Minutes of the 16th FOM meeting held on 04.05.2010

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 15th FOM meeting were approved.

Follow-up from the last FOM:

a) Status of the PS-Bfield fluctuations. S. Gilardoni reported that measurements and analysis are progressing and that the first results should be available by the end of the week.

b) Status of the PSB BE.BSW14L4. The element was tripping few times in the last weeks. Once a pulse repeater was changed, the problem did not reappear.

c) EAST Area magnet repair. See EAST hall section.

d) Linac2 source intensity fluctuation. The fluctuation is still present.

The weekly statistics of the operational beams is presented in the following table:

Period	29 Apr - 3 May		
	CPS		SPS
	rel. (%)	abs. (%)	abs. (%)
NORMHRS			
NORMGPS			
AD			
TOF			
EASTA			
EASTB			
EASTC			
SFTPRO			
CNGS	99.29	81.58	79.00

The statistics of the beams will be presented every week from now on. The relative availability corresponds to the fraction of time during which beam was available for – a user while beam request was ON. The absolute availability is calculated with respect to the total time when the cycle was present in the supercycle, independent of whether the request is ON or OFF. Values for the PS complex are based on transformer readings before the experiment or at PS extraction for beams that go to

the SPS. The SPS statistics is based on transformer readings after extraction to the experiment.

T. Eriksson asked how long stops due to repairs can be taken into account in this kind of evaluation. B. Mikulec replied that unfortunately these periods have to be manually subtracted by the automatic values computed from the logbook.

2. Status of the machines

Linac2 (R. Scrivens):
The source interlock chassis has been changed and since then the problem mentioned at the last FOM did not reappear.

On Tuesday evening, the series ignitron on tank2 had to be changed. RF will follow this problem since this problem appeared already twice in a month.

On Wednesday morning, after a power glitch at about 6:00 AM, the Linac was back by about 9:00 AM.

PSB (K. HANKE):
On Tuesday, an access was done to fix a valve so to reduce the cooling water flow on the C02 cavities. A too low temperature was causing condensation on the cavities, as mentioned during the last FOM. This access was done without interfering with the LHC or SPS operation.
LHC25 beam was sent to the SPS for the MD.

On Wednesday, a power glitch caused the trip of the compressed air circuits and of the water stations. The restart of the PSB needed the intervention of the piquet power.

On Monday morning, the beam permit was signet for ISOLDE. The BTY line, however, could not be restarted immediately, but could be powered only in the afternoon. Beam could be sent on the GPS target only at 20:00. The SEMGRID measurements had to be postponed to Tuesday.

ISOLDE (E. SIESLING for P. FERNIER):
The facility received the first proton beam on Monday evening instead of Monday morning (see PSB report). The SEMGRID tests started on Tuesday morning on the GPS front-end. If the tests will progress without any problem, the HRS will be completed on schedule.
Regular beam is expected as from Thursday.

K. Hanke asked if the new vacuum installations and the front ends are working as expected. E. Siesling replied in the positive. K. Hanke wanted to congratulate the vacuum group for this important and successful renovation of the entire vacuum system.

ISOLDE Users:
No users yet.

PS (Y. PAPAPHILIPPOU):

The PS had a good week, with the only problem related to the electrical power glitch on Wednesday.

On Monday and Tuesday, an INCA MD took place. The recover from the MD was not as fast as expected but without any major problem.

The recovery from the electrical glitch on Wednesday took about 3 hours. The restart of the BFAs and the DFAs required the intervention of the expert.
During the PSB stop, the repair of the F61 splitter continued. Unfortunately, an emergency button was triggered and another access in the tunnel will be necessary to reset the button.

During the Wednesday MD, four nominal LHC25 batches were delivered regularly to the SPS. The intensity was fluctuating by less than 1% per batch, whereas the emittances were slightly too large compared to the nominal.

