

Minutes of the 29th FOM meeting held on 06.10.2009

Agenda:

- 1) Follow-up of the last meeting (K. Hanke)
- 2) Status of the machines (Supervisors)
Report on PS-SMH42 failure (J. Borburgh)
- 3) Schedule (K. Hanke)
- 4) Outlook on the 2010 schedule and OP strategy during X- mas closure (M. Lamont)
- 5) AOB
- 6) Next agenda

1. Follow-up of the last meeting

The minutes of the 28th FOM meeting were approved.

Open actions from last FOM:

- a) Check with GS what could be done to avoid SPS North Area doors going into free access mode. S. Hutchins said that tests were done on a spare system in a laboratory and the problem could not be reproduced. The system puts the doors into free access mode upon request. It was not possible to identify the source of the request. This kind of problem has never appeared before. A full renovation of the system is planned in the long run.
- b) Send information to S. Hutchins to complete the list of EIS elements. S. Hutchins said that finally most of the information is available, except for CTF3. The list will be presented to the IEFC on Friday.
- c) Follow up with specialists radiation alarms linked to PS extraction elements. R. Steerenberg mentioned that investigations are ongoing. A similar problem appeared already in May. At the time the solution was found by replacing the CPU of the power converters controlling the extraction bump power converters. Since August, however, a new problem appeared. The extraction septum sometimes pulses at the value of the previous user in the supercycle, causing eventually large losses. The specialists will try to apply the same solution used in May.
- d) Organise the OP password change on 8th of October and propose new passwords. The new password will be changed on Wednesday for the CPS complex and the SPS.

K. Hanke mentioned also a list of actions from the ATOP days which are still open:

- a) PSB BLM (whole chain to CCC) to be checked; test procedure to be revised.
- b) The remaining not responding BLMs will be checked during the current technical stop.
- c) Specific requests for ongoing SPS BPM renovation?
- d) To be followed up by K. Hanke.

- e) ISOLDE operation beyond limits defined in 1993, or modifications with RP impact to be assessed and approved by RP (idem for other installations).

K.Hanke will follow-up the issue with RP.

- f) Procedures to be prepared in case of ARCON failure.

- g) K.Hanke will follow-up the issue with RP.

- h) Radiation related nTOF matters (ventilation, alignment).

R. Steerenberg mentioned that the sealing of the nTOF tunnel is going to be improved during the current technical stop to reduce the air activation in view of a further integrated intensity increase.

2. Status of the machines

Linac2 (G. BELLODI):

The Linac had a good week. On Wednesday the source went off due to the EHT interlock. The EHT power supply was replaced by its spare. This intervention caused 3 hours of down time.

During the advanced technical stop, the RF tubes of tank 2 and 3 were changed as part of the regular maintenance.

PSB (A. FINDLAY):

The PSB had a good week. The MD on the LHC 50 ns beam with single batch PS injection continued. The beam could be taken by the PS. The setting up of the high intensity for the MTE beam was done.

For the first time, the PSB was providing at the same time the LHC25A and LHC25B as well as the LHC75 single batch user to the PS.

On Saturday, due to the PS injection septum problem, all the PSB cycles were dedicated to ISOLDE. Also on Saturday the access system generated an alarm. The specialist was called and he found that a door had been forced.

On Monday the beams were stopped at 7:00 a.m. to allow access to the PS.

K. Hanke added that access to the PSB was allowed by RP only after 13:30, after an usually long cool-down time (6,5 h)

M. Widorski clarified the rules about the radiation cool-down time which RP requires before an access. Typically between 2 and 4 hours of cooling down are requested before an access. In this particular case, the access time of 13:30 was determined by the fact that most of the works were planned in the afternoon (scheduling issue).

D. Macfarlane mentioned that the interventions foreseen for the advanced technical stop should be finished before Thursday. The only remaining work is the cleaning of the LTB power converters and their room after the fire of two weeks ago.

G. Vandoni added that high radiation levels were measured in the LTB and BI lines. This will have an impact on the intervention on this line (sieve removal). The exact schedule of intervention on the sieve will be decided on Wednesday morning after a radiation survey. M. Widorski mentioned that the risk will be that, if high radiation levels will be detected, the intervention might be postponed to late in the evening.

K. Hanke replied that beam will be provided to ISOLDE until 7:00 a.m. as scheduled, and in case of too large radiation detected in the LTB area the intervention will have to be postponed according to the RP recommendations.

ISOLDE (E. Siesling):

ISOLDE had no particular problems.

- GPS: The run was very good until the scheduled stop on Thursday.

- HRS: A target change was done on Tuesday. Unfortunately the new target was not coupled correctly to the front-end. H. Vestergard had to adjust the target. However, the sensor which detects the correct coupling does not give a readback any more. Since the target could be pumped, i.e. the correct coupling tested, the interlock was bypassed. The problem will be solved during the next ISOLDE shutdown, since only two more target exchanges are scheduled before the end of the run. The whole front-end will be replaced by a new one during the coming shutdown.

