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September 25, 1989

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ELV-00868
1645n

Docket Nos. 50-424
50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REVISION TO TECHNICAL SPECIFICATION 5.3.1
SUPPLEMENTAL INFORMATION

By letter ELV-00511 dated June 12, 1989 Georgia Power Company (GPC) proposed 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 proposed amendment revises the allowable reload fuel enrichment from 3.5 to 4.55 weight percent U-235. The NRC noted that the use of the higher enrichment fuel would allow increased burnup and requested that GPC address the environmental considerations of increased burnup in conjunction with the request for the Technical Specification change.

In response to this request GPC provided supplemental information in its letter ELV-00696 dated July 17, 1989. That letter noted that the batch average burnup of fuel to be discharged at the end of Cycle 3 will be higher than the 33,000 MWD/MTU assumed in 10 CFR 51.52 and requested a categorical exemption from 10 CFR 51.52. In support of this request, GPC provided an evaluation to demonstrate that the higher burnup expected for Cycle 3 of VEGP Unit 1 does not involve any significant hazards considerations. The purpose of this letter is to provide additional information and clarification regarding the content of our previous letter ELV-00696.

10 CFR 51.52 (a)(3) states "The average level of irradiation of the irradiated fuel from the reactor does not exceed 33,000 megawatt-days per metric ton...". The basis of our previous letter was that the fuel to be discharged at the end of Cycle 3 of VEGP Unit 1 would exceed 33,000 MWD/MTU. However, it should also have been noted that the average irradiation of all irradiated fuel discharged from the reactor will remain less than 33,000 MWD/MTU.

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In support of the evaluation to demonstrate that the increased burnup associated with Cycle 3 does not involve any significant hazards considerations it was stated that the batch average burnup for fuel to be discharged at the end of Cycle 3 will be less than the maximum batch average burnup of approximately 36,000 MWD/MTU used in developing the core fission product inventories for the safety analyses presented in Chapter 15 of the VEGP Final Safety Analysis Report.

A batch of fuel as used in our letter to define batch average burnup, refers to those fuel assemblies having the same enrichment and same initial loading date. Using this definition of batch to calculate batch average discharge burnup results in our previously submitted value of 35,000 MWD/MTU. If batch average burnup is defined as the average of the burnup of all fuel assemblies in the quantity of fuel to be replaced at the end of the Cycle 3, the value will be approximately 37,000 MWD/MTU.

Core fission product inventories, given in table 15A-3 of the FSAR, are based on a three region equilibruim cycle core at end of life and assumes that the three regions have operated at a specific power of 40.03 MW/MTU for 300, 600 and 900 EFPDs, respectively, for a core average burnup of approximately 24,000 MWD/MTU. The core average burnup of VEGP Unit 1 at the end of Cycle 3 is anticipated to be in the range of 29,000 to 30,000 MWD/MTU. Since the primary concern of the change is related to increased burnup, only burnup was previously discussed in the significant hazards evaluation. It should have also been noted in the significant hazards evaluation that VEGP operates at a specific power of approximately 38.4 MW/MTU at 100% rated thermal power, compared to the 40.03 MW/MTU used for FSAR table 15A-3. This conservatism more than compensates for any effects of the burnup increase, and represents significant conservatism when compared to the relatively small effects of increased burnup associated with Cycle 3 of VEGP Unit 1.

Due to the differences in the way the batch average burnup presented in our previous letter was defined and the way the burnup was defined for the development of table 15A-3, GPC has determined that it is more appropriate to acknowledge the conservatism in core fission product inventories due to the actual operating specific power level versus the conservative 40.03 MW/MTU specific power level. This is because increasing core average burnup has a smaller secondary effect on core fission product inventory for figure 15A-3 than differences in specific operating power level . VEGP is not increasing the specific operating power level, therefore, the conclusion that the increase in burnup associated with Cycle 3 of VEGP Unit 1 does not involve a significant hazards consideration remains valid.

Sincerely,

W. G. Hairston, III

WGH,III/HWM/gm

xc: (see next page)

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