

DEC 8 1972

50-270/287

R. C. DeYoung, Assistant Director for Pressurized Water Reactors, L  
THRU: A. Schwencer, Chief, PWR Branch No. 4, L

MEETING WITH DUKE POWER COMPANY, BABCOCK AND WILCOX - OCONEE 2/3  
CORE FLOODLINE BREAK ANALYSIS - DECEMBER 1,,1972

Enclosed is a summary of the meeting held with Duke Power Company  
and Babcock and Wilcox on December 1, 1972. An attendance list  
is also enclosed.

I. A. Feltier  
Project Manager  
PWR-4

Enclosure:

- 1. Summary of Meeting
- 2. Attendance List

cc: w/enclosures

- R. S. Boyd
- D. Skovholt
- D. Knuth
- R. Maccary
- R. Tedesco
- H. Denton
- PWR Branch Chiefs
- R. W. Klecker
- M. Rosen
- RO (3)
- H. Schierling
- D. Knuth
- Each major AEC participant

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OFFICE ▶	PWR-4	PWR-4	L:AD/RS	L:C/RSB	
SURNAME ▶	IAPeltier:kmf	ASchwencer	DKnuth	VStello	H.C.M.
DATE ▶	12/5/72	12/11/72	12/7/72	12/11/72	

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ATTACHMENT I

Meeting With Duke Power Comapny and  
Babcock and Wilcox - Oconee 2/3  
Core Floodline Break Analysis  
December 1, 1972

Summary - The purpose of the meeting was to provide B&W with an opportunity to discuss with the staff the analysis and possible solution to the core floodline break issue based upon work performed by B&W since the November 17, 1972 meeting on this subject.

The significant point that B&W tried to make at the meeting is that B&W did not impose the by-pass assumption because there are good hydraulic reasons why it is not necessary to do so and not because analysis shows that the "end of blowdown" is not reached. The remaining technical discussion centered around the assumptions used to arrive at those hydraulic reasons.

One of the important hydraulic phenomena in this analysis is the bubble rise phenomenon. The correct way to model bubble rise in view of its possible sensitivity to system geometry is still an open question.

B&W did some comparison of large break models with small break models for the floodline break and claims reasonably good agreement in results regarding water remaining in the vessel. B&W also claims that its non-equilibrium model shows more water left in the vessel than the equilibrium model used in BAW 10034 Supplement 1.

Difficulty with physical interpretation results when multinoding of the core is employed for small breaks because of phase separation. Some of the staff expressed the thought that the intent of the interim criteria could still be met with a single node in the core.

B&W stated that 50 pounds of water per second is required to cool the core and the injection rate (for this accident) is 65 pounds per sec. Therefore, although the core may be being cooled, it will take a long time to fill the vessel.

B&W discussed the use of a flow restrictor in the floodline nozzle which would reduce the effective break size from 0.722 ft.<sup>2</sup> to 0.442 ft.<sup>2</sup>. According to B&W this approach results in a significant savings of water in the primary vessel for the floodline break without serious penalty to the larger break analysis. The reflood rate stays within 10 pounds per second of equilibrium.

Duke and B&W have concluded that the Oconee electrical system will not permit adding on another high head pump to increase the flood rate and cross connections between the two injection points would take 10 months to a year in a plant like Oconee.

It is planned to hold another meeting on this subject the week of December 18, 1972 when Technical Review has completed its own independent analysis.

POOR ORIGINAL

ATTACHMENT II

ATTENDANCE LIST  
DUKE B&W ECCS  
MEETING

Atomic Energy Commission

I. A. Peltier  
H. J. Faulkner  
H. Schierling  
D. Davis  
B. Buckley  
D. Knuth  
J. Hendrie  
V. Stello  
D. Ross  
H. Sullivan

Duke Power Company

R. J. Ansell  
C. L. Sansbury

Babcock and Wilcox

C. E. Parks  
J. E. Mecca  
B. M. Dunn  
L. R. Pletke  
R. V. Straub  
D. W. Montgomery