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

HARDWARE COMMISSIONING COORDINATION - WEEK 48

1 December 2006 8:30 2889-R-009

Present: B. Bellesia, P.Chambouvet, V.Chareyre, M.Coccoli, J.C.Guillaume, F.Millet, B.Perea Solano, R.Schmidt.

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

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**ATTENTION:** Next Monday 4th Dec.:

- Cable positioning (access system cable; posed starting from LSS8L toward pt7);
- 60A SCT (cells concerned: C12.L8-C24.L8).

AC cabling: -

DC cabling: -

Vacuum: -

Cryogenics: -

DFB Commissioning:

- J.C.Guillaume asks to allow the Flohe team to work from 7am to 5pm (presently limited by the 9am-4.30pm consignation of the monorail power line).
- P.Chambouvet informed that the DFBAO insulation vacuum pumping will be ready by Thursday 7th Dec.

Safety:

- M.Coccoli informed that yesterday, during his permanence in Pt7 and Pt8, various members of personnel (both from CERN and from contractors) were apparently not putting enough attention to the LHC equipment. Specifically, one team was repeatedly climbing magnets, one other team was investigating on DFBAO using the link line to step over the DFB right interconnection. The attendees of the RAT agree that the zones with fragile instrumentation should be properly labeled. Concerning the DFBs, it is unanimously suggested that additional supports are added to every DFB to facilitate a safe access.

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

- B. Bellesia informed that next Monday 4th Dec the 60A SCT will start according to the planning. For Monday the cells concerned are C12.L8

to C24.L8 corresponding to Q11-Q24. During these tests the zone concerned will be signalized with flashing lights.

- B.Dehning, A.Suraci, R.Denz should be kept informed of the progress of the 60A so that their activity can be properly planned and executed.
- R.Schmidt suggested performing an instrumentation interface box integrity check in one cell.

AOB:

- J.C.Guillaume informs of a cabling activity: 3km cable (needed required by the access system) to be posed with a special machine (its size is not clear yet and, then, the working restriction during its passage). This cable has three piece lengths of 1km each that will take about 1 day each to be posed. As the Flohe team will work using scaffolding, its activity should be planned according to the passage of the cabling machine.
- During the pose of the access system cable, an update on the daily working plan will be explained at the RAT meeting.

**Open Issues**

AC non-conformity

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| 21.11.06 | Non-conformity on instrumentation cables (temperature sensors on current leads) (A.Suraci: 3 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

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| 30.11.06 | Non conformity: 6 temperature sensor cables need repair (A. Suraci) |
| 25.11.06 | Functional test on the leads heaters: DFBAO, DFBMA, DFBMC, DFBXG |
| 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

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| 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

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| 29.11.06 | Definition of owner of activity and pumping needs for current leads insulation vacuum (DFBX) |
| 29.11.06 | Pumping of insulation vacuum for DFBX |
| 13.11.06 | ElQA-TP4-A for all DFBs between 7 and 8 (D.Bozzini: next(w48): DFBAO HC module, DFBMA, DFBMC, DFBX)) |

Safety

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

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| 25.11.06 | ElQA-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

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| 30.11.06 | El_QA performed on C16L8. ICC test showed reversed sequence of V-taps on circuit RCBV16.L8B1. To be discussed on next RAT. |
| 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

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| 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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| 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 |

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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 |

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| 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 |

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**Next RAT meeting**

**Monday, December 4th 8:30 @ P8 2889-R-009**

Mirco Coccoli