October 10, 1989

Docket Nos. 50-424
50-425

Mr. W. G. Hairston, III
Senior Vice President -
Nuclear Operations
Georgia Power Company
P.O. Box 1295
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: ISSUANCE OF AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NPF-68 AND AMENDMENT NO. 5 TO FACILITY OPERATING LICENSE NPF-81 - VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (TACS 73595/73596)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 24 to Facility Operating License No. NPF-68 and Amendment No. 5 to Facility Operating License NPF-81 for the Vogtle Electric Generating Plant, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated June 12, 1989, and supplemented July 17 and September 25, 1989.

The amendments will increase the maximum enrichment of reload fuel.

A copy of the related safety evaluation supporting Amendment No. 24 to Facility Operating License NPF-68 and Amendment No. 5 to Facility Operating License NPF-81 is enclosed.

Sincerely,

/S/

Jon B. Hopkins, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 24 to NPF-68
2. Amendment No. 5 to NPF-81
3. Safety Evaluation

cc w/enclosures:
See next page

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[VOGTLE AMEND 73595/6 ENRICHMT]
*See previous concurrence

*LA:PDII-3	*PM:PDII-3	*D:PDII-3
MRood	JHopkins:sa	DMatthews
08/15/89	08/15/89	09/07/89

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Mr. W. G. Hairston, III
Georgia Power Company

Vogtle Electric Generating Plant

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DATED: October 10, 1989

AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NPF-68 - Vogtle Electric Generating Plant, Unit 1

AMENDMENT NO. 5 TO FACILITY OPERATING LICENSE NPF-81 - Vogtle Electric Generating Plant, Unit 2

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

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 24
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 June 12, 1989, and supplemented July 17 and September 25, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, 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 license 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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2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachments to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-68 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 24 , 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 and shall be implemented within 30 days 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 Changes

Date of Issuance: October 10, 1989

OFFICIAL RECORD COPY

LA:PDII-3	PM:PDII-3	DEST:SRXB	DREP:PRPB	OGC	D:PDII-3
for MRood	JHopkins:sa	WHodges	LCunningham	MYoung	DBMatthews
8/15/89	8/15/89	8/17/89	8/18/89	8/29/89	9/7/89

EA publ. 8/18/89

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

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 5
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 June 12, 1989, and supplemented July 17 and September 25, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, 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 license 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 attachments to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-81 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 5 , 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 and shall be implemented within 30 days 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 Changes

Date of Issuance: October 10, 1989

OFFICIAL RECORD COPY

LA:PDII-3	PM:PDII-3	DEST:SRXB	DREP:PRPB	OGC	D:PDII-3
MRood	JHopkins:sa	WHodges	LCunningham		DBMatthews
for 8/15/89	8/15/89	8/17/89	8/16/89	8/25/89	9/7/89

EA publ. 8/16/89

ATTACHMENT TO LICENSE AMENDMENT NO. 24

FACILITY OPERATING LICENSE NO. NPF-68

AND LICENSE AMENDMENT NO. 5

FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NOS. 50-424 AND 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. The corresponding overleaf page is also provided to maintain document completeness.

