



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

May 8, 1980

Docket No. 50-312

MEMORANDUM FOR: Steve Scott, Chief, Distribution Services Branch, ADM  
FROM: Darrell G. Eisenhut, Director, Division of Licensing, NRR  
SUBJECT: BOARD NOTIFICATION - RANCHO SECO FACILITY

Please forward the enclosed material to the Board members and parties  
to the proceedings.

A handwritten signature in cursive script, appearing to read "D. G. Eisenhut".

Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

cc w/enclosures:  
H. Denton  
E. Case  
E. Christenbury  
S. Varga  
D. Thompson  
S. Lewis  
D. Garner  
L. Nichols  
R. Capra  
T. Novak

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DISTRIBUTION OF BOARD NOTIFICATION  
(Steam Generator Refill)

Rancho Seco (Docket No. 50-312)

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### EVALUATION OF ENCLOSED MATERIAL

Issues now before the Rancho Seco Licensing Board encompass control of auxiliary feedwater system flow rates. The enclosed material appears to be relevant to these issues. The enclosure is a letter from Babcock & Wilcox to the Sacramento Municipal Utility District pointing out the potential concerns associated with the overfilling of steam generators. The letter requests that the utility undertake a review of the effect of overfill on the main steam line pipes.

**Babcock & Wilcox**

RECEIVED

MAR 10 1980

Generation Engineering

Power Generation Group

P.O. Box 1260, Lynchburg, Va. 24505

Telephone: (804) 384-5111

March 4, 1980

RS-80-091

*Attention D. Lawrence*

Mr. D. G. Raasch  
Manager, Generation Engineering  
Sacramento Municipal Utility District  
6201 S. Street  
Sacramento, CA 95813

Subject: Rancho Seco Nuclear Generating Station - Unit 1  
Preliminary Safety Concern  
Steam Generator Overfill

Dear Mr. Raasch:

At the February 19, 1980 B&W 177FA Plant Owners Group meeting a preliminary safety concern (PSC) concerning steam generator overfill was discussed.

This PSC was initiated within B&W and presents the concern that a potential exists for overflowing steam generators by excessive addition of main feedwater (MFW) or auxiliary feedwater (AFW).

Excessive feedwater addition, as used here, is defined as a condition which would exist if feedwater (main or auxiliary) is continually added to the steam generator in an unplanned fashion at a rate greater than the core heat generation capability for converting it to steam. Overfill, the condition addressed in this PSC, may be defined as a limiting case of excessive feedwater addition which allows liquid spillage into the steam lines.

It is estimated that the time to overfill the Steam Generators is approximately 2 to 4 minutes with main feedwater and between 7 to 15 minutes with auxiliary feedwater.

Potential results of overfill could be:

Steam line deformation and failure due to water accumulation.

Steam generator blowdown due to steam line failure with the potential for core return to power from a safe shutdown condition, excessive steam generator tube stress, exceeding reactor vessel NDT limits or containment overpressurization.

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Babcock & Wilcox

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March 4, 1980

Pivotal in the evaluation of the PSC is the ability of plant steam lines to survive, without breaking, the static and dynamic effects of overfill. While B&W has not specifically analyzed a worst case result from steam line break due to overfill, it is our best engineering judgement faced with the above potential results that if the steam line breaks, a reportable safety concern exists. Conversely, based on best engineering judgement and results of analysis done for Consumer Power Co. for the recent operating plant show cause order on the steam generators, if the steam lines do not fail a reportable safety concern does not exist.

The arrangement and design of the secondary system is the responsibility of the licensee and his A/E and is therefore plant specific. In addition, the stress analysis of the steam lines is not done by B&W (in A/E's scope), thus the Company is not prepared to do such analysis. Considering these facts, it is our judgement that we cannot complete the evaluation of this concern. Therefore, pursuant with Section 21 of 10CFR21, B&W is requesting each of the plant licensees to complete the evaluation and determine the reportability of the PSC.

If B&W can be of any further assistance in this matter, please let us know.

We would appreciate being notified of the results of your evaluation and any corrective action plan that may be initiated.

Yours truly,



J. T. Janis

Service Manager 61 S Wd CE R&D  
1980 APR 30 PM 5 19

JTJ/cw

cc: R. J. Rodriguez  
R. P. Oubre  
R. A. Dieterich  
S. I. Anderson  
J. R. Shetler  
J. H. Johnston

U.S. NUCLEAR REGULATORY COMMISSION