

## LHC RF Meeting 19<sup>th</sup> March 2003

### **Present:**

Luca Arnaudon, Thomas Böhl, Olivier Brunner, Edmond Ciapala, Hans Frischholz, Wolfgang Höfle; Trevor Linnecar, Roberto Losito, Eric Montesinos, Joachim Tückmantel, Volker Rödel, Daniel Valuch.

### **1) Follow up from the last meeting 26<sup>th</sup> Feb 2003.**

#### ***Corrections to minutes***

Under Section 1) Point viii) ADT:

“The market summary for power supplies is in preparation”.

### **i) Earthing for HV equipment in UX45**

A special meeting, with John Pedersen ST-EL, was held on 12<sup>th</sup> March. A brief summary will be circulated. (**Action:** Ed.) A schematic layout for the earthing in UX45, initially concerning the ACS power system, will be prepared. (**Action:** Olivier)

### **ii) EVM and follow up:**

A further and second last EVM ‘Panel’ meeting was held on 17<sup>th</sup> March. Sorting the WBS structure has taken longer than expected. Additionally the lack of a proper access protection mechanism has created some problems. Some F-contract costs (for klystrons) have changed without explanation. The inclusion of contract labour in cost per week rather than in man-weeks makes the cross checking with the cost to completion more difficult. Progress will nevertheless continue. The ACN system will be uploaded shortly (**Action:** Ed). Volker has entered rough work-units for installation directly using the excel file system provided. A full detailed planning remains absolutely necessary and work on layouts and documentation is continuing.

For the remaining work:

- Software and diagnostics needs completion in Project (**Action:** Andy, then Ed)
- ACS low level needs completion in Project (**Action:** Philippe and Ed)

### **iii) Integration at Point 4**

The special meeting will be held on 20<sup>th</sup> March. Everyone concerned is encouraged to attend.

### **iv) UX45 Layout & Installation**

Use of ex-LEP racks. No official reply had been received from Carlo Wyss on re-use of the LEP racks in ISR storage. *Since the meeting it has been agreed in principle with Carlo that the remaining 400+ racks can be stripped and used. Useful material will be stored. Our proposed solution for other projects using LEP klystrons or cavities is to use ‘LHC standard’ controls. This will need agreement with the list of potential customers before the official agreement can come.*

Mobile Racks for Klystrons in UX45 The purchase of extra racks will be easier to justify if insufficient racks will finally be available in the common pool - including the ex-LEP RF racks. *(In fact J-C. Guillaume’s latest estimate is that 800 more racks will be needed. We should therefore go ahead with the purchase of these mobile racks. (Action: Olivier + Ed)*

Cabling Controls cabling is almost finalised. HV cables in UX45 are defined but the routing of HV cables has to be finalised (**Action:** Olivier + G. Pecheur) J-C. Perrier is responsible for compiling the overall list for the DiC.

Cooling Water pipe layout details for ACN and ADT need to be finalised.  
(**Action:** V. Rodel+J-C. Perrier.)

**v) Planning**

Follow up is needed on obtaining more time for commissioning with the new installation planning at IR4. (**Action:** Volker+all)

**vi) Radiation in UX45**

No further news in Andy's absence.

**vii) Storage space**

The resolution of the SM18 space allocation crisis makes our requirements slightly less urgent. However we still have to remove unnecessary equipment from SM18 and there is pressure to free space in ISR. We will have to select the waveguides needed for LHC (and other projects) and store them somewhere before moving them to UX45.

**Action:** (Ed & Volker)

**viii) Power Supply performance with 18kV disturbances**

Simulations on reducing the loop gain to minimise output transients should be done with PO group. The effect on output ripple should be checked. (**Action:** Olivier with PO group)

**2) Round Table**

**i) ADT**

The specification meeting for power supplies will be held on 9<sup>th</sup> April.

**ii) ACN cavities (Roberto)**

Two more cavities will be delivered and tested in the coming week.

**iii) ACS Cavities & SM18 (Roberto)**

The helium supply will return on 31<sup>st</sup> March. Repetitive gas cooling and warm-up cycling will be done on the first re-tuned module.

**iv) ACS Power Couplers (Eric)**

550 kW continuous power was reached in the Cu & Kovar test stand after replacement of the klystron. After a 1-week stop 500 kW was reached almost straight away, without much vacuum activity. After a few days a vacuum leak occurred on the kovar coupler. This result is very positive for the Cu design. The power levels that can be reached are well above peak and continuous levels from Joachim's simulations with nominal beam current. Tests will continue, this time with two Cu couplers.

Production of windows for the couplers is still on schedule.

**v) ECRs:**

The ECRs for the staging of the installation of ACN and for correction of wrong positioning of the ACS cavities on the existing drawings are out for approval.

***Next Meeting***

Wednesday 26<sup>h</sup> March 09:00 in 864 1 C 01

**Agenda**

- Follow up from last meeting
- EVM status
- SR4 Layout & Planning
- Review of RF rack requirements for JC. Guillaume's meeting Friday 28<sup>th</sup> March
- Round table

E. Ciapala, 21<sup>st</sup> March 2003