

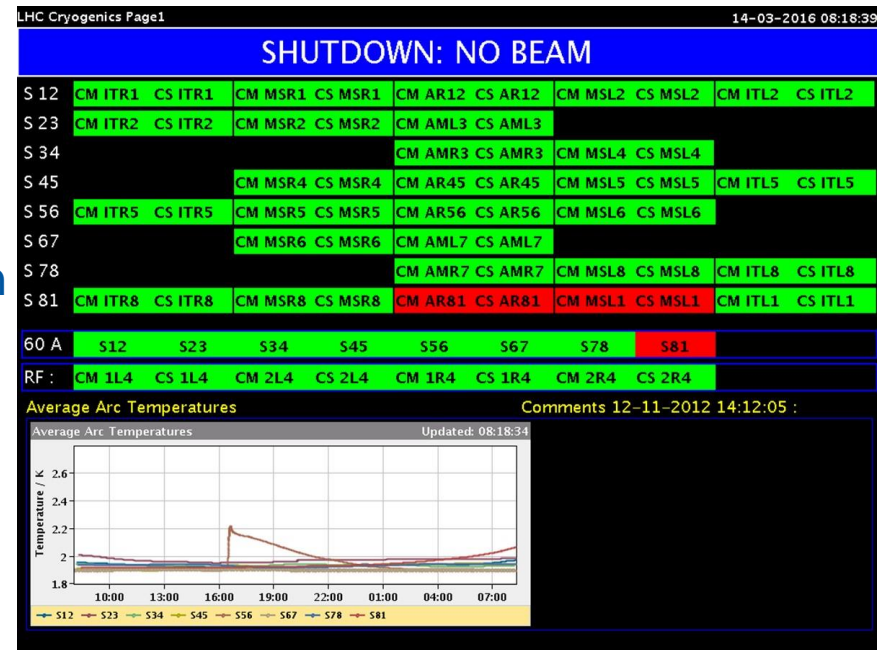




Powering tests
preparation_meeting 9

Mirko Pojer and Matteo Solfaroli

Cryogenics



- Beam screen conditioning test done in
 - S34
 - S45
 - S81 ongoing
 - The others will be done during the week

- Intervention completed on transformer EMT405/2U (18/3,3kV - 8MVA)-SU2
 - Cryogenics for S12 and S23 is in a “unusual” configuration with both sectors cooled by the unique installation of P18
 - Cold box at P2 was restarted on Fri.
 - Reconnection of S23 on cold box @ P2 today
- “maximum heat load” this week
 - S78 from March 14th to 16th
 - S23 from March 15th to 17th
- 2 days will be needed at the end to set S23 and S78 in Run II configuration

General news

- New firmware deployed everywhere, but some issues in 7R (reset?)
- A couple of QPS/EE issues (detailed list below):
 - Many circuits tripped above 55 A (compensation?)
 - Many circuits tripped during ramp-down, due to 0V-crossing (“sensitivity” of new boards?)
 - Few circuits where the Z switch does not open
- PID parameters changed for the IT correctors; tested in 5L, they are good but maybe not enough (330 K reached, CS lost); to be improved elsewhere
- Problem of communication in L2 is understood:

“ During components upgrade we tried latest version of CMWClient and CMWServer based in RD3: QPS-236

We found many issues that we are now investigating: QPS-237

We rolled-back all machines, and kept only QPS_12_DT2FL with RDA3 until beginning tests to evaluate the issues found: ENS-16724

When we rolled-back latest project QPS_12_DT2FL, for any reason our management tool got confused reporting installed version was old one (RD2) meanwhile currently one was latestone (RD3).

