Docket 50-313

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Docket No. 50-313

APR 6 1972

Mr. J. D. Phillips
Vice President and Chief Engineer
Arkansas Power & Light Company
Sixth and Pine Streets
Pine Bluff, Arkansas 71601

Dear Mr. Phillips:

We have completed our initial review of Section 9 of the FSAR, Auxiliary and Emergency Systems; the additional information described in the enclosure to this letter is needed before we can complete our review of this section.

Our review schedule is based on the assumption that this additional information will be available for our review by April 28, 1972. If you cannot meet this data, please inform us within 7 days after receipt of this letter so that we may revise our se'

Please contact us if you have any questions regarding the additional information required.

Sincerely,

R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Division of Reactor Licensing

Enclosure:
Additional Information
Required

cc: See attached



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Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1970—407-758

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cc: Mr. Harlan T. Holmes
Nuclear Project Manager
Arkansas Power & Light Company
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Pine Bluff, Arkansas 71601

Mr. Horace Jewell
House, Holms, & Jewell
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Little Rock, Arkansas 72201

Mr. Roy B. Snapp
1725 K Street, N. W.
Washington, D. C. 20006



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ADDITIONAL INFORMATION REQUIRED
ARKANSAS POWER & LIGHT COMPANY
ARKANSAS NUCLEAR ONE - UNIT 1
DOCKET NO. 50-313

The requests for additional information listed herein relate to Section 9 of the FSAR, Auxiliary and Emergency Systems. These requests are numbered in sequence with those previously made by our letters of November 1 and December 13, 1971.

9.5 Design criteria for assuring the capability of the emergency cooling pond to perform its function during a safe shutdown earthquake (SSE) and during combinations of local floods and earthquakes were stated in Section 9.7.2.3 of the Unit 2 PSAR. Provide sufficient information for an independent review of the functional capability of the pond during severe natural phenomena, reasonable combinations of less severe natural phenomena, and site related events that may be caused by natural phenomena.

9.5.1 Provide a description of the emergency pond design and include plan and elevation views of all structures, including the spillway and the intake and discharge structures. Provide a topographical map of the area south and west of the pond for a distance of at least 500 feet.

9.5.2 Provide the rainfall, rainfall distribution, unit hydrographs, runoff hydrograph, loss rates, drainage areas, pond routing hydrographs and rating curves for the design flood selected in conformance with the criterion stated in Section 9.7.2.3 of the Unit 2 PSAR, i.e. the spillway is designed to accommodate one half the local probably maximum precipitation and remain stable under a concurrent OBE condition. Identify the design margin in terms of the flow capacity of the spillway. Will the remainder of the pond remain functional for these conditions?

9.5.3 If earthfill is to be placed beneath the spillway or anywhere along the margin of the pond, provide the design bases and the construction specifications for selection and placement. Either demonstrate the applicability of your earlier slope stability analysis to the spillway area or furnish a summary of additional slope stability analyses for this area.

9.5.4 Section 9.3.2.4 of the Unit 1 FSAR states that weathered shale which extends to or above the pond bottom, will be excavated to a depth of two feet below the pond bottom and replaced with well compacted impervious clay material and that the pond sides will be handled in a similar manner as required. Describe the design bases and the construction specifications for this procedure, and provide the results of an analysis of the slope stability of these areas during a Safe Shutdown Earthquake (SSE). Also, demonstrate that assurance is provided that seepage will not exceed rates assumed in performance analyses.

9.5.5 In addition to earthquakes and floods identify other natural phenomena that have been considered in the design of the pond, e.g., wave action, and describe how the design provides assurance that loss of function will not be caused by these events.

9.5.6 Describe any design provisions to assure that phenomena associated with the pond will not cause a loss of function of the service water system, e.g., inclusion of soil or foreign objects in the water delivered from the pond.

9.6 Provide the results of an analysis of the performance of the service water system and ultimate heat sink, including heat rejection from the emergency cooling pond following loss of the capability of the Dardanelle Reservoir to provide service water. Provide sufficient information for an independent evaluation and include at least the following:

9.6.1 Identify all operating modes that will be permitted by technical specifications for Unit 1 operation alone and for concurrent operation of Unit 1 and Unit 2, e.g., a loss-of-coolant accident in either unit with concurrent shutdown of the other unit and the most rapid concurrent normal shutdown permitted for both units. Include in the list of operating modes all combinations of pump operation possible with and without offsite power.

9.6.2 State all assumptions and describe the calculational model including (1) the model for calculating heat addition to the service water; (2) the initial water level in the pond; (3) the loss rate due to seepage from the pond, leakage from