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SOUTHERN COMPANY

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NL-12-0826

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant – Unit 2
Maintenance/Refueling Outage 2R21
Steam Generator Tube Inspection Report

Ladies and Gentlemen:

In accordance with the requirements of Joseph M. Farley Nuclear Plant Technical Specification 5.6.10, Southern Nuclear Operating Company submits the enclosed report of the steam generator tube inspections performed during the Unit 2 twenty-first maintenance/refueling outage (2R21).

This letter contains no NRC commitments. If you have any questions, please contact Jack Stringfellow at (205) 992-7037.

Sincerely,

M. J. Ajluni
Nuclear Licensing Director

MJA/RMJ/lac

Enclosure: 2R21 Steam Generator Tube Inspection Report

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. T. A. Lynch, Vice President – Farley
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. B. J. Adams, Vice President – Fleet Operations
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Farley
Mr. E. L. Crowe, Senior Resident Inspector – Farley

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The Joseph M. Farley Nuclear Plant (Farley) – Unit 2 Refueling Outage 21 (2R21) was conducted after the cumulative Replacement Steam Generators' (RSG) service equivalent was approximately 9.7 effective full power years (EFPY), while the service from the previous RSG eddy current inspections performed during Unit 2 Refueling Outage 18 (2R18) was approximately 4.5 EFPY. No tube leakage was reported during this operating interval comprising of cycles 19, 20, and 21. As of Farley 2R21, approximately 100.7 effective full power months (EFPM) of the 144 EFPM in the first sequential period were accrued. Farley 2R21 is the last required inspection in this sequential period. Based on steam generator (SG) eddy current and available visual inspection data, there are no existing degradation mechanisms observed in the Farley Unit 2 RSGs.

A. The Scope of Inspections Performed on Each Steam Generator:

The inspection program, as required by EPRI PWR SG Examination Guidelines, addressed the potential degradation mechanisms for Farley Unit 2 RSGs. The defined scope for Farley Unit 2 implemented during refueling outage 2R21 included the following:

1. Bobbin exams (all 3 SGs):
   - 50% Bobbin full length examination of tubes not inspected during 2R18, except for Rows 1 and 2, which were inspected from tube end to the top tube support plate (TSP) from both the hot leg (HL) and cold leg (CL).
   - 100% Bobbin examination of Row 1 and 2 CL straight length of all tubes not inspected full length during 2R18.

2. +Point rotating pancake coil (RPC) (all 3 SGs):
   - 50% +Point examination of Row 1 and Row 2 U-bends not inspected during 2R18. The tubes in this sample population were tubes which were also tested as part of the bobbin program.
   - 20% +Point examination at top-of-tubesheet hot leg side (TSH) +/- 3 inches. This sample population was taken from tubes tested as part of the bobbin program that were not +Point inspected at TSH during Unit 2 Refueling Outage 15 (2R15) and 2R18.
   - 100% +Point examination of all dents and dings ≥ 2 volts. All additional dents and dings ≥ 2 volts identified by the bobbin program were also examined.
   - +Point tests of special interest tube locations in both the HL and CL of possible flaw from the bobbin program to characterize underlying conditions. The presence of indications from previous inspections listed was taken into account in developing the special interest program.

B. Active Degradation Mechanisms Found:

None.

C. Nondestructive Examination Techniques Utilized for Each Degradation Mechanism:

Bobbin and +Point RPC eddy current probes were used to detect potential degradation mechanisms.

D. Location, Orientation (if linear) and Measured sizes (if available) of Service Induced Indication:

None.

E. Number of Tubes Plugged During the Inspection Outage:

No tubes were plugged during 2R21.

F. Total Number or Percentage of Tubes Plugged to Date:

No tubes have been plugged in SG 2A, 2B, and 2C to date.

G. The Results of Condition Monitoring, Including the Results of Tube Pulls and In-Situ Testing:

Based on the inspection data, no tubes exhibited degradation that required in-situ pressure testing to demonstrate structural integrity. There was no primary to secondary leakage reported prior to the end of the inspection interval. No secondary side tube degradation attributable to foreign objects has been identified from top of tubesheet visual inspections. The SG performance criteria for operating leakage and structural integrity were satisfied for the preceding three cycle operating interval.