Minutes of the 8th FOM meeting held on 12.05.2009

Agenda:

1) Follow-up of the last meeting (K. Hanke)
2) Status of the machines (Supervisors)
3) Schedule (K. Hanke)
4) Preliminary list of activities during technical stop (V. Chohan)
5) News on Linac4 civil engineering work and possible impact on operation (M. Vretenar)
6) AOB

1. Follow-up of the last meeting

The minutes of the 7th FOM meeting were approved.

a) Status of the BWS in the PS and in the PSB: A lot of progress has been made and the situation seems to be converging after an intense measurement campaign last week. Nevertheless there are still many open issues, mainly concerning the application. Weekly meetings with BI and CO responsibles are in place.

b) OASIS debugging: ongoing.

c) Check of PS central building temperature alarms: The alarms have now also been implemented in Laser and have been tested on Thursday. Nevertheless there has been an incident on Thursday when Cegelec switched off the alarm on purpose to do some work, but without informing the users. This should obviously not happen next time. The action will be closed.

d) BT.BCT calibration: practically completed; one last test of the BI specialist still outstanding.

e) Status of FESA devices in SPS: Tests on the ZS motorisation have been performed, but a few issues are still open.

f) Beam requirements for the LHC injection line tests: the beam type needs have been clarified with M. Meddahi (SPS parameters):

- LHPROBE, 1 bunch, I=5E9, emittance ~1 um

- LHC25A, 12 bunches of 25 ns spacing, I~5E9-1E10 (remark: the lowest intensity of 5E9 corresponds to ~1/20th of the nominal intensity; 1/10th was up to now the minimum intensity)

- LHC25A+B, 72 bunches of 25 ns spacing, I~5E10

The action can be closed.

2. Status of the machines

Linac2 (G. BELLODI): As reported already last week, the RF problems that led to frequent non-resettable trips on tank 2 were investigated Monday afternoon (4 May) and some connections checked, notably a suspicious grounding connection on tank 2. Since then the situation had improved, but on Wednesday (6 May) some instabilities on the voltage

amplitude of tank 2 were observed. On Thursday (7 May) frequent trips cutting the beam occurred every 2-3 hours, but were remotely resettable. The situation degraded on Friday (8 May), leading to an intervention of the RF team at 2pm. A faulty measurement module was replaced and the 1800 V gaps had to be cleaned, which seems to have solved the problem.

At the same time the supervisor was informed about a water leak in the LEIR water circuit. An access showed water besides the beam stopper BI.STP, but the water originated from a leak in the PSB sieve BI.SIEVE. The fire brigade was called in to collect the water, and the water supply to the sieve was disconnected. If repair is possible, the sieve will be repaired during the upcoming technical stop. Beam was back in the evening (~8 h lost in total).

Operation during the weekend was smooth. The voltage on the RFQ was increased back to its nominal value before the RF problems yielding usual beam current values.

The excavation work for Linac4 goes underneath the service gallery between Linac2 and the PSB. It was stated that the work should not affect operation, but the risk of this excavation is still under discussion. The gallery is anyway locked from now on.

PSB (A. FINDLAY): The VELO experiment started taking beam this week; after some timing issues got solved they reported a good MD session. The continuation of this MD has to end soon as it is not possible to dump large beams during that period.

The PSB scope for the tomoscope application had been sent off for repair already on 08/11/2008, but was only returned on Tuesday (5 May). In addition it had not been repaired as the company claimed the repair was not possible and the scope too old. Exchanging the PS and PSB tomoscope scopes proved that the PSB scope and the spare PS scope have both hardware problems. A program to replace this aging hardware is being worked out to propose the purchase of a new system. In the meanwhile, the PSB scope was switched with the PS scope (in the PS only 1 channel is required contrary to 4 in the PSB). J-F. Comblin had to rewrite the PS code. Finally on Friday (8 May) the application was more or less working for the PS (except for the smallest time base required for tiny LHC beams), but the situation is not ideal and requires hardware upgrade.

The EASTB beam has been updated to the new specifications. The MD1 user was also prepared (beam for PS MTE).

ISOLDE (D. VOULOT): There has been a problem on Monday (4 May) with the stepping motors that drive the pulling electrodes on both frontends meaning that the targets could not be moved/exchanged anymore. For the failing controller cards there exist no spares, no drawings and no responsible. In the end one spare could urgently be purchased, but they are not produced anymore. STI managed to repair the faulty cards, but a consolidation is required for this item. The target change was delayed due to this problem.

Another issue concerned the venting line of the frontends that got blocked. To reach the valves, access into the primary zone was required under RP surveillance. On Thursday (7 May) the valve could be unblocked. The request for an improved layout in the longer term (valves outside primary zone) was made.

One Faraday cup in the main ISOLDE beam line is not working anymore. It is steadily used for transmission measurements. As the Faraday cup might be contaminated, there is again a need for RP intervention for the repair. This has to be well planned and seems not to be possible before week 21.

Nevertheless it was still possible to provide beam to the users (IS417) and run as well for solid-state collections (IS486).

