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SUBJECT: Forwards util analysis of probability & public risk of potential accidents in spent fuel pools which could lead to beyond design basis accident due to pool drainage potential. Concerns re spent fuel design, submitted.

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**DUKE POWER**

December 4, 1996

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

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
Oconee Spent Fuel Pool Safety Enhancement  
Backfit Analyses

The NRC recently completed an industry review of spent fuel storage pool safety issues. The results of this review were issued in a memorandum to the Commissioners dated July 26, 1996. The NRC review identified potential concerns at a number of operating plants. The NRC report identified the following two concerns regarding the spent fuel pool design at Oconee Nuclear Site (ONS):

- 1) During periods when the blank flange on the containment side of the transfer tube is removed, improper operation of the spent fuel transfer system or the spent fuel pool (SFP) cooling and cleanup system could lead to loss of inventory from the SFP. Since the transfer tubes penetrate the SFP wall at an elevation below the top of the fuel in the storage racks, it is conceivable that the spent fuel could be uncovered.
- 2) The Standby Shutdown Facility (SSF) Reactor Coolant Makeup System draws suction from the transfer tubes. In addition, Reactor Coolant System letdown is directed back to the SFP via a connection to the transfer tubes when the SSF Reactor Coolant Makeup System is in operation. This configuration introduces the potential for improper alignment of the system or failure of the piping that could result in a loss of SFP inventory, possibly leading to uncovering of the spent fuel.

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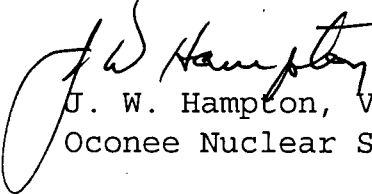
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By letter dated September 20, 1996, the NRC formally notified Duke Power Company (Duke) that it will be performing backfit analyses pursuant to 10 CFR 50.109(a)(3) regarding the above two concerns. The NRC letter indicates that comments received from Duke by November 15, 1996, will be considered in their backfit analyses. In a November 5, 1996 letter, Duke requested a 20 day extension to submit its voluntary response regarding the aforementioned backfit analyses.

In response to the September 20, 1996 NRC letter, attached is Duke's analysis of the probability and public risk of potential accidents in the spent fuel pools which could lead to a beyond design basis accident due to the pool drainage potential. The results of this analysis indicate that an accident which drains the SFP is very unlikely. However, during the evaluation, several procedure enhancements were identified that could further reduce the risk associated with the sequences of concern. Duke plans to implement these procedure changes and train our operators on the mitigative actions for the sequences of concern. We believe these steps to further enhance human performance will have the greatest impact on reducing the risk associated with these already highly unlikely scenarios.

Duke also investigated potential modifications to the SFPs to determine the extent of any risk reduction achievable from these modifications. Scoping cost estimates were also developed for these modifications. The conclusion of the Duke analysis is that the costs of these modifications are not justified in light of the small reduction in public risk that they would achieve. Duke would appreciate the opportunity to comment on the draft NRC backfit analysis for ONS before it is finalized.

Very truly yours,

  
J. W. Hampton, Vice President  
Oconee Nuclear Site

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