

**From:** Robert Tregoning , *RFS*  
**To:** William Cullen  
**Date:** 10/31/02 9:58AM  
**Subject:** Re: Cladding corrosion???

Bill:

The only info that I have is from the 9/19 progress report. This has a figure containing the profilometer grid of the actual thickness numbers (as well as the generated contour plot), but it only contains contour plots for the top and bottom surface. I would really need the actual numbers to verify your findings, but they seem logical based on your description below and what I can make of the contour plots.

The bottom surface (RCS side) contour plots are largely radially symmetric which you'd expect from plastic deformation during operation. The top side plots appear to contain a slightly deeper troughs than you might expect from plastic deformation alone near both reduced thickness points. The contour plots appear as if there is a steeper drop at the bottom (-1.37, -2.67) location compared to the top (4.08, -2.93) location and that the affected area may be larger. Your calculations predict that the top location lost more thickness at the measurement point, but the contour plots infer that the bottom location may have a larger area with reduced thickness. This could simply be an artifact of the contouring process however.

Given the fact that the cavity is oriented at an angle, how do you suppose that the fluid remains stagnant in those locations and just doesn't run off?

Rob T.

>>> William Cullen 10/31/02 09:16AM >>>  
Rob,

I'd like concurrence from you that I am looking at the Excel spreadsheet of clad thickness correctly, because as I interpret the numbers, there is a depression (corrosion-related??) on the exposed clad side. There also appears to be a change in elevation on the normally wetted side, but it is nearly zero in magnitude.

Looking at the spreadsheet "Top Side", which is the exposed side, I believe, at (4.08, -2.93) the dial gage (dg) reading is -0.141, a decrease of about 70 mils with respect to neighboring measurements. At (-1.37, -2.67) the reading is -0.142, a decrease of about 50 mils wrt neighboring measurements. There is however, a steady gradient from right to left of about -40 mils per inch, so to be fair, I need to reduce (the magnitude of) these "decreases" by about 20 mils, bringing them to 50 and 30 mils resp.

Looking at the "Clad Side", all the signs (except the gradient) are reversed, but it appears that (.349 - .322) is .027, less about 20 mils is ~0.007, and (0.344 - ~0.325) is 0.019, less 0.020 is about nothing. So the bottom line is that the absolute elevation of the wetted surface changed hardly at all, but the exposed side, subjected to corrosion, seems to have lost material.

Am I looking at this correctly??

BC

4-41