Accelerator Complex Status

End week 36 (Monday 11 September 2017)

TI (Jesper Nielsen)

Tuesday 29/08 at 14:32: CV informed TI and SPS that there was a major leak on the Beam transfer cooling pump 213 at BA2 and asked if it would be ok to switch to the standby pump 210. The SPS were informed this would involve a short period of low flow which may affect them. During 10 seconds the flow dropped from 124m3h to 48m3h and then back to 127m3h. CV plan to leave this configuration until the next TS.
Wednesday 30/08 at 06:01: Electrical perturbation, confirmed by EDF - RTE on a 400kV line near Génissiat.
Thursday 31/08 at 09:04: Trip of demineralised water cooling station in BA81due to a leak warning alarm. The alarm was caused by a user refilling his circuit and thus causing the leak alarm threshold to be reached.
Details: https://wikis.cern.ch/display/TIOP/2017/09/04/TI+Summary+Week+35

LINAC2 (Francesco Di Lorenzo):

Very good week. Only on Tuesday in the morning, we got a very short stopped (3 minutes), because we lost the timing in fact the operator called me that the possible reason has been a watchdog reset.
But anyway, the Linac 2 has worked very well, we got no more than
15 flashovers this week in the source.

LINAC3 (Francesco Di Lorenzo):

The problem with the amplifier for the Tank1 has not been fixed last week, due to lack of mechanical parts, this problem will be resolved this week.
The beam was only present in the source. Thursday morning and Sunday evening we got a fault with the RF amplifier (Thomson generator) in the source , that was fixed by reset.

LEIR (Nicolo Biancacci):

This is a very short summary for LEIR in week 36, as the machine was not running due to the Linac3 issue with the amplifier.
Hopefully we should have beam back tomorrow afternoon.

PSB (Gian Piero Di Giovanni):

it was a quiet week in the PSB.

The major downtime (~1h30 minutes) was due to an access needed in the PS on Friday morning to investigate a possible water leak. Since at the time of the access the location of the water leak was unclear and an access in the switchyard could have been a possibility, we agreed with the PS and ISOLDE to stop the beam in the PSB as well. LHC was already filled.

On Wednesday morning we had problems with the power converter of BTY.QFO179 which tripped and could not be reset. This failure did not affect

ISOLDE operation because the GPS target was used and for this transfer line the quadrupole is set at 0A. Firstline was called in and fixed the problem. This was good as ISOLDE would take beam on HRS later in the week and spared the 3 hours needed of intervention. In fact for HRS the quadrupole is powered at ~110A.

Otherwise we had few other minor failures, but every time a reset worked and the beam was back within minutes.

The stable running during the week allowed the operators to actively work on improving the performance of 8b4e in terms of intensity stability and emittance, prepare beams for the LHC MD week and investigate some of outstanding operational issues with the WS.

As usual several MDs were carried throughout the week.

ISOLDE (Eleftherios Fadakis):

Very busy week at ISOLDE with multiple experiments taking place(list below).

1. Collections on GHM(172Lu, 155Tb, 149Gd16O), GLM(152Tb, 155Tb) from GPS.
2. ISOLTRAP takes stable beam from GPS(50Ti).
3. COLLAPS takes stable(58Ni, 60Ni, 61Ni, 62Ni) and radioactive beam (56Ni, 66Ni, 67Ni, 68Ni, 70Ni) on HRS.
4. preparation for next HIE run (94Rb):
   Intervention on 9GAP for longer RF pulses (1,6msec).
   Temporary stable beam set up for HIE (A/q=4.0, E=2.966MeVu).
   Re-phasing all SRF.

COLLAPS continues taking beam through the weekend.

Issues regarding points:

1. On 3 occasions all GHM, GLM and most GPS electrostatic elements went off. In one of them there was a vacuum spike to be connected to the tripping. In one of the cases the valves for GHM and GLM were closed and still the elements went off. To be investigated.
2. Many GPS and CA0 elements tripped. Circuit breaker EXD12.10 went down and with it all electrostatic elements. Further investigation needed by EL technician.
3. HV tripped once. Target heating tripped but restarted by users.

PS (Ana Guerrero):

The PS has been running continuously except in a few occasions due to minor equipment faults until Friday when an inspection in the 'puisard/sump' of building 352 had to be organized after TI informed of a water leak. The leak turned out to be an infiltration in the wall around section 57 that will be discussed next Wednesday at TIOC. During the inspection
pump A02.PSR.352 was found in fault and was switched to the spare. The beam was down during 2h25mins.

On the beams side, all operational beams have been delivered as requested, in particular the 8b4e beam has been successfully sent to the LHC with 11e10ppb all along the week. A high intensity version of the new 8b4e beam has been prepared (17e10ppb)) in view of the next LHC MD block. Also a 8b4e BC (batch compression) version with 32bunches has been created.

AD (Bertrand Lefort):

Even if we have lost some beam time, It was a relative good week for AD.

Tuesday 06/09/2017:
Un-resetable error on DE0.BHZ12 (solved by the mythical Power OFF - Power ON)

Cavity C10-26 tripped several time : the grid power supply was at the current limit, Specialist has increased the current limitation.

Several Injection kicker Trip, a module is in error. After replacing the module thyratron and masking a sensor in the hydraulic group the kicker was operational again.

From Thursday 07/09/2017 till Saturday:
We received several complaints due to beam instability. The problem was coming and going :

- Vertical Jitter on ALPHA's last GEM.
- Horizontal Jitter on AEGIS's last GEM.

After checking physically all the PS located in the B. 195, I found that DE0.DHZ45 was not following the CCV. Another ON-OFF and the problem was solved.

SPS (Karel Cornelis):

The availability of the SPS during the last week was 97.6%. This is very exceptional for this period in the run where we operate with high intensity for FT and have many different beams. LHC changed beams from BCMS to 8b4e on Monday and on Friday the intensity was increased from 1.1e11 to 1.23e11 per bunch. By doing this we hit some limits on the 800MHz and the horizontal damper causing several minutes of the otherwise very low downtime. Monday and Tuesday morning we had a successful HiRAdMat run and during afternoon and nights we gave beam to AWAKE. The fixed target transmission depends strongly on the PS beam quality. Optimisation during the last week gave 96% transmission in the SPS.

LHC (W. Hoefle and M. Giovannozzi):

The 8b4e beam was first injected on Monday (with some issues related to the MKI kick length and to beam injected into the abort gap) and the bunch number could be increased from 1130 to 1920 bunches over 5 steps without any dump induced by 16L2. Stable operation at 1920b began on Wednesday with bunch populations of ~1.1E11 in collision. Increasing the bunch population beyond that intensity triggered again 16L2 dumps (3 in total), all at or close to 6.5 TeV.