

## Accelerator complex status

### End week 5 (Sunday 1<sup>st</sup> February 2015)

Summary: argon successfully from source, through LEIR and PS, to SPS. Good progress in SPS benefiting from commissioning at end of last year. Cycle set-up for NA61 run well advanced, beam extracted to TED. North Area DSO tests end of this week.

Protons in Linac2, Booster should take beam this week.

### Linacs (Giulia Bellodi)

For Linac2 we continued the machine setup sending beam down the measurement lines.

- On Thursday night the air temperature in the tunnel dropped again from 22.3deg to 21.7deg triggering an alarm.
- CV followed up the problem in the morning and re-adjusted some thresholds; temperatures were stable since.
- During the weekend beam went off on Saturday night (a spark causing the LI.VVS20 valve closure, which sent a vacuum interlock to the source).
- On Monday morning beam could not be sent to the PSB because the PSB enable manual interlock hadn't been restored yet for normal operation. Once the plug re-inserted, beam was normally handed over.

Linac3 delivered Argon beam to LEIR/PS/SPS throughout the whole week. We profited from a PS access on Thursday to install the new stripper and carry out beam measurements.

### LEIR (Sergio Pasinelli)

LEIR has produced beam for the PS & SPS as expected during all the week.

The RF team (MEA) has worked very hard in order to fix the "LLRF chassis/FESA crash" and the longitudinal emittance at the extraction.

- Last Monday Maria Elena has changed the DSP daughter cards on the LLRF chassis and since Monday the chassis is running without any errors. The problem seems to be solve.
- In collaboration with the PS RF team, the longitudinal beam emittance was reduced from the initial 2.6 eVs (before the start of the MD) to a value between 1.8 eVs and 2.1 eVs depending on the shots.

The new field compensation for the LEIR injection is in good shape and should be available next week for the tests.

### PS (Jakub Wozniak)

The week in the PS was very calm and driven mainly by the ion beam requests from the SPS.

On Thursday we had a day of stop for the 80Mhz (leak detection, spare RF cable connection at the damper output) & 10Mhz cavities intervention from which we had several small glitches throughout the week.

Otherwise no other major problems have been reported.

## SPS (Django Manglunki)

A pretty good first week with beam for the SPS, which for the first time started with ions after a ZS was fixed on Monday 26/1.

The beam permit had been cancelled because of scaffolding in ECN4. A new one was established after RP gave its OK.

The PS started delivering the Ar ion beam on **Monday 26/1**, and it was steered in TT10. The beam was injected on Tuesday 27/1, on the first ion cycle, SFTION2, with a flat top at 150AGeV/c (333.3GeV/c proton equivalent), and acceleration conditions from December were retrieved.

Slow extraction was set up on **Wednesday 28/1**.

Beam was stopped most of **Thursday 29/1** for interventions in the PS (80MHz cavity 08). This gave TE/EPC the opportunity to fix the QD power supply which is now operational again, as well as the spare. Note the link is provisionally disabled, a situation which will have to be changed before LHC starts.

On **Friday 30/1**, the Ar beam was injected on the second ion cycle, SFTION3, with a flat top at 13AGeV/c (28.9GeV/c proton equivalent).

After retrieving acceleration conditions from December, slow extraction was set up in the evening.

During the **week-end**, BA1 cooling failed several times, tripping the main magnets and kickers.

The machine is now ready for setting up the extraction on the 3rd cycle Ar cycle, at 19AGeV/c (42.2GeV/c proton equivalent) on Monday 2/2, and possibly on the 4th one at 30AGeV/c (66.6GeV/c proton equivalent) before the end of the week.

North Area DSO tests, including the interlock for primary ions, are foreseen on Friday 6/2. A further interlock test with protons will also be performed, at a date to be determined, before the SPS can prepare a proton beam for the LHC.