# Minutes of the 5th FOM meeting held on 01.03.2011

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

In the minutes of the 4th FOM, it was said that the LINAC2 watchdog triggered as expected except once. After the meeting, R. Scrivens pointed out that the SIS watchdog acted also in that case correctly - in response to a tank 2 RF fault - in the event mentioned by K. Hanke during the meeting (Thursday 17th February, see PSB elogbook entry and LINAC2 elogbook entry). As a conclusion, the statement is now that the LINAC2 watchdog has been working correctly.

The minutes of the 4th FOM meeting were approved.

Follow-up from the last FOM:

Pending actions:

a) *Status of the PS B-field fluctuations (PS supervisor):* R. Steerenberg said that work is still ongoing. Action not closed.

b) *Status of TSM application after user redefinition (R. Steerenberg/CO):* R. Steerenberg said that a lot of work has been done by S. Hancock and N. De Metz-Noblat and real progress was achieved. A report will be given at the next meeting. Action not closed.

c) *Status of eventual problems caused to BI by the redefinition of MTG user names (BI):* L. Soby said that a meeting is being organised. Action not closed.

   Besides, S. Hancock pointed out that references in LKTIM are also affected and not written in the LSA database. He reminded that the LKTIM linked timing trees are at the heart of the PS RF control system but that, in addition to the reference issue, the LKTIM editor has been fundamentally broken at the software level since June 2010 as it does not allow the structure of the trees to be modified correctly. New action (for CO).

d) *Monitor the pressure in Section 68 in the PS (J. Hansen/VSC)*: J. Hansen said that the pressure fluctuated. There is a slight improvement, but this does not change much the situation. It is not a problem for the moment, but R. Steerenberg would like a status report next week. Action not closed.

e) *Monitor the Bdot at the reference magnet (M. Buzio/PS supervisor)*: R. Steerenberg said that the measurement coils in the reference magnet indeed see the Bdot noise with frequencies corresponding to the ones of POPS. He added that presently there is no problem observed on the beams, but the Bdot signal is mainly used by the RF loops. Work is ongoing: a new probe was used for an MD on Wednesday, but its response is non-linear and should be calibrated correctly. Another idea is to connect a voltage measurement probe to the busbars of the reference magnet requiring a machine stop. R. Brown asked if this method was approved, and insisted it should be. Since the slow extraction is very sensitive to Bdot ripple, it is planned to set up the slow extraction and evaluate the quality of the slow extracted beam. Since the East area is not yet ready for beam, the beam stoppers should be locked in. This is being organized and first tests could start on Thursday. Action not closed.

*f)* *Check the polarity of all the BBS in SPS before NA startup (SPS supervisor)*: K. Cornelis reminded that this is foreseen for the next technical stop in week 13. Action not closed.

g) *Add the SPS scrubbing run on injector schedule* (G. Rumolo/M. Lamont): As a scraper has to be installed in LSS1, K. Cornelis said that too much beam should not be sent to the beam dump to limit the radiation levels in that area. As a consequence, the SPS will profit from the setting up of the LHC25 beam, but it will not be a proper scrubbing run and should not appear as such in the schedule. Action closed.

*h)* *Look at the impact of the cut of the ventilation in BA3 during the next technical stop (S. Delaval)*: a meeting will be organized next week. Action not closed.

i) *Send the list of activities for the next technical stop to the machine superintendents (FOM)*: it was decided to send a preliminary list to the machine superintendents 2 weeks before (i.e. FOM of March 15), and the final list 1 week before (i.e. FOM of March 22). S. Gilardoni proposed to advance this by a week, but R. Brown and K. Hanke objected that this was too long in advance so that the situation would have to be reviewed the week before anyway. Action not closed.

## 2. Status of the machines

**LINAC2** (G. BELLODI):

Linac2 had a good week.

A new optics was found that reduces the losses on all BLMs and enables to inject 6% to 8% more beam in the PSB. These settings were copied to all users, but a second iteration should be performed later on when the high intensity beams (CNGS, nTOF) are ready.

The town water station tripped on Friday due to an accidental problem that occurred during a CV intervention. This trip led to a power cut of the RF and quadrupoles. It was restarted after 15 min.

S. Gilardoni asked if LINAC2 uses the LHC-type BLMs and G. Bellodi answered that she will find out. After the meeting, G. Bellodi informed the FOM that the LHC-BLMs were used.

**PSB** (A. FINDLAY):

The PSB had a good week.

Several elements including 2 cavities tripped after a glitch on the 400 kV network, but all could be reset and restarted.

