

Sandia National Laboratories

Albuquerque, New Mexico 87185

February 6, 1985

Dr. Thomas J. Walker
Containment Systems Research Branch
U. S. Nuclear Regulatory Commission
7915 Eastern Avenue
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Dear Tom:

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

Programmatic Activities

None.

Thermal-Hydraulic Analysis Activities

PWR Large Dry Containments (Bellefonte): The ~~present~~ computer code ~~was developed for the analysis of severe accident sequences having up to 750 nodes and 128 flow junctions. Since carbon dioxide and carbon monoxide gases will not be important for these calculations, these two gases were deleted from the code to decrease the computer time required for the calculations. The code and input model have been checked out with several short transient calculations. The initial complete transient, using source terms calculated by MARCON 2.0P, will be performed the first week of February.~~ The present model has 42 compartments and 128 flow junctions. Since carbon dioxide and carbon monoxide gases will not be important for these calculations, these two gases were deleted from the code to decrease the computer time required for the calculations. The code and input model have been checked out with several short transient calculations. The initial complete transient, using source terms calculated by MARCON 2.0P, will be performed the first week of February.

PWR Ice Condenser (Watts Bar/Sequoyah): A report, MARCH-HECTR Analysis of Selected Accidents in an Ice-Condenser Containment, ~~was prepared by Sandia National Laboratories, SAND83-0501, documenting containment pressure-temperature responses to a variety of accident sequences.~~

BWR Mark II (LaSalle): In support of the RMIEP program, ~~calculations will be performed for the first week of February. The LTAS computer code was developed by Oakridge National Laboratory (ORNL) SASA program for analysis of Browns Ferry Unit 1.~~ The LTAS computer code was developed by Oakridge National Laboratory (ORNL) SASA program for analysis of Browns Ferry Unit 1.

Andrew Peterson and Lanny Smith of the SNL SASA program and Greg Kolb of the RMIEP program visited Mike Harrington of ORNL on January 15 and 16, 1984 to discuss the changes to LTAS input and coding that are required for the LaSalle calculations. Five significant code modeling changes were identified during these discussions. Subsequent to this meeting it was established in discussions with you, that ORNL would continue to support this activity and would develop models for the containment passive heat sinks, RHR heat exchanger and small break LOCA. The input specific for LaSalle and models for the high pressure core spray and motor driven feed water pump are under development by SNL.

Upgraded Computational Capability Activities:

MARCON 2.OP: Discussions with BCL identified that updates to version 151 of March 2 were being developed. BCL informed us later that the updates were on the INEL computer system and we have obtained them from the INEL system. These updates change some of the output format, correct some errors in MACE and INTER, and improve the ZRWATR time step reduction algorithm and will be included in MARCON 2.OP. A final draft of the documentation describing the MARCON models and links was completed and will be distributed for internal review.

HECTR: The linking of the M1 (initial short time fuel-coolant interaction) and M3 (CORCON Mod2) modules of the ~~the program is being completed~~, which is being performed at the University of Wisconsin, was nearly completed and is in the process of being checked out.

Sincerely,

Andy Peterson

A. C. Peterson
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