July 21, 1995

Mr. J. T. Beckham, Jr.
Vice President - Plant Hatch
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT - EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. M91077 AND M91078)

Dear Mr. Beckham:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendments dated January 13, 1995, as supplemented by letters dated April 5 and June 20, 1995. The proposed amendments would increase the licensed core thermal power from 2436 MWt to 2558 MWt for Hatch, Units 1 and 2. This represents an increase of 5 percent over the current licensed power level.

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

Sincerely,

Original signed by:

Kahtan N. Jabbour, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: Environmental Assessment

cc w/encl: See next page

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

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UNITED STATES NUCLEAR REGULATORY COMMISSION

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

DOCKET NOS. 50-321 AND 50-366

EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2

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. DPR-57 and NPF-5 issued to Georgia Power Company, et al. (GPC or the licensee), for operation of the Edwin I. Hatch Nuclear Plant, Units 1 and 2, located in Appling County, Georgia.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

This Environmental Assessment, provided by the licensee, addresses potential environmental issues related to GPC's application to amend Plant Hatch, Units 1 and 2, Operating Licenses. The proposed amendments would increase the licensed core thermal power from 2436 MWt to 2558 MWt, which represents an increase of 5 percent over the current licensed power level. This request is in accordance with the generic boiling water reactor (BWR) power uprate program established by the General Electric Company (GE) and approved by the NRC staff in a letter from W. T. Russell, NRC, to P. W. Marriott, GE, dated September 30, 1991. Implementation of the proposed power uprate at Plant Hatch will result in an increase of steam flow to approximately 106 percent of the current value, but will not require changes

to the basic fuel design. Core reload design and fuel parameters will be modified as power uprate is implemented to support the current 18-month reload cycle. The higher power level will be achieved by expanding the power/flow map and slightly increasing reactor vessel dome pressure. The maximum core flow limit will not be increased over the pre-uprate value. Implementation of this proposed power uprate will require minor modifications, such as resetting of the safety relief setpoints, as well as calibrating plant instrumentation to reflect the uprated power. Plant operating, emergency, and other procedure changes will be made where necessary to support uprated operation.

The proposed action involves NRC issuance of license amendments to uprate the authorized power level by changing the Operating Licenses, including Appendix A (Technical Specifications). Appendix B of the Operating License (Environmental Technical Specifications) does not require revision as a result of power uprate.

The Need for the Proposed Action:

The proposed action would authorize GPC to increase the potential electrical output of Plant Hatch by approximately 40 megawatts per unit and thus would provide additional electrical power to service GPC's grid.

Environmental Impacts of the Proposed Action:

The "Final Environmental Statement" (FES) related to operation of Plant Hatch Units 1 and 2 (Reference 6) evaluates the nonradiological impact of operation at a maximum design reactor power level of 2537 MWt per unit. By letter dated January 13, 1995 (Reference 1), GPC submitted the proposed amendment to implement power uprate for Hatch Units 1 and 2 which is the subject of this environmental assessment. Enclosure 2 of that submittal provided information on the nonradiological environmental aspects of the

amendment request. Enclosure 4 was the Plant Hatch power uprate licensing report (GE report NEDC-32405P) which provided information on the radiological environmental impact of power uprate.

The proposed amendments allowing power uprate operation will not have a significant impact on the environment and the change does not constitute an unreviewed environmental question. The nonradiological and radiological effects of the proposed action on the environment are described below.

Nonradiological Environmental Assessment:

Power uprate will not change the method of generating electricity nor the method of handling any influents from the environment or effluents to the environment. Therefore, no new or different types of environmental impacts are expected.

The detailed evaluation presented below and in Reference 1 concludes that nonradiological parameters affected by power uprate will remain within the bounding conditions cited in the FES, which concludes that no significant environmental impact will result from operation of Plant Hatch. This conclusion remains valid for power uprate.

The FES evaluated the nonradiological impact at a maximum design reactor power level of 2537 MWt per unit (approximately 104 percent of the current licensed power level). The parameters evaluated in the Environmental Report and the subsequent FES (References 4 through 6) were re-evaluated at 2558 MWt to determine whether the proposed change is significant relative to adverse environmental impact. Table E2-1 of Reference 1 provided a comparison of environmental-related operation parameters at rated and uprated power. Both units at Plant Hatch utilize a closed-loop circulating water system and forced air cooling towers for dissipating heat from the main turbine condenser.

