Georgia Power Company
40 [illegible] ss Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7279

J. T. Beckham, Jr.
Vice President - Nuclear
Hatch Project

Georgia Power
the southern electric system

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Docket Nos. 50-321
50-366

HL-4724

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant
Request for License Amendment:
Power Uprate Operation

Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Georgia Power Company (GPC) hereby requests changes to Operating Licenses Nos. DPR-57 and NFP-5 and Appendices A thereto, for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, respectively. The proposed changes will allow Plant Hatch to operate at an uprated power level of 2558 MWt. This represents a power level increase of 5 percent.

This proposal follows the generic guidelines for General Electric (GE) BWR power uprate described in References 1 and 2. Enclosure 1 contains a detailed description of the specific proposed changes necessary for power uprate operation and the technical bases for these changes. Enclosure 2 contains an environmental assessment. Enclosure 3 provides the page change instructions and the proposed changed Technical Specifications and Operating License pages. The Technical Specifications markups are consistent with the Hatch Improved Technical Specifications (Reference 3). Enclosure 4 is a GE report containing the detailed plant-specific submittal information required by the generic guidelines (References 1 and 2). Portions of the GE report are proprietary. Enclosure 5 provides GE's affidavit to that effect. Enclosure 4 also contains a non-proprietary significant hazards evaluation.

The Technical Specifications markups in Enclosure 3 are based on the Improved Technical Specifications (ITS) as provided to the NRC in Reference 3. It is expected the NRC will issue the Unit 1 and Unit 2 ITS in early 1995. Upon issuance of the ITS, GPC will provide the NRC revised Technical Specifications markups and typed pages to incorporate the proposed power uprate into the approved ITS.

Reference 4 provided GPC's implementation schedule for power uprate. The Fall 1995 Unit 2 outage is scheduled to begin September 20, 1995. Georgia Power Company requests approval of the proposed changes for both Units 1 and 2 by September 1, 1995. The proposed Unit 2 license amendment should become effective upon startup in Cycle 13.

Appl Change pkg for Hatch 1 Encl W/out Prop
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NRC approval 2-3 weeks before the Unit 2 outage is necessary to support pre-outage planning and GPC management approval for required power uprate modifications. Examples include:

a. Core Reload Design - Power uprate operation requires additional fuel and the reload design and core loading pattern are established prior to the outage.

b. Design Changes/Maintenance Work Orders - Power uprate implementation involves resetting the safety relief valve setpoints as well as recalibration and resetting of plant instrumentation.

Plant Hatch Unit 1 is scheduled to implement power uprate modifications during the Spring 1996 outage. Therefore, the proposed Unit 1 license amendment should become effective upon startup in Cycle 17.

In accordance with the requirements of 10 CFR 50.91, a copy of this letter and all applicable enclosures will be sent to the designated State official of the Environmental Protection Division of the Georgia Department of Natural Resources.

Mr. J. T. Beckham, Jr. states he is Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

GEORGIA POWER COMPANY

BY: Jane T. Beckham Jr
J. T. Beckham, Jr.

Sworn to and subscribed before me this 13th day of January, 1995.

Dana Delane Brown
Notary Public
MY COMMISSION EXPIRES NOVEMBER 3, 1997

GKM/eb

HL-4724

Enclosures:

1. Bases for Change Request
2. Environmental Assessment
3. Page Change Instructions
4. GE Report NEDC-32405P, "Power Uprate Safety Analysis Report for Edwin I. Hatch Plant Units 1 and 2," December 1994 (proprietary)
5. GE Affidavit for NEDC-32405P

References:

1. NEDC- 31897P-1, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," June 1991.

2. NEDC-31894P, "Generic Evaluations for General Electric Boiling Water Reactor Power Uprate," Volumes I, II; Supplements 1, 2, July 1991.

3. GPC Letter HL-4713, J. T. Beckham, Jr. to NRC, "Request to Revise Technical Specifications: Improved Standard Technical Specifications Submittal Revision," dated November 1, 1994.

