

Accelerator complex status

End week 18 (Sunday 8th May 2016)

TI (Jesper Nielsen)

Here's the TI summary of yet another eventful week!

<https://wikis.cern.ch/display/TIOP/2016/05/02/TI+summary+week+18%2C+2016>

Linac2 (Jean-Baptiste Lallement)

We had two main issues this week: On Monday, the RFQ RF amplifier had to be replaced (2 hours downtime) and the DTL tank3 ignitron broke on Wednesday (2.5 hours downtime).

The Linac was very stable over the long week-end.

Booster (Alan Findlay)

A good week for the PSB, no doubt helped by the long weekend.

We only had a small amount of downtime due to the PSB, Wednesday a water leak in a pipe cooling the injection and extraction line supplies required a 35 minute intervention to replace the punctured pipe, then Saturday evening the MPS dropped out requiring the PiPO to do a local reset, but we lost 50 minutes.

In other PSB news this week, work continued on trying to reduce the vertical emittance on R4 for LHC25ns, and Abdel managed to find solutions for us to work with that would match the other rings, which will be followed up. There were a number of MDs by Bettina to investigate the losses on R3 around 4L1, and these generated even more questions for us! Jean-Michel noted that since an ADC measuring the IMPS of the PS had been changed a while ago, the scaling factor he used to calculate the PS stray field compensation in the PSB was no longer correct. He corrected the scaling factor, Abdel returned to the nominal lambda value, tested this with the GPS beam and noted a significant improvement in the injection trajectory stability and a slight increase in the intensity on target.

PS (Matthew Fraser)

Except for Monday morning's electrical network problem (SIG), the PS had a relatively calm week in comparison to the week prior and continued its recovery from the POPS incident. No further electrical glitches were experienced but a piquet intervention was needed to get MPS (rotating machine) up and running after an intervention on Monday.

The intensity for MTE sent to SPS was interlocked with the internal dump in the PS at 550 ppp on request of EN-STI (TIDVG issue). Experts worked on LHC50 to make it operational with the beam looking tidy before the long weekend.

The PS took advantage of the dedicated MD for the SPS ZS aperture scans to test and implement a new LLRF electronics card for the vertical transverse damper.

Beam was sent to AD without major issues and significant integrated proton flux was delivered to TOF and EA, whilst respecting the average power limit of the MPS. The RP monitor next to the TOF target occasionally tripped the beam. In agreement with the RP group the radiation detector will be re-positioned, re-calibrated and the beam steering adjusted on the target.

Over the weekend EAST North stopped taking beam and all spills were instead delivered to EAST IRRAD. LHCPROBE and LHCINDIV were provided for LHC towards the end of the week as it re-started. Over the weekend LHC25 12 and 72 bunches were provided for injection tests and finally physics. The main issues were recurrent trips of certain cavities and will be followed up with experts in the coming week.

SPS (Karel Cornelis)

Since Monday the 2nd of May the SPS is delivering again slow extracted FT beam. Due to the vacuum leak on the TIDV a maximum intensity of only $1e+13$ p+ at injection as well as only one FT cycle per 40 s are allowed.

The SIS TIDV intensity interlock was modified to already interlock at $1e+13$ dumped in 36 s. FT extraction is also stopped during LHC filling where good spill control cannot be guaranteed. During the weekend, SPS has been sending up to 72 bunches of $1.1e+11$ protons per bunch. The beam dump vacuum is still stable just below $2e-7$.

LHC

Recovered from the transformer problem on Thursday morning. Some issues to be resolved following the 6 days out. Back into Stable Beams Friday evening following loss maps etc. Up to ~300 bunches by Sunday.