

FEB 6 1983

*Docket File*  
*DCS MS-016*

Docket No. 50-368

Mr. William Cavanaugh, III  
Senior Vice President,  
Energy Supply  
Arkansas Power & Light Company  
P. O. Box 551  
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

By letter from A. E. Scherer (CE) to R. C. DeYoung (NRC), dated August 4, 1982, the staff was notified of a core protection calculator (CPC) software discrepancy in certain CE designed plants, including Arkansas Nuclear One, Unit 2. Subsequently, by letter of August 30, 1982, from J. R. Marshall (AP&L) to W. C. Seidle (NRC), the staff received Arkansas Nuclear One, Unit 2, Licensee Event Report No. 82-026/03L-0, which indicated that AP&L had been notified of the discrepancy by Combustion Engineering on August 2, 1982. In that report AP&L indicated that the CPC functional inconsistency was related to the penalty factors (PF) associated with failed Control Element Assembly Calculators (CEAC). Under certain conditions a large Departure from Nucleate Boiling Ratio (DNBR) PF and a large Low Power Density (LPD) PF should be applied to the CPCs. However, under these conditions only the large DNBR PF is applied. Even though this condition is not in accordance with the design specifications, the report indicated that CE has concluded that there is adequate protection provided by CPC reactor trip logic to permit plant operation with the CPC software error. CE's justification is based on the supposition that DNBR trips would occur prior to any LPD trips that might be initiated when applying the LPD PF.

The staff has not reviewed this justification and doubts that the evaluation can be thorough, though the conclusion is probably true. The nature of the CPC software protection logic is not amenable to an evaluation or test program which can provide complete assurance that all circumstances requiring LPD trip protection have been adequately analyzed. Even if the conclusion is valid, the staff believes that the error degrades the protection provided by the CPCs by effectively eliminating one software trip path to the protection circuit.

In your LER No. 82-026/93L-0, you indicated that no corrective action would be taken at that time, but, to restore consistency with the original functional requirements and to assure compatibility with licensing documentation, the CPC software would be corrected at the time of the next software update. While the safety concern does not appear serious enough to warrant plant shutdown until the correction is implemented, the staff believes that the software should be corrected as soon as practical without impairing operation. For this reason, you are requested to provide us with a schedule within 30 days of your receipt of this letter, reflecting correction of the error at the

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Mr. William Cavanaugh, III

- 2 -

The information requested in this letter affects fewer than ten respondents; therefore OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by:

Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing

cc: See next page

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Arkansas Power & Light Company

cc:

Mr. John Marshall  
Manager, Licensing  
Arkansas Power & Light Company  
P. O. Box 551  
Little Rock, Arkansas 72203

Mr. James P. O'Hanlon  
General Manager  
Arkansas Nuclear One  
P. O. Box 608  
Russellville, Arkansas 72801

Mr. Robert B. Borsum  
Babcock & Wilcox  
Nuclear Power Generation Division  
Suite 220  
7910 Woodmont Avenue  
Bethesda, Maryland 20814

Nicholas S. Reynolds, Esq.  
c/o DeBevoise & Liberman  
1200 Seventeenth Street, N.W.  
Washington, D. C. 20036

Mr. Charles B. Brinkman  
Manager - Washington Nuclear  
Operations  
C-E Power Systems  
4853 Cordell Avenue, Suite A-1  
Bethesda, Maryland 20014

Regional Administrator  
Nuclear Regulatory Commission, Region IV  
Office of Executive Director for Operations  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Mr. J. Callan  
U.S. NRC  
P. O. Box 2090  
Russellville, Arkansas 72801

U.S. Environmental Protection Agency  
Region VI Office  
ATTN: Regional Radiation  
Representative  
1201 Elm Street  
Dallas, Texas 75270

S. L. Smith, Operations Officer  
Arkansas Nuclear Planning &  
Response Program  
P. O. Box 1749  
Russellville, Arkansas 72801