

Accelerator Complex Status

End week 29 (Monday July 23rd 2018)

TI (Jesper Nielsen)

<https://wikis.cern.ch/display/TIOP/2018/07/16/TI+Summary+Week%2C+29>

LINAC2 (J.B. Lallement):

Because of a high spark rate, the proton source HV column was cleaned on Wednesday (30 mins stop). The spark rate went back to lower and more acceptable values since then. Yesterday, one of the tank2 vacuum pumps stopped: An intervention is being planned for this morning.

LINAC3 (J.B. Lallement):

A pretty good week for Linac3. There was a source oven refill on Thursday. The linac stably delivers between 28 and 30 μA

LEIR (N.Biancacci):

Tuesday:

- NOMINAL cycle optimization.

- Injected momentum distribution optimization.

- Space charge studies: Resonance compensation using harmonic sextupoles?.

Wednesday:

- MD activity: set up of WR Btrain MD cycles.

- Request to keep BIOMD (3BP) always in the new Btrain reliability run.

- NOMINAL type cycle optimization.

- Injected momentum distribution optimization: upto 90% inj. efficiency achieved!

- BPM logging issue detected (no logging and bad readings from 14/07 as solenoids were without current).?

Thursday:

- Morning: Pb source refill.

Friday:

- AMDRF optimization and preparation for weekend drift analysis.

- Space charge MDs.

Saturday/Sunday

- Smooth operation.

- Drift of accumulated and extracted intensity on the high intensity cycle AMDRF recorded and correlated to temperature change in ETL line power converters.

- Slight drift of energy mean/spread recorded.

Monday

Linac3 measurements.

PSB (V. Forte):

It was a very good week in the PSB with 98.8% availability. Priorities of the previous week were followed up. In particular, RF specialists solved high intensity limitations on R2 (and TOF brought back from R3 to R2), the new White Rabbit B-train reliability run was extended to all the OP and MD beams, the chirp tune excitation was successfully commissioned, the LHC MD beams for week 30 were finalised.

We still had some issues: several sparks on the Linac2 intensity which are still under investigation and monitoring and were not solved by an intervention on Wednesday morning. Moreover we were experiencing some spurious losses on ISOLDE beam (BTY line) which initially obliged the OPs to re-steer the beam. Then such losses were related to a drift CCV/AQN of BT.BHZ10 (solved by piquet after PC reset). This allowed to restore to the initial steering of the line. However such events have to be followed up.

Different MDs were carried out: in particular, they concerned studies on instabilities at 160 MeV, extraction bump tuning, Q3 studies, phase scans with TFB, K-scan on BTM line and dispersion-free measurement optics with LHCINDIV beams and different dp/p.

ISOLDE (E. Matti):

it has been a very good week at ISOLDE, target and machine behaved very well and users were really happy.

We have been delivering 96Kr^{23+} @ 4.8 MeV/u to Miniball until Friday when we switched to 212Rn^{50+} @ 4.35MeV/u.

The only intervention was to reduce the beam energy on Saturday after the users completed early the measurements in the proposal.

PS (K. Hanke):

An excellent week for the PS with 99.1 % availability.

There were only short resets and reboots of the RF and power supplies here and there. On Wednesday morning there was a 30' scheduled stop for Linac2. The stop was too short for the vacuum group to take advantage and install some diagnostics for the leak developing; they are still requesting a 1 – 2 h access which we need to schedule if no occasion arises. Also on Wednesday there was a 55' stop for TOF due to a trip of FTN.QFO415S and FTN.QDE430S, the First Line needed to be called.

We had a discussion with D. Macina on the new TOF new cycle presented at the last MSWG, they agree to deploy it in two weeks' time (mid-week, probably Wednesday, tbc.)

Other than that all our operational beams as well as the ones for the LHC MD are in good shape.

AD/ELENA (S. Pasinelli):

Good week for ELENA.

After an hard and intense work on the RF, ECooler, Tune, Orbit ,Timing etc...

The first Pbar beam was sent to GBar Friday. (~15% efficiency)

http://elogbook.cern.ch/eLogbook/event_viewer.jsp?eventId=2620251

SPS (F. Velotti):

Very good week at the SPS, with about 96% availability for the fixed target beam. On Monday, RF experts had a look at non-perfect re-phasing and corrected it. A small drift was accumulated which needed to be corrected. The 8b4e, for next week LHC MD was taken (1 batch, as requested) and tested also to see if the ZS was perturbed - no issues observed. Also, the losses thresholds on LHC1 were updated with values more in line with normal operation. On Tuesday, the first part of the HiRadMat TCDIL-deep impact experiment was set up. The collimator was aligned and ready for the following day of data taking.

Wednesday was dedicated MD for the crab cavities. After that, the high intensity run for HiRadMat took place. After negotiation with the NA experiments, 4 hours were allocated for the HI run, due to the incompatibility of 4 25 ns batches with the ZS at -130 kV (sparks). In the end, this resulted in only one hour and 30 minutes with no slow extraction as physics and HiRadMat were quickly interleaved by the shift crew. The HiRadMat experiment finished their program. On Thursday we had the longest down time (foreseen since the beginning of the week) as the RF experts had to re-check the cavity phasing with the phase pickup as a drift of 40 deg was previously observed (this was due to the module replacement of last week). The procedure took 3h as foreseen since the beginning. Also, a HW interlock was put in place on the BA80 BLMs PS in order to interrupt the beam in case no voltage is recoded. Friday and the weekend passed very quietly, except for an issue on an extraction sextupole which showed very strange behaviour - suddenly the current sent was completely wrong but the state was still cycling. This happened 3 times and should be investigated further with EPC experts. Sunday night, also the MDH43007 and MDH42807 had the same behaviour - all these FGCs are connected to the same server.

LHC (J. Wenninger):

Following repeated issues with the full detuning firmware on some cavities, the RF system was switched back to half-detuning on Tuesday evening (cavities already conditioned for 58kV as this higher voltage is still used during injection). 2nd (but small) 16L2 event on TUE night. Access on WED afternoon, followed by additional fills with half-detuning during Thursday. Friday morning the impact of ALICE polarity reversal was re-checked; with the increased BLM thresholds for the B2 TCTPV in point2, the loss rates does not exceed ~32% of the threshold. A new version of the full-detuning firmware was also tested and put into operation on the same day, followed by successful physics fills over the week-end.