

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

HARDWARE COMMISSIONING COORDINATION - WEEK 48

28 November 2006 8:30 2889-R-009

Present: D.Bozzini, P.Chambouvet, M.Coccoli, R.Lauckner, F.Millet,  
B.Perea Solano, R.Schmidt.

### **Preparation of the Cool-Down in Sector 78**

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AC cabling: -

Instrumentation cabling:

- D.Bozzini clarified that the Quench Protection continuity test is between the DFBs and the Quench Protection racks.

Vacuum:

- R.Schmidt debriefed about the meeting held yesterday 27<sup>th</sup> Nov that was about the outcome of the pressure test (this was confirmed by F.Millet):
  - The arc performed well and need minor works;
  - One leak was found in the Inner triplet chain; this leak is being investigated; the CoolDown will not include the inner triplet magnets and the DFBX.

Cryogenics: -

DFB Commissioning:

- P.Chambouvet requires a clarification about the current leads pumping needs on DFBXs.
- P.Chambouvet confirmed that the current lead heater tests started yesterday in LSS7R (DFBAN) and they should move to LSS8L by the middle of this week.
- He also informed that the current lead insulation vacuum in LSS8L started at the DFBMA/C.

Safety: -

Preparation of Powering Procedure Test (previously called Dry Run): -

ELQA:

- D.Bozzini informed that the EIQA-TP4-A has been completed on DFBAO low current module. Also, all the transfer function measurements have been completed in DFBAO, and are going to be performed on DFBAN. The DFBMs will be finished by the end of week 48.

- Davide wants to measure the resistance of the circuits during the cool-down. They have software and hardware ready to test a few circuits at the DFBAO. He requests if there is WiFi at that level.
- The work planned from ELQA on the DFBX is delayed due to the leak search at the inner triplet.
- EIQA-TP4B was scheduled to be performed at the end of week 50 between Friday and Sunday, however, D.Bozzini stresses the point that he has no manpower to work during weekends. This point will be discussed between L.Serio and D.Bozzini to find a solution and to integrate it in the planning.
- The access conditions during ELQA-TP4B should be clarified in the Test Procedure that Davide is preparing. In principle, with protection of the concerned DFBS, the access to the arc should be allowed.

AOB:

- Tomorrow and EEWG (Electrical Engineering Working Group) is taking place and K.H.Mess will talk about the EIQA. From the HC team at least A.Vergara should attend this presentation.

## Open Issues

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### AC non-conformity

- 21.11.06 Non-conformity on instrumentation cables (temperature sensors on current leads) (A.Suraci: 4 cables are in repair-Wed.29th)
- 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, orbit corrector power converters & VAC.

### DC cabling

- 25.11.06 Functional test on the leads heaters: DFBAO, DFBMA, DFBMC, DFBXG, DFBMH
- 22.11.06 Pre-connection of 120A cables in LSSR7 (TS/EL)
- 20.11.06 Galvanic insulation installation on all DFBS (AT/MEL)
- 13.11.06 Non-conformity of the DC cabling of the orbit corrector power converters
- 13.11.06 6 kA and 13 kA cables positioning at DFBAO, DFBMA, DFBMC, DFBAN (Flohe)

### Assembly

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### Vacuum

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### Cryogenics

- 22.11.06 Cryo-valves remote control in CCC by AB/CO
- 22.11.06 Control of quench valve

- 20.11.06 DFB instrumentation cables to be connected (A.Suraci: 80% done)
- 17.11.06 Instrumentation cable HV tests in LSS8L (A.Suraci: 4 cables to be tested)

#### DFB Commissioning

- 13.11.06 EIQA-TP4-A for all DFBs between 7 and 8 (D.Bozzini: (done: DFBAO; next(w48): DFBAN, DFBMA, DFBMC, DFBMH, DFBX))
- 17.11.06 Pumping of insulation vacuum for all DFBs between 7 and 8 (P.Chambouvet: DFBAN done; next: DFBMA, DFBMC, DFBX)

#### Safety

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

- 25.11.06 EIQA-TP4B safety procedure (1900 volts tests!).
- 23.11.06 Wooden structure for UA access restriction (that will allow transport).
- 23.11.06 Preparation of a prototype insulating protection (derived from a plastic tube) of the monorail by J-C.Guillaume and approval by J.Etheridge.
- 23.11.06 Water leak on the tunnel concrete wall to be fixed (33L8).
- 16.11.06 Cool down safety procedure & access conditions

#### Preparation of powering test

- 22.11.06 Pretest of 60A converters in sector 78, location C16L8. (B.Bellesia: stopped due to LQA hardware problems; expected end by Tuesday 28 Nov)
- 22.11.06 Installation of flexible cables by CV (UA83)
- 16.11.06 Water circulating in UA83 for the Powering Procedure Test: filters need to be checked.

#### AOB

- 13.11.06 BPM connection in Q2, Q3, Q4, Q5, Q6, Q7-wk49 (J-C.Guillaume & R.Jones)
- 13.11.06 Quench protection continuity tests and cables assignment LLS7R (DFBMH, DFBAN) and LSS8L (DFBMC, DFBMA and DFBX)

#### **Closed Issues**

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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**

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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	Diesel Tests
Week 50	Flushing
Week 50 [15.12.06]	Giga PAQ
Week 51	Cool Down Sector 78



**Next RAT meeting**

**Wednesday, November 29th 8:30 @ P8 2889-R-009**

Mirco Coccoli