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the southern electric system

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Docket Nos.: 50-348
50-364

10 CFR 50.4

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

Joseph M. Farley Nuclear Plant
Generic Letter 96-04 Boraflex Degradation in Spent Fuel Pool Storage Racks

Ladies and Gentlemen:

On June 26, 1996, the NRC issued Generic Letter 96-04 and requested addressees submit responses to address concerns related to Boraflex degradation in spent fuel pools. The following is Southern Nuclear Operating Company's response for Farley Nuclear Plant to applicable portions of the generic letter.

NRC Request:

(1) 'provide an assessment of the physical condition of the Boraflex, including any deterioration, on the basis of current accumulated gamma exposure and possible water ingress to the Boraflex and state whether a subcritical margin of 5 percent can be maintained for the racks in unborated water.

Monitoring programs or calculational models in effect or being developed, or an estimation of anticipated concerns based on the specific rack design are considered an appropriate basis for this response.'

Farley Nuclear Plant Response:

The current Farley Nuclear Plant criticality analysis demonstrates a 5% subcriticality margin. It allows for 3% Boraflex shrinkage and does not take credit for soluble boron. Based on the most recent coupon surveillance data which exhibits approximately 2.5% shrinkage, the surveillance coupons meet the assumptions for FNP criticality analysis. However, Farley Nuclear Plant acknowledges that localized flow, location and other unique factors can affect Boraflex in the Spent Fuel Pool and impact the accuracy of the coupon surveillance. Although the rack cell doses have not been determined, Farley Nuclear Plant is conservatively assuming that sufficient irradiation has occurred in a number of cells to reach the expected point of some

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accelerated Boraflex deterioration. Possible water ingress has also occurred; however, Farley Nuclear Plant cannot conclusively quantify this. Therefore, Farley Nuclear Plant plans to re-perform the criticality analysis with no credit for Boraflex and limited credit for soluble boron. This analysis should be completed by January 1, 1997.

NRC Request:

(2) 'submit to the NRC a description of any proposed actions to monitor or confirm that this 5-percent subcriticality margin can be maintained for the full time of the storage racks and describe what corrective actions could be taken in the event it cannot be maintained.'

Farley Nuclear Plant Response:

Farley Nuclear Plant plans to submit Technical Specification change by July 1997 to take limited credit for soluble boron and assume no credit for Boraflex. In addition, Farley Nuclear Plant plans to institute a fuel loading checker boarding pattern that will provide additional margin. Finally, the typical soluble boron concentration in the Spent Fuel Pool provides an additional subcriticality margin beyond the 5% subcriticality margin.

NRC Request:

(3) 'describe the results from any previous post operational blackness tests and state whether blackness testing, or other in-situ tests or measurements, will be periodically performed.'

Farley Nuclear Plant Response:

Farley Nuclear Plant has not performed blackness testing and does not have plans to perform blackness or other in-situ testing since limited credit for soluble boron will eliminate dependence on Boraflex.

NRC Request:

(4) 'Chronological trends of pool reactive silica levels, along with the timing of significant events such as refuelings, pool silica cleanups, etc., should be provided.

Implications of how these pool silica levels relate to Boraflex performance should be described.'

Farley Nuclear Plant Response:

Attachment 1 provides Spent Fuel Pool silica data for Farley Nuclear Plant Units 1 and 2.

SNC does not believe that accurate correlations can be made as to the actual amount of Boraflex degradation that has occurred relative to Silica content of the pool. However, increasing Silica does indicate that some degradation of Boraflex has occurred in the Farley Nuclear Plant spent fuel pools.

