End Week 4 (January 27th 2013) – Status of Accelerators

Statistics

nTOF: https://espace.cern.ch/be-dep/OP/PS/default.aspx

CNGS: https://accstat.web.cern.ch/accstat/statistics/charts/2012/SPS/CNGS_Target_Cumul2012.jpeg

LHC: http://lhc-statistics.web.cern.ch/LHC-Statistics/index.php

TI (Peter Sollander)

A calm week...

LINAC2 and LINAC3 (Giulia Bellodi)

Linac2 had a very good week, no particular problems to be reported.

Operation at Linac3 also went rather smoothly, apart from the daily retuning of the source.

On Saturday night two interventions were needed: the first one to reset Tank1 after a pre-amplifier fault and later on to re-establish an average 20uA current after an HT glitch on the source.

LEIR (Michael Bodendorfer)

LEIR had a stable week. The EARLY and the NOMINAL beam performed routinely stable at 1*10^10 charges and 5*10^10 charges respectively. MDOPTICS was used throughout the whole week for study and development of the RF capture loss, longitudinal emittance improvements and the preparation of a manual chromaticity measurement.

On Monday morning, Jan. 21st, missed shots hindered the LHC filling. It is not yet clear what caused the missed shots. Investigation is under way in LINAC3.

On Monday afternoon, Jan. 21st, a low level RF MD was performed and resulted in an MDOPTICS beam with a lower longitudinal emittance at the same extracted intensity. We let this beam operational as MDOPTICS for two days to check its consistency.

On Wednesday morning, Jan. 23rd, at 11am we connected the improved MDOPTICS cycle to the NOMINAL user. Since then, the improved cycle provides consistently lower longitudinal emittance at the same intensity around 5*10^10 charges.

The rest of the week, LEIR provided EARLY and NOMINAL beam of the above mentioned intensity and longitudinal emittance.

Noticeable glitches through the week were limited to the regular tripping of the power supply of the main bending magnets of LEIR (ER.BHN). This power supply tripped between one and four times per day for the whole week. Due to the current demand in ion beam, we did not investigate physically the origin of this tripping pattern but reset the respective power supply after each tripping to restore the ion beam delivery with as little time delay as possible.

The ER.BHN main power supply of LEIR may turn "faulty" when zero cycles are integrated in the LEIR super cycle. Since the super cycle is changed regularly and LEIR was coupled to PS, this may trigger the LEIR main power supply several times per day into "faulty" mode. This, however, is a working hypothesis and it needs to be tested.

PS (Alexej Grudiev)

Calm week for PS with only few down times during the second half of the week.

Monday evening 80 MHz cavity for ions C80-08 tripped due to wrong synchro frequency related to extraction energy modification on one of the ion users.

Thursday evening 3 hours no beams in TT2 due to problem in secondary circuit of the cooling circuit. TI piquet solved the problem. Then it was impossible to reset the TT2 line. PIPO and PICO had to come in and have found and replaced carte TG8 causing the problem.

Friday afternoon 2 hours 20 min no beam in PS due to POPS fault related to temperature interlock caused by the water leak in IGBT unit.

This morning 2 hours no beam. Due to problem with one of the cooling stations PSB and TT2 went down between 4:50 and 6:50. Everything seems to be OK now.

PS (Jose-Luis Sanchez Alvarez)

The PSB had not a very good week, with 3 major issues:

Tuesday night the power supply of BT.QNO10 has been replaced by a spare (downtime 1h30)

Wednesday night and Monday morning the PSB water station tripped. Downtime 7h30 (5h30 + 2h). After the first event, an electro vane of the magnet BE.SMH has to be changed.

During the week-end, impossible to restart the ejection bump, (intervention of the specialist 1h30).

SPS (Edda Gschwendtner)

A rather good week for the SPS dedicated to LHC filling with 12 injection ion and proton beams, delivering ions to the North Area and some parallel MDs.

The main issues to mention are that thanks to the quite stable conditions in the first days of the week, the setting up of the ion beam to the North Area at a higher energy (80GeV/c) was already planned for Thursday morning. However, this was continuously interrupted by LHC beam optimization (energy matching with PS extraction, chromaticity tuning), LHC filling, cooling problems on the injector side, so that eventually the new ion cycle to the NA was ready at ~23:00.

There were problems with the MKQV kicker, appearing on Monday with a kicker switch heating, which consequently caused several interventions during the week; the kicker did not work over the weekend and further intervention is planned for next week.

The weekend was rather quiet with smooth LHC filling periods.

On Saturday the piquet had to be called in for an intervention on the polarity inversor for a corrector (MDLV2402) used for T4 symmetry trimming. On Sunday the main circuit breaker tripped, causing a 1/2hr beam-stop.

LHC

After a bit debugging, a good week of pA operation. Polarity change of ALICE performed Sunday night.

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