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ELV-02166

Docket Nos. 50-424
50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES
VANTAGE-5 FUEL DESIGN

In accordance with the provisions of 10 CFR 50.90 and 10 CFR 50.59, Georgia Power Company (GPC) proposes to amend the Vogtle Electric Generating Plant (VEGP) Units 1 and 2 Technical Specifications Appendix A to Operating Licenses NPF-68 and NPF-81. The Technical Specifications for which this change is requested allow the use of reload fuel assemblies of the Westinghouse VANTAGE-5 design. Currently, VEGP Units 1 and 2 utilize the Westinghouse LOPAR fuel design for core reloads.

In order to implement a long-term fuel management strategy planned by GPC for the VEGP Units 1 and 2, it has been decided to use fresh VANTAGE-5 fuel assemblies in each reload until a full core loading of VANTAGE-5 fuel is achieved. This long-term strategy includes the implementation of high energy 18-month fuel cycles with high capacity factors and low leakage loading patterns, and extending discharged fuel burnup to support lead rod burnups of 60,000 MWD/MTU. In addition, GPC plans to request a revision to the licensed power level for VEGP Units 1 and 2 from 3411 MWt to 3565 MWt in the near future; however, the Technical Specifications changes for power rerate are not being pursued in this licensing amendment request. The VANTAGE-5 fuel-related Technical Specifications changes are summarized in Enclosure 1 and the changes are provided in Enclosure 3.

The Westinghouse VANTAGE-5 fuel design provides the operating characteristics (by inclusion of specific design features and by use of improved methodologies previously reviewed by the NRC) required to implement GPC's long-term fuel management strategy. The VANTAGE-5 fuel design features include smaller diameter (OFA) fuel rods, mid-span zircaloy grids, the Intermediate Flow Mixer grids, natural uranium oxide axial blankets, Integral Fuel Burnable Absorbers, extended fuel burnup, and Reconstitutable Top Nozzles. The new computer code methodologies relative to the current VEGP safety analyses used in the VEGP VANTAGE-5 safety analyses include BART/BASH (large-break LOCA), NOTRUMP (small-break LOCA), and the improved THINC-IV (thermal-hydraulics) computer codes, as well as

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the Revised Thermal Design Procedure, the WRB-2 DNB correlation, and the Relaxed Axial Offset Control strategy. Both the fuel design features and methodologies support the safe, efficient fuel management scheme planned for the VEGP Units 1 and 2. The real margin provided by the VANTAGE-5 fuel design and VEGP change in methodologies was used to support revised core design parameters that will provide increased operational flexibility and meet the GPC core design fuel management strategy.

The safety analyses (Enclosure 4) supporting the VANTAGE-5 fuel design and the proposed Technical Specifications changes include conservatisms to allow for future revisions to the Technical Specifications. These conservatisms include operational margin for power rerating from 3411 to 3565 MWt, additional increased peaking factors, steam generator tube plugging up to ten percent, removal of the Resistance Temperature Detector bypass loops, and a reduction in thermal design flow. The NSSS design parameters to which the safety analyses have been performed in support of VANTAGE-5 fuel have been generated to account for these future changes.

Enclosure 1 provides a brief description of the proposed changes and the bases for the changes.

Enclosure 2 provides the basis for a determination that the proposed changes do not involve significant hazards considerations.

Enclosure 3 provides instructions for incorporating the proposed changes into the Technical Specifications. Since VEGP uses combined Units 1 and 2 Technical Specifications, the instructions for incorporating the proposed changes for each unit will be done in two phases. The first phase is the proposed Technical Specifications changes involving Vogtle 1 Cycle 4's first fuel loading of the VANTAGE-5 fuel design expected in late September 1991. Attachments 1a and 1b of Enclosure 3 contain the marked-up and typed changes, respectively, to be incorporated following Vogtle 1 Cycle 3 shutdown. At this point in time, the Technical Specifications changes only apply to VEGP Unit 1, while VEGP Unit 2 will continue to operate with the existing Technical Specifications until its initial loading of VANTAGE-5 fuel (about February 1992). In the second phase (Attachments 2a and 2b of Enclosure 3), Technical Specifications changes are proposed to allow Vogtle 2 Cycle 3's first fuel loading of the VANTAGE-5 fuel design expected in February 1992. Therefore, the second phase fully implements the VANTAGE-5 Technical Specifications changes for both VEGP Units 1 and 2. In summary, Phase 1 (Attachments 1a and 1b of Enclosure 3) revises the Technical Specifications to apply the VANTAGE-5 changes to VEGP Unit 1 only without affecting the current Technical Specifications applicable to VEGP Unit 2 operation. Phase 2 revises the Technical Specifications (Attachments 2a and 2b of Enclosure 3) to apply the VANTAGE-5 changes to both VEGP Units 1 and 2. Enclosure 3 contains the changes necessary to incorporate both Phases 1 and 2.

Enclosure 4 provides details of the safety evaluations/analyses performed to support the transition to a full core of VANTAGE-5 fuel for both VEGP Units 1 and 2. Enclosure 4 also includes Appendices A, B, and C which contain the detailed supporting non-LOCA, LOCA, steam generator tube rupture, and radiological assessment analyses/evaluations performed for the VANTAGE-5 fuel design.

Enclosure 5 provides an environmental evaluation to support the use of VANTAGE-5 and LOPAR fuel to lead rod burnups of 60,000 MWD/MTU.

GPC requests a review of this licensing amendment request on a schedule to support the first reload of VANTAGE-5 fuel for VEGP Units 1 and 2 scheduled for late September 1991.

In accordance with 10 CFR 50.91, the designated state official will be sent a copy of this letter and the enclosures.

Mr. W. G. Hairston, III, states that he is a Senior Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company and that, to the best of his knowledge and belief, the facts set forth in this letter and enclosures are true.

GEORGIA POWER COMPANY

By: W. G. Hairston, III

Sworn to and subscribed before me this 29th day of November, 1990.

Notary Public

MY COMMISSION EXPIRES DEC. 15, 1992

Enclosures
1. Basis for Proposed Change
2. 10 CFR 50.92 Evaluation
3. Instructions for Incorporation
4. Safety Evaluation Report
5. Environmental Evaluation

WGH,III:BCA/gps
Distribution Attached

cc w/enclosures:

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Mr. W. B. Shipman
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Mr. R. M. Odom
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U.S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
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Mr. B. R. Bonser, Senior Resident Inspector, Vogtle

State of Georgia
Mr. L. C. Barrett, Commissioner, Department of Natural Resources