Since Friday and during the weekend, the high intensity CNGS beam MTE extracted was regularly delivered to the SPS. The instability which reduces the spill quality every 6-12 minutes is still present. Investigations are ongoing to try to understand the possible source. It is very unlikely that the oscillation is generated by a beam instability since, as reported by S. Gilardoni, a series of tests were done on the beam to verify the spill stability. Currently, the HW stability is under study, in particular of the power converters used for the resonance excitation.
A. Bland suggested that a possible source of the fluctuations might be a ripple on the electrical network.
During the weekend, KFA13 dropped a few times. The specialist had to intervene to change the controls rack.
Y. Papaphilippou mentioned that on Sunday the piquet was called for a problem with the cavity C91 on the MD4 user. In principle, the piquet should not have been called for an MD beam. S. Gilardoni explained that MD4 is currently used for the MTE setting-up, and in particular to understand the influence of the longitudinal plane on the spill quality. It was judged important to be in the condition to continue the study even during Sunday, and this required the intervention of the RF piquet to fix the C91 cavity.

M. Widorski reported that more data were collected from PAXS35. An increase of the dose has been observed with the increase of the intensity delivered to the CNGS. The dose levels are considered pretty high.
S. Gilardoni added that, apart from the instability mentioned above, the losses on MTE are as expected.
R. Steerenberg added that some clarifications should be given by the radioprotection group for the case of a possible intervention on SMH16.
K. Hanke said that a report should be given at the next FOM about the results of the dose measurements and the impact of the radiation on the interventions in the tunnel.
M. Widorski added that the dose levels in the Linac3 improved but that the radiation is still close to the limit for the zone classification.

EAST AREA (L. GATIGNON):
L. Gatignon reported that the consolidation work on the spare magnet of MNP23 has accumulated some delay. Unfortunately, the insertion of the new insulation did not

give the expected results. New tooling has to be done to insert another new insulation. The magnet should be ready by Friday afternoon. The installation work should be finished by the 19 May. After this, the access system tests have to take place before any beam can be delivered to the users. The work will be slightly delayed due to the long ascension weekend.
B. Mikulec asked what will happen if also the new insulation will not work. L. Gatignon replied that the magnet experts are confident that there will be no problem.

EAST Users (H. BREUKER):
The physics run should start the 10 May with irradiation. The start has been delayed due to the magnet repair.
CLOUD will start in June.
DIRAC should upgrade their readout system. This will be done during the next technical stop since the new system has not been tested yet.

AD (T. ERIKSSON):
The AD needed many interventions during the week from many experts. T. Eriksson wanted to thank everyone for the support during this period.

The restart after the Wednesday power glitch was pretty long, in particular for the restart of the electron cooler.

The setting up of the electron cooler is not yet finalised. The physics will start on 10 May with the ASACUSA experiments. This user requires a very good beam quality.

AD Users (H. BREUKER):
The users are ready for the run.

SPS (E. METRAL):
The MD that should have lasted from Monday to Thursday morning was reduced due to the main magnet exchange announced during the last FOM. The magnet was changed on Monday morning and good vacuum was re-established by the evening.
During the same intervention, the work on the doors meant to protect the SPS in case of a He leak in the LHC was finished. S. Hutchins mentioned that some other passages will be closed in the future.
The DSO tests of the NA were done during the shadow of the magnet intervention.

Measurements done on Tuesday afternoon showed that electron cloud effects are less severe than in 2009. This could be due to the fact that there were only minor interventions during the Xmas break, without venting large fractions of the machine.

On Wednesday afternoon, 4 LHC25 batches of 72 bunches were accelerated with only 5% losses. This very good result was achieved thanks also to the powering of the ZDS at -4 kV even in retracted position. The studies on the ZDS were done in collaboration with the BT experts present in the CCC during the LHC25 run.

New tests with LHC beam at intensities higher than the nominal are planned in the near future. The beam has been prepared in the PSB and will be injected soon in the PS. The SPS should take the beam in week 22.

The MDs could continue on Thursday in parallel with the LHC operation. For the first time, the LHCFAST cycle (LHCINDIV beam) and the nominal LHC25 cycle/beam were present in the same supercycle. This was an important success since this supercycle will be used during the LHC filling.

