

Mar 9, 1993

Docket Nos. 50-424
and 50-425

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

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Dear Mr. Hairston:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT
UPGRADE IN RATED CORE POWER - VOGTLE ELECTRIC GENERATING PLANT,
UNITS 1 AND 2 (TAC NOS. M82724 AND M82725)

Enclosed is a copy of an "Environmental Assessment and Finding of No
Significant Impact" for your information. This environmental assessment
relates to your application dated February 28, 1992, as supplemented June 26
and August 28, 1992, and February 12, 18, 23, and 25, 1993, regarding your
application for license amendments to increase rated core power level from
3411 megawatts thermal (MWt) to 3565 MWt.

This environmental assessment is being forwarded to the Office of the Federal
Register for publication.

Sincerely,

ORIGINAL SIGNED BY:

Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosure:
Environmental Assessment

cc w/enclosure:
See next page

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DATE	2/25/93	2/25/93	2/25/93	3/9/93	2/26/93

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

March 9, 1993

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Senior Vice President -
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Sincerely,

A handwritten signature in dark ink that reads "Darl S. Hood".

Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Environmental Assessment

cc w/enclosure:
See next page

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

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UNITED STATES NUCLEAR REGULATORY COMMISSIONGEORGIA POWER COMPANY, ET AL.DOCKET NOS. 50-424 AND 50-425NOTICE OF ISSUANCE OF ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF-68 and NPF-81 issued to Georgia Power Company (the licensee), for operation of the Vogtle Electric Generating Plant, Units 1 and 2, (Vogtle or the facility) located in Burke County, Georgia.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

This Environmental Assessment is written in connection with the proposed core uprate for Vogtle in response to the licensee's application for license amendments dated February 28, 1992, as supplemented June 26 and August 28, 1992, and February 12, 18, 23, and 25, 1993. The proposed action would increase the rated core power level for each of the two Vogtle units from the current level of 3411 Megawatts-thermal (Mwt) to 3565 Mwt, and upgrade the corresponding Nuclear Steam Supply System (NSSS) power from the current level of 3425 Mwt to 3579 Mwt. This uprate would represent an increase of approximately 4.5 percent over the current rated core power and NSSS thermal power.

The proposed action involves NRC issuance of license amendments to uprate the authorized power level by changing the operating licenses, including Appendix A of licenses (Technical Specifications). No changes are needed to Appendix B of the licenses (Environmental Protection Plan - Non-radiological).

The Need for the Proposed Action:

The proposed action would increase the electrical output of each Vogtle unit by 50 Megawatts and, thus, would provide additional electric power to service commercial and domestic areas of The Southern Company grid (i.e., the Southern Electric System or SES). In its letter of February 18, 1993, the licensee explained that this additional power is needed to meet current and projected loads. Specifically, the licensee stated that:

The Southern Electric System (SES) experienced substantial load growth during the 1980s. By the late 1980s, the system recognized that new sources would be needed in the early- and mid-1990s.

Three of the five load-serving companies in the system filed for certification of new generating units in 1991 and 1992. The Alabama Public Service Commission certified the need for 720 MW of new capacity at the Greene County site for completion in 1995 and 1996. The Georgia Public Service Commission certified the need for 160 MW in 1994 for Savannah Electric and 480 MW of new capacity in 1994 and 1995. Georgia Power Company filed in early 1993 for an additional 160 MW of capacity in 1995 and released a request for proposals for up to 800 MW in 1996 and up to 800 MW in 1997 of independent power.

All of these certifications and requests for proposals assumed the VEGP [Vogtle Electric Generating Plant] uprates will be successful, or more capacity would have been needed.

