

**From:** Goutam Bagchi, *NRK*  
**To:** George Hubbard, Niles Chokshi, Robert Rothman  
**Date:** Tuesday, August 29, 2000 04:02 PM  
**Subject:** Re: Fwd: If you like this, please pass it on to Goutam and Nielish.

My comments are indicated below by excerpting Glenn's paper by page number and my suggestion in red.  
Page 12:

1. These percentages are based on discussions with staff structural engineers who believe that at accelerations in excess of 1.2 g spectral acceleration (which is greater than three times the SSE for many reactor sites east of the Rocky Mountains) there is a high likelihood that there will be building damage that leads to blockage of air flow. For heavy load drop sequences, the staff assumed a 50 percent partition to the high air flow case.

2. Failure of spent fuel pools due to earthquakes is predicted to occur due to shear failure of side walls. The critical shear plane is at a distance equal to the thickness of the wall. This means that there would be about 4 to 5 feet of water standing on the pool floor. This would essentially seal off any air flow through the bottom of the fuel assemblies to the top. However, consideration of whether or not a spent fuel bundle would receive high air flow or low air flow following fuel uncoverly does not change our insights into the risk associated with operation of spent fuel pools. The partition results are driven by how one partitions seismic events. A partition of 9 to 1 to either high or low flow does not render the lesser case insignificant.

Page 13: • Initiating event frequencies for the loss of cooling, loss of inventory, and loss of off-site power are based on generic data. In addition, the probability of power recovery is also based on generic information, therefore bounding (higher probability of occurrence) . Site-specific differences would proportionately affect the risk from these initiating events.

Page 20: These curves are convolved mathematically

Page 20: The staff recognized that many of the spent fuel pools and the building housing them were designed by different architect engineers. The spent fuel pool structures were built to codes and code editions.

**Page 20: To overcome lack of knowledge of the capacity of the spent fuel pools, the staff and NEI developed a seismic check list and used a generic fragility function characterized by a spectral acceleration value of 1.2 g corresponding to the capacity of the spent fuel assured by the seismic check list discussed below.**

Page 21: Figure 3.2 shows the results of convolving...

Page 21: and WNP 2

Page 21: The staff finds  $5 \times 10^{-6}$  per year spent fuel pool failure probability to be a reasonable acceptance criterion for earthquake ground motions since it is a factor of 2 less than ...

Thank you,  
Goutam  
301-415-3305

>>> George Hubbard 08/25 7:41 AM >>>

Please take a look at Glenn's section on seismic and make comments. I believe it provides a good description of our seismic position.

George Hubbard  
2870

**CC:** Glenn Kelly, Robert Palla, Timothy Collins

4/29/2