

Sandia National Laboratories

Albuquerque, New Mexico 87185

April 4, 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 March, 1984.

Programmatic Activities

F. E. Haskin and S. E. Dingman made presentations at the NRC containment Loads Working Group Meeting held in Rockville, Maryland on March 13, and 14, 1984.

F. E. Haskin and J. H. Linebarger participated in the NRC Severe Accident Phenomenological Issues Prioritization Meeting conducted by Battelle - Columbus Laboratory personnel on March 15 and 16, 1984 in Rockville, Maryland.

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), the IDCOR/NRC exchange meetings, and the risk rebaselining for NUREG 0956. Some preparatory work is being accomplished. A containment leakage model, the model proposed by the NRC Containment Performance Working Group (CPWG), has been coded and is being implemented in MARCH-CORCON. In addition, the CONTAIN single volume containment model is being checked out. The check out should be completed the first week in April.

PWR Ice-Condenser Containments (Watts Bar/Sequoyah): The final NUREG draft summarizing the MARCH-HECTR Watts Bar/Sequoyah calculations will be delayed until November, 1984. The extended delay is due to the preempting work described above.

Containment Loads Working Group (CLWG) Support

Two of the four recently requested standard problem calculations were presented at the last CLWG meeting. These were the ice condenser and MK-III problems. Plans for the MK-I and MK-II problems were also presented. Sandia was asked to do the ice condenser and MK-III problems because of our capability to use the special purpose HECTR code. HECTR is particularly well suited to hydrogen burn problems. We were asked to do the MK-I and MK-II problems because of our MARCH-CORCON capabilities. Brookhaven had calculated these problems using the two codes, MARCH and CORCON, separately. The Sandia version has the two codes integrally linked together to properly account for the physics and includes a reactor cavity heat transfer interface model missing when the codes are run separately.

By the next meeting, the ice condenser and MK-III problems will be documented and the MK-I and MK-II results should be ready to present. MK-I and MK-II documentation will be completed in May.

Upgraded Calculational Capability Activities

General: The CONTAIN and SASA Programs have reconciled their mutual needs and agreed to a CONTAIN develop plan and a SASA program plan. A memo outlining this agreement and providing a broader picture of SASA's program guidelines and plans has been prepared.

MARCH-CORCON: The code has been modified to perform MK-I and MK-II BWR containment analyses. These modifications were needed to perform calculations requested by the CLWG.

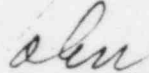
Structural Analysis Activities

The management review of the NUREG documenting Watts Bar, Maine Yankee, and Bellefonte is being completed. The first draft should be available for NRC review and comment in April.

The follow-on structural failure analysis on Bellefonte plans have been modified. A scoping analysis, rather than a detailed analysis, will be performed. The scoping analysis will determine if more detailed analysis will result in significant changes to the predicted containment failure pressure. We anticipate that further detailed Bellefonte

containment failure analyses will not be needed. If so, the Bellefonte follow-on structural analyses will be terminated. The scoping analyses should be completed in May.


Sincerely,



John H. Linebarger/A. L. Camp
Reactor Safety Technology
Division 6411

JHL:6411:cgt

Copy to:


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
6411 S. E. Dingman
6411 R. D. Gasser
6424 K. D. Bergeron
6424 W. R. Trebilcock
6442 W. A. Sebrell
6442 J. Jung