

Sandia National Laboratories

Albuquerque, New Mexico 87185

March 1, 1984

Dr. Thomas J. Walker
Containment Systems Research Branch
U.S. Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Springs, Maryland 20910

Dear Tom:

This letter summarizes the Severe Accident Sequence Analysis (SASA) Program activities at Sandia during February, 1984.

Programmatic Activities

F. E. Haskin, V. L. Behr, and J. H. Linebarger attended the NRC Containment Loads Working Group Meeting held at the Electric Power Research Institute (EPRI) in Palo Alto; California on February 1-3, 1984.

R. T. Curtis, NRC visited Sandia on February 21, 22, 1984. We briefed Bob on SASA support requested by other NRC programs and the current status of the Sandia SASA Program.

Thermal Hydraulic Analysis Activities

PWR Large Dry Containments (Bellefonte): Analysis activities by the SASA staff have temporarily stopped to support the NRC Containment Loads Working Group (CLWG). Some residual work, such as leakage model development and implementation in MARCH, may be accomplished during this intervening period as time permits. The CONTAIN staff supporting the Bellefonte analysis has completed a single volume, Bellefonte containment model. They will obtain input information from the initial MARCH-CORCON calculations to drive the model for test purposes.

PWR Ice-Condenser Containments (Watts Bar/Sequoyah): The comment period for the preliminary NUREG draft summarizing the MARCH-HECTR Watts Bar/Sequoyah calculations has expired. The report will be modified and reissued in July, 1984. The report is being delayed by the work mentioned in the previous section. Start of the follow on hydrogen/steam generation rate sensitivity study will also be delayed.

Structural Analysis Activities

The first draft of the NUREG documenting the Watts Bar, Maine Yankee, and Bellefonte structural analyses has completed peer review and will get management review this coming month.

The follow-on structural analysis on Bellefonte is proceeding on schedule.

Upgraded Computational Capability Activities

General: A series of meetings have been held with the CONTAIN staff to coordinate CONTAIN development. An internal memo summarizing the results of these meetings and prioritizing CONTAIN development from SASA's perspective has been written. SASA's priorities will be reconciled with the priorities of the CONTAIN Program to optimize the result for both programs.

MARCH-CORCON: Documentation of the MARCH-CORCON link has been interrupted by the CLWG work. Work should begin again next month. The MARCH-CORCON linkage was introduced at the CLWG meeting. As a result, a seminar will be held during the next CLWG meeting, March 13, 14, 1984. During the seminar Oak Ridge National Laboratory (ORNL) SASA personnel and Brookhaven National Laboratory personnel will be shown how to use the MARCH-CORCON capability. We have furnished ORNL personnel preliminary information on the linkage so they can be prepared for the meeting.

Technical Issue Support

The pressurized water reactor coolant system (RCS) failure mode, during a station blackout (TMLB') sequence, is not known. Current thinking assumes the system will remain at high pressure until the vessel fails. More recent calculations indicate the RCS may fail somewhere in the primary system prior to vessel failure. The containment response is quite different in the two cases. We are investigating a cooperative analysis with the MELPROG program to address this issue. The calculation would be done by the TRAC-MELPROG linked code. We will be talking to Los Alamos National Laboratory (LANL) and Idaho National Engineering Laboratory (INEL) SASA personnel about these calculations as both laboratories are also involved with this issue.

Containment Loads Working Group (CLWG) Support

During the last CLWG meeting, SNL was asked to perform four standard problem calculations and a study to be completed early

next month. This work has high priority and is taking all of SASA's analysis talent, at the current time. CLWG support at this level is expected to continue through April.

Sincerely,

John H. Linebarger
John H. Linebarger
Reactor Safety Technology
Division 6411

JHL:6411:cgt

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~~REACTOR SAFETY TECHNOLOGY~~
TVA J. A. Raulston
INEL R. C. Gottula
LANL B. E. Boyack
ORNL S. A. Hodge
RMA C. J. Shaffer
SAI L. N. Smith
BCL A. Walters

6411 A. S. Benjamin
6411 V. L. Behr
6411 F. E. Haskin
6424 K. D. Bergeron
6424 W. R. Trebilcock
6441 A. L. Camp
6442 W. A. Sebrell
6442 J. Jung