

Present: AB/PO: H.Thiesen.
AB/CO: P.Dahlen, R.Schmidt.
AT/ACR: S.Junker, E.Millet, A.Suraci.
AT/MCS: D.Tommasini, R.Lopez, A.Poncet.
AT/MEL: D.Bozzini, P.Chambouvet, V.Chareyre, R.Denz.
TS/HDO: M.Coccoli, J.Etheridge, S.Fratianni, M.Solfaroli,
M.Laureure, B.Perea, M.Pojer, R.Saban.
TS/IC: E.Barbero.

Preparation of the Cool-Down in Sector 78, 81 and 45.

Sector 78

Flushing (F.Millet):

- The flushing is progressing well. The filter which was recovered yesterday at 10 am still showed kapton pieces, tissue, etc. The second half of the sector is being flushed today (not continuous magnets) and the conditions for the ELQA tests will be set by tomorrow afternoon.
- The DFB lines have not been flushed individually yet. S.Funken informed that it will have to be done manually, since the dispositive that was initially foreseen could not finally be implemented.
- The helium flow rate and the Δp has been measured during the flushing and is coherent.

Vacuum & Cryo (A.Suraci):

- P.Gomes finished yesterday the tests regarding the VAC & CRYO interlocks. The results have been reported to W.Maan and I.Laugie,r who will finish their analysis. The simulation of a vacuum loss, which had been requested last Monday by F.Millet could be performed tomorrow morning.

Non-conformities in cabling (J.C.Guillaume):

- The 2 cables for cryo-instrumentation controlling the temperature of the HTS will be pulled today and connected tomorrow. However, cables withstanding 600 V are already available and could be used to perform the tests if needed.
- P.Chambouvet informed that there are still non-conformities in the DFBXG current lead temperature sensor cables.
- J-C.Guillaume will not be able to correct QPS non-conformities regarding a few cables with housing with 2 *leviers*. R.Denz thinks that

the cable will keep in place with the present connector, and therefore this is not critical for the cool-down. However the connectors should be replaced before the powering tests.

QPS (R.Denz):

- D.Tommasini and R.Lopez will repair the QPS cable by this evening, using one *ruban haute tension* ensuring appropriate performance and mechanical stability of the cable.

ELQA (D.Bozzini):

- EIQA-DOC on 60 A has been performed from cell C30L8 to C28R7. A non-conformity has been found on circuit RCBH32.R7B2.
- D.Bozzini has requested that the labelling of the current leads is not changed and that the non-conformities should be implemented in the as-built machine database, where the assignment of the circuit to the current lead is done. A meeting between I.Moya, A.Vergara, B.Bellesia, D.Bozzini and V.Chareyre will be held tomorrow morning to sort out this issue.
- ELQA on 120 A has been carried out in 7L8, where a non-conformity has been found on circuit RCBCH7.L8B1 and in 8L8.

AOB:

- **Holes in IFS Boxes:** D.Tommasini / R.Lopez confirmed that there is going to be a systematic check of the IFS boxes all along the arc, starting today. If the operation cannot be finished before the cool-down a window should be allocated before the powering tests.
- **Cryo valves:** A.Suraci informed that two cryo valves need to be fixed mechanically. This should be done today.

Sector 81

Warm Magnets (M.Coccoli):

- There has been a delay in the start of the tests due to water leaks since the o-rings were missing. Everything should be ready by 10 am this morning, and the Visual inspection and ELQA tests should start then. The injection line warm magnets program is going to be discussed today within the responsables.

Open Issues

AC non-conformity

- 13.11.06 Non-conformity of the crates of cryo instrumentation (inrush current) (A.Suraci: ready next year)
- 13.11.06 Non-conformity of the AC cabling of the crates under the magnets. This concerns ACR, MEL & VAC.

