

Sandia National Laboratories

Albuquerque, New Mexico 87185

June 5, 1984

Dr. Thomas J. Walker  
U.S. Nuclear Regulatory Commission  
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Dear Tom:

This letter summarizes the Severe Accident Sequence Analysis  
(SASA) Program activities at Sandia during [REDACTED] *MAY 84*

Programmatic Activities

R. D. Gasser and F. E. Haskin attended meetings of the Containment Loads Working Group (CLWG) BWR MK I and II and Ice-Condenser subcommittees in Chicago on May 10, 1984.

Several persons attended the NRC/IDCOR meeting on May 15-17, 1984. A summary of the results from the CLWG standard problem 6 (BWR MK III) was presented at the meeting.

Two papers were completed for presentation at the Containment Integrity Workshop to be held on June 13-15, 1984.

Thermal-Hydraulic Analysis Activities

PWR Large Dry Containments (Bellefonte): Work has continued on setting up a MARCON deck for Bellefonte. MARCON calculations will begin once the RELAP calculations are received from INEL (expected in early June). CONTAIN and HECTR calculations will begin in late summer.

PWR Ice-Condenser Containments (Watts Bar/Sequoyah): No progress to report. The work has been temporarily preempted by CLWG tasks.

Containment Loads Working Group (CLWG) Support

The PWR ice-condenser calculations have been completed and draft documentation has been sent to Battelle for incorporation into the consensus summary report. A significant finding is that MARCH and HECTR produce significantly different results for many cases. A letter explaining the differences in the results was sent to Battelle. We feel that MARCH is limited in its ability

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to model ice-condenser containments and should generally not be used for that purpose.

The BWR MK I and II calculations have been completed and draft documentation is being reviewed internally. The MK I calculations predict containment failure within about two hours, and the MK II calculations predict containment failure within about three hours for the standard problems. The calculations are sensitive to modeling assumptions for the degassing of concrete and radiant heat transfer upward from the melt.

The BWR MK III documentation for the HECTR calculations has been completed and the consensus summary is in the final stages of preparation. The MK III subcommittee agrees that diffusion flames will pose no threat to containment in terms of overpressure, but that high temperatures and heat fluxes may result. No specific analyses of equipment or penetration response were performed.

Support for the CLWG is now winding down and will terminate shortly.

#### Upgraded Computational Capability Activities

MARCON: A first draft of the MARCON (MARCH-CORCON) documentation is nearly complete. The code should be available shortly, pending some minor revisions.

CONTAIN/HECTR: The SASA program is continuing to support and consult with the CONTAIN program in preparation for Bellefonte calculations to begin this fall. Versions of HECTR and CORCON have been readied for transmittal to the University of Wisconsin, and work on linking HECTR to MEDICI will begin shortly.

#### Structural Analysis Activities

The review of the report documenting the Watts Bar, Maine Yankee, and Bellefonte structural analyses is continuing. A copy was sent to the NRC for final review.

#### Problems

There are none at this time.