

End Week 33 (August 22nd 2011) – Status of Accelerators

Linacs (D. Kuchler)

Linac 2:

Linac2 had in general a good week. On Thursday due to the power glitch everything was down, but after two and a half hour the linac was back in operation.

Linac 3:

On Tuesday there were some problems with cooling and air conditioning in the Linac3 hall. As decided in the FOM the oven was refilled on Wednesday. Thursday morning the beam was back.

The power glitch also tripped Linac3. It could be restarted but in the evening tank2 and 3 stopped again. Friday morning a cathode switch was found faulty. The power glitch may have damaged it.

Unfortunately all spare parts did not work (stored for too long time). Repair will go on today.

PSB (K. Hanke)

Very good week for the Booster, with only minor resets and reboots here and there. INCA related issues are followed up directly with the specialists, the support is good and we are gaining experience with it.

On Wednesday BR4.XSK6L1 tripped, needed piquet intervention, and was OK after 30 min.

On Thursday the Booster suffered – as anybody else – from the general power cut. All equipment could be switched back on by the operators with the help of the piquets, no equipment was damaged. All beams were back 16:09, a few remaining problems (in particular bad injection on R1 due to a bad contact on a cable of a pulse repeater of BI1.DHZ50 and BI1.DHZ70) could be solved during the afternoon.

On Friday at 16:20 we stopped to re-configure the electrical network as it was before the power cut.

During the weekend there were a few trips of the CO2 cavities in rings 2&4, it could always be reset and did not cause any significant down time. However the expert will be asked to take a look this week.

ISOLDE (D. Voulot)

Last week was a frustrating one for ISOLDE. A 72Kr run on HRS/REX for Miniball was schedule to start on Tuesday night. The 200 MHz amplifier for the 9-gap cavity of the REX linac failed on Friday 12/8 when we were starting setting-up. The RF team tried to fix it without success for 4 days. They were still working on it on Thursday when the power cut occurred. The ISOLDE and REX facilities were restarted in a record time and the amplifier was finally repaired on Thursday night. Miniball started taking 72Kr at full energy around 22:30 with excellent yields and beam purity. Unfortunately after only one night of operation the 9-gap amplifier failed again. It was not possible to repair it and the run had to be cancelled. This is particularly disappointing since this run has already been cancelled twice. ISOLTRAP will be taking Kr beams at low energy from this target during the weekend. Bertronix (the supplier of the REX amplifiers) has been called and will be working on the amplifier to have it operational for the coming REX run starting Wednesday evening.

PS (G. Metral)

Lundi, les correcteurs hautes énergies ont été remis en route sur le Users LHC_MD. Les trajectoires d'extractions de ce User ont été copiées depuis le User MD9 pour que l'injection SPS soit la même pour les faisceaux 12bunchs et 36 bunchs

Depuis mardi l'observation des pertes est facilitée, un working set avec tous les moniteurs de radiations a été installé dans le console manager.

Mardi après midi, le spécialiste des Bumpers d'éjection 16 a remis en ordre les timings des équipements BSW16-12 et BSW16-14. Leurs starts étaient inverse. Par contre le réglage précis du synchronisme de ces 4 bumps n'est pas possible depuis la salle de contrôle CCC (La qualité médiocre des signaux ne nous permet pas de faire ce réglage). En local, le réglage est lui aussi très compliqué, pas de timing pour observer ces équipements sur un User donné. (le CO va voir avec OP pour installer un équipement type TCU)

Les 2 cycles des ions (early et Nominal) ont été injecté, accéléré et extrait sur la Dump D3 cette semaine.

Toujours des problèmes de climatisation au central bulding. Une température trop élevée de ce local est l'origine de dysfonctionnement de certains équipements RF cette semaine.

Le panne principale cette semaine est du au cable 18Kv endommagé Jeudi et a sa réparation Vendredi.

Le PS avait l'ensemble des faisceaux a nouveau disponible seulement 5H après la coupure. Coupure générale qui avait fait tomber tous les équipements de la machine (pompe a vide, vanne, alimentation, ...)

Le SEMFIL 277 de TT2 est HS. Les ABS de cette ligne d'extraction ne sont donc plus possible avec cet équipement.