Amended Page	Overleaf Page
5-4	5-3

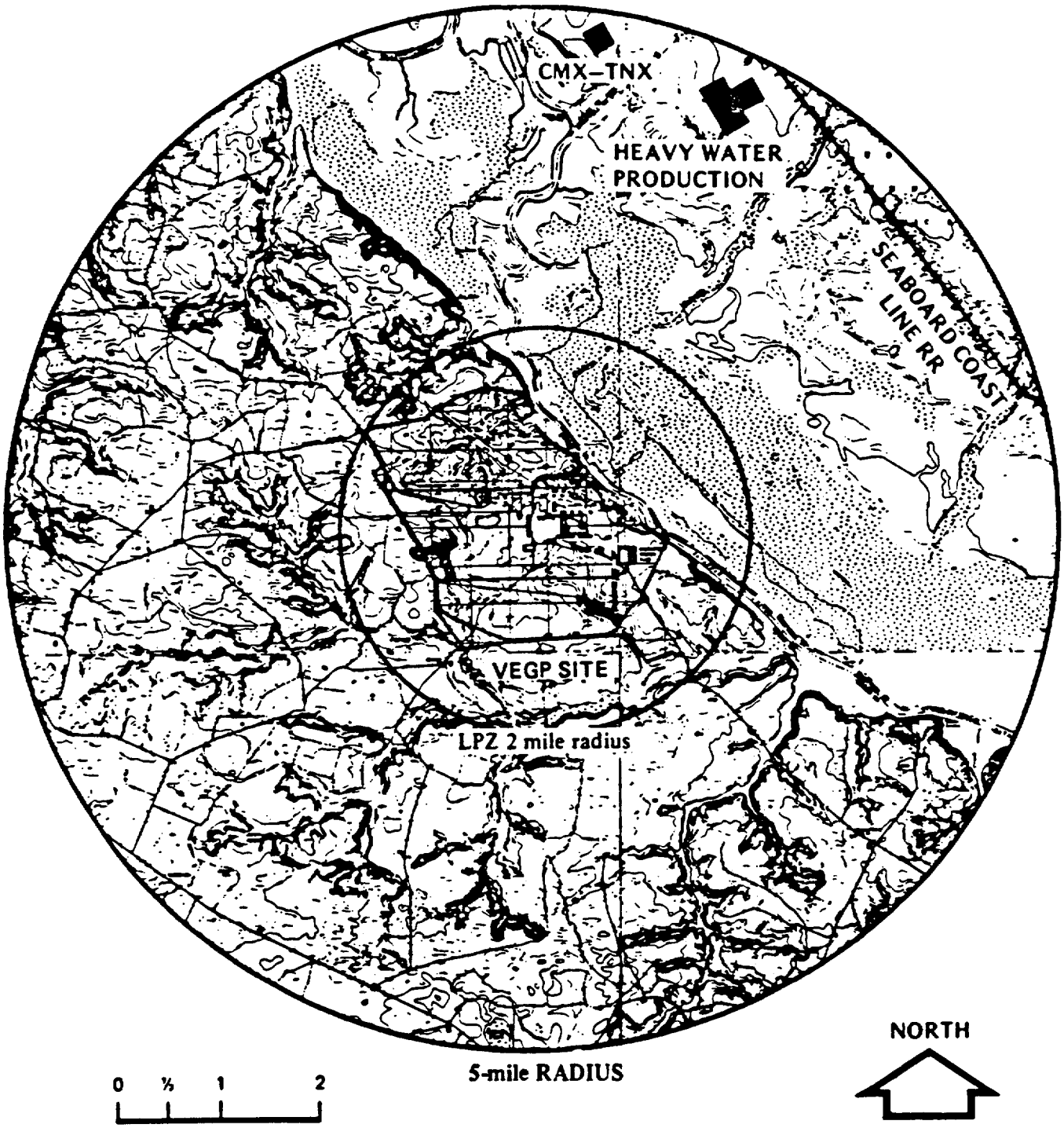

FIGURE 5.1-3

LOW POPULATION ZONE

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment not to exceed 3.2 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment not to exceed 4.55 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length control rod assemblies. The control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal absorber composition shall be 95.5% natural halfnium and 4.5% natural zirconium. All control rods shall be clad with stainless steel.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

a. In accordance with the Code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 12,240 ± 100 cubic feet at a nominal T_{avg} of 588.5°F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1 and 5.1-2.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NPF-68

AND AMENDMENT NO. 5 TO FACILITY OPERATING LICENSE NPF-81

GEORGIA POWER COMPANY, ET AL.

DOCKET NOS. 50-424 AND 50-425

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

1.0 INTRODUCTION

By letter dated June 12, 1989, and supplemented July 17 and September 25, 1989, Georgia Power Company, et al., (the licensee) requested a change to the Technical Specifications (TS) for Vogtle Electric Generating Plant (VEGP), Units 1 and 2. The proposed change would revise TS 5.3.1, "Fuel Assemblies," to increase the maximum enrichment of reload fuel from 3.5 weight percent U-235 to 4.55 weight percent U-235. Associated with the higher enriched fuel is an increase in allowed batch average burnup from 33,000 MWD/MTU to 36,000 MWD/MTU.

