

End Week 34 (August 28th 2011) – Status of Accelerators

TI (Peter Sollander)

<http://wikis/display/TIOP/2011/08/29/TI+summary+week+34,+2011>

Events of the week: A blown fuse stops the SPS on Tuesday, EDF glitch stops LHC on Wednesday and an earth fault stops cryo on Friday and halts the LHC for 27 hours.

LINAC2 (Giulia Bellodi)

Linac2 had a particularly quiet week: smooth running, full beam availability, no issues to be reported.

LEIR (Maria Elena Angoletta)

week 34 was (finally!) an excellent week for LEIR. By Tuesday 23 we finished solving the problems very likely left-over from the power cut of the previous week, namely a) a couple of power supply not working in two pick-up signals distribution crates and b) a broken auxiliary power supply for electronic regulation in the high-voltage power supply of the RF cavity.

MDs for LEIR beam optimisation were made.

From Tuesday afternoon onwards the beam was always available to the PS whenever required. The beam was also available to PS on Saturday afternoon, thus allowing the PS crew to change the time offset between LEIR and PS so as to shorten the time when ions beam is kept in the PS at low energy.

ISOLDE (Erwin Siesling)

GPS:

Running with a UC target. Na beam for the Miniball experiment through the GPS separator and REX trap, EBIS and Linac.

Setting-up finished on wednesday afternoon after which the beam was delivered to Miniball. Low yields for ^{30}Na , we switched to ^{26}Na on Thursday

Issues:

Had a few trips of the IHS and 9-Gap RF amplifiers which could be restarted without problem.

Running the 9-Gap at slightly lower max power due to the problems of the previous week. Therefore total energy of the beam is slightly reduced (2.82 in stead of 2.85MeV/u). Ok for Miniball.

HRS:

Previous run with the YO target stopped on Monday. Had excellent yields but unfortunately the broken 9-Gap amplifier humpered the run.

New UC target has been mounted on Friday.

Issues:

Operation of the HRS (and GPS) robot did not work. Due to the power-cut the Thursday before the GPS had lost its program and the HRS its calibration. My first conclusion of upgrades of the console manager causing a communication problem was wrong. May thanks to Enzo Genuardi (CO) for being patient and helping out. On Friday with Richard we managed to reload programs and calibration after which the target-change went smoothly.

Booster (Giovanni Rumolo)

Not much happened at the PSB in this past week.

Excluding 17 minutes last Wednesday, during which a quadrupole in the BTP line required a local reset by the PiPO, the beam has been available all the time for all users over the past 6 days. Even in spite of all the dire predictions for storms last Friday, threatening all kinds of power disturbances, the PSB operation did not actually suffer from any interruption.

PS (Simone Gilardoni)

The PS had a quite good week, so the report will not be too long.

All the beams for normal operations as for the LHC-MDs were delivered without any major problem.

On Monday the BI and the RF experts were contacted since the transverse damper was found ON as exciter for the tune measurement event if it was set OFF, and it turned back ON by itself after few hours without any apparent reason. The chirp from the damper was causing a blow-up of the LHCINDIV transverse emittance of a factor of 2, problem appeared already on Sunday. It turned out also that the ALARM on LASER that shows the status of the damper is no more available. BI/RF and CO are following the problem.

On Tuesday afternoon the relay-gap of the cavity in SS56 broke. The intervention to repair it was postponed to Wednesday morning since the LHC requested to fill and a half an hour/45 minutes stop was not possible for them. So, it was decided to run during the night without a spare cavity.

On Wednesday the setting-up of the LHC ion cycles continued, with some difficulty due to the orbit measurement. The expert intervened few times but the system stops working in some occasion: the OP crews have problems in correctly inject and steer the beams. On Wednesday night the LHC25 ns could be finalised for the Friday MD.

Between Saturday and Sunday the LHC ion cycles were optimised to reduce at minimum the presence of the beam in the PS. 65 ms were gained at low energy. The beam setting-up has to be finished also due to the aforementioned difficulty with the orbit measurement.

SPS (Elias Metral)

During the past week the SPS has been sending beams to CNGS and NA as foreseen and since Wednesday morning it has been delivering all the required beams for the different LHC MDs, after having checked them on Monday and Tuesday.

On Monday there was a request from the LHC coordinators for Tuesday morning's 90 m optics' study in the LHC ($\sim 8E10$ p/b within $\sim 3-4$ microns and $\sim 2-3E10$ p/b with the smallest possible transverse emittances). Furthermore it was asked to increase the intensity per bunch to $\sim 1.3-1.35E11$ p/b for the next fill. At the end of the afternoon, a patrol in BA7 had to be done after an access and a door not properly closed.

On Tuesday, a power supply in the BIC system was in fault. A power plug has been replaced by a circuit breaker, to avoid any further problem. During the night between Tuesday and Wednesday, the high-intensity bunch (on MD4) was optimized to reach an intensity of $\sim 2.5E11$ p/b with ~ 2.5 microm.

On Wednesday, several BPM problems in TT41, BPG412211 and BPG412321 latched even without beam. The problem was solved by masking them.

On Friday morning, the BPM interlock LSS4 was blocking the extraction and we had to remove the interlock on BPCE.419H/V (after having tried before to increase the tolerance without success). On Friday afternoon, the beam was lost for ~ 15 min due to the thunderstorm which cut the mains. Just before that, an error occurred when trying to extract the LHC3 cycle (PC FEI TI8 Upstream). This was due to some negative values on the RBI816, which is not accepted.

The week-end was quiet.

LHC

Rocky week – major timeouts: to cryogenics (trip of 400 V aux supply to 3.3 kV switchboard), electrical glitches, current lead temperature monitoring. 90 m optics attempt only partially successful. MD also hit by poor machine availability. Of note: commissioning of 1 m squeeze, and good results of triplet aperture measurement at 3.5 TeV.

<http://lhc-commissioning.web.cern.ch/lhc-commissioning/>