

## End Week 41 (October 18<sup>th</sup> 2010) – Status of Accelerators

### Linacs (M. O'Neil)

Quiet week.

### PS Booster (K. Hanke)

The Booster had no big problem, but many small ones... Here the most important ones:

Tuesday 12 October 30 min down time due to extraction septum, the EPC piquet changed 2 fuses.

Wednesday 13 October the equipment specialist performed measurements on the new ISOLDE watchdog, the noise on the cards is still higher than with the old system and different solutions (filter, new cards) are being followed up. In the afternoon, a resettable trip of the MPS, caused probably by a power glitch. Following this trip the Q-strips needed re-adjustment.

Thursday 14 October CO2 cavity on R4 trips, the operator could reset it locally, 30 min down time. The equipment specialist came in later and adjusted the filament voltage, he needs to do an intervention but hopes to survive until the technical stop. In parallel a strange controls problem needed piquet CO intervention.

At 22:27 the BT.KFA went down, G. Ravidia was called; the temperature sensor was faulty (known problem). It indicated a too high value. This happened twice last month. A spare has been ordered at that time. A 2 h stop is needed to do the permanent repair (-> tech. stop). At 23:19 all was OK.

Friday 15 Oct at 07:00 electrical glitch in the mains, several equipments down (RF cavities, elements in the injection, BT line etc...); all back 07:20.

Weekend absolutely quiet.

### ISOLDE (E. Siesling)

In short a very good week for Isolde with minor issues.

#### GPS:

Successful run at 40kV involving RILIS laser ionization on Be for the Collaps experiment and a few collection in the GHM line.

HT problem: Recovery of the High Voltage after proton impact. Some 40ms instead of the normal 6ms. It was decided to swap with the HRS HT source. Now GPS on HT1, HRS on HT2. The short recovery time is very important for this particular run on light short lived masses. The modulator will be repaired during the shutdown (Thanks to Jan Schipper for all the time spend on analysing the problem).

The facility has been running very stable during the week and over the weekend. Minor interruptions of the proton beam.

The users are very happy.

#### HRS:

In cooldown period. The foreseen target-change on Thursday has been postponed to today (monday) due to extensive outgassing of the new target.

Tests on the target cooling water flow ongoing (Serge Deleval, Nicolas Roget) and on the compressed air pressure for the target valve piston (problems with not closing completely at HRS) (Stefano Marzari, Michel Fressard).

### **PS (R. Steerenberg)**

The PS has been running very smoothly last week with excellent beam availabilities:

East Area beam 98%

TOF 94%

AD beam 98%

SFTRPO and CNGS 99%

LHC PROBE and LHC 150 ns beam 99%

A big effort went into preparing the different beams for the LHC following the request of the 50 ns beam. The beam control hardware and the settings of the different LHC beams was adapted to be able to deliver now four different types of LHC beam (25ns, 50ns, 75ns and 150ns) without major adjustments. The single batch injected PS LHC50 was delivered on Thursday morning to the SPS for verification and adjustments and all the other variants are also available.

The only problems worth mentioning are:

- Thursday morning at 6:30 all beams were stopped due to the bad pulsing of the PS injection septum at the same time as an RF problem in the PSB. The problem disappeared mysteriously at the same time as the PSB RF problem was solved, but caused about 30 minutes downtime.
- Friday morning there was a glitch on the 400KV network that caused several equipments to switch off, but they could easily be reset, causing about 20 minutes downtime.

It is also worth mentioning that due to the large number of activities (normal operation for non-LHC physics, ion commissioning, parallel MD's, LHC beam operation, LHC beam preparation, etc.) using many different sequences and super cycles there is one of the three persons in the PS island for about 60% or even up to 70% of his time occupied by making modifications to all the different super cycles and sequences in case of a simple change. This is required since a simple request of the LHC switches sequences and super cycles and therefore they all need to be synchronised to maintain as stable as possible operation for all the other users. It would be good to address this point and see what can be done to alleviate this situation (e.g. less sequences, less ad-hoc and better planning, make use of spare cycles in SPS, etc....).

### **LEIR (M.E. Angoletta)**

Positive week for LEIR.

On Monday 11 Oct the oven was refilled and the beam could be injected in LEIR as from Tuesday afternoon. The LEIR restart was somewhat laborious owing to the dielectric crate failure, which was solved by the piquet CO in about one hour.

On Friday 15 October morning there was a problem on the Linac3 energy ramping cavity, which was solved in a couple of hours by the RF experts. During this time no beam could be injected in LEIR hence also the SPS could not run ions. A similar problem happened in Linac3 also during the afternoon but the downtime in that occasion was just 1/2 hour.

### **AD (K. Mikluha)**

Pretty stable and efficient machine during the week.

On Monday morning we had C10-26 cavity off because of a predriver fault. This fault did cause only minor drop of intensity, and Mr. Matthias Haase fixed it quickly. So, the users were happy despite this problem.

On Tuesday afternoon we had DE2.BHZ10 power supply tripped off, which was quickly fixed by the Firstline. Downtime because of this problem was 45 minutes.

We had also problems with an access door of ASACUSA zone, which door's hinge was broken and making it hard to close the zone. Mr. Didier Chapuis was called in and he changed the whole access door module. Downtime because of this was only a couple of minutes thanks to him.

On Friday afternoon we had a DE.VVF7048 vacuum valve shut, so the vacuum piquet was needed. Downtime 50 minutes, making the whole week's downtime caused by AD problems less than two hours.

### **SPS (D. Manglunki)**

The SPS week started by a 9 h stop of CNGS because of the reflector's power supply, but the rest of the week was quite quiet. However, the SPS is still plagued by spurious polarity changes (i.e. on MDLH 2303) at each sequence change.

The Pb ion commissioning went on as usual from Wednesday till Friday. The 50ns bunch spacing LHC beam has been tuned and is now ready to be sent to the LHC.

There was a glitch on Friday morning at 7:00 which tripped all the RF transmitters. On Friday afternoon there were a few beam stops due to a lost subscription of SIS, caused by an IT network problem.

During the week-end there were several stops due to trips of RF transmitters.

### **TI (P. Sollander)**

Very quiet week for TI with only two major event reports, both on Friday 15. Not many alarms or faults as can be seen by the ODM stats.

Friday October 15:

Electrical perturbation seen across CERN stopping PS, SPS and LHC. External perturbation, awaiting the detailed trends from EN/EL

Afternoon, 4 x 50 second computer network interruptions with BA3 stops the SPS. Investigation ongoing, pending info from IT.

**LHC (G. Arduini)**

Full details under “coordination” at

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