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March 5, 2001

MEMORANDUM TO: Mark Cunningham, Chief
Probabilistic Risk Analysis Branch
Division of Risk Analysis and Applications

FROM: Jack E. Rosenthal, Acting Chief **/RA/**
Safety Margins and Systems Analysis Branch
Division of Systems Analysis and Regulatory Effectiveness

SUBJECT: SCOPING ANALYSIS OF CALVERT CLIFFS SURGE LINE BREAK
LEADING TO A PTS VESSEL SPLIT

Attached is a report on a scoping calculation using RELAP5 to calculate the results of a hypothetical 12 square foot vessel break resulting from an overcooled surge line break. The principle purpose was to provide mass and energy release information to be used by PRAB in their pressurized thermal shock (PTS) containment failure analysis. Two subsidiary purposes were:

1. To provide RCS pressure information that might be helpful in assessing the potential for RCS internal damage.
2. To provide information about the timing of possible core damage after the vessel failure.

As noted in the report, there is a concern about the proper calculation of annulus water level after the vessel split blowdown and after safety injection tank (SIT) flow is terminated. This should not be a problem that significantly affects the mass and energy information requested by PRAB. If additional information is needed, or additional sensitivity studies are desired, or if you have any questions please contact Norm Lauben at 415-6762.

Attachment: As stated

cc w/att.:
J. Ridgely
A. Rubin
F. Eltawila
D. Bessette
T. Lee

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