**RAT in Point 8** Réunion Avancement Travaux

HARDWARE COMMISSIONING COORDINATION - WEEK 3

17th January 08:30 2889-R-009

**Present:**
AT/ACR: A.Suraci.
AT/MCS: A.Poncet.
AT/MEL: D.Bozzini.
AT/VAC: W.Maen.
TS/IC: E.Barbero.

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

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**Sector 78**

Cool-Down:

- D.Bozzini reported that the leakage current monitoring was not presenting any problem (last update was at 7pm of yesterday 16th Jan).
- R.Saban was in the control room before the meeting and he reported that the flowrate was increased to the value of 400 g/s from the 200 g/s of yesterday.
- There is noise in the reading of some temperature sensors: the origin is being investigated (A.Suraci).
- The Vacuum system is performing well and there is nothing special to be reported so far (W.Mann).

**Sector 81- Sector 45**

DC cabling of DFBs:

- The polarity check of the 120A cables will be carried out this week in sector 81 and next week in sector 45 (A.Vergara).

Warm Magnets (M.Coccoli):

- All the warm magnets in LSS8 have been grounded; therefore M.Coccoli will investigate the possibility to perform the WELQA tests starting from tomorrow 18th Jan afternoon from 5pm. The planning can be found attached to this document.
- The area of the Transfer Line magnets needs to be cleaned. The cleaning will be repeated upon conclusion of the interconnection works.
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

22.11.06  Pre-connection of 120A cables in LSSR7 (TS/EL) - PC Non conformities (H.Thiesen)

Instrumentation Cabling

12.01.07  Cryo-instrumentation cables: 2 LSS8L connectors (A.Suraci-J-C.Guillaume)

10.01.07  Continuity error with cable 1813004A and a wrong housing of 1702440 which should be replaced (D.Bozzini)

Cryogenics

16.01.07  Vac-Cryo Interlock tests - window of 1 day needed (P.Cruikshank-F.Millet)

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

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  El_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

Mobile camera installed, tested, fully operational (K.Kershaw) 16.01.07

DFBXG Temperature sensors repaired (R.Rabehl) 16.01.07

Warm magnet transport stuck in the arc 78. 15.01.07

Connection of the NC Magnets in LSS8R (J-C.Guillaume) 15.01.07

DFBX Pumping of Current Leads insulation vacuum (S.Feher, P.Chambouvet) 15.01.07

QPS - 2 cables need repair (R.Denz-D.Tommasini) 12.01.07

DFBXG non-conformity on the current lead heater cables 1821322 and 1821323 (P.Chambouvet-J-C.Guillaume) 12.01.07
Cryo-instrumentation cables: 2 LSS8L + 1 LSS7R to be pulled (A.Suraci-J-C.Guillaume) 15.01.07
Bad positioning of the 13 kA power cable cosse 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
ElQA-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
ElQA-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 (DFB) (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
ELQA-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**

<table>
<thead>
<tr>
<th>Week 45</th>
<th>Interconnections</th>
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<tbody>
<tr>
<td>End week 46 [18.11.06]</td>
<td>Leak Test</td>
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<td>End week 47 [24.11.06]</td>
<td>Pressure Test</td>
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<td>Week 47-48</td>
<td>EE sensor tests in RR77</td>
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<td>Week 48 &amp; 49</td>
<td>Purge and filling</td>
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<td>Week 49</td>
<td>Dry Run</td>
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<td>Week 49</td>
<td>Short Circuit tests of 60 A</td>
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<td>Week 49 [07.12.06]</td>
<td>Diesel Tests</td>
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<td>Week 49</td>
<td>ELQA-TP4B (Phase I)</td>
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<td>Week 50</td>
<td>Flushing</td>
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<td>Week 50 [15.12.06]</td>
<td>ELQA-TP4B (Phase II)</td>
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<td>Week 02 [15.01.07]</td>
<td>ELQA-TP4B (Phase III)</td>
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<td>Week 03</td>
<td>Cool Down Sector 78</td>
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**Next RAT meeting**

*Friday, January 19th 8:30 @ P8 2889-R-009*

Matteo Solfaroli - Mirco Coccoli
### PLANNING of the Warm Magnets Commissioning in Point 8

<table>
<thead>
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<th>MTF</th>
<th>Week 2 (Jan)</th>
<th>Week 3 (Jan)</th>
<th>Week 4 (Jan)</th>
<th>Week 5 (J/F)</th>
<th>Week 6 (Feb)</th>
<th>Week 7 (Feb)</th>
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<tbody>
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<td>Setup PC Comp+Sept</td>
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<td>Setup PC TL (COD)</td>
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- **MTF:** 89 1 0 1 1 2 1 5 1 6 1 7 1 8 1 9 2 2 2 3 2 4 2 5 2 6 2 9 3 0 3 1
- **Weeks:** 10 WElQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib

- **Planning Status:**
  - ■ = planned
  - ■■ = completed

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**Notes:**

- Week 2 (Jan): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib
- Week 3 (Jan): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib
- Week 4 (Jan): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib
- Week 5 (J/F): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib
- Week 6 (Feb): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib
- Week 7 (Feb): 10 WEIQA Comp+Sept, 10 WIC Comp+Sept, n/a TL grounding, 10 WEIQA TL, 10 WIC TL, n/a AC cabling LHC (Comp), 15 WIC PC Comp+Sept, 15 WIC PC TL, 10 Setup PC Comp+Sept, n/a Abort Comp PC Test, 10 Setup PC TL (Main), 10 Setup PC TL (COD), n/a CCC Comm, 20 Polarity checks, 30 8h run, 40 24h run, n/a Perf Test + DCCT Calib

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**Abbreviations:**

- AB/CO-Com
- AB/CO-IC
- AB/OP
- AT/MEL
- TS/EL
- TS/HDO