

RAT in P4 - *Status of Sector 45* - Preparation of Cool-Down

HARDWARE COMMISSIONING COORDINATION - WEEK 10

16th March POINT 4 (2485 2-001 SX4)

Present: E.Barbero Soto, A.Bouillot, P.Chambouvet, K.Dahlerup-Petersen
C.Dehavay, S.Feher, C.Fernandez, J-J.Gras, P.Maesen, F.Moro, S.Pelletier,
B.Perea Solano, M.Solfaroli, S.Weisz.

Sector 45 & Sector 34

Installation (S.Weisz/E.Barbero)

- **Cooling & Ventilation:** F.Moro informed about the progress of the annual maintenance of cooling and ventilation equipment. Significant maintenance had to be done at the level of the primary circuit. The filters are ready and also the Radio Frequency equipment was maintained for the first time. Everything should be ready by the 23rd March. Priority will be given to Sector 34, since J-C.Guillaume is waiting for the cables to be filled in order to finish the presentation at the level of the DFBs in LSS4L. F.Moro will try to bring back the water circulation in that area by Wednesday. Bake-outs in the LSSs will be affected by the lack of water circulation due to the fact that beam instrumentation equipment needs water cooling when heating the vacuum chambers.
- **DC Cabling:**
 - ✓ S.Pelletier informed that they should finish the presentation of the cables at the level of the DFBs in LSS4L by wk12. At that time, P.Denis should validate the positioning.
 - ✓ The Access & Safety (1 x 3 km cable) and Cryo and QPS cables (4 cables from the RR to the RE). The first one has to be installed when all the passage in the tunnel is free so during the Flushing (2 days). The second set could be installed during wk14 or wk15. This is going to be checked by Esther and Sylvain.
 - ✓ The cabling campaign to be carried out LSS4R and LSS4L essentially for beam instrumentation should be carried out wk12 and wk13. Sebastien will ask for the consignment of the 18kV cellule for that !. The connectors campaign would then take place wk15, once the bake-outs in the area are completed. J-J.Gras informed that this has an impact in the hardware commissioning of the beam instrumentation, which will be slightly delayed.
- **NEG Activation:** E.Barbero informed that NEG activation activities in A7R4 (DFBAH) will start on week 13 or 14 and will take one weeks; during this slot nobody will be allowed to work there.
- **DFBLD:** A meeting was organized in situ to clarify the works to be done for the DFBLD (LSS5L). Mechanical works should be finished wk15. The arc will only be ready wk17 and the final pressure tests should be then carried out wk19.

Cryogenics (A.Bouillot)

- A.Bouillot informed that the connection of the QUI (surface to QRL) was still ongoing and should be finished by Monday 19th March (wk12).
- Regarding the leak and pressure tests, no tests should be carried out today 16th March. Last week, the DFBAH could not be leak tested, since the internal mechanical connections were not ready.

Beam Instrumentation (J-J.Gras)

- The commissioning of the Wire Scanners in LSS4R has started. The remote monitoring of mobile parts should be tested now.
- Delphine is checking the UPS that failed. For the time being conventional power is being used, and everything should be back to UPS once the failure is repaired.
- There are no news concerning the non-conformity that had been opened for BPM.22R4. Still under discussion.
- The BGIs will not be ready by wk 13. 2 BGIs should be ready wk16 and 2 more wk 18. There is one whose installation might be complex and therefore they should start installing that one first.

Current Leads (P.Chambouvet)

- P.Chambouvet informed that the team performing the insulation vacuum for the current leads in P1 should finish by Wednesday and then should move to P4 in order to start pumping the DFBs in LSS4L. Then they should move to LSS3R. Before starting those interventions, the slots will be checked with HC, since other activities need to have finished at the level of the DFBs in the area.
- The functional tests of the current lead heater cables will be carried out from next week in Sector 34.

Radio Frequency (P.Maesen)

- Pierre Maesen informed that the RF warm recovery line is now ready.
- Pierre would like to know when the vacuum connection at the level of the cavity modules will be done. Esther pointed out that this should be carried out mid-april, but she will confirm this with Jimenez during their weekly meetings.
- Regarding the RF power converter short circuit tests, the transformers needed to carry out the tests at full power shall be installed in two phases: the first one lasting for 2 or 3 weeks starting now; and the second one lasting for 9 weeks. This is being managed between AB/PO and TS/EL.

