LHC RF Meeting

11th March 2009

Participants: Oliver Brunner, Pierre Maesen, Vittorio Rossi, Joachim Tuckmantel, Trevor Linnecar, Edmond Ciapala, Andy Butterworth, Philippe Baudrenghien, Thomas Bohl, Wolfgang Weingarten, Daniel Valuch, Frode Weierud, John Molendijk, Elena Shaposhnikova, Eric Montesinos, Maria Elena Angoletta

1. **UX45 status**
   - Waveguides hort circuited, water turned on last week, no leaks. ADT tests done, water off at end of this week. Intervention by Thales to replace all connection systems for focus on klystron (bad connection defect, connectors burned). Will start up before Easter with interlock tests etc. Procedure for access has been agreed with Ghislain (HV on while RF zone is open).
   - Last magnets will be in in week 16 (13 April, 1 week late), roof closed end April. Sector 4-5 cooldown 1 week late but does not affect us.
   - Much work to be done in LSSs which will stop us conditioning. To be verified with K. Foraz.
   - LMC: 3 points can run at half cryo capacity, including Pt 4. Startup and commissioning will be with full cryo system, then subsequently back off to half capacity.
   - Access to UX45 in discussion, with a possibility of access at low magnet currents (to be decided).

2. **Klystron collector modification**
   - Tested and opened at Thales and at CERN, quite conclusive, modified collectors showed no marking after 15 minutes. But our klystrons only have a few hundred hours and are running with increased water flow. Could do a random check after a year's running.

3. **ADT**
   - New air cooling for amplifiers tested successfully. Temperature reduced from 100 deg C to 80. All amplifiers started with HV, 2A rest current, no problems seen.

4. **SM18**
   - Cold, conditioning first cavity of module LHC4. V6 measurement for Soleil. Preparing for US-LARP LL tests last week of March and first week of April. Pt1 cryo disconnected week 15 (just before Easter). Module power tests will not be finished.

5. **LHC Commissioning report**
   - Very nearly finished, waiting for Philippe to come back, then after final checks, will publish it.

6. **Risk review:**
   - Olivier made a presentation, stating that we believe there is no pollution of cavities. What would be the consequences of an event closer to point 4, and what can we do to prevent damage, to all systems: ACS, ADT, APW. Steve Myers asked how do we know there is no MLI in the cavities, and was suspicious of the way we decided not to take the cavities out.
   - Olivier is preparing a report: Sector 3-4 cavities can only be tested in August. There is no way to connect them to sector 4-5. We could swap the cavities in 3-4 and 4-5 but this is risky, and we will need to open the roof, empty QRL etc, which has a big impact on schedule. If we believe there is a risk, we could take them out now, otherwise we leave them in and switch on carefully in August. There is also the risk of dust elsewhere migrating into cavities. A statement is needed from the vacuum group on the reason for our decision, and confirming that they believe that the unopened sectors of the LSS are clean. Ideally Miguel would be a co-author of Olivier's report.

7. **Budgets:**
   - Sector 3-4 repairs are coming out of the operation budget.
   - FSU costs are included in operation budgets, will check it all adds up when budgets are fixed.

8. Crab cavities

- Can we move the ACN cavities (problem with moving lines and couplers, need space between the cavities), do we need them all (yes). Can we drill an additional hole for the power distribution? Can we connect to the cryo line (additional jumper on QRL possible but expensive)?
- Do we need the ADT spare (for high intensity)? Installation would be in 2014. We cannot give an unqualified yes because we will not know everything until we run at high intensity.
- The best possibility is to connect to distribution line for cavities, which could be connected to an additional cryo system.

A. Butterworth, 25th March 2009