

May 11, 2001

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 RE: ISSUANCE  
OF AMENDMENTS (TAC NOS. MB0256 AND MB0257)

Dear Mr. Beasley:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 120 to Facility Operating License NPF-68 and Amendment No. 98 to Facility Operating License NPF-81 for the Vogtle Electric Generating Plant, Units 1 and 2. The amendments consist of changes to these licenses in response to your application dated October 5, 2000.

The amendments revise the licenses to reflect changes to the Updated Final Safety Analysis Report due to revisions to the dose equivalent iodine analysis.

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

Docket Nos. 50-424 and 50-425

Enclosures:

1. Amendment No. 120 to NPF-68
2. Amendment No. 98 to NPF-81
3. Safety Evaluation

cc w/encls: See next page

Mr. J. B. Beasley, Jr.  
Vice President  
Southern Nuclear Operating  
Company, Inc.  
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Birmingham, Alabama 35201

May 14, 2001  
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Accession #ML001360399

OFFICE	PDII-1/PM	PDII-1/LA	OGC	PDII-1/SC
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DATE	4/30/01	4/25/00	5/9/00	5/3/00

OFFICIAL RECORD COPY

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120  
License No. NPF-68

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Vogtle Electric Generating Plant, Unit 1 (the facility) Facility Operating License No. NPF-68 filed by the 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 5, 2000, 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, changes to the Vogtle Updated Final Safety Analysis Report (UFSAR) to reflect the revised dose equivalent iodine analyses for a steam generator tube rupture and a main steam line break outside containment, as set forth in the application for amendment dated October 5, 2000, are authorized. The licensee shall submit the revised description authorized by this amendment with the next update of the UFSAR, in accordance with 10 CFR 50.71(e).
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/*

Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Date of Issuance: May 14, 2001

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 98  
License No. NPF-81

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Vogtle Electric Generating Plant, Unit 2 (the facility) Facility Operating License No. NPF-81 filed by the 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 5, 2000, 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, changes to the Vogtle Updated Final Safety Analysis Report (UFSAR) to reflect the revised dose equivalent iodine analyses for a steam generator tube rupture and a main steam line break outside containment, as set forth in the application for amendment dated October 5, 2000, are authorized. The licensee shall submit the revised description authorized by this amendment with the next update of the UFSAR, in accordance with 10 CFR 50.71(e).
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/*

Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Date of Issuance: May 14, 2001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NPF-68  
AND AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NPF-81  
SOUTHERN NUCLEAR OPERATING COMPANY, INC., ET AL.  
VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2  
DOCKET NOS. 50-424 AND 50-425

## 1.0 INTRODUCTION

By letter dated October 5, 2000, Southern Nuclear Operating Company, Inc., et. al (the licensee) for Vogtle Electric Generating Plant, proposed license amendments to change the licenses for the Vogtle Electric Generating Plant (Vogtle), Units 1 and 2. The changes reflect a revision to the radiological consequence analysis in the Vogtle Updated Final Safety Analysis Report (UFSAR) Section 15.1.5, "Steam System Piping Failure," and Section 15.6.3, "Steam Generator Tube Failure." The licensee reevaluated the radiological consequences resulting from the steam generator tube rupture (SGTR) and main steam line break (MSLB) outside containment to determine if the parameters and assumptions currently used in the Vogtle UFSAR are potentially non-conservative based on Westinghouse Nuclear Safety Advisory Letter NSAL-00-04, "Non-conservatism in Iodine Spiking Calculations," dated March 7, 2000. The Westinghouse letter discusses, among other things, potentially non-conservative assumptions used in calculating the iodine appearance rates during iodine spikes following the SGTR and MSLB accidents with respect to (1) letdown flow and its uncertainty, (2) letdown demineralizer efficiency, (3) primary coolant leakage, and (4) primary coolant mass. The licensee did not request any relaxation of the current design basis in the Vogtle UFSAR.

## 2.0 EVALUATION

The licensee reevaluated the following potential non-conservative issues discussed in Westinghouse NSAL-00-04:

### (1) letdown flow rate and its uncertainty

The current radiological consequence analyses are based on 75 gallons per minute (gpm). The licensee currently operates the letdown system with a normal flow rate of 75 gpm and a maximum allowable flow rate of 120 gpm. A higher letdown flow rate would increase the iodine appearance rate in the primary coolant resulting in higher iodine spiking values. The licensee used 132 gpm in its reevaluation with 10% flow measurement uncertainty.

(2) letdown system demineralizer

A higher demineralizer efficiency would remove more iodine which would also increase the iodine appearance rate in the primary coolant resulting in higher iodine spiking values. The current radiological consequence analyses are based on an iodine decontamination factor of  $1E+6$  which is near 100% removal efficiency. The licensee used a maximum removal efficiency of 100% in its reevaluation.

(3) primary coolant leakage

A higher primary coolant leakage would also increase iodine spiking values. The licensee had assumed no primary coolant leakage in its radiological consequence analysis. In the reevaluation, the licensee used 12 gpm as the maximum reactor coolant system leakage. This amount of leakage is allowed in the Vogtle technical specifications.

(4) primary coolant mass

This is not applicable to Vogtle since the licensee assumed a conservatively large reactor coolant system volume ( $2.32E+6$  gm) in the current analysis.

The licensee performed and submitted the revised radiological consequence analyses resulting from the MSLB and SGTR accidents using more conservative parameters as discussed above. The licensee's revised analyses indicate that the resulting doses are higher than the current values in the Vogtle UFSAR, but they are still within the relevant dose criteria.

To verify the licensee's analyses, the staff performed a confirmatory radiological consequence calculation and finds the licensee's results are consistent with those calculated by the staff. The resulting radiological consequence calculated by the staff are provided in Table 1.

An increase in the letdown flow rate and letdown demineralizer iodine removal efficiency will result in a decrease in iodine concentration in the reactor coolant system. Therefore, the source term used for determining normal effluent releases from the liquid and gaseous waste management systems, and plant shielding will decrease. Consequently, the current analyses in the Vogtle UFSAR Chapter 11, "Radioactive Waste Management Systems," remain bounding.

The doses calculated by the staff and the licensee are well within the dose guideline values specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 100, and meet dose acceptance criteria specified in Standard Review Plan, Sections 15.1.5 and 15.6.3. Therefore, the staff finds that the revised radiological consequences analyses proposed by the licensee are acceptable. On the basis of this evaluation, the staff concludes that the Vogtle UFSAR revisions requested by the licensee are acceptable.

**Table 1 Radiological Consequences  
(thyroid doses in rem)<sup>(1)</sup>**

<u>Postulated Accident</u>	<u>EAB</u>	<u>LPZ</u>	<u>Dose Guideline Values</u>
Main steamline failure outside containment:			
With concomitant iodine spike	1.0	1.1	30
With pre-accident iodine spike	1.1	0.8	300
Steam generator tube rupture:			
With concomitant iodine spike	13	5.3	30
With pre-accident iodine spike	23	8.4	300

<sup>(1)</sup> Whole body doses for all cases are less than 0.1 rem

### 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 requirements with respect to installation or use of a facility component 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 (65 FR 77925). 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: J. Lee

Date: May 14, 2001

Vogtle Electric Generating Plant

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