Accelerator complex status

End week 39 (Sunday 27th September 2015)

TI (Jesper Nielsen)

TI summary of the week:

https://wikis.cern.ch/display/TIOP/2015/09/21/TI+summary+week+39%2C+2015

Linacs (Rolf Wegner)

Linac2

It was a good week for Linac2. Only 2 minor interventions:

- Monday a control card in the power supply of the magnet LA1.QDN175 had to be replace
- Friday afternoon the tube in the Frank James amplifier of tank 2 was exchanged to avoid trouble during the weekend

The Intensity at transformer BCT60 is typically 140 mA.

Linac3

We struggled last week to get a good beam intensity out of the source since parameters were drifting. Friday evening however, we found good settings and the source was running quite stable all weekend long producing good intensity. The other Linac components have been running well.

Intensity at BCT41 has been between 13 and 20 uA last week and between 18 and 20 uA over the weekend until now.

LEIR (Jerome Axensalva)

A quite good week for LEIR.

- On Monday 21st a water leak was successfully repaired on the septum SMH40 (in the shadow of the LN3 source refill)
- A 4.8 sec , 4 BPs Lead cycle was successfully created for up to 18 injections studies, RF tuning has still to done on this cycle
- EARLY and NOMINAL beams were successfully sent to the PS all over the week, these beams are accelerated and ejected on D3, ready for SPS.
- Linac3 source is sometimes unstable, but the LN3 team did its best to maintain a usable intensity on T41 all over the weekend.

Booster (Klaus Hanke)

The only major problem of the week occurred on Tuesday morning when the MPS and some other power supplies tripped. The reason was an interlock rack powered down, most probably caused by the campaign to do a scan under the false floor in the PSB buildings (in preparation of the YETS). Although the edict was to open the false floor without touching anything, it is very likely related to this activity.

A meeting has been scheduled for this morning with EN to analyse what has happened and to identify improvements in the procedure. Once the rack was powered again, still some power supplies were malfunctioning; they sent from time to time the wrong ccv value (one of another user) to the magnets. This perturbed operations during the whole day (LHC filing was possible) and could be fixed only in the evening. A phone call to D. Calcoen finally brought us on the right track: the CPUs of some power supplies got saturated when the display was switched on. Switching the display to 'economy' mode cured the problem immediately. Beam was back around 20:30. The following day we could reproduce the problem and confirm that the display was really the cause. The EPC group will propose solutions to permanently cure this weak point.

The rest of the week was eventless.

PS (Gabriel Metral)

Intervention sur la cavité C80-08 en début de semaine pour pouvoir faire l'opération des ions. Le Tuner a été remis en état, cette cavité est à nouveau opérationnelle.
les cycle ION EARLY et NOMINAL ont été accéléré dans le PS.

Problème sur le mode de display des châssis qui pilotent les alims de BTP, pas de faisceau PSB pendant 4H lundi après-midi.

Faisceau MTE délivré de façon stable à la physique depuis Lundi.

Cette semaine, un gros travail a été fait pour extraire les faisceaux TOF sans les Kickers MTE. Un nouveau schéma a été mis en place par Cedric avec succès. Ce travail va été porte sur l'operation AD.

Le faisceau LHC 8B+4E a été délivré au SPS.

SPS (Verena Kain)

On Monday this week the SPS switched to MTE for the proton fixed target beam. The shift crews in the PS and SPS kept optimizing the beam throughout the week by centering the beam on the first screen in TT10, equalizing the spill from PS and correcting the tune as much as possible around the SPS transition. The maximum transmission achieved this week with MTE was 93 % compared to the CT transmission of > 97 %.

The users in the NA do not see any major differences so far between the two beams.

On Wednesday the LHC beam 8b+4e was injected and accelerated in the SPS. The bunch intensity at injection was close to 2e+11 with emittances of 2.3 um at 26 GeV. Up to 2 batches with 56 bunches

each were used. The flattop of the MKP4 is however not long enough for the 8b+4e beam. The first as well as the last bunch are slightly miskicked. No emittance growth seems however to be associated with it.

The beneficial effect on the nominal LHC beams of injecting larger dp/p bunches from the PSB into the PS was demonstrated also in the SPS during the Wednesday MD. The emittance in the horizontal and vertical plane could be reduced by about 10 %.

HiRadMat took again LHC beam up to 288 bunches for a BLM experiment.

The Pb fixed target cycle is ready for beam setting-up.

The longest downtime was caused by the MPS failure in the PSB on Tuesday. Almost 10 h of beam time were lost.

The NA could not be served with beam for about 2 h 40 min due to a vacuum controls problem in BA80 which lead to closing the valves. The issue seems to be fixed after the piquet has exchanged a vacuum controls box.