

March 7, 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, UNIT 1 (VOGTLE 1) - SUMMARY  
OF THE STAFF'S REVIEW OF THE STEAM GENERATOR TUBE INSERVICE  
INSPECTION REPORTS FOR THE END-OF-CYCLE 12 REFUELING OUTAGE  
IN SPRING 2005 (TAC NO. MC8105)

Dear Mr. Grissette:

By letter dated April 12, 2005 (Agencywide Documents Access and Management Systems (ADAMS) Accession No. ML051040239), Southern Nuclear Operating Company, Inc. (SNC, the licensee), submitted the 15-day steam generator (SG) tube plugging report in accordance with Technical Specification (TS) Section 5.6.10. By letter dated July 1, 2005 (ADAMS Accession No. ML052060257), SNC submitted the 12-month SG tube inspection report in accordance with TS Section 5.6.10.b. On March 28, 2005, the Nuclear Regulatory Commission (NRC) staff participated in a conference call with SNC to discuss the ongoing SG inspection activities for Vogtle 1 (specifically regarding the crack-like indications found in the portion of the SG tube within the tubesheet. This conference call was summarized in NRC letter dated June 3, 2005 (ADAMS Accession No. ML051400035).

The NRC staff has completed its review of these reports and concludes that the licensee provided the information required by the Vogtle 1 TSs and that no additional follow-up is required at this time. The staff's review of the report is enclosed.

Sincerely,

/RA/

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

Docket No. 50-424

Enclosure: Summary of NRC Staff's Review,  
End-of-Cycle 12

cc w/encl: See next page

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ADAMS Accession No. ML060320582

\*SE input dated 12/15/05

NRR-106

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REVIEW OF STEAM GENERATOR ACTIVITY  
SPRING 2005 REFUELING OUTAGE  
SOUTHERN NUCLEAR OPERATING COMPANY, INC.  
VOGTLE ELECTRIC GENERATING PLANT, UNIT 1 (VOGTLE 1)  
DOCKET NO. 50-424

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Vogtle 1 has four Westinghouse Model F SGs which are designated SG1 through SG4. The Westinghouse Model F SG consists of approximately 5,626 tubes which have an outside diameter of 0.688-inches and a wall thickness of 0.040-inches. The tubes have been hydraulically expanded into the tubesheet and are supported by a number of Type 405 stainless steel tube support plates, which contain broached quatrefoil tube holes through which the tubes pass. The Vogtle 1 SGs began operation in 1987 and have thermally-treated Alloy 600 tubing.

SG1 and SG4 were inspected as part of the original inspection scope during the spring 2005 refueling outage. However, due to the crack-like indications found in the portion of the SG tube within the tubesheet in SG4 (NRC letter dated June 3, 2005), the original inspection scope was expanded to include a sampling (i.e., bulges and over-expansions) in the hot-leg tubesheet region for SG2 and SG3. Details of the inspection expansion scope are included in the NRC letter dated June 3, 2005, and the July 1, 2005, letter from SNC.

On November 21, 2005, NRC staff participated in a conference call with Vogtle 1 representatives. The licensee provided the following clarifying information regarding their 12-month SG tube inspection report:

1. No tubes in the low rows (Rows 1 through 10) were identified to have the Seabrook and Braidwood artifact (i.e., offset signal in eddy current data) which may indicate susceptibility to stress corrosion cracking.

In the high rows (Rows 11 through 59), a review was performed to identify tubes with an eddy current offset of less than the mean eddy current signal minus two standard

Enclosure

deviations (mean minus 2-sigma). There were 54 tubes in SG1, 17 tubes in SG2, 23 tubes in SG3, and 24 tubes in SG4 identified to have an offset less than the mean minus 2-sigma. These tubes were identified for special monitoring and were to be plugged if a confirmed or non-confirmed distorted support indication (DSI) signal was detected. None of the tubes having an offset less than the mean minus 2-sigma had DSI signals associated with them. It is expected that there will always be tubes in the high rows with an offset less than the mean minus 2-sigma which indicates the higher residual stress in the U-bend and lower in the straight length.

2. The licensee's statement on Page 4-3 of the 12-month report was meant to indicate the location within the tube bundle of the foreign object (i.e., Tube Row 4 Column 97 and Tube Row 5 Column 96).

The licensee provided the scope, extent, methods, and results of the Vogtle 1 SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging or repair) taken in response to the inspection findings.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their TSs. In addition, the staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: L. Miller

Date: March 7, 2006

Vogtle Electric Generating Plant, Units 1 & 2

cc:

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