01/03/2010

- Mostly dominated by the Cryo intervention in point 8 for filter cleaning
- Intervention started at 00:40 yesterday and conditions recovered at ~03:00 this morning
- Yesterday access mostly in the morning:
  - QPS intervention in Sector 78 and 67 to replace noisy n-QPS channels that caused spurious interlocks in these sectors
  - Power converter repair replacement: RQTL11.L5B1 (FGC), RQTF.A81B1 (Power module on Aux power supply), RCBH23.R6B2 (replaced)
  - BI interventions: Wire Scanner in PM45 and BRAN US15
  - ABT intervention: PC on MKD B1, generator J
- Pre-cycle activities in all available sectors 12 to 67 for most of the afternoon to validate the nQPS repairs and test robustness:
  - Offset observed in some of the sectors over night could not be reproduced. Not a feature of the calibration of the detectors introduced as part of the pre-cycling procedure ➔ to be followed-up
  - Some trips observed (2 SC circuits: RQTF.A56B2 ➔ PC, RU.L4 and 2 warm circuits RQ4 and RQ5.LR3 ➔ PC: active filter)

01/03/2010

- RF: no satellite bunches observed before the “main” bunch in the SPS. To be continued

- Parameters re-generated with b2 correction

- HWC : Tests in view of the 3.5 TeV operation: study the behavior of the RB circuits while switching off the converter and opening of the energy extraction system performed on RB.A12 and RB.A23

- ABT : Checked some interlocks for LBDS concerning BTV movement - OK for BTVSE.B1 BTVSE.B2 BTVD.B1 BTVD.B2

02/03/2010

- 03:00: Recovered from cryogenics
- 03:00 – now : Problems in closing QPS quench loop of main quad in S78 – Tunnel intervention is required
- 10:00 ?? Recovered
- 10:00 – 12:00 : Pre-cycle for sectors 67 - 78 – 81 and BIC, Dumped beam event problem investigation
- 12:00 – 16:00 : re-establish beam in the LHC
- 16:00 - 18:00 : RF work (bucket number for beam 2), cavity phasing
- 18:00 – evening: Systematic beam 2 and beam 1 measurements and corrections
- Over night : Beta beat measurements and possible preliminary aperture measurements

- Introduce RBAC – Postponed to tomorrow morning

02/03/2010

- Damper is OFF (power-wise)
- Inject one beam: B2
  - Orbit – establish “good” orbit
  - Correct tunes to nominal
  - Measure and correct coupling
  - Measure and correct chromaticity (save spectra for each frequency offset)
  - Measure dispersion
  - Check phase beating
  - Take reference for the hump (save spectrum)
- Inject second beam: B1
  - Orbit – establish “good” orbit
  - Correct tunes to nominal
  - Measure and correct coupling
  - Measure and correct chromaticity (save spectra for each frequency offset)
  - Measure dispersion
  - Check phase beating
  - Take reference for the hump (save spectrum)

Hump measurements

- Inject both beams: B1&B2
  - Take reference for the hump (save spectrum)
  - Measure correlation e.g. After disconnection of Beam1/Beam2 frequencies change B1 frequency and observe effect on hump on both beams

- With single beam:
  - Measure lifetime as a function of tune w.r.t. hump position (tune scan)

Hump measurements

- List of elements ON/OFF for hump checks: PC OFF not only 0 current – one beam at a time.
  - TL magnets incl. MSI
  - Damper OFF (power-wise)
  - Orbit correctors after establishing an orbit with minimum number of correctors
  - Spool pieces RCO – RCD – RCS – RSS
  - AC dipole
  - Spectrum of BLM data at the primary collimator with RF ON and RF OFF (get value of the emittances, and all longitudinal parameters)

- Measurements with experts:
  - Spectral analysis of the radial pick-up and damper pick-up data
  - Vary He flow of the beam screens – block all the valves regulating the flow on the beam screens – saved actual settings first
  - Make the measurements with different sets of RF modules ON while keeping the RF voltage constants