

From: Mahendra Shah
To: Bernard White; Ron Parkhill
Date: 12/20/02 3:55PM
Subject: Re: Fwd: SNL plans for resolving the HI-STORM () issue isattache d

Bernie:

I agree with Ron that we need to perform realistic analyses and not bounding analyses. I did not see anything new or creative in SNL write-up. We need to get comments from Jeff Smith and Doug Ammerman on this. Ron has good suggestions for consideration by Sandia. I may have additional comments next week.

Thanks.

Mahendra

>>> Ron Parkhill 12/20/02 03:33PM >>>

Need to remind SNL that we need to REALISTIC not bounding analyzes. A bounding analyzes approach can only be utilized if it shows no damage. BUT, once the bounding analyzes suggest that the canister may failure it needs to be abandoned in lieu of a realistic approach. This is our current situation. I recommend the following adjustments to our approach in order of preference:

- 1) Adjust mass of plane to reasonably approximate the contributing mass to cask velocity. If nothing else is reasonable then use $\frac{1}{2}$ of (total plane mass + cask contact area mass).
- 2) Compensate for the effect of friction. Could be done by adding mass to cask either directly from coefficient of sliding friction or vectorally. Bottom line is that friction needs to be considered.
- 3) Consideration of cask separation distances and likelihood of various impacts - suggest weighted average approach out to maximum separation distance.
- 4) Likelihood of worst case striking orientation as described under conservatisms.
- 5) For Second Problem- As a first approximation (and possibly good enough), determine force at point of contact between cask lid deflection and missing canister, from current results. Then apply this force to canister to determine (possibly via hand calcs) the maximum deflection of canister and consequently the lid. from these results determine bolt strain from prying action of the lid.
- 6) Any discussion of release/dose at this point should be held in abeyance until realistic analyses have demonstrated cannister breach.

Bottom line- we now need realistic analyses with extensive use of reasonable engineering judgements -not bounding calculations.

>>> Bernard White 12/20/02 01:34PM >>>

Attached is a qualitative description of the approach SNL is going to use to evaluate the HI-STORM cask based on our phone conversation from Wednesday.

Any comments??

Bernie

CC: Daniel Huang; Robert Shewmaker

Portions Ex2

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