



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

JAN 16 1985

MEMORANDUM FOR: Members and Staff of the  
American Physical Society Study Group

FROM: M. Silberberg, Assistant Director  
Accident Source Term Program Office  
Office of Nuclear Regulatory Research

SUBJECT: ADDITIONAL RESULTS FROM SPECIAL REVIEW AND AUDIT OF  
BMI-2104 METHODOLOGY

You will recall in late November 1984 that the Accident Source Term Program Office (ASTPO) initiated several tasks related to concerns about lanthanum releases in BMI-2104. The results of Task 1 (Examination of Peach Bottom AE) were presented to the Study Group on December 8. The Battelle report on Task 1 is enclosed for your information (Enclosure 1). As a result of Task 1, we are recalculating the Peach Bottom TC and TW sequences, but we have determined that the calculations for the other plants in BMI-2104 are not impacted by the use of CORCON MOD1.

Task 2 (Independent QC Audit of Surry and Peach Bottom) has been completed by BNL and is reported in Enclosures 2 and 3, which are provided for your information. Enclosure 2 presents the results of an independent calculation of the Surry TMLB (station blackout) sequence using the full suite of BMI-2104 codes. The results demonstrate that the codes can be transported to another organization and that, by using similar input parameters and intercode data (transfer), similar results to those reported in BMI-2104 can be obtained. Some problems related to data transfer between codes were found by BNL; however, a self-consistent sequence was calculated. This information will be valuable to work in progress at Battelle to provide an integrated software package of the BMI-2104 codes for future applications.

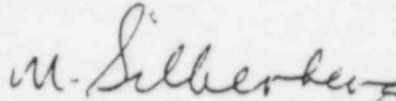
In Enclosure 3, BNL reports in detail on the audit calculations of the ex-vessel fission product release for Peach Bottom AE, Surry TMLB and Surry S<sub>2</sub>D using the CORCON MOD1 and VANESA codes. The Peach Bottom calculations were done as a further check on Task 1. The Surry sequences were done for comparison with the QUEST base-case calculations, and of course the TMLB calculation was also part of the full TMLB analysis done in Task 2. A comparison of the BMI-2104 and BNL results indicates excellent agreement in ex-vessel releases for the three audit calculations.

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Task 3 (Update of Report on Code Validation, ORNL/TM-8842) is nearing completion and we will transmit this shortly for your information.

If you have any questions regarding these reports, please contact Chris Ryder at 301-427-4337.

A handwritten signature in cursive script, appearing to read "M. Silberberg".

M. Silberberg, Assistant Director  
Accident Source Term Program Office  
Office of Nuclear Regulatory Research