

From: "Sorenson, Ken B" <kbsoren@sandia.gov>
 To: "bhw@nrc.gov" <bhw@nrc.gov>
 Date: 2/4/03 7:27PM
 Subject: Bernie,

Bernie,

Per our phone conversation this morning, following is a path forward proposal for finishing the report on the airplane events. It closely follows Wayne Hodges comments from our conference call early in January.

1. The airplane report will feature a single plane event into a set of casks on one pad. The featured plane scenario is considered a more likely event in a range of already unlikely events. The selected featured event is the plane flying horizontally into a cask at mid-height of the cask and at the top of the cask. The analyses considers translation of the impacted cask of four feet, when it strikes a second cask. This is represented in the first figure of Table 2 of the fax document that we sent you.

This analysis is complete and characterizes the overpack response and also estimates the striking velocity of the first cask into the second cask. This analysis shows (no significant damage) to the overpacks or (damage) to the MPC. We will supplement the computer analyses with hand calculations to determine the tip-over translational velocity of the second cask. We will compare this velocity to a separate parametric analyses of an end-on impact of the MPC. This will tell us if there is a concern with the MPC once the second cask is tipped over.

As part of this featured scenario, we will discuss short-comings of the analyses. An example is that the kinetic energy of the portion of the plane that has not been consumed by the impact after the first cask has traveled the 4 ft. is not taken into account.

2. We will then include the bounding analyses that covers other scenario possibilities, but are considered less likely in our range of already unlikely events. We do not consider these to be likely scenarios, but are included for NRC's judgment as to their significance. These analyses include figures 2-8 of the fax.

3. For the hard component analyses shown in figures 9-21, we will include them in sections 1 and 2 above, as appropriate.

4. For the MPC analyses shown in figures 22-24, we will again include them in sections 1 and 2, as appropriate. In particular, figure 24 will be a parametric analysis that we will compare to the velocities of the tipped over cask discussed in item 1, above, to determine MPC performance.

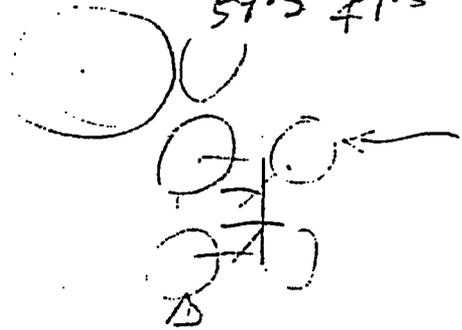
5. Schedule

We propose that we submit to you the Executive Summary of the report that will discuss the feature event with results in detail on Feb. 14th. We then propose to submit to you the full report on Feb. 28.

Regards,

Ken

$$\begin{array}{r} 132.5 \\ - 132.5 \\ \hline 59.5 \end{array} \quad \begin{array}{r} 180 \\ - 132.5 \\ \hline 47.5 \end{array}$$



Ex 2 { Fig. 1: Table 1.

MV

$$\frac{400 \text{ Kip} \times 254 \text{ ft}}{2} = 50800 \text{ Kip-ft}$$

Ex 2 {

$$\begin{array}{r} 103 \text{ Kip} \times \\ + 360 \\ \hline 463 \text{ Kip} \end{array} \quad \begin{array}{r} \text{Kip-ft} \\ = 11575 \\ \text{Ex 2} \end{array}$$

Ex 2 { $\Rightarrow (463 + 360) V = 823 \text{ Kip}$

Ex 2 {

1000 to you instead of 2000 cases 17 EIB

Portions Ex 2

E/93