

Accelerator complex status

End week 26 (Sunday 28th June 2015)

TI (Jesper Nielsen)

TI week: <https://wikis.cern.ch/display/TIOP/2015/06/29/TI+summary+week+26%2C+2015>

Linacs (Richard Scrivens)

Linac2

High radiation levels in the transfer line were debugged and cured on Monday.

On Wednesday an MD to improve the transfer line transmission did not reach and improved settings.

Linac3

Beam was delivered to LEIR for a couple of half days in the week.

A normal intensity was reached on Thursday, and the oven refill was brought forward to Friday before beam to LEIR next week.

ISOLDE (Erwin Siesling)

All in all a good week for ISOLDE with minor technical issues.

GPS:

Last week was used to prepare the GPS side of the machine for a negative ion run. This involves the installation of a negative HT source and polarity swapping of the separator magnet power supply, its hall probe and polarity swapping of the electrostatic elements along the beamline to transport the negative ions.

Target change for the #535 Nb-neg target was done successfully on Wednesday. The change to negative HT source took a while and some difficulties were faced by Jan Schipper and his team but by Thursday the change was done.

Friday first negative ions were extracted into the GPS separator. This week the run will start.

HRS:

During the changes on the HT at GPS no HT was available for HRS beam extraction.

Outside working hours however beam could be provided for the CRIS experiment.

Over the weekend yield tests were performed on the HRS target (#539). A few small issues needed remote intervention in corporation with the EN/STI specialists in the ICR such as trigger for the tapestation, changing to standard focus for protons on target and reset of the HRS separator magnets.

Technical issues:

Since two weeks we are having difficulties with the HRS separator magnets losing connection and getting stuck (not cycling to the wanted mass). A workaround is resetting the magnets G64 crates but a solution needs to be found.

EPC has been in close contact with OP on this and during convenient hours (not hampering the physics) via First-Line and EPC Controls the problem will be followed up (Christophe Mugnier, Julien Para-Lopez, Michal Dudek, First-Line).

Booster (Alan Findlay)

It would appear that summer has started as it was a good week for the PSB and I guess that's due to people having already left on holiday. There was a Linac2 vacuum problem late Friday night that was fixed by the vacuum piquet but it took down the beam for about an hour. Then later that night HRS didn't get their beam for 1.5 hours due to a rack controlling some of the magnets in the BTY line not having power and this needed an intervention by Firstline.

In other news from around the rings, our hunt for the source of the random losses on R4 with higher intensity beams continues, with measurements to try to capture the start point in all 3 planes ongoing. We also re-commissioned the R4 vertical TFB system just to be sure that this would not help, and it didn't! We can see that there are instabilities on the signals coming from the TFB system when we have these losses and the specialist agrees that the TFB should be able to damp these and is trying to work out how to achieve this. The Finemet cavity tests this week confirmed that we don't have these losses if we use the Finemet cavity in place of the C04 system.

On Sunday I was called by Jean Francois as the loss problem on R4 was getting worse and was now regularly messing up R4 of SFTPRO with only 400E10. As the specialist was on holiday, I came in to see if there was anything I could do to improve the situation, but alas, there was not. We now need the TFB on even with very low intensities just to get through our first resonances at C375, when we should be able to work easily without the TFB, so we have more work to do to find the source. I'll get the supervisors together today to get some more ideas as to what to do next.

The Finemet cavity is now set up on ISOHRS & ISOGPS to replace the C04 cavity with only a few knobs and instructions how to do this have been written and tested. We plan to run with the Finemet as $h=2$ on R4 for these two users starting from next week as part of a reliability run for the new cavity.

PS (Ana Guerrero Ollacarizqueta)

PS had a fairly good week till early Sunday morning when the LHC and SFTPRO beams could not be extracted anymore. The issue was traced to a broken 200MHz RF divider. The total down time was of 5h.

This week the work has been concentrated on two fronts:

- decreasing the SFTPRO losses to be able to increase the I to $2.5e13p$.
- all beams, and in particular LHC, extractions have been made TPS15 compatible for a position up to 82.5mm (nominally 86mm/out at 120mm) in order to perform MTE extraction

tests to SPS as often as the machine schedule allows it. On Wednesday a MTE beam of $1.5e13p$ was injected in SPS.

The tests of the SPS injection inhibit set-up on BHZ377 pursued. A last iteration is needed to make the initial set-up for the power supply operational. A misunderstanding between the specialist and the PSS produced an important loss of beam on TT2 and the beam had to be stopped $\frac{1}{2}$ h longer than expected.

All operational beams and AD were produced as requested.

SPS (Django Manglunki)

A pretty good week for the SPS, which served beam to North Area, HiRadMat (single bunch) and the LHC (INDIV, 50ns and 25ns for scrubbing). HiRadMat high intensity has been postponed to next week.

On Monday 22/6 Single bunches were sent to HiRadMat in the afternoon.

During the night radiation alarms started in the North Hall, traced to failing bending magnets during a short supercycle. It turned out the next day that some bending magnets in the North Hall had a bad programming, and were pulsing on LHC50ns.

During the whole night the SFTPRO beam was interrupted many times by the CPS due to higher losses than tolerated.

On Tuesday 23/6 the LHC started to take the INDIV beam, then the 50ns beam.

Wednesday 24/6 was a dedicated MD for the injectors; SPS main MD was on the MTE.

Coming back from MD North Area could not be restarted immediately as chain 9 was down due to a LOKN error, eventually solved by EN/MEF.

On Thursday 25/6 morning an electrician from EN/CV entered ECN3 without the consent of NA62 and forced the door when leaving the area, which caused more beam time to be lost as the SPS operator had to go back and search the area.

BEND11 tripped by temperature, because of a lack of efficient cooling in the building housing the power supply. This is a big concern for Compass operation in the coming weeks as summer is only starting. EN/CV is aware, and have an open action at the IEFEC.

The 25ns LHC beam was tested in prevision of the week-end, up to 2×72 bunches.

1 h beam time was given to the CPS between 16:40 and 17:40, to test a new TE/EPC card for the control of BHZ377 in TT2.

On Friday 26/6 morning, from 3:20 to 8:20, 5 hours of beam down time were due to a faulty switch on TRX6, solved and repaired by the Power Rf standby.

In the afternoon TE/EPC installed more fans on the power supply for BEND11 (Compass).

Since Friday the LHC takes the 25ns beam, up to 12+36 bunches over the week-end.

On Monday 29/6 two hours were lost between 1:45 and 3:45 because of an MKDV fault, solved by ABT standby.

AD (Tommy Eriksson)

Good progress with reasonable intensity through the cycle, beam extracted, set-up continuing.