

Accelerator complex status

End week 17 (Sunday 1st May 2016)

TI (Jesper Nielsen)

<https://wikis.cern.ch/display/TIOP/2016/05/02/TI+summary+week+16%2C+2016>

No big surprises, Apart from POPS and LHC8 we had a few perturbations and a stop of Linac 2 cooling station.

Linac2 (Rolf Wegner)

Linac2 was running quite well (apart from a few resets) until Friday morning. Friday morning we suffered from the electric glitch. The restart took 4.5 hours. Saturday morning the Linac stopped again due to a stop of the cooling station and an electric glitch, about 1 h 15 min down time. This morning stop of the cooling water again, repair ongoing.

The intensity given to the PSB (BCT60) is typically 140 to 145 mA.

Booster (Klaus Hanke)

An eventful week for the PSB.

On Thursday there was an access to the Switchyard which forced us to stop, and we took advantage to give access to the PSB for two interventions that were on the waiting list. When re-starting we found that BT1.BVT10 did not come up and needed to call in the Power piquet, who found that the rack was not powered (blown fuse). Until that was fixed we delivered beam with three rings.

On Friday there were numerous trips of BTP.DVT50, and while the operator was addressing this problem the general power cut took out all machines. When the conditions were OK to re-start the PSB, we found that we needed the Power piquet to start up BI.DVT40, BTP.DVT50, the MPS, some quads in BTY, BI1.SMV and some other steerers and quads. At 11:48 all was OK except BI1.SMV, which meant that we could deliver beam from 3 rings, and at 12:26 the PSB was back with all rings. BTP.DVT50 started to get crazy later and during the night, and the problem was permanently fixed by the Power piquet who changed two cards.

Saturday early morning the Linac went down with a water station problem, which took out the PSB for about 1h. Once everything was back, the PSB was running for three minutes before another power glitch stopped us. The operator could re-start everything except the MPS which required piquet intervention.

On the positive side we managed to set up a variant of the 50 ns beam for kicker heating MDs in the SPS and a variant of LHCINDIV for VDM scans. Elena managed to produce very high brightness for the standard 25 ns beam which we copied on the operational user.

PS (Denis Cotte)

Le PS a connu une semaine plutôt mouvementée.

Pas de gros soucis jusqu'à Mercredi à part quelques brèves coupures de faisceaux due aux cavités RF10MHz.

Mercredi après-midi, lors du recommissioning du DC/DC1 de POPS, l'explosion de condensateurs dans le container 1 vers 18H15 empêcha tout retour faisceau jusqu'au lendemain 16H avec le retour du PS sur la génératrice.

La matinée de Jeudi a été dédiée au basculement vers la génératrice et aux différents accès en attentes dans le PS-SwitchYard, PS-Ring et TT2. (pour réparation des cavités, vérification d'interlock aimants, etc)

Le redémarrage des faisceaux sur la génératrice s'est effectué sans problèmes.

Vendredi matin vers 5h30, l'incident électrique du Point8 du LHC arrêta une grande majorité des équipements du PS. L'action des différents piquets nous a permis de retrouver le faisceau vers 13H.

Samedi matin, une autre perturbation électrique moins importante cette fois a causé 2h d'arrêt.

Entre ces arrêts, le PS a continué de fournir quelques faisceaux LHC, les zones TOF, EAST (north et sud) et AD du mieux que possible.

SPS (Django Manglunki)

Not the best week for the SPS.

On Monday 25 in the evening the SFTPRO beam started to be sent to T6.

During the night a lot of LHC scrubbing pulses (3x72 bunches, 25ns spacing) were dumped because of bad RF rephasing. The TIDV dump vacuum started to degrade and on Tuesday 26/4 morning at 06:00, the residual pressure reached the first interlock level of $2e-7$ Torr. The vacuum did not recuperate even after all beams were stopped.

A first leak detection was performed as well as a RP survey, both with the robot. No leak was detected, the dose rate at the dump was about 30mSv/h.

In the evening only INDIV bunches were delivered to the LHC, and it was decided not to deliver beam to the North Area until further notice.

After 24h, on Wednesday morning, the dose rate had only decreased to 10mSv/h and it was decided to wait until the next day to perform a manned leak detection. In the meantime gas analysis showed the leak consisted of air from outside and not water from the cooling circuit.

On Wednesday evening no beam was delivered to the LHC as the PS's POPS power supply had caught fire and needed to be replaced by the rotating machine, not available before Thursday afternoon.

Thursday morning, in the shadow of all the rest, Bill Bannister fixed a water cooling problem in BA6.

The leak detection on Thursday afternoon showed the leak was indeed on the dump itself, probably at the level of the electron welding.

LHC was filled with trains of 12 bunches (25 ns spacing) once the PS was able to deliver beam with the generator.

On Friday morning at 5:32 a glitch affected the whole accelerator complex. The SPS was ready after a couple of hours but the LHC announced it would not take beam before Monday as transformer had been damaged by a mustelid-driven short-cut.

There was another glitch on Saturday morning at 6:00, caused by EDF. SPS was up after 3 hours, but without customers.

On Sunday morning at 6:00 the RF cavities tripped, due to another EDF glitch.

During the whole week the OP team helped TE/EPC conduct measurements on SFTPRO without beam, to try and identify the cause for the spikes on the QF power supply.