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Vice President
Farley Project

Southern Nuclear Operating Company
the southern electric system

May 31, 1995

Docket Nos.: 50-348
50-364

10 CFR 50.90

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

Joseph M. Farley Nuclear Plant
Technical Specification Changes Associated With
Steam Generator Tube Support Plate Voltage-Based Repair Criteria

Ladies and Gentlemen:

By letter dated December 7, 1994, Southern Nuclear submitted a proposed, permanent voltage-based repair criteria for outside diameter stress corrosion cracking (ODSCC) at steam generator tube support plates for both units at Farley Nuclear Plant. The December 7, 1994, submittal was revised to request Unit 2 approval for one cycle prior to the Spring 1995 outage. The interim plugging criteria was approved by letter dated April 7, 1995. This submittal revises the Unit 1 submittal to be similar to Unit 2's amendment.

NRC approval of the voltage-based criteria for Farley Unit 1 is requested by September 1, 1995, based on the Unit 1 outage starting on September 15, 1995.

The safety analyses to support this amendment have been previously docketed. These analyses include:

1. WCAP-12871, Revision 2, J. M. Farley Units 1 and 2 Steam Generator Tube Plugging Criteria for ODSCC at Tube Support Plates, February 1992;
2. EPRI Report TR-100407, Revision 1, PWR Steam Generator Tube Repair Limits-Technical Support Document of Outside Diameter Stress Corrosion Cracking at Tube Support Plates; and
3. Southern Nuclear to NRC letter dated December 9, 1993, and associated technical specification amendment and NRC safety evaluation dated April 5, 1994.

Additional analyses exist in draft Generic Letter 94-XX, Voltage-Based Repair Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking.

Attachment 1 contains responses to and exceptions taken to the draft Generic Letter. Attachment 2 contains the proposed changed technical specification pages in support of the voltage-based plugging criteria. A significant hazards evaluation for the proposed voltage-based repair criteria was submitted with the December 7, 1994 submittal. This evaluation remains valid for this revision.

Southern Nuclear Operating Company has performed an assessment of the impact of the proposed revision to the technical specifications on the environment and has determined that there is no impact. The proposed revision does not affect the types or amounts of any radiological or non-radiological effluents that may be released offsite. No increase in individual or cumulative occupational radiation

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exposures will result from this revision. Additionally, the revision does not involve the use of any resources not previously considered in the Final Environmental Statement related to the operation of Farley Nuclear Plant.

A copy of these proposed change is being sent to Dr. D. E. Williamson, the Alabama State Designee, in accordance with 10 CFR 50.91(b)(1).

If there are any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

04 May
Dave Morey

REM/maf:SGTPV.DOC

Attachments

cc: Mr. S. D. Ebnetter
Mr. T. A. Reed
Mr. B. L. Siegel
Mr. T. M. Ross
Dr. D. E. Williamson

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 31st DAY OF May, 1995

Martha Gayle Dow
Notary Public

My Commission Expires: November 1, 1997

Attachment 1

Responses/Exceptions to Draft Generic Letter 94-XX Guidance

Responses/Exceptions to Draft Generic Letter 94-XX Guidance

Southern Nuclear (SNC) will implement the requested actions of the draft Generic Letter with the following comments/exceptions:

(1) The inspection guidance discussed in Section 3 of Enclosure 1 of the draft Generic Letter will be implemented with the following responses/exceptions:

- 3.b.1 - SNC will inspect all bobbin flaw indications with voltages greater than 2.0 volts with a motorized rotating pancake coil (RPC) probe.
- 3.b.3 - SNC will inspect all intersections where copper signals interfere with the detection of flaws with an RPC probe.
- 3.b.5 - SNC will inspect all intersections with large mixed residuals with an RPC probe.
- 3.c.2 - In order to perform data acquisition in a manner consistent with the methodology utilized to develop the voltage limits, bobbin coil probes will continue to be calibrated against the 20% holes in the ASME calibration standard instead of the 100% through wall holes. The NRC Staff has concurred with calibration on the 20% holes.
- 3.c.3 - Due to time constraints for the Fall '95 Unit 1 outage, new probes certified to a 10% variability are not available. It is anticipated that probes meeting the variability requirement will be available within 6 months of the final Generic Letter being issued and will be used when available when necessary.
- 3.c.4 - The requirement to re-inspect all tubes if the wear measurement exceeds 15% is unnecessary. As acknowledged in the draft Generic Letter, a 5.6 volt repair criterion is justified; however, the repair criterion is limited to 2.0 volts. To require re-inspection of all tubes inspected with a specific bobbin probe if probe wear reaches 16% is not necessary from a safety standpoint and could affect critical path outage time.

Probe wear inspections/re-inspections will be governed by the same practices used during the last Farley Unit 1 steam generator inspections. These practices were forwarded to the NRC by letter dated February 23, 1994 which states in part:

If any of the last probe wear standard signal amplitudes prior to probe replacement exceed the $\pm 15\%$ limit, say by a value of $X\%$, then any indications measured since the last acceptable probe wear measurement that are within $X\%$ of the plugging limit must be re-inspected with the new probe. For example, if any of the last probe wear signal amplitudes prior to probe replacement were 17% above or below the initial amplitude, then indications that are within 2% (17%-15%) of the plugging limit must be re-inspected with the new probe. Alternatively, the voltage criterion may be lowered to compensate for the excess variation; for the

case above, amplitudes ≥ 0.98 times the voltage criterion could be subject to repair.

