

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

.....  
In the Matter of: .

SACRAMENTO MUNICIPAL UTILITY DISTRICT .

Docket No. 50-312 SP

(Rancho Seco Nuclear Generating Station) .  
.....

AFFIDAVIT OF WALTON L. JENSEN, JR.

I Walton L. Jensen, Jr. being duly sworn, depose and state that:

1. I am an employee of the U.S. Nuclear Regulatory Commission (NRC).  
My present position is Senior Nuclear Engineer, Reactor Systems Branch,  
Division of Systems Integration within the Office of Nuclear Reactor/  
Regulation. A copy of my professional qualifications is attached.
2. The purpose of my affidavit is to respond to Item No. 5 of the Atomic  
Safety and Licensing Appeal Board Memorandum and Order dated October 7,  
1981 (ALAB-655). Item No. 5 requests the following information:

Staff comments on the March 25, 1981, letter from B&W to SMUD  
concerning "Reactor Coolant Pump Suction Small Break LOCA".

3. The NRC staff has reviewed the information contained in the letter from  
B&W to SMUD on "Reactor Coolant Pump Suction Small Break LOCA" dated  
March 25, 1981. We conclude that this information is not significant

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with regard to the continued safe operation of Rancho Seco.

Following the event at TMI-2, B&W performed additional small break LOCA analyses beyond those which had been presented to the staff as a licensing basis to show compliance with 10 CFR 50.46. These additional analyses were performed for the purpose of providing guidance to the operator and are documented in the B&W report titled "Evaluation of Transient Behavior and Small Reactor Coolant System Breaks in the 177-FA Plant" dated May 7, 1979. These analyses demonstrated that for a small break LOCA event coupled with a complete loss of feedwater, operator action to manually initiate Auxiliary Feedwater or High Pressure Injection (HPI) would provide adequate core cooling. These analyses were utilized in preparation of Small Break Operating Guidelines that would be used in coping with small breaks.

A minimum of 20 minutes was identified by the analyses as the time available for operator action in the event of a  $.01 \text{ ft}^2$  break in a reactor coolant pump discharge pipe without feedwater available. This break size is approximately the largest break for which automatic ECCS actuation would not occur. For this situation the operating guidelines instruct the operator (in the event of a small break LOCA which does not depressurize sufficiently) to automatically actuate the HPI, to manually initiate HPI flow and to restore feedwater flow if it is not available.

The letter to SMUD from B&W dated March 25, 1981 indicates that a break at the suction side of the reactor coolant pump might result in less time being available for operator action than for the  $0.01 \text{ ft}^2$  pump discharge break analyzed in the May 7th report. This reduction in available time.

is because the reactor coolant piping is lower at the reactor coolant pump suction than at the pump discharge and more reactor system water might be lost out the break. The staff agrees that additional liquid may be lost from the system for a break in the pump suction piping; however, even if it were not lost, the liquid would be below the level of the reactor vessel inlet nozzles and would not be available to provide core cooling. For this reason the effect on time available to the operator is not expected to be significant. In addition, the instructions to the operator to immediately actuate HPI are not dependent on break location or time after the event and would be correct for either break location.

Also, the improvements to the auxiliary feedwater system already implemented and the long-term upgrade of the system to meet safety-grade criteria will further reduce the likelihood of the above event scenarios at Rancho Seco.

To summarize, demonstration of the 20 minutes for operator action is not an absolute requirement since the subject scenarios are outside the design basis for Rancho Seco. Present emergency procedures continue to apply regardless of the specific value of time available.

The above statements and opinions are true and correct to the best of my personal knowledge and belief.

Walton L. Jensen, Jr.  
Walton L. Jensen, Jr.

Subscribed and sworn to before  
me this 24th day of November, 1981

Judith L. Butts, Notary Public  
My Commission Expires: July 1, 1982.

WALTON L. JENSEN, JR.

PROFESSIONAL QUALIFICATIONS

I am a Senior Nuclear Engineer in the Reactor Systems Branch of the Nuclear Regulatory Commission. In this position I am responsible for the technical analysis and evaluation of the public health and safety aspects of reactor systems.

From June 1979 to December 1979, I was assigned to the Bulletins and Orders Task Force of the Nuclear Regulatory Commission. I participated in the preparation of NUREG-0565, "Generic Evaluation of Small Break Loss-of-Coolant Accident Behavior in Babcock & Wilcox Designed 177-FA Operating Plants."

From 1972 to 1976, I was assigned to the Containment Systems Branch of the NRC/AEC, and from 1976 to 1979, I was assigned to the Analysis Branch of the NRC. In these positions I was responsible for the development and evaluation of computer programs and techniques to calculate the reactor system and containment system response to postulated loss-of-coolant accidents.

From 1967 to 1972, I was employed by the Babcock and Wilcox Company at Lynchburg, Virginia. There I was lead engineer for the development of loss-of-coolant computer programs and the qualification of these programs by comparison with experimental data.

From 1963 to 1967, I was employed by the Atomic Energy Commission in the Division of Reactor Licensing. I assisted in the safety reviews of large power reactors, and I led the reviews of several small research reactors.

I received an M.S. degree in Nuclear Engineering at the Catholic University of America in 1968 and a B.S. degree in Nuclear Engineering at Mississippi State University in 1963.

I am a graduate of the Oak Ridge School for Reactor Technology, 1963-1964.

I am a member of the American Nuclear Society.

I am the author of three scientific papers dealing with the response of B&W reactors to Loss-of-Coolant Accidents and have authored one scientific paper dealing with containment analysis.