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## Archives
Activities in sector 45 from Monday 2nd July

- **CRYO**
  - Purging on Friday 29th evening and all the weekend long;
  - Refilling on Monday 2nd July;
- **ElQA-TP4B and Monitoring installation**
  - On Tuesday 3rd July, once 6Bar conditions are reached, ElQA will be repeated (only on RB) maybe from 8am to 1pm. RESTRICTED ACCESS.
- **CRYO-instrumentation**
  - Coherence test of all the valves in ARC and LSS (Thursday 28th and Friday 29th);
  - Commissioning;
  - Initialization of the CV910 valves on Tuesday 26th and Wednesday 27th;
- **TS/EL intervention**
  - Changing of the connectors of a BPM (LSS4R);
  - Connection check of the instrumentation cables of BCT;
- **TIM camera**
  - General check on Monday 2nd July;
  - Run from P4 to P5, during the Cryo Patrouille the morning of the start of the cool-down;
- **Safety Inspection**
  - Monday 2nd July at 2pm;
- **AT/ACR Patrouille**
  - A Patrouille will be carried out on Wednesday 4th July just before the cooldown.
- **AT/VAC**
  - Short access to LSS4R and LSS5L on Monday 2nd July.
- **AB/BI**
  - LSS4R short intervention on the BI (capeau).

Comments:

Edit, attach file or add comment

Created by Main.BorisBellesia on 2007-06-28 - 19:42

**Powering test**
### Priorities and Tests for next week categorized by subject

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<td>Davide</td>
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Edit, attach file or add comment

Test Report from Wednesday 27.06.2007

- RB.A78
  - PLI1.4 - FPA from PIC - Test OK
  - PLI1.5 - Quench heater discharge on A28.R7 - Test OK
  - The bus-bar detection threshold is increased from 1V to 2V in order to ease the ramp up
  - Circuit successfully ramped to 2000A!!
    - PLI2.1 - Current cycle - Test OK
    - PLI2.2 - Energy extraction discharge (quench to a current lead) - Test OK
    - PLI2.2b - SPA from PIC - Test OK
    - PLI2.3 - Quench heater discharge on LBBRA.13L8 (magnet 3002) and LBBRA.13R7 (actually we wanted to quench LBARA.13R7) - Test OK

- RQF.A78 and RQD.A78 ramped up together to 6500A. Quench on 15L8 - Test OK

- Simultaneous powering of RQF.A78, RQD.A78 and RB.A78 - Started @ 21:00 - Stopped @ 22:00 - Test OK

- 600A Correctors - 9 new circuits released by QPS (see pdf file attached)
  - PIC2 done on 9 circuits
  - PCS.2/3/4 on RQS.L8B1 and RCO.A78B1

- 60A Closed Orbit Correctors
  - P2N continued for 2 circuits

- Matching Section
  - Reproduction of the quench event of May 31st - Magnet did not quench.
  - Last commissioning step of RQ5.L8 via the sequencer - Test OK

- Stability test on RQ4.L8B1/B2
Test Plan for Thursday 28.06.2007 - Noon Update

Tests will resume once EIQA and connection of the current leads on 8 circuits of the DFBAO (see file attached) are completed.

- PCS tests for all the circuits released by PIC2
- In parallel: PIC2 for the eight circuits that have not gone through it yet (whenever possible)
- RQF.A78, RB.A78 - Performance tests
- Local tests of AB/PO in one corrector circuit of DFBMC (the test implies disconnection-connection of active parts in the converter side)
- Matching Section: Powering of RD2.L8 and RQ4.L8 with DFBMA at minimum liquid operational level (31%) - RD2.L8 quench detector level at 20mV
- P2N continues for 60 closed orbit correctors
- Quadruple quadrupole quench post-poned for tomorrow before lunch.

Outstanding activities

- Performance tests of two 600A circuits once released. 4 hours per circuit are required.
- Tracking tests of RB/QF/QD using PO function generation. Provisionally scheduled for Friday 29/07, from 14:00
- Tracking tests of all available circuits (RB/QF/QD/Q4/Q5/D2/600A) using LSA application. Provisionally scheduled for Monday 2/7/07, from 08:00
- Long duration tests of all available electrical circuits, minimum of 8H test
- EIQA for circuits not powered in this run
- AUG - Scheduled for Monday 9/7/07

Edit, attach file or add comment

Created by Main.MatteoSolfaroli on 2007-06-27 - 18:52

going on activities in sector 45
Going on activities in sector 45

- **DFBAH and MB (diode)**
  - checked and closed by Wednesday 27th;
  - Leak test on Thursday 28th;
  - Purging on Friday 29th evening and all the weekend long;
  - Refilling on Monday 2nd July;
  - On Tuesday 3rd July, once 6Bar conditions are reached, ElQA will be repeated (only on RB);

- **CRYO-instrumentation**
  - Initialization of RF valves on Wednesday 27th or Thursday 28th;
  - Coherence test of all the valves in ARC and LSS (Thursday 28th and Friday 29th);
  - Commissioning;
  - Initialization of the CV910 valves on Tuesday 26th and Wednesday 27th;

- **TS/EL intervention**
  - Changing of the connectors of a BPM (LSS4R);
  - Placing of some Radmon cables on Wednesday 27th, Thursday 28th and Friday 29th (LSS5L);
  - Connection check of the instrumentation cables of BCT;

- **TIM camera**
  - General check on Monday 2nd July;
  - Run from P4 to P5, during the Cryo Patrouille the morning of the start of the cool-down;

- **Safety Inspection**
  - Monday 2nd July at 2pm;

- **RAMSES**
  - Check of the equipment on Tuesday 26th and Wednesday 27th.

- **CV Intervention**
  - Thursday 28th June from 2pm to 4pm

- **QUI**
  - Caps removal, sleeve installation and then closure of the QUI performed on Thursday 28th.
  - The new mechanism for the header B valve is being prepared and should be ready for Friday 29th or early next week.

