would update Figure 3.1.7-1 and 3.1.7-2 of the Units 1 and 2 TS to reflect the increased concentration of Boron-10 in the solution. Conforming revisions to Bases B 3.1.7, "Standby Liquid Control (SLC) System" are also included.

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, Sr. Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosures:

1. Amendment No. 247 to DPR-57
2. Amendment No. 191 to NPF-5
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION: See next page

Package Number: ML052870353

Tech Specs: ML060060116

Amendment Number: ML052870246

NRR-058

OFFICE	NRR/LPLC/PM	NRR/LPLC/LA	DSSA/SC	OGC	NRR/LPLC/BC
NAME	CGratton	CHawes	FAkstulewicz	GMLongo	EMarinos
DATE	11/14/05	11/14/05	9/27/2005	11/17/05	11/29/05

OFFICIAL RECORD COPY

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 RE: ISSUANCE OF
AMENDMENTS NOS. 247 AND 191 (TAC NOS. MC5109 AND MC5110)

Date: January 5, 2006

DISTRIBUTION:

PUBLIC

PDII-1 R/F

RidsNrrDorLplc (EMarinos)

RidsNrrPMCGratton

RidsNrrLAMOBrien (Hard Copy)

RidsOgcRp

RidsAcrsAcnwMailCenter

GHill (4 Hard Copies)

RidsDirsltsb(TBoyce)

RidsRgn2MailCenter

BSingal, DORL DPR

GThomas

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. 247
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 November 12, 2004, as supplemented September 2 and September 16, 2005, 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. 247, 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/

Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 247

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.

Remove

3.1-20
3.1-21
B 3.1-34

Insert

3.1-20
3.1-21
B3.1-34

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. 191
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 November 12, 2004, as supplemented September 2 and September 16, 2005, 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. 191, 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/

Evangelos C. Marinos, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: January 5, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 191
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>
3.1-20	3.1-20
3.1-21	3.1-21
B 3.1-34	B3.1-34

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO
AMENDMENT NO. 247 TO RENEWED FACILITY OPERATING LICENSE DPR-57
AND AMENDMENT NO. 191 TO RENEWED FACILITY OPERATING LICENSE NPF-5
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 50-321 AND 50-366

1.0 INTRODUCTION

By letter dated November 12, 2004 (Reference (Ref.) 1), as supplemented by letters dated September 2 (Ref. 2) and September 16, 2005, (Ref. 3), Southern Nuclear Operating Company (SNC), the licensee for the Edwin I. Hatch Nuclear Plant (Hatch), Units 1 and 2, submitted proposed changes to Technical Specifications (TS) Figure 3.1.7-1 for Units 1 and 2 and the corresponding bases for the Standby Liquid Control System (SLCS). The figures define a permissible region of operation for the sodium pentaborate solution in the SLCS tank. Specifically, the figure provides the weight percent of sodium pentaborate solution as a function of the gross volume of solution in the tank. The figure revision was necessary due to an error discovered by the licensee in the current figure. The error is conservative in the permissible region of operation. However, there is a non-conservative error in an area of the figure where Hatch rarely operates. The proposed TS change will correct the figure and change concentration requirement to 800 ppm natural Boron equivalent from 660 ppm.

While developing a response to a Nuclear Regulatory Commission (NRC) staff request for additional information, SNC discovered that more volume in the tank was required and that the concentration of sodium pentaborate solution required revision from 6.9 percent to 7 percent. SNC provided a revised Figure 3.1.7-1 for Units 1 and 2 in Ref. 3. In addition, Figure 3.1.7-2, which is a plot of the sodium pentaborate temperature versus concentration requirements, was also revised. Both Figures 3.1.7-1 and 3.1.7-2 are changed to reflect that the boundary between the permissible region of operation (Region A) and non-permissible region of operation (Region-B) is changed from 6.9 percent to 7 percent, solution concentration.

The supplemental letters dated September 2 and September 16, 2005, provided clarifying information that did not change the scope of the November 12, 2005, application nor the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

The SLCS is an independent reactivity control system that can be used to shutdown the reactor under normal and Anticipated Transient Without Scram (ATWS) conditions.

The basic requirement for the SLCS is specified in Appendix A of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 (General Design Criteria (GDC) 26, "Reactivity control system redundancy and capability") and paragraph (c) (4) of 10 CFR 50.62 (the ATWS rule), that states, in part:

"Each boiling water reactor must have a standby liquid control system (SLCS) with the capability of injecting into the reactor pressure vessel a borated water solution at such a flow rate, level of boron concentration and boron-10 isotope enrichment, and accounting for reactor pressure vessel volume, that the resulting reactivity control is at least equivalent to that resulting from injection of 86 gallons per minute of 13 weight percent sodium pentaborate decahydrate solution at the natural boron-10 isotope abundance into a 251-inch inside diameter reactor pressure vessel for a given core design."

