

Accelerator complex status

End week 14 (11th April 2010)

PSB (Giovanni Rumolo)

The week was very quiet and the LHC PROBE and LHC INDIV beams were regularly produced for the LHC in the requested ranges of intensity. Two problems worth mentioning: 1) Last Tuesday a strange behavior of the beam radial position and the phase between C02 and C04 was observed on all the users. The LL-RF piquet found that the problem was caused by a faulty pick-up used by the phase loop, so that he had to switch to another pick-up to solve the problem. Later on it was found that the malfunctioning of the original pick up was just due to a loose connection, which was then fixed the next day. 2) In the night between Thursday and Friday, after recovery from the technical stop, alternating problems on Linac2 and the MPS caused a total stop of about 5 hours.

PS (Alexej Grudiev)

Smooth running during the whole week. LHC PROBE and LHC INDIV were sent to SPS on request with no interruptions. MTE setting up were continuing during the week with MD1 cycle used to send the beam to SPS and MD2 used for setting up higher intensities in the PS.

The technical stop was started and finished as planned but the restart was longer than usual. First, several 'normal' problems with magnet power supplies were solved by PIPO: local reset of F16.QFO105/215, fixing redresseur of QFOs et QSKs in the ring. The major problem which took more time to diagnose and to fix was the erratic GFAs (even those which are normally not used) which were at 0 for the 1200 ms) on many equipments including magnets and RF on MD1. The solution was to Reload all GFAs function from all Data Columns Saved last morning 4am. Reboot all concerned DSCs. Later CO confirmed that due to human error during YASP testing a send to hardware button was hit and this modified the GFAs. Next problem was with the power supply of the PR.WFW which had to be switched off and on in order to get it working and finally LHC PROBE was in the ring and OK at 21 :00 after a 4 hours restart.

SPS (Elias Metral)

It was a quiet week, during which the required beams were sent to LHC and the MTE high-intensity beam (i.e. $\sim 1.6E13$ p/p instead of $\sim 0.5E13$ p/p used until now) was set up in the SPS, with a transmission of $\sim 92\%$ at high energy (and transverse norm. rms. emittances of ~ 7 microm in both planes, when the core is

less intense than the islands. When the core is more intense the horizontal emittance can increase up to $\sim 15-18$ microm).

Most results from the SPS BQM have now been logged in the measurement database, i.e. the data for the past 7 days can be found (G. Papotti).

On Thursday some accesses took place, with a priority for the TEDs in TI2 and TI8. Both dumps' repairs went well, even if the vacuum recovered more slowly in TI2. Moreover, we profited from this 12 h stop to start the RF power maintenance (which requires 6 stops of 12 h during the year, removing some dedicated MD time). Some MD time might therefore be recuperated later in the year.

At the end of the week, longitudinal and transverse emittance measurements were performed on LHCFast2 (i.e. with the LHCINDIV bunch) at several intensities. For $\sim 1.2E11$ p/b, transverse norm. rms. emittance of ~ 1.7 microm in both planes were obtained at 451.19 GeV/c, for a longitudinal emittance of ~ 0.5 eVs.

Finally, on Sunday night the Cavity 4 and Hybrid 4 tripped. The Local Veto was still on after a restart with the sequencer. We stopped pulsing and called the RF piquet. One hour and a half later, the Cavity 4 was up and running again. The PLC responsible for the cavity cooling was in a bad state. The piquet had to restart it via a precise procedure. However, somehow the status was blocked and a "local veto /RF Off" remained on all four lines, which do not block the beam.

LHC – please see cern.ch/lhc-commissioning for latest news.

- single bunch nominal intensity injected successfully
- squeeze good to 2 m in IR 1 & 5; commissioning to 2 m. in LHCb in progress
- stable beams well established