On Thursday, the RFQ HV was changed and the RFQ and the separator were working correctly already on Friday morning. After the proton scan and a few tests the physics run could start. The run was the first of the year at 60 kV. Some sparking on the FE was observed, and finally the power converted dropped. The one of the GPS was used instead. Unfortunately during the run the door of the HV cage was left open, causing a number of radiation alarms.

A first meeting took place with M. Buzio to investigate on the long-standing problems with the NMR measurement of the separator magnets.

ISOLDE users (A. HERLERT):

The users were happy even with the beam time lost due to the accesses in the PS. Their schedule will be changed run in the most efficient way during this period of PS interventions.

PS (G. METRAL - mail):

“Tuesday

15mn beam OFF for measurements on F16.QFO215.

Thursday

Breakdown of SEH23 and PFWD

Problem with KFA45 (pulsing value below the request value)

LHC50ns : Single batch injection done by the RF team (everything OK for the longitudinal point of view)

Friday

Cavity C76: gap relay broken. 1H30 beam OFF

SMH42 broken at 23H. No more beam after that failure”

J. Borburgh reported on the failure of SMH42 and the intervention schedule. The slides are available [here](#).

The PS injection septum broke down on Friday evening, with a sudden increase of the vacuum. Typically, if the problem is generated by sparking, the vacuum rises quickly but then it recovers

also quickly. In case of a water leak, typically the vacuum degrades slowly. In this case, the vacuum rose very fast, with a dynamic of the failure which was never seen before. On Saturday afternoon, an access was done for a leak tests. The results of the investigation were that the source of the leak was the water cooling circuit. The new spare was prepared, with a small delay due to the missing feed-trough of the SEMWIRE mounted on the septum.

The septum was changed on Monday and a first vacuum leak detection showed that no leaks are present. The bake-out will start as soon as possible. This will imply that no beam will be available for the PS before Saturday.

J. Borburgh wanted to thank all the colleagues involved in the various interventions.

He also added that the collective dose taken during the intervention was slightly higher than anticipated due to the need of more people than foreseen.

H. Breuker asked if there are particular problems for the slow extraction septum which has to be removed to fix the main magnet bus-bar. J. Borburgh replied that the intervention was already done and there were no particular problems. The pumping already started. G. Vandoni mentioned that it is not yet clear if SMH26, used for the ion injection, has to be baked or not. This will be clear only after the pumping of the entire sector.

R. Brown mentioned the status of the other PS related activities during the advanced shut-down: a) the replacement of the slow extraction sextupole in SS7 went as scheduled; b) the RF works are proceeding; c) the grass cutting outside the tunnel started.

East Area (L. GATIGNON-mail):

Nothing special to report.

East Area Users (H. BREUKER):

DIRAC lost one week of running for different problems, mainly related to cooling and ventilation and the frequent tripping of the spectrometer. They also had a problem with an electronic module responsible for triggering.

CLOUD has a delay for the installation, in particular for the cover floor of the scaffolding.

AD (L. BOJTAR):

On Monday there were 3 MDs, one on the GEM beam position monitor test, the second on the intensity vs. acceptance tests, the third on test of the beam cooling in a barrier bucket at 100 MeV/c. On Monday night, FirstLine had to intervene on two power converters, in particular on DE0.QN70. The quadrupole was going off without a clear reason. The first solution was to put the power converter in local mode. C.-H. Sicard said that CO investigated the problem, and found that the FEC controlling the converter was overloaded. Once the FEC was cleaned-up, the problem did not reappear.

On Tuesday, the stochastic cooling was not working on every cycle. Depending on the supercycle composition, a timing of the control system was not issued correctly. A first temporary solution found was to increase the length of the AD cycle by one bp. In the meanwhile, CO experts are investigating the source of the problem.

K. Hanke asked if there were interventions in the ring related to the advanced technical stop. T. Eriksson replied that there are no interventions apart the cleaning of the water stations.

AD users (H. BREUKER):

ASACUSA had basically no beam, and one of the ASACUSA experiments could not conclude the physics program on the anti-hydrogen trapping. ATRAP is using the time without beam to solve some of the minor problem left from their recent upgrade. No news from ALPHA.

NTOF (R. STEERENBERG):

Civil work is ongoing in the tunnel to improve the air sealing and to reduce the radioactive air release in the view of a possible intensity increase.

SPS (D. MANGLUNKI):

On Tuesday, there were again spurious cooling alarms on TBSJ/TBSM, which every time required the reboot of a processor. The reboot of the processor took only few minutes each time, but the large number of reboots per day (about 25) caused substantial down-time. Unfortunately the follow-up is difficult since it is not clear who is responsible for the system.

