Subject: **Meeting Minutes - 18 SEP 01**
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Hi All,

Here is a short summary of the meeting we had today, including some items that need to be acted on:

1. I have ordered 150 2' lengths of the original tubing that we used for sectors (the tubing that needed etching to attain proper wall thickness). We will most likely use this process for the real sectors, as the other batch of aluminum has not been laser-weldable. Delivery is approximately end of the week of October 1.

2. I have contacted a company named FTI Anamet, which can do compositional analysis of our two batches of aluminum. The cost is 120 per sample, with a 3 day turn around time. Tom J. is getting two small samples for me to ship to them tomorrow.

3. Marco has proposed using a condensed set of tubing sizes for the volume inside the PST. This would result in tubes of 4 mm and 8 mm ID only (in addition to sector size). K&S engineering (http://www.ksmetals.com) has tubing that almost exactly meets this size requirement. Their 3/16" tube with 14 mil wall ends up with an ID of .159" (4.04 mm), while their 11/32" tube with 16 mil wall gives an ID of .312" (7.92 mm). However, only lengths up to 6' can be ordered off the shelf, and they are resistant to larger sizes (though this may be negotiable). This means we may need to split the type 1 section of tubing (PP0-PP1) into two parts. In addition, we need to find what swagelock compatibility we may have with the stock tubing sizes. I will work on these items in the near future, and we will order some tubing for testing.

4. We need to discuss with our European collaborators the possibility of testing a complete cooling circuit (evaporatively) and we need to agree on how to test the mate/demate performance of the fittings (what tests during, before, or after these cycles, how many cycles, etc.) Some of these things will be discussed in a phone meeting with CERN early next week (Marco?).

5. Tom W. has informed us that the Al/PEEK luers are not faring well after irradiation. It is not known why, but there seems to be a definite leak that is localizable on the fitting body. Tom will mark this leak for later use in an autopsy of the fittings. Two of these fittings (#'s 2,3) will progress through stage 5 of the sequence and then stop. The third Al/PEEK luer (#4) is still considered viable. Tom has not begun retesting the variseals yet. Fitting results can be seen at http://www-eng.lbl.gov/~hartman/pixel/Fitting Results 18SEP01.pdf

6. It is our goal to have the Luers all completely tested (w/o mating/demating tests) by the October pixel meeting, which means October 5th.

7. The pressure testing apparatus has been constructed. It cycles the fittings from 1 bar absolute to 5 bar absolute 50 times. The fitting is pressurized for 45 seconds, then depressurized for 10, before repeating.

8. The Al/Al luers have been tested through stage 8 (vac check after

thermal cycling and pressure cycling) and they look good! Results are at http://www-eng.lbl.gov/~hartman/pixel/Fitting Results 18SEP01.pdf

9. Glue samples have been removed from the can and weighed (after irradiation in a dry environment) but results are not available yet. Fred will let us know when he has posted the results.

10. Tom J. has made two sector tubes complete with all out-of-plane bends. One is in new tubing, annealed but not etched. The other is from new tubing, but was annealed and etched before bending. Over the next week, Tom will make three more of the annealed and etched sector tubes in order to submit them for laser welding at EB and Applied Fusion.

11. In light of recent events in NY and other factors, I am postpoing my visit to EB until late october. We will proceed with testing and communication by phone, but I am making plans to visit another laser welder in San Jose next week.

12. Tom J. will look for boxes that we can use to house and transport sectors and sector tubes (during the production process). Current boxes we have are too small for the new tubes.

13. I will order some Aluminum capillary tubing, have it parylene coated, and assess its bendability. The bare aluminum bends nicely, but the anodized tubes snap like twigs. If coating is needed, we cannot anodize the aluminum capillaries, so parylene is the best option. The capillaries will use sector size luer lock fittings.

14. I will meet with Fred soon so that we can discuss the necessary luer lock sizes, and hopefully have drawings made within two weeks. This way we will be fabricating fittings while the meetings at CERN have many of us distracted with other things.

Thanks to everyone for their continued work. With the success of the Al/Al luer, it is beginning to seem certain that we will soon have a working fitting for sector production!

Neal