LHC RF Meeting

20th December 2007

Participants: Maria-Elena Angoletta, Luca Arnaudon, Philippe Baudrenghien, Thomas Bohl, Olivier Brunner, Andy Butterworth, Edmond Ciapala, Pierre Maesen, Eric Montesinos, Trevor Linnecar, John Molendijk, Joachim Tückmantel, Frode Weierud.

1. Equipment status in tunnel (RUX 45)

Power systems set-up:

- **Switch and protection** for klystron drive has been set up for the klystrons of Module1.B2. There are appreciable differences in gain between the klystrons. Up to 4 dB. This is a consequence of the adjustment needed to the first bunching cavities to keep the parasitic resonance in the output response to the same frequency in all klystrons. There is also some slight loss in efficiency.
- **RF Leakage:** Problems in setting up the line for C7.B1 were traced to RF leakage, waveguides bolts not all fully installed and tightened on a waveguide flange.

We urgently need to install a detection system, to be systematically checked after any waveguide intervention and on a periodic basis, tother with an alarm facility This coincides with a proposal from F. Szoncso (SC/GS) on help from a technical student in the Spring who could work on this subject with a specialist in our group. (**Action: Follow-up Ed, Olivier & F. Caspers**)

Cavity conditioning: Cavity conditioning is now ongoing in all 8 cavities in sector 4-5. Cryogenics is still running reliably and so far no magnet quenches have occurred. We have managed to get a sufficiently accurate calibration for the vacuum gauges to do safe conditioning, but we will pursue the test and installation of the same type of electronics as we have in SM18, both to have a better readout range and for compatibility reasons. Radiation levels measured so far in the tunnel have not exceeded 70 uS/hr. Hence there is no risk for sector valves (See last week's meeting). Maximum cavity field achieved so far is ~1.4 MV and maximum applied power is 150 kW cw, with 220 kW pulsed. Note we will not try to exceed nominal cavity field and 200 kW cw RF power for the moment, till all cavities are completed.

2. LLRF, controls and timing:

RF Feedback and cavity tuning tests: The cavity tuning has been made operational for Cavity8.B1. It operates correctly, with both cw and pulsed RF. The feedback electronics has also been installed for this cavity, ready for test when nominal conditions are reached. Final cabling in Faraday cage A is in progress.

Clock generators: The two clock generators (B1 and B2) will soon be installed in the Faraday cage B.

Feedback module status: Testing of the series of 40 is continuing; a number of different, non-systematic problems have been found.

VME Interface in controller crates: A problem has been found with transmission of interrupt acknowledge through installed non-interrupting VME modules situated between the requestor and the CPU. This abnormal behaviour of the VME interface logic and has been brought to the attention of CO group.

FGC Installation: Installation of the FGC cassettes will be done with AB-PO in the near future. At present they are checking the WorldFIP interface to the front-ends.

Next Meeting: Friday 11th Jan in 864 1 C02 at 08:45

E. Ciapala, 9th January 2008.