

UITC meeting minutes

4/28/2014

I'll try to do a better job with minutes...

- 1) Gun chamber ordered, job went to Kurt Lesker, a duplicate of chamber at GTS. It costs ~ 8k\$. The machine shop finished the rails to hold NEG sheet in place, there are two versions, Phil can assess which version he prefers. We will weld these to chamber wall and bake gun chamber at 400 °C to reduce outgassing rate. We also have NEG rails for the GTS gun, we can add these when it's convenient.
- 2) Poelker to order enough NEG sheet for both guns.
- 3) We ordered black R30 insulators from SCT via JB Lafon, but they don't have enough powder to make insulators with material identical to the black R28 insulators (powder batch #4). Instead they offer us powder from batch 14, which exhibits resistivity 23 times higher than batch #4, which performed well. It doesn't seem like we have much choice, and actually since we only tested one black insulator, we don't know what resistivity is best. Maybe powder from batch 14 will be even better.? Carlos asked JB if powder from batch 21 was available, as this exhibits resistivity only a factor of 12 different from the material we tested. JB replied with a new table (below, on right). Anticipated delivery ~ June of 2014. Also, SCT will send us a coated R30 insulator for free, provided we test it and tell them how well it performs.
- 4) Per JB Lafon, "The last table provided is showing the data after ceramics metallization only and should be ignored." (he is referring to the table on left). He thinks we need to look at the table on right, resistivity after brazing...

<i>Batch No.</i>	Resistivity ($\Omega.cm$)
1	1,5E+14
4	6,7E+11
7	1,4E+13
14	2,2E+13
21	8,0E+12

<i>Batch No.</i>	Resisitvity value after brazing (Ohm.cm)
1	3,10E+13
4	7,40E+11
7	4,40E+15
14	1,70E+13
21	1,60E+16

- 5) John will attempt to measure the resistivity of our insulator assortment: white R30, white R30 coated with ZrO, and black R28. Strangely, his first attempt indicates that of all the insulators, the black insulator is the closest to a perfect insulator, showing the largest resistivity.? It should have a smaller resistivity than pure white material....
- 6) John is close to finishing the design of the SF6 tank, getting advice from Tommy Hiatt on how to word the pressure vessel requirements. John is almost ready to order the girder material.

- 7) Apparently, Facilities is making some headway on issuing a PR to pay an outside contractor to cut away the concrete kneewall, remove concrete blocks and provide us 6 penetrations in the ceiling. It will be nice to get this dirty job behind us.
- 8) Evelyn will check with Suresh Chandra to see if he is working on the entry way to the cave(s), in coordination with RadCon.
- 9) Joe has an elegant model of proposed beamline, he can present it to group soon. We will also ask Reza for advice. The subject for future meeting.
- 10) Carlos verified with Jim Coleman, indeed there's an unused spare ODH system in FEL transportainer. We can have it, although it is not a modern system recommended by Kelly Mahoney. This older system requires new heads every year. Seems like a good way to go for us.
- 11) Carlos mentioned we can use a buncher system from FEL. VA money is being spent on a new buncher system, including cavity + RF drive. Once the system has been tested, we can use it at the cave. Or if it's used at the FEL, we can have the old FEL buncher. Either way, a nice cost savings, and time savings.
- 12) At the GTS, Carlos and Yan witnessed a less-than-hoped-for result using the ZrO coated R30 insulator. It suffered damage at 230kV during Kr processing. Upon inspection, the insulator and ball seem fine. The cable appears to be damaged. There's some chance Poelker did not insert the cable properly into the ZrO-coated R30 insulator, causing a failure. Upon discussion, we agreed to retest the insulator using a new cable, that John will install - we will watch and learn the technique, maybe even write it down.
- 13) Discussion topic for next meeting: where are all our drawings? Other future topics: all thing RF, continued discussions on layout at test cave and GTS, continued discussions on magnets, check in with Facilities...