

End Week 19 (May 13th 2012) – Status of Accelerators

TI (Jesper Nielsen)

Here's the summary of a busy week + WE in TI!

<http://wikis/display/TIOP/2012/05/10/TI+summary%2C+week+19+2012>

May 13th

- Gaz detection sends false level 3 alarms that cause an interlock to the powersupply for the compressed air. TI operator allowed in by firemen and managaes to restart one compressor locally (different power supply), without this intervention the compressed air would have been lost! [Minor event](#)
- PVSS supervision lost, restart necessary phisically in the CCR. CRYO maintain not lost, LHC dumps though. Connected or not? [Major event](#)
- Pertubation not impacting the machines (CRYO problem at the same time) Pertubation confirmed by RTE (cornier - montagny)
- CNGS ventilation problem, unclear if we could run without this one. CNGS not started before this was confirmed by S. Delaval. [Minor event](#)

Saturday, May 12th

Deshumifier in Isolde causes problems since yesterday. The circuit breaker needs changing it's a 16A should be 32A, but cables need changing accordingly. For now it was replaced with a 25A. See [major event](#)

Friday, May 11th

- Compass stopped, leak warning alarms on circuit. [Major event](#) Delay before interlock changed, leak checks should probably be done. * Leak on cooling pump in Isolde. Before piquets had the time to change to the other pump the circuit stopped on leak warning. [Major Event](#)

Thursday, May 10th

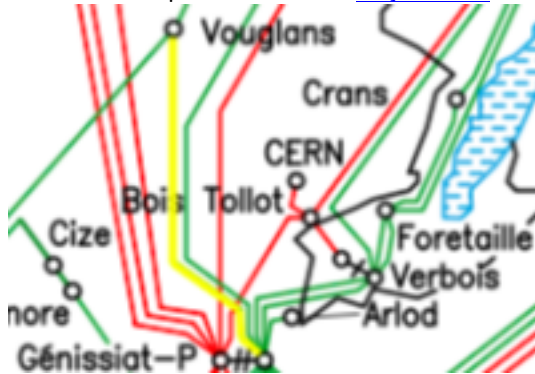
- 48V problem in CNGS. Beam stopped in the morning to allow for an access, the promec seemed sleeping. See [major event](#)* Starpoint problem in building 65. Two different problems, the power was OFF and a clim was in maintenance causing the temperatures to rise. The power was switched back on and a "clim de secours" was put in place. See [event](#)

Wednesday, May 9th

- Transformer stopped in ATLAS due to a fault temperature sensor. See [Major event](#)* SPS stopped due to a problem with a pump in the SEPTA circuit. See [Major event](#)* Electrical perturbation, not seen by RTE, still it causes a brief stop of the PS complex. See [Major event](#)

Monday, May 7th

- Perturbation stops the show. See [Major event](#)



- Perturbation, explained by a short-circuit from RTE. See [Major event](#)



LINAC2 (Rolf Wegner)

Over the last weekend (5th, 6th May) intensity fluctuation of the Linac2 beam have been seen and effected the whole accelerator complex. On Monday (7th May), the problem was found: an aged tube in the buncher 1 amplifier and solved by exchanging the tube (30 min down time of Linac2).

Some drops in beam intensity of single pulses (~ 1 every 15 min) have been seen on Monday and Tuesday until the RF team adjusted the buncher 2 amplifier's rise time and cavity tuner settings.

During the rest of the week, Linac2 was running without problems.

ISOLDE (Pascal Fernier)

GPS : target #474 run @ 30.2 kV pour IS534 sur ligne LA1 et pour Isoltrap

Setting-up machine, proton scan, "small" yield check and faisceau pour ajustement Rillis, faisceau Li pour Rex, puis faisceau 196At, 205TI pour ligne experimentale LA1 et Isoltrap (Wed 09/05 – 205TI)

Problemes :

- 1) Arret separateur MAG60 (off) mercredi 09/05 @06H00 raison inconnue.
- 2) Arret chauffage « line » target GPS jeudi 10/05 @13H45 à raison inconnue.
- 3) Intervention eau et electricite –voir logbook
- 4) Arret HT et chauffage cible jeudi @21H00 suite a un probleme sur dsc rplcgps(?) ; dsc et plc down à pour sauver la cible à alimentations de chauffage en local mode.

5) Vendredi soir fuite d'eau sur le système de refroidissement et arrêt des 2 machines GPS et REX ; apres basculement sur la pompe de decours numero2 redemarrage de GPs apres 1H et redemarrage de REX en 3H.

6) Samedi panne du deshumidificateur d'air de la zone cible ; apres depannage provisoire par Cegelec le probleme devra etre suivi cette semaine.

AD (Lajos Bojtar)

-Tuesday and Wednesday ASACUSA couldn't use the beam most of the time, and we took it for ejection line studies. We made a good progress, the first half of the ASACUSA line is understood now and the measurements fit the theory. We will continue with the second half during today's MD.

