Minutes of the 24th FOM meeting held on 12.07.2011

Agenda:

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

1 Follow-up of the last meeting

The minutes of the 23rd FOM meeting were approved. H. Breuker pointed out that the ion physics is planned to start one week earlier than what is written in the injector schedule (i.e. week 45 after the injector MD instead of week 46).

Follow-up from the last FOM:

Pending actions:

Problems with POPS (3 actions)

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

Analyze the frequent trips of PSB cavities and steerers

As mentioned in last week's FOM minutes the problem was identified and solved during the technical stop. Action closed.

2 Status of the machines

LINAC2 (G. Bellodi):

On Monday, an MD took place to see current limits with newly installed RF tubes. With the source arc current increased to 55A and RFQ amplitude at 3.8V, 177mA current was measured on the transformer at PSB injection, but tanks 2 and 3 were close to saturation. This operation mode can be sustained for a short duration, but should not be considered as an operational setting.

All planned interventions during the technical stop were carried out.

Source dips and missing pulses came back. Investigations on source dips were carried out, but there is no result so far. More tests will be performed at the next technical stop.

An increase in gas flow helped to cure the missing pulses.

After the power glitch on Sunday, restart happened around lunchtime, but the full restart had to wait until 5pm after all services had been brought back up. There were no major problems to report during the restart and total downtime was 7hrs.

LINAC3:

No news.

PSB (J. Tan):

It was a busy week.

The PSB door was closed at 5:30pm after the technical stop, but restart was delayed due to magnet power supply issues (the piquet PO was called), timing issues (the piquet CO was called) and the extraction kicker KFA14L1 (the specialist fixed a defective cable). The corrector magnet BI4.DHZ/DVT70 was fixed by piquet PO.

In addition, the consolidation of the extraction line pickups undertaken during the technical stop could not be completed on time. As a consequence, the PS injection trajectory could not be optimized for TOF and AD. A temporary fix was made available to operators on Saturday afternoon after 5 days of hard work. J. Tan explained that BI had underestimated the workload (removal of cables, modules, debugging, incompatibility between firmware of ADC boards).

On Thursday the piquet PO fixed a quadrupole and also BTY.BVT101. In the afternoon, the bending magnet BTY.BHZ301 for ISOLDE HRS was fixed by the piquet First Line.

On Friday: a wrong RP threshold was found on a radiation monitor. RF colleagues found after long debugging the origin of the jitter at ring2 synchronization, which disappeared. Finally a security chain issue occurred in TT70 and the beam was cut for all users for 5 min and longer only for ISOLDE as a patrol was lost (the beam was back after 1h).

On Sunday after the power glitch the beam was back at 7pm. The cavity C04 in ring 4 was fixed by the LLRF piquet. Everything was green at 22:10.

On Monday the extraction phase jitter was understood (due to 50Hz noise on the phase pickup). The analog signals for the ejection trajectory were available on Oasis.

During the night BT.QNO30 was fixed by an operator (50 min). The injection trajectory problem will be followed up today.

N. Gilbert said that he did not have feedback on all technical stop activities, but it seemed ok from what he heard. He mentioned that it would be better to install the new access system at level -3. A vacuum leak was found in the injection magnet (bending 162) of ring 4. A. Findlay asked when the elevator would be back in service. N. Gilbert answered that the lift must go up and down completely, which requires a stop of 1h to 2h of beams as the lift is interlocked since last shutdown. N. Gilbert should be informed when such a stop occurs.

J. Hansen added that a leak due to corrosion of the PVC support holding the corrector magnet was found in the vacuum chamber and that leaks in the other rings could as well occur. The workshop has started to fabricate a new vacuum chamber, but this would need a minimum of 2 weeks stop (1 week for the repair, 1 week for bakeout). The magnet was not opened since it was installed. B. Mikulec said it is hoped it can hold like that until winter stop.

L. Soby added that the work on the extraction line pickups needed to be done now. He apologized that it was not ready for beam start. The test of the application program was not foreseen as it should have been. B. Mikulec pointed out it is unfortunate that the specialist for the application was now on holidays as this intervention was not coordinated with OP, but a workaround was found to bridge this period.

N. Gilbert said that he is circulating an Excel file summarizing the racks used in the PSB, as space is needed for Linac4. He asked all equipment specialists to send information on the rack occupation and their request for usage of racks to him.

B. Mikulec added that the INCA deployment in the PSB is ongoing today. It seems to work nicely and she thanked CO for the preparation.

ISOLDE (M. Lozano Benito):

It was a good week before the thunderstorm on Sunday.

