

Southern Nuclear Operating Company  
Post Office Box 1295  
Birmingham, Alabama 35201  
Telephone 205 868-5086



Southern Nuclear Operating Company

*the southern electric system*

J. D. Woodard  
Vice President  
Farley Project

February 20, 1992

Docket No. 50-364

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

Joseph M. Farley Nuclear Plant Unit 2  
Steam Generator Tube Support Plate Interim Plugging Criteria

Dear Sirs:

By letter dated February 26, 1991, Alabama Power Company submitted a steam generator tube support plate alternate plugging criteria. On November 13, 1991, in response to questions and comments from the NRC Staff, a revised submittal was made simplifying the alternate plugging criteria and including additional pulled tube data. On January 29, 1992, the NRC Staff indicated to Southern Nuclear Operating Company that the amendment would not be approved prior to the upcoming Unit 2 Spring 1992 outage. At that time, the Staff indicated that a more conservative submittal might be approved on a one cycle basis. This letter provides Southern Nuclear's proposed, one cycle, interim plugging criteria for Farley Unit 2. NRC approval is requested by March 27, 1992.

Southern Nuclear proposes that the Unit 2 technical specifications be modified, on an interim basis, to clarify that the percent tube wall degradation criteria currently employed is inappropriate to determine serviceability of tubes with flaw indications at the tube support plate intersections. Rather, the appropriate method for determining serviceability is by a methodology that more reliably assesses structural integrity. As a result of the structural integrity assessment at Farley Nuclear Plant, tube indications within the tube support plate with a bobbin coil voltage less than or equal to 1.0 volt will be left in service. Furthermore, Southern Nuclear will ensure that primary-to-secondary leakage as a result of a steam line break are sufficiently low to ensure the dose at the site boundary is a small fraction of the Part 100 limits. Southern Nuclear further proposes to modify the technical specifications to reduce the total allowable primary-to-secondary operational leakage from any one steam generator from 500 gallons per day to 150 gallons per day. The total allowable primary-to-secondary operational leakage through all steam generators will be reduced from one gallon per minute (1,440 gallons per day) to 450 gallons per day.

The proposed interim criteria is composed of two parts. Attachment 1 contains the proposed interim voltage plugging criteria including a sampling program. Attachment 2 contains the steam line break primary-to-secondary leakage criteria to be used with the interim criteria.

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Attachment 3 contains the proposed changed Technical Specification pages in support of the interim plugging criteria.

Attachment 4 provides a significant hazards evaluation for the proposed interim plugging criteria in accordance with 10 CFR 50.92. The technical justifications supporting the proposed change are provided in Attachment 5 as:

1. WCAP-12871, Revision 2 - J.M. Farley Units 1 and 2 SG Tube Plugging Criteria for ODSCC at Tube Support Plates (Proprietary).
2. WCAP-12872, Revision 2 - J.M. Farley Units 1 and 2 SG Tube Plugging Criteria for ODSCC at Tube Support Plates (Non-Proprietary).

These WCAPs provide the basis for the use of a 3.6 volt alternate plugging criteria for Farley Units 1 and 2. Consequently, these WCAPs provide a conservative basis for use of the 1.0 volt interim plugging criteria threshold on a one cycle basis for Unit 2. These WCAPs supersede the Revision 1 WCAPs provided with the November 13, 1991 submittal and should be used as updated justification for the alternate plugging criteria.

Attachment 6 provides responses to the issues identified in the Staff's January 29, 1992 letter. Attachment 7 provides the proposed eddy current guidelines for use in the Unit 2 Eighth Refueling Outage, assuming the interim criteria is approved for use.

As the Staff requested, the voltage/burst and voltage/leakage correlations for 3/4 inch tubes are being compiled into a separate WCAP. Included in that WCAP is one method which could be used to combine the 3/4 inch and 7/8 inch tube data. This methodology is not necessarily the most correct manner to combine the data. Unfortunately, time constraints have precluded further evaluation of the data. This WCAP will be forwarded to the NRC Staff separately as soon as it is received from Westinghouse.

Also enclosed are a Westinghouse authorization letter, CAW-92-265, accompanying affidavit, Proprietary Information Notice, and Copyright Notice. As Item 1 contains information proprietary to Westinghouse Electric Corporation, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.790 of the Commission's regulations.

Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.790 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse Affidavit should reference CAW-92-265 and should be addressed to R. P. DiPiazza, Manager of Nuclear Safety Licensing, Westinghouse Electric Corporation, P. O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

If there are any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

*for RBM Woodard*  
J. D. Woodard

JDW/REM:map  
Attachments

cc: Mr. S. D. Ebnetter  
Mr. S. T. Hoffman  
Mr. G. F. Maxwell  
Dr. C. E. Fox

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 20 DAY OF February 1992

Jerem Maino  
Notary Public

My Commission Expires:                      MY COMMISSION EXPIRES JAN. 2, 1994

Attachment 1  
Voltage Plugging Criteria  
for the  
Interim Plugging Criteria

## Voltage Plugging Criteria

### Southern Nuclear Operating Company proposal:

1. A bobbin inspection of 100% of the hot and cold leg steam generator tube support plate intersections will be performed.
2. Flaws within the bounds of the tube support plate with bobbin voltage less than or equal to 1.0 volt will be allowed to remain in service.
3. Flaws within the bounds of the tube support plate with a bobbin voltage greater than 1.0 volts will be repaired or plugged except as noted in 4.
4. Flaw indications within the bounds of the tube support plate with a bobbin voltage greater than 1.0 volt but less than or equal to 3.6 volts may remain in service if a rotating pancake coil probe (RPC) inspection does not detect a flaw. Flaw indications with a voltage greater than 3.6 volts will be plugged or repaired.
5. A sample RPC inspection of 100 tube support plate intersections will be performed. All intersections with a bobbin dent voltage exceeding 5 volts will be inspected. Other intersections in the sample population will be based on inspecting intersections with artifact indications and intersections with unusual phase angles. Expansion of the sample plan, if required, will be based on the nature and number of the flaws discovered.

### Justification:

WCAP-12871, Revision 2, J.M. Farley Units 1 and 2 SG Tube Plugging Criteria for ODSCC at Tube Support Plates, provides the development of a 3.6 volt alternate plugging criteria. Use of a 1.0 volt threshold for application of the current Technical Specification is more conservative than the use of the 3.6 volt criteria. Burst pressure for steam generator tubes with flaws within the bounds of the tube support plate will still meet the requirements of Regulatory Guide 1.121.

Attachment 2  
Steam Line Break Leakage Criteria  
for the  
Interim Plugging Criteria

## Steam Line Break Leakage Criteria

### Southern Nuclear Operating Company proposal:

Prior to startup, measures will be taken to limit predicted primary-to-secondary steam generator leakage in the event of a steam line break event to less than 1 gallon per minute.

Operational primary-to-secondary leakage during normal operation will be limited to 150 gallons per day per steam generator.

### Justification:

The Bases for Technical Specification 3/4.4.7.2 indicates that the acceptance criteria for steam line break accident site boundary dose is "a small fraction of Part 100 limits", i.e., 30 rem. This acceptance criteria is based on a 1 gallon per minute steam generator primary-to-secondary leak rate. Therefore, predicted total primary-to-secondary steam generator tube leakage will remain within the current licensing basis for Unit 2.

Primary-to-secondary leakage is currently limited to 500 gallons per day per steam generator. The use of a 150 gallons per day is more restrictive, and as a result, provides greater margin of safety than provided by the current Technical Specifications.