Environmental Impacts of the Proposed Action:

In the "Environmental Statement Relating to Operation of Vogtle Electric Generating Plant, Units 1 and 2," (FES) dated March 1985, the NRC staff addressed radiological impacts for plant operation up to a maximum (or "stretch") core design output of 3565 MWt and corresponding NSSS stretch power output of 3579 MWt. Thus, the radiological impacts of the proposed action have already been addressed and determined not to present a significant risk nor to present a significant adverse impact on the quality of the human environment. The proposed increase in power involves no significant change in types or significant increase in the amount of any radiological effluents that may be released offsite which have not already been evaluated and found

acceptable in the FES. Similarly, there would be no significant increase in individual or cumulative occupational radiation exposure.

The FES for Vogtle addressed the non-radiological environmental impacts based upon the current NSSS power level of 3425 MWt. To support the application for amendments to increase power level, the licensee re-evaluated relevant parameters from the Vogtle Environmental Report - Operating License Stage based upon operation at the proposed NSSS power level of 3579 MWt (see enclosure 4 of the licensee's submittal of February 28, 1992, as supplemented by the licensee's letter of February 18, 1993). The re-evaluation included environmental parameters associated with the following systems:

River Water Intake and Circulating Water Systems

In the re-evaluation, the licensee concluded that the proposed uprated power operation would not require an increase in the blowdown rate for the natural draft cooling towers because the circulating water system (CWS) design flow rate already envelopes uprated conditions. Changes in the temperature of the cooling tower blowdown would be negligible.

The CWS design flow rate is the primary basis for determining makeup water requirements for the natural draft cooling towers. Other factors affecting makeup requirements include tower performance and meteorological conditions such as dry bulb temperature and relative humidity.

The licensee found that the tower makeup water requirements for the uprate would be within the current design values since the existing CWS design flow rate of 509,600 gpm envelopes the proposed uprate conditions. The licensee's conclusion took into consideration the total

heat loads that would be conveyed to the natural draft cooling tower due to the uprate. The existing cooling tower design heat loads enveloped the licensee's calculated condenser heat loads for the proposed uprate.

Based on the manufacturer's instructions, the licensee states that the maximum drift loss for the natural draft cooling towers is 0.03% of the circulating water flow. The licensee finds that the existing drift loss would envelope the proposed uprate since the CWS design flow would not change for the uprate. The licensee does not expect the natural draft cooling water chemistry to change for the proposed uprate since the design cycles of concentration are expected to be maintained.

Accordingly, the licensee concluded that the design makeup flow to the natural draft cooling towers would not increase due to the proposed uprating, and the intake canal velocity would not be significantly affected.

Groundwater Withdrawal System

The licensee's re-evaluation for the groundwater withdrawal system included withdrawal rates to supply the nuclear service cooling water (NSCW) cooling towers. The primary makeup to the NSCW tower basins is supplied from the makeup well water storage tank. Backup makeup water is also supplied from the river water intake. The current normal makeup requirements to each of the NSCW cooling towers varies from about 230 gpm to 400 gpm based on NSCW design flow rates and the cycles of concentration.

The NSCW makeup requirements are also a function of the design heat loads during normal plant operation. The licensee found that the NSCW design heat loads for normal operation after the power uprate would

increase by about 7% due to an increase in the calculated heat load for the refueling spent fuel pool. The licensee based the evaluation of the design heat loads upon the Unit 2 spent fuel pool, which bounds the Unit 1 design, since the Unit 2 pool and plant fuel management scheme uses high-density spent fuel storage racks. The increase in spent fuel pool heat load is due to use of VANTAGE-5 fuel with its extended fuel cycle, the proposed increase in power level, and use of the Unit 2 high-density racks. The increase in makeup for the NSCW tower will be proportional to the increase in the NSCW heat load during normal operation. Therefore, the licensee concluded that the increase in makeup requirements for each of the two Vogtle units would be only about 7% (30 gpm) of the current design makeup requirements.

