End Week 25 (June 27th 2011) – Status of Accelerators

LINAC2 (Richard Scrivens)

Linac2 ran well most of the week.

The RF needed some adjustments on Thursday when RF tank 2 amplifier started to saturate. Following up on Friday, the RF team could find better conditions, and are now confident for high intensity tests next week.

ISOLDE (Emiliano Piselli)

Nothing special to report for this week…everything went really very fine. Beam (STAGISO) to solid state and biophysics users from Wednesday without any problem…users happy!

Booster (Bettina Mikulec)

The week was calm for the PSB, but some excitement was added during the weekend...

- On Tuesday late afternoon we had almost 1h of downtime due to a specialist intervention for the slow bumper at extraction.

- Wednesday morning beam stop due to the strike. The PSB came back immediately after restart of the MPS. Also the power glitch in the afternoon didn't do too much harm - the PSB was back in operation 10 minutes later. 20 minutes of downtime had to be added in the evening as TI requested a cable exchange for the MPS.

- On Friday the LHC complained about too high transv. emittances of the LHC50ns beam; adjustements were made to solve this problem.

- On Sunday around 8am, the extraction septum BE.SMH15L1 tripped a few times, also once during LHC filling. The piquet PO had to change a fuse and warned us that some adjustments might be required due to the increased temperatures. Also the extraction kickers tripped that morning, but could be reset.

- Monday at 2am, the C04 cavity of ring 4 tripped. The equipment specialist had to be called; he identified an amplifier as the culprit. An access had to be organized, and beam was back around 5am.

- A few trips as usual throughout the week of BT3.DVT40 and the C16 cavities. This issue is being followed up.

Additional remarks:

- Progress is being made on the INCA side - the PSB INCAification is immanent.

- Throughout the week beams were readjusted to prepare the SPS and LHC MDs.

PS (Alexej Grudiev)

Week of good running with several minor problem. Steady providing nominal LHC beams: LHC_INDIV LHC50ns 36 and 12 bunches, at nominal parameters. AD, EASTA EASTB, TOF, SFTPRO and CNGS operation continued at nominal intensities.

Several problems to report:

Wednesday

12:30-14:55 Painful restart after the strike. The problem related to timing distribution system was difficult to diagnose. PICO was called. No start of the cycle is observed. But JC Bau confirmed that the timing going out of the "cfv-ccr-ctmemm". Finally, Steve Hancock found a problem in Central building with "TriVolt" +/-5V power supply which is close to dcpsinj. PICO went to CB to fix it. Heiko also found a loose connection close to dcpsinj. The timings “start super cycle” and PIX.TRF become operational after fixing the connection. After this the injection septum PI.SMH42 did not pulse. PIPO was called. They fixed the problem by regulating the active filters. Finally after 2.5 hours all beams were back.

10 min beam stop in PS qafter power glitch due to thunderstorm. Reset MPS -> OK

Thursday

9:10-10:00, no beam for CNGS and AD. Extraction septum SMH16 was on fault, reset -> OK. But then it went down again PIPO was called and they fixed the problem.

Sunday

14:31-16:11 no beam to EAST zone. SMH57 was on fault. Specialist had to came and fix the software problem with the septum temperature interlock system.

SPS (Elias Metral)

It was a relatively quiet and good week for the SPS, with some foreseen and unforeseen interruptions.

On Monday the beam was stopped as foreseen at 15:30, to allow EDF to repair the 18 kV cable near BA3. This lasted for about 3 h, and the beams were back at about 18:30. We profited from this beam stop to perform for several other interventions needed.

On Tuesday afternoon the BA7 DSO tests (for HiRadMat) were performed. Then, around 17:30 the mains tripped (with a SMQD electrical ripple), and around 17:44 a problem with LHC2 appeared: the beam was lost during the first quarter of the ramp. It looked like an RF issue and the RF experts worked on it until ~ 01:20. Due to their erratic appearance it had been difficult to find the cause. The origin of the problems observed was related to a bad contact. Transients on fRFprog have been identified and been linked to the Freq. Progr. DSP. Relevant connectors have been replaced on the working and the spare modules. During the night, another problem appeared with losses observed on SFTLONG2 and CNGS after the second injection around 1360. The loss was due to the vertical tune, which was too low (and close to the half integer). Increasing it solved temporarily the problem until the morning around 07:20 when the vertical tune came back to normal. We then had to remove the trims. This might have been linked to the SMQD rippled observed some time before…

On Wednesday morning, the SPS was stopped as foreseen during the work stoppage (08:30 to 12:30). During this time, the large injection oscillations in TI2 and TI8 observed the night before were understood by JorgW. This was due to the fact that the orbit on the SPS flat top was corrected for the probe with orbit correctors, which should never be done (SPS orbit correctors should all be at 0 A at extraction). As a consequence the beam position at extraction was changed. JorgW removed the YASP steering incorporation rules for all operational cycles (CNGS, LHC, SFTPRO), which will prevent steering on the flat top of cycles with extractions. At the beginning of the afternoon, HiRadMat started its beam commissioning with a pilot bunch. The beam was extracted on the TT60 TED and then down the line on first shots. Furthermore, during the afternoon, the mains tripped several times because of thunderstorms.

On Thursday morning, several other trips of the mains were also observed due to some electrical ripple on the SMQD.

During the night between Thursday and Friday, the high intensity bunch was studied on MD1 (Benoit and Hannes) with first the Q26 optics and then the Q20 optics, to check in particular the values of chromaticities and their impact on the beam.

The week-end was quiet.

TI (Peter Sollander)

Please follow link below for full breakdown of week

http://wikis/display/TIOP/2011/06/20/TI+summary+week+25%2C+2011

Events of the week; the 18kV for BA5 was repaired, we had a major power outage for LHC due to the Thunderstorm on Wednesday afternoon and there was another failure of an emergency stop button in the TI2 line costing 10 hours for the LHC.

LHC

Running at 1236 bunches per beam. Rocky-ish week: cryognenics, strike, thunderstorm, AUG point 2, vacuum spikes D3/D4 beam2 point 4…

http://lhc-commissioning.web.cern.ch/lhc-commissioning/