

Subject: Cooling Meeting Notes from 29 AUG 2002

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From: Neal Hartman <nhartman@lbl.gov>

Organization: Lawrence Berkeley National Laboratory

To: Marco Olcese <olcese@ge.infn.it>, Vigeolas Eric <vigeolas@cppm.in2p3.fr>, Tom Johnson <TAJohnson@lbl.gov>, Jon S Wirth <JSWirth@lbl.gov>, Fred Goozen <FRGoozen@lbl.gov>, Thomas F Weber <TFWeber@lbl.gov>, Murdock Gd Gilchriese <MGGilchriese@lbl.gov>, Eric C Anderssen <ECAnderssen@lbl.gov>

Hi All,

Here is a short summary:

1. Testing apparatus (Tom W.) - Tank and cooling substrate are finished and assembled. One sector was tested under vac only (just sector tube under vac) and it leaked. Problem seems to be with the rubber casting that is used to seal to luer lock. Jon and Tom will turn the mandrel down smaller and cast tighter connectors. The chamber itself, however, is vac tight. It still needs to be shown that the rubber castings and hold down clamps can handle 8 bar internal pressure.

2. Q/A for sector tubes - We discussed the steps that all production tubes must go through when received from the laser weld vendor. These include an initial vac check, 8 bar proof test, and then another vac check to make sure no damage was done. Since production tubes will not have had a chance to "age" harden, there is some concern that the Q/A will bow them out (pressure test). We will need to try one or two, measure them, and then act accordingly. If the tubes bow during proofing, we may have to age them in an oven in order to raise the strength before the Q/A can occur.

3. We have made tentative plans to visit EB (myself and Tom J.) on October 8,9 in order to deliver and weld the first production batch of sector tubes. We will take 5 test pieces (tacked with loctite), 1 carrier with 2 stubs in it, and 9 real tubes in carriers, with an additional 31 tubes that will be switched out by me and Tom as welding progresses. I have asked Jim Fox to let us know if this schedule can be finalized.

4. Jon W. will send pics of the different butt weld geometries to Jim Fox for comments on which style seems more weldable. Once we have his input, we will start considering how we can setup the long tubes in his machine. If possible, Tom and I will discuss this with him when we visit (including "blowing a hole in the wall" of the weld room).

5. Capillaries (with the new, "accessible-weld" fitting type) will not be ready to test by the October visit. The original batch had bad surface finish (due to the tool they made for machining) so we are having them re-done. We are splitting the cost of the new tooling with the vendor.

6. New fittings (to be welded in October) will arrive this week. Tom J. is having new glue extension pieces made so that he can glue up 10 test regimen samples. We must complete the regimen before we weld in October in order to ensure we're not using bad fittings for production tubes.

7. I need to update the Pro/E models to include the newest luer lock (slightly longer than before) which I will get from Fred as soon as he's caught up from working on Babar.

I think this is everything we discussed (other than my cookie eating greed!) but let me know if I've missed anything. Thanks alot for all of

the hard work,

Neal