Minutes of the 12th FOM meeting held on 19.04.2011

Agenda:

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

1 Follow-up of the last meeting

The minutes of the 11th FOM meeting were approved.

Follow-up from the last FOM:

1.1 Pending actions:

Problems with POPS (3 actions)

Studies will be resumed when POPS is back. Actions not closed.

Make the orbit measurement system work with the presently defined user files

S. Gilardoni said that discussions are ongoing within BI and that they should provide an answer soon. Action not closed.

Send the list of activities for the next technical stop to the machine superintendents

Action not closed.

Give update on radiation levels in the TOF degassing system

J. Vollaire said that RP analyzed measurements, and that the applied change seems to have been efficient. As a consequence, he said that there is no restriction anymore for operation. There will however be a formal follow-up done by RP. Action closed.

Update on PSB ring 1 losses

Losses on ring 1 have disappeared without understanding them (see more details in the PSB summary). Action closed.

2 Status of the machines

LINAC2 (D. Küchler):

There was nothing special to report for LINAC2.

PSB (K. Hanke):

It was a difficult week for the Booster but it is now in a better shape.

There were ongoing problems with the losses in ring 1. Together with all the experts (in particular low level RF and transverse feedback), the operation team checked everything, undid and redid everything. On Wednesday, the loss pattern changed without any obvious correlation with correcting actions. On Thursday at 17:09, losses disappeared, again without any correlation. Low level RF experts were looking at the opportunity to try and recreate the problem (reverse engineering) but A. Findlay confirmed there was no link with low level RF changes after post-mortem analysis. The reason for the occurrence of these losses and their disappearance is not understood yet.

Last Tuesday, as mentioned in the previous minutes, similar loss patterns could be observed on ring 2, strongly affecting LHC50. These losses turned out to be uncorrelated to ring 1 losses as a broken power supply was found. Its replacement cured the ring 2 problem.

Besides minor resettable problems, a trip of ring 4 C04 cavity occurred on Sunday. The expert was called in and changed an amplifier, causing a stop of 2.5 h.

A new application was put in place to switch automatically and rapidly from 12 to 36 bunches.

A second Inca MD took place. There are still small issues but the CO team is optimistic to solve them by mid-July.

A short access was allowed this morning in the shadow of a PS stop to redo an earth connection that had been disconnected to investigate the ring 1 losses.

LHC complained that the transverse emittances were too large for bunches coming from ring 4. Inconsistent measurements were obtained with the wire scanners. This LHC requirement cannot be checked with the existing instrumentation in the injectors. However, the working point or ring 4 at injection was changed and it should be better now.

ISOLDE (D. Voulot)

First stable beam is expected today. Patrols are going on and the target area will be closed. Next week beam will be sent to GPS. Measurements with the SEM grid of the other target will be done after Easter and new pick-ups in front of the targets will be tested. Next week will be very dense as several items have to be done (watchdog, send beam in beamlines, and dedicated tests).

S. Gilardoni asked if the front end and the robots were changed. D. Voulot answered that the GPS front end has been changed, but not the robots. S. Gilardoni said that in that case there may still be problems with target exchange. D. Voulot mentioned that both robots are now working so that the situation should have improved. A replacement of the robots is foreseen in the frame of the HIE ISOLDE upgrade.

M. Kowalska said that first ISOLDE physics should be after May 1st.

PS (Gaby):

It was a good week for the PS.

On Wednesday, the TOF beam had to be produced from PSB ring 3 instead of ring 2 due to the ring 2 losses.

The FMR probe was put back in service to measure the B-field instability at injection. Measurements showed the B-field seems to be stable.

Work was performed to reduce satellite bunches on LHC50 beam. There is no instrumentation to see these ghost bunches in the PS. To avoid satellites, the kicker falling edge timing stability should be less than 10 ns when it is of the order 30 ns in the PS.

As in the PSB, the PS OP team tried to implement an application to automatically switch from 12 to 36 bunches on LHC50. It has not been very successful so far as cavities' and kickers' timings need to be readjusted every time anyway.

As it has been confirmed that LHC75 will not be used in the short term, G. Métral suggested to use one user for LHC50 (12 bunches) and another user for LHC50 (36 bunches). In that case LHC75 would be archived. No one objected.

A software problem was generating bad communication to MPS, which made MPS trip.

An intervention took place today to change cables on electrostatic septum SEH23, which were damaged by radiations. The septum was tested and repulsed and it can be put back in operation.

PS users: nTOF (H. Breuker)

H. Breuker sent the nTOF report before the meeting:

"nTOF is again running (on the iron program) smoothly since more than a week. PS and SPS users meetings will resume on the 28th of April."

