

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

March 26, 1981

Director of Nuclear Reactor Regulation
Attention: Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Docket 50-312
Rancho Seco Nuclear Generating
Station, Unit No. 1
TMI Action Plan, NUREG 0737
Item II.K.3.30

Dear Mr. Eisenhut:

NUREG 0737 requested the submittal of a detailed scope and schedule for a small break LOCA analysis by January 1, 1981. The Sacramento Municipal Utility District advised you by letters dated December 15, 1980 and February 26, 1981, of a meeting with the NRC Staff and the evaluation of a program proposed by the Babcock and Wilcox Company to the B & W Owners' Group. The Owners' Group Program is based on a review of the applicable NUREG documents and the information exchange which took place with your staff on December 16, 1980. The Sacramento Municipal Utility District has decided to participate in the B & W Owners' Group Program with the understanding, that there may be changes to this program during the course of the model development and verification effort. At the present time the plan to make certain modifications to the existing model and to further justify certain other parts of the model, is summarized below:

1. Steam Generator Model

Models will be provided in the CRAFT2 code to more phenomenologically account for the steam generator heat transfer due to the primary and secondary flow regimes, mixture levels and condensation in the presence of a non-condensable gas. This steam generator model, along with other models described below, will be used in a revised natural circulation model. These models will be compared against LOFT test results.

2. Pressurizer Model

A 2-region non-equilibrium pressurizer model will be put in the CRAFT2 code. The model will utilize fully-coupled conservation and state equations. The model will also provide for the pressurizer heater and spray actuation effects. The present surge line (no flooding) model will be justified. This model will be compared to B & W plant transient data.

A046
5
1/0

P

3. Core Mixture Level and Heat Transfer Models

Previous studies will be used to justify the core mixture level calculation. The ORNL high pressure core boiloff experiments will be used to justify the present heat transfer model.

4. ECC Injection Model

The sensitivity of the NSS to non-equilibrium ECC injection will be assessed. The enthalpy of the injected ECC fluid will be adjusted that local condensation and depressurization are reduced if necessary. Compensation would then be included to provide overall conservation of energy to account for the true injection enthalpy.

5. Noding Model

A noding sensitivity study for certain components of the RCS will be used in conjunction with previous experience in selecting a noding model for the entire system. This model will be checked sufficiently to ensure convergence and will also be compared against previous analyses.

6. Break Flow Model

A search of the literature will be performed to select a "Best Estimate" leak flow model. Analyses will then be performed to compare the present model with the "Best Estimate". The objective will be to show the present model to be adequate.

7. Non-Condensable Gas Model

All sources of non-condensable gases will be accounted for including the radiolytic component. The radiolytic component will be determined with a model which accounts for the boiling in the core region.

8. Two-Phase Flow Model

A drift flux model will be included in CRAFT2 as part of the L3-6 prediction. This model will be modified as necessary to permit simultaneous use of both drift flux and bubble rise models, with a junction between vertical and horizontal piping sections.

9. Reactor Coolant Pump Model

NUREG-0623 contains a concern for the two-phase reactor coolant pump models. This concern is acknowledged here, however, this concern will be addressed as part of our response to NUREG-0737, Item II.K.3.5.

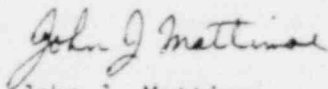
Darrell G. Eisenhut

Page 3

March 26, 1981

The revised model documentation will be provided in a report to the NRC Staff by March 1, 1982. In the meantime, if we can provide any further information, please advise.

Sincerely,

A handwritten signature in cursive script, reading "John J. Mattimoe".

John J. Mattimoe
Assistant General Manager
and Chief Engineer