

End Week 34 (August 31st 2010) – Status of Accelerators

Linacs (G. Bellodi)

Linac2:

Linac2 had a quiet week with only one RF trip on Tuesday evening, reset by the PSB operators, that made beam unavailable for a few minutes. On Wednesday morning we were warned by the RF team that the transfer line debuncher LT.CDB10 AMOD was hitting 0V on long pulses (meaning no RF power was sent in the cavity as more than enough amplitude was present just due to the beam loading). The cavity phase was adjusted from 300deg to 285.6deg on all users, and as consequence of this change an 8% step up in ejected beam intensity from the PSB was recorded on ISOGPS.

Linac3:

Linac3 tuning continued during the week: after increasing by 7% the RFQ voltage (and decreasing the phase) quite some gain was observed on TRA15. Beam intensity on TRA25 is now in the 23-27 muA.

PS Booster (B. Mikulec)

The PSB was running smoothly last week.

Few issues are worth mentioning:

- Transformer values unavailable last week Monday/Tuesday morning. The proxy server was migrated to a different machine and upgraded to the latest version.
- Wednesday: Around 15h beams get lost from time to time at extraction (watchdog and BLMs reacting). It was observed that the ejection kicker was rising 1 rf period too late for h2 users (a temporary fix was to change BEX.MW8RF from 6932 to 6931). ~2h later, the problem suddenly disappeared without having been understood. The LL-RF specialists are still following this up with CO.
- Thursday: Sometimes the watchdog triggered for NORMGPS and there were losses on BE.MBL-S. These losses seemed to be correlated with the C02 dropping out for ring 4. This problem will hopefully be corrected during the technical stop (the cavity seems to draw more current than usual).
- Exchange of the power supply for B13.QNO60 on Thursday.
- Friday: Change of a regulation card for BTY.QFO184.

Stop of all beams at 5am this morning and preparations for the technical stop.

Beams: The 150ns beam has been optimised for the LHC injection tests and the 50ns high-intensity beam prepared for the SPS MD this week.

ISOLDE (E. Siesling)

ISOLDE had a very good week and the machine has been running calm and smoothly.

HRS:

HRS has been in standby and we started taking 1 puls in the SC in ppm with the GPS ones since this morning to create long lived Ra for the upcoming experiment at REX (as of tomorrow, Monday).

GPS:

GPS is producing Mn using RILIS laser ionization. Shared beamtime for experiments at the LA1, the GLM and the GHM lines. The GPS defelector plates are working fine (succesful repair a few weeks ago) and are in full use to serve the different experiments.

The experiments are running smooth and they are happy.

Few problems:

- At GPS we are restricted to a 30kV extraction voltage. 50kV or higher is not possible due to sparks in the front-end. This seems to be the case each time after a previous liquid metal target. Probably caused by polution on the tip of the extraction electrode. The users are happy with 30keV but an intervention will be planned for later this week (after run and radioactive cooldown) to be able to go up in energy for the next coming experiments.
- The GPS faraday-cup FC490 movement is trembling when going in and out. Not to have it stuck in the machine it has been put out-of-order. We will schedule an intervention to replace it by its spare later this week.
- Leaks of N2 for venting the different sectors have finally been located on the REX venting line and have been repaired. The rack of N2 bottles were empty each 4-6 weeks where we use to run with 2 racks a year..
- A worn pulley on the hall ventilation system was found during inspection by SEGELEC. It will be replaced this week.

PS (G. Metral)

User en operation: AD, EASTA, EASTB, EASTC, CNGS, LHCINDIV, LHCION, LHCPROBE, MDION, MD4, SFTPRO, TOF

Semaine sans problème majeur

Faisceau Ion nominale injecté et extrait du PS. Quelques déclenchements de la MPS.

Continuation de la mise en place d'INCA.

Lundi

Intervention sur cavité 40-78.

Suite de la mise en place de INCA : Problème possible avec le restore des archives (seulement possible sur le User utilise pour la sauvegarde)

Mardi

Nouveau release d'INCA => plus de control possible des PTIM-v (perte d'une règle pour génération de CCV et CCV1 depuis CCV2)

Correction du bug de décalage du Gfa du B simule. (10 ms de décalage du time scale)

Mercredi

15H30. Problème avec le transfert des faisceaux entre PSB et PS. (injection dans mauvais buket..)
Tous les faisceaux concernés sauf AD, EASTA et EASTC. Retour OK après 1H30 de perturbation sans comprendre le problème !!!