13kA Energy Extraction System (K.Dahlerup-Petersen)

- Knud informed that the campaign for the installation of arc detectors at the switches would start wk13 and last up to wk14 in UA47 and RR53.
- Wk13 the piping of the 13kA EE System in RR53 will be re-done by Renco.
- The non-conformity with the fans is also reviewed.

- The connections with all the quench detectors in the arc will be checked.
- The campaign in Sector 34 should follow.

60A Orbit Correctors (M.Solfaroli)

- 60A orbit corrector 24-hour heat run tests should be carried out Wednesday 21st March (wk12). Panels at both ends of the arc will be placed to indicate the start and end of this tests.

WorldFip (C.Dehavay)

- C.Dehavay informed that the problems encountered for arc 45 have been solved together with Simon Brown.
- The installation and tests of WorldFip in sector 34 should start next week and be ready for the 60 A orbit corrector tests.

Open Issues

Current Leads

- 15.01.07 Current Lead heater functional tests LSS5L (P.Chambouvet)
- 15.01.07 CL Insulation Vacuum DFBAI, DFBL, DFBXE in LSS5L (P.Chambouvet)

QPS

- 31.01.07 LSS5L DFBAI, DFBL, DFBXE continuity/assignment cables and HVT - non-conformities to be repaired by J.Mourao and TS/EL(R.Denz)
- 31.01.07 LSS4R DFBAH, DFBMK/L/G continuity/assignment cables and HVT - non-conformities to be repaired by J.Mourao and TS/EL(R.Denz)

Cryo-Instrumentation

- 09.03.07 Radio Frequency: heater connections and 8 capillaries for pressures sensors
- 16.02.07 Manipulation of cryo valves (A.Suraci)
- 16.02.07 Connection of the temperature sensors and control cables (A.Suraci)

Beam Instrumentation

- 09.03.07 Water leaks at the level of the BCTs to be repaired (J-J.Gras)

ELQA

- 16.03.07 ELQA-TP3 in LSS4R (D.Bozzini/V.Chareyre)
- 22.02.07 Non-conformity (EDMS 816458) at the level of the cable trays installed above the DFBXE (D.Bozzini)

Energy Extraction

- 16.03.07 Verification of the connection of the 13kA EE-quench detectors arc (K.Dahlerup-Petersen)
- 16.03.07 Renco intervention on the 13kA EE System LSS5R (K.Dahlerup-Petersen)
- 16.03.07 Cable inversion at the fans of the 13kA EE System LSS5R/LSS4L (K.Dahlerup-

Petersen)

16.03.07 Arc detectors for 13kA EE System LSS4L/LSS5R (K.Dahlerup-Petersen)

Power Converters

20.03.07 Problem with 50kHz/26V RPLA34L5.RCBH33 (H.Thiesen)

16.03.07 60 A Orbit Correctors - 24h Heat Run - wk12 (M.Solfaroli)

09.03.07 60 A Orbit Correctors - polarity tests - wk11 (M.Solfaroli)

09.03.07 60 A Orbit Correctors - grounding problem (J.Pierrelot)

15.02.07 Check of PC in UA47 because of water leakage (H.Thiesen)

AOB

16.03.07 120A mechanical connection DFBAH (P.Chambouvet/P.Denis)

23.01.07 Current lead cable non-conformities : 1515511 1515512 1515513 1515514
1515516 (L.Poyet + J.C.Guillaume)

Open Issues (followed by TS/IC)