I forced the uninstall and install of RD2 version, and issue was solved. “

Jonas Arroyo

Summary status

Circuit type	Completion [%]
RBs	92% (7 commissioned)
RQs	88% (6 commissioned)
ITs	95% (All commissioned-sign.missing)
IPQs	99%
IPDs	100%
600 A	95%
120-60 A	98%
Total	97% (8347 oo 8560 successful tests)

Status of RB circuits

- RB.A12 OK
- RB.A23 quenched at 11040 A (C24R2=2195, 1st quench), then OK
- RB.A34 OK
- RB.A45 OK
- RB.A56 quenched at 11076 A (B33R5=3375, quenched in 2008)
- RB.A67 OK
- RB.A78 OK
- RB.A81 OK

RQD/F tested with new current

- RQD/F.A12
 - RQD/F.A23
 - RQD/F.A34
 - RQD/F.A45 not done
 - RQD/F.A56 not done
 - RQD/F.A67
 - RQD/F.A78
 - RQD/F.A81 tested with old value
-
- Will have to test again at a further increased value

S12

- XR1, LR1, ML2 and XL2 – COMMISSIONED
- Missing in A12
 - RSD1.A12B2: U_RES_max is slightly higher than criterion (73 instead of 70 mV)
 - RQTF.A12B2: U_RES_max is 104 mV
 - RQT13.R1B1: Noise in U_HTS
 - RQT13.R1B2: U_Res is oscillating before quench@555A
 - RQTL11.R1B1 and B2: trip on 0V crossing

S23

- Missing in XR2

- RCBXH2.R2: 3rd quench (477 A, 475 A and 470 A); is there something we don't see?

- MR2 - COMMISSIONED

- Missing in A23

- Four 600 A missing the last test
- ROF.A23B1 – OK, but **wrong I_DCCT reading**



S34

- Missing in A34
 - RQTF.A34B1 – TT problem, circuit is super-locked; last test missing
 - RCBV13.L4B2
 - **resistance is double the maximum: Giorgio cleaned the contacts, the connection was changed, but still not good.**
- Missing in ML4
 - RU.L4 – Still some fine tuning missing

S45

■ Missing in MR4

- RU.R4 –was ramped twice to 400 A with 0.3 A/s; at 0.5 A/s trips because of 0-V crossing!

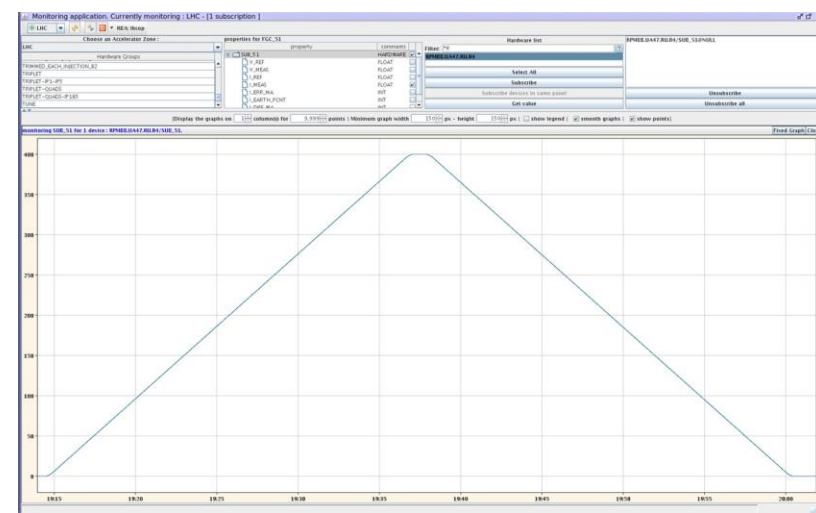
■ Missing in A45

- RB.A45 commissioned, but quench loop was opened; MPE piquet did some reset, finally a hard reset fired the heaters of A26.L5, C26.L5 and B27.L5
- RQD/F.A45 – Test at 2 kA was failed and flagged: some voltage feelers are not working; Q27.L5 QPS channel not working properly
- Few 600 A missing
 - RQT13.L5B2 is not compensated (U_{res} saturated and trip at 55 A)
 - ROF.A45B1 – problem with U_{res}
 - RSD1.A45B1 – not in PMEA
 - RQT12.L5B2 – last test missing
 - RQTL11.L5B1 and B2 – 0V crossing trip (same parameters as in 2014/15)

