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Date: 12/20/02 7:51PM
Subject: RAM Package Vulnerability Study weekly email report

RAM Package Vulnerability Study
Weekly Report for the Week Ending 12/19/02
Submitted by Jeremy Sprung

NRC Support. B. White and S. Bush-Goddard traveled to SNL to review the status of the RAM Package Vulnerability Study. B. White reviewed the status of jetliner impact and [redacted] and also of the preparation of a sabotage source term guidance report. The possibility of [redacted] of the HI-STORM cask lid during jetliner impact scenarios was extensively discussed and an approach for resolving this issue was defined. An email summarizing the proposed approach was sent to B. White. B. White and S. Bush-Goddard discussed consequence modeling questions with Vulnerability Study consequence modelers. Appropriate ways to address concerns about modeling economic costs, [redacted] calculation of near-field contamination, and updating of MACCS input parameter values were identified.

Ex 2

Jetliner Impact Draft Report. Revision of Section 2 on jetliner impact and Section 3 on [redacted] fires in response to NRC comments continued. In particular, work continued on the preparation of a flow chart and a general description of the analysis methodology and on revisions to Section. The new jetliner CTH calculations that were performed at [redacted] were written up. This writeup will be added to Section 2 of the Jetliner impact report

Ex 2

Global Jetliner Impact Calculations. The global jetliner CTH impact calculations that were being rerun using a [redacted] impact velocity were completed.

Ex 2

Jetliner Components Impact Calculations. Performance of additional landing gear strut PRONTO impact calculations for the HI-STORM cask continued (3 calculation have been completed, 1 calculation is underway and 1 more will be run). Two PRONTO landing gear strut impact calculations at two different impact orientations for the NAC UMS cask were completed. These calculations assumed a yield strength of 300 ksi for the steel in the strut. Because this yield strength is very high, the calculation that examined an impact at [redacted] is being rerun assuming a strut steel yield strength of 50 ksi. An analysis of the impact of the NAC UMS cask onto a rigid surface in a [redacted] was performed. Documentation of the results of the NAC-UMS PRONTO calculations is nearly complete.

Ex 2

Work developing input for a jetliner engine impact calculation was continued. In particular, the development of a Riera curve that can be used in a PRONTO calculation of the impact of a [redacted] onto the NAC UMS cask was begun.

Ex 2

[redacted] Calculations. Documentation of the benchmarking of [redacted] predictions against actual test results (the ETR Drawbar cask [redacted])

Ex 2

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) was begun.

Ex 2

) Fire Calculations. Construction of input for the CAFE/PTermal code for use in modeling the response of the upright HI-STORM cask to a wind driven fire continued. Input for a full cask model and for a half-symmetry model of that cask was prepared and test calculations using this input are underway.

Ex 2

(Calculations. SCAP code modeling of shaped charge penetration of the HI-STORM, NUHOMS, TN-68, and VSC-24 casks was completed and a memo that documents the results was written.

Ex 2

Fission Product Release. Input for the Control Volume, Heat Structures, and Core Packages of the MELCOR code to be used to perform fission product transport analyses of a NAC-UMS cask was completed and preliminary check-out calculations that use this input were begun.

Ex 2

Consequence Modeling. Development of MACCS2 and RADTRAN 5 input files to be used to perform consequence calculations using the NRC screening criteria for sabotage scenarios was begun. Calculations that will allow differences in MACCS2 and RADTRAN6 calculations that use the same source term were initiated. The sabotage scenarios being used in this analysis is an unclassified scenario developed published in the Yucca Mountain FEIS. Review of published works on turbulence induced dispersion in the near field in pool fire plumes continued. Investigation of a related topic, plume dispersion from ground fires in urban and industrial areas, was begun.

Source Term Guidance Document. Preparation of sabotage scenario source term evaluation sheets continued. Work on the placement of contracts for the services of peer review team members Anderson, Baker, Haschke, and Darrough continued.

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Portions Ex 2