Minutes of the 34th FOM meeting held on 20.09.2011

Agenda:

1) Follow-up of the last meeting (K. Hanke)
2) Status of the machines
3) Schedule (K. Hanke)
4) AOB
5) Next agenda

1 Follow-up of the last meeting

The minutes of the 33rd FOM meeting were approved.

Follow-up from the last FOM:

Pending actions:

Status of the PS-Bfield fluctuation with POPS

The action is on hold since POPS is not operating. Action not closed.

2 Status of the machines

LINAC2 (M. O'Neil):

It was a very quiet week with no problem to report.

PSB (B. Mikulec):

It was a good week with only minor stops.

On Thursday at 1:20 am, no controls were available (working sets and knobs could not be opened). The beams that were already in the machines could be produced but could not be modified. This problem affected almost all machines.

A. Bland said a rare network problem occurred which did not happen since 2008. At 8 am, the network team was called and the switch was rebooted. It worked but it is not clear whether it was the switch as among the 20 machines that are on the switch, 5 were working and 15 were blocked. Most injectors were blocked due to CMW1 and LHC blocked due to LSA1. Discussions are ongoing with IT to prevent such an issue to occur again.

At 11h30, controls were back after the InCA server was rebooted.

A faulty fan caused temperature and humidity increase in the RF cage. A rack tripped causing beam loss. This was quickly cured by the RF expert who rearmed the circuit breaker.

On Monday a radiation alarm (PAX51) required a reset of a BTP line quadrupole.

There were few diagnostics issues probably related to the storm on the week end before (power supply of one ring pickup, a few faulty OASIS scopes, a power failure of the rack for the injection and extraction BLMs, data missing for injection pickups).

A lot of time was spent to measure transverse emittance of LHC50 double batch upon request of LHC. These measurements will continue in other machines. A special demanding MD beam for LIU is also being prepared.

ISOLDE (M. Lozano Benito):

GPS:
No problem to report. Yield checks were performed from Wednesday to Friday morning.

HRS:
It turned out to be difficult to go through the separator with 7Li beam. As agreed with users, 27Na was then provided instead at 12 pm on Friday.

On Saturday afternoon, the REX RFQ amplifier temperature was too high. The frequency was then lowered from 50 Hz to 20 Hz to keep the tube temperature low.

Beam was used until Monday. The HT2 power supply was replaced. The cathode was changed.

ISOLDE users (M. Kowalska):

GPS used a new kind of target to test carbon beams. The production was lower than expected, but very stable in time and allowed reaching 17C and 18C for the first time. Work to improve efficiency will continue offline

On HRS there was not enough time for this beam (need to allocate the standard 3 days). Some re-scheduling is needed due to the cathode change.

PS (A. Grudiev):

It was a calm week.

On Tuesday there was a fault on quadrupole ZT8.QDE01 and Dirac had no beam for 40 min. A solution should be found to cut the beam before the alarm goes off.

Many trips of the MPS occurred at the beginning of the week. The specialists did not find anything special and the MPS is stable now.

The C51, C56, C81, C86, C96 10 MHz cavities tripped many times also but they could be reset. On Sunday morning, C51 and C81 could not be reset anymore and the specialist had to come to fix them (1h downtime). He had to come again for C51. A feedback gain fault for C96 was fixed by the LLRF piquet. A. Grudiev summarized that in general the situation with 10 MHz cavities is worrying and perturbs operation.

F61.QDE04 tripped and did not allow sending beam to EAST on Sunday afternoon during 2.5 h.

H. Damerau said that the C96 problem is believed to be driven by the feedback. The amplifier of C81 is dying and should be replaced. An over current problem affects C51. All in all it looks like there are a lot of unrelated problems. K. Hanke noted that the next technical stop is far away and maybe there is a need to do something before. This should be discussed with C. Rossi at the next FOM.

G. Métral said that C81 is not the one that perturbs the most, as it does not trip.

*POPS planning (**slides** by K. Kahle):*

K. Kahle exposed the reasons for the POPS trip on Sept. 2nd 2011 and the small fire that occurred in an IGBT cabinet. The cause of the problem has been identified as a use of tinned bus bars instead of

the specified nickel plated bus bars in the MultiContacts. All 42 MultiContacts will be replaced by bolted connections. The mechanical design of this modification is almost done. The mechanical design, procurement and repair should take 3 to 5 weeks, after which 1 week is required. An optimistic scenario is to have POPS back in operation during the next technical stop (week 45).

Furthermore a meeting with GS/ASE is organized on the 20 September to see how to improve the fire detection (faster detection in cabinet, and better signaling/localization for the fire brigade).

D. Manglunki asked if it is a normal procedure to open the cabinet to check the smoke by themselves and not let the fire brigade do it. K. Kahle answered that this was confirmed to him by the fire brigade.

H. Vincke asked whether the fire was outside of a radiation area and K. Kahle answered in the affirmative.

H. Breuker asked how long it took to switch back to the old MPS after the trip. R. Steerenberg answered that the time needed was about 3 h. It was asked how much testing of the POPS will be needed without beam and K. Kahle answered that this is not known yet. A fine planning will be needed closer to the date of restart.

East Area (E. Gschwendtner):

On EASTA, the beam was sent to T9 but there were data acquisition problems.

On DIRAC (for irradiation), beam tuning was required but excellent conditions were obtained for the weekend.

East Area Users (H. Breuker):

The CALICE calorimeters were moved to T9.

TOF (H. Breuker):

TOF is taking small intensity now as they are using a special Uranium sample. The counting rates were too high and they need special conditions (1e8p instead of 8e8p).

