LHC RF Meeting
12th March 2004

Present: Luca Arnaudon, Andy Butterworth, Philippe Baudrenghien, Olivier Brunner, Edmond Ciapala, Wolfgang Hofle, Trevor Linnecar, Roberto Losito, Pierre Maesen, Volker Rodel, Joachim Tuckmantel.

Agenda:

1) ACS news - SM18 Planning
2) ADT news
3) LHC overall planning
4) Commissioning – Planning preparation.
5) AoB

1) ACS News (Roberto)

- There is a further 3-week delay in the assembly (central workshops) of the second pair of couplers for the next module (Module 1). The SM18 planning has therefore been modified, (See latest version) with thermal cycling ("fast cool-down") of module 4 to be carried out after module 2 cycling; instead of conditioning of module 1. The problem of scheduling LLRF tests was raised. While a 3-week period is planned at the end of each module conditioning, this may not fit with the availability of the new electronics or manpower. Some tests can be done in Hall 112 but SM18 is the only place where real performance can be measured with the cavity. Two options should be looked at:

a) HV and controls modifications to allow not just 352 MHz but also 400 MHz power operation in the second bunker. Water cooling may be a problem.

(Action: Olivier, Luca)

b) Fast switch-over of RF loops for conditioning and new LLRF tests, to permit alternate conditioning and LLRF tests, e.g. on a day/night basis. (This is the mode originally planned). Additionally, individual cavities could be left on one mode or the other, and power switched by the waveguide switch. **(Action: Philippe, Pierre)**

- Given the number of activities in SM18, cavity & coupler conditioning, cycling, LLRF tests, then Soleil SPL etc. the modification of the second bunker is essential.
- The possibility of doing SPL warm tests in SA2 would need re-possession of the area previously given to experimenters, so far not used by them.

2) ADT (Wolfgang)

- **Drive amplifiers:** The problem of excessive output noise was traced to a switched-mode supply and has been solved. All parameters expected to be within specification. Series production will start after next visit on 15th March. Production planning and registration of design and test results in EDMS and MTF will be discussed during the visit.
- **Feedthroughs:** Two corrected feedthroughs (with smooth ceramic) have been received. Tests will start next week with H. Preis.
- **Dubna:** Will be visited by Wolfgang and Reinier just after Easter, 13.04. - 16.06. They have received welding samples from the Lesnoy factory. Amplifier testing is planned during the week of our visit, subject to reception of CERN supplied items. Items such as water connectors may be delayed due to late ordering, long delivery time (10-12 weeks) and long delays for customs clearance. The possibility of inviting the Russians for a longer period to assemble the series of 20 amplifiers here at CERN should be looked at. To fit into the new planning this assembly work must be done during 2005. The planning will be discussed with JINR during the visit.
- **Anode Power Converter:** The contractor has started the design and planning work. The company will be visited, probably in week 17 (19th April, Frode + Wolfgang).

3) LHC overall planning

- In order to absorb the delays in QRL production, significant changes have been made to the installation planning. Trevor has been asked to present the implications for the group and whether we can meet the revised schedule. A new planning proposal shows installation in LSS4 between August 2005 and April 2006, the end date having been brought forward roughly 4-5 months. The QRL will be installed in sectors 34 and 45 in mid 2005. First cool-down in these sectors will be April to September 2006, with two months for QRL testing followed by magnet tests for a further two months, more or less concurrently in the two sectors. While more information is clearly needed, this planning would suggest that the ACS cavities, if installed as part of the general installation, could be tested cold in the second half of 2006, perhaps during magnet tests and possibly also during the 'blank' time from October to December 2006. The installation of waveguides and other equipment in UX 45 is at present planned for completion only in early 2006, and installing the cavities beforehand may change the installation sequence of waveguides. Additionally our tight module completion schedule and SM18 planning will have to be strictly maintained.
- The extra commissioning time that could be gained by conforming to this new planning would obviously be of great value.

- *Further discussion, since the meeting, with Cryo has revealed that the baseline plan is to warm the QRL up to 70 K in LSS4 after the QRL and magnet tests, during the 'blank' period. (October to December 2006) A specific request would have to be made for running during this period and resources would have to be found. Requirement for this should be a result of analysis of the commissioning planning requests (See below)*

4) Commissioning – Planning preparation

- For the commissioning committee Olivier has to collect information on requirements and planning for the commissioning of the RF and damper systems. For each system the information needed is:

  Activity: e.g. hardware cold check out, HV tests, RF tests, conditioning, LLRF setup and calibration, controls and software tests, long term reliability.. etc.
  Requirements: e.g. 18 kV, Cooling Water, Reseau Assuré, Cryo, Control System, Access system .etc.
  Timing: Starting date, estimated duration

(Action: Wolfgang, Olivier, Ed, Andy, Luca)

5) AoB:

- **Naming of Pick-ups:** Installation management requests that pick ups under the responsibility pf BDI group have 'B' as first letter, rather than 'A' for acceleration, which is reserved for the RF group.
- **Dust Traps: (Joachim)**

These have been approved by the division. BT group now have to find resources.

Next Meeting:

Friday 19th March 2004 at 08:45 to 10:00 in J. B. Adams Room (864-2-B14)

E. Ciapala, 15th March 2004.