

Preparation of Cool-Down in Sector 78 RAT Réunion Avancement Travaux

HARDWARE COMMISSIONING COORDINATION - WEEK 50

18 December 2006 8:30 2889-R-009

Present: D.Bozzini, P.Chambouvet, B.Dehning, S.Feher, R.Lauckner, K.H.Meß, F.Millet, B.Perea Solano, A.Poncet, R.Saban, D.Tommasini, M.Zerlauth.

Preparation of the Cool-Down in Sector 78

Dipole 3014 with the short to ground in the dipole lyra

The program of the day consists in:

- Reflectrometry tests to qualify the diagnostic for this specific defect on the lyra.
- Try on the mock-up in building 30 the repair to be done. Such repair will consist in: 1. position busbar away from the metallic point by making the interconnection shorter; 2. place a protective insulation sleeve around the lyra.
- Close the interconnection (braze, re-weld and leak test with the clam shells) in the afternoon.
- Then the cryo team would pump down during the night and re-fill the circuits tomorrow morning. No pressure tests need to be re-done at this stage since A.Poncet is going to as for a *derogation* from SC.
- VAC should pump the insulation vacuum during the night. P.Cruikshank will be contacted for that.

The **objective for tomorrow** is to start the EIQA in the morning after the cold mass is pressurized to 6 bar. It was finally decided that the hi-pot test will not exceed 600 V.

QRL78 Flushing:

- Fabien must inform the cryo operators that the lines are closed this afternoon/evening so that the pumping can start.
- Lines E and F could be also flushed, depending on the degree of dirtiness found today in the filters.
- A final flushing would be done tomorrow in lines C and D.
- Wednesday afternoon the flushing inside the cold mass could start.

Orbit corrector EIQA:

- Will restart today

Partial Powering Tests:

- The EIQA tests can be performed tomorrow in coordination with D.Bozzini, who should be testing the main circuits in the morning. Therefore a first slot for the partial powering tests could be envisaged tomorrow afternoon.
- The banners and flushing lights needed for these tests have been requested to Jean-Pierre Malod-Dognin.

Current leads heater functional tests:

- P.Chambouvet informed that the non-conformities found for DFBXG cables are still not solved.

BLM:

- B.Dehning will work today in Q4, Q5 and Q6.

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

- 12.12.06 Short-to-ground in QBBI.A21R7 (Lyra side) (D.Bozzini, F.Seyvet)
- 30.11.06 Non conformity temperature sensor cables need repair LSS7R (D.Bozzini, A.Suraci)
- 22.11.06 Pre-connection of 120A cables in LSSR7 (TS/EL) - PC Non conformities (H.Thiesen)

Instrumentation Cabling

- 15.12.06 DFBXG non-conformity on the current lead heater cables (P.Chambouvet-J-C.Guillaume)

Vacuum

- 12.12.06 One Pressure Gauge in DFBs cannot be read (F.Millet)

Cryogenics

- 22.11.06 Cryo-valves remote control in CCC by AB/CO (F.Millet)
- 22.11.06 Control of quench valve (F.Millet)

DFB Commissioning

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

13 kA EE Systems

- 16.12.06 Calibration of the Arc Detectors on the 13 kA EE System (K.Dahlerup-

Petersen)

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

13.11.06 BPM connection in Q2, Q3, Q4, Q5, Q6, Q7-wk50 (J-C.Guillaume & R.Jones)

Closed Issues

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
EIQ-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/cablig 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	Cool Down Sector 78



Next RAT meeting
Tuesday, December 19th 8:30 @ P8 2889-R-009

B.Perea Solano