Preparation of the Cool-Down in Sector 78

AC cabling non-conformity:

- S.Brown reported the decision which was taken at the meeting yesterday on the strategy to be adopted to close the AC cabling non-conformities. For the orbit corrector power converters, new cables of a section of 2.5 mm$^2$ will be pulled during next week before the cool down starts. For the others (vacuum, quench protection, cryogenics) the junctions with the 1.5 or 2.5 mm$^2$ cable will be redone following the recommendations of SC. This will be carried-out sometime in January. The exact calendar has to be worked out with Katy. Also, the corrections of this non-conformity will be planned together with Katy or Esther.

Instrumentation cabling:

- A.Suraci needs scaffoldings. A sharing of the TS-HDO scaffolding between L.Prever-Loiri, I.Moya and A.Suraci has been arranged.
- JC.Guillaume confirmed that the non-conformities (cable lengths and shorts) will be resolved in time for the tests of A.Suraci next week.

Vacuum:

- Pressure test foreseen for Friday. The tunnel from RR73 to UJ87 will be not accessible from 13:00. The tests will start at 14:00.
- W.Maan informed that all the leaks that had been localized have now been repaired. An effort to localize the others is ongoing. The updated table showing the status of leak detection prepared by P.Cruikshank is given in the appendix.

Cryogenics: -

DFB Commissioning:

- P.Chambouvet informed that the pumping of the current lead insulation vacuum in DFBAN is ongoing today. There is a parallel activity carried out by I.Moya and S.Gillet on DFBAN; this activity is compatible with the insulation vacuum pumping.
Safety:
- B.Perea is preparing a planning with consignations and deconsignations of the monorail according to scheduled activities.
- B.Perea informed that today between 4pm and 5.30pm the zones Pt7 and Pt8 will be deconsigné.
- An alternative to consignation, which consists in a solid insulating protection of the “gaine” of the monorail, is being investigated.
- Works in UG76 not possible until the test of the quench line is not completed. (practically from the Cool-Down start on 18th Dec to week 4 of 2007).

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

AOB: -

Open Issues

AC non-conformity
- 21.11.06 Transport and installation of the heater system of the current leads for RR77 and UA83
- 21.11.06 Non-conformity on instrumentation cables (temperature sensors on current leads)
- 13.11.06 Non-conformity of the crates of cryo instrumentation (inrush current)
- 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
- 23.11.06 Cable temporary positioning on the transport side of the tunnel
- 23.11.06 Adjustment of cable length on DFBAO
- 22.11.06 Missing labels on DFBAO instrumentation cables
- 22.11.06 Pre-connection of 120A cables in LSSR7
- 20.11.06 Galvanic insulation installation of 600 A cables to the DFBAO
- 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 and DFBMC

Assembly

Vacuum

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
17.11.06  Instrumentation cable HV tests in LSS8L

DFB Commissioning
13.11.06  ElQA-TP4-A in the DFBAO, DFBAN, DFBAX
17.11.06  Pumping of insulation vacuum DFBAO, DFBAN, DFBMC, DFBMA, DFBXG

Safety
General remark: written communication in advance to announce operations!!!
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).
23.11.06  Planning of consignations/deconsignations
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.
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
13.11.06  Quench protection continuity tests and cables assignment LLS7R (DFBMH, DFBAO) and LSS8L (DFBMC, DFBMA and DFBX)