- Thursday afternoon one of the ring power supplies DR.QTRIM5 had unusually big ripple, the beam was lost at various places during deceleration. FL was called, but they couldn't fix it. The machine was stopped for the night and next morning the specialist continued to work on it. Beam was back around 11 am. The problem was the too high temperature in the power supply building due to fault of air conditioning.

- The rest of the week was calm

Booster(Jose-Luis Sanchez Alvarez)

Last Tuesday, the ring 3 was not available during a total of 3h50. Problem with the BI3.QNO60 power supply, EPC piquet has been called 3 times.

Wednesday morning the cavities C16 have suffered from a power glitch. Specialist has changed a magnetic contactor on the BR2.C16. In the afternoon, BR1.C16 has fallen with a frequency error. During the night, ejection kickers have dropped by timing problem.

Thursday morning PS has requested the CNGS 100ns beam. In the afternoon, a wrong status information of the beam stopper BI.STP, in the external condition has stopped the beam during 1hour. The CO piquet found nothing.

Friday afternoon the Isolde water station stopped.

Sunday morning the ejection kickers fell over again by a timing problem (PS RF train missed).

BI specialist has worked on the injection trajectory acquisition problem.

Several PSB supervisors have investigated the transverse instabilities observed by the PS. The ripple of 1% in the recombination kicker produced a vertical variation of 3 mm in the same bunch seen in the PS injection. In the Ring 2, instabilities in H plane have been observed before the syncro.

During the week-end, an extensive emittance measurement has been performed to understand the emittance conservation between the transfer PSB-PS and the performances of the different rings for the 50 ns and the 25 ns.

Setting –up of a very large transverse emittance XL_T_EMITT for MD in the PS.

PS (Jakub Wozniak)

It was a rather calm and stable week for the PS with all operational beams delivered as expected. From the 10th of May we deliver an LHC100ns type beam for CNGS.

Startup of the Dirac beam is postponed until the 23rd of May due to magnet installation on site. PS will need around 1-3 days of setup as we have to provide a longer spill (550ms instead of 400ms on 3 EASTB cycles instead of 4).

On Sunday LINAC2 intensity became unstable followed up by the intervention on Monday that stopped all beams around 9:30.

On Tuesday PS was stopped for 1.5h access in TT2 to fix problems with pickups and monitors. The same day in the late afternoon and night there was a few hours of downtime for different beams due to the problems with the booster (ring 2 & ring 3).

On Wednesday morning there was an electrical glitch, than no beam from PSB ring 2 causing 2h of downtime for the TOF beam.

During the same day PS had problems with PE.QKE16 which was not pulsing due to a power supply and timing problems. Reboot of the fronted dcpstj resolved the problem. Due to that there was no beam for 2h from the PS. A small problem of the POPS caused downtime for 11 minutes.

During Thursday night PSB had problems causing 1h beam stop.

On Friday the TOF beam was stopped until early afternoon due to the users request. There was a fire alarm in the CTF resulting in the access to the site.

The weekend was rather calm with 3h of stop due to problems with PSB kickers on Sunday morning.

A large campaign of the emittance measurements has been launched during the weekend to understand possible problems with the blowup for the LHC type beams.

Currently those issues are still under investigation.

SPS (Yannis Papaphilippou)

It was a busy week for the SPS with the NORTH area startup, switching CNGS to the 100ns type beam and delivering the beam for LHC physics, with around $1.3e11$ ppb. For this last and during the whole week, large horizontal emittances were measured (up to 2microns), in spite that the beam is coming much smaller from the PS and TT2 (1.2microns). The problem was accentuated during the weekend (the vertical became equally large) and although there is not a clear explanation, it seems to be associated to the beam transfer in the TT10 line. Investigations continue tonight.

Regarding the NORTH area physics, although scheduled to start on Monday, it was delayed until Wednesday, first due to a leak detection in the M2 line and then due to a safety issue. The delivery of the CNGS 100ns beam started on Tuesday but was interrupted on Thursday morning for 8 hours, due to a problem with the electrical distribution in the target area. Setting up of the HIRADMAT beam started on Wednesday and continued until Friday. During Friday night, the bunches in the LHC beams were observed too long. It was solved by the LL-RF piquet and expert who found a problem with the longitudinal blow-up module. At the same time, a lot of magnets in the M2 line showed an abnormal read-out and the beam had to be cut until next morning, when it was found that this was coming due to a data communication fault. During Saturday morning, an MKP kicker tripped due to a switch problem with the PFN of generator 3. It was decided to resolve this next week, as it was not penalizing operation. During the night, the CNGS beam was stopped for 2.5h in order to investigate a ventilation fault on the CNGS target area. It was confirmed by TI that we can leave with it until the next technical stop. Finally, due to the presence of several LHC type beams in the SC (like the CNGS 100ns) the MKE4 kicker is over-heating. If it reaches 55 deg., the OP crue has to stop the CNGS beam for the time to cool down.

LHC

Interesting week marked by low availability, beam quality problems with tails generating losses in the ramp and squeeze. Even so, over 0.5 fb^{-1} delivered. More details:

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