- 3.c.6 - Quantitative noise criteria has been and will continue to be used in data collection. Data analysts will use qualitative guidelines in the evaluation of the data. However, it is expected that these criteria will be evolving over the inspection and, as a result, are subject to change.

Inspections will be performed in accordance with the Appendix A guidelines last submitted to the NRC by letter dated February 23, 1994.

(2) Calculations of the leakage will be per the guidance of Section 2.b of Enclosure 1 of the draft Generic Letter with the following responses/exceptions:

- 2.b - Calculations performed in support of the voltage-based repair criteria will follow the methodology described in WCAP-14277, SLB Leak Rate and Tube Burst Probability Analysis Methods for ODS CC at TSP Intersections, January 1995.
- 2.b.2(1) - No distribution cutoff will be applied to the voltage measurement variability distribution.
- 2.b.3(1)/2.b.3(2) - As a result of discussions with the NRC Staff, data exclusion under criteria 2a and 2b of Reference 1 has been approved. The NRC Staff has also concurred with all data excluded under criteria 1b and 1c. Data will not be excluded under 3a, 3b, or 3c unless approved by the NRC Staff.
- 2.b.4 - In order to preclude the possible need for rapid turn around of a technical specification amendment for reactor coolant system specific iodine activity, Farley has revised its technical specification to 0.5 $\mu\text{Ci/gram}$.

(3) Calculation of the conditional burst probability will be per the guidance of Section 2.a of Enclosure 1 of the draft Generic Letter with following responses/exceptions:

- 2.a - Calculations performed in support of the voltage-based repair criteria will follow the methodology described in WCAP-14277, SLB Leak Rate and Tube Burst Probability Analysis Methods for ODS CC at TSP Intersections, January 1995.
- 2.a.1 - As a result of discussions with the NRC Staff, data exclusion under criteria 2a and 2b of Reference 1 has been approved.

(4) The operational leakage limits for Unit 1 will remain at 140 gallons per day through only one steam generator as previously approved by the NRC.

(5) Farley leakage monitoring measures provide guidance on trending and response to rapidly increasing leaks. Guidance is provided not only for the absolute leakage measured, but also on the rate of change of the leak rate. Timely detection of leaks is ensured by the N-16 monitors on both units.

Farley continues to participate in the industry effort for developing primary-to-secondary leakage guidelines. Upon NRC concurrence with the industry guideline document on leakage monitoring, Farley will implement the industry guidelines.

(6) Tube pull guidance of Section 4 of Enclosure 1 of the draft Generic Letter will be followed with the following responses/exceptions:

4 a - SNC will attempt to pull a single tube with three intersections from a Farley steam generator. The tube pull will be successful if at least two intersections are successfully pulled.

(7) Results will be reported per the guidance of Section 6 of Enclosure 1 of the draft Generic Letter with the following exceptions approved by the NRC Staff:

6 a - The calculation of leakage and of conditional burst probability to be performed prior to returning the steam generators to service (Mode 4) will use the as-found end-of-cycle voltage distribution (as opposed to the projected distribution).

6 b(a) - The results of any metallurgical examinations performed for tube intersections removed from the steam generator will be submitted to the NRC Staff within 120 days.

SNC will brief eddy current analysts of the possibility of PWSCC occurring at tube support plate intersections. The discovery of PWSCC at tube support plate intersections will be reported to the NRC Staff prior to startup.

(8) The paragraph associated with mid-cycle inspection limits has been deleted pending issuance of the final Generic Letter and revised repair limit formulas.

The voltage based repair criteria has been revised to indicate that the 2.0 volt repair criteria are applicable for the Fourteenth Operating Cycle only.

Additional requested information:

1.b.1 - Concerning the deformation or collapse of steam generator tubes following a loss of coolant accident plus a safe shutdown earthquake event, a Farley specific analysis was docketed under WCAP-12871, Revision 2 dated February 1992. As a result of this analysis, no tubes will be excluded from using the voltage repair criteria.

Reference:

1. Letter dated April 22, 1994, to Jack Strosnider, NRC, from David A. Steininger, EPRI, "Exclusion of Data for Alternate Repair Criteria (ARC) Databases Associated with 7/8 inch Tubing Exhibiting ODSCC".

Attachment 2

Revised Technical Specification Pages

Unit 1

Page	
3/4 4-10	Replace
3/4 4-11	Replace
3/4 4-12	Replace
3/4 4-12a	Replace
3/4 4-13	Replace
3/4 4-23	Replace
3/4 4-24	Replace
3/4 4-25	Replace
3/4 4-26	Replace
B3/4 4-3	Replace
B3/4 4-4	Replace
B3/4 4-5	Replace

Unit 1 Markups