

Accelerator complex status

End week 38 (Sunday 21st September 2014)

TI (Jesper Nielsen)

TI summary of the week:

<https://wikis/display/TIOP/2014/09/22/TI+summary+week+38%2C+2014>

LEIR (Jerome Alexsalva)

It was a quiet week for LEIR, we did not suffer any big or long problem so that the beam was available all along the week. No special event or trouble occurred during the week on LEIR equipment. We spent the beginning of the week optimizing the intensity delivered to the PS (up 1E10 charges during the best shots).

With the help of Mike & Greg, we now understood the troubles we have with LSA, we have started to clean and rebuild the system, tests are ongoing and the coming weeks will be dedicated for the continuous improvement of the machine.

ISOLDE (Miguel Luis Lozano Benito)

HRS

Tuesday

Beam for ISOLTRAP and WINDMILL (At) and target yield checks. The separators magnets power supplies were tested and worked well.

Wednesday

Beam for ISOLTRAP and WINDMILL (At). We see some faraday cups beam readings freezing quite often. The problem occurs on all faraday cups at the same time and can even be observed on the expert application.

Thursday

No protons on target during the morning due to a planned intervention on the GPS fronted.

Target and line heating dropped when GPS intervention due to a mistake. Restarted and fine.

INCA update after INCA team found a bug. After the update the target and line heating stopped. Restarted and fine. Beam for ISOLTRAP and WINDMILL (At)

Friday

Beam for the users during the day.

Saturday

Beam for users. Beam tuning for COLAPS.

Sunday

Beam tuning for COLAPS. Users called because both separator magnets power supplies had an error. Reset and fine. Cooling target and line for target change on Monday .

GPS

Tuesday

Target cooling for target change.

Wednesday

Target change and target clamps potentiometer replaced.

Thursday

During the intervention a short circuit was developed on the new potentiometer and a second intervention on the frontend was needed to fix the problem.

Friday

One of the power supplies on the frontend (YGPS.SCRMAG) broke down. First line called but not responding. Expert then contacted and power supply replaced quickly.

Some issues with the logbook that was not available from time to time.

Beam tuning, proton scan and yield checks during the day. The target was still outgassing and the beam profile was not good. Anyway we managed to set the machine up in a very long day for the target team (many thanks to Tania for her hard work). Beam collections during the night.

Saturday

Beam collections.

Sunday

More beam collections. User called because the separator magnet power supply was down ruining a couple of collections. Power supply restarted and fine.

Booster (Alan Findlay)

Overall a good week at the PSB, reasonably quiet with good up time.

A couple of things to mention though, just so you have something to read:

Tuesday an emergency stop was pushed accidentally, taking the beam down for 20 minutes or so.

A water leak in the PSB noted by TI caused us to allow access on Wednesday in the shadow of the PS interventions and the lack of ISOLDE beam request. We allowed the various accesses on the list and beam was off between 13H15 & 15H45.

Thursday the synchro for the AD beam stopped working correctly around 11H00, the LL RF specialist & the machine supervisor worked closely on the problem, and found reflections on timing cables to

be the source of the problem. The AD beam was back by 13H30, but Alan & Alan are still trying to understand why only this h=1 beam saw the problem.

The SFTPRO h=2 beam was worked on throughout the week, and R4 had the nominal 600E10 by Friday afternoon, but the LL RF specialist & the machine supervisor are still trying to explain why this ring is so sensitive.

A power glitch on Friday night took beam out, but Jean-Francois had it back up and running after 20 minutes.

A power glitch on Sunday evening took out a few elements, but Nicolas had the beam back within 10 mins.

PS (Ana Guerrero Ollacarizqueta)

Two long beam stops affected the PS this week.

On Wednesday the scheduled 54H and 68H wire-scanner exchange took place. Beams were stopped at 7 a.m. The intervention went smooth and the pumps could be switch on as expected by 10h30. The vacuum did not advance as expected though and a second detection leak had to be envisaged. No leak was found. The stop allowed several other pending accesses thus delaying the ions in LEIR a bit. The machine was closed for access at around 15h as foreseen. By 21h30 beams could be switched on again without major problems with a total down time of 14 ½ h, less than initially expected.

On Friday, at 10h a condition in TOF primary area was lost. As a result PS switch yard and ring fell down. The beam was back by 13h. Electricity had been cut off in TOF primary area for works. After some investigation it was found out that a battery expected to last 4h stopped working after 2h and a patrol box lost the power. Even if the wired loop was not lost initially it was necessary to perform a patrol. Some minutes after the EAST beams could start being delivered, POPS went in fault due to a fire central unit alarm. The investigation showed that a vacuum pump had been switched on in the contiguous building B367 for MTE kickers which actually produced smoke. All these events resulted in all beams stopped during 3h. In particular SPS beams had been already affected by a problem on the 10MHz cavities from the night before and were running with very low intensity. The cavities were back by 14h.

In addition on Tuesday there was an accidental emergency stop that stopped all beams during 30 mins.

PS has been producing the usual operational beams, EAST, TOF and AD normally. Low I SFTPRO and LHC25ns 12 bunches have been sent to SPS all along the week.

During the week the work has been centered on the LHC25ns 72 bunches beam with double injection 4+2 from booster and TOF intensity increase.

On Thursday the ions went back into the PS.

SPS (Django Manglunki)

Beam is circulating in the SPS since the previous weekend.

On **Monday** 15/9 and Tuesday 16/9 a first round of orbit measurements took place in view of the realignment.

On **Tuesday** evening there was a false fire alarm in a power supply for RF in BA3. The same sensor had already been giving false alarms in the previous weeks.

The first realignment campaign was done on **Wednesday** 17/9 during the PS intervention for the wire scanners (5 quads in each plane).

On **Friday** 19/9 afternoon took place the second round of orbit measurements for realignment. The second realignment campaign was done on **Saturday** 20/9 morning (4 quads in H, 6 in V).

Setting up of the slow extraction started on **Saturday** afternoon. It was found that the new SEMgrid in the ZS was still not working after LS1, it is hoped it can be fixed this week. Also a corrector polarity was found inverted (MDLV.210218)

For the moment the early dump cannot be arbitrarily set to any value but only to a gradually increased energy starting from the end of the forbidden zone, in order to condition the kicker.

The SEMgrid in front of the dump was found not working because the cables were not plugged in. This was corrected during two interventions.

During the week the LHS 25ns beam was circulating and used to condition the machine elements. Currently we are taking two batches of 12 bunches.

The QD is still working on the spare power supply; TE/EPC needs about half a day with no beam and no one inside the machine to switch to the normal one and test it.

It was found that turning off the light in BA1 trips the MKD, through the differential personal protection system. Until the problem is fixed, EN/EL has blocked the automatic switch-off timer.