4. GPC Letter HL-4738, J. T. Beckham, Jr. to NRC, "Power Uprate Implementation Schedule," dated December 1, 1994.

cc: *Georgia Power Company*
Mr. H. L. Sumner, Nuclear Plant General Manager
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. B. L. Holbrook, Senior Resident Inspector - Hatch

State of Georgia
Mr. J. D. Tanner, Commission - Department of Natural Resources

Enclosure 5

Edwin I. Hatch Plant Units 1 and 2
GE Report Affidavit for NEDC-32405P

General Electric Company

AFFIDAVIT

I, George B. Stramback, being duly sworn, depose and state as follows:

(1) I am Project Manager, Licensing Services, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in the GE proprietary report NEDC-32405P, *Power Uprate Safety Analysis Report for Edwin I. Hatch Plant Units 1 & 2*, Class III (GE Proprietary Information), dated December 1994. This document, taken as a whole, constitutes a proprietary compilation of information, some of it also independently proprietary, prepared by the General Electric Company. The independently proprietary elements are delineated by bars marked in the margin adjacent to the specific material.

(3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), 2.790(a)(4), and 2.790(d)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;

b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;

c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of General Electric, its customers, or its suppliers;

d. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, of potential commercial value to General Electric;

e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

Both the compilation as a whole and the marked independently proprietary elements incorporated in that compilation are considered proprietary for the reason described in items (4)a. and (4)b., above.

(5) The information sought to be withheld is being submitted to NRC in confidence. That information (both the entire body of information in the form compiled in this document, and the marked individual proprietary elements) is of a sort customarily held in confidence by GE, and has, to the best of my knowledge, consistently been held in confidence by GE, has not been publicly disclosed, and is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the

accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information identified by bars in the margin is classified as proprietary because it contains detailed results and conclusions from these evaluations, utilizing analytical models and methods, including computer codes, which GE has developed, obtained NRC approval of, and applied to perform evaluations of transient and accident events in the GE Boiling Water Reactor ("BWR"). The development and approval of these system, component, and thermal hydraulic models and computer codes was achieved at a significant cost to GE, on the order of several million dollars.

The remainder of the information identified in paragraph (2), above, is classified as proprietary because it constitutes a confidential compilation of information, including detailed results of analytical models, methods, and processes, including computer codes, and conclusions from these applications, which represent, as a whole, an integrated process or approach which GE has developed, obtained NRC approval of, and applied to perform evaluations of the safety-significant changes necessary to demonstrate the regulatory acceptability of a given increase in licensed power output for a GE BWR. The development and approval of this overall approach was achieved at a significant additional cost to GE, in excess of a million dollars, over and above the very large cost of developing the underlying individual proprietary analyses.

To effect a change to the licensing basis of a plant requires a thorough evaluation of the impact of the change on all postulated accident and transient events, and all other regulatory requirements and commitments included in the plant's FSAR. The analytical process to perform and document these evaluations for a proposed power uprate was developed at a substantial investment in GE resources and expertise. The results from these evaluations identify those BWR systems and components, and those postulated events, which are impacted by the changes required to accommodate operation at increased power levels, and, just as importantly, those which are not so impacted, and the technical justification for not considering the latter in changing the licensing basis. The scope thus determined forms the basis for GE's offerings to support utilities in both performing analyses and providing licensing consulting services. Clearly, the scope and magnitude of effort of any attempt by a competitor to effect a similar licensing change can be narrowed considerably based upon these results. Having invested in the initial evaluations and developed the solution strategy and process described in the subject

document GE derives an important competitive advantage in selling and performing these services. However, the mere knowledge of the impact on each system and component reveals the process, and provides a guide to the solution strategy.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's comprehensive BWR technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods, including justifications for not including certain analyses in applications to change the licensing basis.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to avoid fruitless avenues, or to normalize or verify their own process, or to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions. In particular, the specific areas addressed by any document and submittal to support a change in the safety or licensing bases of the plant will clearly reveal those areas where detailed evaluations must be performed and specific analyses revised, and also, by omission, reveal those areas not so affected.

While some of the underlying analyses, and some of the gross structure of the process, may at various times have been publicly revealed, enough of both the analyses and the detailed structural framework of the process have been held in confidence that this information, in this compiled form, continues to have great competitive value to GE. This value would be lost if the information as a whole, in the context and level of detail provided in the subject GE document, were to be disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources, including that required to determine the areas that are not affected by a power uprate and are therefore blind alleys, would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing its analytical process.

