

End Week 33 (August 23rd 2010) – Status of Accelerators

PS Booster (Giovanni Rumolo)

The PSB had, very fortunately, an uneventful week.

Only two specialist interventions were needed in the course of the week, the first one on Thursday to replace a chassis and fix the slow injection kicker in Ring 2 (BI2.KSW), which had previously tripped several times, and the second one on Saturday to put back in operation the C16 of Ring 2.

ISOLDE (Pascal Fernier)

GPS:

Coming soon....

HRS:

Coming soon....

PS (Simone Gilardoni)

Week pretty calm, only minor issues.

Monday: the control rack of the stripper in TT2 was found OFF. Probably it was never powered after the Xmas flood. The rack is in pretty poor state, with cables covered by dust and calcare. The EN/STI piquet intervened to power it and A. Masi will check who is responsible for the rack, and in case for its renovation.

Tuesday: the ions emittances, transverse, have been measured in TT2 and within the 1 μm .

Wednesday: problem with 80 MHz cavity. Pb with timings of the pre-tuning cycle solved by Erk.

Thursday afternoon: pb security chain of tof due to a faulty fan of an electronic rack.

Friday morning: 1 hour access to change a relay gap of 10 MHz cavity.

Monday-Thursday: MTE measurements with different settings of the transverse damper.

Friday-Saturday-Sunday: MTE beam sent to the SPS. First tests were delayed due to SPS problems.

A new TT2-TT10 optics has been implemented. The user sent to the SPS is the MD4, the one with the longitudinal feedback. The transverse setting up in the SPS was done for the low energy part.

Then for the longitudinal the expert is needed. Few shots of the screens were taken in TT10 for the CNGS-MTE and SFTPRO beam to compare trajectories and spot sizes. To be discussed next week.

INCA: few problems with the PPM copy plus the TT2 initialisation of the momentum followed-up with CO.

AD (Kari Mikluha)

AD has had a very stable week with good 90% efficiency. The only problem we've had worth of mentioning is an injection kicker's module 3, which has been tripping occasionally off when having a Dump Switch Faulty Shot high voltage interlock activated. Simple reset has always worked for this problem. Sunday afternoon there was a cooling problem with the target that stopped the beam for 4 hours.

SPS (Django Manglunki)

The LHCFast3 (150ns bunch spacing, 4 bunches, 5E10/bunch) was sent to the LHC for tests during the week.

The sharing in the North area was changed several times for the needs of AMS which eventually stopped on Saturday morning.

The SPS has restarted to take the MTE beam from the PS on one CNGS cycle at the end of the week, not yet for production.

Finally, CNGS has reached the 2.5E19 protons on target mark last night.

On the problems front:

Monday the temperature on the CNGS target was rising above 70 degrees, but this was only due to the high number of cycles sent. It came down rapidly once the supercycle changed.

Tuesday night there were problems sending the beam to the LHC.

Eventually the processor handling the Beam Quality Monitor has to be restarted by the specialist as it is not completely implemented in diamon. This is being solved by CO.

On Thursday there a 3 long period without beam, due to several breakdowns in parallel: the mains and the RF tripped, there was a water problem on the MST, and an apparent problem with the access chain. the latter problems turned out to be communication errors and were solved by the specialists. For the mains a crowbar card had to be exchanged.

On Friday night a problem on MKE4 and MKP necessitated the intervention of the BT piquet.

There were also a few resettable trips of the mains during the week and the week-end

TI (Peter Sollander)

Overall a week without too many problems for TI, a couple of Major Event reports still:

- Thursday 19 morning, access to LHC delayed because of a problem on the LACS. This problem happened during the night and could have been signaled to the piquet before there was a need for access. New procedures are being put in place to avoid this happening again.
- Sunday 22 afternoon, a water cooling problem stops AD for 4 hours. TI has no monitoring for this circuit (AD target) so the problem was only first seen when it stopped AD.

LHC – full details under coordination at (Oliver Bruening):

The beginning of the week the machine ran with 25b on 25b and from Thursday onwards with 48b on 48b.

During the week there were 3 fills with up to 240 nb⁻¹ and 36.5 of luminosity production

The average fill time was above 12 hours.

At the start of the weekend, but also during the weekend there were cryo problems in pt6 and BI problems with BLM and BPM systems and a power glitch.

On Tuesday bunch trains where tests using the LHC 150 ns beam.

Aim for the coming week:

- Continue physics with 48b
- Continue preparatory studies for bunch train injections
- Loss maps and beta start measurements via Q1 modulation

The LHC observed fluctuating bunch intensities from the PS complex.

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

Day	Summary	Link to report from morning meeting
Sunday 22 nd August	<ul style="list-style-type: none"> • Recovery from cryo problem in Pt5. • 04:00: Glitch on electrical network results in several trips. • Morning: recovery from network glitch. • Rest of the day: Physics fill with 48 bunches per beam. 	Slides from 9h meeting
Saturday 21 st August	<ul style="list-style-type: none"> • Recovery from cryo problem in Pt6. No beam before Saturday evening. • 22:00: Preparing new physics fill with 48 bunches. Lost due to another Cryo problem in Pt5. 	Slides from 9h meeting
Friday 20 th August	<ul style="list-style-type: none"> • Morning: Continuation of physics fill from night. • Noon: Potential for end-of-fill studies (Damper). • 5pm: Cryo problem in Pt6. No beam before Saturday noon. 	Slides from 8h30 meeting
Thursday 19 th August	<ul style="list-style-type: none"> • Morning: access for various issues. • Noon: Problems with injector complex (no beam for several hours). • Afternoon: Injection setup for 48 bunch per beam • Night: Physics fill with 48 bunches per beam. 	Slides from 8h30 meeting
Wednesday 18 th August	<ul style="list-style-type: none"> • Morning to evening: Physics fill with 25b per beam. • Late evening: Short access to repair quench heater power supply. • Night: Physics fill with 25b per beam. <p><></p>	Slides from 8h30 meeting
Tuesday 17 th August	<ul style="list-style-type: none"> • 9:00 - 11:00 : LHC and SPS preparing machine and beam parameters for the first tests for bunch train operation (1 train of 4 bunches, each separated by 150 ns) • 11:00 - 14:00 : Injection tests of 1 train of 4 bunches • Fill for physics 	Slides from 8h30 meeting
Monday 16 th August	<ul style="list-style-type: none"> • 09:00 - 11:00 : EOF (ADT and Roman Pots in) • 11:00 : Dump beams • 11:00 - 13:00: Ramp down + new BLM firmware release (dry tests) • 13:00 - 16:00: LHC in access • 16:00 - 20:00: LHC recover 450 GeV injection conditions • overnight: BLM requalification tests and test ramp 	Slides from 8h30 meeting