Comments:

Edit, attach file or add comment

Created by Main.AntonioVergara on 2007-06-26 - 20:06

**Powering Tests Sector 7-8 - Tuesday 26.06.2007**

<table>
<thead>
<tr>
<th>Progress_PoweringS78_070627.pdf</th>
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<tbody>
<tr>
<td><a href="https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x26x19x45/Progress_PoweringS78_070627.pdf">https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x26x19x45/Progress_PoweringS78_070627.pdf</a></td>
</tr>
</tbody>
</table>

**Test Report from Tuesday 26.06.2007**

- **RB.A78**
  - PIC2 - Test completed OK
  - During the whole day, the noise read by the bus-bar quench detector of the circuit tripped several times. The source of the noise (period of about 20 minutes) has not been identified yet.
  - PLI1 (760A)
PLI1.1 - Current cycle - Test OK
PLI1.2 - Energy extraction discharge (quench to a current lead) - Test OK
PLI1.3 - Powering Failure from PC - Test OK

- RQ5.L8: Commissioned up to PLI3 using the sequencer - Tests OK
- 60A closed orbit correctors - P2N completed for one corrector using new automated procedure
- RQF.A78 - Type test completed - Test OK
- 600A correctors
  - RCO.A78 and RQT12.L8B1 - PCS completed - Test OK

**Test Plan for Wednesday 27.06.2007**

- Show goes from 7:00 to 22:00

- RB.A78
  - PLI1.4 - FPA from PIC
  - PLI1.5 - Quench heater discharge on A28.R7
  - PLI2 (2000A)
    - PLI2.1 - Current cycle
    - PLI2.2 - Energy extraction discharge (quench to a current lead)
    - PLI2.2b - SPA from PIC
    - PLI2.3 - Quench heater discharge on LBBRA.13L8 (magnet 3002) and LBARA.13R7 (magnet 1054)

- RQF.A78 and RQD.A78 (once RB.A78 tests are completed)
  - RQF and RQD ramped up together to 6500A. Quench on 15L8
  - RQF and RQD ramped up together to 6500A. Quadruple quench 20L8, 19L8, 19R7 and 22R7.

- Simultaneous powering of RQF.A78, RQD.A78 and RB.A78.

- 600A Correctors - More circuits will be released in the afternoon by QPS for PCS tests

- 60A Closed Orbit Correctors
  - P2N will continue
  - Type tests for some converters in the evening after quenches in the main circuits

- Matching Section
  - Reproduction of the quench event of May 31st
  - Last commissioning step of RQ5.L8 via the sequencer

- AB/PO (David) will prepare a list of the activities to be carried out in the converters already commissioned before the warm-up

Edit, attach file or add comment

Created by Main.MirkoPojer on 2007-06-26 - 19:00
Diagnosis of MB.A45 circuit shorted to ground - Courtesy of D.Bozzini & J.P.Tock

This morning MCS has open the diode box of the dipole 3186. AT/MEL has connected an ohmmeter during the operation to follow the status of the short. At the time of opening the big flange of the diode box the resistance to ground started to change (increase). After the opening it could be possible to first see a quite big quantity of dust on the diode metallic box and second some big pieces of welding residuals.

After having disconnected the diode at the level of the half moons the short disappeared (infinite resistance) and in at the same time some debris felled down from the top part of the half moons. As you can see in the attached pictures the size of one of this residual fits perfectly between the live part and the metallic body of the bus bar duct. In addition in one picture you will see a carbon trace on the G10 insulating piece. This could be provoked by the current of 1A we injected to better localize the fault position flowing through the debris supported onto the G10 piece.

The system will be set back to the requested pressure condition (6 bars in the magnets, 2.2 bars in the DFBA's - which should be achieved by Tuesday 3rd July), when the ELQA-TP4B qualification of this faulty circuit will be repeated.
Diagnosis of MB.A45 circuit shorted to ground - Courtesy of D.Bozzini & J.P.Tock
Short circuit test UA23 - 26th June 2007

Test Report of Monday 25.06.2007

- RB.A78
  - Provisional correction of the detection threshold of the bus-bar quench detector.
  - TF measurement - Test OK after some corrections done in one QPS crate
  - RB converter connected to the circuit
  - Circuit ramped up to 350A with the bus-bar quench detection threshold increased. Loop properly closed!
Some modifications needed in the QPS bus-bar quench detector - Circuit ramped up again to 350A with QPS in operational conditions!!

PCC Circuit Config - TEST OK!

- RQF.A78 (6500A)
  - PLI3.2 - Energy extraction discharge - Test OK
  - PLI3.3 - Quench heater discharge on 12L8 SSS - Test OK

- 600A Correctors
  - PCS tests on the circuits: RQT12.L8B1, RQS.L8B1, RCO.A78B1 - Going on

- DFBMA refilled and cooled down in a couple of hours

- 60A Closed Orbit Correctors: PCC in 16 converters

Test Plan for Tuesday 26.06.2007

- RB.A78
  - PIC2
  - PLI1 (760A)
    - PLI1.1 - Current cycle
    - PLI1.2 - Energy extraction discharge (quench to a current lead)
    - PLI1.3 - Powering Failure from PC
    - PLI1.4 - FPA from PIC
    - PLI1.5 - Quench heater discharge on LBBRG.10L8 (magnet 1030)
  - PLI2 (2000A)
    - PLI2.1 - Current cycle
    - PLI2.2 - Energy extraction discharge (quench to a current lead)
    - PLI2.2b - SPA from PIC
    - PLI2.3 - Quench heater discharge on LBBRA.13L8 (magnet 3002) and LBARA.13R7 (magnet 1054)

- Matching Section: Powered to the same conditions of the triple quench on 31/06 once the quench detection threshold has been increased to operational values.

- 60A closed orbit correctors: PCC and P2N

- RQF.A78 or RQD.A78
  - Type tests
  - Quench campaign:
    - RQF and RQD ramped up together to 6500A. Quench TWO quadrupoles in different cryogenic cells simultaneously.
    - RQF and RQD ramped up together to 6500A. Quench FOUR quadrupoles in different cryogenic cells simultaneously.

- 600A correctors
  - Study and debugging of the quench detectors going on.