19h30. Utilisation impossible du séquence manager=> call expert

Jedi

Quelques problèmes avec le Damper réglés par le spécialiste

F16.QFO215 : 45mn d'arrêt faisceaux TT2

19h=>21H 3h sans PSB ring 3 (bi3.qno60)

Vendredi

Faisceau MDION (ion nominal) dans le PS. Longitudinal OK. Réglages encore nécessaires dans le plan transversale.

10h : 30mn d'arrêt des faisceau East (changement d'1 alim auxiliaire sur SMH61

Ajustement du champ a l'éjection sur les ions a la demande du SPS. (Éjection a 12575G)

Samedi

Quelques soucis pour démarrer la cavité 80-89

Dimanche

Arrêt des faisceaux CNGS,SFTPRO et TOF a minuit

Other

INCA :

Ppm copy toujours laborieux

Archive (difficilement utilisable et dangereuse)

TRAFO :

Une calibration des trafos circulant des machines PS et PSB doit être faite pendant cet arrêt technique.

Le trafo TOF doit être remplace pendant cet arrêt technique.

LEIR (M. Chanel)

Very good week.

With 7 injections spaced by 200 ms, LEIR delivers a total current of $5\text{-}6 \times 10^{10}$ charges (Pb^{54+}) on a 3.6 s cycle. This corresponds to the nominal ion beam parameters.

AD (T. Eriksson)

Generally very good week with good uptime.

A few short stops due to a few equipment resets : kickers, ring supplies, pulsed inj.line power supplies, target water cooling.

One power supply repair by FL on Saturday (BHZ6044)

ASACUSA experiment changeover on Thursday meant 1 shift for us to do the following:

- Vacuum sublimation
- Search for bunch length problem at ejection.
- Ring access for thermal inspection of main magnet cooling circuit
- Timing tests inj. Line
- Shielding inspection for ELENA feasibility.

Set-up of sextupole ejection ($h=6$) for ASACUSA was done on Friday along with further search for bunch length problem at ejection.

SPS (K. Cornelis)

No big problems for the SPS in the past week. The only stop which lasted more than an hour was this weekend. Access had to be given on Saturday in order to repair a broken mechanical part of the scraper. All beams were stopped for three hours.

On Wednesday there was a problem with the sequence manager. This had mainly an impact on the LHC, which had to wait until we could send the right beam. Also on Wednesday we had a problem with a Hall probe in one of the ECN1 magnets causing some unwanted drops of chain11. The probe was replaced.

For the rest the week was pretty busy with several types of beam. On Monday a first attempt was made with a new integer tune of 21 in order to lower gamma transition. On Tuesday we had a 24h MD in order to set up the 55GeV and 270GeV coast. During the night BBLR measurements were done at 55 GeV. On Wednesday we sent the 150nsec beam to LHC and on Thursday and Friday we started setting up the ion cycle. The ions are circulating in SPS and the energy matching was done. We have also resumed injection of the MTE from time to time. A new matching for the injection line was installed.

Ions in SPS (D. Manglunki)

Both the early (single bunch) and nominal (4 bunches) Pb^{82+} ion beams have been injected on the SPS flat bottom. The characteristics in intensity, transverse emittances, and bunch length comply to the design.

TI (P. Sollander)

- Monday 23: Water problem stops AD for four hours.
- Tuesday 24: Early in the morning (03:26), water problem on a converter in UA27. Joint intervention by TE-EPC and EN-CV to solve the problem; a flow meter triggered an interlock on a low flow (<46 liters/minute). The circuit is OK to work with 40 liters/minutes. The interlock value was changed and the circuit restarted. No problems since
- Friday 27: A UPS in RE28 has a battery problem that requires access. The same problem has been seen on January 26 in RE12 and on April 23 in RE78.
- Saturday 28: Internal cooling problem on a power converter in UA63. Intervention TE/EPC.

LHC (R. Assmann)

Full details under “coordination” at

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