LHC RF Meeting 24th May 2007

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

1. P4 RF Installation/Commissioning

General planning: Cool down of Sector 4-5 is delayed one week and is now planned to start in week 26. The modules would then be cooled down by the end of July.

Roof Blocks: These are now in place. We need to fit the barrier to separate the cryo side from RF across the cavern before ACS cavity powering. This will be checked with G. Roy next week.

Vacuum work:

• The APWL and ADT kickers in sector 4-5 are being baked out, at the reduced temperature of 200 °C.

• Vacuum chambers: Some more interconnecting vacuum chambers have been installed and are being baked. (Sector 4-5 side)

• **Bake out and activation of NEG** has started in the first ACS module. There was an inversion in the connection of the insulating vacuum pumps in the two RHS modules. Fortunately this was detected before heating was started on a non-evacuated cryostat.

• Electron stoppers: These are now in place on the Sector 3-4 side

Access system: Tests will be done next week. Equipment will be checked and correct transmission of the various signals will be tested first.

Cabling work: Some remaining arc detectors near the ACS cavities have now been installed and connected.

ACS HOM cables: The material and the layout will be checked next week and installation will start the week after. Sensors will be put on HOM cables that pass close to the waveguide. This last activity not specially urgent and will be done at the most convenient time.

4 ACS HV, klystrons and power tests: All 4 klystrons for Module 1.B2 have now given 200 kW RF. Two other bunkers have been taken to taken to 46 kV and the remaining one to 10 kV. Two bunkers show unusually high noise on the crowbar signals and this is being investigated. The power converters are performing reliably. Typically one day was needed by PO group to finally check them out and to make ripple measurements

ACS Modules & cryo lines:

• **Pressure tests and flushing:** Pressure tests on all four modules at 2.1 bar will be done in the evening (24th May) - one 2.2 bar release valve has been put on each module for the tests. The He circuits and tanks will be taken slowly to 2.1 bar and held for approximately one hour. Leak tests will follow, then flushing, which consists of alternately slowly pressurizing and pumping the system.

• Low power tests: The first tasks on the ACS modules will be the low power measurements. The work should take less than one week.

• **Safety valves:** Suppliers have been found for the 3-way valves, one per module, to allow protection by an additional 1.5 bar release valve at the start of cool-down. We expect to have these (with non-teflon parts) before the modules are cooled down.

• **Blowers:** (Eric) All the blowers are in place and have been tested; we will still have to test them with the wave guides re-mounted after the low power measurements.

4 ADT: (communicated by Eric)

• **System test and commissioning:** All the positions have been tested with low power RF. Water cooling is ok, power supplies have been repaired (with a few difficulties) and PLC and fast interlocks have also all been verified.

• Layout and cabling: The situation is now well understood. Minor control cable changes are being looked at.

• **Amplifier completion:** The Dubna team will come from June 05 to July 07, to fully finish the first set of 16 amplifiers and prepare the 4 remaining ones (without the HV resistors, but with all the other components). The missing HV resistors for these amplifiers will only be delivered in the Autumn.

• **B867 test stand 867**: This is now up to date, with the latest LHC configuration. (PLC upgraded).

2. ACS Modules, Couplers and SM18:

Module 4 (Europa): The Cryo system in SM18 is very slow to start up after the switch to the 6 kW plant. The Cryo team are however keen to do the He level measurement tests.

Polar loop tests: First tests of the phase loop have been very encouraging, with the operation and performance closely following what was expected, thanks to thorough testing in the lab.

Cavity 21: Still planned go into the bunker towards the end of June.

3. SR4:

Ventilation System: Jean-Claude has received a preliminary estimate from TS-CV of over 300 kCHF to bring the system up to date. This cannot come out of the RF budget.

Next Meeting: Thursday 31st May at 08:45 in the JBA room.

E. Ciapala, 29th May 2007.