

11/24/82

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. 7 of the Atomic Safety and Licensing Appeal Board Memorandum and Order dated October 7, 1981 (ALAB-655). Item No. 7 requests the following information:

Staff clarification of its position on the need vel non for extended pressurizer level indication.

3. The statement on page 5-13 of NUREG-0667 "Transient Response of Babcock & Wilcox - Designed Reactors" which was cited by the Appeal Board is as follows: "It is the belief of this Task Force that the loss of pressurizer level, along with the need for operator actions of the kind described,

places the plant in an undesirable condition and should be remedied". The B&W Transient Response Task Force stated on the same page that "...this level loss is primarily caused by the contraction of the primary coolant in response to the secondary side temperature associated with the secondary side control". On page 5-10 of NUREG-0667 the Task Force also stated that, "The measured level in the pressurizer is a clear (and only) indication to the operator of coolant inventory". The complete loss of pressurizer level is undesirable since the condition leads to a loss of pressure control for the reactor system and may result in ECCS actuation on low reactor coolant pressure. Frequent challenges to the engineered safety features have been identified as undesirable in NUREG-0667 and in NUREG-0578, "TMI-2 Lessoned Learned Task Force Status Report and Short-Term Recommendations".

Pressurizer level indication is no longer utilized at Rancho Seco as the only means of determining primary system inventory. Operator guidelines developed subsequent to the TMI-2 event instruct the operator to also rely on reactor system subcooling, which is indicated in the control room.

Under Item II.E.5 of NUREG-0660 "NRC Action Plan developed as a result of TMI-2 Accident", the Argonne National Laboratory (under contract to the NRC) has completed a study of the sensitivity of B&W reactors to perturbations in the secondary coolant system. The study concluded that secondary system upsets caused by either loss of main or auxiliary feedwater control (overcooling) could eventually result in loss of pressurizer level and HPI initiation on low

reactor system pressure. The study also indicated that by proper control of main and auxiliary feedwater flowrate, pressurizer level could be controlled so that level indication would not be lost and HPI would not be initiated. The NRC staff is currently reviewing the results of this study for consideration of possible backfit modifications on operating plants.

In a letter from J. Mattimoe SMUD to J. Stolz, NRC dated September 8, 1981, SMUD described long term modifications to the main and auxiliary feedwater system of Rancho Seco which are designed to upgrade the auxiliary feedwater system to meet safety-grade criteria and to improve controls on both main and auxiliary feedwater flow. These modifications are currently under review by the NRC and are schedule to be implemented at Rancho Seco during the 1984 refueling outage. Based on the results from the sensitivity study conducted by ANL, we conclude that the modifications proposed by SMUD in its September 8, 1981 submittal conceptually meet the objective of NUREG-0667, such that following a reactor trip, pressurizer level will remain on scale and system pressure will remain above the HPI actuation setpoint. We believe that this objective can be accomplished without extending the current pressurizer level indication range.

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.