Minutes of the 11th FOM meeting held on 12.04.2011

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 10th 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 (PS supervisor/BI)

BI organized a meeting yesterday. They will come out with a proposal and will organise a technical board. Action not closed.

News on vacuum in 68 (action closed before the technical stop): see slides by J. Hansen

J. Hansen showed that the pressure in 68 recovered to 6 10^{-8} mbar 12 days after the installation of the wire scanner mechanism and the ferrites in the tank during the technical stop in Week 13. He reminded that one month after the installation of the tank during the winter shutdown 2010/2011, a pressure of 10^{-8} mbar could be recovered within one month. Before this Christmas shutdown, the pressure was in the 10^{-10} mbar levels. From the plots, the pressure does not seem to decrease much anymore now. A pressure of 10^{-8} mbar is not satisfying for ions, but in any case the sublimation will be done before having ions in the machine. An important point is that no effect of high intensity beam on the pressure is observed anymore after the installation of the mechanism and the ferrites. As a consequence the ferrites seem to be doing their job of damping the FWS higher order modes, but they are also most likely responsible for the increase of the static pressure. K. Hanke said that this issue should be rediscussed before the summer in view of the ion run.

2 Status of the machines

LINAC2 (A. Lombardi):

It was a quiet week for LINAC2.

The piquet Power had to intervene on a quadrupole trip that caused the watchdog to cut the beam (1h of down time).

PSB (A. Findlay):

This has been a bad week for the Booster (see here for details the PSB supervisor meeting weekly report).

Significant beam losses during acceleration started to occur on Tuesday morning 05.04.2011 on ring 1 CNGS. The low level RF piquet could suppress noise on C16 by recabling the 10 MHz clock but this did not suppress the losses. It was thought to be a transverse problem. Thorough checks of the transverse feedback hardware, of the working point, of the R1 multipoles, of the RF systems, of the beamscope, of the BBQ kicker and the RF DSP crate did not show any special issue. The losses could not be compensated by RF gymnastics or changing the multipoles, the working point, the radial steering, frequency offsets or "everything for the transverse feedback several times". But they could be slightly reduced by reducing the bunch length during acceleration. CNGS could be kept reasonably stable with 8e12 p accelerated by the ring (1 in 5 shots was showing losses). These losses were also observed on the LHC25 beam. Wire scanner measurements showed that losses occurred predominantly in the horizontal plane, but also in the vertical plane.

The list of interventions during the technical stop was scanned to find possible problems but without much success (horizontal wire scanner in R1 was replaced, R2 vacuum chamber securing and earthing, check of cables and turns of a measurement transformer in section 8L1). An access was allowed to do a visual inspection of the wire scanner and to undo the grounding, but this did not suppress the losses.

Tuesday morning similar losses started to occur on ring 2 and strongly affected LHC50 beams but the issue was solved the day after the FOM by changing an RF power supply. This problem was unrelated to the Ring 1 instability.

High intensity LHC50ns single batch was set being up upon PS request.

The Booster MPS was down due to an electrical disruption on the 225kV CERN supply, and piquet power could restart it after 20 min.

The MD4 user was used for tune studies in the PS.

An INCA MD took place on Friday, and the results look promising as no big issue was preventing CO from controlling the machine. The good performance already obtained in restoring a cycle and swapping resident cycles was also very promising. A number of pending issues have to be followed up before the second MD.

ISOLDE (D. Voulot)

ISOLDE is getting ready (cold checkout, restarting the machine).

PS (S. Gilardoni):

It was a good week for the PS.

LHC50 was delivered for the scrubbing run in the LHC. Ghost bunches after the batch were investigated, but there is no instrumentation available in the PS to observe these ghosts as they have intensities of less than 1% of the main bunches. S. Gilardoni insisted that enough time should be given to operators and RF specialists for the switch from 12 to 36 bunches, to optimise the bunch splitting, i.e., reduce at the minimum the ghosts.

The AD beam could be set up with up to 1e13ppp. The 20 MHz cavities often tripped when the AD beam was in, even if not in use for this cycle. The reason of these trips is being investigated by experts. Both 20 MHz cavities are now switched to the frequency used for the LHC50. If the LHC75 is needed, there is a need of 2 hours to switch back one of the cavities to the LHC75 frequency.

The LHC25 was delivered to SPS.

The CNGS beam was delivered on request with a few kicker trips that required the replacement of some of the thyristors.

For TOF, M. Widorski said that radiation level measurements on the degassing system started at 18:00. For the moment, there is no conclusion for operation. Magnet workshop is accessible again. M. Widorski will check when beam can be sent again to D3. In the meantime, the nominal beam was sent to the experiment for physics.

For MTE, the trajectory on the islands seems to oscillate from shot-to-shot on the extraction flat top, and the aim is now to correlate these oscillations with Bfield observations and to check that this is not an effect produced by the trajectory measurement system. Tests with the electrostatic septum are not conclusive yet as the procedure is more complicated than expected.

C. Rossi said that 800 microSv were measured next to C76. There is a risk of increased intervention time if something is wrong and he asked if something could be optimised to reduce the radiation levels. The problem is that there are large losses on the CNGS extraction and that we produce CNGS more than usual these past days.

PS users (H. Breuker):

TOF: No other news.

AD (T. Eriksson):

Hardware tests were performed last week (power supplies in experimental areas, audit of the magnets). Everything was ready on Friday. The audio-visual patron in the target area did not reveal any problem. First beam was sent to the target around noon yesterday. The problem is only that 25% of the antiproton nominal intensity was injected. A limitation in the horizontal plane is being investigated. There are in total 4 weeks dedicated to setting up before the start of the physics.

SPS (D. Manglunki):

Beam was delivered to CNGS with up to 3.8e13 protons per cycle.

LHC75 (4*24 bunches) and LHC50 (2*36 bunches) were delivered to LHC and LHC25 was prepared.

HiRadMAt was given beamless cycles, and access whenever LHC did not need beam.

The sequencer was not used to recover from access, leading to a timing error for magnets. This was solved eventually before experts came.

The TRX4 had a burnt transformer and was repaired, which enabled to retrieve the CNGS intensity. Piquet Power was called this morning for a trip TRX6. Several resettable trips on several of these TRXs happened during the week.

There was an SIS problem preventing the extraction of the probe beam towards the LHC, under investigation.

A modification was implemented in the BCT. The safe beam flag was not valid anymore but it was solved rapidly.

CNGS

No news but it is going well even if PSB ring 1 issues affect the delivered intensity.

CTF3 (D. Manglunki):

Installation of fire detectors started (2 weeks).

CTF3 is stopped until the end of the month.

TI (E. Liénard):

Two perturbations of the electrical network external to CERN occurred without any particular damage. A meeting with EDF is scheduled to understand the reason of these glitches.

LHC interface with injectors (M. Lamont):

LHC is scrubbing with up to 1020 bunches per beam. Interesting issues happened. Next step is a ramp with 200 bunches with LHC50. Decision to go for LHC50 or LHC75 is to be made at LMC tomorrow.

S. Gilardoni asked when the scrubbing is supposed to end and how much in advance we will know when and if the LHC75 will be requested. The PS needs some time to switch back to LHC75. M. Lamont expects the scrubbing run will last at least two more days.

3 Schedule / Supercycle / MD planning

Presentations with the preliminary list of interventions for the next technical stop are scheduled for the FOM in Week 17.

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

5 Next meeting

The next meeting will be held on Tuesday, 19th April at 10:00 in 874-1-011.

Preliminary Agenda:

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2) Status of the machines
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Minutes edited by S. Gilardoni and B. Salvant