AD (B. Dupuy)

Monday, new steering for ALPHA. We keep the old settings for ASACUSA (It receives more beam). No incident until Thursday.

Thursday, water leak in the cooling system of the hall 193. no consequence on the users beams.

18kV power loss. Beams available again to 7:00 p.m.

Saturday 21H30 0H30, random malfunction of S-Cooling in 2 GeV flat top. The specialist is contacted, it will present tomorrow morning (best effort)...

Sunday 10H00 - 12H00, work on the Stochastic-Cooling by P.Lowers and B.Dupuy. Repairs should continue this week.

Excepted during the Weekend the beam is stable and we have more than $3.3E7$ anti-proton extracted.

LEIR (D. Manglunki)

Not much beam in LEIR this week

On Monday work on the NOMINAL & EARLY beams was hampered by a bug in the LSA function generation, preventing a change in the tune, and worse, a rollback to a working situation.

On Tuesday the Trim Editor LSA problem was fixed by Greg Kruk; we were then able to change the tune and start optimising the transmission through the EARLY and NOMINAL cycles. The NOMINAL beam was transferred to the PS in the afternoon.

On Wednesday the source was refilled, on Thursday by the time we had restarted to take the beam a power cut affected the whole site, and we spent the afternoon restarting it with the help of the Controls and Power Piquets. Some elements (ITE.BHN40, ER.QDN2040,...) appeared to be OFF as seen from the controls system while they were actually pulsing.

On Friday an RF problem with the Linac3 prevented us from taking any beam. Earliest estimate for beam is Monday, see Linac report.

SPS (K. Cornelis)

The power supply, on the quadrupole in the M2 line (COMPASS), which gave problems during the previous weekend, was replaced last Monday. The intervention took only a few hours and not the foreseen eight hours. On Wednesday there was a 24h floating MD. Most of the daytime was lost. LHC was taking beam during the whole morning and the afternoon was lost due RF problems in the PS. During the MD we managed to reduce the spark rate on ZS5 by opening a little bit the gap. We also found that with the actual LHC beam it is better to put at least 100kV on the cathode (instead of the 30kV that was found last year) in order to reduce the vacuum activity.

The power cut on Thursday did not affect the SPS at all. In the late afternoon we had our weekly dose of problems with the access in the north. This time it was chain 13 giving problems due to a problem with the 'field presence' sensor in a magnet.

The weekend was smooth. On Sunday the RF power piquet had to come in order to isolate a tube on TRX2. We also checked the 25 nsec. beam as preparation for LHC MD. From the SPS point of view the beam looks OK, but there is still some work to be done from the PS side.

LHC (J. Uythoven & B. Holzer)

Main issues were:

The electrical glitches, with the main power cut on Thursday together with a few single event upsets, were the main reasons why not so much luminosity was produced. The cryo recovery after the main power cut was particularly difficult due to problems with the cold compressor speed S4-5. The cryo was back around 00:30 Sunday morning. Since this morning 00:30 the LHC is running with stable beam again.

More details under:

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

TI (J. Nielsen)

Wednesday, August 17

- 23:03 -- Electrical glitch on the 400kV supply. LHC down for two hours (back in stable beams at 01:10. RTE reports thunderstorm near Nancy and problem on the line Génissiat - Vielmoulin

Thursday, August 18

- 06:23 -- A 400kV glitch dumps LHC stable beams. Not seen by the injectors
- 06:57 -- Another 400kV glitch before the LHC had started again. Not seen by the injectors
- 06:59 -- Yet another glitch, LHC still not up. Not seen by the injectors.
- 08:04 -- And one more. LHC still not up. Not seen by the injectors
- 11:45 - During the works on the new substation next to the CCC, a "digger" dug into a 18kV cable (MP7), which caused a general power cut! See major event for more information
- Saturday, August 20 Problem with the demineralized water production in Meyrin (building 378). One of the two chains is faulty (a wago module needs changing, but none on stock). We keep running with one chain until Monday. TI operator on site a few times per shift to check the levels (only by precaution, alarms should come through) Minor event

Sunday, August 21

- Compass experiment stopped accidentally because of a low level in the tank. Leak spotted on site, intervention to be foreseen for tomorrow.