# Minutes of the 44th FOM meeting held on 29.11.2011

Agenda:

1) Follow-up of the last meeting (K. Hanke)
2) Status of the machines
3) Schedule (K. Hanke)
4) Update on LHC and injectors schedule for 2012 (M. Lamont)
5) Detailed start-up schedule of the PS complex (K. Hanke for F. Chapuis)
6) Draft list of piquets available during the technical stop (B. Salvant)
7) AOB
8) Next agenda

## 1 Follow-up of the last meeting

The minutes of the 43rd FOM meeting were approved.

Follow-up from the last FOM:

***Pending actions:***

*Status of the PS-Bfield fluctuation with POPS*

Action not closed (will be carried over to next year).

## 2 Status of the machines

**IONS**

**Linac3 (D. Küchler):**

Operation was smooth until the source refill on Friday.

On Wednesday a series of lower intensity shots happened always on the same cycle. The increase of the A_MOD of the tank cured the problem.

The tube was changed on RF tank 1 on Friday. The amplifier was found full of water. The anode capacitor had to be dried and cleaned, and D. Küchler thanked the RF team for the help. Beam was back at 22:45.

K. Hanke asked where the water was coming from, and D. Küchler and D. Manglunki answered that it is most likely a water leak of the cooling circuit inside the amplifier.

On Sunday tank 1 tripped and needed a local reset.

The source was retuned on Monday and delivers 18-20 μA.

## LEIR (D. Manglunki for C. Carli)

LEIR ran smoothly and almost delivered nominal intensity despite the low Linac3 current.

The intensity per burst could be improved thanks to work on the electron cooler settings and also better vacuum due to lower losses.

## PS (A. Grudiev for S. Gilardoni)

The NOMINAL ion beam was optimized and delivered.

Issues with POPS affected operation on Wednesday and Friday. S. Gilardoni sent by email the succession of events that occurred:

"
On Tuesday afternoon POPS went down due to a problem with the cooling water and then with an issue related to the feedback from the electrical network. Then during the night, two IGBTs broke down at about 1:41 AM. The expert promptly intervened but could not fix the problem. At ~7:00 AM it was decided to switch back to the Rotating Machine. After discussion with J.P. Burnet, it was decided to try to have POPS back on Thursday, with the goal of a short run with POPS before the stop due to the oven re-filling of the Pb source. It was in fact not possible to restore POPS operation immediately due to a missing spare part of one of the connectors that was delivered from an external company on Wednesday evening.

POPS could be back on Thursday at about 12:00, but unfortunately went down again due to a problem with the control parts of the IGBTs.

A second switch to POPS was tried on Friday morning but unfortunately it went down again in the afternoon. A series of faulty control cards had to be replaced, probably the same cause of Thursday fault, and after a reset of the FGC, POPS could continue to run without any particular problem. I

want to thanks J.P. Burnet, F. Boattini and all the EPC colleagues for the different interventions during the week.
"

The injection steering was optimized and vacuum has improved.

D. Manglunki said that the intensity was very dependent on the supercycle composition. When LHC is being filled, it seems it is important to terminate the supercycle with a LEIR NOMINAL coupled with a CPS I-LHC-SU cycle.

**F. Boattini reported for the POPS incidents (slides).**

The 1st incident occurred on Wednesday November 23rd 2011. POPS tripped for an IGBT fault that appeared to be due to a short circuit. The fault was repaired but it was not realized that it was in fact the pre-charge transformer that had failed and had caused the short circuit.

The poor quality of the transformer insulation is suspected to be the cause of this fault. The POPS team asked Converteam to replace all the transformers and CERN will study how they can be put out of the loop when pre-charge is over.

The 2nd incident occurred on November 25th and the cause of the IGBT failure was not found yet. Converteam is analyzing the fault and a problem with a batch of firing cards is suspected.

The good news is that the switch from MPS to POPS (or back to MPS) is now down to 45 min.

V. Chohan inquired about the quality assurance that was followed for POPS.

**SPS (D. Manglunki)**

It was a busy week for the SPS, which delivered ion beam to the LHC, to the North Area and to UA9 in coast. In particular, NA61 in H2 took Be fragments and UA9 in H8 took primary Pb beam. D. Manglunki added that primary beam in H8 was made possible by the fact that there was no proton beam in the complex, in agreement with the DSO. H. Vincke asked what intensity was used and K. Cornelis and D. Manglunki answered that the pilot with 2E10 charges per spill was getting attenuated so that the primary beam would be on the order of 1E10 charges per spill.

