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July 29, 1983

1CAN078308

Director of Nuclear Reactor Regulation  
ATTN: Mr. J. F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 1  
Docket No. 50-313  
License No. DPR-51  
Request for Additional Information  
ANO-1 EFW Safety Evaluation  
NUREG-0737 Item II.E.1.1

Gentlemen:

The Emergency Feedwater (EFW) system reliability study required by NUREG 0737, Item II.E.1.1 was submitted on October 7, 1981 (1CAN108104). At this time, AP&L initiated several modifications to improve the reliability of the EFW system. As a result of the NRC review of the AP&L submittal, additional modifications were recommended by the NRC to improve the reliability of the EFW system. In your letter dated June 18, 1982 (1CNA068202) you stated that we needed to address the concerns in Recommendations GL-2 and GL-4. These recommendations concern a postulated loss of suction to the EFW pumps. The suggested solution to these concerns was an automatic rather than manual switchover of EFW suction to the service water system. Our letter of July 22, 1982 (1CAN078205) stated our reasons for not installing such a switchover including the possible consequences to the steam generators as a result of inadvertent actuation. Your letter of March 22, 1982 (1CNA038308) suggested other solutions to this concern. As a result of our review of these suggestions, AP&L is currently investigating upgrading the EFW water supply.

In the current system normal condensate makeup as well as the condensate feed to the EFW pumps are both supplied from the same tank. The Technical Specifications specify a minimum tank level to assure an adequate supply of condensate is available for EFW supply. The present condensate tank is a non-Q tank with service water as the safety grade source of EFW supply. The switchover from the condensate tank to service water is manual.

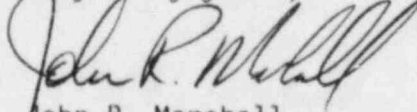
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It should be noted that an extensive upgrade of the EFW system is currently in progress. This upgrade includes seismically qualified EFW control valves, a new EFW pump turbine, and the Emergency Feedwater Initiation Control (EFIC) system. The EFIC system, as its name implies, includes safety grade automatic initiation and control of EFW. The system also provides EFW system status, EFW flowrate, and steam generator level information. Additionally, EFIC includes provisions to automatically control steam generator level to minimize overcooling or terminate overfill. This upgrade is scheduled to be completed during the sixth refueling outage. As a result of this upgrade, AP&L had previously stated that no further modifications of the EFW system were necessary. However, as a result of further review of your concerns, a concept involving upgrading the initial source of EFW suction is being considered.

The potential modification being pursued at this time is a new seismically qualified tank, large enough to provide minimum Technical Specification volumes of water for both ANO-1 and ANO-2. The emergency feedwater pumps from both units would be aligned to take suction from this new tank and a seismically qualified, tornado protected level transmitter would be provided on the new tank to alarm low level conditions. This transmitter will thus allow the operators to detect tornado damage to the tank. The option of a seismically qualified tank and a tornado protected level transmitter has been chosen over that of a seismically qualified, tornado protected tank. This choice was due to an evaluation which shows that there is no significant difference in overall EFW system reliability for the tornado protected tank. Normal condensate makeup requirements would continue to be provided from the existing condensate tanks. This modification would thus provide ANO-1 with a safety grade source of water for a minimum of 4.5 hours of operation which satisfies the current Technical Specification bases. Although the actual volume of the proposed tank will provide significant additional volume, a manual switchover to Service Water can be performed. Since the new tank would provide a sufficient supply of EFW suction from a safety grade source, there would be no need for an automatic suction switchover to Service Water.

We believe the described modification which AP&L is considering will adequately address your concerns. As this potential modification involves significant costs and engineering effort, it is necessary for AP&L to gain your concurrence before proceeding with the evaluation of this concept. However, it should be noted that this is not a commitment to perform this modification, but a request for concurrence on a conceptual design.

Very truly yours,



John R. Marshall  
Manager Licensing

JRM:MCS:rd