

## Accelerator complex status

### End week 28 (Sunday 17<sup>th</sup> July 2016)

#### TI (Ronan Ledru)

Summary of the week:

<https://wikis.cern.ch/display/TIOP/2016/07/18/TI+summary+week+28%2C+2016>

#### LEIR (Sergio Pasinelli)

This week was intensive ...

##### RF:

Hard work was done on LLRF. Experts have managed the migration to the new LLRF. New LEIR LLRF, has captured, accelerated, synchronised and sent to the PS both EARLY-type and NOMINAL-type beams. From now, all beams are using the new LLRF. The old system is disconnected but keep alive ... in case of ... we need it.

##### SFC:

Straight Field Compensation on the ETL.BHN10 GFA was tested and deployed with success.

##### ECooler:

Specialists have been detected a voltage limitation on the filament. An access into the machine was done in order to fix it but without success. An another access will be planned during the TS3 in September.

##### MD:

Injection @10Hz  
ECooler optimization

During the week-end we have had a fire alarm in building 150. Fire brigade and TI saw some smoke around the power supply of the ETP.BHN10. They switched off the breakers of ETP.BHN10. PIPO was called but nothing can be done by him. Only the responsible of the power supply can do the diagnostic. More news Monday. PIPO also repaired the ETL.QNN50 ,ER.QFN2344 and ER.QFT23. They were in fault.

#### AD (Joao Carlos Oliveira)

- We had a kicker problem last Friday evening. The kicker was in fault because of a temperature interlock.

The AD machine has no piquet for this. I could reset the fault myself with the help of a specialist that told me what to do by phone.

- Sunday ATRAP experiment couldn't have beam. There were two problems:
  - a) We couldn't open their vacuum valve. This was repaired by the vacuum piquet.

- b) A temperature default on a magnet. This was fixed this morning. People from the experiment agreed to wait, it was almost time to switch beam for another experiment.

## **ISOLDE (Miguel Luis Lozano Benito)**

It was a good week at ISOLDE until Saturday night.

IDS took beam from GPS until Thursday when they moved to HRS for one more day.

On Friday CRIS started taking beam from HRS but unfortunately on Saturday night, at around 2 AM, users called because some of the optics elements were in fault.

I called first line and we replaced the faulty power supplies but the problem didn't disappear.

After having some conversations over the phone with the TE/EPC experts we got to the conclusion that it was something probably related with a PLC.

Unfortunately no PLC experts were available so the experiment had to stop until Monday.

## **Booster (Gian Piero Di Giovanni)**

It was a very good and calm week for the PSB.

During the week (on Thursday) we had to stop for about 40 minutes as the Linac2 needed to replace a turbo pump. The intervention was anyway performed while the LHC was delivering stable beams for physics. So only ISOLDE was affected.

During the week we had couple of technical issues:

1) We experienced issues with BT2.DHZ10 corrector during the LHC filling process. The corrector tripped several times but the reset always worked so we could continue filling LHC. You finally managed to track back the problem to the difference of ppm values between users in the supercycle. After equalizing the CCV setting, we did not have additional trips. Nevertheless, the piquet was contacted, but, after more than one hour intervention he could not solve the underlying issue with the power converter. We will follow this up today.

2) We observed a slow drift of the current of the septum BT4.SMV10 towards lower values, causing undesired changes of the extraction trajectory in ring4. The temporary solution is to increase the CCV current to compensate for the decreasing current. We will follow the issue with the expert today.

Despite the summer period, a lot of MDs and progress towards solving operational issues and homogenizing several settings among different beam users.

## **PS (Denis Cotte)**

Une bonne semaine pour le PS avec une disponibilité d'environ 95%.

La restriction de charge sur POPS a été levée Mercredi.

Le seuil de température du transformateur a été rehaussé à 110 degrés C au lieu de 90 degrés C précédemment.

La seule limitation restante est une consigne de Fulvio de ne pas dépasser le courant IRMS de 3000A sur 1 minute.

(Ce seuil n'ayant jamais été atteint depuis le début du Run) et de surveiller la température de l'eau de refroidissement des IGBTs qui doit rester sous les 41 degrés C.

La perte de communication avec l'automate gérant le refroidissement de la cible de TOF a causé 2h sans opération TOF.

Des problèmes avec le kicker d'injection de AD, ont empêché de jouer le faisceau AD pendant ~3h. Deux éléments de la ligne T9 (BVT01, QDE06) ont été vus par le spécialiste TE-EPC et First Line afin de supprimer l'instabilité verticale présente ces derniers jours sur le faisceau de la zone EAST\_N.

Une version BCMS avec des emittances réduites a été envoyée au LHC pendant le week-end avec un record de « peak luminosity » Samedi.

Un correcteur entre PSB et PS (BT2.DHZ10) a perturbé le remplissage. Le piquet a été appelé ce week end pour ce problème.

Le setting-up des faisceaux IONS continue même si nos spécialistes RF sont maintenant en vacance jusqu'à début Aout.

La mesure de durée de vie des ions s'effectue maintenant à chaque shift.

Des nouvelles consignes ont été ajoutées en cas de blocage d'un « Fast Wire Scanner » en position « IN »

### **SPS (Karel Cornelis)**

Another very good week for the SPS with an availability for fixed target of over 92%. Besides the injector stops, the SPS downtime was mainly due to power convertor problems on Wednesday evening (MDHI1021 in TT10 and the splitter in TT20). The MDHI1021 could not be repaired and was finally replaced by a spare. The splitter PC could be temporary fixed, but an intervention was needed on Thursday morning in order to do a permanent repair. The QF was replaced by the spare QS on Thursday. First observations indicated that the 65Hz on the spill disappeared. On the LHC side we continued to fill with the blown-up BCMS. The bunch to bucket transfer from PS to SPS was optimized by the experts in order to reduce satellites. As from Saturday the emittance of the BCMS was reduced for LHC filling, resulting in an increased initial luminosity.