End Week 22 (June 7th 2010) – Status of Accelerators

Summary

LINAC 2	Good week without problems
PSB	Slightly difficult week with some problems
ISOLDE	Good week with some smaller problems
PS	Reasonable week with some operation problems and stops.
SPS	Good week for the SPS.
AD	Difficult week for AD with a long re-start after the technical stop and several technical problems.
TI	UPS EBS12/83 failed on Sunday afternoon, requiring an LHC beam stop and an intervention, otherwise no larger problems
LHC	Technical stop Monday – Wednesday with slow recovery, restart for physics with 13 bunches 2E10.

Linacs (R. Scrivens)

Linac2:

Linac2 had a good week without problems to report.

Linac3:

Linac3 finished this morning the three weeks of running for ion desorption measurements on amorphous carbon surfaces. The source will now be switched to 18GHz for tests.

PS Booster (K. Hanke)

Slightly difficult week for the PSB. Major issues were BTY transformers (throughout the week and persisting) and a controls black-out on Friday.

Monday and Tuesday technical stop, all interventions were completed as scheduled. The re-start went reasonably smooth, beams were back 18:39.

The transformer in the ISOLDE line BCT213 overestimated the intensity by 30%, the specialist worked on the problem but could not easily solve it. The problem escalated on Wednesday when the erratic transformer reading triggered permanently the ISOLDE watchdog which perturbed heavily the ISOLDE run. Thursday there was the same issue with BTY.BCT112. To this day the problems persist, and the situation as of this weekend is that BTY.BCT213 just before the target gives around 60E10ppp (with beam and without beam) - even though ISOLDE took 1E13ppp. Ejection and BTY.BCT112 give now correct readings.

Friday morning the injection and ejection kickers tripped following a reboot. The controls experts took a while to understand the problem. Some libraries had been linked to the process which generates the telegram. the situation before this was just at the limit of the allowed time. With the new libraries the time window was exceeded and upon reboot the TG8 went down. We went now back to the previous situation and CO is working on a permanent solution. Down time from 11:00 – 13:00.

The last not working BLM was brought back to life, following an intervention during the tech stop.

Sunday short stop due to Linac2 quad failure, the crate was found OFF.

Beams: all user beams up and running. LHC 150ns beam has been set up in the PSB as an archive on the LHC75 user (there is no free user for this beam). Ultimate LHC beams and other flavors of LHC beams have been delivered for the MDs. MTE beam has been set up with increased intensity of 2.7E13 and within MTE emittances (h=10, v=6).

ISOLDE (E. Siesling)

HRS:

Running with a ZrO target for Collaps on copper using RILIS laser ionasation and ISCOOL in bunch mode.

Few issues:

-As of Tuesday we lost communication with the ISCOOL elements. All in local so we can continue but solutions needs to be found (no tuning possible). CO is on it: Daniel Calcoen and Frank Locci.

-Saturday the transmission through the RFQ (ISCOOL) dropped from 60 to 2%. All was checked. Tuning of the RFQ difficult due to the local status of the RFQ elements. Solution was found on Sunday morning by re-tuning the beam in the HRS separator part before injection into the RFQ. Transmission back to >60%. Collaps succesfully continued.

GPS:

Succesful run for biophysics collections ended last Wednesday. Used STAGISO on a Sn target. First time this beam this year.

Few issues:

-Minor problems with the vacuum controls for the GLM and GHM lines: All new, needs readjustment now and then.

-The last transformer in the BTY line gives a wrong value: 25% too high for staggered beam and no value for normal GPS beam. BI is on it.

-When changing the target on Wednesday we had problems uncoupling the old target due to proky server problems (no knob available to unclamp). Alastair Bland and Jean-Claude Bau solved it by cleaning up connections to that particular server.

-Now setting-up GPS to inject into REX.

PS (R. Steerenberg)

The week started with the technical stop on Monday for which the MTE and CT beams were already cut on Sunday morning 9:00 and all other beams at 5:00 on Monday morning. The technical stop went well and many repairs were made. The restart took place on Tuesday late afternoon. After some problems all beams were produced around 20:00 after which some fine adjustments had still to be made.

Wednesday and Thursday were MD days during which the PS provided physics beam in parallel.

