

Accelerator complex status

End week 6 (Sunday 8th February 2015)

TI (Peter Sollander)

Tuesday, February 3rd: AUG in TI2. First fire brigade & Piquet EN-EL were in LHC2, but nothing was found. A long time was spent to get access in BA7, where it was thought the faulty button would be. In the end it was located in LHC2. See [Minor Event](#)

Thursday, February 5th: CRYO stop in LHC18, due to a faulty PLC. the program was reloaded and the installation restated. See [Major Event](#)

More details at: <https://wikis/display/TIOP/2015/02/09/TI+summary+week+6+2015>

LINAC3 (Jean-Baptiste Lallement)

The Linac3 operation was very smooth this week.

LINAC2 (Jean-Baptiste Lallement)

A pretty good week for the Linac2 .

We had an usual vacuum valve closure which triggered the interlock on Thursday (20 mins down time). On Friday, the RF team readjusted the amplitudes and the phases of the cavities according to the source current, which increased since the restart with the direct effect of a better transmission from source to PSB.

On Sunday early morning at 3:50 AM, the proton source went down. The electronic module controlling the source arc current, located inside the Faraday cage, was found to be in fault. After its replacement by a spare, beam was restored to PSB around 9:00 AM (5 hours down time). Given the relative emergency for restoring the beam, I decided not to contact the source experts (Mike and Richard) in the middle of the night. Thanks to both for your help this morning.

LEIR (Django Manglunki)

On Wednesday morning, there was an access in the PS tunnel by BE/BI for an intervention on Linac3 BCTs.

On Thursday 5/2 Michael & Sergio had the machine for a dedicated MD from 8:30 to 16:30. The goal was to perform a flat cycle MD and a bare machine MD. The flat cycle MD was successful. Stable machine conditions were established with extended electron cooling, no transverse feedback, no RF and closed RF gap. The machine showed a new tune behaviour and the Schottky system delivered interesting longitudinal structure. Both findings need yet to be analyzed in more detail. There was not enough time for the bare machine MD, beam was sent back to PS before 17:00.

Losses occurring before extraction on Thursday evening pointed to an instability. Problem was solved by opening the loop of the transverse feedback, which was adjusted the next day with the help of Fredi Blas.

The machine performed pretty well over the weekend, apart from the odd RF cavity or main magnets trips.

PS Booster (Jose-Luis Sanchez-Alvarez)

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PS (Rende Steerenberg)

The PS had smooth ion running with ions delivered to the SPS.

Some MTE related measurements were made with the ion beam on MD cycles.

There were quite a few trips of the cavities 10 MHz and 80 MHz, but no serious issues.

On Thursday during the LEIR MD no access in the PS could take place, but work was done on the low energy corrector acquisition (working sets and OASIS).

During the week there were a few trips of POPS and On Tuesday there was a 1-hour intervention on POPS.

Monday the PS will start taking protons to setup the LHCINDIV cycle for the SPS to test the North Area interlock with protons beam.

SPS (Hannes Bartosik)

It was a pretty good week for the SPS, which was mainly devoted to the setup of various Ar ion cycles. The first half of the week was spent on the setup including the acceleration and slow extraction onto the TT20 TED for the cycles with extraction energies of 42.2, 66.7, 88.9 and 166.7 GeV/c (proton equivalent). The rest of the week was devoted to the setup of the T2 transfer line for the 333 and 28.8 GeV/c (proton equivalent) cycles, which were already prepared last week and are the first of the six to be used for NA physics.

To be also mentioned:

During the POPS intervention in the PS on Tuesday, EN/CV changed a controls card in BA1 for the cooling circuit of the main magnets.

Due to a dedicated MD in LEIR, no beam was available most of Thursday. This allowed TE/EPC to work on the main power supplies, which had tripped several times during the first half of the week. The works continued for a few hours during Friday morning.

The ion interlock preventing that high intensity beams can be sent to the NA tripped two times during the week even though the interlock level of $2e11$ charges was not exceeded.

The reason was BI testing their equipment. They apparently were not aware the interlock was already active as the run had not started and no proton was available to the SPS

The beam was stopped on Friday afternoon for the DSO tests of the ion interlock. After the successful test, the beam permit for sending ion beams towards the NA targets was established. Further interlock tests with proton beams in the machine are scheduled for next Monday, before the start of NA physics.

On Friday evening the TT20 TED was moved out and the Ar beam extracted at 333 GeV/c (proton equivalent) was successfully steered to the T2 target. The TT20 transfer line steering for the 28.8 GeV/c (proton equivalent) cycle was performed on Saturday.

The Kicker Piquet had to be called twice on Saturday for a recurring fault of the Beam Energy Tracking system. The same fault occurred already three times during the days before, but eventually disappeared by itself. The problem is not understood and investigations are on-going.