Accelerator complex status

End week 11 (21st March 2010)

Booster (Alan Findlay)

The PSB has been a bit truculent this week, with a number of problems cutting the beam. On the whole, there was not too much beam down time, around 5 hours, but still, more than we would like.

We had beam back in the PSB by 19H00 after the Technical Stop on Tuesday, and by 20H15 we had a stable LHCINDIV available for the PS. It took until about 22H00 to get the LHCPROBE back up to spec and delivered to the PS. The following day we worked our way through the other beams de-bugging the various problems, but nothing major was reported.

Our principal problems started on Friday evening, when the main power supply dropped out and would not be remotely reset. The PiPO got it back up and running within about an hour, but at 05H30 it dropped out again, so he was called back on site. He identified the fault as "over intensity on the TRIM B power supply", so switched to the other TRIM A supply and we had beam back by 07H15 Saturday morning.
Saturday wasn't going to be our day however, and a "Frank James Amplifier power supply" for tank 1 of LINAC 2 went into fault, requiring a local intervention by the operator. Within 35 minutes he had the LINAC back up on it's feet, and we were in business again.
This didn't last long though, as by 14H30 the MPS started to play up again, so the PiPo was called back in again to take a look, as it wouldn't be reset. After he had discussed with the equipment specialist, they decided to swap the 2 TRIM supplies back, which he duly did. The operator joined the PiPO in the PSB, and by 15H30 he reported that they thought they had a solution, so they left the scene of the breakdown. It was not to be however, as within 15 minutes the operator called the PiPO back, as the MPS was once more grounded. A swap back to the TRIM B supply was performed, and by 16H00 the MPS seemed to be stable again. The PiPO was "invited" to join the operator in the CCC to keep an eye on the situation, and by 17H00 the MPS seemed happy again, so he was allowed to leave. The MPS has behaved itself since then, but we'll chase this up with the equipment specialist on Monday.

Otherwise, we've got all the requested LHC beams up and running, and we're bringing the other beams up according to the schedule and requests.

SPS (Karel Cornelis)

The week started with two days technical stop on Monday and Tuesday. A few leaks were repaired (a.o. on the beam dump), some shielding was installed behind the scraper and a lot of work was carried for HIRADMAT.

As from Wednesday the SPS was back and available for LHC filling. The Chromaticity was checked and corrected on the LHC-indiv beam.

On Thursday night we proved a slightly blown up probe beam for the first 3.5 TeV ramps in the LHC. During the weekend the SPS has been providing the probe beam without blow up.

We are still suffering from a recurrent problem with erratics on the inflector dump switch. During the weekend the injection kick was shortened as a temporary measure but we will have to take a few hours in the beginning of the week to replace a switch on the pulsing network.

PS (Rende Steerenberg & Yannis Papaphilippou)

Last week started with a technical stop on Monday and Tuesday. Tuesday at 18:00 the PS restarted, but was hampered by some difficulties. However the LHC beams were available in time for LHC injection.
Over the week a long standing problem with the GFAS extended to the radial loop control. The GFAS from time to time do not pulse with the correct function or not at all. This has been observed on several GFAS. Some GFAS were changed and even their address was modified, but this did not cure the problem. Investigations on the CO-side continue and hopefully will result in a solution soon as this problem causes unnecessary losses, but also generates bad quality LHC beam pulses.
There are also some problem with on e of the PFW power converters. The PFWFW from time to time doe snot provide a function at its output, but does not give any error. Resetting the power converter every time resolves the problem.
Sunday evening at 22:30 an emergency stop was generated in building 367, housing POPS, due to most probably a faulty contact that was perhaps caused by water infiltration. This caused the switch off of many PS equipments like cavities, kicker, septa, etc. The fire brigade intervened together with TI and reestablished the power distribution. After which an attempt was made to restart all the equipments that had tripped. The Piquet power was called in together with the piquet low level RF and the high level RF specialist. Thanks to their combined efforts the beam production for the LHC was resumed around 6:00, while the LHC had foreseen to inject around 2:00. Even at 6:00 only the low intensity beam could be provided as still some 10 MHz cavities were not available. They became available around 7:30 Monday morning.

LHC

Good progress with the 3.5 TeV ramp and on the 3.5 TeV flat-top. Full details at //cern.ch/lhc-commissioning

TI (Peter Sollander)

Wednesday 17, emergency stop at SPS BA7 due to human error stops the SPS for about an hour. No impact on the LHC which had not yet restarted

Thursday afternoon 18, false oxygen deficiency alarms in sector 6-7 generated some confusion, found to a faulty detector in the end.

Sunday 21 late evening, emergency stop in the PS. PS back at around 06.00 this morning.