



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

April 12, 1990

Docket No. 50-424

Mr. W. G. Hairston, III  
Senior Vice President -  
Nuclear Operations  
Georgia Power Company  
P.O. Box 1295  
Birmingham, Alabama 35201

Dear Mr. Hairston:

SUBJECT: VOGTLE UNIT 1 SAFETY EVALUATION ON PRESSURIZER SURGE LINE THERMAL  
STRATIFICATION (NRC Bulletin 88-11) (TAC 72178)

On January 4, 1990, Georgia Power Company (GPC) requested our review of WCAP-12218, Supplement 1, "Supplementary Analysis to Address Thermal Stratification for Vogtle Unit 1 Pressurizer Surge Line." Through the application of the leak-before-break methodology, WCAP-12218, Supplement 1, provides the results of analyses that demonstrate the integrity of the Unit 1 pressurizer surge line considering the effects of thermal stratification addressed in NRC Bulletin 88-11, "Pressurizer Surge Line Thermal Stratification."

On February 26, 1990, GPC and Westinghouse made a presentation to the NRC staff describing the pressurizer surge line analysis. This was followed by an NRC audit at Vogtle on March 6-7, 1990, and the March 19, 1990, GPC response that provided additional information, including Supplement 2 to WCAP-12218, "A Supplementary Assessment of Leak-Before-Break for the Pressurizer Surge Lines of Vogtle Units 1 and 2."

GPC's approach to resolve surge line thermal stratification for Unit 1 is to modify the surge line supports to a configuration similar to that currently in Unit 2. This involves replacing one of the two original rigid supports with a snubber and spring hanger. The design and analysis of this surge line modification uses the leak-before-break methodology previously found acceptable for Unit 2.

The NRC staff has reviewed the topical reports and information provided by GPC regarding the Vogtle Unit 1 pressurizer surge line analysis. The staff finds the GPC approach to resolution of NRC Bulletin 88-11 to be acceptable and generally conservative both with regard to the consideration of thermal stratification and in the use of leak-before-break methodology. The stress and

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fatigue analysis methods are identical to those previously used for the Unit 2 surge line design. GPC adequately addressed the differences (versus Unit 2) in support configuration and questions regarding system delta T for past operation of Unit 1. The refined thermal stratification profiles used in the Unit 1 surge line analysis were based on monitoring data taken from the instrumented Unit 2 surge line. GPC committed to revise applicable operating procedures to limit the system delta T (between the pressurizer and the reactor coolant loop) for reactor coolant system (RCS) heatup to 320° F and for RCS cooldown to 300° F. The revised heatup and cooldown procedures ensure consistency between actual plant operation and the surge line analysis assumptions.

The NRC staff concludes that GPC has defined and implemented an acceptable program to address the requirements of Bulletin 88-11. The results of the Unit 1 surge line analysis meet the applicable requirements of the ASME Code when considering the effects of thermal stratification for the 40-year design life of the Vogtle plant. The Unit 1 surge line is in compliance with the revised General Design Criterion 4 of Appendix A to 10 CFR Part 50.

This completes NRR's actions regarding NRC Bulletin 88-11 for the Vogtle Electric Generating Plant, Units 1 and 2. Further review, if any, will be through the inspection or audit process.

Sincerely,

Timothy A. Reed, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II  
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Vogtle Electric Generating Plant

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