End Week 47 (November 23rd) – Status of Accelerators

Summary

LINACS	Good week with until Sunday evening, when a vacuum on RFQ appeared
PSB	Very good week, only minor problems to report
PS	Very good week, high beam availability
SPS	Reasonably good week for the SPS, 95% SFTPRO and 80% CNGS availability
ISOLDE	Good week with no major breakdowns.
AD	
TI	Relatively quiet week, the only large event was compensator trip LHC point 8
LHC	

Linacs (G. Bellodi)

Linac2:

Very good week without problems until Sunday evening 19:00, when a vacuum problem appeared on the RFQ (possibly caused by RF sparking). Observed was a rapid increase in pressure (to be expected from the source) and a stop of the vacuum system . A problem with a pumping group (turbo & primary (scroll) pump) was observed. The scroll pump was replaced which (apparently) solved the problem. The pressure remained however at slightly higher level than before the incident.

At 1 a.m. again a vacuum problem on the RFQ appeared. An ion pump stopped which caused the sector valve to close. Resolved by PIVAC intervention but some instabilities are observed on the ion pump. Investigations ongoing.

PSB (G. Rumolo)

After a very smooth week, we had some problems at the Booster on Friday afternoon, due to some water steam that was exhausted through the rack with the BT1.SMVT10 (recombination septum Ring 1) power supply and made it trip. While the power supply could be reset locally by the PiPO and the total downtime for the beams using Ring 1 was only about 30', the origin of the steam could not be found. It was suspected it could come from the air conditioning system close by, but the CEGELEC guys, who were called in to look at the problem, said it was working correctly and the error messages it displayed had been there since long. The same problem re-appeared also on Saturday afternoon and this time the steam also triggered a fire alarm. Again the origin of the steam could not be found out in spite of the investigations.

In the night between Saturday and Sunday the MPS tripped 5 times, causing very short breaks. After the 6th trip, the PiPO was called. He exchanged the electronic card for the TRIM_A with its spare and fixed the problem.

The LHCPROBE has been produced all the weekend for injection into the LHC, and we have added both in the logbook and in the consignes that its intensity in the PSB must not exceed 5e9 for any reason, as long as there is no official request for it.

ISOLDE (M. Eriksson)

Very good week with only minor issues.

GPS

The GPS had a new CaO-target successfully mounted on the Frontend on Wednesday (this year's last target change!)
Machine was setup without problems and the Witch-experiment was handed over beam one day in advance. Witch runs until Monday morning and will be followed by tests of sending un-synchronized 1200ms cycles to ISOLDE.
Separator courses will use GPS as soon as tests are done (by lunch.)

Tuesday evening Miniball equipment went down after a user had daisy-chained a power extension box to one of the other outlets.
Power could not be restored so electrical services was called in and finally found a solution.

HRS

HRS has been resting and cooled down but was re-started late last week, beam has been verified through separators and RFQ and is now ready for the upcoming separator courses.

Tilted foil setup

The tilted foil setup was moved on Tuesday from the beam diagnostics box in REX beamline 7 into the beam diagnostics box located in REX beamline 8 (close to the Miniball target). Everything was aligned on Wednesday and the new (larger) foil-holders will have the 9 foils mounted and assembled early next week. Stable beam will then be taken from REX EBIS and polarization tests can start in collaboration with Miniball.

PS (S. Gilardoni)

99% beam availability for all users.

MTE delivered up to 1.75e13 per extraction regularly to the SPS. Starting on Tuesday morning and for 7 hours, all the CNGS cycles were delivered by MTE, like as if in normal operation and for a radiation survey outside the PS tunnel. The goal is to compare the differences in radiation with respect to the CT extraction.

LHCPROBE and LHCINDIV delivered regularly to the SPS. Some difficulties with the measurements of the BWS with such small intensity/emittance beams. BI will follow the issue.

nTOF intensity delivered went above the committed intensity.

The CLOUD experiment in T11 started the data taking.

SPS (D. Manglunki)

A reasonably good week for the SPS. Beam availabilities 94% SFTPRO, 78% CNGS.

The week started with a spurious interlock problem on CNGS, given by vertical beam position monitor BPKG.421449, whose threshold had to be increased. Then in the afternoon still for CNGS QID410100 tripped several times by overheating; it was decided to give access the next day to have a look at the magnet. Beam was turned off at 1:00 on Tuesday, access took place at 9:15 after RP survey, the problem was quickly fixed by increasing the cooling water flow and the beam was back at 10:30.

Then for 8 hours all CNGS cycles were programmed to use MTE (CNGS2).

The other beam stops in the week were essentially due to trips of RF transmitters TRX2 and TRX5, and problems in the injector complex (booster main power supply and recombination septum, linac 2 vacuum).

From Friday afternoon on, the SPS reliably delivered a low-intensity

(~3E9) probe beam to the LHC. Its emittances were artificially blown up by injection mis-steering (respectively ~3 microns in H, ~2 microns in V) for fear of quench in case of beam loss.

North Area and CNGS beams stopped at 8:00 this Monday morning. CNGS reached 3.5E19 protons on target on Saturday morning.

TI (P. Sollander)

Monday: electrical perturbation on EDF 400kV stops the SPS briefly, otherwise no consequences

Tuesday: compensator LHC point 8 trips off. TE-EPC investigating why. ATLAS magnets trip after a fault on EOD403/15A. Major event report created, pending input from electricians.

Wednesday: localized power cut in LHC point1 due to lift maintenance. Some confusion but no damage

Saturday: perturbation registered on 18kV supply LHC point 8. Electricians on site suspect problem with transformer. No trip. Transformer monitored closely

Over the week-end, a number of fire and gas detection units had problems.

LHC

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CTF

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