STATE OF CALIFORNIA)
) ss:
COUNTY OF SANTA CLARA)

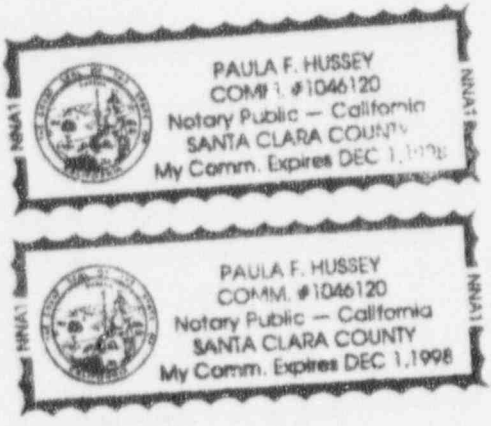
George B. Stramback, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at San Jose, California, this 3rd day of January 1995.

George B. Stramback
General Electric Company

Subscribed and sworn before me this 3rd day of January 1995.



Paula F. Hussey
Notary Public, State of California

Enclosure 1

Edwin I. Hatch Nuclear Plant
Request for License Amendment:
Power Uprate Operation

Bases for Change Request

Introduction

This proposed amendment consists of a number of changes which will permit uprated power operation for Plant Hatch Units 1 and 2. Plant Hatch is a dual-unit General Electric (GE) BWR/4 with a Mark I containment. Other plants similar in design to Plant Hatch have already received NRC approval to operate at uprated conditions.

Both units were originally designed and the safety analyses performed for a maximum power level of approximately 2537 MWt, which corresponds to 105 percent of the rated steam flow. This power level is often referred to as "stretch power." This power level corresponds to approximately 104.2 percent of the current licensed rated power level (2436 MWt). Because of the significant economic advantages of operating at a higher power level, Georgia Power Company (GPC) is proposing a permanent amendment to the operating license for each Plant Hatch unit, which will enable them to be operated at power levels up to 105 percent of the current rated power level (i.e., approximately 0.8 percent above the "stretch power" level).

The analyses and evaluations supporting these changes were completed using the guidelines in General Electric (GE) Topical Report NEDC-31897P-A, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," (Reference 1). The NRC approved this Topical Report by letter to GE dated September 30, 1991. Resolution of generic issues associated with power uprate was addressed in GE Topical Report NEDC-31984P, "Generic Evaluations of General Electric Boiling Water Reactor Power Uprate," (Reference 2). The NRC approved this Topical Report by letter to GE dated July 31, 1992.

An increase in electrical output is accomplished primarily by generation and supply of higher steam flow to the turbine generator. Continuing improvements in the analytical techniques (i.e., computer codes and data) based on several decades of BWR safety technology, plant performance feedback, and improved fuel and core design have resulted in a significant increase in the margin between calculated safety analysis results and the licensing limits. This available safety analysis margin, combined with the excess capability of as-designed equipment, systems, and components, provide the potential for an increase of 5 percent in the full power rating of a plant without the need to perform major Nuclear Steam Supply System (NSSS) or Balance-of-Plant (BOP) hardware modifications. The full power level can be increased safely, and the installed systems and equipment are capable of performing their required functions at the uprated conditions. The method for achieving higher power is to expand (raise) the reactor core power-flow map by increasing

reactor core flow along equivalent flow control load lines. The maximum core flow limit will not exceed the pre-uprate value.

The plant-specific safety analyses, performed by GE to support this change are documented in Enclosure 4. This report demonstrates that Plant Hatch can operate safely with a 5 percent increase in maximum reactor thermal power and an associated 30 psi increase in the operating reactor vessel pressure. This includes the corresponding increase in main turbine inlet steam flow and the corresponding increases in flow, temperature, pressure, and capacity in supporting systems and components. The GE analysis included the following performance improvements which are currently licensed for use at Plant Hatch:

1) Single Loop Operation (SLO)
2) Extended Load Line Limit (ELLL)
3) Increased Core Flow (ICF)
4) Final Feedwater Temperature Reduction
5) APRM/RBM/Technical Specifications (ARTS)

Table E1-1 and E1-2 summarize the Technical Specifications and Bases changes needed to support the power uprate. Each proposed change is discussed in this enclosure.

TABLE E1-1

TECHNICAL SPECIFICATION CHANGES FOR POWER UPRATE

Parameter	Change	Comments
Rated Power	Increased to 2558 MWt	Redefined
Standby Liquid Control Discharge Pressure	+11 psi	Surveillance test pressure based on 30 psi increase in SRV setpoints.
High Pressure Scram	+31 psi	Allowable value (AV) increase based on 30 psi analytical limit (AL) increase.
ATWS High Pressure RPT	+80 psi	AV increase based on 30 psi AL increase and r. -spanned instruments.
LLS Arming Pressure	+31 psi	AV increased based on 30 psi AL increase. Arming function only.
Single Loop Rod Line	-4 percent	Same as current rod line in absolute mega-watts.
SRV Setpoints	+30 psi	Nominal value.
Steam Dome Pressure LCO	+38 psi	Initial condition of vessel overpressure analysis, and approximately 2 percent above operating pressure.
HPCI/RCIC Surveillance Test Pressure	+38 psi	Same as steam dome pressure LCO.