AD (C. Oliveira):

It was a quiet week. On Thursday night, PICO replaced a DSC (4h without beam). On Sunday night there was a problem with a converter of the stochastic cooling. The power supply was started again after 3h.

AD Users (H. Breuker):

No report.

SPS (Y. Papaphilippou):

It was a “rocky week”.
There are still problems with the chain 11, despite the reclassification of the area behind a redundant access door, which needed to stop for the North Area for 2h.

On Tuesday afternoon, access was given in the SPS machine for an RF and CV intervention which lasted 2.5 hours in the shadow of a PS MPS trip.

On Tuesday evening, the CNGS horn tripped without possibility of reset. The power converter exploded while the EPC piquet was investigating. The thyristor was broken and replaced by the only

spare. 43 weeks are needed to get a new spare (i.e. late March). The CNGS team preferred to investigate the reflector and horn system. They fixed it but it took 3 days. There has been no trip since then. The procedure for the operators is now to not perform a reset in case of a horn trip, and to call the expert.

The TRX3 and TRX4 RF transmitter tripped. A quick fix was thought to be found but it turns out that it still trips. This is now under investigation.

Commissioning of Hiradmat with 12 bunches was performed and multibatch beams was only commissioned yesterday.

The SPS was affected by the network problem on Wednesday night.

On Saturday morning, the mains tripped due to an electrical network glitch. TRX7 could not be restarted and piquet RF was called (1h without beam).

On Saturday morning, there was a coil temperature fault on Quad34 of M2 line (COMPASS). The piquet was called and informed that there may be a need to replace the magnet.

On Sunday afternoon, there was a water pressure fault with wobbling magnets close to T2 and T4 north area targets. The magnet piquet and radioprotection were contacted. This is a known problem and the fault was short circuited as two other redundant protections are in place.

L. Gatignon added that there are 3 redundant sensors (water pressure, water temperature and coil temperature). It is a standard procedure as sensors sometimes get stuck.

There was a problem with a crate controlling beam instrumentation which was fixed by BI experts.

P. Sollander said that TI did not record any glitch on Saturday morning due to a thunderstorm.

North Area (L. Gatignon):

The magnet in M2 for COMPASS mentioned in the SPS summary could stand 30 min of beam but would then require 45 min to cool down. Dirt came out when the magnet was opened. The coil was overheating but has been working fine since. Cleaning will be done during the MD. It would take a day to replace the magnet.

North Area users (H. Breuker):

On H2, NA61 finished and statistics are sufficient.
There are new users in H4 and H6.

CNGS (report from E. Gschwendtner sent before the FOM):

“We had a trip in the horn on Tuesday night. It turned out that one of the two thyristors broke down.

Wednesday TE-EPC was working on-site, Thursday we made access down to CNGS in order to check the equipment down in the tunnel, i.e. transformer, strip lines, etc.... That's all fine.
The cause is on the power converter side, it seems that the card, that triggers the thyristors gets uncorrelated accidental triggers caused by the close-by installed inductor (which might be also the reason for the frequent trips we had in the reflector).
Finally filters were added to the electronic card and the card was shielded with copper plates.

To test the modifications, we run over the weekend with 20% less current in the horn and in the reflector.
As everything was very smoothly running, we will increase the current today.

The order of reserve parts is on-going (long lead time!); during winter-shutdown some more modifications are needed."

CTF3 ():

No report.

TI (P. Sollander):

Nothing more to report.

LHC interface with injectors (M. Lamont):

It has been "rocky" physics production. Intensity per bunch is now 1.4e11p/b and LHC performance has been spectacular.

IONS

LINAC3 (M. O'Neil):

It was not a very good week. The source was restarted after 48 h stop. It was hard to get the beam back. Ion production was switched from oven 1 to oven 2. By Wednesday, very stable beam was established but only with 2/3 of the nominal intensity. It was agreed with downstream machines to keep this intensity.

LEIR (D. Manglunki)

It was a quiet week without major breakdowns.

The source current was a bit weak.

Beam was stopped in the morning for refill, but was already back in the afternoon.

D. Manglunki sent thanks to the Linac3 team for keeping the source stably running.

Test of the archives for the InCA release were done, but there were still issues. Solutions have been found.

The source current is still on the low side, but it is OK to set up the machine. 25 µA instead of 20 µA would be better for the run.

PS (A. Grudiev)

Ion acceleration was transparent in the PS. Emittances were measured in TT2 and it turned out at this occasion that the TT2 optics were not reinstalled after the users change. Emittance looks comparable to last year (<1mm.mrad).

SPS (Y. Papaphilippou)

T. Bohl looks at the LLRF part. Next week, a long MD to start testing multiple injection of nominal or intermediate beam will be done.

3 Schedule / Supercycle / MD planning

The 2011 schedule (V3.3) is available at:
https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/injector_schedule.pdf

All planned interventions for the injector complex are available via the on-line agenda:

https://espace.cern.ch/be-dep/FOM/Lists/Agenda/calendar.aspx

The planning for the upcoming MDs is available (8 am to 8 am both days).

MDs are transparent for ISOLDE and AD but not for EAST on Thursday from 7 am to 2 pm.

There will be a 12 h MD for ions in week 39.

4 AOB

K. Kostro said that there will be an ORACLE APEX upgrade, which will affect database browsing and editing tools, on Wednesday 27 September 13 h-14 h.

There is an entry in the FOM intervention calendar.

5 Next meeting

The next meeting will be held on Tuesday, 27th September at 10:00 in 874-1-011.

Preliminary Agenda:

1) Follow-up of the last meeting
2) Status of the machines
3) Facts and action plan for frequent PS cavity trips (C. Rossi)
4) Schedule
5) AOB
6) Next agenda

Minutes edited by B. Salvant