

May 31, 1994

Docket Nos. 50-424  
and 50-425

Mr. C. K. McCoy  
Vice President - Nuclear  
Vogtle Project  
Georgia Power Company  
P. O. Box 1295  
Birmingham, Alabama 35201

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Dear Mr. McCoy:

SUBJECT: ISSUANCE OF AMENDMENTS - VOGTLE ELECTRIC GENERATING PLANT, UNITS 1  
AND 2 (TAC NOS. M88481 AND M88482)

The Nuclear Regulatory Commission has issued the enclosed Amendment No.72 to Facility Operating License NPF-68 and Amendment No. 51 to Facility Operating License NPF-81 for the Vogtle Electric Generating Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated December 30, 1993.

The amendments add the following footnote to TS 3.5.2.d: "The allowable outage time for each RHR pump may be extended to 7 days for the purpose of converting the pump motor assembly to a coupled design. This exception may only be used one time per pump and is not valid after December 31, 1994."

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:

Louis L. Wheeler, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 72 to NPF-68
2. Amendment No. 51 to NPF-81
3. Safety Evaluation

cc w/enclosures:

See next page

OFC	LA:PD23:DRPE	PM:PD23:DRPE	<del>BC:OTSB:DORS</del>	OGC <i>EH</i>
NAME	LGBerry <i>LP</i>	LLWheeler	<del>CIGrimes</del>	<i>EHOLLER</i>
DATE	<i>4/21/94</i>	<i>5/13/94</i>	<del>1/94</del>	<i>5/25/94</i>
OFC	D:PD23:DRPE <i>DM</i>	<i>DSSA:SAK/STO</i>		
NAME	DMatthews	<i>T.C. Collins</i>		
DATE	<i>5/13/94</i>	<i>5/10/94</i>		

*N/A CGI 5/13/94*

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

May 31, 1994

Docket Nos. 50-424  
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Mr. C. K. McCoy  
Vice President - Nuclear  
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P. O. Box 1295  
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Sincerely,

A handwritten signature in cursive script, appearing to read "Louis L. Wheeler".

Louis L. Wheeler, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 72 to NPF-68
2. Amendment No. 51 to NPF-81
3. Safety Evaluation

cc w/enclosures:  
See next page

Mr. C. K. McCoy  
Georgia Power Company

Vogtle Electric Generating Plant

cc:

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Manager - Licensing  
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U. S. Nuclear Regulatory Commission  
P. O. Box 572  
Waynesboro, Georgia 30830



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

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. 72  
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 Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated December 30, 1993, 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.

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P PDR

2. Accordingly, the license is hereby amended by a page change to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-68 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 72, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Change

Date of Issuance: May 31, 1994



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

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. 51  
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 Georgia Power Company, acting for itself, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the licensees), dated December 30, 1993, 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 a page change to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-81 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 51, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. GPC 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David B. Matthews, Director  
Project Directorate II-3  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Change

Date of Issuance: May 31, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 72

FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 51

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change.

Remove Page

3/4 5-3

Insert Page

3/4 5-3



## EMERGENCY CORE COOLING SYSTEMS

### 3/4.5.2 ECCS SUBSYSTEMS - $T_{avg}$ GREATER THAN OR EQUAL TO 350°F

#### LIMITING CONDITION FOR OPERATION

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3.5.2 Two independent Emergency Core Cooling System (ECCS) subsystems shall be OPERABLE with each subsystem comprised of:

- a. One OPERABLE centrifugal charging pump,
- b. One OPERABLE Safety Injection pump,
- c. One OPERABLE RHR heat exchanger,
- d. One OPERABLE RHR\*\* pump, and
- e. An OPERABLE flow path capable of taking suction from the refueling water storage tank on a Safety Injection signal and semi-automatically transferring suction to the containment emergency sump during the recirculation phase of operation.

APPLICABILITY: MODES 1, 2, and 3.\*

#### ACTION:

- a. With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours\*\* or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.8.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected Safety Injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

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\* The provisions of Specifications 3.0.4 and 4.0.4 are not applicable for entry into MODE 3 for the Safety Injection Pumps declared inoperable pursuant to Specification 3.5.3.2 provided the Safety Injection Pumps are restored to OPERABLE status within 4 hours or prior to the temperature of one or more of the RCS cold legs exceeding 375°F, whichever occurs first.

\*\* The allowable outage time for each RHR pump may be extended to 7 days for the purpose of converting the pump motor assembly to a coupled design. This exception may only be used one time per pump and is not valid after December 31, 1994.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 72 TO FACILITY OPERATING LICENSE NPF-68  
AND AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE NPF-81

GEORGIA POWER COMPANY, ET AL.

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-424 AND 50-425

1.0 INTRODUCTION

By letter dated December 30, 1993, Georgia Power Company, et al. (the licensee) proposed license amendments to change the Technical Specifications (TS) for Vogtle Electric Generating Plant (Vogtle), Units 1 and 2. TS 3.5.2.d requires with one The proposed changes would add the following footnote to TS 3.5.2.d: "The allowable outage time for each RHR pump may be extended to 7 days for the purpose of converting the pump motor assembly to a coupled design. This exception may only be used one time per pump and is not valid after December 31, 1994."