There was a double target change on Monday on HRS and GPS.

GPS:

The target could not be installed due to a valve problem so that a target already used on HRS was put on GPS.

After setting up, stable beams were delivered until the power cut.

HRS:

Setting up and proton scan was done. A problem with the fast tape station was solved on Friday. On Friday a radiation alarm was due to a wrong threshold in the monitor and was fixed by RP. Stable beams could be delivered to HRS.

A lot of problems occurred after the storm, and most of them were fixed. A problem remains in the low-energy part showing lower transmission. A power supply is to be replaced this morning.

On GPS the target is leaking and will be replaced tomorrow – this target is anyway at the end of its lifetime.

Coming Monday both targets will have to be cold due to an intervention on the cooling system.

ISOLDE users (M. Kowalska):

Users are very happy, and were in fact stopped by the thunderstorm just 1h before the planned end of the run.

The HRS target put on GPS was heavily used this year (solid state physics and biophysics).

MINIBALL is 1 day late as the proton scan was planned for yesterday.

M. Kowalska reminded that operation should try to follow the official supercycle schedule and get 1 proton pulse from TOF during the night. This rule was not always followed during the past weeks. B. Mikulec said that she reminded again the operators of the procedure.

PS (G. Métral for A. Grudiev):

It was a difficult week.

On Tuesday patrols were lost in many zones (underground, TT2, PS, TOF) because the access system videos on several doors was not working.

The interlocks for the shielding block at door 111 did not work either. This was repaired in the afternoon with the help of D. Chapuis. The access was granted using the emergency videos, which prevented patrols to be lost.

In addition to these issues, the restart was difficult: 50% losses were reported between the extraction from PSB and the PS injection. There was no measurement in the BTP line. The PS vertical orbit measurement was wrong by 4 mm (bad calibration). G. Métral said that it was not sensible to restart under such conditions.

TOF, AD and MD beams could be produced. No trajectory measurement was available until the thunderstorm on Sunday. Many specialists were called (RF, vacuum, CO, PO, kickers). The PFW Bdot compensation system could only be restarted on Monday morning,

On Monday there was a problem with the interlock of SMH57. Also, an access problem occurred in access zone ZT10 at door 151. The interphone was not working so that no sound was indicating that someone was requiring to exit. An intervention is planned, but for the moment someone needs to physically go there to check that everybody actually left.

The LHC50 double batch beam is available in 36 bunches and 12 bunches.

M. Lamont agreed that the PS should not have restarted under these conditions. B. Mikulec added that better planning should prevent such a situation in the future.

S. Gilardoni said that a lot of effort was invested so that the orbit measurement system works for MTE beams, and he suggested the same effort should be put now on all operational beams. He added that the injection septum was delicate. L. Soby said that he would need another technical stop.

East Area (L. Gatignon):

A quadrupole was replaced in the F61 line during the technical stop and the intervention went fine.

On Sunday two quadrupoles were in fault in the T10 line.

The DIRAC spectrometer was in fault and the power supply was fixed yesterday.

East Area Users (H. Breuker)

H. Breuker also mentioned the problem with the DIRAC spectrometer power supply.

TOF (H. Breuker):

TOF is doing fine and exceeding the line. The HIE committee decided to delay an experiment for TOF. M. Kowalska added that also many ISOLDE proposals were rejected by this committee.

AD (C. Oliveira):

A lot of work was done during the technical stop (water pump, valves, radiation monitor moved, pumping tested, water leak repaired, shielding of vacuum chamber in extraction line installed).

The restart was difficult, with interventions on power supplies until 1am.

Thursday and Friday went fine and on Saturday at 1pm one magnet was down, and the piquet Firstline then CO were called and identified the problem.

After the storm on Sunday, there was a difficult recovery on Monday. The main issue there is that priority for AD is low. Issues occurred with mains, quads, injection lines and the electron cooler. A temporary fix of the electron cooler problem was done and the full repair was postponed.

AD managed to deliver beam to physics at 8:30pm. The Schottky needs to be repaired (crucial for operation) as well as the anti proton transformer which shows 0 beam. This is being followed up.

A remark from C. Oliveira: yesterday afternoon, a strong radiation alarm occurred due to TT2 losses. Should the AD and the PS be stopped in that case? G. Métral said that it was one full shot of SFTPRO that was lost in a single place. He will have a more precise look.

AD Users (H. Breuker):

The week before was dedicated to ACE and they managed to get all the data, so users are happy.

ALPHA and ASACUSA made major modifications. It took more time for ALPHA than foreseen, but it should be back today.