DC cabling

- 10.01.07 Connection of the NC Magnets in P8 (J-C.Guillaume)
- 30.11.06 Non conformity temperature sensor cables need repair LSS7R (D.Bozzini, A.Suraci)
- 22.11.06 Pre-connection of 120A cables in LSS7 (TS/EL) - PC Non conformities (H.Thiesen)

Instrumentation Cabling

- 10.01.07 Continuity error with cable 1813004A and a wrong housing of 1702440 which should be replaced (D.Bozzini)
- 10.01.07 Cryo-instrumentation cables: 2 LSS8L + 1 LSS7R to be pulled (A.Suraci-J-C.Guillaume)
- 08.01.07 QPS - 2 cables need repair (R.Denz-D.Tommasini)
- 15.12.06 DFBXG non-conformity on the current lead heater cables 1821322 and 1821323 (P.Chambouvet-J-C.Guillaume)

Cryogenics

- 22.11.06 Instrumentation and remote control not fully stable (P.Gayet - F.Millet)

DFB Commissioning

- 29.11.06 DFBX Pumping of Current Leads insulation vacuum (S.Feher)

Safety

General remark: written communication in advance to announce operations!!!

- 23.11.06 Water leak on the tunnel concrete wall to be fixed (C33L8).

Preparation of powering test

- 30.11.06 EI_QA performed on C16L8. ICC test showed reversed sequence of V-taps on circuit RCBV16.L8B1 (D.Bozzini)

AOB

- 08.01.07 Re-installation of 3 BLMs interfering with pumping groups (B.Dehning)
- 13.11.06 BPM connection in Q2 (R.Jones) - waiting for Inner Triplet to be repaired

Closed Issues

Bad positioning of the 13 kA power cable <i>coses</i> corrected (J-C.Guillaume-P.Denis)	11.01.07
Cryo-instrumentation cables at DFBX inversion sorted out (A.Suraci)	10.01.07
Calibration of the Arc Detectors on the 13 kA EE System (K.Dahlerup-Petersen)	19.12.06
Short-to-ground in QBBI.A21R7 (Lyra side) (D.Bozzini, F.Seyvet)	19.12.06
BPM connection in Q3, Q4, Q5, Q6, Q7 (R.Jones)	15.12.06
DFBAO Functional test on the leads heaters	15.12.06

DFBXG 100V test on current leads (S.Feher)	15.12.06
Repositioning of 1 DC cable on DFBAO and of 2 DV cables on DFBAN (all 13kA) (J.C.Guillaume)	14.12.06
Wooden structure for UA access restriction (that will allow transport)	12.12.06
Non conformity in DFBMH, DFBAN and DFBXG current lead heaters (P.Chambouvet-J-C.Guillaume)	12.12.06
Galvanic insulation installation on all DFBs (AT/MEL)	08.12.06
Re-positioning collars used to fix the WRL to the CLs (all DFBs) (A.Perin-D.Bozzini-F.Millet)	08.12.06
6 kA and 13 kA cables positioning at DFBAO, DFBMA, DFBMC (Flohe)	08.12.06
Functional test on the leads heaters: DFBMA, DFBMC	08.12.06
EIQA-TP4B safety procedure (1900 volts tests!).	07.12.06
Cool down safety procedure & access conditions	07.12.06
Instrumentation cable HV tests in LSS8L (A.Suraci: 4 cables to be tested)	06.12.06
Non-conformity on instrumentation cables (temperature sensors on current leads) (A.Suraci: 3 cables are in repair-Wed.29th)	06.12.06
Quench protection continuity tests and cables assignment LLS7R (DFBMH, DFBAN) and LSS8L (DFBMC, DFBMA and DFBX)	06.12.06
DFBAN cable positioning (J.C.Guillaume)	06.12.06
Access & Safety Cable Installation (full sector) (J.C.Guillaume)	06.12.06
EIQA-TP4-A for all DFBs sector78	04.12.06
Water circulating in UA83 for the Powering Procedure Test: filters checked, installation of flexible cables by CV.	04.12.06
LHCb ODH System ready	04.12.06
Definition of owner of activity and pumping needs for current leads insulation vacuum (DFBX) (S.Feher, R.J.Rabehl)	04.12.06
DFB instrumentation cables to be connected (A.Suraci)	04.12.06
Functional test on the leads heaters DFBMA	04.12.06
Functional test on the leads heaters DFBMC	04.12.06
Non-conformity of the DC cabling of the orbit corrector power converters	04.12.06
Pretest of 60A converters in sector 78, location C16L8.	30.11.06
EIQA-TP4-A on DFBAN, DFBMH, DFBAO LC module	29.11.06
Pumping of insulation vacuum for all DFBs between 7 and 8 (except DFBX)	29.11.06
Functional test on the leads heaters DFBMH	29.11.06
Functional test on the leads heaters DFBAN	28.11.06

