

September 12, 2002

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. MB5211 AND MB5212)

Dear Mr. Sumner:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 233 to Renewed Facility Operating License DPR-57 and Amendment No. 175 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 (TSs) in response to your application dated May 24, 2002.

The amendments revise the TSs to allow Mode 2 (startup) operation with two out of four, rather than three out of four, required intermediate range monitor channels per trip system.

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/

Leonard N. Olshan, 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. to DPR-57
2. Amendment No. to NPF-5
3. Safety Evaluation

cc w/encls: See next page

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DISTRIBUTION:

Enclosures:

- 1. Amendment No. 233 to DPR-57
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- 3. Safety Evaluation

PUBLIC	OGC
PDII-1 R/F	ACRS
SCahill, RII	GHill(4)
HBerkow	JNakoski
LOlshan	CHawes
RDennig	

cc w/encls: See next page

Tech Spec Pages : ML022660217, ML022660211

Package: ML022690751

Amendment: ML025660197

OFFICE	PDII-1/PM	PDII-1/LA	OGC	PDII-1/SC	SRXB/SC
NAME	LOlshan	CHawes	RHoefling	JNakoski	RCaruso
DATE	07/18/02	07/18/02	9/21/02	9/5/02	08/20/02

OFFICIAL RECORD COPY

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. 233  
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 May 24, 2002, 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. 233, 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: September 12, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 233

RENEWED FACILITY OPERATING LICENSE NO. DPR-57

DOCKET NO. 50-321

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

Remove

3.3-7  
B 3.3-4  
B 3.3-5  
B 3.3-32

Insert

3.3-7  
B 3.3-4  
B 3.3-5  
B 3.3-32

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. 175  
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 May 24, 2002, 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. 175 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: September 12, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 175

RENEWED FACILITY OPERATING LICENSE NO. NPF-5

DOCKET NO. 50-366

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

Remove

Insert

3.3-7  
B 3.3-4  
B 3.3-5  
B 3.3-32

3.3-7  
B 3.3-4  
B 3.3-5  
B 3.3-32

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO  
AMENDMENT NO. 233 TO RENEWED FACILITY OPERATING LICENSE DPR-57  
AND AMENDMENT NO. 175 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 May 24, 2002, Southern Nuclear Operating Company, Inc. (Southern Nuclear, the licensee), et al., proposed license amendments to change the Technical Specifications (TSs) for the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The proposed amendments would allow Mode 2 (startup) operation with two out of four, rather than three out of four, required intermediate range monitor (IRM) channels per trip system. This would be accomplished by revising TS Table 3.3.1.1-1, Function 1, "Intermediate Range Monitor." The revision changes the "3" to "2" in the column entitled "Required Channels Per Trip System" and adds the following footnote to the "2": "One channel in each quadrant of the core must be OPERABLE whenever the IRMs are required to be OPERABLE. Both the RWM [rod worth minimizer] and a second licensed operator must verify compliance with the withdrawal sequence when less than three channels in any trip system are OPERABLE."

Amendment No. 166, issued April 27, 2001, granted, only for one time, a similar TS change for Unit 2.

## 2.0 REGULATORY EVALUATION

The IRM system consists of 8 incore detectors and their associated drive mechanisms and electronic circuitry. The 8 channels are divided into 2 groups of 4, such that 4 IRM channels provide input into each reactor protection trip system. There are 2 incore detectors per quadrant.

The regulatory requirements on which the staff based its acceptance of the amendments are 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 10 and 13. GDC 10 requires that the reactor protection system be designed to assure that specified acceptable fuel design limits are not exceeded during anticipated operational occurrences. The IRMs are capable of scrambling the reactor in the event of the anticipated operational transient of a control rod being withdrawn out of sequence during reactor startup; the scram would keep the peak fuel energy deposition below the current licensing threshold criteria of 170 calories/gram (1cal/g).

As a result of a fuel failure during a test at the CABRI reactor in France in 1993 and the 1994 test at the Nuclear Safety Research Reactor in Japan, the NRC recognized that high burnup fuel cladding might fail during a reactivity insertion accident (RIA), such as a control rod assembly ejection event, at lower enthalpies than the limits currently specified in Standard Review Plan (SRP) 4.2, "Fuel System Design." However, generic analyses performed by all of the reactor vendors have indicated that the fuel enthalpy during RIAs will be much lower than the SRP 4.2 limits, based on their 3D neutronics calculations. For high burnup fuel which has been burned so long that it no longer contains significant reactivity, the fuel enthalpies calculated using the 3D models are expected to be much lower than 100 cal/g.

The staff has concluded that although the SRP 4.2 limits may not be conservative for cladding failure, the analyses performed by vendors, which have been confirmed by NRC-sponsored calculations, provide reasonable assurance that the effects of postulated RIAs in operating plants with peak pellet fuel burnups up to 70 gigawatt days per metric ton uranium, such as Hatch, will neither (1) result in damage to the reactor coolant pressure boundary, nor (2) sufficiently disturb the core, its support structures, or the other reactor pressure vessel internals to impair significantly the capability to cool the core as specified in current regulatory requirements.

GDC 13 requires that instrumentation be provided to monitor variables over their anticipated ranges for normal operation. The IRMs monitor neutron flux levels from the upper range of the source range monitors to the lower range of the average power range monitors (APRMs), providing the operators with necessary information on core reactivity during startup.

### 3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's submittal in support of its proposed license amendments. The detailed evaluation below will support the conclusion 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.

With regard to the GDC 10 function of the IRMs, the proposed TS footnote provides two compensatory measures when two IRMs are operable. The first compensatory measure requires that the RWM verify compliance with the withdrawal sequence. The RWM would then initiate a rod block that would stop the withdrawal of an out-of-sequence control rod. The second compensatory measure requires that a second licensed operator verifies compliance with the withdrawal sequence, which would reduce the likelihood that a control rod would be withdrawn out of sequence.

Although these two compensatory measures would make the continuous withdrawal of an out-of-sequence control rod unlikely, the licensee has evaluated the consequences of this event. The licensee has determined that the event would be terminated because Doppler feedback would limit the power increase and because the APRM system would initiate a reactor scram.

With regard to the GDC 13 function of the IRMs, the proposed TS footnote requires that one channel in each quadrant of the core must be operable. The current TS in effect already allow only one channel per quadrant, because the current TS allow one channel per quadrant (of the

two available per quadrant) to be bypassed in each trip system. Having one channel per quadrant operable provides the operator with the necessary information on core reactivity during startup.

In summary, the staff concludes that the proposed amendments are acceptable based on the following:

- (1) GDC 10 is still met because there are means available to terminate, prior to exceeding acceptable limits, an out-of-sequence rod withdrawal during startup, and
- (2) GDC 13 is still met because one channel per quadrant will be available to provide the operator with the necessary information on core reactivity during startup.

#### 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 (67 FR 45572). 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: L. Olshan

Date: September 12, 2002

Edwin I. Hatch Nuclear Plant

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