TABLE E1-2

BASES CHANGES FOR POWER UPRATE

Parameter	Change	Comments
Main Steam line, HPCI, and RCIC High Flow	Differential pressure changes vary with instrument.	Allowable value (AV) in percent of rated, does not change.
Peak Containment Pressure	3-4 psi lower	Recalculated for uprate conditions.
Inservice Hydrostatic/ Leakage Pressure	+30/+33 psi	Based on 30 increase in operating pressure.

Proposed Changes

Table E1-1 and E1-2 summarized the Technical Specifications and Bases changes needed to support the power uprate. These changes are also identified in Table 11-1 of Enclosure 4. Enclosure 2 provides the proposed Operating License and Technical Specifications pages which reflect those changes. Each of the Operating License and Technical Specifications changes is evaluated below:

1. Rated Thermal Power is increased to 2558 MWt on page 3 of the Unit 1 Operating License, page 4 of the Unit 2 Operating License, and in Section 1.1 (Definitions) of the Unit 1 and 2 Technical Specifications.

   Evaluation

   This increase and redefinition of rated thermal power for Plant Hatch follows the generic guidelines of NEDC-31897P-A (Reference 1) for General Electric BWR power uprates. NEDC-31897P-A provides generic licensing criteria, clarified methodology, and a defined scope of analytical evaluations and equipment review to be performed to demonstrate the ability to operate safely at the uprated power level. Technical Specifications parameter values, which are expressed as a percentage of rated reactor thermal power or steam flow, were not changed since the uprated values were used in the bounding analyses and evaluations required by Reference 1 unless otherwise specified in this submittal. Enclosure 4 provides the results of the evaluations supporting the proposed uprated power operation consistent with the methodology presented in Reference 1. The report concludes that an uprated power rating of 2558 MWt can be achieved without a significant impact to equipment or safety analyses.

2. The surveillance test discharge pressure for the standby liquid control pump at 41.2 gpm is increased from 1190 psig to 1201 psig. This value appears in Surveillance Requirement (SR) 3.1.7.7 and the corresponding Bases Section B3.1.7 in both the Unit 1 and Unit 2 Technical Specifications.

   Evaluation

   Power uprate operation will result in a 30 psi increase in reactor operating pressure. As will be discussed in these proposed changes, several pressure-dependent setpoints (including SRV setpoints) will be increased to preserve current margins. Increasing the pressure 11 psi, at which a 41.2 gpm flow rate is developed, assures continued conformance to ATWS criteria at uprated condition. The surveillance test pressure is based on the maximum pressure for an ATWS event during the time period when the standby liquid control pump is in operation. Section 6.5 of Enclosure 4 discusses

the capability of these positive displacement pumps. A small increase in the SRV setpoints will have no effect on the rated injection flow to the reactor.

3. The reactor vessel steam dome high pressure allowable value for Reactor Protection System (RPS) instrumentation is increased 31 psi, consistent with the nominal pressure increase for power uprate. The allowable value appears in Section 3.3.1.1, Table 3.3.1.1-1, Function 3, in both the Unit 1 and Unit 2 Technical Specifications.

   Evaluation

   The reactor vessel steam dome high pressure scram limit is increased because the steam dome operating pressure is increased. Operating pressure for uprated power is increased to assure that satisfactory reactor pressure control is maintained. The operating pressure was chosen on the basis of steam line pressure drop characteristics and the steam flow capability of the turbine. Satisfactory reactor pressure control requires an adequate flow margin between the uprated operating condition and the steam flow capability of the turbine control valves at their maximum stroke. An operating dome pressure of 1035 psig, which is 30 psi higher than the current operating dome pressure, is expected. Therefore, the high pressure scram is increased approximately the same amount to preserve existing margins to reactor trips.

