



ARKANSAS POWER & LIGHT COMPANY

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July 3, 1984

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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  
NUREG 0737 Item II.E.1.1  
Emergency Feedwater Reliability

Gentlemen:

In your letter dated May 17, 1984 (1CNA058406), you agreed that a 30 minute supply of tornado protected EFW suction would be sufficient to allow a manual switchover to service water. However, you requested that AP&L provide the method by which we calculated the actual volume of water required. The volume calculated was for ANO-1 only. If ANO-2 also draws suction from the proposed tank, a suitable volume of water to be protected will be justified at that time.

The volume of water required was determined to be 21,300 gallons. This volume is made up of two parts. The first part is the amount of water required to remove decay heat from the reactor coolant system and keep the steam generator level constant. The amount of decay heat produced for 30 minutes from reactor trip was conservatively calculated using 1.2 times the standard decay heat curve. Then the amount of water required to remove this decay heat was calculated, using the equation  $Q=m\Delta h$ , to be 14,000 gallons. The second part of the required volume of water was based upon the automatic actions of the Emergency Feedwater Initiation and Control (EFIC) system. This system raises the level of the steam generators at a rate of 4 inches per minute. At this rate of increase, 7,300 additional gallons of water are required to supply the steam generators. Therefore, the amount of EFW suction required for 30 minutes is 21,300 gallons of water.

A discussion of the indications to the operator of a loss of EFW pump suction and the resulting actions was also requested. An annunciator for each pump indicates low EFW suction pressure. This annunciator will alarm

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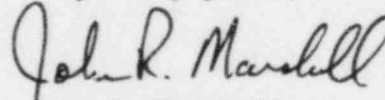
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when 30 minutes of condensate remains in the new Condensate Storage Tank (CST). The operator, upon receiving the alarm, checks the CST level and EFW pump suction pressure to verify the alarm. The operator then opens one set of service water suction valves to the EFW pumps and places the suction transfer handswitches into the service water position. These handswitches open the remaining service water suction valves and close the CST suction valves. These switches are currently located on adjacent panels in the control room. Following the EFIC modifications during the upcoming refueling outage all necessary controls will be located on one control room panel. The entire operation requires approximately 5 minutes.

You also requested that we respond to your concern involving parallel suction valves from the CST. We will respond to this concern by July 30, 1984.

In order for AP&L to complete our evaluation of a seismically qualified condensate storage tank with partial tornado protection we request that you provide written concurrence that 21,300 gallons of protected water for ANO-1 is sufficient to resolve concern GL-4. Upon receiving your concurrence this evaluation will be submitted to AP&L management for approval and a subsequent formal commitment to construct the new condensate storage tank. It should be noted that AP&L is currently finalizing the financial approvals for the work to be performed in the upcoming outage. Any delay in concurrence by the NRC could result in a significant impact on the schedule for completion of the proposed CST. Therefore, we request that you provide your concurrence as soon as possible.

Very truly yours,



John R. Marshall  
Manager, Licensing

JRM/MCS/ac