Closed Issues

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

★★★★

Next RAT meeting
Friday, November 24th 8:30 @ P8 2889-R-009

Mirco Coccoli

Appendix: Insulation Vacuum results

<table>
<thead>
<tr>
<th>No.</th>
<th>Vac SEC</th>
<th>Sub-sector</th>
<th>Wk xx</th>
<th>Vented</th>
<th>LC Intervention on-going</th>
<th>To do this week</th>
<th>Presently vented &amp; reopened</th>
<th>Comment</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>VACSEC.1L8</td>
<td>50</td>
<td>30</td>
<td>NC</td>
<td>2, 3 to repair</td>
<td>2.3 x 10^-4 to repair</td>
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<td>cold mass - localised to Q2/Q3</td>
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<tr>
<td>2</td>
<td>VACSEC.4L8</td>
<td>25</td>
<td>41</td>
<td>1</td>
<td>envelope - DFB chimney - use-as-is</td>
<td>1 x 10^-5 use-as-is, 1 x 10^-8 use-as-is</td>
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<td>envelope - DFB chimney - repaired - complete 7/11/06</td>
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<td>3</td>
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<td>12</td>
<td>42</td>
<td>1</td>
<td>envelope - DFB chimney - repaired - complete 7/11/06</td>
<td>2 x 10^-1 to repair</td>
<td></td>
<td>envelope - DFB chimney - repaired - complete 7/11/06</td>
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<tr>
<td>4</td>
<td>VACSEC.6L8</td>
<td>190</td>
<td>45</td>
<td>1</td>
<td>envelope - W - repaired</td>
<td>1 x 10^-5 use-as-is, 1 x 10^-8 use-as-is</td>
<td></td>
<td>envelope - W - repaired</td>
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<tr>
<td>5</td>
<td>VACSEC.11L8</td>
<td>214</td>
<td>45</td>
<td>NC</td>
<td>2, 3 to repair</td>
<td>1 x 10^-1 (repaired), 5 x 10^-4 to repair</td>
<td></td>
<td>cold mass - QBBI.B12L8, QBQI.12L8</td>
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<tr>
<td>6</td>
<td>VACSEC.15L8</td>
<td>214</td>
<td>31</td>
<td>2</td>
<td>ELQA on #2006 - reclosed - complete 7/11/06</td>
<td>1 x 10^-5 use-as-is, 1 x 10^-8 use-as-is</td>
<td></td>
<td>ELQA on #2006 - reclosed - complete 7/11/06</td>
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<tr>
<td>7</td>
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<td>38</td>
<td>1</td>
<td>cold mass - missing weld QBBI.B22L8</td>
<td>1 x 10^-7 disappeared?</td>
<td></td>
<td>cold mass - missing weld QBBI.B22L8</td>
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<tr>
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<td>42</td>
<td>1</td>
<td>cold mass - opened QBBI.A27L8 &amp; B27</td>
<td>1 x 10^-3 (repaired)</td>
<td></td>
<td>cold mass - opened QBBI.A27L8 &amp; B27</td>
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<td>1</td>
<td>cold mass - opened QQBI.29L8</td>
<td>1 x 10^-3 (repaired), 1 x 10^-7 disappeared?</td>
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<td>cold mass - QBBI.B32L8, QBQI.22L8</td>
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<td>11</td>
<td>VACSEC.31R7</td>
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<td>2</td>
<td>o-ring - repaired - opening error - completed 9/11/06</td>
<td>2 x 10^-1 to repair</td>
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<td>o-ring - repaired - opening error - completed 9/11/06</td>
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<tr>
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<td>43</td>
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<td>7/11/06</td>
<td></td>
<td>complete 7/11/06</td>
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<td>13</td>
<td>VACSEC.23R7</td>
<td>214</td>
<td>43</td>
<td>2</td>
<td>o-ring - repaired - opening error - completed 9/11/06</td>
<td>2 x 10^-1 to repair</td>
<td></td>
<td>o-ring - repaired - opening error - completed 9/11/06</td>
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<tr>
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<td>VACSEC.19R7</td>
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<tr>
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<td>1</td>
<td>cold mass - QBBI.A19R7-N bad weld - repaired - complete 8/11/06</td>
<td>1 x 10^-4 (repaired)</td>
<td></td>
<td>cold mass - QBBI.A19R7-N bad weld - repaired - complete 8/11/06</td>
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<tr>
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<td>VACSEC.11R7</td>
<td>214</td>
<td>44</td>
<td>valves ?</td>
<td>2, 3 to repair</td>
<td>1 x 10^-5 use-as-is, 5 x 10^-4 to repair</td>
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<td>valves ?</td>
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<td>NC</td>
<td>1, 2 to repair</td>
<td>5 x 10^-3 (repaired), 1 x 10^-3 to repair</td>
<td></td>
<td>cold mass - QBBI.9R7, QBQI.10R7, QBQI.9R7</td>
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<tr>
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<td>21/11/06</td>
<td></td>
<td>complete 7/11/06</td>
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Done