Pumping of current lead insulation vacuum DFBAN	25.11.06
120A and 600A positioning on DFBAN and DFBMH (INEO)	25.11.06
Missing labels on DFBAO instrumentation cables	24.11.06
Adjustment of cable length on DFBAO	24.11.06
Prototype of galvanic insulation to be tested at Point 6	23.11.06
Definition of Safety procedure for Powering Procedure Test (aka Dry Runs)	23.11.06
Leaks on DFBAO gas recovery line in repair/installation of helicoflex	22.11.06
21 leak detectors to be placed all along the arc 78	22.11.06
Connections (made by TS/MME) of 120 A cables to be verified (TS/EL)	22.11.06
600 A cable positioning on DFBAO	22.11.06
Pumping of current lead insulation vacuum DFBMH	21.11.06
Pressurized air supply to valve on WRL	21.11.06
Support on DFBAO WRL	21.11.06
Bellows in Q6-Q7 LSS8L which had been damaged, is now repaired	20.11.06
Valve on the WRL is operational	20.11.06
Leak in arc Q11-8L	20.11.06
Cryogenic valve manipulation on DFBX	20.11.06
Removal of some BLMs in conflict with the pumping groups	17.11.06
120 A Cables connection in DFBAO, DFBMC, DFBMA and DFBX LSS8L	17.11.06
DS7R and DS8L leak test finished	17.11.06
Leak in R7 repaired	17.11.06
Q6-Q7 bake-out completed	17.11.06
Current lead vacuum: man power and pumping groups availability	15.11.06
Hydraulic connection of the current leads	15.11.06
DFBX AT/MEL Transformers installation	14.11.06
WRL connection DFBMH LSS7R	14.11.06
ELQA-TP3 test of the sector 78	14.11.06
Polarity tests of the 600A and 120A cables for DFBAN and DFBMH (LSS7R)	14.11.06
QUI available	10.11.06
Pressure tests of QUI and DFBS safety valves finished	10.11.06
QRL valves available for all sector	09.11.06
QRL valve opening/cabbling verification	13.11.06
Interconnections DFBAO, DFBMA and DFBMC.	13.11.06

WRL connection at DFBMC, DFBMA and DFBX	13.11.06
120A cables positioning at DFBAO, DFBMA and DFBMC	13.11.06
Q6-Q11L8 leak test envelope	13.11.06
Interconnections of DFBAN and DFBMH	13.11.06

Milestones: Test Schedule

Week 45	Interconnections
End week 46 [18.11.06]	Leak Test
End week 47 [24.11.06]	Pressure Test
Week 47-48	EE sensor tests in RR77
Week 48 & 49	Purge and filling
Week 49	Dry Run
Week 49	Short Circuit tests of 60 A
Week 49 [07.12.06]	Diesel Tests
Week 49	ELQA-TP4B (Phase I)
Week 50	Flushing
Week 50 [15.12.06]	ELQA-TP4B (Phase II)
Week 02 [12.01.07]	ELQA-TP4B (Phase III)
Week 03	Cool Down Sector 78



Next RAT meeting

Friday, January 12th 8:30 @ P8 2889-R-009

Blanca Perea