

1CAN030203

March 18, 2002

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

SUBJECT: Arkansas Nuclear One, Unit 1
Docket No. 50-313
Degradation of Boraflex in ANO-1 Spent Fuel Pool

REFERENCES: 1) Generic Letter 96-04, Boraflex Degradation In Spent Fuel Pool Storage Racks (June 26, 1996) (0CNA069618)
2) Letter dated October 24, 1996, Arkansas Nuclear One - Units 1 and 2, 120 Day Response to Generic Letter 96-04 (0CAN109605)
3) Letter dated January 29, 1998, Arkansas Nuclear One - Unit 1, Revised Commitment Made in Response to Generic Letter 96-04 (1CAN019803)

Dear Sir or Madam:

On June 26, 1996, the Nuclear Regulatory Commission office of Nuclear Reactor Regulation issued Generic Letter (GL) 96-04, *Boraflex Degradation in Spent Fuel Pool Storage Racks* (reference 1). The generic letter addressed issues concerning the use of Boraflex in spent fuel storage racks and requested an assessment of the capability of the Boraflex to maintain a 5 percent subcriticality margin and the submittal of a plan describing the utility's proposed actions if the subcriticality margin cannot be maintained by the Boraflex material because of current or projected future Boraflex degradation. Arkansas Nuclear One (ANO) responded to the generic letter in the above referenced documents (reference 2 and 3).

The purpose of this letter is to provide an update regarding the condition of the Boraflex in region 1 of the ANO Unit 1 (ANO-1) spent fuel storage racks and ANO's plan for maintaining a 5 percent subcriticality margin in the region where the spent fuel storage racks contain Boraflex. Entergy's current plans and actions are consistent with those originally communicated in response to GL 96-04.

In the original response to GL 96-04 (reference 2), Entergy outlined ANO's Boraflex monitoring program. The purpose of the monitoring program is to ensure that the 5 percent subcriticality margin can be maintained for the life of the spent fuel storage racks. The program provided an allowance should an assessment indicate that the 5 percent subcriticality margin cannot be maintained as follows:

"In the event this assessment determines the 5 percent subcriticality margin cannot be maintained, immediate steps will be taken to maintain soluble boron levels to insure this margin is sustained. Additionally, analyses could be performed to justify continued use of the racks in unborated water based on more realistic assumptions

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such as credit for integral poisons, higher burnup requirements, or additional restrictions on fuel storage configurations."

Section 9.6.2.4.3.1.2 of the ANO-1 Safety Analysis Report (SAR) describes the assumptions used to perform the criticality analysis for the spent fuel storage racks. For region 1, it was assumed that the Boraflex content was 90 percent of the minimum design areal density loading. Currently, there are no loading restrictions in the region 1 spent fuel storage racks. However, Entergy has performed calculations that determined the Boraflex content will drop below the currently assumed Boraflex content in August 2002.

In August 2002, it is ANO's intent to consider the spent fuel pool racks operable but degraded as allowed by Generic Letter 91-18, *"Information To Licensees Regarding Two NRC Inspection Manual Sections On Resolution of Degraded and Nonconforming Conditions and On Operability."* The degraded condition has been documented in the plant corrective action program.

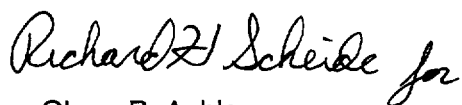
Entergy has performed new criticality analyses that take credit for 70 percent Boraflex content. Based on the new analyses, loading restrictions in region 1 will be required for fresh fuel. It is Entergy's intent to administratively control fuel storage configurations in region 1. This is consistent with the actions presented in our initial response to GL 96-04.

The design basis for preventing criticality outside the reactor is that, including uncertainties, there is a 95 percent confidence level that the effective multiplication factor (Keff) of the fuel assembly array will be less than 0.95 as recommended in ANSI N210-1976. ANO-1 Technical Specification (TS) 5.4.2 requires that a calculated Keff no greater than 0.95 (including all known uncertainties) when the pool is flooded with unborated water be maintained. This specification is consistent with the ANSI recommendation. General Design Criterion (GDC) 62, *Prevention of criticality in fuel storage and handling states*, "Criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations." This GDC and the design bases stated in TS 5.4.2 will be maintained in region 1 by the use of administrative controls.

In late 2003 to early 2004, Entergy plans to insert new poison panels in a portion of the currently designated region 2 of the ANO-1 SFP. Entergy will submit a proposed change to the ANO-1 TSs prior to the insertion of the panels. The proposed change will reflect the use of these poison panels and take no credit for the Boraflex panels in the current region 1.

If you have any questions or require additional information, please contact Ms. Dana Millar at 601-368-5445.

Sincerely,

Handwritten signature of Richard H. Scheide in cursive script.

Glenn R. Ashley
Manager, Licensing

GRA/dm

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