

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

HARDWARE COMMISSIONING COORDINATION - WEEK 50

15 December 2006 8:30 2889-R-009

Present: J.Blanco, D.Bozzini, E.Carlier, V.Chareyre, P.Chambouvet, K.Dahlerup-Petersen, B.Dehning, R.Denz, L.Ducimetiere, R.Lauckner, K.H.Meß, F.Millet, D.Nisbet, B.Perea Solano, A.Poncet, R.Rabehl, I.Romera, S.Russenschuck, R.Saban, R.Schmidt, H.Thiesen, D.Tommasini, M.Zerlauth.

Preparation of the Cool-Down in Sector 78

Dipole 3014 with the suspected short to ground in the dipole lyra

Report of the investigations : the reflectometry measurements were not conclusive. For better accuracy they require that the dipole bus bars are disconnected in the interconnect.

The program of the day consists in cutting the M3 tube close to the fond bombé to allow easier access to the where the lyra touches the corrector supports. An insulator will be inserted at the point of contact to validate the location of the short. For this Davide Bozzini will intervene as soon as the insulation operation is terminated, probably at the end of this morning. Considering the presence of helium and air in some of the parts of the magnet chain, after the first measurements at low voltage, the circuit will be hi-potted at 500 V.

QRL78 Flushing (lines E/F/D concerned) will still be carried-out every night and during the week-end. It will start today after D.Tommasini or D.Bozzini informs the Cryo Control Room in Point 8 that they have finished their intervention/test.

Access to the sector is allowed during the flushing: the open interconnect will be marked with a sign indicating who should be contacted to interrupt the flushing when work resumes there on Monday.

After the flushing of the QRL headers during 20h, pieces of kapton, plastic, wood, metal were collected in the filter. It is suspected that this results from depressurisation following the pressure tests at 25 bar rather than from the partial flushing that had been performed. It nevertheless indicates that flushing of all the cells should be planned before cool-down because there are still debris which could hinder operation of the cryogenic system.

Partial Powering Tests:

- A request has been done to perform a partial powering test in the DFBAO to test the interlock circuits next Tuesday 19th Dec. Such test would concern 6 kA, 600 A and 120 A circuits.

- R.Saban insisted that special care must be paid to the currents applied to the circuits and should always remain below the maximum currents that the short circuit can withstand.
- It was also pointed out that the current leads should be grounded during this test.

13 kA EE arc detectors:

- K.Dahlerup-Petersen informed that arc detectors in their 600A EE system would be calibrated during this weekend in RR77.

DFBXG coating and CL heater tests:

- R.Rabehl informed that the coating of the current leads was done yesterday. P.Chambouvet could not perform the functional tests of the current lead heaters due to non-conformities found in cables concerning all the current leads.

MKI LSS8R:

- The injection system kickers in LSS8R would like to start performing the High Voltage Tests next week instead of next year. Co-activities are to be checked with installation, but since vacuum activities close to the MKIs are postponed this should be ok.

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

- 15.12.06 DFBXG non-conformity on the current lead heater cables (P.Chambouvet)
- 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)
- 25.11.06 Functional test on the leads heaters: DFBAO, DFBXG (P.Chambouvet)
- 22.11.06 Pre-connection of 120A cables in LSSR7 (TS/EL) - PC Non conformities (H.Thiesen)

Instrumentation Cabling

- 15.12.06 Non-conformity of the instrumentation cables for the current lead heaters was detected and JCGuillaume was informed (P.Chambouvet)

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 Pumping of Current Leads insulation vacuum for DFBX (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

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

Closed Issues

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/cabling 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 51

Cool Down Sector 78



Next RAT meeting

Monday, December 18th 8:30 @ P8 2889-R-009

B.Perea Solano