The licensee evaluated this projected increase of 30 gpm. The FES for Vogtle was based on a conservatively estimated total groundwater usage of 840 gpm for the two units. The licensee has found from operating experience that actual total groundwater usage based on current data is about 750 gpm. The Permit to Use Groundwater that was issued for the Vogtle facility by the Georgia Department of Natural Resources - Environmental Protection Division authorizes an average withdrawal rate of 5,500,000 gpd (3819 gpm). Thus, the expected 60 gpm withdrawal rate associated with the proposed power increase does not result in a total groundwater withdrawal rate which exceeds the 840 gpm used in the FES. Moreover, the previous conclusions in the FES remain valid for the proposed power increase.

The licensee's re-evaluation also included other systems that use groundwater. The licensee concluded that groundwater withdrawal to

supply ~~the~~ water treatment plant and the fire protection system would not increase due to the proposed power uprate. The licensee also does not expect any significant increase in makeup requirements for the reactor coolant system, component cooling water system, condensate and feedwater system, turbine plant cooling water system, auxiliary steam system, or liquid radwaste system due to the proposed power uprate. Therefore, the licensee concluded that there would be no changes in groundwater withdrawal.

Other Systems

The licensee's re-evaluation considered the flow rate required by the radwaste dilution system due to the proposed power increase. The licensee does not expect increases in liquid radwaste quantities or activity levels that would increase the required radwaste dilution flows.

The licensee also re-evaluated the river water discharge system and concluded that there would be no significant changes to the discharge flow rate, velocity, temperature or thermal plume, or chemical composition due to the uprate. The licensee found that water discharge parameters subject to the NPDES Permit would not change from parameters **evaluated in the FES**. The licensee also found that the discharge **characteristics** on which the NPDES Permit was based would also not be **affected by the power increase** and, therefore, that no modification to the existing NPDES Permit was required.

From its evaluation summarized above, the licensee finds that the environmental effects of Vogtle operation as presented in the FES were based on conservative estimates of operating conditions such that the conclusions of

the FES remain valid for operation at the proposed uprated conditions. The licensee finds that the plant operating parameters impacted by the proposed uprate would remain within the bounding conditions on which the conclusions of the FES are based.

The NRC staff has reviewed the licensee's re-evaluation of the potential non-radiological environmental impacts for the proposed action. On the basis of this review, the NRC staff finds that the non-radiological environmental impacts associated with the proposed small increase in power are essentially immeasurable and do not change the conclusion in the FES that the operation of Vogtle would cause no significant adverse impact upon the quality of the human environment.

Accordingly, the Commission concludes that this proposed action would result in no significant radiological or non-radiological environmental impact.

Alternative to the Proposed Action:

The principal alternative would be to deny the requested amendments. Denial would not significantly reduce the environmental impact of plant operations, but would restrict operation of the Vogtle facility to the currently licensed power level. Denial of the amendments would prevent the facility from generating the additional 50 MWe from each Vogtle unit that is needed for present and future system loads.

Alternative Use of Resources:

This action does not involve the use of resources not previously considered in the "Final Environmental Statement Relating to Operation of Vogtle Electric Generating Plant, Units 1 and 2," dated March 1985.

Agencies and Persons Consulted:

The Commission's staff reviewed the licensee's request and consulted with the Environmental Protection Division, Department of Natural Resources, for the State of Georgia. The State Liaison Officer acknowledged that the State of Georgia has no outstanding actions with respect to the proposed uprate and has no comment regarding the NRC's proposed action.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed license amendments.

Based on the foregoing environmental assessment, the NRC staff concludes that the proposed action will not have a significant adverse effect on the quality of the human environment.

For further details with respect to this action, see the application for amendments dated February 28, 1992, and supplemental letters from the licensee dated June 26 and August 28, 1992, and February 12, 18, 23, and 25, 1993. These documents are available for public inspection at the Commission's Public Document Room, 2120 L Street, NW., Washington, DC 20555, and at the Burke County Library, 412 Fourth Street, Waynesboro, Georgia 30830.

Dated at Rockville, Maryland, this **9th** day of **March** 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



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