LHC Schedule: update

LHC Risk Review – March 2009
Contents

- Official schedule
- Critical issues, as presented in Chamonix
- Delays w.r.t. official schedule & Additional works
- Updated schedule
- Critical issues
Chamonix Schedule

- **Jan.**
  - Warm-up / He emptying
- **Feb.**
  - Intermediate cool-down (PIM’s) & QRL-SAM warm-up (stand alone)
- **Mar.**
  - ELQA & Flushing
- **Apr.**
  - Activities
- **May**
  - Activities
  - Powering tests
- **Jun.**
  - Powering tests
- **Jul.**
  - Powering tests
- **Aug.**
  - Cold check-out
- **Sep.**
- **Oct.**
- **Nov.**
Chamonix Critical issues

- Sector 34: magnets & interconnections
- Magnet for sector 67
- Sector 23 & 45 → Sectors 78 & 81
- DN200
- SSS relief valves
- Racks for nQDS
- Jacks reinforcements
- Tightness of LSS schedule
Delays & Additional works

- Magnets readiness
  - Last dipoles of sector 34 announced in wk. 16
  - Dipole for sector 67: wk. 13 – Good news
  - +1 wk for Cool-Down of sec.23

- Interconnection works
  - W.r.t delays on surface & the unavailability of complete half cells
  - F. Bertinelli: “4 extra weeks more realistic (more will create further complications with Summer months...)”
  - +1-2 wks for Cool-Down of sec.34

- Cryogenics:
  - Hiccough at start-up point 2, but in the shadow of the delay induced by delays of magnets
  - Point 6: start-up, consolidation of QSRB is taking longer than expected (+2wks). If schedule constraint can see alternative solution.. But see later OK with schedule
  - Good news: time window for intermediate cool-down and stand alone & QRL warm-up is taking few less days

- DN200:
  - ~2wks of delay – problem with the drilling machine
  - The progress rate is lower than expected
  - Depending on the teams between 24 and 30/wk (baseline =30/wk & sector)
  - ➤ +1-2 wks for C.-D. of sec.56
Delays & Additionnal works

**NEW!**
Additional cabling to ensure the redundancy of UPS on QPS systems

- Painful in term of coordination: blocking the passage
- Impact schedule (compare to official):
  - Sector 12: +2wks
  - Sector 45: +1wk
  - Sector 56: +2wks
  - Sector 67: +1wk
- Connectors availability: May 2009
- Electronics availability: July 2009 (underground)

**Impact on Powering tests to be discussed**

**NEW!**
Additional cabling in the LSS (from surface to Q12)

- Between Chamonix & last week: additional cables were requested, adding an extra week in each LSS !!!
- Still to be scheduled: cabling for additional thermo switches in Current Leads & nQDS in the LSS
- Cabling campaigns at points 3, 5 and 2 are finished/just started
  - we have to find a 2nd slot for these cabling !!!
Additional pressure relief valves
- On Inner Triplets: If relief valves placed on the bottom, we had a 1st look to the schedule- no impact on schedule
- SAM, DFBM links & DSL: to be looked at
- On DFBAs & DSLC: to be looked at in more detail

Jacks reinforcements
- SAM: if...should fit in schedule
- DBA’s: more critical, to be studied
Updated schedule – LSS part

- **QPS-UPS cabling**
- **Bake-out restrictions**
- **LSS cabling campaigns**

**Not detailed but scheduled**
- SAM in the shadow
- Cryogenics consolidation
- Maintenance activities
- Collimators/Kickers/BI replac./ inst.

**To be scheduled**
- Additional safety valves
  - Inner Triplets
  - SAM
  - DFBA’s
- Additional cables
  - Point 2, 3 & 5
  - nQDS
  - Thermo switches of C.L
- **Critical** : MKD commissioning
Updated schedule – Arc part

- **QPS-UPS cabling**
- **nQDS cabling**
- **DN200**
- **Interconnections: magnets, Pims’, CC..**
- **nQDS electronics.... To be updated**

- **Other activities not shown but scheduled**
  - Jacks reinforcements
  - SSS relied valves
Updated schedule

- Warm-up / He emptying
- Intermediate cool-down (PIM’s) & QRL warm-up (stand alone)
- ELQA & Flushing
- Activities
- Powering tests
- QPS Electronics

for symmetric quench: only in July

Globally 1-2 weeks delay
**Updated schedule: Critical issues**

- **Activities**
  - Sector 34: magnets & interconnections.....
  - Sector 23 & 45 ▶ Sectors 78 & 81
  - DN200... especially for sector 56
  - QPS-UPS cabling... very tight
  - Tightness of LSS schedule
  - More and more activities, becoming very complicate to schedule, & in term of co-activities management !!!

- **Material not delivered or activities not yet scheduled**
  - Electronics for nQDS & symmetric quench
  - Jacks reinforcements for SAM, DFBAs
  - Additional cables