End Week 18 (May 4th) – Status of Accelerators

Linac2 (A.Lombardi)

Everything OK except some problems with the RF. Remote reset didn't work from May 1st late afternoon until May 2nd afternoon and local reset was needed 4 times. The RFQ amplitude value was lowered on Saturday afternoon as a precaution. Since then and up to now only one remote reset was needed.

PSB (J.Tan)

Despite 1 to 3 RF trips of Linac2 per shift, the PSB has been performing well with a few hardware and controls issues.

On Wednesday 2 hours were lost due to extraction septum BE.SMH15L1. The power and controls piquets worked together to bring it back to operation.

Tests of the fast wire scanners were done throughout the week. The application still contains a long list of bugs. Rings 3 and 4 suffer from truncated profiles (negative offset on the vertical axis).

Beams prepared during the week: TOF (dedicated), LHCPROBE, LHC25A/B at intermediate intensities, special beam for MTE (on user MD3). Setting up of LHCPILOT and LHCINDIV is ongoing.

ISOLDE (M.Eriksson)

All in all a good week for physics were many collections/implantations have been done by the scheduled experiments, beam time has been affected by LINAC RF problems during the week causing protons to come and go without warning.

A problem with the air condition in the ISOLDE control room resulting in temperatures ranging between 14-26°C has been fixed by TI/Cegelec in the beginning of the week.

GPS: The PISOMOVE system stopped working due to a broken stepping motor controller card (21 years old). Efforts to find a replacement card have been unsuccessful as they are not manufactured anymore neither available through the PO-group. This system is divided in to an HRS and a GPS part. HRS remains functional. The GPS part controls the extraction electrode (needed for beam setup/target change) + the GPS Low/High Mass deflectors (GLM/GHM). This problem is of course severe and needs a quick/permanent solution as it is a potential "show stopper". Will be discussed in the ISOLDE technical meeting Tuesday and efforts to find a solution are ongoing.

HRS: Communication problem with DISOPOW/POWP, CO-piquet contacted and find/solve problem with "PISOBL01". RFQ working set loose connection with hardware, RFQ PLC reset - all back to normal.

PS (R.Steerenberg)

The setting up of the different beams continued last week.

Wednesday in the shadow of the extraction septum problem in the PSB an access was made in the PS to solve a problem with the injection SEM-grids that moved and were blocked for unknown reason in the beam. The BI crew manage to retract them and verification showed that they were not damaged.

PS start up progressed well and entered the next phase last Thursday when the first physics users in the East Area started taking beam from the north branch target. A good steering that excluded the broken vertical corrector (F61N.DVT01) was found. Setting up of the T7 irradiation beam was not straight forward and the beam was delivered Friday. Maurice Glaser removed an obstacle from the beam line Friday morning after which the setting up continued and resulted in beam delivery Friday afternoon.

The PS wire scanner system gives profiles, but we cannot yet get correct emittance values from it. Substantial progress on making the application available in the PS has been made and we will continue the debugging this week, as the correct functioning of this tool is mandatory for the LHC beam production.

The LHC 25 ns beams were set up and the setting up of the AD beam was continued.

Over the long weekend the PS team performed successfully the CTF3 PETS backup operation.

AD (T.Eriksson)

AD ring: cooling water was found off last Monday – no alarm to CCC. To be investigated. All ring supplies now tested OK. B-main coil movement measurements finished last Friday, one magnet (out of 24) shows significantly more movement than others. More measurements on this unit to be done this week.

AD target area: Damaged guide/support for target z-position movement found. Probably happened 1 year ago when manipulating target. This was possible to adjust back to somewhere near original shape with specially made tool. Quick interaction – low doses taken.

Target shows small water leak. Was left over the weekend, probably have to fabricate new thicker joints this week.

Much equipment not yet tested due to target area problems (e.g. new horn pulser electronics/interlocks, xfer line magnets etc.

We might just about be able to stay on schedule – we'll know by the end of this week.

SPS (E.Metral)

As foreseen, last Monday we broke the vacuum in LSS2 once again in order to repair the ZS5. In the meantime the geometers re-aligned the SPS machine (4 quads in H and 4 quads in V have been moved). After the access, the orbit at top energy was re-measured and it was smaller than ~ 1.5 mm rms in both planes (before it was ~ 2-2.5 mm).

During the week some work has been done to try and decouple the different cycles as much as possible, in particular to have the same behavior on the 1st cycle (SFTLONG) when the last cycle of the supercycle is either LHCFAST or CNGS.

DSO tests for NA took place until Thursday. The situation with SFTPRO was quite good (beam up to 400 GeV/c with ~ 91% efficiency, for ~ 3E12 p/p) and the extraction was set up during the night from Thursday to Friday.

During the week, the beam was also accelerated up to 400 GeV/c on CNGS, the extraction kickers were pulsed on both LHCFAST and CNGS cycles and some checks were made on the calibration of the BWS51995 with old and new server (in both cases, the same value was measured).

Finally during the (long) week-end the TT20 transfer line was started to be adjusted and the beam was seen on the T2 target. This work will continue during the coming week (to be ready to send beam to physics on Monday 11th) and several issues (such as polarities of some magnets in TT20 etc.) will be followed up.

TI (P.Sollander)

Monday 27: AD demineralised water circuit found to be off. Thought to be off since the electrical perturbation on the weekend before. No alarms in the CCC.

North zone water problems. Thought to be a controls problem (instabilities of the PLC due maybe to powering...

Wednesday 29: LASER crash (again). LASER has been unstable for approximately one week. Mark Buttner is working on a solution

BA81 demi water problems (will repeat over the week on Thursday and Saturday)

Thursday 30: Water leak on SPS extraction power supply.