On Wednesday the coasting beam MD took place. During LHC fillings, the sequence with the pilot was loaded and slow extraction was performed for NA61to allow for tests with the primary beam.

On Wednesday night RF power trips occurred on TRX4 and caused 12 h downtime during the night and on Thursday afternoon. As it appeared it was possible to fill the LHC with only 25% of the RF power available, the RF team tried to solve the problems between the fills at the expense of North Area. The RF teams diagnosed that there was a wrong internal measurement and a faulty transformer will need to be changed during the winter stop.

The week end was quiet.

The last change in momentum from 80 to 40 GeV/c/u for NA61 will be done today.

**North Area ():**

No report

**North Area users (H. Breuker):**

UA9 users are very happy with the coast mode.

NA61 users are very happy that they had 2*30min with primary Pb. They are looking forward to the energy change.

**LHC (M. Lamont)**

It has been very good running with very good luminosity.

## OTHERS

### CTF3 (P. Skowronski)

There were unexpected problems with the delay loop recombination, which are triggering many radiation alarms. Checks have performed throughout the week but did not reveal the cause of the problem.

A power supply for a klystron modulator broke during the week end and the repair will take at least two days.

### TI (P. Sollander):

Quiet week for the injectors.

The dates for the EL tests have been fixed:

- Tuesday Dec. 13th at 7:00 a.m. (CERN wide emergency test, and F. Tarita requests that all non sensitive equipments are left running)

- Dec. 17th (West Area).

P. Skowronski said that it is a problem for CTF3 as they stop running only on December 18th. In particular he asked that the klystrons (Bldg 2001 and 2002) are taken out of the EL tests. He added that the choice of dates is very unfortunate for CTF3 as it usually takes 2 days to recover after a stop.

F. Tarita answered that all was discussed and set up, and that it cannot be changed. D. Mcfarlane added that all the SPS planning was done to accommodate these dates and that it would be very difficult to shuffle it again. M. Lamont agreed and said that one should stick this year to the planned dates. K. Hanke added that the stop of CTF3 should be made clear in the planning for next year. After the meeting, F. Tarita provided the planning for the EL tests.

## 3 Schedule / Supercycle / MD planning

The 2011 schedule (V3.7) 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 Update on LHC and injectors' schedule for 2012

M. Lamont presented the schedules proposed for approval at the Research Board this week (slides).

D. Mcfarlane added that the SPS will be closed the week before the PS and PSB (February 3rd).

Highlights are the 5-day-scrubbing run in week 13, the 6-week-ion run to North Area in September, which is the reason for having ions set up in the machine earlier than usual. D. Küchler said that a bottleneck with source specialistsis to be expected with this schedule. M. Lamont answered that only

standby service should be provided during the summer. He added that the NA ion run was put there to take advantage of the COMPASS shut down (4 weeks) and he said that CNGS could continue during this period. D. Manglunki added that NA62 will only take beam at the very end of the year. Upon a question of D. Mcfarlane on the technical stop being placed on a Monday, M. Lamont answered that MDs and injector technical stops are to be rearranged and that it is foreseen to interleave the technical stops inside the MD blocks as it was done this year.

As there are no ions planned during weeks 41 and 42, D. Küchler asked whether the blocks could be moved by 2 weeks. D. Manglunki said that maybe MDs could take place in these two weeks.

M. Lamont said that fine tuning will be possible after approval and added that proton-lead running instead of only ion is very likely following the very successful LHC ion run of this year.

## 5 Detailed start-up schedule of the PS complex (K. Hanke for F. Chapuis)

F. Chapuis prepared a detailed start-up schedule. K. Hanke asked the FOM to check the schedule and come back with comments at next week's meeting.

## 6 Draft list of piquets available during the technical stop (B. Salvant)

B. Salvant presented the draft list of piquet that are planned to be available during the winter stop and during the official Christmas holidays.

P. Sollander said that it would important that the piquet access is available during the whole winter stop, including the Christmas holidays. After the meeting, R. Nunez confirmed that it will be the case.

## 7 AOB

A. Bland said that the passwords for the OP accounts will be changed on Thursday December 8$^{th}$, except for CTF3, which is still running.

K. Kostro said that all the consoles will be moved to SLC6. No development should be done on console machines anymore. More details will be given next week.

## 8 Next meeting

The next (and last!) meeting will be held on Tuesday, 6$^{th}$ December at 10:00 in 874-1-011.

Preliminary Agenda:

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3) Schedule
4) Questions on detailed start-up schedule of the PS complex
5) List of piquets available during the technical stop
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Minutes edited by B. Salvant