

STONE & WEBSTER ENGINEERING CORPORATION



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COMPARISON OF SANDIA AND STONE & WEBSTER ANALYSES

This letter is intended to report the results of a comparison of analyses of the AB- β sequence for the Surry plant as performed by Sandia, using the CONTAIN program with MARCH inputs, and Stone & Webster Engineering Corp. (SWEC, using the THREED and NAUA programs, as reported in the ANS source term study.

The attached figure presents the results of the comparison of cumulative leakage fractions of iodine and cesium as a function the size of a postulated pre-existing opening in the containment. The ANS study results are shown in the bottom curve, with a graphical interpolation between the 0.35 and 1.0 ft² opening sizes indicated by a dashed portion of the curve. This interpolation would indicate a peak leakage fraction of 0.235 @ ~ 0.5 ft² as compared a peak value of 0.20 @ ~ 1 ft² reported in the ANS study. Two Sandia analyses are included, with and without hydrogen burns. (Note: there were no hydrogen burns in the ANS study analysis performed by SWEC).

A word about the analysis conditions is in order. The Sandia analyses were performed by revising previous CONTAIN analyses which were based on MARCH-1.1 output from BMI-2104 Volume I. The revisions consisted of changing the steam and hydrogen ejection rates from the RCS to more nearly represent the MARCH-2.0 results reported in BMI-2104 Volume V. The ANS/SWEC analyses were in reasonably good agreement with the MARCH-2.0 analyses with regard to these two parameters. the CONTAIN and THREED/NAUA analyses are not based on identical inputs and treatments. I plan to send you a brief letter summarizing my observations based on this comparison shortly. However, in the interest of time I am limiting this correspondence to the enclosed figure and above brief descriptions.

Sincerely,

Edward A. Warman
Edward A. Warman

Attachment

CC: DWilliams-Sandia

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CUMULATIVE IODINE & CESIUM LEAKAGE FRACTION
AS A FUNCTION OF SIZE OF OPENING IN SURRY CONTAINMENT
AB- β SEQUENCE

Cumulative Leakage Fraction