Edit, attach file or add comment

Created by Main.AntonioVergara on 2007-06-24 - 14:47
Powering Tests Sector 7-8 - Report 22.06.2007

Test Report of Friday 22.06.2007

- RB.A78
  - PIC1 - Completed OK after the solution of an adjustment problem in the current loop controller of the QPS (few mA too low).
  - Connection of the 60A converter to the RB circuit in the UA83 side. The TF measurements could not be completed because the converter noise made the bus-bar quench detector trip everytime it was switched on. The detection threshold will be increased on Monday.
  - The time out preventing from closing the switches too early after a switch opening has been lowered in order to speed the tests up.

- RQF.A78
  - PLI1 (760A) completed - Test OK
  - PLI2 (2000A) completed - Test OK
  - PLI3.1 (current cycle up to 6500A) completed - Test OK

- 60 Closed Orbit Correctors
  - PCC carried out in one circuit.
  - All the circuits released by ElQA have been connected to the power converter.

- AB/PO current stability measurements in RD2.L8 - Completed

- Empty of DFBMA and Q4/D2 started in the evening

Test Plan for Monday 25.06.2007

- RB.A78
  - Provisional correction of the detection threshold of the bus-bar quench detector in order to allow TF measurement with the 60A converter.
  - TF measurement
  - Disconnection of the 60A converter and final connection of the RB converter to the circuit; PCC tests
  - Set detection threshold back to operation value
  - PIC2
    - PLI1 (760A)
      - PLI1.1 - Current cycle
      - PLI1.2 - Energy extraction discharge (quench to a current lead)
      - PLI1.3 - Powering Failure from PC
      - PLI1.4 - FPA from PIC
      - PLI1.5 - Quench heater discharge on a selected magnet
    - PLI2 (2000A)
      - PLI2.1 - Current cycle
      - PLI2.2 - Energy extraction discharge (quench to a current lead)
      - PLI2.2b - SPA from PIC
      - PLI2.3 - Quench heater discharge on a selected magnet

- RQF.A78 (6500A)
  - PLI3.2 - Energy extraction discharge
  - PLI3.3 - Quench heater discharge on 12L8 SSS

- 600A Correctors
Software upgrade by QPS
PCS tests on the circuits: RQT12.L8B1, RQS.L8B1, RCO.A78B1

- DFBMA will be refilled in the afternoon
- 60A Closed Orbit Correctors: PCC and P2N whenever possible

Warm Magnets Commissioning at point 7. Minutes 22-06-2007

WARM_MAGNETS_7.v03.pdf: https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint7x2007x06x22x15x40/WARM_MAGNETS_7.v03.pdf

Comments:

Powering Tests Sector 7-8 - Report 21.06.2007

Test Report of Thursday 21.06.2007

- RQD.A78
  - PLI3.2 Discharge Request - Test OK
  - PLI3.3 Quench heater discharge in 12R7 - Test OK - Cryo_Maintain was recovered after 10 minutes and Cryo_Start in about 30 minutes.

- RQF.A78
  - PIC2 completed - Test OK
  - PLI1.1 - Current cycle at 760A completed - Test OK
  - PLI1.3 - PC Failure at 760A completed - Test OK
  - Communication problems with the energy extraction controller prevented from closing the switches remotely. Tests stopped.

- RB.A78
  - QPS IST completed - 2 DQHDS had to be replaced
  - A communication problem came up due to a corrupted code line maybe caused during the downloading of the last software version.
  - Current leads connected to DC cables in DFBAO and DFBAN
  - Last corrections being done by QPS experts

- Matching Section
  - Heat runs continue during the whole week with RD2 and RQ5
  - Type tests of the converters by AB/PO completed.
Planning for Friday 22.06.2007

- RB.A78
  - PIC1
  - Connection of the 60A converter and TF measurement
  - Connection of the RB converter to the circuit+ PCC
  - PIC2

- RQF.A78 (in parallel with RB whenever possible)
  - Complete PLI1 (760A)
    - Energy extraction discharge
    - FPA
    - Discharge request from PC
    - Heater firing
  - PLI2 (2000A)
  - PLI3 (6500A)

- 60 Closed Orbit Correctors
  - PCC and P2N on selected circuits

- AB/PO current stability measurements in RD2.L8

- Empty of DFBMA and Q4/D2 cryostats over the weekend

Short Circuit Test UA23. Minutes 21-06-2007

- RQF.A78
  - PIC2 completed up to Fast Power Abort from PIC - Test OK

- RQD.A78
  - PIC2 tests completed - OK
  - PLI1 tests at 760A completed - OK
  - PLI2 tests at 2000A completed - OK
PLI3 started. RQD.A78 circuit ramped up successfully to 6400A, kept there for more than one hour. - OK

Champagne and pictures

PLI3.1 test completed - Magnet ramped up to 6500A and down to 350A successfully!!

• Matching section
  ♦ Type tests on different circuits performed by AB/PO

Planning for Thursday 21.06.2007

• RQD.A78
  ♦ PLI3.2 Discharge request
  ♦ PLI3.3 Quench heater discharge

• RB.A78
  ♦ After tests completed in RQD.A78 (in parallel):
    ◊ QPS IST tests
    ◊ Connection of the current leads in DFBAO and DFBAN
  ♦ PIC1
  ♦ Connection of the 60A converter - Transfer function measurement
  ♦ Cabling repair 600A - RCS, RCD circuits.
  ♦ Wait for DFBAN release from ACR

• 600 Circuits - Further measurements by QPS - Depending on Reiner's progress in RB, which has full priority.

• Matching section
  ♦ Type tests AB/PO continue
  ♦ ACR checks on the DFBMA current leads with D2 at nominal current

Edit, attach file or add comment


Powering Tests Sector 7-8 - 19.07.2007

Test Report from Tuesday 19.07.2007

• RQD.A78:
  ♦ Transfer function measurements with 60A converter completed OK
  ♦ PCC Circuit Config tests completed
  ♦ PIC2 - All steps completed OK except:
    ◊ Circuit discharge from power converter: switches were not rearmed after PM data generation - Test to be repeated
    ◊ Discharge request from PIC - to be done

• RQF.A78:
  ♦ Transfer function measurements with 60A converter completed OK
  ♦ PCC Circuit Config tests completed
  ♦ PIC2 - All steps completed OK up to Powering Failure test (included)

• RQ4.L8 and RD2.L8:

Test Report of Wednesday 20.6.2007 14
Tests 1 and 2 proposed by MPP completed but without provoking an artificial quench at the end of the second. Detection threshold still at 20mV. Still no quench. Further research to be done.

