

**From:** Ellis Merschoff  
**To:** Brian Sheron; Samuel Collins  
**Date:** 8/20/02 7:29AM  
**Subject:** Food for Thought- Davis Besse

Sam/Brian,

Here is a first order approximation of a risk informed assessment of Davis Besse, that might be useful to you as a datum when reviewing the staff and licensee's more rigorous assessments.

Use our Davis Besse SPAR model with MLOCA set to 1.0. Result is 2.6 E-3. Seems reasonable given an MLOCA.

Now, for probability of MLOCA. Licensees ANSYS analysis page 16 of 29 plotting Von Mises strains shows failure criteria is met at the membrane midplane at 2500 psi vessel pressure. Uncertainty for this result is very high. Consider ANSYS modeled a flaw free membrane when it more likely includes stress risers and discontinuities from its method of application. Thus, a probability of failure of the membrane of 0.04 doesn't seem completely unreasonable. (If you believe 2500 psi, a trip with loss of heat sink gets you pretty close to the predicted failure criteria).

Now,  $MLOCA = 0.04$   $MLOCA\ CDF = 2.6\ E^{-3}$

$(0.04)(2.6\ E^{-3}) = 1.0\ E^{-4}$  Which is RED.

I recognize this is a very simplified approach, but I thought you might find it an interesting point of comparison.

Ellis

**CC:** Jim Dyer; Jon Johnson

WJ