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April 30, 1981



GR-0481-20

Mr. Darrell G. Eisenhut, Director
 Division of Licensing
 Office of Nuclear Reactor Regulation
 U. S. Nuclear Regulatory Comm.
 Washington, D.C. 20555

SUBJECT: Arkansas Nuclear One - Units 1 & 2
 Docket Nos. 50-313 and 50-368
 License Nos. DR-51 and NPF-6
 NUREG-0737 Item II.K.3.30-
 Small Break Analysis Methods
 (File: 1510.3, 2-1510.3)

Gentlemen:

By letters dated February 5 and February 27, 1981, AP&L committed to provide the scope and schedule of our plans to address the subject requirement. This information is provided below for ANO-1 and ANO-2, respectively.

ANO-1

The clarification of Item II.K.3.30 provided in NUREG-0737 refers to NUREG-0565 for a description of specific staff concerns. Further, the clarification provided clearly allows the option of justifying the present model by assessment against experimental data (i.e., LOFT and Semiscale test). In addition, the staff has stated, in NUREG-0565, its belief that "the present small break LOCA model can be both qualitatively and quantitatively assessed against these tests."

We are aware that other B&W utilities are proceeding to address this issue in a different manner than that described below. However, we have elected the option, described above, of justification of the present model by comparison to existing data. Each of the staff concerns, as described in NUREG-0565 Section 4.1.1.1, are discussed below:

CONCERN NO. 1: This concern deals with the ability to predict various modes of natural circulation. The staff has concluded that experimental data is not currently available to allow an assessment of the computer code. Therefore, no action is currently planned to address this item. We concur with the staff's belief as stated on page 4-5 of NUREG-0565 that "the CRAFT-2 code can model this phenomenon."

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CONCERN NO. 2: This concern addresses Semiscale Test S-07-10B and LOFT Test L3-1. This item has been the subject of further correspondence by the NRC via Mr. R. W. Reid's letter to All Babcock and Wilcox Licensees dated February 24, 1981. We will address this concern per our response to Mr. Reid's letter dated April 1, 1981.

CONCERN NO. 3: This potential concern deals with the use of an equilibrium vs. a non-equilibrium pressurizer model. Our response to this item is discussed below.

CONCERN NO. 4: This concern addresses the calculation of core level and core heat transfer. The staff has concluded more experimental data must be obtained before additional code verification work can be done. Therefore, no action is planned relative to this concern at this time.

CONCERN NO. 5: This concern expresses the staff's conclusion that modeling detail (e.g., noding detail) can significantly affect analysis results. However, no specific concern with present noding is identified. Since previous noding sensitivity studies, required by Appendix K to 10 CFR 50, have been accepted by the NRC and no code modifications are anticipated, no additional work is planned on this issue.

CONCERN NO. 6: This concern addresses the assumption of thermodynamic equilibrium during the recovery period from a small break LOCA. Our plans in response to this concern are discussed below.

CONCERN NO. 7: This concerns the discharge rate of two-phase fluid through a postulated stuck open PORV or safety-valve. This is being addressed by the EPRI/PWR Safety and Relief Valve Testing Program. Therefore, no additional actions are planned in conjunction with Item II.K.3.30.

CONCERN NO. 8: This concern addresses the rate of core flood tank water injection. The staff has concluded that additional studies will be required before code verification work can be done. Therefore, no additional work is planned at this time.

As discussed above, only concerns two, three and six require additional work at this time. Concern two has been addressed by other correspondence as referenced above. A two phased approach has been developed to address concerns three and six. Phase 1 will consist of a review of all LOFT and Semiscale experiments performed to date, to identify experiments which can be used to address concerns three and six, and identification of the scope of work required to utilize the identified data to address concerns three and six. Phase 2 will consist of work identified by Phase 1, if any.

Due to the limited technical manpower with expertise in this area and the high demand for such expertise in response to other NRC required items, we cannot complete Phase 1 prior to November 1, 1981. A scope and schedule for Phase 2 will be developed as part of the Phase 1 effort.

Mr. Darrell G. Eisenhut, Director - 3 -

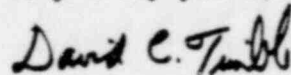
April 30, 1981

Since the time allowed to complete this work is limited, we request that you review our plans and provide your approval or more specific clarification of the requirement by June 1, 1981.

ANO - 2

On January 26, 1981, representatives of the C-E Owners Group met with members of your staff to discuss those actions needed to respond to the NRC staff's concerns. AP&L is participating with the C-E Owners Group actions to address these concerns. We plan to submit the results of this program by January 1, 1982 as required by NUREG-0737.

Very truly yours,



David C. Trimble
Manager, Licensing

DCT:DRH:lp