



Southern Nuclear Operating Company

*the southern electric system*

Dave Morey  
Vice President  
Farley Project

April 15, 1994

Docket No.: 50-348

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

Joseph M. Farley Nuclear Plant - Unit 1  
Interim Plugging Criteria Analysis Report

Gentlemen:

By letter dated April 5, 1994, the NRC issued Amendment No. 106 for Unit 1 of the Joseph M. Farley Nuclear Plant concerning steam generator tube interim plugging criteria. The Safety Evaluation for the amendment required that the following be submitted prior to restart:

1. The predicted MSLB leakage will be reported to the NRC prior to restart from the refueling outage.

**Response:**

**Predicted Main Steam Line Break Total Leakage  
for the Bounding Steam Generator (Steam Generator C)**

Probability of Leakage Distribution	NUREG-1477 Calculation	Leak Rate Correlation
Log Logistic	0.82 gpm	0.023 gpm
Log Normal	0.58 gpm	0.021 gpm
Log Cauchy	3.0 gpm	0.047 gpm
Logistic	2.2 gpm	0.038 gpm
Normal	1.8 gpm	0.034 gpm
Cauchy	4.4 gpm	0.061 gpm

These predicted leakage values are based on a 60% probability of detection; the exclusion of several "outlier" data points from the leakage database; the cycle 11 voltage growth rates; and are at a 98% confidence level for the NUREG-1477 calculation and 95% confidence level for the regression calculation. The exclusion of the outlier data points results in a more conservative prediction (higher predicted leakage) for the NUREG-1477 calculations. The voltage growth rates for cycle 12 were negligible and bounded by the cycle 11 growth rates. Therefore, the use of the Cycle 11 growth rates results in a conservative (higher) estimate of leakage.

*Foot  
1/10*

The largest predicted leakage, 4.4 gpm for the Cauchy distribution, is significantly less than the 22.8 gpm Farley limit.

2. The NRC will be informed, prior to plant restart from the refueling outage, of any unexpected inspection findings relative to the assumed characteristics of the flaws at the tube support plate elevations. This includes any detectable circumferential indications or detectable indications extending outside the tube support plate.

**Response:** No unexpected inspection findings relative to the assumed characteristics of flaws at the tube support plate were found.

The detailed assessment of the interim plugging criteria methodology will be forwarded after the completion of the outage.

If there are any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

  
Dave Morey

REM/clt:PCU1C13.Doc

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