AD (T. Eriksson)

AD setting up is ongoing. At first it was limited to very low intensities. The reason was found to be the horizontal stochastic cooling kicker blocked in the "in" position. This was fixed Wednesday morning. By the afternoon, good intensities and deceleration efficiencies had been established.

Many problems occurred with cycle modification so that the OP team could only use the standard cycle for which efficiency was good.

Continued cycle modification problems occurred with controls on Thursday.

On Friday, it was found that Inca-related problems were preventing from changing cycles (not possible to modify C-TIM:s). This was solved by N. De Metz-Noblat.

Machine studies were done during the week end.

On Monday the electron cooler cathode filament tripped with no explanation causing a few hours downtime. Also, a previously un-noticed controls problem was found. Besides, there is still a

problem with the synthetic B-train (frequent DSC crashes when modifying AD cycle) and no solution was found yet.

The beam permits to the experimental zones are pending from RP. The set-up of the new AEGIS beamline will start as soon as the permits are signed. After completion of the AEGIS-line setup, the zone will be separated from the access system and safety will be established by manually locking out relevant devices. AEGIS equipment installation and modifications to the access door will then follow.

So far the machine has been running very well.

SPS (D. Manglunki for K. Cornelis):

SPS provided beam for CNGS and LHC50 for LHC scrubbing:

Good production levels could be obtained for CNGS despite the Booster ring 1 losses. Besides the usual RF transmitter trips, there is no special problem to report.

The rise time of the injection kickers was looked at in detail as the kick was affecting the first and last bunches of consequent LHC50 batches of 36 bunches. PFN timings were aligned and one of these PFNs was found out to have a too slow rise time. The problem was solved by increasing the pressure in the thyratron.

Another problem on LHC50 was a longitudinal instability that generated large longitudinal blow up and beam losses, triggering a beam dump. T. Bohl added that this longitudinal coupled bunch instability occurred at the end of ramp and was a function of the orbit. Investigations took place but no RF hardware issue could be found. This issue can be solved by centering the beam. However this orbit dependence has yet to be understood and is under investigation.

This morning a tube was changed on TRX7, profiting from the PS access.

CNGS

Protons to target account is a bit below the goal line but it will get better when beam is back, as ring 1 losses disappeared.

CTF3 (D. Manglunki):

The installation of fire detectors continues (it should take another week and hopefully be ready for Easter). As a consequence, CTF3 should be stopped until the end of April.

TI (P. Sollander):

No major problem to report.

LHC interface with injectors (M. Lamont):

It was decided at last week's LMC to go to LHC50 after successful scrubbing run. Luminosity reached the record 3.7e32 $cm^{-2}.s^{-1}$. A nasty injection kicker flashover occurred on Monday morning during injection. 36 bunches were sent directly to the TDI, which triggered quenches in the arc. It was decided to work with 36 bunches instead of 72 bunches to check the kicker. Today, the

operation with batches of 72 bunches will be resumed. K. Hanke mentioned that transverse emittance from ring 4 should now be OK.

3 Schedule / Supercycle / MD planning

Presentations with the preliminary list of interventions for the next technical stop are scheduled for the next week's FOM.

The 2011 schedule (V2.0) 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

4 AOB

A. Bland said a Vistar problem will be fixed by a new release next Tuesday April 26th. An e-mail will be be sent to those OP colleagues who made some of the Vistars as no change should be done before the next release.

F. Tarita informed of an RTE intervention (consignation au poste de Génissiat 400kV on Thursday April 21st). This intervention should not affect beams.

R. Brown asked whether 24 hours are including cool down time. K. Hanke said that access is planned as from 08:00. There is some cool-down time to be taken into account before. The cool-down time will be determined by RP depending on the interventions planned. A detailed planning is to be drawn up, together with the MD coordinator who plans the MDs before and after the technical stop. Although the technical stop is scheduled to be 24h, it is likely that all interventions can be completed within a working day (to be confirmed). This would be a time gain for the MD. However, 24 hours have been requested for SPS RF. After the meeting, T. Bohl contacted E. Montesinos who stated that the intervention request from the RF power team is in fact for 12 hours (8:00 to 20:00).

5 Next meeting

The next meeting will be held on Tuesday, 26th April at 10:00 in 874-1-011.

Preliminary Agenda:

1) Follow-up of the last meeting
2) Status of the machines
3) Preliminary list of interventions for the technical stop
4) Schedule
5) AOB
6) Next agenda

Minutes edited by S. Gilardoni and B. Salvant