A problem during acceleration occurred on ring 1, and it was found that it was linked to the working point. This was seen in the past, when the GFAs of the Q-strip were somehow losing their memory. The solution found was to send back the GFAs more than once to the equipment.

The beams prepared this week are: LHC_MD_A and B (25 ns), MD3 (for high intensity single bunch studies in SPS). The beams AD, EASTB and EASTC are under way, and the CNGS beam intensity is being pushed up.

On Monday, an MD to study the vertical emittance reduction for the MTE beams took place. It seems that, for the nominal intensity, the vertical emittance cannot be further reduced, more than 8 mm mrad (1 sigma normalised).

**PS** (R. STEERENBERG):

Good progress for the PS.

The LHC25 double batch beam was set up and still needs few minor adjustments. The voltage program for C46 was reduced by 5 to 10% to prevent a trip. To be followed up.

The nTOF beam is currently being set up.

Work started on the LHC50 (put on MD5), but no study was done yet on the RF side as a lot of time is dedicated to the LKTIM problem. S. Hancock mentioned that the beam appeared in the Supercycle under his request to start the debugging of the LLRF.

POPS tripped twice. In one case it restarted 15 minutes later, in the other the specialist had to be called. So far, the specialist has to be called to re-start POPS every time to progress in the debugging of the converter.

A problem occurred with one of the doublets as a cable was disconnected in the interconnection box due to a loose screw. Mechanical stress is suspected to have

loosened the screw. Checking all these cables is already on the list of R. Brown for the next technical stop.

A synchronization problem with the PSB was solved on the PSB side on the MD4 beam.

It was asked when the nTOF beam would be sent to the target. R. Steerenberg answered on the 14th or 15th of March as safety tests need to be performed.

Also the PS suffered from the 400 kV power glitch, but without major consequences.

On Monday, POPS tripped again, probably due to a too large load caused by a completely full Supercycle.

**SPS** (D. MANGLUNKI):

This was an eventful week for the SPS.

LHC75 was prepared while LHCPROBE and LHCINDIV were delivered to the LHC.

A technician was wounded and evacuated by firemen after falling through a false floor in the CNGS area. The patrol was repeated.

An interlock by the LHC collimator occurred during that night.

On Wednesday, a water leak on a quadrupole was found during the PS stop and it was decided to fix it immediately (3 hours delay for LHC restart). An additional 3.5 hours delay was suffered following an MKD interlock, for which the BT piquet had to change a card.

A false fire alarm occurred in BA2. Following this, the LHCPROBE could not be injected. This was due to an early dump programmed on the preceding cycle. This is a known behaviour and it was fixed by disabling a surveillance.

A power supply breakdown required the intervention of the power piquet to change a circuit breaker.

An MSE tripped due to two stopped pumps.

Beam could not be extracted to the LHC for 3 hours due to an interlock on MKE6. A frontend CTV card had to be changed by the piquet.

Calibration data on the wire scanners were taken and showed a position problem for one of the movements (wire IN). BI is looking into it.

Erratics were also observed on MKE4 and missings on MKP.

**CTF3** (D. MANGLUNKI):

PHIN: more measurements on phase coded beam seem to indicate it is satisfactory. There is a new program to measure quantum efficiency online. The cathode is being commissioned.

There are still problems with the gun (pulser). Spare parts have been ordered.

**TI** (E. LIENARD):

E. Lienard reported several major events took place, but said he would like to wait for more explanations from the respective groups before going into the details of the events.

There was (1) a water leak in UX85, (2) a water cooling stop for LINAC2, (3) the issue on the 400 kV EDF network which caused beam stop, and (4) a high conductivity issue in SEQ6.

**LHC interface with injectors** (M. LAMONT):

The LHC finished the first week of commissioning. The collimation and injection for multiple bunches are being set up. The LHC75 beam should be required by the end of this week. This beam is now ready in all injectors.

## 3. Schedule / Supercycle / MD planning

CNGS and nTOF should be ready in week 10. SPS is not yet ready for CNGS; the setup will start next week after the LHC25. ISOLDE physics start should be added in the schedule, as well as AD closure (before the meeting, N. Gilbert stated AD will be closed on March 28).

R. Brown informed that tests for POPS will happen on Tuesday of week 13, meaning access will only be granted on Wednesday and Thursday.

The 2011 schedule (V1.4) is available at:
https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/2011-injector-schedule_v1.4.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

Next week the FOM will be chaired by B. Mikulec, and the following one by D. Manglunki.

## 5. Next meeting

The next meeting will be held on Tuesday, 8th March at 10:00 in 874-1-011.

Preliminary Agenda:

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Minutes edited by B. Salvant and S. Gilardoni