

A6354: B&W Assessment Program - Report for: 12-16-86 to 1-2-87

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The major objective of B&W Assessment Program is to develop a methodology with the capability to evaluate the relative risk importance of plant modifications proposed by the Babcock & Wilcox Owners Group (B&WOG) or the Nuclear Regulatory Commission and to apply this methodology, when requested. An additional objective is to assess differences in operational safety between Babcock & Wilcox (B&W) plants and plants of other reactor vendors.

1. Summary of Work Performed During Report Period

Steady state conditions at full power were established for the Oconee plant model which is now ready to be used for transient calculations. Problems in the steam generator or secondary control system models have prevented a steady state condition from being established for the H. B. Robinson model. A separate effects model of a steam generator and associated control systems has been developed to speed resolution of this problem. Models of the primary and the majority of the secondary systems were completed for Calvert Cliffs. Initial calculations to establish the steady state conditions at full power for Calvert Cliffs are being run in parallel with development of the final system models. Definition was completed for a loss of feedwater transient that will provide timing information for the assessment of potential operator actions. Additional manpower was obtained and extended work week was approved for several thermal-hydraulic analysts to accelerate the plant response calculations.

The Critical Safety Function (CSF) response trees developed for Oconee were reviewed by personnel with operator examination experience and modifications are currently being made. The CSF response trees for H. B. Robinson are currently undergoing a similar review by operator examiners with experience with this type of plant. An initial draft of the Calvert Cliffs CSF trees was completed and is ready for review. Development of Operational Sequence Diagrams (OSDs) for Oconee was not completed in the reporting period as originally anticipated. Assistance has been obtained from the operator examiners to accelerate their completion. Development of OSDs for H. B. Robinson and Calvert Cliffs were initiated.

2. Summary of Work To Be Performed During the Next Period

Modeling of the secondary system for Calvert Cliffs will be completed. Steady state conditions at full power will be established for the H. B. Robinson (HBR) model and calculations for the loss of feedwater transient at Oconee and HBR will be initiated. Comparisons of the Oconee and HBR CSF response trees will be initiated. Review of the CSF response trees by operator examiners will be initiated for Calvert Cliffs. Initial

Operational Sequence Diagrams (OSDs) for the Oconee Plant will be completed. Development of operational sequence diagrams for the other two plants will continue. Identification of the type of information needed during plant visits and the expected duration of these visits will be completed and transmitted to the Babcock and Wilcox Owners Group.

3. Future Information Needs

Plant visits to the three vendors will be required by the week of February 17, 1987 to allow utilization of the results in the program.

4. Problems and Potential Problems

The current work scope should be reviewed, in detail, by NRR to ensure that it will meet NRRs needs both in terms of results and schedules.

Since plant visits will provide more accurate and reliable information, every effort should be made to obtain access to the plants. INEL will take the lead initially in attempting to set up these visits at H. B. Robinson. However, based on past experience, close coordination will be required with NRC to obtain cooperation from Oconee.

The transients currently being considered were selected to highlight differences in the response of the three vendor plants including the burden on the operator. However, the B&WOG may interpret the transient selection as only including those transients for which B&W plants would have a more severe response when compared to the other vendors plants. Since there is only limited time for this study, inclusion of a wide variety of transients is not possible.

5. Cost and Schedule Information

Of the \$712 K currently estimated for this work, \$79 K has been spent as of January 4, 1987, the last day of this period for which cost information is readily available. All work is currently on schedule except for calculation of the H. B. Robinson steady state conditions and development of Operational Sequence Diagrams. Both tasks are currently having additional manpower applied to reestablish the original schedule.

Variance Statement

None.