Equivalent reactivity control can be obtained by increasing the pump flow rate, boron concentration or boron enrichment.

In a generic Safety Evaluation Report dated October 21, 1986, the NRC staff approved topical report NEDE-31096P which provided the acceptable methods for complying with the ATWS rule.

3.0 TECHNICAL EVALUATION

This amendment was requested to accommodate fuel design changes and increased fuel cycle energy requirements. The licensee evaluation concluded that the current TS bases value of 660 ppm of natural boron in the boron solution is not sufficient to meet the new requirements. Hence, the licensee proposed to change the concentration of 660 ppm of natural boron to 800 ppm. The staff believes that the proposed value of 800 ppm is sufficient for the new requirements, and, therefore, is acceptable.

For ATWS, the 86 gpm equivalency requirement of the rule can be met if the following relationship is satisfied:

$$(Q/86) \times (M251/M) \times (1C/13) \times (E/19.8) \leq 1$$

where:

Q = expected SLCS flow rate (gpm)

M = mass of water in the reactor vessel and recirculation system at hot rated condition in lbs

C = sodium pentaborate solution concentration (weight percent)

E = B isotope enrichment (19.8% of natural boron)

M251= mass of water in a BWR/4 251 inches diameter reactor vessel (lbs)=628300 lbs

The licensee performed plant specific calculations to verify that the SLCS complies with the ATWS rule referred above. Using the following Hatch-specific values to satisfy the relationship given above, SNC established the bases for the revised TSs.

Q = 41.2 gpm
M = 485900 lbs
C = 7.0%
E = B-10 isotope enrichment, atom percent, 60%

With the boron enriched in the B-10 isotope in the sodium pentaborate solution, and a 218-inch vessel, Hatch is able to meet the equivalency determination (1.01 more than 1) requirement of the rule. This option assumes operation of one pump and maintenance of the sodium pentaborate solution concentration of 7 percent.

Since the equivalency determination is satisfied for Hatch, the NRC staff concludes the proposed changes of Figures 3.1.7-1 and 3.1.7-2 are acceptable.

The NRC staff requested the licensee to verify that the tank low level and temperature alarm set points will continue to be valid after the proposed changes. In Ref. 2, SNC confirmed that tank level and alarm calculations will be completed, and any annunciator set points will be adjusted accordingly, prior to implementation of the TSs change package. These actions are acceptable to the NRC staff and are not considered a basis for acceptance of this amendment.

Information Notice 2001-013, "Inadequate Standby Liquid Control System Relief Valve Margin," was issued on April 10, 2001, informing licensees about NRC staff concerns with regard to SLCS pump discharge relief valve margin. The NRC staff requested the licensee to verify that enough margin exists for the Hatch relief valve during ATWS. In Ref. 2, SNC confirmed that there is enough margin (more than 200 psi) for the limiting event during ATWS. The NRC staff finds SLCS pump discharge relief valve margin acceptable.

The NRC staff has reviewed the proposed TS changes of the SLCS and have concluded that the proposed TS changes correct the errors discovered by the licensee and we find them to be acceptable. The proposed TS changes are acceptable since the SLCS will continue to provide the required level of shutdown capability under normal operating conditions as per 10 CFR Part 50, Appendix A, GDC 26, and under ATWS conditions in accordance with 10 CFR 50.62.

The licensee included in Ref. 1 conforming changes to affected TS Bases pages. The licensee will formally address the changes to the TS bases in accordance with its Bases Control Program.

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 (70 FR 61662). 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.

7.0 REFERENCES

1. Letter from H.L. Sumner, Jr. (Southern Nuclear Operating Company) to NRC, "Edwin I. Hatch Nuclear Plants, Units 1 and 2, Technical Specifications Revision to Standby Liquid Control Figure 3.1.7-1," dated November 12, 2004.
2. Letter from H.L. Sumner, Jr. (Southern Nuclear Operating Company) to NRC, "Edwin I. Hatch Nuclear Plant, Response to request for Additional Information on a Technical Specifications Revision to Revise Standby Liquid Control Figure 3.1.7-1," dated September 2, 2005.
3. Letter from H.L. Sumner, Jr. (Southern Nuclear Operating Company) to NRC, "Edwin I. Hatch Nuclear Plant, Supplement to Technical Specifications Revision Request to Standby Liquid Control Figure 3.1.7-1," dated September 16, 2005.

Principal Contributor: G. Thomas

Date:

Edwin I. Hatch Nuclear Plant, Units 1 & 2

cc:

Laurence Bergen
Oglethorpe Power Corporation
2100 E. 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, AL 35201-1295

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

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

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

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
244 Washington St., SW
Atlanta, GA 30334

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

Chairman
Appling County Commissioners
County Courthouse
Baxley, GA 31513

Mr. Jeffrey T. Gasser
Executive Vice President
Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 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, GA 31515

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