SPS (D. Manglunki):

Lots of interventions occurred during the technical stop (5 water leaks, 1 by changing a magnet), followed by 24h dedicated MD for UA9.

An access was granted to remove a collimator in BA5 after this MD. The beams were delivered around 11am instead of 8:00am. The CNGS beam had to be stopped again in the afternoon due to an intervention on security chain 6. During the night, the power supply of the horn broke down and was only fixed the next afternoon at 13:15.

LHC50 double batch beam with 36 bunches was extracted with around 2.5 microns. There are stability issues with the transverse emittance blow up, and the SPS team is trying another method (mismatch in TT10 instead of noise in octupoles). The transverse emittance is around 1.6 micron if no blowup is performed.

The ALARA signature was obtained for the intervention to replace a corroded vacuum chamber on Friday and the intervention finished very quickly. The vacuum team worked a lot. A micro leak was found, but proper vacuum conditions were obtained on Saturday afternoon. Beam was back to the North Area in the afternoon.

After the thunderstorm on Sunday, sextupoles took time to start up, and required an access as a thermal contact was stuck and yielded an interlock. The PS gave small beam to identify an obstacle and it was finally OK at 3am.

The SPS waited for the PFW repair, and the restart was effective at noon yesterday.

Last night, more than 3h of fixed target beams were lost due to chain 9. Piquet Firstline is checking this morning. The operation team changed the voltage limit on R2214.

North Area (L. Gatignon)

Beam was back on Saturday (except for T2 which was also fixed).

Beam needed again to be set up after the storm. The wobbling was set up yesterday. It has been working fine since then.

H4 IRRAD require more flux to T4, but this would mean missing intensity for COMPASS.

North Area users (H. Breuker)

H. Breuker said that rescheduling was needed for the H4 beam time. There is a conflict between IRRAD and COMPASS. Other users had unfortunately to be cancelled.
H8: several users made an agreement to split the time, but this was destroyed by the thunderstorm.
On the North Area access system issues, the reboots that are due to the change of the matrix should not have any implication on patrols. The problem comes when there is a reboot for an improvement.

Maybe more information should be put on page 1 to avoid losing patrols when updates are being made.
COMPASS lost the power supply for the polarization, which takes 24h to get it back running.

CNGS ()

No report.

CTF3 (S. Pasinelli):

The beam was optimized in the combiner ring and 14 A were transported to CLEX. A gradient of 120 MV/m was obtained for the probe beam. The 12 GHz structures are being conditioned. The machine is just getting back to normal today.

TI (E. Liénard):

A meeting will happen tomorrow to analyze the situation and try to find a long-term solution after the consequences of the power cut on Sunday. Users are welcome to send all problems experienced for the meeting tomorrow. An official report will be published at the end of the week.

LHC interface with injectors (M. Lamont):

The technical stop went from Monday through Friday and the beam was back on Saturday afternoon. The LHC is not fully back after the thunderstorm and hopes to get beam back this afternoon. Following emittance fluctuations, the transverse blow up needs to be checked, but a revert to single batch is not foreseen.

The CMS magnet is still down, but it should be back on Friday morning. CMS and ATLAS lost quite a lot of helium following the power cut.

The LHC is planned to be ramping up, hopefully in time for physics on Friday.

LEIR (D. Manglunki):

This week LEIR is starting with hardware tests. Patrols were done yesterday afternoon and LEIR is now ready for DSO tests, but careful scheduling is needed as the PS will be affected.

L. Soby asked when the CO system would be available, in particular the timings. K. Kostro will check. The handover to OP is planned at the end of the week.

N. Gilbert is responsible for the coordination of the cold check-out period, but many actions are taken without communication. N. Gilbert reminded that the planning was fixed 3 or 4 months ago.

3 Schedule / Supercycle / MD planning

The 2011 schedule (V3.1) 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

V. Chohan reported briefly on the main interventions and issues during the technical stops:
- A magnet was changed in the SPS.
- New liners in BA5 caused issues to get the vacuum back.

- There were issues with access control between TI2/TI8 and the SPS. It is suggested to put signs there to try to reduce the number of issues.
- A classical lift maintenance is going on.
- CV had problems to repair the motor.
- Access problems in the PS.

5 Next meeting

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

Preliminary Agenda:

1) Follow-up of the last meeting
2) Consequences of the thunderstorm of July 10th and potential actions (R. Grimand)
3) Status of the machines
4) Schedule
5) AOB
6) Next agenda

Minutes edited by B. Salvant