- RCO.A78B1 powered below 20A for QPS analysis. The circuit is still blocked till the new software is uploaded.

Test Plan for Wednesday 20.07.2007

- Resolution of cable signal/interlock swap F/D

- RQD.A78 (from the CCC):
  - Last two steps of PIC2
  - PLI1 (750A)
  - PLI2 (2000A)
  - PLI3 (6500A)

- RQF.A78 (from the CCC):
  - Complete PIC2
  - First steps of PLI1,2,3 if possible

- RB.A78
  - IST Energy extraction tests, PIC1, connection of the leads

- Matching section:
  - Type analysis of the power converters
  - Analyse boil-off data and eventually repeat a more complete boil-off
  - Waiting for new proposals from MPP
  - 120A converter on Q5 type tests

Edit, attach file or add comment


Powering RQD.A78 and RQF.A78

- PIC2 - I = I_MIN_OP = 350A

- PLI1 - I = I_INJECTION = 760A
  - PLI1.1 - Current cycle: 350A to 760A at 10 A/s
  - PLI1.2 - Energy extraction discharge at 760A (bus-bar or current lead quench)
  - PLI1.3 - Powering failure from power converter
  - PLI1.4 - FPA from PIC
  - PLI1.5 - Quench heater firing
    ◊ SSS049 15L8

- PLI2 - I = I_INTERM_1 = 2000A
  - PLI2.1 - Current cycle: 350A to 2000A at 10 A/s
  - PLI2.2 - Energy extraction discharge at 2000A (bus-bar or current lead quench)
  - PLI2.3 - Slow Power Abort from PIC
  - PLI2.4 - Quench heater firing
    ◊ SSS016 24R7
PLI3 - I = I\_INTERM\_2 = 6500A
  ♦ PLI3.1a - Current cycle: 350A to 6500A at 10 A/s
  ♦ PLI3.2 - Energy extraction discharge at 6500A (bus-bar or current lead quench)
  ♦ PLI3.3 - Quench heater firing

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**Short Circuit Test UA23. Minutes 19-06-2007**

RAT\_20070619.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x19x12x14/RAT\_20070619.pdf

Comments:

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**Update on Powering tests sector 78 - Afternoon 18 June 2007**

**Progress during Monday 18.06.2007 from the 8:30 meeting till the 16:30 meeting**

- RQF.A78 and RQD.A78
  - Wait for green light from QPS - OK
  - PIC1 for both circuits: OK but several points to note:
    ◊ PM problem noted: the data, although complete, does not display correctly in the PM viewer. Sandrine will look at data manually and Adriaan will correct the problem
    ◊ after a discharge request from the PC, the PC fault and discharge request signals arrive out of sequence. According to Valerie this is understood (due to cable delays)
    ◊ QPS_OK does not take into account the switches status allowing powering of the magnets with the switches open
  - Connection of the DC cables to the current leads has not happened yet. Will be done tomorrow at 7:30

- RB.A78
  - QPS IST. All heaters charged (2 out of 700 needed intervention) Discharging started at 16:45 (will need 3-4hours to complete)

- Matching Section
  - MPP presented the next tests to investigate the triple-quench event. It includes various ramping schemes, forced quench of Q4 and a boiloff test of DFBMA, to be completed during the next few days. Tonight: DFBMA boiloff and re-fill.

- 600A correctors in DFBBO
  - ACR/MEL tests on the damaged cryo-instrumentation cards (RSF2.A78B2, RCS.A78B1) - ONGOING
  - If possible, solution of problem in RCO QPS communication -DONE

**Powering RQD.A78 and RQF.A78**
QPS Software upgrade - Will not done before tomorrow

- Tests of the 60A CRYO_START/CRYO_MANTAIN signals - OK although for the 60A circuits all tests will have to be done in conjunction with the cryo operators with a manual CRYO_START/MAINTAIN

A.O.B.: Francois reminded the meeting that it is preferable that the cryo EIC is informed (as well as the cryo operators) of any pending tests.

Programme for tomorrow Tuesday 19 June 2007

- RQF.A78 and RQD.A78
  - Connection of DC cables to the current leads
  - Connection of a 60A converter to the RQD.A78 circuit from the UA83
  - PCC tests for RQD.A78 (MAXIMUM CURRENT: 350A) - Experts from AB/PO, PIC, QPS and Energy Extraction required
  - PIC2 tests for RQD.A78 in parallel with PCC for RQF.A78 (MAXIMUM CURRENT FOR BOTH TESTS: 350A)

- RB.A78 QPS IST tests will continue during the whole day

- Matching Section
  - Test 1 proposed by MPP (see slides attached)
  - Test 2 proposed by MPP, but:
    ◇ If detection threshold can be increased up to 50 mV: full test
    ◇ If detection threshold cannot be modified yet: full cycle without provoked quench at the end

- 600A correctors in DFBAO:
  - ACR/MEL tests on the electronic cards will go on till RQD.A78 is released by PIC2
  - Software upgrade of the quench detectors

Beam Dump System - Installation & Commissioning - 05/06/2007

- RAT_20070605.pdf:
  https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint6x2007x06x18x16x21/RAT_20070605.pdf

Warm Magnets Commissioning at point 7. Minutes 18-06-2007

- RAT_20070618_WM7.pdf:
  https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint7x2007x06x18x12x33/RAT_20070618_WM7.pdf

Progress during Monday 18.06.2007 from the 8:30 meeting till the 16:30 meeting
Powering Tests Sector 78 - Evening 15.06.2007

Planning for Monday 18.06.2007

- RQF.A78 and RQD.A78
  - Wait for green light from QPS
  - PIC1 for both circuits
  - Connection of the DC cables to the current leads
  - Connection of a 60A converter to the DC cables in the UA side
  - PCC tests for both circuits

- RB.78
  - QPS IST. Discharge of the quench heaters, quench loop tests, energy extraction type tests