The MD stopped Thursday evening at 20:00 when we returned to normal physics running. On Friday we had a 2 hour stop due to a timing problem in the PSB and on Sunday both 40 MHz cavities were broken and required an intervention by the specialist. This caused a 2.5 hours stop of the LHC type beams. On Sunday a reoccurring problem on the SMH42 required 3 interventions by the power piquet before it was repaired.

During the whole 2nd part of the week many problems with the transformer in the TT2 line were addressed, in particular the nTOF transformer, which is required by the experiment too. A more or less workable solution was found on Friday, but a definitive solution will be put in place today, Monday.

AD (K. Mikluha)

During the technical stop we had OP7 Total during which we had a ring vacuum sublimated.

On Tuesday we had the horn pulser tested and both the ejection line magnets and the elecron cooler earthed.

We had lots of problems with restarting after the technical stop, such as a red button of BTI.9016 in the TT2 tunnel, a FTA.QDE9010 injection line quadruple which was tripping off, and the stochastic cooler pickups which were stuck

On Wednesday morning the pickups' power supply was fixed, first by realizing that also the spare module was broken, but luckily the third unit was ok. We also had problems with the switching program, which could not set ejection lines properly because of corrupted values in the archives database. This was fixed manually, but it prevented us from saving new values as referecies the whole week. So we got beam finally delivered after the technical stop on Wednesday at 11am

Also on Wednesday we had problems with C10-26 cavity, which was later fixed by the specialists. We had also problems with DI.BHZ6045 bending magnet, which was on, but not having any AQN. It was first fixed by the Firstline at 8pm, then at midnight and finally on Thursday morning

Also on Wednesday we started to have intermittent losses of the beam at 3rd flat top caused by a vertical dipole DR.DVT5408, which was sometimes not following the GFA. Both Firstline and PICO

were needed for fixing it. Because we couldn't fix the problem on Wednesday, we decided to turn this dipole off over the night, since while it was on it was destructing the beam

On Thursday morning the PICO fixed DR.DVT5408 by changing its GFA card

On Friday morning we observed some shape changes in the longitudinal pickup signal, so the RF specialist was called in, and later also the electron cooler specialist. We found out, that this time the DR.DVT1304 was not always following the GFA. It was fixed by the Firstline who changed its converter

Also on Friday we lost the beam at the first deceleration ramp, which was identified to be caused by a broken DADEBSYN DSC's power supply. This was fixed by the PICO

Late Friday evening and night we had problems again with switching program, which didn't set values for ASACUSA properly so, that we had two sets of conflicting CCV values. This problem was fixed on Saturday day, but still not permanently

At Friday midnight we started to have stability problems with electron cooler, which was first fixed by simply adjusting it

On Saturday day the beam started to be more unstable. We found out, that this time the DR.BHZTR20+21 was not always following the GFA and it caused sudden jumps of electron cooler. After fixing this by the Firstline we had a while a stable beam, until the DR.DVT1608 started to not following its GFA. This was fixed by the Firstline, after which we didn't have stability problems anymore

On Saturday evening we had both vertical and horizontal stochastic cooler predrivers malfunctioning, which were fixed by simply rebooting them

On Sunday the DE0.QN70 tripped OFF several times and the Firstline was again needed.

SPS ()

MD on ultimate LHC beam. Losses occur during acceleration, emittances are of course larger than nominal.

TI (P. Sollander)

Monday 31 May: Technical stop. ODH alarms in the tunnel when the lights are switched back on. This is a known problem and an intervention to fix it was scheduled for the technical stop.

Tuesday 1 June: Technical stop. Emergency stops in B867 and in BA2. Human error during transport in the first case, unknown what triggered in BA2. Later in the day, compensator 1 tripped.

Wednesday 2 June: New TI operator post, BE-OP-TI-2010-148-LD published.

Thursday 3 June: Late evening, problem on the nTOF cooling circuit. nTOF stopped 10 hours for an intervention Friday morning.

Friday 4 June: nTOF intervention in the morning, otherwise, no main problems to report

Saturday 5 June: No problems to report.

Sunday 6 June: UPS problem in UA83 requires beam stop for intervention.

LHC (G. Arduini)

Full details under “coordination” at

http://lhc-commissioning.web.cern.ch/lhc-commissioning/