

Accelerator Complex Status

End week 11 (Monday 19 March 2018)

The accelerator complex is restarting progressively and all activities are on or slightly ahead of schedule. Beams are accelerated in the LINAC2, PS Booster, PS and the SPS. The powering on the LHC circuits are also well-advanced and ahead of schedule.

TI (Jesper Nielsen)

A rather good week with the switching on of the static var compensator in Meyrin and the LHC4 stable filter. On Monday 13.03 at 19:37 there was a false evacuation alarm in LHCb caused the evacuation.

Details: <https://wikis.cern.ch/display/TIOP/2018/03/19/TI+Summary+week+11>

LINAC2 (Rolf Wegner):

A quite good week for Linac2 with only one short trip of the RF amplifier of Tank2 and 2 short issues with the new LT.BHZ20 power converter.

On Tuesday a 3 hour stop of the Linac was scheduled for an access into the PSB and the EIS connection of the spare BHZ20 power converter and the following DSO testing.

PSB (Alan Findlay):

A good week for the PSB, with beam setting up going well and machine problems being ironed out. A few issues with the distributor tripping & TFB power amps tripping continue from time to time, but the specialists are on these problems. There was an electrical glitch on Friday evening that took out a number of systems, but a reset brought them back online.

We had a machine access Tuesday as agreed at the FOM, the faulty BPMs were fixed in the PSB and the LT.BHZ20 spare and operational upgraded with the safety people. Good work carried out setting up the high intensity MTE with 2500E10 already available with minimized losses. GPS is now available with 850E10 per ring (R1 having finally been beaten into submission). HRS and STAGISO have also been set-up and are in good shape. LHC25 is within spec and ready for use with the PS. BCMS has also been set-up and tested, but final checks to be made.

Various YASP steering tests between the PSB & PS showed very promising results with a single ring, next step will be to try with all 4 rings.

A week of good progress.

PS (Klaus Hanke):

All in all good week, setting up continues and beams are now delivered to the SPS.

On Tuesday afternoon there was a scheduled stop driven by the PSB, in the shadow we did a number of interventions (work on PFW power supplies, C51 amplifier, BLM, screens and wire scanner). The "missing" BLM 135 was checked, the cable is cut somewhere around 94 m. Pulling a new cable will require 5-6 h and has been added to the list for ITS1 unless we have a long stop before.

Other problems during the week concerned mainly the RF which needed numerous resets and also expert interventions. The 200 MHz system is presently in a not too good shape which is reflected in an ugly structure on the MTE beam.

Beams presently available in the PS are LHCINDIV, LHCPROBE, low intensity MTE 4 turns (taken by SPS - can do 5), small TOF, high intensity MTE until 1550E10 has been set up; EAST cycle on internal dump, AD with 1200E10. The energy matching remains to be done for this week as there is an important radial offset.

SPS (Karel Cornelis)

The SPS started with beam last Friday morning. After some initial problems with timing settings, the beam could be injected and was circulating immediately, showing once again the excellent work done by the hardware commissioning team. By Friday afternoon, two beams were accelerated to full energy (FT and INDIV). The weekend was mainly spent on qualifying the MOPOS system with kick response measurements, in order to have a list of pickups to be attended to on Monday, before the beam-based alignment. Initial aperture measurements showed that only one of the three remaining (tertiary) vertical restrictions were removed and that no new restriction were introduced during the YETS. Besides some smaller problems with RF cavities, there were periods where we were frequently stopped because of BLM's in 6. A first diagnosis indicates that the data are not always published in these periods.

LHC (Rende Steerenberg from 08:30 meeting):

The hardware re-commissioning and testing is progressing fast and is by now well ahead of schedule, as no major problems are encountered. All issues encountered are efficiently dealt with by the various experts.

Several additional test have been and are being performed.

An intervention on the cryo in point 8 is being planned for this week and fits in the present schedule.

For the RQ5.L6 it was agreed to push the current to 4000 A for both beam apertures, as a test for the exploitation of the LHC at 7 TeV. However it was also agreed that the number of quenches would be limited to three, even if the maximum current would not be reached. The present status is:

- 3928 A for aperture beam 1 with 3 quenches
- 3916 A for aperture beam 2 with 2 quenches