

End Week 37 (September 13th) – Status of Accelerators

Summary

ISOLDE	Very good.
LINACS	OK
AD	OK
PSB	Running very well with only minor niggles and glitches.
PS	Normal operations – a few problems. Lost around 7 hours on Saturday – amplifier of thyatron (extraction to SPS)
SPS	Good performance – ions to flat top
TI	Rather quiet week for TI.
LEIR & Ions	Looking good.

PS status (Alexej Grudiev)

Normal operation during the whole week. Providing all nominal users: SFTPRO, CNGS, AD, TOF nominal and parasitic together with EASTC and EASTB. Still several interruptions of a few hours each during the week.

Wed. 23:33 to Th. 3:13 no beam for SFTPRO and CNGS due to fault on the BFA/DFA rack. One phase of the three was not available on some equipment racks. Temporary fix has been put in place. Equipment specialist is on vacation till Monday.

Friday 7:20- 9:50 no ions due to fault of the C80-08 cavity. A 24 kV power supply has been taken from the spare 40 MHz cavity as a temporary fix until the equipment specialist will arrive on Monday. 10:04-10:32 again no ions due to unstable behavior of the C80-08.

Saturday 10:57 -18:35 No beam for SFTPRO and CNGS. Due to several problems with BFA21. G. Rivada and J. Schipper have changed an amplifier of the thyatron trigger on the BFS21S5, as well as the thyatron of the BFS21S1. After this BFA21S started to pulse but in a wrong order. Then, E.Carlier, A.Fowler et L.Ducimetiere have changed Amplifier of the thyatron trigger of the BFS21S1. All this failures are probably a consequence of the under voltage which is the result of the failure happened on the night of Wednesday.

Sunday 7:00 10 MHz cavity C56 seems to have broken gap-relay. It is replaced by spare cavity C11 but the gap-relay is not closed which means an additional impedance in the ring and more losses are observed on SFTPRO, CNGS and TOF. Gap-relay must be replaced on Monday.

Booster (Bettina Mikulec)

The Booster was running perfectly well last week after the repair of the two problems on Monday that hampered operation the week before: on the ring1/ring2 recombination septum BT1.SMV10 a regulation card had to be adjusted, and for the ring3 C04 an amplifier had to be changed on the feedback loop.

During the week F. Blas made parallel MD studies for controlled transverse emittance blow-up in the PSB. Wire scanner measurements continued, but the strange results at low energies cannot yet be explained.

Otherwise only small problems like a timing error on some extraction elements on Friday afternoon or some dsc reloads and Linac2 interlocks, but each time a reset cured quickly the problem.

Early Monday morning at 5am a quadrupole in the Linac2-to-PSB transfer line (LTB.QFN20) stopped pulsing. It had to be exchanged with its spare by the piquet (~1h lost).

ISOLDE (Pascal Fernier)

HRS : target #410 Uc2C; run @30.2kV via Rex pour l'expérience miniball

Tres bon run selon les physiciens sans aucune panne majeure. Arret de l'expérience lundi matin.

GPS : target #411 surface W ; fin du setting-up lundi et faisceau delivre en fin de journee a Rex.

SPS (Karel Cornelis)

The week started with Booster RF problems causing an unstable spill structure for the fixed target beam coming from the CPS. An intervention took place on Monday afternoon in the PSB to repair the RF. At the same time there was a problem with an interlocked AD magnet, stopping all beams going through TT2 and stopping therefore also the ion commissioning.

On Wednesday morning the CPS was stopped for an access in order to inspect and prepare the intervention on the busbar. The SPS was stopped for thirty minutes for an intervention on the beam dump kicker. On Wednesday afternoon there was some trouble with the electricity in BB4. This was due to an overload coming from the extraction elements which were generated with a 2 sec. flat top (just as the main magnets) on the ion cycle.

Although Thursday was a holiday, the LHCFAST cycle was used for MD in order to make up for the lost time due to the PS busbar problem. The rest of the week all MD was going to the ion commissioning. Ions can now be accelerated without losses at transition, but for that, an unexplained bump of -5mm is needed. The RF controls for ions is still unstable and a lot of debugging is still needed to make operations reliable.

Saturday was a bad day for CT extraction. The BFA's in the CPS were unstable, giving a very irregular spill to the SPS. It took most of Saturday to fix this problem.

Last week we crossed the bar of 2 10e19 protons on the CNGS target.

TI (Peter Sollander)