■ Missing in LL5

- One 120 A failed PNO.d1

■ XL5 - COMMISSIONED



S56

- Missing in XR5
 - RCBXH1.R5 – negative cycle missing
 - **Three 600 A have T regulation problem** (going below 290 K)
 - Three 120 A have missing signatures
- Missing in LR5
 - RQ4.R5 – completed, but **problem in lead T regulation**
 - RQ5.R5 – completed, but **problem in lead T regulation**
- Missing in A56
 - **RQD/RF.A56 – problem with EE PM**
 - **RQ9.R5 – one QPS file is missing**
 - **RQS.A56B2 – Z switch did not open**
 - **RQTL11.L6B1 – 3rd quench (-359 A, 350 A and 325 A) – MP3 to decide**
 - **RQTL11.R5B1 – “exactly the same as yesterday”???**
 - **ROF.A56B2 – trip at FT**
 - **RSD1.A56B1 – trip at FT**
 - **RSD2.A56B1 – trip at FT**
 - Six 60/120 A have missing EPC signature
- **ML6 - COMMISSIONED**

S67

- MR6 - COMMISSIONED

- Missing in A67

- ROD.A67B1 – tripping at 120 A: compensation?
- ROD.A67B2 – OK, but bad compensation
- RQ6.L7B1 and B2 – wrong dldt (0.75 instead of 1.2) → EPC to synchronize
- RQS.A67B1 – Z switch did not open
- RQT13.L7B1 – trip at 56 A – not compensated
- RQTD.A67B2 – Failed PLI3.b1 since spikes in voltage of switch A and B
- RQTL10.L7B1 – trip at 56 A – not compensated
- RQTL10.L7B2 - 0V crossing trip
- RQTL11.L7B1 and B2 – 0V crossing trip
- RQTL7.L7B1 and B2 – 0V crossing trip
- RQTL8.L7B1 and B2 – 0V crossing trip
- RQTL9.L7B1 and B2 – 0V crossing trip
- RSD2.A67B1 – Z switch did not open
- RSD2.A67B2 – U_cap_Z far out of margin
- RSF1.A67B2 – failed because of U_CAP_A/B/Z
- RSS.A67B2 – Z switch did not open

S78

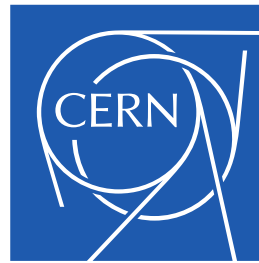
- Missing in A78
 - ROF.A78B2 – Z switch did not open
 - RQ6.R7B1 – bad compensation?
 - RQ6.R7B2 – trip at FT
 - RQS.A78B2 – trip at FT
 - RQT12.R7B1 – trip at 57 A – not compensated
 - RQTL11.R7B2 – 0V crossing trip
 - RQTL7.R7B2 – 0V crossing trip
 - RQTL8.R7B1 – 0V crossing trip
 - RQTL8.R7B2 – quench
 - RSS.A78B1 – Z switch did not open
 - RSS.A78B2 – trip at FT
 - Four 60 A quenched during cycle; to be repeated
- ML8 - COMMISSIONED
- XL8 - COMMISSIONED

S81

- Missing in XR8
 - 600 A – RCBXV3.R8 failed on T regulation
- MR8 - COMMISSIONED
- Missing in A81
 - RQTL11.L1B2 – tripping on 0-V crossing
- LL1 - COMMISSIONED
- XL1 - COMMISSIONED

Accesses

- CV at PM32 on Tue. 15/03
- **Wed. 16th March, 8h30-10h15 AM:** forcing the end-of-zone door of the UJ561 in order to reach the PM56 lift for the CMS Emergency guide training course (patrol lost)
- **Thu. 17th March, 19h-21h:** commissioning of the smoke detection of UXC55 (no personnel underground as the evacuation sirens will ring in all underground areas, LHC tunnel and CMS caverns)



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