**From:** Mark Kirk , 2E5
**To:** Steven Long
**Date:** 5/31/02 9:10AM
**Subject:** Re: Probabilistic Calcs for DB

Steve -

Kindly e-mail me Dale's input when available. Also e-mail to Richard Bass at ORNL (just to make sure that he get's it quickly too). Richard is at

bassbr@ornl.gov

Thanks

Mark

>>> Steven Long 05/30/02 07:53AM >>>
Dale Wuokko of Davis-Besse says he will provide the latest geometry of the cavity today.

We will have to proceed on the basis of that information, because better information will not be avialable on a timely basis. We need to produce a technical basis sufficient to support a preliminary significance determination as soon as possible. Refinements of our technical assessments can be done if warranted when "all" of the information is in.

Steve

>>> Mark Kirk 05/29/02 04:05PM >>>
Steve -

Following the conversations many of us have had over the past few weeks, i would suggest the following course of action:

1. ORNL will further refine their mesh in the cladding, and perform more detailed analysis of the results of these runs. After talking with Richard (Bass) it is his view that becasue the maximum pressure at which you are interested in probabilities is fairly low (2500 psi), the differences in failure criteria that we believe in (here "we" is NRC RES and our contractors) may be fairly small. An examination of these FE results will help us to make this determination. This of course will not tell us what the "right" failure criteria is (seeking absolute truth in this matter may take far more time than we have) but it will help us to better assess the uncertainty in results that arises due to our uncertainty about what the "right" criteria is.

2. As we have discussed before, it is critically important in our final calculations (not the #1 calcs - but the #3 calcs) to have a much less equivocal definition of the geometry of both the cavity and the cladding than we have now (i have not yet seen what the licensee "last" sent ... but i don't think it is what we are looking for). If we cannot get a better geometric definition then geometry will have to be a parameter that varies in the probabilistic analysis, and that will significantly complicate the effort. Since the combination of the cavity geometry and the cladding geometry has a first order effect on the results - and since it is something that is in principal knowable - we feel strongly that this is information we should press the licensee to provide ... or we should obtain ourself. If we do the probabilistic analysis and retain geometry as a variable we will only further blur the results ... and therefore further impede your ability to draw clear conclusions from it.

3. Once we have insights from #1 and the info from #2 we will perform the appropriate 3D FEA at ORNL to define the fragility curves. Random variables in this analysis will be (definitiely) the stress-strain properties and (maybe - but hopefully not) the cladding thickness.

In view of the urgency here i am asking Richard and Paul (by this e-mail) to begin with the analyses

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outlined in #1 above. However, as we have previously discussed, funding considerations still need to be worked out between your boss and my boss. Accordingly, unless directed to do so by Nilesh I will not have Richard and Paul continue with this analysis past Monday (hopefully Nilesh can work out something appropriate with you guys by then).

Also, I have to be away from the office for the next two days for personal reasons. I will, however, be checking e-mail from home (at least Thursday evening and Friday mid-day or evening). If you need to contact me there I am [redacted] Get b

Mark

Mark

CC: Bass, Richard - ORNL; Deborah Jackson; Edwin Hackett; Mark Kirk; Nilesh Chokshi; Paul Williams; Wallace Norris