H. Vincke mentioned that most likely RP availability would get worse with LHC running. This message should be transmitted to the management. It is therefore important to improve the reliability and accessibility wherever possible.

Concerning REX there was progress on the cooling system for the RF amplifiers. Water-cooling tests will be performed next week; the change of the cooling system is planned for the coming shutdown.

ISOLDE users (A.HERLERT, email): The users thank everybody involved in the fast repair of the broken controller cards. Only one day for the GPS measurements was lost. There is a good chance to catch up in the upcoming two weeks of operation. The users are otherwise happy with the delivered beam.

PS (A. GRUDIEV): SFTPRO as well as EASTA and EASTC were delivered to the users. The AD beam has been set up as well as LHCPROBE. EASTB and the dedicated TOF user are almost ready.

On Wednesday (6 May) an access to TT2 was made in parallel to the SPS stop to check some magnet interlocks. By mistake an emergency button was pushed resulting in a trip of the MPS and the security chain. Beam was back around 1:30 pm (2.5 h were lost).

On Monday (11 May) evening a problem occurred with some magnets used for slow CT extraction (no SFTPRO beam extracted). To solve the problem, a pulse repeater card had to be changed.

Concerning the wire scanner situation, E. Metral asked if it was possible to measure the transverse emittances of small LHC beams in the PS in view of the upcoming TI tests. R. Steerenberg replied that in the PS the final check of the emittance values provided by the wire scanner application still has to be done.

East Area (L. GATIGNON, email): The East Area T9 and T10 beams have been running smoothly. The T9 users want to decrease the momentum to the unusually low value of 300 MeV/c. In a test last year this worked, but now three rectifiers do not go down to the required current of 7 A. The rectifier specialist has been informed.

There are some steering difficulties for the EASTC beam. An alignment check is being planned for the technical stop. In spite of this the users can be served, but in a slightly different position.

East Area Users (H. BREUKER): T8: Setting up. There has been a security visit yesterday and they are ready to receive beam on Thursday (14 May).

T11 (Cloud): A chamber problem occurred during the cleaning procedure. ~3 weeks of delay are estimated.

M. Widorski asked if there were still increased losses inside the target area of T7 like during start-up. R. Steerenberg replied that the PS crew has reduced the beam size in the meanwhile. He cannot guarantee no losses as there are no beam loss monitors installed in this area, but the same efficiency is observed as last year. There is still a small doubt concerning one quadrupole, and measurements around the magnet are planned with Idelette for the 25th. H. Breuker added that it is planned to stop irradiations on Thursday 4 days before the intervention. The North branch will stop on Sunday night.

AD (J.C. OLIVEIRA): Last week was the final week of hardware tests.

The problem with the coils moving vertically by 1 and 3 mm inside 2 bending magnets could be fixed.

The flow sensor and the air filters in the target area have been exchanged and the interlocks tested.

There were some remaining controls issues and fixing of bugs in application programs.

Tests of the main power supplies (bendings and quadrupoles) have been performed as well as magnet tests in the target area.

Currently everything is on track for beam today.

AD users (H. BREUKER):

NTOF (V. VLACHOUDIS): NTOF will start on May 18th.

The cooling system has problems with the material of the expansion vessel and its delivery. V. Vlachoudis said that it has been decided to delay the startup if delivery is within 2 weeks; otherwise the plan is to run with the old one and plan the replacement for later.

SPS (K. CORNELIS): The test of the transfer lines could be finished, but on Thursday (7 May) there were problems with one of the main dipole power supply that tripped. In the meanwhile first line had to be called several times for the trip of MBE2103. The MPS tripped twice more in the afternoon and necessitated specialist intervention. After repair 50% losses were observed at the start of the ramp and finally the faulty dipole magnet (short circuit in coil) could be identified and an intervention planned for the coming day.

The intervention to exchange the dipole magnet took until 15:45 on Friday (8 May). Restart of beam after OK from vacuum experts at 22:00.

Early next morning the beam could not circulate for more than 3 turns. Immediately an obstacle was suspected. It took the whole day to identify the culprit, valve VVFA21701 that was closed due to a broken switch, but with a status indicating it being open. It was decided to block the valve open in local and repair it after the 2-day MD.

Saturday night and Sunday beam was sent to the North Area for setting up.

There has been a power cut in BA1 (short circuit on a water pump). As a result, the chromaticity sextupole chain heated up and the crate for the screens lost power, leaving 1 screen stuck in the beam.

H. Vincke requires an access of ~1 h duration to the ventilation building this week. K. Cornelis will attribute a suitable moment for this.

Moreover there will be some necessary work on the ventilation system in week 22. One consequence of this will be that the access to section 3 will only be possible using respiratory masks. It might be better to plan this during the running period (not during injector stop) when access to the machine is less likely.

CNGS (K. CORNELIS): It was reported that work in CNGS was still going on until the 18th.

Full intensity beam to CNGS is planned for June 1st. Therefore beam setup will start from May 20th in the SPS.