29.01.07 Installation of UPS PIC boxes (E.Barbero)

22.01.07 Interconnections around DFBAI, Q6-DSL

16.02.07 Installation and activities on the DFBL - meeting in the field

AC non-conformity

13.11.06 Non-conformity of the crates of cryo instrumentation (inrush current)
(A.Suraci: ready next year)

DC cabling

19.03.07 Inversion of the cosses of RB circuit in UA43 (J-C.Guillaume)

16.03.07 Access & Safety cable (4 short cables + 1x3km cable) (S.Pelletier)

Cryogenics

16.03.07 Local leak and pressure tests on DFBAH (A.Bouillot)

09.03.07 Connection of the QUI (surface to QRL) wk 11 & wk12 (A.Bouillot)

16.02.07 Pulling profibus cables in UA47 and USC55

Warm Vacuum - NEG Activation

16.03.07 NEG Activation in A7R4 (DFBAH) w13 or wk14

05.02.07 NEG Activation in A6L5 in LSS5L (to be finished week 17th)

Other issues

16.03.07 Installation of the RF Power Converter Transformers (P.Maesen)

16.03.07 WorldFip installation in sector 34 (wk12) (C.Dehavay)

09.03.07 BPM Schottky electronics installation (wk19)

- 16.03.07 DFBLD mechanical works LSS5L (wk15)
- 09.02.07 wk12-13 fiber installation campaign for the experiments in LSS5L
- 09.02.07 Cooling & Ventilation annual maintenance P4 (F.Moro)
- 09.02.07 Non-conformity for damaged BPM.22R4 Sector 45 (J-J.Gras)
- 12.02.07 Activity on the water pressure valves for the ACNs

Closed Issues

P.Denis check of the 6kA and 13kA cable presentation in LSS4R	12.02.07
Pre-mounting 600-120A in DFBAI LSS5L (TS/EL)	09.02.07
Pre-mounting 120A in DFBMk/L/G LSS4R (TS/EL)	06.02.07
Polarity Tests of the 120 A in DFBAH, DFBMK, DFBLM and DFBMG in LSS4R (TS/EL)	29.01.07
Pre-mounting 600-120A in DFBAH (TS/EL)	26.01.07
120A mechanical connection DFBAH, DFBMK/L/G (P.Chambouvet/P.Denis)	09.03.07
CL Insulation Vacuum DFBAH, DFBLM/K/G in LSS4R (P.Chambouvet)	09.03.07
Current Lead heater functional tests LSS4R (P.Chambouvet)	09.03.07

Closed Issues (followed by TS/IC)

Cryo instrumentation racks installation in Arc 45 (A.Suraci)	16.03.07
Correction of two water-cooled cables on the DFBAI - Flohe (LSS5L)	16.03.07
Non-conformity of the AC cabling of the crates under the magnets. This concerns ACR, MEL & VAC.	16.03.07
Interconnections around Q5-DSL, Q4-DSL	16.03.07
WorldFip in UA47 and in Arc 45 (C.Dehavay)	06.02.07
Local leak and pressure tests on DFBLM, DFBMK (A.Bouillot)	16.03.07
Local leak and pressure tests on DFBMG (A.Bouillot)	09.03.07
Water-cooled power cable joints replacement by Renco in UA43 and UA47	09.03.07
Interconnection and WRL connection DFBMK/L/G (LSS4R)	16.02.07
Interconnections around Q6-DSL (LSS5L)	26.01.07
Cabling 600A and 120A in DFBAI, 120A in DFBL in LSS5L(INEO)	09.02.07
13-6kA cabling at the DFBLM in LSS4R (Flohe)	06.02.07
Cabling 13-6kA in DFBAI and DFBLX in LSS5L(Flohe)	19.01.07
Cabling Q6, Q7, Q8, Q9 and Q10 in LSS5L (INEO)	26.01.07

Cabling of the 600-120A in DFBAH, 120A in DFBMK, DFAML and DFBMG, Q6, Q7, Q8, Q9 and Q10 in LSS4R (INEO)	26.01.07
Installation of two power outlet (required by worldfip) in the arc 45	09.03.07
Interconnection and WRL connection DFBAH (LSS4R)	09.03.07
WorldFip Tests in Arc 45 (week 08) (J.Thomsen)	09.03.07
Cabling 13-6kA in DFBAH, DFBMK\G in LSS4R(Flohe)	09.03.07
NEG activation in E5R4 and D5R4 in LSS4R	09.03.07

Milestones: Test Schedule

FORESEEN DATE (provided by TS/IC)	TASK
Wk 10-11	AB/PO short Circuit tests
Wk 18	Interconnections+Vacuum
Wk 16-17	ELQA-TP4A
Wk 13	Interconnection Inner Triplet
Wk 19	Interconnection DFBL
Wk 20-21	Pressure Test + Consolidation
Wk 25	Cool Down Sector 45
Wk 34	Powering Tests

E.Barbero/M.Solfaroli/B.Perea