

Accelerator complex status

End week 8 (Sunday 22nd February 2015)

Summary:

- Steady operation with argon to North area (energy change Monday 23rd).
- Proton set-up continues in Booster and PS.
- Wire scanner exchange in Booster.

TI (Jesper Nielsen)

TI summary of the week:

<https://wikis/display/TIOP/2015/02/23/TI+summary+week+8+2015>

Linacs (Rolf Wegner)

Linac 2 is running well.

On Wednesday we used the PSB stop to re-install the repaired source arc power supply unit. In this way we run with the original unit and we are sure to have a working spare unit.

Otherwise Linac2 saw 2 setup issues last week:

On Tuesday the source interlock stopped the beam because the tail clipper of a user (MD5) was not ppm copied and was disabled, producing a long beam.

On Thursday a restart of the BI/BCT crates caused a longer stop. A driver problem of the internal timing card prohibit the restart. Thereafter it was discovered that some BCT settings were not initialised correctly. As a result some currents in the Linac were not measured correctly and the Linac2 watchdog cut the beam. BI corrected the settings and we tested the restart procedure.

Linac3 is running reliably. Only on Tuesday a reset of the extraction Solenoid was necessary.

LEIR (Sergi Pasinelli)

Calm week for the LEIR. Beam was sent to the CPS&SPS with the nominal values.

Friday, in collaboration with Jakub, we have tested the new Field Compensation with success and it will be deployed Monday.

Booster (Bettina Mikulec)

Good week for the PSB focused on beam set-up and the wire scanner exchange intervention.

After we finally managed also in the PSB to break one wire, all beams were stopped at 7am for the wire scanner exchange (ring 1 vertical). The intervention went as planned, and at the same time a vacuum leak was discovered on a vacuum pump feed-through and fixed. Vacuum conditions were fine the next morning so that we could continue our work on the beam setting up.

Friday afternoon suddenly there acquisitions for the extraction and recombination correctors didn't work anymore and the steering was corrupted although the power supplies were pulsing. It turned

out that they were pulsing too late because they didn't receive certain timings. A reboot of the FEC didn't help. Finally the HW controls specialist had to intervene and fixed a bad contact on some pulse repeater. 2h downtime.

Many low-level RF adjustments, in particular for the h2 SFTPRO beam.

Beams currently available in the PSB: LHCPROBE, LHCINDIV, LHC50, LHC25, TOF, SFTPRO.

PS (Ana Guerrero Ollacarizqueta)

All along the week the PS delivered the ions for physics and has been working on the set up of the LHC25, LHC50 and SFTPRO beams. The LHCINDIV was also sent to SPS. A few problems were encountered by the end of the week.

There was a beam stop for an intervention on a 10MHz cavity (C56) of almost two hours on Thursday to exchange an amplifier. On Saturday evening it was found another intervention will have to be scheduled on Monday for this cavity.

On Friday a non resettable fault (IGBT fault) in POPS produced a 40 minute beam stop. This morning POPS was down during 20 minutes (resettable fault).

Also on Friday a rise in pressure at SS08 was detected. Even if the pressure seems quite stable after the rise on February the 7th, a slight increase has been noticed and a detection leak needs to be carried out.

On Saturday a broken BNC connector in a cable used as delay for a coarse synchronization module produced a synchro problem affecting the extraction kicker KFA71 and C80-08. As a result the ions were could not be delivered during approximately 7 hours.

The operations team has traced the low energy equipment acquisition issue to come from real time misbehaviour. The server timings have been adapted accordingly and the acquisition follows correctly the cycles. The only issue remaining is the intermittent and apparently random errors on the acquisition retrieval for some of this equipment.

The investigations on the MTE island population fluctuation has carried on. Some measurements show a 1 per mil variation in one of the PFW (WFW) with approximately the same low frequency as in the island population fluctuation.

SPS (Django Manglunki)

The only user for the SPS this week was the North Area taking primary Ar ions at 150AGeV/c (333 ZGeV/c). This beams requires constant attention and frequent changes of the radial position at extraction.

On Monday 16/2 evening at 21:00 the mains tripped for a cooling problem in BA6, fixed in 1:30 by the EPC first line.

Another water problem occurred on the mains at 4:00 on Tuesday 17/2 morning, which needed the intervention of the EPC specialists, and a reconfiguration. Beam was back at 9:00. The problem being caused by degrading hoses, it was decided to organize a crash repair on all affected stations as soon as possible, i.e. Thursday morning at 08:00.

More mains trips happened during the afternoon.

On Wednesday 18/2 the PS RF started to give problems to deliver the ion beam, with many trips of their 80MHz cavity, and occasional loss of synchronization at extraction; these instabilities came and went during the rest of the week. At 23:00 an MKP fault was quickly fixed by the ABT standby service.

On Thursday 19/2 beam was stopped at 8:00 for the simultaneous intervention on all mains power supplies, by seven different EPC teams.

An intervention on MOPOS in BA6 took place in the shadow of this, as well as a Linac3 parasitic MD, and a test of a 58 second long supercycle comprising the doublet cycle and an SFTION, to check it does not trip the primary ion interlock. The intervention was over at 10:00 as foreseen, but SMD11 had to be stopped and removed from the configuration because of smell of smoke. It turned out to be a burnt bakelite insulator. In the afternoon the beam was stopped for two hours for a PS access (change of RF amplifier).

On Friday 20/2 during the night the EN/MEF team had to come to improve the beam on NA61.

The indiv LHC beam was taken for setting up on the pilot cycle, from 08:00 until 15:00 when a PSB problem stopped these efforts. Protons came back at 18:00.

On Saturday 21/2 there was no ion beam for most of the day (from ~08:00 until 17:00) because of a hardware fault in the PS RF. Whether it was already the same cause perturbing the beam earlier in the week since Wednesday remains to be confirmed.

Sunday 22/2 was quiet.

Momentum change to 13 AGeV/c (28.9 ZGeV/c) will take place on Monday 23/2 morning. 150 AGeV/c beam will be stopped at 09:00