LHC RF Meeting

29th March 2007

Participants: Luca Arnaudon, Philippe Baudrenghien, Olivier Brunner, Andy Butterworth, Edmond Ciapala, Pierre Maesen, Eric Montesinos, Wolfgang Höfle, Trevor Linnecar, John Molendijk, Elena Shaposhnikova, Joachim Tückmantel, Daniel Valuch, Frode Weierud.

.

1. P4 installation/commissioning

- **UX45/RUX Activities** – ongoing and pending items:

  - **Water:** Maintenance work is being done on the system. The system will be restarted 30th March. (tomorrow)
  - **SC Report:** Results are back - SC reference SC/GS/ES/07-00043. Some remarks on identifying bunker equipment, fluorescent stickers, safety gear near bunkers, Access procedure documentation. The blower fuses need to be changed to lower values.
  - **Cryo:** A. Suraci will test the interface to the He inlet and outlet valves. They have encountered problems with high amplitude 8 kHz ripple in their system.
  - **Vacuum:** NEG activation for the ACS module second beam tubes is planned for week 18.
  - **Damper pick-up cables:** At Q7 the enlarged QRL diameter makes access to the connectors very difficult. A special means of making the connection may be needed.

- **SR4:**

  - **Power converters:** SC requires that the areas around the ADT and ACS klystron power converters be marked. Habilitation Electrique (Level 0) will be needed to go inside the marked areas. Web based courses should be available soon.
  - **SR4 cooling and ventilation units:** Still waiting on news from TS-CV. To check with J-C Perrier.

2. ACS Modules, Couplers and SM18

- **He tank pressures & safety valves:** AT-CR have been provided with the detailed drawings of the internal He circuits in the ACS modules, to allow them to make the promised precise maximum pressure estimates under different fault conditions.

- **Single cavity:** The LLRF tests having been completed, the module has been taken out of the bunker. Vacuum is very bad ~ 2 E-5 mbar. Leak detection is being done, starting around the power coupler.

- **Coupler Conditioning: move to H112:** The tests of the modified PLCs have been done. The power converter will be tested first. We have to wait for completion of maintenance on the water system.

- **Future SM18 tests:** The priority will be the He level tests on Module 4 (Europe). However, water should be back in mid-April, allowing tests on the klystron polar loop module (see below). Cryo is not needed for this.

3. Klystrons:

- **Thales:** First tests on changing the collector cooling will be done by Thales.

4. LLRF:

- **Polar Loop and Modulator:** The modulator part is working, as is the control of phase modulation to make the 'virtual trombone' phase shifter. Unwanted modulation components are reduced by the specified 42 dB.
- **3.3 V power supplies in VME crates:** We have encountered a significant amount of failures, around 5 to 6. A very high level of ripple has been seen in the output current output, indicating a problem with the stability of the output regulation. The manufacturer has been informed and they have been able to reproduce the fault. They concede that there is a problem and will find a solution. We will probably have to change all the installed supplies. This will be straightforward as they are plug-in supplies.
- **Damper electronics:** The power protection electronics crates have been calibrated.

5. AoB

- **ICC Presentation:** Olivier will make a presentation to the ICC on the status of the LHC RF systems. While there are no 'major problems', items currently needing close follow up are: 1) the cryo valve operating pressures and dimensioning for the ACS modules and the safe operation of cryo controls, and 2) the high rate of series production which we will need to complete a number of the cavity controller and other LLRF modules.
- **LTC news:** Recent problems with the inner triplet at P5 may lead to 1 month overall delay in the project. A 450 GeV run this year is now unlikely, but a sector test now becomes probable. Cool down of P4 will probably not be significantly delayed due to the inner triplet problem, as cool down of the sector will be done with it removed.

Next Meeting: Thursday 5th April at 08:45 in the JBA room.

NOTE Special TOPIC: MTF for RF Hardware commissioning. Blanca Perea Solano. (TS-HDO), around 09:30.

E. Ciapala, 3rd April 2007.