

End Week 21 (May 29th 2011) – Status of Accelerators

LINAC (Giulia Bellodi)

Linac2 had a very quiet week.

On Monday morning DLINSTIM was rebooted to restart the psrcevt task which had frozen. In the evening one hour beamtime was lost to replace a faulty power supply of the LA1. QDN27S quadrupole.

On Wednesday morning a watchdog action to cut the ZERO user was triggered by a missing value exception.

The rest of the week saw normal operation.

ISOLDE (Emiliano Piselli)

GPS:

Beam to users from Tuesday to Sunday without any major technical problem.

HRS:

Stable beam tuning done on Tuesday and Wednesday. We have struggled to get beam out of the RFQ...and at the end we got poor transmission through it, less than 50% when the usual one should be about 70%. On Thursday afternoon target and line heating dropped due to a control problem. CO piquet and D.Calcoen have restarted those power supplies and in the evening we were able to provide again stable beam to users and to RILIS. Beam was completely unstable (+/- 20% on the intensity) and the transmission through RFQ was about 25%.

On Friday morning we tried again to improve efficiency and beam transmission through the machine because users could not work in such unstable situation. We have tuned again and we got again 50% through RFQ. Unfortunately after lunch we got the same problem of the day before: target and line heating down.

After many investigation D.Calcoen restarted everything and he told us that this problem occurred because of some sparks in the HV cage which have set the PLC in a bad state.

Radioactive beam to users from the evening and no major problem over the weekend.

AD (Bruno Dupuy)

Here are the major events of the week:

- The beginning of the week is marked by the observation of random jitter on the beam ejected (Position, Emittance and intensities). Observation reported by ASACUSA and ALPHA. The diagnostic have been concluded Thursday by changing the ring power-supply DR.DVT1608 (random impulse function). Since the beams are stable for the experimental areas.

- OP7 Exceptional for moving a radiation monitor (Study of radiation levels in case of loss in the TT2 line. (Wednesday,25 15H-16H).

- ASACUSA force accidentally access to their experimental area. The Piquet-Access restore the conditions (Friday,27 23H-02H)
- S-Cooling intermittent failure (Saturday 16H-19H). Intervention of the Piquet First-Line on DR.SCV1DCPOWPRE power-supply. Bad connections in the distributions timings are at the origin of all these dysfunctions (Saturday 28 16H-19H).
- Some disruption to users, caused by the access control by Film Badge for hall ADE entrances.

Summary

- Monday,23 -
- Tuesday, 24 Cavity C10-26 (reset)
- Wednesday,25 FTA.DVT9029 and DI.BHZ6024 (Reset)
- Thursday,26 DR.DVT1608 (changed)
- Friday,27 ASACUSA Access
- Saturday,28 DR.SCV1DCPOWPRE and Timing (Stochastic-Cooling)
- Sunday,29 -

Booster (Giovanni Rumolo)

This has been an excellent week at the PSB, with basically no issue to report.... I think the total downtime due to equipment trips amounts to less than 10 minutes! All the beams to ISOLDE, PS physics users, CNGS, LHC, MDs have been always provided as requested.

PS (Rende Steerenberg)

The PS has been running very well last week with only a few minor faults despite the many different activities that took place.

The most important issues were:

- On Monday Morning a 1 hour access in the PS took place to replace the broken final amplifier of one of the 10 MHz cavities (C86).
- On Tuesday the nTOF beam transformer front-end was upgraded. Unfortunately this was not planned, nit communicated to the CCC and could have been done during a technical stop. This intervention caused in total more than 2 hours of down time nTOF and some perturbations for a further hour.
- On Sunday it was found that the video server for the access system was down. A temporary fix was put in place.

During the week there was also a lot of work done on the fast wire scanner measurements. Lots of systematic data have been taken and are being analysed, with the aim to solve some of the issue observed with the PS wire scanners.

On Thursday a loss test was made on request of the RP team. The aim is to model a weak point in the shielding between TT2 and the AD hall.

SPS (Elias Metral)

During the past week, the SPS continued to deliver a lot of beams to CNGS and the required beams for LHC, with in particular batches of 108 bunches spaced by 50 ns. In addition, several MDs took place in parallel or during the floating MD session of Wednesday.

On Monday, the transverse emittances of the nominal 4 batches 25 ns beam were checked with a correct gating of the wire scanner (i.e. not on the first half of the first batch, as was done in the past). The previous measurements were confirmed, revealing transverse emittances between ~ 2.5 and 3 micron.

On Tuesday, the dependence of FBCT on bunch length and position was studied. Furthermore, from the operation side it was also noticed that the RBIH.660107 for HiRadMat perturbs the trajectories in TI2 (through an electric coupling).

On Wednesday, the AUG intervention in BA7 took place. The EN/EL people informed us that the access in BA7 is back to the usual procedure. Moreover, the 24 h floating took place as foreseen: the first part was devoted to the setting-up of the coast at 120 GeV/c, the second to test of the phase II collimator set up and the third to emittance growth studies (in particular for possible crab cavities to be installed in the SPS). As concerns the last MD, last year's main results were confirmed: small beam losses but quite large emittance growths in both planes (~ 10 -20 microm per day). This seems to be almost independent of the tunes, which were roughly scanned. The current interpretation is the presence of external excitation(s), which seem to be clearly seen on the Qmeter.

On Thursday, at the end of the afternoon a problem was observed on CNGS where beam losses were observed at the start of the ramp (at ~ 1600 ms) and close to the end of the ramp (at ~ 3700 ms). After many checks during the night it was finally found that the problem was due to a missing reference on the main dipoles station SMD3 (due to the auxillary power supply of the card sending the reference which was not working properly). The beam was back only on Friday morning at $\sim 10:00$. Besides, on Thursday, the NA TAX intervention took place successfully (all NA experiments should be ready for physics by June 6th).

Finally, during the week-end, many calibration measurements were performed on the wire scanners 41677H and V.

LHC

48 hours out during the week to cryogenics (effects of two different PLC crashes). Otherwise reasonable performance – now up to 1092 bunches per beam and peak luminosity of around $1.2e33$ cm⁻²s⁻¹.

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

TI (Peter Sollander)

Quiet week for TI, only one major event on Saturday, electrical perturbation.

The pending intervention in T12 to check the emergency stop buttons could take place. EN-EL preventively changed the contacts on 9 buttons. Inspection of another AUG chain in T12 will be planned for next technical stop.

day	events
Wednesday, May 25	EN-EL access to T12 (in the shadow of cryo problem) to check emergency stop buttons.
Saturday, May 28	00:26 -- Electrical perturbation stops LHC for half an hour.

<http://wikis/display/TIOP/2011/05/30/TI+summary+week+21%2C+2011>