- Matching Section
  - Further tests for investigating the triple-quench event to be discussed in MPP meeting on Monday

- 600A correctors in DFBAO
  - ACR/MEL tests on the damaged cryo-instrumentation cards (RSF2.A78B2, RCS.A78B1)
  - If possible, solution of problem in RCO QPS communication
  - QPS Software upgrade

- Tests of the 60A CRYO_START/CRYO_MANTAIN signals

Test Report of Friday 15.06.2007

- Matching Section
  - In the morning RD2.L8 and RQ4.L8 and the 7 correctors ramped to nominal.
  - While starting ramp up, RQ5.L8 quench detector tripped due to the very high acceleration in the converter.
  - After some corrections, RQ5.L8 was also ramped to nominal current. The software of the quench detector of this circuit still needs to be upgraded
  - During the afternoon Squeezing tests from LSA were performed

- 600A correctors in DFBAO
  - Eight out of the nine circuits released by ElQA and ACR went through the PCC tests OK. QPS gathered the data needed to update the detector and released the circuits. PIC2 performed in the afternoon in all of them. Test OK.
  - RCO has a problem with the QPS communication

- 60A type tests completed OK.

- RQF.A78 and RQD.A78
Switch opening failure issue already solved. Small communication problem to be fixed (world-FIP connection). The two circuits should be released for PCC tests on Monday morning.

- RB.A78
  - Quench heaters are now charged.

- Boil-off tests on the DFBAN successfully carried out on Saturday.

Edit, attach file or add comment

Created by Main.AntonioVergara on 2007-06-14 - 18:22

Powering Tests Sector 78 - Report 14.06.2007

RD2-Q4_14.06.ppt: https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint200706141822/RD2-Q4_14.06.ppt

Test Report of Thursday 14.06.2007

- EIQA
  - RQD.A78 and RQF.A78 circuits released by EIQA. Circuits OK for powering as soon as QPS gives green light.
  - MBA and MBB lines tested OK up to 1 kV with all instrumentation connected. Circuit OK for QPS IST

- RD2.L8, RQ4.L8 and its correctors
  - Powered to nominal (6000 A) during the whole morning. Ramped down to beam operational current (5980 A) in the beginning of the afternoon.
  - Keeping RD2.L8 at operational current, the five Q4 correctors available were ramped to nominal current (72 A) RQ4.L8 is powered according to the procedure attached (see slide) up to 3.6 kA and 2.95 kA in apertures 1 and 2 respectively. No quench was observed.
  - Pushing for the quench: With D2 at 6kA, aperture 1 of Q4 at 3610 and four correctors at nominal
    - Ramp up from 2950A to 3610 at 1 A/s - OK
    - Ramp down from 3610A to 2950A at 5 A/s -OK
    - Ramp up from 2950A to 3610A at 10 A/s -OK
    - Ramp down from 3610A to 2950 at 10 A/s - OK
    - Ramp up from 2950A to 3610A at 10 A/s - OK
  - Magnet still doesn't quench, so we go on:
    - Ramp up Aperture B1 and B2 from 3610A to 2200A at 10 A/s - OK
    - Ramp up Aperture B2 from 2200A to 3610A at 10 A/s - OK
    - Ramp up Aperture B2 from 2200A to 3610A at 10 A/s - OK

- RQ5.L8 and its correctors
  - Calibration tests in all the converters

- 600 A Circuits
  - Very useful data was obtained during the morning on the RQ6.R7 quench detectors
  - Generation and analysis of the QPS data advances in parallel with PCC tests for the available 600A circuits in the DFBAO
Planning for Friday 15.06.2007

- **RQF.A78 and RQD.A78**
  - Wait for green light from QPS to go ahead with PIC tests. All heaters and quench loop worked OK, 'Switch Open Failure' functionality to be corrected.
  - PIC1 for both circuits as soon as QPS gives green light.
  - AB/PO will use the characterisation values obtained during ElQA to avoid the connection of a 120A converter for PCC.
  - The DC cables will be connected to the leads once PIC1 is completed.

- **RB.A78**
  - QPS IST to start today. They will take around 2 days.

- **600A Circuits in the DFBAO**
  - PCC will continue for the circuits available. QPS will take profit of them to obtain the needed data for improving the filtering of the detector noise.
  - PIC2 for the circuits in which PCC is completed
  - AB/PO will do some measurements after PIC2 (below 20A)

- **Matching Section ML8**
  - 8-hour heat run with all the circuits in the matching section at nominal current
  - Squeezing tests for RQ5.L8 and RQ4.L8 can be carried out in parallel

- **60 A type test will start after QPS IST for RQF and RQD are completed.**

- **Cryo-instrumentation**
  - The time needed by QPS to implement the corrections in the 600A quench detector software will be used to test the electronica cards from cryo damaged during the ElQA tests.
Beam Instrumentation - BSRT Installed and Aligned

The two BSRT telescopes were Installed last Monday in LSS4.

LSS4L: The BSRTD has been connected to the BSRTM and the system successfully aligned with the laser.

LSS4R: The vacuum chamber in IP4 right side is still intact after the BGI bake-out incident and therefore connection and alignment of the BSRT right side will be done tomorrow!

J.J. Gras for the BI Team
Short Circuit Test UA23. Minutes 12-06-2007

RAT_20070612.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x13x16x49/RAT_20070612.pdf
Powering of sector 78 - Report of 13.06.2007

Report of Wednesday 13.06.2007

- EIQA
  - Tests in MBA during all the day.
- RQ5.L8:
  - Calibration test performed by AB/PO. Test ongoing.
- RD2.L8:
  - Ramped to 200A. Quench heater fired. Post-mortem data acquired properly. Test OK
  - Ramped to 1kA. Quench heater fired. Post-mortem data acquired properly. Test OK
- RQF and RQD
  - Quench heater charge.
- RD2.L8
  - Test 1 on the ML8 performed. D2 quenched when R4.L8B1 was at 2.2kA and R4.L8B2 was around 3kA ramping to 3.61kA. Test NOT OK.