   The high pressure scram terminates a pressurization transient not terminated by direct scram or high neutron flux scram. The setting is maintained above the nominal reactor vessel operating pressure and below the specified analytical trip limit used in the safety analyses. The revised high pressure scram setpoint will preserve the hierarchy of pressure setpoints. This means that the high pressure scram setpoint will remain below the opening setpoint of the safety/relief valves (SRVs). The SRV nominal setpoints are also increased 30 psi, as discussed in proposed change 7. This hierarchy of setpoints provides assurance that there is a low probability of opening more than one SRV without scram intervention.

4. The anticipated transient without scram (ATWS) reactor vessel steam dome high pressure recirculation pump trip (RPT) allowable value is raised approximately 80 psi. The allowable value appears in Section 3.3.4.2, SR 3.3.4.2.3, in both the Unit 1 and Unit 2 Technical Specifications.

Evaluation

The ATWS-RPT high pressure setpoint initiates a trip of the recirculation pumps, thereby adding negative reactivity following events in which a scram does not (but should) occur. Section 5.1.3.2 of Enclosure 4 discusses this function in detail.

The current analytical limit for the ATWS-RPT high pressure trip is 1150 psig. This value was increased 30 psi in the power uprate ATWS safety evaluations to account for the 30 psi increase in vessel operating pressure, SRV setpoints, etc. The current allowable value in the Technical Specifications is 1095 psig. This allowable value was not set by the current analytical limit, but by the range of the installed pressure instruments. As part of the power uprate plant changes, these pressure instruments will be replaced to accommodate higher pressure, and the allowable value will be increased in conjunction with the analytical limit used in the safety analysis. Raising the ATWS-RPT high pressure setpoint to correlate with the analytical limit will also tend to prevent unnecessary recirculation pump trips following pressurization transients with reactor scram (e.g., turbine trip or load rejection with bypass). Recirculation pump operation following a scram allows for better mixing of the reactor coolant and reduces thermal stratification in the vessel.

5. The low-low set (LLS) safety/relief valve arming pressure allowable value is increased 31 psi, consistent with the increase in operating pressure and high pressure scram allowable value. The LLS arming pressure allowable value appears in Section 3.3.6.3, Table 3.3.6.3-1, Function 1, in both the Unit 1 and Unit 2 Technical Specifications.

Evaluation

The allowable value for the LLS SRV high pressure arming setpoint is increased because the high pressure scram setpoint is increased. (See proposed change 3.) No changes to the LLS arming logic associated with the SRV tailpipe pressure switches, and the LLS opening and closing pressure setpoints are proposed.

The LLS relief logic mitigates the postulated containment loads of subsequent SRV actuations during small or intermediate loss of coolant accidents by extending the time between actuations. The LLS logic requires two separate signals to arm itself for operation. Specifically, the LLS logic arms when an SRV opens (i.e., tailpipe pressure switch) and reactor pressure concurrently exceeds the scram setpoint. To preserve the hierarchy of pressure setpoints, this high pressure input to the LLS SRV arming logic has the same setpoint as the high pressure scram, thus minimizing the

potential for a spurious SRV opening through the LLS logic without occurrence of a reactor scram.

6. Lower the permissible rod line for single-loop operation (SLO) below 45 percent core flow from the 80 percent rod line to the 76 percent rod line. This Technical Specifications limit appears in Section 3.4.1 (Figure 3.4.1-1) and the corresponding Bases (B3.4.1) of both the Unit 1 and 2 Technical Specifications.

   Evaluation

   During development of the generic power uprate program, GE and the NRC agreed to maintain the current exclusion region in the power-to-flow map related to thermal-hydraulic stability. The current limit for SLO is the 80 percent rod line. As noted previously, power uprate will redefine 100 percent rated power, and therefore rated rod or flow control lines. The 76 percent rod line at uprated conditions closely corresponds on an absolute rather than percentage basis, to the existing 80 percent rod line.

7. The SRV lift setpoints in SR 3.4.3.1 (both units) will be increased 30 psi.

   Evaluation

   The SRVs are designed to prevent overpressurization of the reactor pressure vessel during abnormal operational transients. The SRV lift setpoints are increased to accommodate the increase in operating pressure that accompanies power uprate. The increase in SRV setpoints ensures that adequate margins are maintained so that the increase in dome pressure during normal operation does not result in an increase in the number of unnecessary SRV actuations. The setpoint increase also maintains the hierarchy of pressure setpoints described in these proposed changes. Transient evaluations include a + 3 percent tolerance to the nominal setpoints. As described in Section 3.2 of Enclosure 4, peak vessel pressure increases by 3 percent, but remains well below the 1375 psig ASME Code limit.

