

H. L. Sumner, Jr.  
Vice President

**Southern Nuclear  
Operating Company, Inc.**  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201  
  
Tel 205.992.7279  
Fax 205.992.0341



*Energy to Serve Your World<sup>SM</sup>*

July 21, 2006

Docket No.: 50-348

NL-06-1518

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

**Joseph M. Farley Nuclear Plant – Unit 1  
Flux Thimble Tube Inspection Results**

Ladies and Gentlemen:

The license renewal safety evaluation report for Southern Nuclear Operating Company's (SNC's) Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2, was issued in NUREG-1825 in May 2005. Commitment Item 19 of Appendix A of NUREG-1825 contained a listing of information to be supplied by SNC following performance of flux thimble tube inspection during the FNP spring 2006 Unit 1 refueling outage (U1R20). The requested information is provided in Enclosure 1.

This letter contains an NRC commitment, as detailed in Enclosure 2. If you have any questions, please advise.

Sincerely,

H. L. Sumner, Jr.

HLS/DWD/daj

- Enclosures: 1. FNP U1R20 Flux Thimble Tube Wear Measurement Information  
2. List of NRC Commitments

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. J. R. Johnson, General Manager – Plant Farley  
RTYPE: CFA04.054; LC# 14465

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Mr. R. E. Martin, NRR Project Manager – Farley  
Mr. C. A. Patterson, Senior Resident Inspector – Farley

Enclosure 1

Joseph M. Farley Nuclear Plant – Unit 1  
Flux Thimble Tube Inspection Results

FNP U1R20 Flux Thimble Tube Wear Measurement Information

Enclosure 1  
Joseph M. Farley Nuclear Plant – Unit 1  
Flux Thimble Tube Inspection Results

FNP U1R20 Flux Thimble Tube Wear Measurement Information

In accordance with Commitment Item No. 19 of NUREG-1825, May 2005, "Safety Evaluation Report Related to the License Renewal of the Joseph M. Farley Nuclear Plant, Units 1 and 2," the results are provided.

**Commitment Item No. 19**

SNC will submit the following information on the Unit 1 flux thimble tubes (after the second inspection of the new tube materials during U1R20):

1. The worst case cumulative wear from the U1R20 flux thimble tube eddy current inspection.

**SNC Response:**

The worst case cumulative wear measured during the U1R20 flux thimble tube eddy current inspection was 38.85% (including uncertainty adjustment) at location B-05, 1091 inches from the seal table.

2. The uncertainty applied to the actual measured wear data.

**SNC Response:**

A 5.0% uncertainty adjustment was applied to the actual wear measurements.

3. The thimble tube wall thickness.

**SNC Response:**

The flux thimble tube wall thickness is 0.049 inches +/- 0.002. A portion of each thimble tube is chrome plated, and the thickness of the chrome plating is 0.0015 inches minimum to 0.0035 inches maximum.

4. The schedule for the next Unit 1 flux thimble tube inspection (inspection interval).

**SNC Response:**

The next Unit 1 flux thimble tube inspection will be after three operating cycles, in fall 2010 (U1R23).

5. The projected wear value for the worst case wear location at the end of the next inspection interval.

**SNC Response:**

At the worst case wear location (described above) the wear value is projected to be 53.788% at U1R23.

6. A discussion of the technical basis for establishing the Unit 1 inspection interval will be implemented after performing the U1R20 flux thimble tube eddy current inspection of the new tube materials. The discussion will address the use of the equation in Proprietary WCAP-12866 and the unit-specific wear data in projecting the wear to the next inspection outage. The curve coefficient (i.e., exponent "n") used in the projection of flux thimble tube wear will be provided.

**SNC Response:**

Evaluation of the U1R20 flux thimble eddy current inspection data was performed by Westinghouse, with results reported in letter AL-06-48, May 17, 2006. The wear projection equation from WCAP-12866, "Bottom Mounted Instrumentation Flux Thimble Wear," was used to estimate wear at the end of fuel cycles before refueling outage U1R21, U1R22 and U1R23 based on the adjusted data from U1R20. Since the previous eddy current inspection at U1R17 showed no wear for any of the thimble tubes (all were replaced at U1R15), a conservative "n" value of 0.67 was used in projecting wear, as provided for by WCAP-12866. The Westinghouse acceptance criterion for thimble wear is 80%, significantly greater than the worst case wear projected at U1R23, therefore the next inspection interval has been conservatively established at three operating cycles.

Enclosure 2

Joseph M. Farley Nuclear Plant – Unit 1  
Flux Thimble Tube Inspection Results

List of NRC Commitments

Enclosure 2  
Joseph M. Farley Nuclear Plant – Unit 1  
Flux Thimble Tube Inspection Results

List of NRC Commitments

The following table identifies those actions committed to by SNC in this document. Any other statements in this submittal are provided for information purposes and are not considered to be NRC commitments.

NRC Commitment	Type (Check one)		Scheduled Completion Date
	One-Time Action	Continuing Compliance	
SNC will perform an inspection of the flux thimble tubes in accordance with the Flux Detector Thimble Inspection Program.	X		During the fall 2010 FNP Unit 1 refueling outage (U1R23).