Other equipment is cooled by the plant service water (PSW) and residual heat removal (RHR) service water systems. The cooling towers and service water systems are operated in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit No. GA 0004120, which expires October 31, 1997. No notification changes or other action relative to the NPDES Permit are required.

The withdrawal of cooling water from the Altamaha River is expected to increase slightly, primarily due to the increase in the evaporation rate from the cooling towers. Emergency system flows are expected to remain generally unchanged. Although increased heat loads are expected for nonsafety-related loads, such as the main generator stator coolers, hydrogen coolers, and exciter coolers, heat loads will remain within the existing design heat loads of the service water systems.

The circulating water system design flow rate is the primary basis for determining makeup water for the Plant Hatch cooling towers. Other factors affecting tower makeup are tower performance and meteorological conditions. Based on the review of cooling tower performance parameters associated with power uprate, the design flow rate of the cooling towers will not change. Makeup requirements may increase slightly due to increased heat load on the towers and the associated increase in evaporation. As discussed in Enclosure 2 of Reference 1, the increase in makeup (withdrawal) rate is expected to be approximately 5 percent or 500 gpm. This projected increase associated with the uprate is not significant and is enveloped by the river water withdrawal rates discussed in the FES and the rates approved under the current Georgia Surface Water Withdrawal Permit for Plant Hatch. Intake canal

velocity will not be significantly affected. No measurable effects on fish impingement or plankton entrainment are expected.

Changes in cooling tower blowdown rate and cooling tower chemistry as a result of the uprate are not significant. Any changes in blowdown rate and cooling tower cycles of concentration resulting from uprated power operation are enveloped by the existing design criteria discussed in FES.

Cooling tower drift does not increase as a result of the uprate since the circulating water flow rate does not change. Cooling tower blowdown temperature associated with power uprate operation will increase slightly (<1°F), thereby producing a slight increase in river discharge temperature. A review of the increase in the river discharge temperature relative to the conclusions of the FES and thermal studies required to support licensing of the plant indicates the slight temperature increase is not significant.

The thermal plume characteristics are not expected to change significantly as a result of power uprate. Circulating water and service water flow rates remain unchanged. The discharge temperature to the cooling towers should increase by no more than 1°F due to operation at power uprate conditions. The corresponding change in discharge temperature at the river will not significantly impact the size or characteristics of the thermal plume. Thermal plume studies conducted during original licensing and the FES conclusions relative to thermal impacts remain valid for the uprated condition.

No significant change in discharge flow rate, velocity, or chemical composition will occur due to the proposed power uprate. Power uprate does not impact the discharge characteristics upon which the NPDES Permit is based.

No notification, changes, or other actions relative to the NPDES Permit are required.

No change in the groundwater withdrawal required to supply the Hatch treatment plant or fire protection system will result from the proposed uprate.

The evaluation also considered the flow rate required by the liquid radwaste system (e.g., floor and equipment drains) due to the proposed uprate. No significant change in liquid radwaste quantities or activity levels which would increase the required radwaste dilution flow are expected. Therefore, the impact on the environment from these systems as a result of operation at the uprate power levels is not significant.

Plant operation at uprated power conditions will not affect current noise levels. Major plant equipment is housed within structures located on the plant site and is not a major contributor to surrounding noise levels. Equipment, such as the main turbines/generators and the cooling towers, will continue to operate at the current speed and noise level. The generator step-up transformers will operate at an increased KVA level; however, the overall noise level will not increase significantly.

Thus, the proposed uprate will not result in any significant environmental impact and is not an unreviewed environmental question. In addition, no actions relative to the Environmental Technical Specifications (ETS), NPDES permit or other environmental documents are required.