The letter of September 25, 1989 provided additional information regarding fuel burnup. The additional information did not substantially affect the amendments request as noticed or the staff's initial determination; therefore, the request for amendments was not renoticed.

2.0 EVALUATION

The licensee has provided the following information in support of their request:

> The proposed amendment is necessary in order that higher enrichment fuel may be used starting with Cycle 3 for VEGP Unit 1. The reload fuel, to be loaded into the VEGP Unit 1 reactor core at the beginning of Cycle 3, will be of the standard Westinghouse design which is currently licensed for use in VEGP Units 1 and 2. Cycle 3 is a transitional cycle to higher burnup and longer operating cycles. The batch average burnup for fuel to be discharged at the end of Cycle 3 will be about 35,000 MWD/MTU, which is below the value of 38,000 MWD/MTU which is considered the transition point to extended burnup fuel. Batch average burnup refers to those fuel assemblies having the same enrichment and initial loading date. The average burnup of all fuel assemblies to be replaced at the end of Unit 1 Cycle 3 will be approximately 37,000 MWD/MTU.
>
> Core fission product inventories, given in table 15A-3 of the Final Safety Analysis Report (FSAR), are based on a three region equilibrium cycle core at end of life and assumes that the three regions have operated at a specific power of 40.03 MW/MTU for 300, 600 and 900 EFPDs, respectively,

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for a core average burnup of approximately 24,000 MWD/MTU. The core average burnup of VEGP Unit 1 at the end of Cycle 3 is anticipated to be in the range of 29,000 to 30,000 MWD/MTU. It should be noted that VEGP operates at a specific power of approximately 38.4 MW/MTU at 100% rated thermal power, compared to the 40.03 MW/MTU used for FSAR table 15A-3. This conservatism more than compensates for any effects of the burnup increase, and represents significant conservatism when compared to the relatively small effects of increased burnup associated with Cycle 3 of VEGP Unit 1.

It is noted that the source terms in table 15A.4 of the FSAR which were used for the Fuel Handling Accident are consistent with those presented in Westinghouse Topical report WCAP-10125 "Extended Burnup Evaluation of Westinghouse Fuel" for a burnup of 48,000 MWD/MTU.

Parameters such as shutdown margin, reactivity coefficients and power peaking factors are not affected by this change. The specification of the fuel enrichment in the Design Features section alone does not uniquely determine nor limit the values of the reactor core parameters contained elsewhere in the Technical Specifications. Each reload design is evaluated to confirm that the cycle core design adheres to the limits that exist in the current accident analyses and Technical Specifications. With respect to increasing the maximum enrichment which can be stored in new fuel or spent fuel storage racks, criticality analyses have been performed to demonstrate that applicable NRC licensing criteria are met for the receipt and storage of 4.55 weight percent U-235 fuel.

The NRC staff has reviewed the criticality analyses for the VEGP Units 1 and 2 spent fuel storage racks and finds that the results show that Keff remains less than 0.95 for Westinghouse 17 x 17 Standard or Optimized fuel assemblies with an enrichment of 4.50 weight percent U-235 plus an uncertainty of .05 weight percent U-235. The NRC staff has also reviewed the criticality analyses for the new fuel storage racks and finds that the results show that Keff remains below 0.95 or 0.98 for optimum moderation for Westinghouse 17 x 17 Standard or Optimized fuel assemblies with an enrichment of 5.0 weight percent U-235 plus an uncertainty of .05 weight percent U-235. These analyses results are in accordance with the Standard Review Plan, NUREG-0800, and are acceptable to the NRC staff.

The licensee has stated that the operating specific power of 38.4 MW/MTU more than compensates for any increased burnup effects. The NRC staff finds this acceptable.

Based on the above, the NRC staff finds that the proposed amendments are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact has been prepared and was published in the Federal Register (54 FR 34265) on August 18, 1989. Accordingly, based upon

the environmental assessment, the Commission has determined that the issuance of these amendments will not have a significant effect on the quality of the human environment.

4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register on August 9, 1989 (54 FR 32711), and consulted with the state of Georgia. No public comments were received, and the state of Georgia did not have any comments.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Jon B. Hopkins, PDII-3/DRP-I/II

Dated: October 10, 1989