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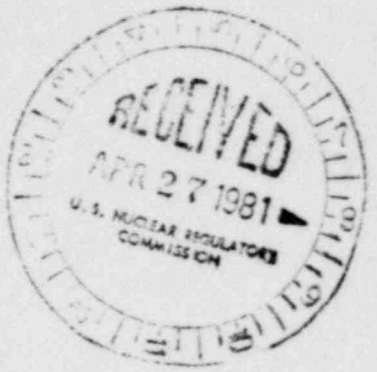
April 20, 1981



DIRECTOR OF NUCLEAR REACTOR REGULATION
ATTENTION JOHN F STOLZ CHIEF
OPERATING REACTORS BRANCH 4
US NUCLEAR REGULATORY COMMISSION
WASHINGTON DC 20555

DOCKET 50-312
RANCHO SECO NUCLEAR GENERATING
STATION, UNIT NO. 1
SMALL BREAK LOCA MODEL

Your letter of February 24, 1981 requested further post-test analyses of the S-07-10D and L3-1 tests.

The B&W prediction of the L3-1 test compared very favorably with the other Vendor predictions. All of the predictions showed the clearing of liquid from the pump loop seal. However, the test did not produce this result due to a bypass flow path which existed between the vessel upper head and the downcomer annulus, as well as another bypass between the hot- and cold-leg pipes due to leakage through the reflood assist valves. EG&G calculations indicate that this leakage path in LOFT is approximately 3 percent of the core flow, or comparable to prototype valves. However, the actual leakage path cannot be measured directly, but only indirectly, inferred by assuming a value which leads to the prediction agreement with the test. Therefore, the leakage flow from L3-1 must be further evaluated before additional analytical work could be justified. In addition, on page 40 of EGG-CAAP-5255 (LOFT L3-1 Preliminary Comparison Report) it is stated that B&W was the only Vendor who accurately calculated the behavior of the secondary side of the steam generator. For these reasons, we are of the opinion that only a marginal benefit at best could be realized from further evaluation of the L3-1 test.

Regarding the S-07-10D test, the situation is a little different. None of the Vendor predictions characterized the test very well. However, we feel this is due in large measure to insufficient information to model the steam side of the steam generator, as well as insufficient data on the valve and associated piping. There is also insufficient information to adequately model the steam separator. Based on these reasons, we are of the opinion that our current results are not unreasonable considering the conservative features of the model B&W used to predict the experiment.

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Notwithstanding the above arguments, we are evaluating a program being proposed by the Babcock & Wilcox Company to the B&W Owners Group to provide a qualitative opinion of the impact of identified test uncertainties and model conservatisms on the results previously provided on the blind predictions of L3-1 and S-07-10D. This effort would not result in a response to your letter before June 1, 1981. We will provide you with the results of our decision by May 1, 1981.

John J. Mattimoe
Assistant General Manager
and Chief Engineer