If there are any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Dave Morey

Dave Morey

Sworn to and subscribed before me this 29th day of August 1996

Martha Gayle Dow
Notary Public

Seal

My Commission Expires: November 1, 1997

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Attachment

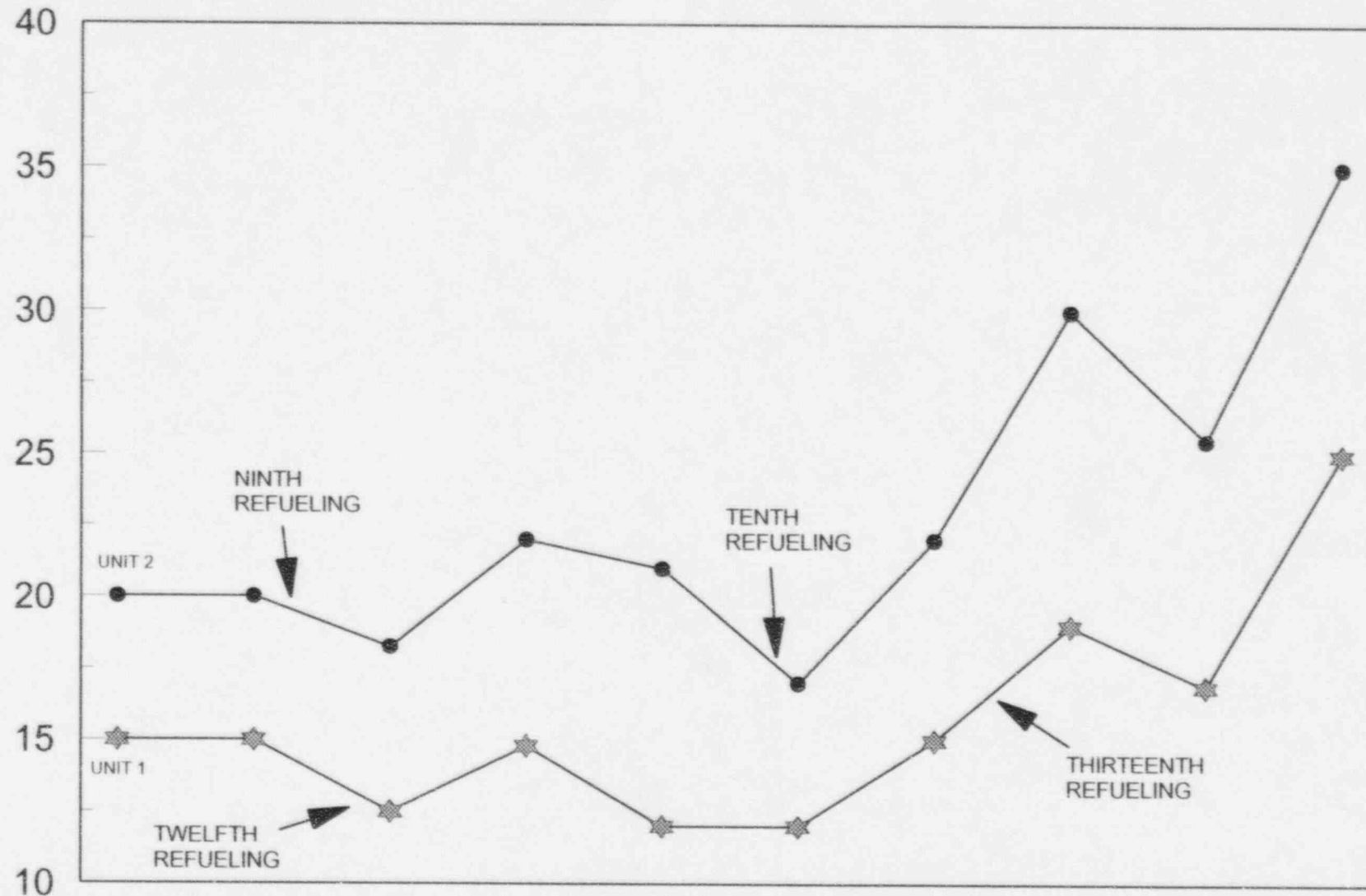
cc: Mr. S. D. Ebnetter, Region II Administrator
Mr. J. I. Zimmerman, NRR Project Manager
Mr. T. M. Ross, FNP Sr. Resident Inspector

ATTACHMENT

Farley Nuclear Plant
Spent Fuel Pool Silica Graph

FARLEY NUCLEAR PLANT SPENT FUEL POOL SILICA

PPM Silica



	6/92	7/93	5/94	9/94	1/95	4/95	7/95	12/95	1/96	6/96
UNIT 1 (ppm) ★	15.00	15.00	12.50	14.80	12.00	12.00	15.00	19.00	16.90	25.00
UNIT 2 (ppm) ●	20.00	20.00	18.25	22.00	21.00	17.00	22.00	30.00	25.50	35.00