Planning for Thursday 14.06.2007

AM:

- EIQA on MB with instrumentation + QF & QD
- QPS IST RQF.A78 and RQD.A78: discharge of the heaters
- RD2.L8 to nominal
- RQ5.L8 and their correctors calibration by PO (UA)

PM:

- 600 A circuits of L8: PCC (<20A) for all
- 600 A circuits of L8: PIC2 for all
- 600 A circuits of L8:PCS.1 for all
- List of the 600A circuits released by AT/MEL and AT/ACR
  - RQTL12.L8B1
  - RQTF.A78B1
  - RQTF.A78B2
  - RSD1.A78B2
  - RQS.L8B1
  - RSD2.A78B1
  - RSF1.A78B1
  - RSF1.A78B2
  - RCO.A78B1
- AB/PO Type tests on 60A converter
Test Report of Tuesday 12.06.2007

- **EIQA**
  - Tests in MBA line will continue tomorrow till noon.

- **RD2.L8:**
  - Ramped to 200A. Quench heater fired. Post-mortem data acquired properly. Test OK
  - Ramped to 1kA. Quench heater fired. Post-mortem data does not arrive properly to the viewer. Test NOT OK
  - Second ramp to 1kA. Quench heater fired. Post-mortem data created is corrupted: the data is an exact copy of the one created in the previous with no new data. The QPS controller needs to be restarted. Test NOT OK

- **600A QPS Controllers:**
  - The available 600A correctors in the DFBAO are released by AT/MEL for powering.

- **Sequencer Test 600A sequence - Completed using RQTL12.L8B2**

- **RQ6.R7:**
  - Different ramp rate applied (up to nominal ramp rate of 1.3 A/s). Current cycles between +10A -10A.
  - Noise level: 20 mV
  - Circuit ramped at 5 A/s: trip at 20A. Test NOT OK.

Planning for Wednesday 13.06.2007

- **AM**
  - ELQA Test of MBA line will continue till 14h00.

- **PM (14:00 in CCC)**
  - 600 A circuits of L8: PCC (<20A) for all
  - 600 A circuits of L8: PIC2 for all
  - 600 A circuits of L8:PCS.1 for all
  - QPS IST RQF.A78 and RQD.A78
  - Quench heater charge/discharge RQF and RQD circuits
  - RD2.L8, RQ4.L8 and RQ5.L8 and their correctors: Powering possible once Reiner has solved the problem with the PM data generation
  - AB/PO Type tests on 60A converter
  - In the late afternoon: EIQA on the 600A circuits of DFBAN.

- **List of the 600A circuits released by AT/MEL and AT/ACR**
  - RQTL12.L8B1
  - RQTF.A78B1
  - RQTF.A78B2
  - RSD1.A78B1
  - RQS.L8B1
  - RSD2.A78B1
Warm Magnets Commissioning at point 7. Minutes 11-06-07

RAT_20070611_WM7.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint7x2007x06x11x19x01/RAT_20070611_WM7.pdf

PLANNING_WM7.v02.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint7x2007x06x11x19x01/PLANNING_WM7.v02.pdf

Comments:

Please, find in the minutes actions affecting the planning that have come out after the meeting.

Powering Tests: Planning for today 11.06

RAT_20070611.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPointx2007x06x11x15x54/RAT_20070611.pdf

_Direct_Quench_Detection_with_Shunt.ppt:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPointx2007x06x11x15x54/_Direct_Quench_Detection_with_Shunt.ppt

Test Report of Monday 11/06/2007

- AB-PO performed "type test" on RPLA.12L8.RCBH12.L8B2
- Special test on RD2.L8: Quench Heater discharge at 200A (Reiner) - Signal cable to be fixed (Vincent)
- AB-CO performed sequencer procedure of 600A circuits - not terminated, half day needed.

Planning for Tuesday 12/06/2007

- EIQA on 13kA circuits
- EIQA on 600A
- Implementation on RQ6.R7 and on L8 600A circuits of the second order monitoring software by AT-MEL - See attached presentation given by Bob Flora during the afternoon RAT in CCC
- QPS Software test on RQ6.R7
**Sequencer verification for 600A circuits - second part**
- PCC on 600A when released by AT-MEL
- PCS on the first bunch of 600A circuits

**RAT in Point 4 - Minutes of 8th June 2007**

**Powering Tests Sector 78 - Report 08/06/2007**

**Test Report of Friday 08/06/2007**

  - PCS.1: Sinus excitation at 1 and 10 mHz OK, the detector tripped for 200 mHz and could not be tested up to 1 Hz as expected. However, the test is considered as OK for the QPS experts since they gather enough information about the circuit and the detector performance - TEST OK
  - PCS.2 (Extraction at 50 A): Detector tripped for ramp rates of 0.5, 0.4 and 0.3 A/s, it worked OK at 0.25 A/s. There was a problem in the transmission of the Post Mortem data, which did not reach the server the first time. The problem was fixed and no data was lost. The issue has not been understood yet - TEST OK
  - PCS.3 (Extraction at 100 A): Test OK
  - PCS.4 (Plateau at 200A): The detector tripped while the current was reaching the plateau due to the very well known issue with the d2I/dt2. Energy extraction worked ok - TEST NOT OK.

- **80-120A Correctors of Q4-Q5:**
  - PNO.4 (Slow Power Abort from PIC): Battery of seven circuits test together - Test OK
  - PNO.2 (Full current bi-polar cycle) repeated after the meeting - Test OK

- **RQ5.L8:**
  - Squeezing Tests: Done after the meeting - Test OK

- **EIQA:**
  - Scope installed and system calibrated using artificial 100 mV spikes.
  - The measurements on the lead heaters insulation gave correct results.
  - Reiner will provide a way to measure the insulation between the quench heaters and the coils.
Planning for Monday 11/06/2007

- RD2.L8, RQ4.L8, RQ5.L8:
  - Special test explained on Wednesday will be applied as soon as AT/MEL has completed new instrumentation in the RD2.L8 circuit.

- 600A Correctors in the DFBAO:
  - Reiner will try to release some circuits for PCS tests on Tuesday. Circuits released by EIQA and connected to the leads are:


- EIQA:
  - Tests will continue in MBA line.