SPS North Area (L. GATIGNON, email): Beam for COMPASS was switched on on Sunday (10 May) without major difficulties apart from some issue with the spectrometer magnets SM1 and SM2 (first line will look into this).

The H6 beam for CERF was set up on Saturday (9 May) and went smoothly as well.

North Area users (H. BREUKER):

H2 users (CMS Castor detector): will arrive this week to be ready for beam on Sunday

H4 (CMS beam conditions monitor): installed; ready for beam

H6 (CERF): running shifts since Saturday (9 May)

H8 (ATLAS): installing and will be ready for beam

COMPASS: there is a problem with the spectrometer magnets as mentioned by L. Gatignon, but otherwise ready for beam

LINAC3: Linac3 is in shutdown; Linac3 matters will be followed up regularly during the run.

LEIR (C. CARLI): Up to now many tests have already been performed, mainly concerning controls. It is still planned to do a sort of dry-run during the second half of this month. On Thursday there will be a meeting to plan the upcoming activities. Beam is expected for July.

CTF3 (P. SKOWRONSKI): The Linac setup was finished beginning of last week.

Recommissioning of the Delay Loop after correction of the orientation of the combined function magnets was started.

There were problems with the BPMs after migration to FESA. BPM scalings and delays needed to be readjusted.

Full transmission of the Delay Loop was quickly established and optics measurements are ongoing.

On Wednesday (6 May) around 9pm somebody forced open the trap on the roof over the Delay Loop/Combiner Ring. This tripped the security chain involving a new patrol on Thursday morning.

There was a problem that led to a loss of settings of the correctors. After a reboot of a server, old settings from a few months ago were loaded instead of the latest ones. The problem could be fixed.

Yesterday there was an access allowing amongst other things a change of uses in the radiation monitors (RP), correct cabling of some badly connected vertical BPMs in the Delay Loop and an exchange of the stepping motor for the screen in the Combiner Ring ejection line.

A new access zone was created for the control room named CTF_CR. Until last Sunday it was belonging to the klystron gallery (CTF_KG). Hence, all people willing to access building 2008, where the CTF control room is placed, must ask for access in EDH or possess key PS 55.

TI (P. SOLLANDER): There is a scheduled database intervention tonight from 21-22h affecting the TIM system (access system for PS complex).

L. Jensen complained that there were problems loading the BI piquets into the web shift list. P. Sollander will try to solve this problem with him.

3. Schedule / Supercycle / MD planning

The 2009 schedule (V3.4) is available at:

https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/Schedule2009.pdf

North Area physics is starting this week.

The next injector technical stop is scheduled for 25 May.

4. AOB

K. Kostro informed everybody on the database intervention mentioned already by P. Sollander. This will also partly affect Laser.

On Monday 18th May there will be 2 short interventions at 18h and 18h15 affecting machine operation.

NFS4 will be interrupted for memory upgrade on 25th of May. SPS and LHC data files will be affected. In parallel there will be new releases of RBAC Java Suite, OASIS and some LSA packages. A reboot of the cs-ccr-ctm timing server reboot will also take place.

5. Special Topics

5.1. Preliminary list of activities during technical stop (V. CHOHAN):

V. Chohan presented the preliminary list of activities per machine planned for the technical stop on Monday 25th (see slides). Everybody concerned has been asked to check this list until next week, when the final list will be shown during the FOM meeting.

It was confirmed that the Linac2 team has to ask for authorisation for the work on the UPS system that will lead to some power cuts in buildings 451 and 363.

K. Hanke wanted to know if during this stop the vacuum control cards in Linac2 will be reprogrammed as this was still outstanding since a bug had been identified at PSB start-up. G. Vandoni will check this with I. Laugier.

A. Bland mentioned that there would potentially be some IT interventions. It was decided to add these to the list (already done in the current linked file).

Once the final status of the interventions will be known, a list of people accessing the machines should be extracted and sent to cpsaccess (for PS Complex) or entered into the web-based database for the SPS.

The technical stop will extend from 8h until 16h. All beams will be cut at 7h.

5.2. News on Linac4 civil engineering work and possible impact on operation (M. VRETENAR):

M. Vretenar explained the civil engineering work currently going on at the Linac4 site (see slides). The new transfer line is being excavated underneath the technical gallery (b. 363) connecting Linac2 with the PSB. Added bars fix the gallery at the location of expansion joints to the neighbouring buildings. The excavation has to proceed from level -3 to level -12. The specialists evaluate the risk of movement as minor in the order of millimetres, but this could still affect the very delicate equipment in the gallery (old water pipes; not yet clear which areas would be affected by a leak). The area will be closed until the end of August and work will be going on only during working hours.

The plan is to steadily survey the position of the gallery during excavation work. In case it moves by 1 mm, TI will enter the gallery to check the equipment.

6. Next meeting

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

Preliminary Agenda:

- Follow-up of the last meeting
- Status of the machines
- Schedule
- Special topic: Final list of activities during the technical stop (V. Chohan)

Minutes edited by B. Mikulec