

## End Week 36 (September 9th 2012) – Status of Accelerators

### Statistics

nTOF: <https://espace.cern.ch/be-dep/OP/PS/default.aspx>

CNGS: [https://accstat.web.cern.ch/accstat/statistics/charts/2012/SPS/CNGS\\_Target\\_Cumul2012.jpeg](https://accstat.web.cern.ch/accstat/statistics/charts/2012/SPS/CNGS_Target_Cumul2012.jpeg)

LHC: <http://lhc-statistics.web.cern.ch/LHC-Statistics/index.php>

### TI (Jesper Nielsen)

With an average of almost a Major Event per day, not a fantastic week..

Monday, September 3	<ul style="list-style-type: none"><li>• 12:00 SPS and LHC stopped for cable fault finding. The fault finding proved to be more difficult than expected and the SPS is restarted on at 16:20. The fault was found near the corner at the entrance of BA4. The repair works will start as soon as possible (dig up 3 or 4 meters of the asphalt and insert a new piece of cable, one end under the road and the other inside BA4).</li><li>• POPS stopped due to a cooling problem, a faulty flowmeter caused the circuit to trip. See <a href="#">Major Event</a></li><li>• Big problems with the Electrical Network Supervisor, TI lost supervision for hours. See <a href="#">Minor Event</a></li></ul>
Tuesday, 5 September	<ul style="list-style-type: none"><li>• Perturbation 400kV Génissiat - Vielmoulin See <a href="#">major Event</a></li><li>• Lost vacuum in sector 7-8 and therefore the CRYO conditions. The vacuum was lost because of a faulty CPU in a controls PLC. See <a href="#">Major Event</a></li></ul>
Thursday, 7 September	<ul style="list-style-type: none"><li>• CRYO problems, due to a 3.3 kV circuit breaker open in LHC4. Rather hard to diagnose because no clear alarms in TI. See <a href="#">Minor Event</a></li><li>• SPS stopped briefly, by an interlock, caused by a change of filter on the circuit. See <a href="#">Major Event</a></li></ul>
Saturday, September 8	<ul style="list-style-type: none"><li>• Fire alarm in UW25, a pump has seized and stopped the circuit. See <a href="#">Major event</a></li></ul>

### LINACS (Richard Scrivens)

There is nothing to report for Linac2 this week.

Linac3 was quite stable during the week. The intensity has decayed over the weekend, some initial tune up is on-going this evening, and it will be worked on properly Monday morning in preparation for the MD.

### LEIR (Maria Elena Angoletta)

Good week for LEIR. Ions have been delivered to SPS as expected for MDs on Monday 3 and Tuesday 4 Sept and were available during the week for anybody who wanted to take them. Intensities available at extraction on Friday were of 2.5 to 3 E10 charges for NOMINAL and 0.8 to 1.1 E10 charges for EARLY, with a LINAC3 beam

a bit on the weak side (ion current varying between 16 and 20 microamp as measured on the T41 transformer).

At the moment of writing (Sunday 9 Sept evening) there are no ions out of Linac3 (reading from T41 is zero), however the Linac3 supervisor is aware of this and will restore the situation to operational before the LHC MD requiring ions and starting at 16:00 on Monday 10 Sept afternoon.

During the week progress were also made on the re-commissioning of the scrubbing mode. This was discovered to be non functioning anymore back in August, probably due to changes in the controls layer. Controls experts have been involved in the investigations and we hope to get the scrubbing back to operation for the winter (end of October) operation, in case it is needed.

## ISOLDE (Emiliano Piselli)

HRS: beam to users from Tuesday till Sunday without any major problem. Target specialists have spent long time to tune the ion source.

GPS: beam to users from Sunday using a new target which requires RILIS and many tuning and adjustment. On Friday BI have exchanged a faraday cup in the separator area which was leaking. Vacuum leak test was fine after that intervention.

I have had to spend a lot of time at Isolde for some ion source problem and for a network problem on Saturday morning.

## AD (Bertrand Lefort)

It was a good week with only 1 hour lost due to a power supply problem.

FAULTS					
Date	Start/Duration	Symptom	System	Resolved	Comment
07/09/2012	8:56/38"	None, no beam time lost!	C10-25 cavities	YES	Filament was off. probably a PLC failure. Resolved after an hard reset. The specialists swill study in detail this problem because it repeats too much in the last weeks.
10/9/2012	10:00/1H18"	Beam lost at 300 MeV/c	DR.DHZ2913 DR.DHZ2917	YES	A dead VERO 5V power supply tripped the whole rack 008 in building 370.

Machine Tuning & General Comments			
Date	Start/Duration	Sub-System	Comment
03/08/2012	afternoon	Bunched beam cooling	MD focused on possible bunched beam cooling. It seems that it is possible to reduce by 13s the cycle.
03/08/2012	morning	ALPHA ejection line	ALPHA ejection line optic study

## Booster (Bettina Mikulec)

The PSB had a very good week with only ~10 min downtime.

Except some minor interventions and many beam measurements and adjustments throughout the week there is only one issue worth mentioning: Saturday around half past 5 in the afternoon the gauge BT.VGP21 went into alarm level showing too high vacuum levels. The piquet PO has been informed, put the vacuum under surveillance, but believes that the levels are fine and that only the gauge has a problem. Yesterday the vacuum level measured by this gauge went back to normal... To be followed up...

## PS (Gabriel Metral)

Semaine sans problème majeur pour la machine PS.

Début de semaine, 1 quadripôle de la ligne TT2 ne cyclait plus correctement. Les spécialistes sont intervenu a plusieurs reprise pour remettre en fonctionnement cet équipement.

Le Damper qui avait permis d'améliorer l'injection du faisceau TOF la semaine précédente, a été testé avec succès cette semaine sur le faisceau LHC (sur le palier haute énergie)

## SPS (Yannis Papaphilippou)

It was a very good week for the SPS without major faults.

On Monday the machine was stopped at midday and for 3.5hours for an EDF fault detection on the 18kV cable of SMD10, which was not operational since last week. The fault was found and finally fixed during a short intervention on Wednesday morning.

The setting up of a short 110GeV cycle for extraction to LSS2 (future sterile neutrinos experiment) was set up during Monday and several measurements were made during Tuesday.

During the same day, the LHC probe Q20 cycle was successfully set-up and beam extracted up to the downstream TEDs. The 50ns Q20 cycle was also polished during Wednesday's 12h MD. The SPS is now ready to deliver this beam to the LHC. Unfortunately, the 25ns Q20 cycle was not at all studied, as most of the MD time was lost, due to some unforeseen LHC tests, subsequent trips of the 800MHz cavity and the 80 MHz cavity of the PS.

The rest of the week was quiet, following the usual SPS physics program (North area, CNGS), the occasional LHC filling and a parallel MD with high intensity single-bunch measurements, at flat bottom, with the Q20 optics.

## LHC

Over 1 fb<sup>-1</sup> delivered.

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