   Although not credited in the transient analysis, GPC installed a pressure transmitter system which can electronically actuate the SRVs on high vessel pressure. The nominal trip setpoints for its actuation correspond with the nominal mechanical lift setpoints in the Technical Specifications. The SRV pressure transmitter system nominal setpoints will also be increased 30 psi.

   The adequacy of BWR SRVs to operate at uprated temperatures and pressures has been evaluated generically in Section 4.6 of Reference 2. The reactor operating

pressure and temperature increases of less than 40 psi and 5°F, respectively, used in that evaluation bound the uprated Hatch operating conditions.

The impact of power uprate on the Hatch containment dynamic loads due to SRV discharge has also been evaluated. As discussed in Section 4.1.2 of Enclosure 4, the vent thrust loads with power uprate were calculated to be less than the loads used in the containment analysis. The effect of power uprate on SRV air-clearing, the discharge line, the pool pressure boundary, and submerged structure drag loads is also discussed in Section 4.1.2 of Enclosure 4. That discussion concludes that the small increase in the setpoint pressure is well within the margin in the SRV loads defined in the Mark I Containment Long-Term Program. Therefore, power uprate does not impact the Hatch SRV load definitions used in the containment analysis.

8. The Limiting Condition for Operation (LCO) and Surveillance Requirements on the maximum reactor steam dome pressure will be increased from 1020 psig to 1058 psig. This requirement appears in LCO 3.4.10, SR 3.4.10.1, and the corresponding Bases in both the Unit 1 and Unit 2 Technical Specifications.

   Evaluation

   As discussed in the Technical Specifications Bases and in Section 3.2 of Enclosure 4, the maximum reactor dome pressure is an initial condition of the vessel overpressure protection analysis, which assumes a fast isolation of all four main steam lines by the main steam isolation valves. The reactor scram signal generated directly by the valve closure is assumed defeated for this analysis. Instead, the scram signal is generated by high neutron flux. The overpressure analysis for power uprate assumed an initial dome pressure of 1058 psig, which represents an increase of 38 psig. This initial pressure was chosen approximately 2 percent above the 1035 psig steam dome operating pressure expected for power uprate operation. The analysis also included the other changes (including SRV setpoints) discussed in these proposed changes.

9. The HPCI and RCIC surveillance test pressures in SRs 3.5.1.8 and 3.5.3.3, respectively, (both units) are increased 38 psi.

   Evaluation

   The allowable HPCI and RCIC surveillance test pressure is increased to correspond with the increase in normal reactor operating pressure and LCO/SR on maximum reactor pressure that accompanies power uprate. (As discussed in proposed change 8, the LCO on reactor steam dome pressure is increased 38 psi.) The change is needed to ensure that pressure and power reductions are not required to perform

surveillance testing. The requested changes will allow the quarterly demonstration of HPCI and RCIC capability to be performed at normal reactor operating pressures, which meets the original intent of the Technical Specifications.

10. Bases Changes

Several changes to the Hatch Units 1 and 2 Technical Specification Bases are proposed for consistency with the power uprate safety analyses. These proposed changes are in addition to the Bases changes corresponding to proposed changes 1 through 9.

a) The main steam line flow differential pressure setpoints, as shown in Bases Section B3.3.6.1.c, and the HPCI/RCIC high flow differential pressure setpoints (Bases Section, B3.3.6.3.a and B3.3.6.4.a) are changed for both units.

The allowable values (in percent of rated) will not change for power uprate operation. However, the actual differential pressure will change due to the increase in steam flow and pressure.

b) The HPCI and RCIC upper design pressure in Bases Sections B3.5.1 and B3.5.3, respectively, is increased 34 psi for both units.

The Bases changes support the design of these high pressure systems to pump rated flow from approximately 150 psig up to a pressure associated with the first group of SRV setpoints. This proposed design pressure conservatively considers the 30 psi higher nominal setpoints and 3 percent setpoint drift. The capability of the HPCI and RCIC systems to deliver design flows at these pressures is discussed in Section 4.2 of Reference 2, was reviewed by GE for both the Unit 1 and Unit 2 systems.