Powering Tests Sector 78 - Morning Meeting 07/06/07

- RAT_20070607.pdf:
  https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x08x15x44/RAT_20070607.pdf

Short Circuit Test - UA27 24hr heat run - UA23 test preparation

- sct_UA23_v002.pdf:
  https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x08x11x25/sct_UA23_v002.pdf

- RAT_20070607.pdf:
  https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x08x11x25/RAT_20070607.pdf

In the minutes:

- 24hr heat run summary
- Test preparation UA23 / Planning attached
# UA27 scheduling

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**Powering Tests Sector 78 - Morning Meeting 08/06/2007**

- RAT_20070608.pdf: https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x08x10x02/RAT_20070608.pdf

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**Test Report of Thursday 07/06/2007**

- RQ6.R7:
PIC2 tests were blocked due to a damaged electronic card in the QPS controller which affected the creation of Post-Mortem data and the proper generation of interlock signals. The problem is understood now and the card changed. PIC2 will be completed today after the evening meeting.

RD2.L8:
- The circuit was powered and the heater discharged at 200 A in order to check the new instrumentation implemented by AT/MEL. The system still needs some hardware work. The protection system is working properly. RD2.L8 stays blocked till Monday since priority is given to RQ6.
- Antonio Perin presented the non-conformity in the internal cabling of the RD2 and RQ4 circuits in the DFBMA.L2 and DFBMA.L8 which may be the cause of the triple quench event of last week in the matching section.

RQ5.L8 and RQ4.L8
- Liberated now for further powering after the Powering Subsector OFF functionality has been disabled in the ML8 powering subsector.
- SPA from PIC in RQ4.L8 at nominal current: Test OK
- SPA from PIC in RQ5.L8 at nominal current: Test OK

80-120A correctors in Q4 and Q5:
- Ramped all together after the meeting at nominal current and kept there for a couple of hours.

EIQA
- MBB line to be retested with all the instrumentation connected.
- MBA line: the test with the cryogening system and one QPS rack disconnected could not start today since the boiling test in the DFBAN is taking longer than expected. If the test fails, it will be repeated with 50% of the QPS racks in the MBB line (38 units) disconnected. If the test is still failing, all the QPS racks will be disconnected.

Planning for Friday 08/06/2007

- PCS.1-PCS.4 tests (Sinus at +/-10A, energy discharge at 50, 100 and 200A) from the CCC
- Upgrade of the controller software after the test.

RQ4.L8 and RQ5.L8
- Squeezing tests if possible.

80-120A correctors Q4 and Q5:
- PNO.4 test in battery for the seven circuits available.

Edit, attach file or add comment

Created by Main.AntonioVergara on 2007-06-06 - 18:58

Powering Tests Sector 78 - Morning Meeting 06/06/2007

RAT_20070606.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2007x06x06x18x56/RAT_20070606.pdf

Comments:
Powering Test Sector 7-8 - Report 06/06/07

Test Report Wednesday 06/06/2007

- **RQ4.L8**
  - Manual Squeezing test (PSQ). Test OK. (The test will be considered as fully passed only once automatic function is used)
  - When Squeezing was finished, the magnet was ramped to nominal current (3610 A) and kept there for "endurance test"; after one hour, the B2 converter tripped and a FPA was initiated: analysis of the PM signals was indicating an external interlock alarm - red emergency button pressed. Nobody was in the area at that moment.
  - The two converters were ramped back to nominal and kept there; after three hours, the same trip as before was experienced on B2 and the FPA initiated. The circuit was blocked for powering.
  - Further investigations showed that the two trips were provoked by a mispositioned pin in the connector on the emergency red button. Already fixed by PO.

  - PCC completed by PO and QPS in the tunnel of point 7.
  - Remaining steps of PIC2 passed on RCBH6.R7B2. Not possible to continue with the others due to a communication problem with QPS detectors; a manual reset in UA83 is needed.

Planning for Thursday 07/06/2007

  - Complete PIC2 on the two 600 A circuits and the corrector RCBV6.R7B1
  - PCS.1, PCS.2, PCS.3, PCS.4 (Ramp rate 0.2-0.5 A/s)

- **600 A correctors**
  - Cable connection on the circuits released by ElQA (after verification by PO of the condemnation of those converters)

- **80 A correctors of Q4 and Q5:** "Endurance test" after Reiner's intervention

- **ElQA tests:**
  - Further investigations on RB circuit/instrumentation

- **ML8:** once D2 is available, special cycle with D2, Q4 and Q5.

- **Powering of RQ4.L8 and RQ5.L8 to validate the FGC software update**

- **Boil-off tests on DFBAN in the morning.**
RQ4.L8

- Special tests carried out by AB/PO from the tunnel in the converter in order to further study the fault in the FWD seen yesterday during the Fast Power Abort test (PNO.9).
- While trying to ramp the converter up during the decay after a provoked fast power abort, the quench detector tripped and the quench heaters were fired. RQ5.L8 was going through the squeezing tests at the moment of the Q4 spurious quench, hence it performed a Fast Power Abort and its quench detector did not trip although it was at 3 kA.
- Fast Power Abort from PIC Test repeated after diode was repaired (PNO.9). Test OK.

• RQ5.L8
  - Manual Squeezing tests (PSQ). Test OK. It will not be considered as fully passed till it is done with the automatic function.

  - PCS test up to +10 A OK. The quench detector performed OK at this current level. There is a problem in the supervision that is being fixed. The transfer functions measured by AB/PO match very well the ones measured during ElQA tests.
  - Due to a misunderstanding with MPP and HCC, the circuit was powered up to 60A in order to check the crowbar. At 53 A, as expected, the QPS provoked a FPA that opened the switches. The procedure has to be reviewed since, so far, powering above 10 A is not allowed before carrying out PIC2. HCC will find an agreement by tomorrow between Mr Circuit, AB/PO and MPP.

• ElQA RB.A78
At 600 V, with all the DFB instrumentation except the lead heaters disconnected, the resistance of the leads was 346 and 260 Ohms for 5 minutes which is a very promising result. Tests will continue tomorrow when 1.9 K are expected.

