

June 1, 2006

Mr. D. E. Grissette  
Vice President  
Southern Nuclear Operating  
Company, Inc.  
Post Office Box 1295  
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT (VOGTLE), UNITS 1 AND 2 -  
10 CFR PART 50, APPENDIX H, TEST REPORT REQUIREMENTS: REVIEW  
OF TOPICAL REPORT WCAP-16278-NP, "ANALYSIS OF CAPSULE X FROM  
THE SOUTHERN NUCLEAR OPERATING COMPANY, VOGTLE UNIT 1  
REACTOR VESSEL RADIATION SURVEILLANCE PROGRAM," AND  
WCAP-16382-NP, "ANALYSIS OF CAPSULE W FROM THE SOUTHERN  
NUCLEAR OPERATING COMPANY, VOGTLE UNIT 2 REACTOR VESSEL  
RADIATION SURVEILLANCE PROGRAM." (TAC NOS. MC6491 AND MC6492)

Dear Mr. Grissette:

The purpose of this letter is to provide you with the results of our review of the surveillance capsule X and W results that you submitted on March 21, 2005.

Appendix H to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50, Appendix H), "Reactor Vessel Material Surveillance Program Requirements" (the rule), provides the Nuclear Regulatory Commission's (NRC's) surveillance and testing requirements for ferritic components of the reactor vessels (RVs) of operating light-water reactors in the United States. The rule requires that licensed owners of light-water reactor facilities install a number of surveillance capsules within the cavities of their RVs and remove capsules and test the capsule materials in accordance with the withdrawal schedule and testing requirements of American Society for Testing and Materials (ASTM) Standard Practice E-185. Paragraph IV.A of the rule requires the RV material surveillance capsule test results to be the subject of a summary technical report that is required to be submitted to the NRC within 1 year of the capsule withdrawal date.

Paragraph IV.B of the rule specifies that these reports shall include all data required by ASTM Standard Practice E-185-82 and the results of all fracture toughness tests conducted on the surveillance capsule materials in both the unirradiated and irradiated condition.

By letter dated March 21, 2005, Southern Nuclear Operating Company (SNC) submitted WCAP-16278-NP, Revision (Rev.) 0, "Analysis of Capsule X from Southern Nuclear Operating Company, Vogtle Unit 1 Reactor Vessel Radiation Surveillance Program," and WCAP-16382-NP, Rev. 0, "Analysis of Capsule W from the Southern Nuclear Operating Company, Vogtle Unit 2 Reactor Vessel Radiation Surveillance Program," to comply with the above requirements. WCAP-16278-NP, Rev. 0 provides the applicable fracture toughness test data for surveillance capsule X, which was removed from the Vogtle Unit 1 RV during the fall 2003 refueling outage. This report also re-analyzes all prior data that was reported in earlier reports for Vogtle Unit 1 surveillance capsules U, Y, and V. WCAP-16382-NP, Rev. 0 provides the applicable fracture

toughness test data for surveillance capsule W, which was removed from the Vogtle Unit 2 RV during the spring 2004 refueling outage. This report also re-analyzes all prior data that was reported in earlier reports for Vogtle Unit 2 surveillance capsules U, Y, and X.

The surveillance program for Vogtle Units 1 and 2 RVs is a plant-specific program that utilizes the plants' own surveillance capsules as the basis for monitoring what the embrittlement trends are for the RV beltline materials. The surveillance weld materials being irradiated in the Vogtle Unit 1 surveillance capsules were fabricated from Heat No. 83653 weld wires and Linde 0091 flux (flux lot no. 3536), using a submerged arc welding process. The Heat No. 83653 surveillance weld is representative of the intermediate-to-lower shell girth weld and all longitudinal weld seams for both the intermediate and lower shell plates in the Vogtle Unit 1 RV. The surveillance plate materials being irradiated in the Vogtle Unit 1 surveillance capsules were fabricated from Heat No. C-0623-1, which is representative of Intermediate Shell Plate No. B8805-3. The surveillance weld materials being irradiated in the Vogtle Unit 2 surveillance capsules were fabricated from Heat No. 87005 weld wires and Linde 124 flux (flux lot no. 1061), using a submerged arc welding process. The Heat No. 87005 surveillance weld is representative of the intermediate-to-lower shell girth weld in the Vogtle Unit 2 RV. The surveillance plate materials being irradiated in the Vogtle Unit 2 surveillance capsules were fabricated from Heat No. C-3500-2, which is representative of Lower Shell Plate No. B8628-1.

The NRC staff has performed its review of WCAP-16278-NP, Rev. 0 and WCAP-16382-NP, Rev. 0 and has confirmed that the reports include all of the data and test results that are required by Paragraph IV.B of 10 CFR Part 50, Appendix H and by ASTM Standard Practice E-185-82. Furthermore, based on this review, the staff has not identified any immediate safety issues associated with the information provided in these reports, as applied to the structural integrity evaluations of the Vogtle Units 1 and 2 RVs. Therefore, the staff intends to forward these reports to the Pacific Northwest National Laboratory for the purpose of officially updating the surveillance data into the staff's Reactor Vessel Integrity Database.

The NRC permitted SNC to relocate the pressure-temperature (P-T) limits for Vogtle Units 1 and 2 into P-T limit reports (PTLRs) for the units in License Amendment No. 136 to Facility Operating License No. NPF-68 for Vogtle Unit 1 and License Amendment No. 115 to Facility Operating License No. NPF-81 for Vogtle Unit 2, both dated March 28, 2005. The original PTLRs were submitted by SNC in a license amendment request in conformance with the process and acceptance criteria that are specified in NRC Generic Letter (GL) 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996. The process permits SNC to revise the contents of the Vogtle Units 1 and 2 PTLRs without NRC approval, provided the PTLRs continue to meet the technical criteria specified in GL 96-03. The current revision of the PTLRs for Vogtle Units 1 and 2 incorporates the information from WCAP-16278-NP, Rev. 0 and WCAP-16382-NP, Rev. 0. This is consistent with the Criterion 7 of GL 96-03, which specifies that the scope of PTLRs includes supplemental data and calculations of chemistry factors used in the adjusted reference temperature calculations and includes surveillance data credibility calculations. The current revision of the Vogtle Units 1 and 2 PTLRs were provided to the NRC on May 4, 2005, in accordance with the requirements of the Vogtle Units 1 and 2 Technical Specifications (TSs), Section 5.6.6, "Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)." Based on these considerations, the NRC staff

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concludes that the Vogtle Units 1 and 2 PTLRs remain consistent with the provisions of GL 96-03 and the Vogtle Units 1 and 2 TS.

This completes the NRC staff's activities under TAC Nos. MC6491 and MC6492. Please contact me at (301) 415-1055, if you have any other questions on this issue.

Sincerely,

*/RA/*

Christopher Gratton, Sr. Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 425

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Docket Nos. 50-424 and 425

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Vogtle Electric Generating Plant, Units 1 & 2

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