On Wednesday there was a sharing change in the North Hall as COMPASS switched back to taking hadrons; the intensity for T6 was decreased on. The same day there were a few problems with RF transmitters, requiring interventions of the RF piquet. Every day the MTE was taken in order to gain experience with it. It was first foreseen to put it into operation on SFTPRO for the week-end, but the intensity could never be brought up to the required level without causing too many losses in the CPS. The losses could not be reduced since the trimming of the extraction with the new intensity requires transverse profile measurements in the PS. Unfortunately the BWS application in the PS was not working any more, following a non-authorized manipulation of the program.

Operation stopped on Friday evening shortly after 23:00 due to the breakdown of the PS proton injection septum.

K. Hanke asked why the BWS application was not working for the entire complex except the SPS. R. Steerenberg replied that in principle only 2 colleagues are allowed to release new versions of the application. Unfortunately a non-authorized colleague introduced some changes to fix a problem in the SPS, and released the application for the entire complex. This caused the application to stop working for the PS and PSB. To fix the problem CO will restore the previous version of the application.

CNGS (K. CORNELIS):

The running was well ahead of the promised intensity until the PS break down. During the current stop some interventions will be done.

SPS North Area (L. GATIGNON):

A cooling problem on the H2 line could be solved.

North Area users (H. BREUKER):

On H2 there was the change of the wobbling settings to e-. Fortunately the physics program could be finished just before the failure the PS.

The main problem now is the re-scheduling of the other experiments.

LINAC3 (G. BELLODI):

There were tests on ion desorption, even if there were problems with the source. The stability was very poor, and the source had to be continuously trimmed. The experiment finished on Sunday at noon.

LEIR (D. MANGLUNKI):

D. Manglunki wanted to thank E. Mahner for having agreed to give the Linac3 beam to LEIR in advance. This allowed them to start-up the machine before the fMD.

CTF3 (S. BETTONI):

S. Bettoni presented the record intensity achieved by CTF3 of 29 A. The slides are available [here](#).

The best recombination in the delay loop has been achieved early last week (almost 7 A). The recombined beam has been transported up to the combiner ring for the first time (no losses). The uniformity of the recombined beam (degraded by the first phase switch put in the beam) has been improved by putting a couple of 180 degrees phase switches in the very first part of the beam, which is routinely lost in the chicane to eliminate the transient.

For the first time the recombined beam has been used to obtain the recombination in the combiner ring. The record current of more than 28 A has been achieved, proving that the drive beam multiplication works.

TI (P. SOLLANDER):

Nothing to report.

3. Schedule / Supercycle / MD planning

The 2009 schedule (V3.6) is available at:

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

The PS will be down until at least Saturday. ISOLDE will have beam during the nights except the night from Wednesday to Thursday.

On 12th October, beam will be sent to the TED of TI8 for the LHCb experiment.

D. Manglunki requested an extra week to conclude the ion commissioning. The run should include also the SPS. FOM endorsed the request to have this run during week 43, under the condition that the PS vacuum has to be sufficiently good after the technical stop to run ions.

4. Special topic: Outlook on the 2010 schedule and OP strategy during the X-mas closure (M. Lamont)

M. Lamont presented the tentative schedule of 2010 for the LHC and the injector complex. The slides can be found [here](#).

In the evening of 16th December the LHC will be put in stand-by at 3 K. During the Christmas stop there will be operators in the CCC and supervisors will be reachable. The machine will have

the regular maintenance following a detailed planning (in preparation). The LHC will start cooling down to 1.9K on Monday 4th January. The machine will be commissioned to have collisions at 3.5 TeV (beam energy) first, and then the decision to rise the energy will be taken according to the study on the splices.

During the LHC filling, the injectors will be in dedicated mode, with no other users for about 1 hour each time.

In the LHC schedule, every month 3 days of stop are foreseen for regular maintenance. During these days the injectors will have dedicated MDs.

The injector schedule will be very similar to the 2009 one, considering the same user requests as last year. H. Breuker mentioned that the discussion with the users already started. K. Cornelis asked if during the injector dedicated MD on Wednesday the LHC is supposed to take beam. M. Lamont replied that some flexibility has to be allowed according to the LHC commissioning status.

In the LHC schedule the ion run has been included starting from week 33.

K. Hanke mentioned that S. Baird is in the process of collecting the information about the activities during the Christmas stop.

5. AOB

K. Sigerud mentioned that on Wednesday there will be an upgrade of the measurement database. The stop of the database will last 2 hours during which the data will be buffered and saved but will not be available for access. The intervention will be confirmed as soon as possible and are entered in the FOM on-line agenda

F. Tarita mentioned that the intervention on the compensators and the filters is ongoing as foreseen.

6. Next meeting

The next meeting will be held on Tuesday, October 13th at 10:00 in 874-1-011.

Preliminary Agenda:

- 1) Follow-up of the last meeting
- 2) Status of the machines
- 3) LEIR status (C. Carli)
- 4) Schedule
- 5) AOB

Minutes edited by S. Gilardoni