

## Accelerator complex status

### End week 35 (Sunday 30<sup>th</sup> August 2015)

#### TI (Peter Sollander)

TI summary of the week:

<https://wikis.cern.ch/display/TIOP/2015/08/31/TI+summary+week+35,+2015>

- A human error on the LHC access system last Monday afternoon during a maintenance operation in point 3.
- Demineralised water leak in sector 2-3 (again). 6 hours lost for the LHC. Another "dilatoflex" failure. A spare pump in UW45 was cannibalised for the part to get the circuit up and running again as soon as possible.

This week is going to be very busy with the technical stop. TI have two people on shift day time the whole week to cope.

#### LINACS (Rolf Wegner)

It was a very good week for **Linac2**, no complaints.

**Linac3** had a good week as well after good setting were found last Monday.

- quite stable beam production, intensity at BCT41 between 17 and 20 uA
- a few resets of the Source high voltage were needed during the week

#### LEIR (Django Manglunki)

A pretty good week for LEIR. Thanks to the efforts of the Linac3 team, there has been enough usable beam all through the week to set up the extraction on both EARLY and NOMINAL cycles.

On Monday the three users NOMINAL, EARLY & MDNOM were made conformant to the new LSA generation type, no longer using "correction".

On Tuesday LEIR which had been running in standalone since the end of the argon run, was coupled again to the complex. Setting up of the extraction started on NOMINAL.

On Wednesday the extraction was set up on EARLY. Gates of the beam current transformers in the extraction line were adjusted remotely.

On Thursday the PS started to use the EARLY beam. Work went on in LEIR to try and minimize the injection and acceleration losses. On Friday investigations on filamentation during synchronization with the PS, eventually pointed to a hardware problem in the final amplifier of the cavity, which does not follow the programmed voltage when about ~2kV. In the meantime the beam can be delivered with a limited voltage.

An intervention is planned for Monday morning.

Many thanks to Greg Kruk, Juan Carlos Allica Santamaria, Sergio Pasinelli, Matthias Haase & Alan Findlay for their help during this week.

### **Booster (Klaus Hanke)**

An extremely calm week for the PSB with only 7 min of down time.

Some synchronisation issues with the PS were tackled by the RF specialist.

On Saturday the above mentioned trip of the MPS which could be reset after 7 min. Also on Saturday there was a trip of BE4.DVT11L1, which required intervention of the EPC piquet who changed a card. However this did not cause any down time.

Otherwise all our physics and MD beams were delivered in specs.

### **PS (Rende Steerenberg)**

The PS had an excellent week with a high machine availability.

The week however started with a problem on KFA4 that did not pulse from time to time during the weekend, causing radiation alarms for nTOF. The replacement of an electronic card solved the problem.

During the routine beam quality measurements on the 25 ns LHC beam the beam was found to become unstable in the vertical plane towards the end of the ramp. This was corrected by slightly increasing the vertical chromaticity.

Saturday morning the nTOF beam was stopped due to a problem on a power converter of a quadrupole in the transfer line. Unfortunately the knob showed the correct acquisition and status, as it was not updating, making diagnostic difficult. This is an issue on quite a few converters since the renovation done during LS1.

Throughout the week the MTE beam was send regularly to the SPS for further setting up on the SPS side.

### **SPS (Verena Kain)**

In week 35 the SPS was juggling between NA physics, SPS MD and providing beam for the LHC MDs. The beam quality to the NA suffered at times due to the continuously changing super cycles.

The BLM on ZS3 is broken and needs an access to repair. The repair is scheduled during the technical stop.

Work on the MTE cycle SFTPRO2 has started. This cycle accelerates the beam to 400 GeV and is extractable to the NA. The beam is now correctly injected with comparable losses at injection to the CT cycle. (On the flat bottom the losses are still higher.) Setting up of injection took longer than expected due to the change of optics in TT2 and TT10 in the weeks earlier, which had been generated but not driven on the MD cycle. The copy from the MD cycle to the SFTPRO2 resulted therefore in very different trajectory and setting up had to start from scratch. Not much progress

could be made yet to improve the transmission along the acceleration. Work on the cycle will have to continue after the technical stop.

Almost 7 h of downtime were accumulated due to recurringly inconsistent current references from the main bend circuit to BETS (Beam Energy Tracking System) of the SPS beam dump kickers. On Friday EPC thought that the problem might be caused by a dying auxiliary power supply and exchanged it. But the problem re-occurred during the weekend. To be followed up.

The magnet patrol for the vacuum leak in 308 was scheduled for 8am Monday morning. The beams were stopped at 7am.