

## Accelerator complex status

### End week 46 (Sunday 16<sup>th</sup> November 2014)

#### TI (Peter Sollander)

Relatively quiet week. A lot of rain, but no real problems with floods or anything. No major events.

#### LINACS (Jean-Baptiste Lallement)

Very good week for what concerns the Linacs operation.

We just got an interlock on the Linac2 source at the Wednesday technical stop restart. It was a “perche” interlock, meaning that the source grounding perche had possibly been touched. Coincidence or not, there was a group visiting the Linac2 control room at the same time...

#### LEIR (Sergio Pasinelli)

LEIR week has been calm and beam for PS & SPS has been available all the time.

After a request from Giulia, the usual Monday Linac 3 MD has been postponed to Wednesday.

#### ISOLDE (Didier Voulot)

ISOLDE has been running smoothly this week with n-rich Zn beams to COLLAPS on HRS until Friday and some target and ion source development run on GPS during the weekend. Next week GPS will continue with n-def Ba beams to IDS.

#### Booster (Klaus Hanke)

A difficult week for the PSB.

On Wednesday access was given to re-align a main dipole. This was to cure a hot spot which had been detected during the technical stop on 29 October. Beams were stopped at 09:00 and access given at 09:30. At the same time access was given to BI to fix a few instrumentation issues. Beam was back in the PSB only 13:42, so a bit later than planned. The afternoon was spent to re-adjust the orbit for the different users, which was completed by the evening. On the positive side it should be noted that theoretical models and measurements of the orbit match remarkably well.

During Wednesday night and Thursday beams were delivered with good performance, but on Thursday evening around 18:30 the injection efficiency dropped by 10% and losses were observed in sectors 4 and 10. During Friday we investigated all possible sources of beam loss, without much conclusions. During the weekend optimisation of the tunes at injection (“Qstrips”) and multipoles were done.

At present the situation is still not understood and the losses are still higher than acceptable.

#### PS (Rende Steerenberg)

The PS had quite a good week with good machine availabilities, taking into account that the stop on Wednesday was a scheduled stop.

The PS machine availability for the operational beams (SFTPRO, LHC, AD, EAST and TOF) was between 96% and 99%.

On Monday the ventilation in the new IRRAD zone in the East Area was tested and validated through a DSO test. The proton flux restriction in the beam permit was lifted and the nominal IRRAD beam with different optics was setup during the week.

During the Wednesday beam stop planned for the PS Booster magnet realignment the PS profited to unblock a filter in the water cooling circuit of a quadrupole magnet in the TT2 line that overheated and the check of the tuner of one of the 80 MHz cavities that is blocked. For the latter it was found that the stepping motor is moving correctly, but that the tuner inside the cavity is blocked. This will require an intervention with possible venting, which is presently being discussed to take place during the YETS-2014.

POPS also tripped a few times last week and during the Wednesday stop the POPS team has put extra diagnostics in place.

nTOF can presently not receive consecutive pulses, as the experimental acquisition system cannot cope with them. This limits the possibility to provide the maximum number of cycles.

The setting up of the TPS15 compatible bumps on the different users is ongoing in view of putting the TPS15 (dummy septum) in and to resume the MTE.

### **SPS (Yannis Papaphilippou and Hannes Bartosik)**

After the successful scrubbing run of previous week, the SPS continued its operation quite smoothly, by delivering beam to the North area, with higher intensity since Tuesday morning, the HIRAMAT cycle setting up, a dedicated MD on Wednesday with successful acceleration of the doublet beam, interleaved with a short technical stop, and optimization of Argon beams for fixed target physics, during the last part of the week.

More specifically:

- The beam operation for fixed target physics resumed on Monday morning after the piquet and specialist solved an issue with chain 11 (communication problem in the rack).
- On Tuesday, the fixed target intensity was increased, delivering  $30e11$  in each NA target. The setting up of the cycle for HIRADMAT also started.
- On Wednesday, the dedicated MD was focused on the setting up of the doublet beam for LHC scrubbing. We also profited from the (actually not so) short stop asked by the PSB to work on the beam energy tracking system and the filters in the QF power convertor regulation. As the beam from the PS complex came back only at 16:15, and with the agreement of the physics coordinator, the MD was prolonged until 21:00, with the successful acceleration of 2 batches with 48 doublets, with  $1.4e11$ /doublet. After the beam was given back to the users, it was found that the spill in the North Area was sometimes perturbed and this was associated to the QF current regulation. The specialist is suspecting a problem with some power supplies in the electronic rack of the regulation and will further investigate the issue (a 10min stop will be needed on Monday).

- On Thursday morning, the beams were cut for 2h due to the failure of a magnetic by-pass power convertor (SBYH2109) in the extraction line towards the NA, that required the intervention of the piquet FIRSTLINE. The setting up of the Argon beam for fixed target physics continued on Thursday and Friday, with the successful acceleration of the beam to flat top.
- On Friday morning, the beam to the NA was stopped for 1.5h due to the DSO tests of H4. During Friday night, all beams were cut for 1.5h, due to a server connection problem with RAMSES.
- On Saturday, the LHC DSO tests took place. In the afternoon, the piquet EN-STI had to intervene to unblock a collimator jaw in H4 (XCHV.022.131).
- Sunday: a problem with a magnet in the NA today which resulted in 2 hours without beam.