The licensee plans to make modifications to the residual heat removal (RHR) pumps that will enhance their maintainability, reliability, and performance and reduce exposure to radiation for maintenance workers. The modifications consist primarily of the installation of a coupling that will allow the pumps and motors to be disconnected. At the same time, modifications will be made that will improve pump performance and allow the pumps to be operated at reduced flow. These changes will improve reliability and are necessary to allow operation at reduced flow which reduces risk of pump cavitation during operation with the reactor coolant system (RCS) partially drained. One of the Unit 2 RHR pumps has already been modified. The modifications for the remaining three pumps can be accomplished in 7 days for each pump. A significant reduction in exposure to radiation can be achieved for the modification if it is made while the reactor is in operation because use of the RHR pump during shutdown increases the exposure rate in the vicinity of the pumps during periods shortly after plant shutdown. In addition, one of the primary functions of the RHR system is heat removal during plant shutdown so it is desirable to have both trains available during that time. Therefore, it is proposed to make this modification while the plant is in Mode 1. This will require a one time extension of the allowable outage time from 3 to 7 days. The modifications will be made on one pump at a time.

2.0 EVALUATION

The current design of the RHR pump and motor utilizes a single shaft. A modification is planned that will add a coupling to the shaft to allow the pump and motor to be disconnected. The modification will also include changes to the impeller that will improve thrust bearing life and allow the pumps to

be operated at reduced flow. These modifications will improve pump performance, vibration levels, availability and maintainability, and they will result in reduced radiation exposure during maintenance. The ability to operate the pumps at reduced flow during operation with the RCS partially drained has been recognized by the NRC as an improvement in safety. Performance of the modifications at power will allow them to be made when the RHR system is not needed to perform its shutdown cooling function and will allow them to be performed under conditions that result in reduced exposure of personnel to radiation. The one time extension of the allowable outage time from 3 to 7 days represents an insignificant effect on the contribution of the RHR system to safety which is balanced against the increased pump reliability and reduced exposure to radiation that is achieved by performing the modifications while the plant is in operation.

One of the Unit 2 pumps has already been modified. The requested time of 7 days is based on the experience gained from the completion of that modification. The alternative for completion of these modifications while in Mode 1 is to perform one during each outage which would result in a delay in the completion of all of the pumps for at least two operating cycles.

The large break loss of coolant accident (LBLOCA) is a design basis accident that is not considered likely to occur during the lifetime of plant operation. It is used as a design basis to assure conservatism. The safety function of the RHR pumps is to provide a low pressure, high volume water source for reflooding the core following a large break that results in a rapid depressurization. Following a small break LOCA, the RHR pumps may be required to provide suction pressure to the safety injection system during sump recirculation and for long term decay heat removal. The loss of coolant accident analyses only takes credit for one train of RHR. The TS require that both trains of RHR be operable in Mode 1. One train is allowed to be inoperable for a period of 3 days. The proposed change will provide for a one time extension of the allowable outage time from 3 to 7 days which will allow the modifications to be completed in 1994. The alternative is to make the modifications during plant shutdown. However, that is during the time of peak radiation exposure rates from the RHR pumps due to their use during plant shutdown. A dose savings of 40 man-rem per pump is expected by making the modification at power rather than during a shutdown.

During the time each train is made inoperable for the modifications to be installed, the redundant train will remain operable and be available to perform the safety function assumed by the safety analysis. The effects of having an RHR pump out of service for 7 instead of 3 days was evaluated. The evaluation was based on the core damage frequency (CDF) from the Vogtle Individual Plant Examination (IPE). The CDF reported in the IPE is  $4.9E-05/RY$  and used a historically based RHR pump outage time of 1.5 days per year. Use of the current allowable outage time of 3 days for each RHR pump results in a CDF of  $5.07E-05/RY$ . Use of a 7-day allowable outage time raises the CDF to  $5.34E-05/RY$ . The effect will be even less significant for Unit 2, since only one pump needs the modification. The change results in a one time increase in CDF of  $2.7E-06$  above that which the current TS allow, which is not considered to be significant. Therefore, the licensee has concluded that the increase in

pump reliability and the reduction in exposure to radiation during the implementation of the modification justify the performance of the modification during Mode 1 operation.

The safety function of the RHR will continue to be provided by the redundant train and, since the possibility of a design basis LBLOCA is small, an allowable outage time of 7 consecutive days does not result in a significant increase in the CDF compared to the current allowable outage time of 3 days. In Mode 1, the RHR pumps are in standby; however, at least one pump is required to be in operation when the plant is shut down. Therefore, performing the modifications in Mode 1 will allow both trains to be available for decay heat removal while the plant is shut down.

### 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 (59 FR 10007 dated March 2, 1994). 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: C. E. Carpenter

Date: May 31, 1994