

End Week 45 (November 9th) – Status of Accelerators

Summary

ISOLDE	Very good week with only minor issues
LINACS	Very good week for Linac2.
AD	Very good week, the long-standing problem of jitter at extraction was resolved
PSB	Very good week, no problems to report
PS	Very good week, high beam availability
SPS	An eventful, but very good week for SPS
TI	
LHC	

Linacs (D. Kuchler)

Linac2:

Very quiet week without any problems.

Linac3:

14.5 GHz klystron for the source broke, and was replaced on Monday. Beam was supplied to LEIR up until Thursday afternoon. Now some repair work and modifications will take place before continuing to run for source development

PSB (K. Hanke)

Extremely quiet week, no problems to report, only very few resets and reboots here and there.

Monday 2 Nov: Our single batch LHC beams were checked for the SPS MD the following day. The SPS took these beams on Tuesday and Wednesday, and they reported that the beams were in excellent shape.

Tuesday 3 Nov: Some adjustments to improve SFTPRO stability.

Wednesday 4 Nov: TGM time out on several applics, among others the Vistars; fixed by CO.

Thursday 5 Nov: We checked our LHC beams in view of the LHC injection tests starting on Friday evening. For a while there was a general black-out of the wire scanner application.

Friday and throughout the weekend: beams were delivered for the LHC injection tests; routine operation without any problems, as it should be!

ISOLDE (E. Siesling)

Very good week with only minor issues.

GPS

GPS running the complete chain including RILIS ionisation lasers REX-TRAP, -EBIS and -Linac for the Miniball experiment on 66Ni.

Setting-up was very successful and physics started Wednesday-afternoon, a day ahead of schedule.

Minor hick-up Sunday-morning early when all REX Linac steerers, the REX separator and bender magnet went down due to the main power PLC going down. A reset of it including a reboot of the PLC gateway and relevant DSCs did the job. It unfortunately kept Miniball from taking the Ni beam for about 3 hours.

The users are very pleased with the intense Ni beam. The Miniball run will end on Saturday morning.

HRS

The HRS run finished last Monday. Despite the number of technical problems faced the users were very happy and took a high amount of data. Magnus solved all technical problems last week. Remaining was the ripple we saw on the HRS beam. It has been solved and explained by Julien Parra-Lopey (PO) and was a missing connection between the neutral and high tension earth in the power distribution box on the HRS HT platform. This box was exchanged for its spare the week before and was missing this particular connection.

New HRS target to be put on this Monday.

Approaching shutdown:

Main issues for the shutdown will be the commissioning of the vacuum(controls)system and the new HRS Front-End in the target zone. Detailed planning for these complex and large projects is getting into place. All relevant (support) groups are involved.

PS (R. Steerenberg)

Last week was a very good week for the PS with only minor issues and very little down time. The statistics on last weeks' downtime as registered in the logbook show a beam availability of 99% for all operational beams.

Tuesday and Wednesday formed a 48 hour MD block for PSB, PS and SPS. In the PS the RF radial loop was extended with an extra radial pickup with the aim to make the MRP seen by the RF feedback loops more identical to the MRP seen by the 40 CODD pickups. This changes required some adjustments of nearly all the operational beams. In addition the single batch full blown 50 ns LHC beam was taken successfully by the SPS, where the beam characteristics were well within the specified ones with an intensity per bunch that was slightly higher than the nominal one.

The minor issues during the week were:

- On Monday and Wednesday the MTG allowed sending a two basic period magnetic cycle on a single basic period MTG cycle. The MTG normally is protected against these faults, but this protection does not longer seem to work correctly. The timing specialists will deal with this problem in order to solve it.
- On Thursday we stopped the beam production for about 15 minutes to investigate a problem on the overhead crane in the PS north hall as it broke down close to the PS Bridge. After radiation level measurements by the radio protection service the repair of the crane during beam production the PS was approved and completed.
- On Friday a non-trivial problem was found on the behavior of the switching magnet between the TT2_D3 dump and the TT10 line for the beam that was under the control of the LHC sequencer. This problem is now understood and temporarily circumvented by putting a single basic period cycle in front of the cycle for the LHC. A definitive repair was not preferred on Friday just before the LHC injection test weekend and will be done on Monday.

- Saturday evening the beam was stopped for about 20 minutes as the vertical wire scanner in SS65 was stuck in the beam. A re-initialisation reestablished the situation.
- Sunday evening there were two false fire alarms that were reset by the fire detection piquet. The alarm on the ventilation station will need some follow up during the next technical stop.

During the whole week, like last week, a few out of the ten 10 MHz cavities tripped regularly and could be reset either remotely or locally by the specialist. The reason for the increase of these failures is not yet understood.

SPS (K. Cornelis)

An eventful, but very good week for SPS. A few hours of perturbation for fixed target physics on Monday due to a cooling problem in BA2 and another few hours of perturbation on Thursday (after the MD), due to some bugs in a new LSA release are the only major problems to mention for the last week.

Tuesday and Wednesday we had dedicated MD. A major result was the commissioning of the 50nsec beam with a single booster injection in the SPS. This beam could be accelerated in the SPS with a transverse emittance of 2.5mm (the same as in the booster) and a bunch intensity more than nominal. All this without problems of out gassing and/or other e-cloud related problems.

During the MD, the necessary sealing was installed in PPG41, so that we will be able to give access in CNGS while LHC is doing powering test.

Thursday and Friday MTE was injected on one of the CNGS cycles. The horizontal injection trajectory of the first four islands into the SPS is not very stable on a cycle to cycle basis and needs to be worked on.

After the (by now traditional) problems with the RBI81607, the LHC injection test was started on Friday afternoon. All the weekend a probe beam was sent to the LHC, while having very stable physics conditions for FT and CNGS

AD (C. Oliveira)

Very good and calm week.

On Monday the beam was jittering more or less 70ns from shot to shot at extraction. It was found the "phase rec & discr" board was not cooled properly because of a fan that was not working anymore. This problem was observed since a while but the jitter was only ~20ns which was ok for the physicists. Now it's below 10ns which is perfect!

TI

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LHC

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CTF

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