Radiological Environmental Assessment:

Georgia Power Company evaluated the impact of the proposed power uprate amendment and concluded that the applicable regulatory acceptance criteria relative to radiological environmental impacts will continue to be satisfied

for the uprated power conditions. Existing Technical Specifications limits on radiological effluents will be maintained. In conducting this evaluation, GPC considered the effect of the higher power level on liquid radioactive wastes, gaseous radioactive wastes, and radiation levels both in the plant and offsite during both normal operation and post-accident.

Enclosure 4 of Reference 1 provides the power uprate safety analyses report for Plant Hatch, as well as an assessment of the radiological effects of power uprate operation during both normal and postulated accident conditions. Sections 8.1 and 8.2 discuss the potential effect of power uprate on the liquid and gaseous radwaste systems. Sections 8.3, 8.4, and 8.5 discuss the potential effect of power uprate on radiation sources within the plant and radiation levels during normal and post-accident conditions. Section 4.4 discusses the standby gas treatment system (SGTS). Section 9.2 presents the results of the calculated whole body and thyroid doses at the exclusion area boundary and the low population zone that might result from the postulated design basis radiological accidents. All offsite doses remain below established regulatory limits for power uprate operation.

The floor drain collector subsystem and the waste collector subsystem both receive inputs from a variety of sources (e.g., leakage from component cooling water system, reactor coolant system, condensate and feedwater system, turbine, and plant cooling water system). However, leakages from these systems are not expected to increase significantly since the operating pressures of these systems are either being maintained constant or are being increased only slightly due to the proposed power uprate.

The largest single source of liquid radioactive waste is from the backwash of the condensate demineralizers. These demineralizers remove activated corrosion products which are expected to increase proportionally to the proposed power uprate. However, the total volume of processed waste is not expected to increase significantly, since the only appreciable increase in processed waste will be due to the slightly more frequent cleaning of these demineralizers. Based on a review of plant effluent reports and the slight increase expected due to the proposed power uprate, GPC has concluded that the slight increase in the processing of liquid radioactive wastes will not have a significant increase in environment impact and that requirements of 10 CFR 20 and 10 CFR 50, Appendix I, will continue to be met.

Gaseous radioactive effluents are produced during both normal operation and abnormal operation occurrences. These effluents are collected, controlled, processed, stored, and disposed of by the gaseous radioactive waste management systems which include the various building ventilation systems, the offgas system, and the SGTS. The concentration of radioactive gaseous effluents released through the building ventilation systems during normal operation is not expected to increase significantly due to the proposed power uprate since the amount of fission products released into the reactor coolant (and subsequently into the building atmosphere) depends on the number and nature of fuel rod defects and is not dependent on reactor power level. The concentration of activation products contained in the reactor coolant is expected to remain unchanged, since the linear increase in the production of these activation products will be offset by the linear increase in steaming rate. Therefore, based on its review of the various building ventilation

systems, GPC has concluded that there will not be a significant adverse effect on airborne radioactive effluents as a result of the proposed power uprate.

Radiolysis of the reactor coolant causes the formation of hydrogen and oxygen, the quantities of which increase linearly with core power. These additional quantities of hydrogen and oxygen would increase the flow to the recombiners by 5 percent during uprated power conditions. However, the operational increases in hydrogen and oxygen remain within the design capacity of the system.

The SGTS is designed to minimize offsite and control room radiation dose rates during venting and purging of both the primary and secondary containment atmospheres under accident or abnormal conditions. This is accomplished by maintaining the secondary containment at a slightly negative pressure with respect to the outside atmosphere and discharging the secondary containment atmosphere through high-efficiency particulate air (HEPA) filters and charcoal adsorbers. The SGTS charcoal absorbers are designed for a charcoal loading capacity of 2.5 mgI/gC for the 30-day loss-of-coolant accident (LOCA) scenario. The proposed power uprate will increase the post-LOCA iodine loading by 5 percent; however, the charcoal loading will remain within the 2.5 mgI/gC design limit. Therefore, there will be no significant increase in environmental impact.

Georgia Power Company evaluated the effects of the power uprate on in-plant radiation levels for Plant Hatch during both normal operation and post-accident. GPC's conclusions are that radiation levels during both normal operation and post-accident may increase slightly (approximately proportional to the increase in power level). The slight increases in in-plant radiation levels expected due to the proposed power uprate should not affect radiation