The first CNGS beam was sent on the target on Thursday, by using the 1.6E13 p MTE extracted beam from the PS. On Friday it was decided to send the high intensity beam, i.e. 2.3E13 p. The transmission efficiency was at first limited to 70-80%, increased by tuning done by the OP crews up to 94%. Unfortunately, the instability observed on the spill in the PS caused a reduction of the transmission efficiency.

On Monday, the setting up of the SFTLONG cycle started, using MTE extracted beam from the PS.

On Sunday night, the piquet CO of the PS complex was called to intervene on a powerpc. In total, 3 hours were lost for this intervention.
K. Kostro said that the specialist of the equipment should have been contacted instead of the piquet CO.
K. Cornelis replied that in the past it was decided that a piquet control was not needed for the SPS since the control failures had a minor impact on the operation down time. Nowadays, this situation has changed, since most of the equipments, the interlocks, or LSA, are controlled by computers. The CO failures are becoming relevant for the machine operation.
K. Kostro replied that a HW piquet exists, and in this cause he should have been contacted first. In any case, the HW piquet can call the control piquet in case of need.

K. Hanke stressed that in the PS complex the power and control piquets are fundamental to run efficiently the accelerators. It is becoming apparent that the SPS needs a control piquet.

H. Breuker reported that OPERA is running in good conditions, whereas ICARUS has some delays. H. Breuker asked if it would be possible to replace the LHC cycle by a fifth CNGS whenever the LHC is in coast. K. Cornelis replied that this is already the case.

North Area (L. GATIGNON):
The NA is ready to take beam as scheduled.

North Area Users (H. BREUKER):
There were small adjustments to be done to the original schedule.
COMPASS is ready.

For the other users: a) the magnet needed to CALICE will be ready only by the end of May; b) NA63 will start two days later; c) the LHCb tests beam on H8 has been cancelled and the time given to TOTEM.

CNGS (E. GSCHWENDTNER):
CNGS has already achieved 1.4E18 protons on target. An access was done to clean the water drains and a second one during the week will be needed in the technical gallery to take some water samples.

K. Hanke suggested that the person responsible for the intervention should be put on the access list to be called in case of an un-scheduled stop.

H. Vincke expressed his concerns about the access without the due radiation cool-down, in particular for the air activation. E. Gschwendtner replied that this will not be necessary since the access will be done in the technical gallery.

CTF3 (D. MANGLUNKI):
A meeting was held during the FOM to decide about the new planning of the facility. K. Hanke said that the revised planning should be reported to the FOM.

TI (J. NIELSEN):
On Wednesday, a power glitch caused the stop of the compress air circuit and of the water stations.
On Saturday there was another minor power glitch which had no impact on the complex.

LHC interface with injectors (M. LAMONT):
Last week, nominal intensity beams were used for collisions. The experiments could take already 1E6 collisions.
Some beam-beam studies were done at injection energy to prepare the high energy runs.
The LHC is entering in a 2 weeks long MD period in preparation for the high energy run with nominal bunch intensities for physics.

The complex should continue delivering the LHCINDIV.

3. Schedule / Supercycle / MD planning

The current 2010 official schedule (V1.6) is available at:

https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/2010-injector-schedule_v1.6.pdf

In this version of the schedule, the start of the ion run has been advanced by two weeks.

A 1 hour stop will be done on Thursday morning as soon as the LHC will start to ramp. This will allow the access in the CNGS and in the PS.

The colleagues are invited to send to the machine superintendents the interventions planned for the next technical stops. Once the complete list of the interventions will be available, the possibility to send beam to ISOLDE during the pumping of the PS after the intervention on the SEH23 will be evaluated.

R. Scrivens reported that a desorption experiment in Linac3 is planned during the technical stop. K. Hanke replied that the compatibility of the Linac3 running and the

technical stop activities will be clear once the full list of the interventions will be available.

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, 11 May at 10:00 in 874-1-011.

Preliminary Agenda:

1) Follow-up of the last meeting
2) Status of the machines
3) Special topics: report on the PS radiation survey after the MTE-CNGS first run
4) Schedule
5) AOB
6) Next agenda

Minutes edited by S. Gilardoni