LHC RF Meeting

25th November 2005

(With ADT corrections 29th Nov)

Participants: Luca Arnaudon, Olivier Brunner, Edmond Ciapala, Wolfgang Höfle, Pierre Maesen, Trevor Linnecar, Daniel Valuch, Frode Weierud.

1. ACS Couplers and Modules

- **Couplers 124 and 125:** SA2 conditioning should be finished by early December.
- **Couplers 126 and 127:** Bake out will start next week in B867 when power is back. These couplers will be mounted on the test cavity when couplers 124 and 125 are removed.
- **Module 4:** Thermal cycling is ongoing. Frequencies will be measured at the end.
- **Module 2:** The domes for module 2 have been fitted and successfully pressure tested.
- **Tuner bellows:** The prototype new bellow is being welded to its flanges. The spare tuner drive is being prepared for tests of tuner cycling under vacuum.
- **SM18 planning:** Pierre showed the present long term planning for module completion and testing. With couplers 124 and 125 completed module 5 can be fitted with all its couplers in January 2006. Tests in the bunker would be completed by early June 2006. Remaining work (springs, domes) on the other three modules needed for installation would be done in parallel. It may be possible to provide two modules for installation in March if needed. The work on changing the tuner bellows is not yet in the planning. This work could be done in the machine, but completing it before installation would clearly be better. The next four couplers are really only needed for the spare module (module 4). The gain of two weeks by conditioning the next two couplers in SA2 over the Christmas break is not essential.

2. ACS Power (Olivier)

- **Klystrons:** Damage to the aluminium HV box has been found on three klystrons. The inside surface has been oxidised and metallic particles found. The problem is being discussed with Thales.
- **SM18 klystron** Klystrons K14 could not be powered due to the critical days this week but is ready for power tests next week.

3. ADT (Wolfgang)

- **Oven tests of electrode material:** Oven tests on a plate of the high purity OFE copper have been done. A weight of 1 kg was used to press down on the plate. Up to 150 °C there was no change. At 260 °C the deformation was 3 mm. Under its own weight there is *expected to be* no deformation.

(**Note:** Correction to last week's write-up - it is the forming process that produces additional hardness, rather than the heating to 600 °C).

- **Kicker tanks:** The first three tanks have been cleaned and leak-tested. One tank will be baked out with electrodes installed. The electrodes have first been measured for flatness (0.1-0.2 mm over 1.5 m length). The bake out will be to 230 °C +/- 20 °C. The electrodes on this kicker will be taken out and re-checked for flatness after bakeout. One or two temperature probes will be fitted for this test to monitor temperatures during bakeout.
- **Anode supplies:** The remaining four supplies, be delivered by the 1st December, could be put directly in SR4 - on the concrete part of the floor if the floor modifications are not yet approved. A lifting arrangement needs to be found - either our crosspiece (to be approved quickly) or some other proposed by transport. **(! Urgent)**

Note: for transport of unusual items a TWG questionnaire (K. Kershaw) can be filled out.

The need to test all converters in B867 was raised, since the warranty period extends to well after hardware commissioning/first beam. There will be a spare in *B864 and not in* SR4. Clearly the transport problem needs to be solved in any case.

- **Supports:** The iron crossbar under the tanks will either be galvanized or painted.
- **HOMCs:** The capacitive coupling may be too strong, requiring mechanical changes to the HOMCs. (machining). The *coupling* is measured using the feedthrough ports. *The HOMs are measured with additional axial antennas, mounted on special end-plates.*

4. APW (Info fromThomas)

- **B864 workshop tests:** The temperature has stabilised now in the present test with RF power corresponding roughly to that of nominal beam.

5. UX45 installation (Olivier)

- **Platform and shielding wall:** Fitting of the additional diagonal bars on the first floor of the platform will be finished this week. The wall modifications will likewise be finished. We would like D. Parchet (TS-IC) to approve the modifications before we continue. It is not clear whether official approval is in the hands TS-CE or SC. (or TS-IC?)
- **QRL installation and test:** The QRL will be pressure tested on 10th. December. For this work still has to be done in the area presently 'off limits' due to the platform and shielding wall.
- **Cabling:** 3/8 inch flexwell cables to ADT in the RBs will now be taken through the waveguide holes rather than round the ULs (J-C Perrier), a considerable saving in distance. We are satisfied that there is sufficient space in the waveguide holes. Flexwells from the ACS racks to the Faraday cages are now being pulled. Cable numbers will be put on special etiquettes, fitted after the connectors are fitted. In general the cabling is progressing very well.

6. AoB

- **EPAC 06:** Suggestions for EPAC contributions can be made to Trevor. Any abstracts would have to be given to him by Friday 16th December.

Next Meeting: Friday 2nd December at 08:45 in the JBA Room 864-2-B14.

E. Ciapala, 28th November 2005.

(With ADT corrections 29th Nov)