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Mr. James H. Taylor  
Manager, Licensing  
Babcock & Wilcox Company  
Nuclear Power Division  
P.O. Box 1260  
Lynchburg, Virginia 24505

Dear Mr. Taylor:

Reference: Letter from S.A. Varga, Chief, Light Water Reactors  
Branch No. 4, Division of Project Management to  
J.H. Taylor, Manager, Licensing of October 31, 1978,  
Subject: Evaluation of BAW-10132P.

The NRC safety evaluation of your topical report on LOCA blowdown loads, see reference, included a commitment on your part to perform a pre-test analysis of an HDR blowdown experiment when test conditions could be defined. The HDR is the largest known test facility especially designed to obtain high quality experimental data required for the verification of related analysis methods. The pre-test data are now available and are provided in the enclosure. The HDR analyses will supplement those previously performed for the CSE, Semiscale and LOFT test facilities.

The NRC has selected test V.31 as the case to be analyzed. This case is typical of PMR operating conditions and should provide the best set of data for computer program verification. Both the thermal-hydraulic and the structural analyses associated with the test are to be provided. The test schedule is provided in the enclosure in Section 9. A submittal date of June 15, 1980 has been chosen for this analysis in order to keep within the test program schedule and to provide ample time to perform the analyses.

It should be noted that the vessel geometry is not as clean as had been anticipated in that several fluid loops are included. Specifically, nozzles "S" and "T", see pages 2-16 and 3-14 of the enclosure, and the mixed water exit loop and bypass, see pages 2-8, 2-13 to 2-15 of the enclosure, will be open to the vessel during the test. As a result, some wave reflections are expected at these locations. It is recommended that the "S" and "T" nozzles be modeled. Consideration should be given to modeling the mixed water exit loop and bypass systems, based on your judgement of their expected influence on the results.

A list of the data to be provided, in addition to nodal diagrams and input listings, is given in Section 6 of the enclosure. While strict adherence to the data format is not mandatory, all listed data is to be provided in graphical form. Each graph should be clearly identified with the name

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Mr. James H. Taylor

-2-

and data type. In addition to these data, the data shown on pages 3-17 for the "S" and "T" nozzles is to be provided. The differential pressure computed across the core barrel, from the 270 to the 90 reference, for each axial elevation modeled should also be provided.

Questions concerning the thermal-hydraulic aspect of the analysis should be directed to E. Throm, Analysis Branch, Division of Systems Safety (301-492-9459). Questions concerning the structural aspect of the analysis should be directed to R. Bosnak, Chief, Mechanical Engineering Branch, Division of Systems Safety (301-492-7456).

The analyses should be provided no later than June 15, 1980. If you cannot meet this date, please inform this office and provide a schedule for the submission of the analyses.

Sincerely,

Original Signed By  
Richard P. Denise

Richard P. Denise, Acting Assistant Director  
for Reactor Safety  
Division of Systems Safety  
Office of Nuclear Reactor Regulation

Enclosure:

HDR-Safety Program (Research  
Project RS 123) Special  
Project 3000: Blowdown-  
Experiments (2)

bcc: (letter only)  
J. Knight, MEB  
Z. Rosztoczy  
R. Bosnak, MEB  
P. Chen, MEB  
S. Hou, MEB  
P. Norian  
L. Shotkin, RES  
E. Throm  
ACRS  
PDR

OFFICE ▶	DSS:AB <i>ED</i>	DSS:AB <i>PN</i>	DSS:AB <i>ZR</i>	DSS:AD:R6 <i>D</i>	
SURNAME ▶	EDThrom/ww	PENorian	ZRRosztoczy	RPDenise	
DATE ▶	3/21/80	3/21/80	3/21/80	3/21/80	