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

March 10, 1992

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

Dear Mr. Hairston:

SUBJECT: PROPOSED REVISION TO TECHNICAL SPECIFICATION BASES FOR VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (TACS M80084/M80085)

On March 29, 1991, Georgia Power Company (GPC), requested the Nuclear Regulatory Commission (NRC) to review and approve proposed changes to Technical Specification (TS) Bases for Vogtle Electric Generating Plant Units 1 and 2. Specifically, your request involves changes to Bases section 3/4.1.1.3 to revise the method of determining the end-of-cycle moderator temperature coefficient and surveillance requirement limits for primary coolant boron concentration of 300 parts per million specified in the Core Operating Limits Report. We have reviewed the proposed changes and find them acceptable. The revised TS Bases pages are enclosed. Our safety evaluation is also enclosed.

As defined in 10 CFR 50.36, the TS Bases are not part of the TS and, therefore, not an integral part of the license. As such, changes to the TS Bases do not require processing of a licensing amendment and may be made in accordance with the provisions of 10 CFR 50.59. Your letter indicates that you have evaluated the proposed changes in accordance with 10 CFR 50.59 and have determined that the changes do not involve an unreviewed safety question and are consistent with the Vogtle Final Safety Analysis Report. Should the proposed change involve an unreviewed safety question pursuant to 10 CFR 50.59(a)(2), or involve a change in the interpretation of the TS (i.e., constitute a TS change), then the proposed change should be provided to the NRC staff pursuant to the provision of 10 CFR 50.59(c) and 10 CFR 50.90 for prior NRC review and approval.

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For administrative purposes, you need to provide the TS Bases change to the staff and to all other TS holders to enable all copies of the Vogtle TS to be updated in a consistent and timely fashion. If you choose to reference this letter when distributing the new Bases, please include TACS M80084/M80085.

Sincerely,

ORIGINAL SIGNED BY:

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

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As stated

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Sincerely,

DARL HOOD

Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
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As stated

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3/4.1.1 BORATION CONTROL

3/4.1.1.1 and 3/4.1.1.2 SHUTDOWN MARGIN

A sufficient SHUTDOWN MARGIN ensures that: (1) the reactor can be made subcritical from all operating conditions, (2) the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and (3) the reactor will be maintained sufficiently subcritical to preclude total loss of SHUTDOWN MARGIN in the shutdown condition.

SHUTDOWN MARGIN requirements vary throughout core life as a function of fuel depletion, RCS boron concentration, and RCS T_{avg}. In MODES 1 and 2, the most restrictive condition occurs at EOL, with T_{avg} at no load operating temperature, and is associated with a postulated steam line break accident and resulting uncontrolled RCS cooldown. In the analysis of this accident, a minimum SHUTDOWN MARGIN of 1.3% $\Delta k/k$ is required to control the reactivity transient. Accordingly, the SHUTDOWN MARGIN requirement is based upon this limiting condition and is consistent with FSAR safety analysis assumptions. In MODES 3, 4 and 5, the most restrictive condition occurs at BOL, associated with a boron dilution accident. In the analysis of this accident, a minimum SHUTDOWN MARGIN as defined in Specification 3/4.1.1.2 is required to allow the operator 15 minutes from the initiation of the Source Range High Flux at Shutdown Alarm to total loss of SHUTDOWN MARGIN. Accordingly, the SHUTDOWN MARGIN requirement is based upon this limiting requirement and is consistent with the FSAR accident analysis assumptions. The required SHUTDOWN MARGIN is specified in the CORE OPERATING LIMITS REPORT (COLR).

3/4.1.1.3 MODERATOR TEMPERATURE COEFFICIENT

The limitations on moderator temperature coefficient (MTC) are provided to ensure that the value of this coefficient remains within the limiting condition assumed in the FSAR accident and transient analyses.

The MTC values of this specification are applicable to a specific set of plant conditions; accordingly, verification of MTC values at conditions other than those explicitly stated will require extrapolation to those conditions in order to permit an accurate comparison.

The most negative MTC, value equivalent to the most positive moderator density coefficient (MDC), was obtained by incrementally correcting the MDC used in the FSAR analyses to nominal operating conditions. These corrections involved: (1) a conversion of the MDC used in the FSAR safety analyses to its

MODERATOR TEMPERATURE COEFFICIENT (Continued)

equivalent MTC, based on the rate of change of moderator density with temperature at RATED THERMAL POWER conditions, and (2) subtracting from this value the largest differences in MTC observed between End-of-Cycle Life (EOL), all rods withdrawn, RATED THERMAL POWER conditions, and those most adverse conditions of moderator temperature and pressure, rod insertion, axial power skewing, and xenon concentration that can occur in normal operation and lead to a significantly more negative EOL MTC at RATED THERMAL POWER. These corrections transformed the MDC value used in the FSAR safety analyses into the limiting EOL MTC limit. The 300-ppm surveillance MTC limit represents a conservative MTC limit at a core condition of 300 ppm equilibrium boron concentration, and is obtained by making corrections for burnup and soluble boron to the limiting EOL MTC limit.

The Surveillance Requirements for measurement of the MTC at the beginning and near the end of the fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 551°F. This limitation is required to ensure: (1) the moderator temperature coefficient is within its analyzed temperature range, (2) the trip instrumentation is within its normal operating range, (3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and (4) the reactor vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS

The Boron Injection System ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include: (1) borated water sources, (2) charging pumps, (3) separate flow paths, and (4) the boric acid transfer pumps.

With the RCS average temperature above 200°F, a minimum of two boron injection flow paths are required to ensure functional capability in the event an assumed single failure renders one of the flow paths inoperable. The boration capability of either flow path is sufficient to provide a SHUTDOWN