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Public Comments Submitted to NWTRB:

Notes on Workshop on Localized Corrosion of Alloy 22 in Yucca Mt. Environment
Sept. 26, 2006 – (Transcript for 2nd Day)

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The specimens used in the corrosion tests are very important and I was glad to hear that some people saw that inadequate annealing of the as-received material from Haynes needed to be annealed by the test person himself to make sure what was affecting his results. We found that there was a lot of this kind of thing concerned with cracks in the welds of our casks – a lot of the results depended on the specimens used and how the corrosion was evaluated – I remember the "linking" of a lot of little cracks into a big crack that seemed very inappropriate to us at the time. Is stress corrosion cracking an issue here? I always wondered about the stress with casks in vertical or horizontal positions and if the inner basket holds up. In the beginning there were a lot of problems with the basket slots. If all the "insides" of a cask fell to the bottom over time (in the horizontal position) would that put more heat and stress on a seam weld if that happened to be placed at the bottom on the invert? I always thought those seam welds were problem areas. I f there is one seam in the cylinder, then I think some concern should be given as to how best that weld surface should be placed in disposal. On the side so water drip off of the welded area? On the bottom – or will condensation occur there. Seems if the weld seam were on the top position the drip shield "should" protect it, but if the drip shield gets condensation on its under surface and this drips on the weld seam, the corrosion would occur faster. Where these welds are placed in final disposal should be considered as I think the welds are always going to deteriorate 1st. How have the welding materials been tested for cracking and corrosion when used with alloy 22?

p162
line 6

"Salting out may reduce the concentration of the oxidants" Where does the salt go then? What happens to it?

Line 21

"What we found in the main point is that this probability was not necessarily negligible" (This term does not inspire confidence) it just seems to me that all the scientific discussion proceeding this NRC presentation just raised more questions, and here is the NRC trying to put it all in a nice format to work with, when it sounds like the rest of the presentations don't seem ready to do this yet. I still distrust the drip shield – I think seepage will come in contact with the waste – (who will know when, for sure) and that localized corrosion won't happen or that repassivation won't be exceeded by corrosion potential from brine? I would really like to see a clear drawing of the casks, drip shield, invert rock bolts etc. – a

look at the derails of that set up and just how things will work in that set up over time. Can you picture this all clearly in your mind. How does it all fit together? Try to go through the procedures from transporting that cask in there and then work forward in the future movement and reaction of everything possible – try to visualize it all in detail as time goes by as if you were I there looking around at everything as it happened. Where would you look? For what? I think sometimes this visualization of the total system is lost as one looks at the parts as not connected to the whole too much. So often in our cask system here, that was a problem – things would be changed in one area without thought for how that change necessitated other changes in the total system so it all worked together.

p 190
line 13

How can it be valid to add crevice samples to a solution a year after the experiment was started? Was the solution evaluated before the samples were added? Sounds like it was not. It could have other things already dissolved in it. Why wasn't a whole new experiment set up for these samples? Doesn't sound right to add something a year later.

p 195

The conclusion that "stifling" will be initiated and that localized corrosion wouldn't dramatically impact the life of the waste package any way. Sounds a little too neat the way all of this falls in place for NRC now.

p 206

"So, the modeling doesn't do an adequate job." This modeling use instead of actual experimental data always worries me. What was it that man said, "garbage in – garbage out"? Computer modeling depends on what you feed it in the 1st place. It can only use what you give it and too often is treated like a creative human being.

p 237
239-240

This whole discussion of a package full of holes in 2000 years or a million – year package – or whatever seems to show that this just plain is not clear from the experimental data and localized corrosion, crevice corrosion, and general corrosion, are all getting intertwined in my mind. If trends from different experiments don't match, then something is wrong here. Is it "apples and oranges" or what? What really will he wet, and at what temperature, for how long? Are we dealing with reality in these experiments or not?

p 249
line 5+6

"only the welded area perhaps easily susceptible to crevices corrosion" Isn't this of concern? Where are all the welds on the cask, the drip shield invert etc. Are the welds in crucial areas – should the welded areas be designed to be placed differently? Welds can and will be a problem.

p 255
line 24+25

"if there is no reservoir for those salts to migrate, they will dissolve in the environment"

_ p 256
line4

"those salts have to go somewhere" Well, as I asked before – where? To form what? That can cause what? New formations are always something to be carefully considered. This is where we want no "surprises."

p 277
line 13-14

"What does it all mean in terms of overall performance?" That's the big question left unanswered.

From some comments at the end it appears people see a lack of "connection" between the experiments and models and the actual repository and want more communications "on the same page" for verification on whether the total waste system is being considered. I agree.