Planning for Tomorrow 06/06/2007

- RQ4.L8
  - Powering at nominal plateau for some hours
  - If functions are available: Squeezing test

- RQ5.L8
  - After modification in the quench detector: Fast Power Abort at nominal current (PNO.9)
  - If functions are available: Squeezing test

- RD2.L8
  - Once new instrumentation is operational: Power to nominal current step by step.

- EIQA
  - Tests up to 1.9 V in RB.A78

Test Report Monday 04/06/2007

- RQ5.L8: Powered up to nominal. During the first trial, the quench detector triggered at 27A. The magnet was powered at its nominal current for 4 hours. Tests successful. MPP is asked to give permission to increase the detection threshold to 100 mV (nominal) to carry out the Fast Power Abort test (PNO.9)

- RQ4.L8:
  - Powered up to 250 A while RQ5.L8 was at nominal in order to check the integrity of the circuit. Test OK.
  - Once RQ5.L8 test was completed and with the agreement of MPP, RQ4.L8 was powered at different current levels up to its nominal current (250, 600, 2000 and 3610 A) and kept there for 20 minutes. Test OK.
  - Squeezing tests (PSQ). Test OK.
  - Fast Power Abort from PIC at nominal current (PNO.9). The circuit did not quench, however, AB/PO considers the test as failed due to the FWD circuit creating a fault. Under investigation. Test NOT OK.

  - PCC Circuit Config tests going on. Some correction in the quench detectors have to be carried out. The noise level in the detector looks promising. Tests will continue tomorrow Tuesday.

- RD2.R8
  - Amalia has analysed previous quenches in this magnet. None of them showed any effect on the level and temperatures in the DFBMA, hence they can conclude that the quench occurred in the DFBMA but they cannot confirm its cause yet.
AB/CO has completed the interlock and circuit synoptics modifications needed for the new instrumentation in D2. Reiner will get the hardwire ready as soon as he finishes the correction in Q6.

- Boil-off Tests
  - DFBAO Low Current Module: test completed, further studies need to be done in the He level gauges
  - DFBAO High Current Module: Test going out. They should be completed this evening. Promising results so far.
  - DFBAN being refilled, the calibration data is being checked.

### Planning for Tuesday (05/06/2007)

- **RQ5.L8:**
  - Squeezing Tests (PSQ)

- **RQ4.L8:**
  - Run at nominal current for some hours
  - Repeat PNO.9 (FPA) if required by AB/PO

- **RQ4.L8 & RQ5.L8 & Correctors**
  - Powering at nominal current together (?)

- **EIQA RB.A78**
  - Tests will be restarted tomorrow Tuesday. First priority activity.

- **60A Converter Type test**
  - If possible in coordination with the EIQA.

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Created by Main.BorisBellesia on 2007-06-04 - 11:22

**Short Circuit Test in UA27 - 04.06.07**

- RAT_20070604.pdf: https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x04x11x16/RAT_20070604.pdf

- SOC_24hr_heatrun_UA27.xls: https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint2x2007x06x04x11x16/SOC_24hr_heatrun_UA27.xls

************

Thursday 07.06: 24hr heat run - SOC attached.

************

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Test Report Monday 04/06/2007
Circuits >2kA

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Powering Tests Sector 78 - Minutes 04/06/2007

RAT_20070604_2.pdf:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x04x11x06/RAT_20070604_2.pdf

D2_6000A.pptm:
https://twiki.cern.ch/twiki/pub/HCC/BlogEntryPoint8x2007x06x04x11x06/D2_6000A.pptm

Cooldown Sector 78

The commissioning programme on Q4, Q5, D2 and the associated correctors continued during this week. While the Q4, Q5 and D2 commissioning was completed, the commissioning of the 120 A correctors associated to these magnets could not be completed: some additional tuning of the software in the FGC remains to be done.

Yesterday (Thursday May30th) Q4, Q5, D2 were taken together to nominal current. At about 80% of the ramp, D2 quenched (5268 A). As expected, this caused the shutdown of the converters in the matching section and during the ramp down Q4 and Q5 also quenched. The data of this event is still being analysed.
The Electrical Quality Assurance team qualified the focusing and the defocusing quadrupole circuits and the matching section quadrupole Q6 at Point 7.

All the DFBs of the sector have been equipped with dry-air bags to ensure no condensation forms on the current leads and their chimneys.

Unfortunately, on Friday (June 1st) morning, the safety chain of cabinet was accidentally broken and the sector was disconnected from the pumping group. The cryo team is now busy recovering the situation to re-establish nominal temperature on the magnets for Monday morning.

ACTIVITY OF FRIDAY

* Triple quench in the matching section (Q5, Q4 and D2) is still under investigation. The current leads have been excluded as possible quench origin. New hardware will be implemented on Monday in order to better analyse the future events. In principle the quench in Q4 was not induced by the previous quench in D2, the delay is too short for that.

* The circuits in the DFBMH have been released by ElQA and QPS.

Comments:
PLAN FOR TODAY MONDAY

TEAM 1 - RR77 (& CCC)

* PCC-Circuit Configuration tests in the circuits of DFBMH. Remark: the PC Permit signal from PIC will have to forced since the DFBMH belongs to the A78 powering subsector
* PIC2 in the DFBMH circuits (CCC)

TEAM 2 - CCC

* Powering of RQ5.L8 and its correctors to nominal current in intermediate steps. Run for some hours at nominal current for validating the splices. If the test is successful the detection threshold of its quench detector will be risen to its normal operational value (100 mV)

EIQA

* If cryogenic conditions are recovered (2.1 K) EIQA of the RB.A78 circuit will continue. First, all the electronics of the DFBAs will be disconnected. If the test still fails the QPS electronics in the tunnel will be disconnected. Reiner ask for one hour advice for carrying out the disconnection.
Archives

- All topics in Point
- archive May 2007
- archive April 2007
- archive March 2007
- archive February 2007
- archive January 2007
- archive December 2006
- archive November 2006
- archive October 2006
- archive September 2006
- archive August 2006
- archive July 2006
- archive June 2006
- archive May 2006
- archive April 2006
- archive March 2006

MonitorApplications

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This topic: HCC > BlogHccAllJun07
Topic revision: r1 - 2007-06-01 - JacekSzkutnik

Web page prepared by Małgorzata Macuda & Jacek Szkutnik