Note that the upper design pressure for HPCI and RCIC is different from the surveillance test pressure for HPCI and RCIC discussed in proposed change 10. The maximum surveillance test pressure corresponds to reactor operating pressure since the surveillance test is performed when the unit is operating. The HPCI and RCIC upper design pressure reflects the capability to inject water to the vessel following a reactor scram and isolation.

c) The peak post accident containment pressure (P_a) is changed to 49.6 psig (Unit 1) and 45.5 psig (Unit 2). These values appear in Bases Sections B3.6.1.1, B3.6.1.2, and B3.6.1.4 in both unit's Technical Specifications.

Section 4.1.1.3 of Enclosure 4 discusses the peak short-term containment pressure response which was recalculated for power uprate conditions. Containment pressure and temperatures remain below design limits and are essentially unchanged.

d) The main condenser offgas gross gamma activity rate limit of 240 mci/second will not be changed for power uprate. A statement that the current limit is conservative for power uprate conditions was added to Bases Section 3.7.6 for both units.

The Bases derive the current 240 mci/second limit using a rated core thermal power limit of 2436 MWt. A slightly higher limit could be justified using the uprated power level. However, adequate margin exists with the current limit.

e) The inservice hydrostatic and leak testing pressures shown in Bases Section 3.10.1 are increased 33 psi and 30 psi respectively. This change affects both unit's Bases.

This change is a direct result of the 30 psi increase in normal operating pressure proposed for power uprate. The leakage test is normally performed at operating pressure and the hydrostatic test at approximately 110 percent of operating pressure.

References

1. NEDC-31897P-A, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," June 1991.

2. NEDC-31984P, "Generic Evaluations of General Electric Boiling Water Reactor Power Uprate," Volumes I, II; Supplements 1, 2, July 1991.

Enclosure 2

Edwin I. Hatch Nuclear Plant
Request for License Amendment:
Power Uprate Operation

Environmental Assessment

Identification of Proposed Action

Edwin I. Hatch Nuclear Plant Units 1 and 2 are currently licensed to operate at a core thermal power level of 2436 MWt. This proposed license amendment will increase the licensed core thermal power to 2558 MWt, or 105 percent of the current maximum steady state power level.

Need for Proposed Action

The proposed action permits an increase in the licensed core thermal power from 2436 MWt to 2558 MWt and provides GPC the flexibility to increase the potential electrical output of Plant Hatch Units 1 and 2.

Environmental Assessment of the Proposed Action

The proposed amendment allowing power uprate operation will not have a significant impact on the environment and does not constitute an unreviewed environmental question. The radiological assessment of power uprate operation is addressed in Enclosure 4 and is summarized below. Details of the non-radiological assessment of the impact of power uprate are provided.

A. Radiological Environmental Assessment

Adequate margin exists for the proposed power uprate without exceeding regulatory limits for radiological effects. Power uprate is not expected to have an adverse impact on the previous radiological environmental analyses; thus revision of these analyses is not required. Existing Technical Specifications limits on radiological effluents will be maintained.

Enclosure 4 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 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.

B. Non-Radiological Environmental Assessment

Since power uprate will not significantly change the methods of generating electricity or of handling any influents from the environment or effluents to the environment, no new or different environmental impacts are expected. The detailed evaluation presented below concludes that non-radiological parameters affected by power uprate will remain within the bounding conditions cited in the Final Environmental Statement (FES), which states that no significant environmental impact will result from operation of Plant Hatch. This conclusion remains valid for power uprate.

The FES evaluated the non-radiological impact at a maximum design reactor power level of 2537 MWt per unit. The parameters evaluated in the Environmental Report and the subsequent FES (References 1-3) were re-evaluated at 2558 MWt to determine whether the proposed change is significant relative to adverse environmental impact. Table E2-1 provides a comparison of environmental-related operating parameters at rated and uprated power.

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. The increase in makeup due to consumptive water use (evaporation) 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.

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 slight temperature increase does not significantly impact the size of the thermal mixing zone for the Plant Hatch thermal effluent and does not alter the conclusions of the FES relative to thermal impacts. The conclusions of additional thermal studies performed to document the thermal mixing zone impact are also not impacted.

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 action 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 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.

Conclusions

Georgia Power Company concludes that the proposed uprate will not result in a significant adverse environmental impact and is not an unreviewed environmental question. Based on the above evaluation, the plant operating parameters impacted by the proposed power uprate remain within the bounding conditions on which the FES was based. The FES concluded that no significant environmental impact would result from the operation of Plant Hatch. This conclusion remains valid for power uprate.

References

1. "Final Environmental Statement for Edwin I. Hatch Nuclear Plant Units 1 and 2," October 1972.