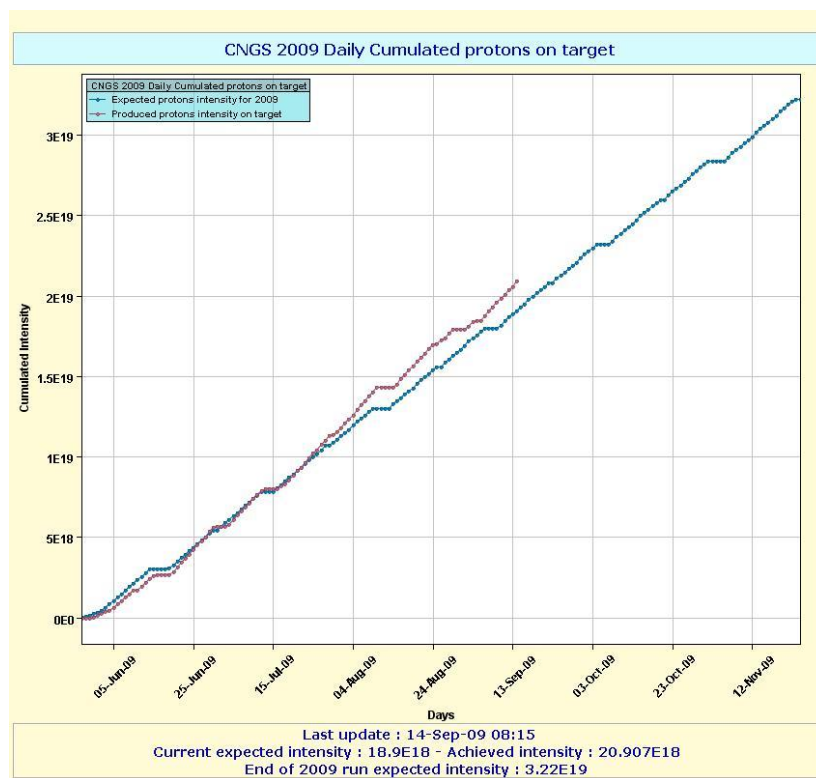
Wednesday 9/9:

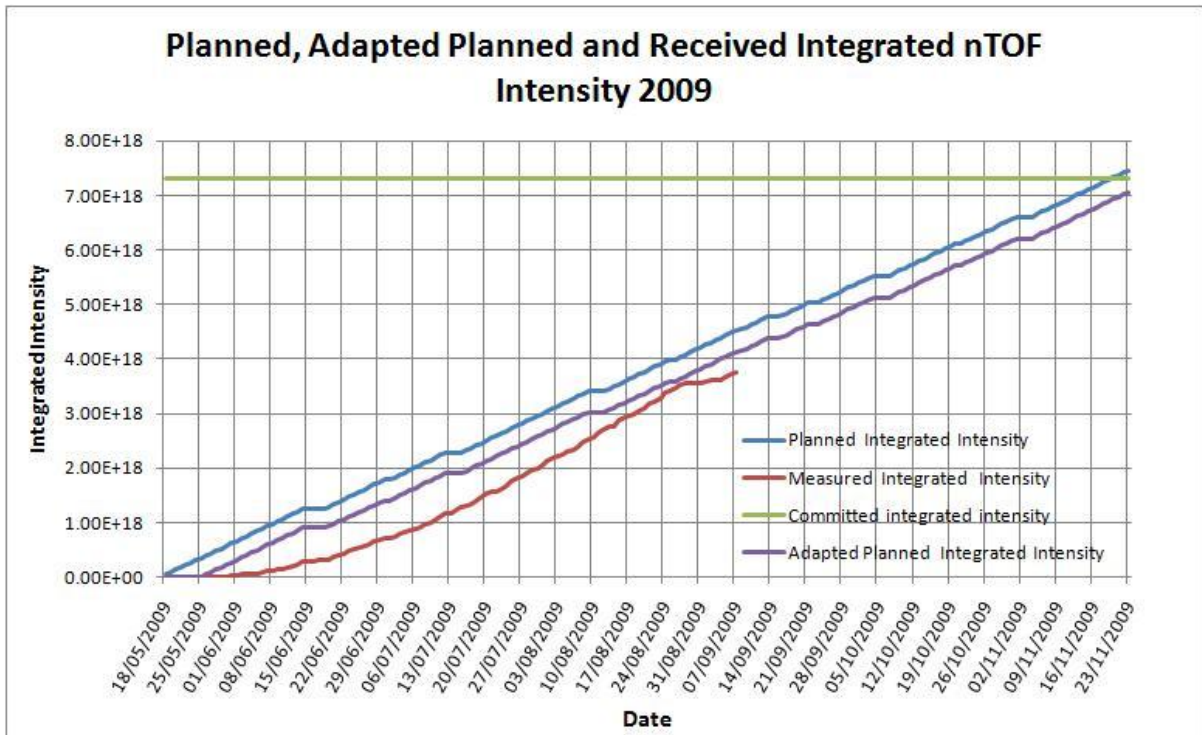
- a 2 hour stop of the SPS: Over-current trips the 18kV breaker EMD032/A4. Waiting for report from EL, but fault seen, simply over-load by SPS power supplies.
- a vacuum problem in sector 2-3 brought up the question of supervision by TI. Currently, we do not monitor vacuum alarms.

AD (Joao Carlos Oliveira)

The major issues were

- The problems with the injectors
- Monday night, RF problem, bunch at extraction moving from cycle to cycle (syncro problem, faulty RF switch)
- During the weekend, problems with a transfo on the extraction line, the TFA7049. Physicists need this transformer to work. I could partially solve the problem by changing the timing of the acquisition but a fine tuning must be done by the specialist.
- Last night, problem with a pwr sup in the extraction line, the DEO.QN100, problem solved by the first line (1h30 fault)





LHC

S12: problem with short to ground on RB bus-bar – related to new QPS – hope to start powering phase 2 this week. Phase 1 powering tests have progressed well.

S23: cold

S34: 80 K

S45: 3K

S56: Good start to powering phase 1 campaign. (50% of tests performed – mainly low current.) New QPS to go in this week. ELQA and back into powering test. Powering phase 2 next week after modification of EE resistors.

S67: 175 K

S78: nQPS installation finishes today, ELQA to be one done first part of week. EE resistor by Thursday QPS IST next Monday – powering phase II next week. Powering phase 1 ongoing dependent on circuit availability. ODH rack work ongoing – limited access.

S81: 50 K average