

January 27, 1997

Mr. D. N. Morey
Vice President - Farley Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING VOLTAGE-BASED ALTERNATE
REPAIR CRITERIA FOR STEAM GENERATOR TUBING - JOSEPH M. FARLEY
NUCLEAR PLANT, UNIT 1 (TAC NO. M97510)

Dear Mr. Morey:

By your application dated December 26, 1996, you submitted for staff review a license amendment to implement the voltage-based alternate repair criteria for steam generator tubes in the Technical Specifications (TS) for Farley Unit 1. After a preliminary review of the information you submitted, the staff has determined that additional information is needed in order to continue its review. The information needed is identified in the enclosure.

It is requested that this information be provided within 15 days of receipt of this letter. If you require any clarification regarding this request, please call me at (301) 415-2426.

Sincerely,

Original signed by:

Jacob I. Zimmerman, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-348

Enclosure: Request for Additional Information

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Vice President - Farley Project
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Sincerely,

A handwritten signature in cursive script, reading "Jacob I. Zimmerman", is written over a horizontal line.

Jacob I. Zimmerman, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-348

Enclosure: Request for Additional Information

cc w/encl: See next page

Southern Nuclear Operating Company

Joseph M. Farley Nuclear Plant

cc:

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REQUEST FOR ADDITIONAL INFORMATION
REVIEW OF TECHNICAL SPECIFICATION AMENDMENT
REGARDING STEAM GENERATOR TUBE SUPPORT PLATE
VOLTAGE-BASED ALTERNATE REPAIR CRITERIA
FOR JOSEPH M. FARLEY UNIT 1 NUCLEAR PLANT

Questions related to the proposed TS change.

1. Attachment 1, Page 1, Item (2)

The licensee states that "(T)he inspection guidance discussed in Section 3 of Attachment 1 of the Generic Letter will be implemented in accordance with the Appendix A guidelines last submitted to the NRC by letter dated February 23, 1994...." This statement is acceptable if its intent is to address the inspection technique of eddy current testing as specified in Section 3 of Attachment 1 of Generic Letter (GL) 95-05. Appendix A to the licensee's February 23, 1994, letter gives guidelines for eddy current probe specifications, calibration requirements, data acquisition and analysis criteria. However, Appendix A does not provide guidance for all inspection criteria that are specified in Section 3 of Attachment 1 of GL 95-05. Therefore, the licensee may not satisfy GL 95-05 based on Appendix A. The staff suggests that the licensee modify the first sentence in Item (2) as follows: "The inspection criteria discussed in Section 3 of Attachment 1 of the Generic Letter will be implemented. In addition, the inspection guidance will be implemented in accordance with the Appendix A guidelines last submitted to the NRC by letter dated February 23, 1994...."

2. Attachment 1, Page 1, Item (2) 3.b.3

Section 3.b.3 of Attachment 1 of GL 95-05 specifies the inspection of dent signals that are greater and less than 5 volts. The licensee has committed to implement the GL guidelines except that the inspection sampling plan will be expanded to intersections with dents less than 5 volts if the detected flaws exceed the structural requirements of Regulatory Guide 1.121. The staff does not believe an inspection sampling plan should be based on an evaluation of the structural requirement of Regulatory Guide 1.121, since this will not ensure that the 40-percent throughwall plugging limit of the technical specifications is satisfied. The structural significance of the flaws near 5 volts should not be a part of the sample selection process. The licensee should expand its inspection sampling plan to include dents less than 5.0 volts if cracking indications are detected. The licensee either needs to modify its commitment in Item 3.b.3 or provide a technical basis to support its proposed inspection sampling plan.

Enclosure

3. Attachment 1, Page 2, Item 3.c.4

The licensee states that a minimal number of analysts are used for determination of voltage. The licensee also states that the use of a small group of analysts would minimize the effect of analyst variability on determination of growth rate, resulting in as accurate a prediction for the next operating cycle as possible. How was the analyst variability assessed?

4. Attachment 1, Page 3, Item 2.a.2

The licensee states that "(T)he upper voltage repair limit will be determined 2 months prior to the outage using the most recently approved NRC database. The database proposed by NEI letter dated September 18, 1996 will be used for the Unit 1 outage." The staff is reviewing the NEI proposed database. Pending the completion of staff review, the licensee needs to specify a database that it will use to perform tube integrity calculations.

5. Attachment 1, Page 3, Items (2)2.b and (3)2.a

The licensee states that the probability methodology in the Westinghouse report, WCAP-14277, "SLB Leak Rate and Tube Burst Probability Analysis Methods for ODS CC at TSP Intersections," January 1995, will be used to support the voltage-based repair criteria. Westinghouse has revised the report and the revised version, Revision 1, was published as a part of submittal for the D. C. Cook nuclear plant in a letter from Indiana Michigan Power to the NRC, subject: Donald C. Cook Nuclear Plant Unit 1 Technical Specification Change Request Steam Generator Tube 2 volt Repair Criteria Request for Additional Information, dated December 20, 1996. The licensee should commit to use WCAP-14277, Revision 1, for the voltage-based repair criteria because the previous version also contains calculational methodologies that the staff has determined to be unacceptable.

6. Attachment 2, Revised TS pages

On page B 3/4 4-3a, the side bar on the margin of the page shows that all paragraphs on this page have been revised. However, the licensee did not revise the last paragraph on the page. To avoid confusion, the side bar should not be applied to the last paragraph.

7. Attachment 4

The licensee proposes the following for Farley Units 1 and 2: (1) inclusion in tube integrity calculations of 50% of the no-detectable degradation (NDDs) that are assumed to be subsequently confirmed by rotating pancake coil (RPC); and (2) use of probability of prior cycle detection (POPCD) instead of the current probability of detection of 60%.

For the proposed 50% of NDDs approach, the licensee needs to provide (1) an assessment to show that using 50% of the NDDs would maintain the conservatism in projected voltage distribution, the leak rate during a postulated steam line break event, and burst probability at the end of cycle (e.g., comparing the projected burst probability and leakage using the proposed method to the results from the as-found conditions); (2) if the 50% NDD approach were to be implemented, discuss any assessment that would be performed at the end of each plant outage to confirm the adequacy of the approach, and discuss any reporting criteria to be implemented on the assessment; and (3) discuss how the value of 50% was derived. As shown in Table 2-3 in Attachment 4 of the submittal, the percentage of RPC confirmation of NDDs can be as high as 85.7%.

NEI has proposed a generic POPCD approach as discussed in the EPRI report, "Steam Generator Tubing Outside Diameter Stress Corrosion Cracking at Tube Support Plates Database for Alternate Repair Limits," NP-7480-L, Addendum 1, 1996 Database update, November 1996. The staff is reviewing the NEI's POPCD approach and has prepared a request for additional information. The licensee's POPCD approach is the same as NEI's POPCD approach; therefore, the staff's review of NEI's POPCD approach would provide regulatory direction for the licensee's POPCD proposal. Pending the completion of the staff's review of NEI's POPCD approach, the licensee should use the existing probability of detection of 60% as specified in GL 95-05 in its tube integrity calculations. The licensee should clarify its intent with respect to combining the percent of NDDs to be used in the tube integrity calculations and POPCD. If this combination is intended, the basis for its acceptability will need to be provided.