2. Edwin I. Hatch Nuclear Plant - Unit 2 Environmental Report, Operating License Stage, July 1975.

3. "NUREG-0417," Final Environmental Statement Related to Operation of Edwin I. Hatch Nuclear Plant Unit No. 2, March 1978.

TABLE E2-1 (Sheet 1 of 2)

COMPARISON OF ENVIRONMENTAL-RELATED OPERATING PARAMETERS

Parameter	Rated Value	Uprated Value
Cooling Tower Makeup	20582 gpm	21600 gpm
Cooling Tower Evaporation	10291 gpm	10800 gpm
Cooling Tower Blowdown	9158 gpm	9668 gpm
Cooling Tower Drift	0.002 percent	0.002 percent
Cooling Tower Blowdown Temperature	92.69°F	93.12 (See note 1.)
Consumptive Water Use	11423 gpm	11932 gpm
Cooling Tower Chemistry	See note 2.	
River Water Withdrawal	See note 3.	
Intake Canal Velocity	See note 3.	
Discharge Flow Rate	See note 4.	
Discharge Temperature, Thermal Plume	See note 5.	
Groundwater Withdrawal	See note 6.	

Notes:

1. Temperature issues were addressed subsequent to and as a requirement of the FES in a study entitled "Plant E. I. Hatch Thermal Plume Model Verification." Temperatures up to 95°F were documented as no effect. The value of 93°F projected for the uprate are well below the 95°F no effect level previously documented.

2. No changes in cooling tower chemistry will result from the uprate. Makeup and blowdown will be adjusted accordingly so that cycles of concentration are not changed. Flow rates were evaluated assuming the lowest number of cycles (2) to reflect maximum flows.

TABLE E2-1 (Sheet 2 of 2)

Notes: (continued)

3. River water withdrawal rate will change approximately the same amount as the evaporation rate. Plant Hatch is currently permitted to withdraw 72 million gallons per day (MGD) monthly average and 127 MGD max day. Based upon review of surface water withdrawal data for the last 4 years, the projected increase associated with the uprate is enveloped by the permitted values. In addition, the flow rate is also enveloped by the average withdrawal rate discussed in the FES.

4. The increase in discharge flow rate is essentially equal to the increase in blowdown flow rate. These values are well within the values defined in the NPDES Flow Study and enveloped by the value defined in the FES.

5. Study entitled "Plant E. I. Hatch Thermal Plume Model Verification, March 1981" verified no effect of thermal plume up to 95°F final discharge temperature.

6. Groundwater withdrawal rates are not impacted by the proposed uprate.

Enclosure 3

Edwin I. Hatch Nuclear Plant
Request for License Amendment:
Power Uprate Operation

Page Change Instructions

The proposed changes to the Plant Hatch Units 1 and 2 Operating License and Technical Specifications will be incorporated as follows:

Unit 1 - Operating License

Page	Instruction
- 3 -	Replace

Unit 1 - Technical Specifications

Page	Instruction
1.1-5	Replace
3.1-22	Replace
3.3-7	Replace
3.3-32	Replace
3.3-64	Replace
3.4-4	Replace
3.4-8	Replace
3.4-25	Replace
3.5-5	Replace
3.5-12	Replace
B3.1-45	Replace
B3.3-153	Replace
B3.3-158	Replace
B3.4-4	Replace
B3.4-53	Replace
B3.4-54	Replace
B3.5-3	Replace
B3.5-23	Replace
B3.6-2	Replace
B3.6-7	Replace
B3.6-28	Replace
B3.7-33	Replace
B3.10-1	Replace

Enclosure 3
Request for License Amendment:
Power Uprate Operation
Page Change Instructions

Unit 2 - Operating License

Page	Instruction
- 4 -	Replace

Unit 2 - Technical Specifications

Page	Instruction
1.1-6	Replace
3.1-22	Replace
3.3-8	Replace
3.3-33	Replace
3.3-66	Replace
3.4-4	Replace
3.4-8	Replace
3.4-25	Replace
3.5-5	Replace
3.5-12	Replace
B3.1-45	Replace
B3.3-153	Replace
B3.3-158	Replace
B3.4-4	Replace
B3.4-53	Replace
B3.4-54	Replace
B3.5-3	Replace
B3.5-23	Replace
B3.6-2	Replace
B3.6-7	Replace
B3.6-28	Replace
B3.7-33	Replace
B3.10-1	Replace