

End Week 24 (June 21st 2010) – Status of Accelerators

Summary

LINAC 2	Good week with few problems
PSB	Good and quiet week
ISOLDE	
PS	Reasonable week with some operation problems.
SPS	Good week for the SPS.
AD	
TI	No major problem during the week
LHC	Excellent progress on commissioning for nominal intensity collisions at 3.5 GeV.

Linacs (G. Bellodi)

Linac2:

At the beginning of the week (Sunday 13/06 and Monday 14/06 pm) a couple of sparks caused the RFQ to drop, and in both cases recovery time was around 10 minutes, with the voltage stalling half way along the ramp back to the nominal value. As a precaution this was since lowered from 3725mV to 3680mV and no further occurrences were recorded.

The rest of the week was uneventful until Friday evening, when all the RF dropped around 20h because of a fault on the Hazemeyer. The main switch on the control crate was found OFF and when switched back on it didn't produce any effect. Access into the Faraday cage to inspect the module revealed that also the switch of the multi-socket feed line inside the rack was OFF. When switched back on, everything restarted smoothly. The exact cause of the fault is at the moment still unknown and under investigation. Total beam unavailability was approximately 3 hours. Normal operation took place during the rest of the weekend.

Linac3:

PS Booster (G. Rumolo)

This week at the PSB has been very quiet. The only problem worth mentioning is the C02 trip on Saturday morning, due to a circuit breaker, which was triggered by a fault in the control unit of Ring 1. This caused ~1h downtime for Rings 2,3 and 4, and ~2h for Ring 1, for which the control unit grid of C02 had to be exchanged.

ISOLDE (P. Fernier)

HRS:

GPS:

PS (S. Gilardoni)

Beams: AD, EASTA/B/C, LHC150ns (on the LHC75 user), LHCINDIV, LHCPROBE, CNGS, SFTPRO, MD4, MD2, TOF

Highlights:

The TOF intensity has been limited to $700E10$ to avoid the saturation of the transformer in front of the target used to normalise the experimental data. This intensity seems to be compatible with the physics program, started on Wednesday. We still want to have the intervention to change the transformer.

All the new trig cards have been installed for the TT2 transformers. The migration to the new system should occur soon and solve the calibration problem for all the transformers.

Tests on the double gap relays installed on the 10 MHz cavities. The RF will likely ask to install double relays on all the cavities.

For MTE: tests are progressing on the beam on the multi harmonic RF source to damp the longitudinal coupled bunch instability. The beam/spill seems to be more stable (longitudinally and for the spill) but more statistics is needed. Data analysis are progressing to identify the source of the spill oscillation. The beam was not sent to the SPS until Monday to recover a bit of the CNGS integrated intensity lost during the technical stop. In the meanwhile, a single MTE cycle was taken in the PS to investigate the spill oscillations. Then, K. Cornelis asked to avoid sending the beam to the SPS to understand the hot spot found in TT10 during the last survey. The MTE should be sent back to the SPS from Wednesday-Thursday, after the new radiation survey of TT10.

Monday

Access in the TOF zone to check again the faulty transformer, but nothing could be found to explain the transformer saturation.

Tuesday:

First faults on the KFA4 (MTE), that finally lead to more investigations all the week (See Friday). Tuning of TOF intensity, in principle, up to $900E10$ could be accelerated, meaning that more than the $700E10$ can be deliver to nTOF.

Wednesday:

Problem with the access video signal solved by the expert.

Problem with the GFA's of the PFW programmed on the slow extraction (EAST beams). The programming of the new virtual GFAs caused a problem on the real GFAs, even if the virtual ones were disabled. The users could be recovered and investigations to understand why this happened are ongoing (OP).

Friday:

Problem with one of the MTE kickers, KFA4, apparently there are discharges on the connector in the tunnel. This is a single turn kicker and the voltage can be limited without too many problems. The final check requires an access but MTE can continue in the meanwhile.

MPS went off suddenly. No apparent reason could be found. Working without any problem since.

Problem during the night with the active filter on the SMH42 (injection) septum. 2:30 hour lost, the power converter is working Ok since, but the expert will check it on Monday in any case.

AD ()

SPS (D. Manglunki)

A good week for the SPS. INDIV and PROBE beams were regularly delivered to the LHC for machine developments, and the fixed target beam to North Area for physics. CNGS cumulated intensity reached $1.1E19$ protons on target.

On Monday the 150ns bunch spacing beam was taken for the first time on user LHCFast3. Its setting up by the RF team went on throughout the week. In the afternoon the beam was stopped for 1.5 hours to allow for a radiation survey in TT10, to compare the current continuous transfer situation with the previous one (MTE). Preliminary results show the level has dropped down from 20mSv/h to 15mSv/h at the same location.

On Wednesday the first "floating MD" took place between 8:30 and 22:45. One new cycle, coastable at 120 GeV, was completely set up, and is ready for the next UA9 run. The setting up of other one, coastable at 55 and 270 GeV, could not be finished due to lack of time. The MD was interrupted several times for LHC filling. The beam stop in the North Area was used to diagnose and fix a problem which had been plaguing the access system for some time; a door module had to be changed.

On Friday morning beam was stopped for just over an hour because of a water valve problem on MSE2183 tank4, rapidly fixed by B.Balhan & team. A simultaneous breakdown on the Linac & PS septum caused several hours without beam, allowing Stephane to start the hardware compensation on the coastable cycle at 55 and 270 GeV.

On Saturday the mains tripped and necessitated the intervention of the power piquet who swapped SMQD with the spare.

TI (P. Sollander)

Monday 14 June: ODH alarms triggered again when lights switched on in sector 67. We thought this problem was fixed during the last technical stop but apparently it is not.

Wednesday 16 June: nTOF flow switch alarm again. Very quick intervention by CV piquet saves the experiment from any downtime.

Thursday 17 June: Beam imminent warning in LHC point4 fails, creating a problem on evacuation central SESEV-00104 which in turn switches off electrical feeder. Securiton and EN-EL on site to fix the problem. The LHC lost approximately one hour.

Friday 18 June: nTOF flow switch problem again late afternoon. CV cannot reset remotely and beam is stopped for about one hour for an intervention.

LHC (G. Arduini)

Full details under "coordination" at

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