End Week 26 (June 28th) – Status of Accelerators

Summary

ISOLDE	Back after a lot of problems with vacuum controls.
LINACS	Looking good
AD	
PSB	The week has been rather calm for PSB operation.
PS	A not so smooth week of running and providing all nominal users during the week: EASTA, EASTB, EASTC, AD, SFTPRO, CNGS. No disasters. Except maybe the night to Friday.
SPS	Smooth running – problems with kickers over the last weekend.
TI	The events from last week were: - Monday, the He leak in P5 - Friday, access problem for PS in the night. - Friday afternoon, thunderstorm trips the PS and SPS. Half an hour stop noted in the logbooks.
LHC	Successful test of nQPS over the weekend.

Isolde (Didier Voulot)

ISOLDE vacuum was back in operation on Thursday afternoon (one week after the power cut). Some communication problems remain between the PLCs without consequences for the operation.

GPS separator was already up and running on Tuesday. So the target change could take place and the TISD (Target Ion Source Development) scheduled for Thursday-Friday could go on.

HRS was restarted for test on Friday. RFQ-cooler hf seems unstable. Test will continue on Monday.

REX delivered stable beam to Miniball (investigation on beam contamination from EBIS).

LINACS (Giulia Bellodi)

Linac2:

An attenuator was changed on Tuesday on the tank3 low level (due to the fact that the beam intensity was reaching the 169mA limit on CNGS).

Apart from that, operation has been very smooth all week.

Linac3

Source and linac tuning has continued during the week, with already good overnight beam stability since Monday.

The FESA software for the BCTs was recompiled and installed on Tuesday. There were some problems with ITF quads power supplies becoming unresponsive, first displaying a MIL1553 error and then a MC fault that needed local reset by PIPO.

By the end of Friday the beam had been taken to the end of ITH before passing onto the LEIR transfer line and checked on the semgrid MSG15 (91muA on TRA25 and 11muA on TRA41). The ramping cavity needs setting up next and the source optimised to give more current.

Booster (Bettina Mikulec)

The week has been rather calm for PSB operation.

Besides usual minor operational problems the main issue concerned a problem with the access system on Friday.

Just before this problem, early in the morning around 1am, no beams could be injected into the PS – the quadrupole BTP.QNO20 did not follow the desired value. The piquet PO could solve the problem at 3am.

After 2am the access controls problem started. The operator tried to trip the security chain, but this didn't work and the beam stopper could only be put in the IN position manually with the interlock key. Once in this state it wasn't possible to return to the OUT position. A reload of the TIM viewer also didn't work. The piquet access had to be called. A first reload of a PLC led to a trip of the MPS. Another reload (only of the instruction and acquisition part) was tried after 6am, which revived the access system. The security chain stayed intact during this operation. Beams were back at 6:40. It seems that the reason was a bug in the PLC software, but the precise circumstances are still under investigation. At 3:15pm beams were cut for 20 min. to allow for a new reload of the access PLC software.

One more problem that could be mentioned is the MPS trip on Wednesday last week requiring the power piquet to intervene on the QDE fault (~2h lost).

We continued our investigations on the wire scanner that are still not providing emittances corresponding to the SEMgrid measurements. This is being followed up.

The MD beam required for this week (SPS impedance measurements) has been prepared as well as the staggered ISOLDE beam (for the liquid target to be used for the first time this week). In addition the LHC beam for single batch transfer to the PS has been set up and is within specifications in the PSB (intensities corresponding to the 50ns and 75ns variant); the PS will now be able to work with this beam. Fine adjustments will certainly still be needed in both machines.

PS (Alexej Grudiev)

A not so smooth week of running and providing all nominal users during the week: EASTA, EASTB, EASTC, AD, SFTPRO, CNGS. No disasters. Except maybe the night to Friday.

Main issues of the week:

- Monday: Energy matching between PSB and PS using old CODD MRP measurement.
- Monday BEAM stop from 15:00 till 17:00 due to intervention in PSB and PS.
- CB works on TSTLHC75 to do 75 ns beam with injection in batch.

• Wednesday. 15:30-17:00 no BEAM for CNGS and SFTPRO. Due to thyratron replacement and corresponding setting up of BFA21

• Friday. No beams from 1:15 to 6:39 due to two problems. First, BTP.QNO20 – quad in the BTP line had a problem. It has been repaired at 3:00. Second, Due to a problem with the UPS of PS access system. Security chain could not be set. It has been repaired by Piquets at 6:39.

• Friday: 9:56–10:39 MPS was down. PIPO fixed a problem with a transformer.

• Friday: 15:10-15:38 Beam OFF to reboot the access system.

• Saturday 6:40. Module 1 of the injection kicker KFA45 failed. Specialist came in and found a problem with the main tyratron which must be exchanged on Monday. Until when 3 remaining modules will be used at higher values.

• Sunday 14:36-17:44 Operation suffered from often BLM trips on SFTPRO caused by blocked DSC. PICO had to came in and do reboot of the DSC which not possible from CCC.

SPS (Karel Cornelis)

After an excellent weekend, the SPS continued with a smooth week. A new MD cycle (26GeV platform) was introduced without major perturbations to the fixed target cycle.

Problems started to occur towards the end of the week. On Friday we started to have frequent RF trips, mainly TRX3 and TRX4, but also TRX6 from time to time and we also suffered a few stops due to thunderstorms.

The main perturbation during the weekend came from the kickers. The MKE4 (used for the CNGS extraction) kept on tripping during the whole of Saturday morning with a 'capacitor bank safety switch'. The kicker piquet spent a long time investigating the problem but could not really identify the origin of the trips. Saturday afternoon the problem disappeared by itself but then we had trouble with the beam dump kicker. There were some problems with the trigger electronics and a module had to be changed.

On Sunday the SPS was pretty stable. We have now accumulated over 5 10^{18} protons on the CNGS target.

LHC (Mirko Pojer)

The tests on the n-QPS were performed over the weekend in sector 2-3.

Access was needed to check some QPS cards configuration, after which the conditions for the tests were re-established.

Several ramps were performed on the RB, RQD and RQF circuits separately, with a ramp rate of 10 A/s. The objective was to validate the new QPS system and establish the exact inductive compensation for the new QPS bus-bar detector, installed on the bus-bars around cell 12.R2.

The splices, in between the voltage taps used by the detection system, were also measured. Results will be given on Monday.

Some tests aimed at validating the symmetric quench detection system were also carried out.

S67 – aim to close end week 28

S45 - connection cryostat, resistance measurements, RF ball OK, (limited) DN200 work started, all BLMs removed/displaced. M3 – 2 dipole outliers – open today with the aim of reclosing and ELQA by end of this week. Aim to close 45 end week 28.

S12 – cool-down started. 3 high field quench heaters u/s on dipole – OK for limited energy – replacements required eventually.