



March 3, 1992

1CAN039201

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Response to NRC Staff Inquiries
Associated with ANO-1 Specific ATWS Analyses

Gentlemen:

The following information is provided in response to inquiries from the ANO-1 NRR Project Manager. It is our understanding that members of the NRC Staff are currently reviewing aspects of the analyses which were performed in the early 1980's to address the NRC questions on the subject of anticipated transients without scram (ATWS). The Staff is interested if an analysis was conducted which considered the impact of plant specific differences on peak pressure and the degree to which previous ATWS results in BAW-1610 are representative of ANO-1. Specifically, the Staff has asked if an analysis had been performed which would account for ANO-1's specific Auxiliary Feedwater (AFW) flow rate.

To respond to this inquiry, contacts were made with individuals at B&W who were involved with the original analyses of the ATWS event. They indicated that generic analyses were performed to define the extent of the concern for ATWS events for the B&W plant design. The generic analyses were designed to provide an "average plant" response, representative of that for each plant. It was acknowledged that the differences in plant specific features would lead to a range of plant responses that differed from the generic analyses.

Initial analyses were provided to the NRC in two topical reports, BAW-10099 and BAW-1610. BAW-1610 presented analyses to address issues resulting from NUREG-0460 and other NRC communications. Within BAW-1610, specific attention was given to the loss of normal feedwater, loss of offsite power, and loss of reactor coolant flow events. Further inquiries from the NRC, following submittal of BAW-1610, questioned the applicability of the analyses to plant specific configurations that did not match the "average plant" parameters used.

AC53
1/0

B&W performed additional plant specific analyses for the loss of normal feedwater accident, the worst overpressure ATWS event. The analyses examined plant specific configurations for key parameters, including AFW flow rates.

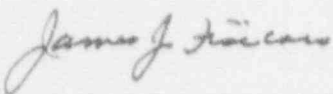
The generic analyses had used an AFW flow rate of 780 gpm per pump. The ANO-1 specific analysis assumed 705 gpm for the turbine driven pump and 702 gpm for the motor driven pump. These flows were chosen to account for plant specific AFW pump capacity differences and to account for a recirculation flow for each pump that did not reach the steam generators.

The peak pressure for ANO-1 for the loss of normal feedwater event was found to be 3620 psia at the core outlet. This assumed no reactor trip, and primary system relief with ANO-1 specific valve capacities. This is an acceptable pressure when compared to the B&W Owners Group acceptance criterion. The B&W Owners Group has justified the use of 4000 psia for those events that do not credit a reactor trip from the Reactor Protection System or the Diverse Scram System.

We were unable to locate any specific docketed correspondence which transmitted the above detail to the NRC. However, we feel certain that this analysis, like much of the ATWS information at the time, was communicated to the NRC Staff in meetings with the B&W Owners Group. The results of the plant specific analysis was transmitted to the NRC in tabular form as part of the B&W Owners group submittal of October 9, 1985 in correspondence for J. Ted Enos to Mr. Hugh I. Thompson, Jr. (1CAN103506).

Should you have any further questions on this topic, please contact my office.

Very truly yours,



James J. Fisicaro
Director, Licensing

JJF/DEJ/sjf

cc: Mr. Robert Martin
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

NSC Senior Resident Inspector
Arkansas Nuclear One - ANO-1 & 2
Number 1, Nuclear Plant Road
Russellville, AR 72801

Mr. Thomas W. Alexion
NRR Project Manager, Region IV/ANO-1
U. S. Nuclear Regulatory Commission
NRR Mail Stop 13-H-3
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

Ms. Sheri Peterson
NRR Project Manager, Region IV/ANO-2
U. S. Nuclear Regulatory Commission
NRR Mail Stop 13-H-3
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852