

Minutes of the 36th FOM meeting held on 24.11.2009

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 35th FOM meeting were approved.

Open actions from last FOM:

- a) Follow up with RP specialists radiation alarms linked to PS extraction.
S. Gilardoni mentioned that the measurement campaign is progressing and data analysis ongoing.
- b) Check that the request of the LHC-mastership is executed during the right supercycle.

The situation has been clarified by a mail from J.C. Bau after the FOM:

“Mercredi dernier, une nouvelle release du CBCM a été déployée pour supprimer cette contrainte. Elle a été testée avec l'opération (LHC et PS) et tout fonctionne correctement maintenant. J'ai demandé au shift leader PS de supprimer cette consigne dans le logbook PS. Lundi dernier, j'ai aussi indiqué lors du MAM meeting que cette contrainte avait été supprimée depuis Mercredi.” For further details, please refer to [here](#).

K. Hanke mentioned that this FOM meeting marks the end of the non-LHC physics run. The injector complex will continue to run for the LHC, with some exceptions like the AD and CLOUD prolongation and the AMS run in the SPS North Area.

The FOM will continue until the Xmas break and resume after the X-mas closure.

2. Status of the machines

Linac2 (G. BELLODI):

The Linac had a good week without any particular problem until Sunday. At about 19:00, the RFQ valves closed with a pressure rise up to more than 10^{-1} mbar. The primary pumps and the ion pumps went off. The vacuum expert could not restart the pumping due to an HW problem. After exchanging the pump for its spare it was possible to re-establish good vacuum for beam at about 23:30.

Late in the night, the valves closed again due to a stop of two ion pumps. The piquet could solve the problem, but, as mentioned by G. Vandoni, the situation concerning the number of the

available pumps in now worrying. Normally there are 4 out of 5 pumps available (one is not cabled), now only 3 out of 5. A further failure will imply the stop of the RFQ for at least two days.

More details about the RFQ problem can be found in this mail from G. Bellodi:

"After a quiet week, Linac2 went down on Sunday night at 7pm with a vacuum interlock problem on the RFQ.

When I reached the site, the pressure on LI.VGR1 had reached 10^{-1} and the ion pumps were off. The fault was isolated to the RFQ sector, with the vacuum on the source and Linac tanks being OK.

With the help of the vacuum expert we tried to restart pumping via the control module of LI.VGP1 (primary pump), but this was not responsive.

When the VAC controls team arrived we replaced the chassis of the

LI.VGP1 control module (and since this didn't cure the problem), also the scroll pump itself. At about 10.30pm we restarted the pumping group and reached a vacuum of 10^{-6} , stable. The RF was restarted and beam was back in the Linac by 11.30pm.

At 1.15am there was another vacuum interlock stopping the beam, this time the valves VVS10 and VVS20 were closed, and the ion pumps LI.VPI3 and 4 were off with high pressure. This time the VAC piquet managed to restart the pumps remotely and pressure levels were OK. Overnight one of the ion pumps went in fault and we're currently running with 3 out of 4 pumps in the RFQ sector. A further failure will imply the stop of the RFQ for at least two days.

After the meeting a leak test on the RFQ was done and it was confirmed that there is no vacuum leak."

K. Hanke asked about the situation of the phone of the vacuum piquet, since he was not reachable for the intervention. G. Vandoni replied that this was due to a problem with the telephone network provider. After a first investigation, it was decided to change the SIM cards of the piquet phones. VSC will provide to OP a list of phone numbers to call since the piquet numbers will be un-available for a few hours after the change of the cards.

PSB (G. RUMOLO):

The PSB had a good week until Friday afternoon when the recombination septa went down. The piquet could do a local reset, but noticed hot water steam being blown from the bottom to the top of the electronics rack. CEGELEC intervened to investigate the problems, but could not identify the cause. The same incident happened again on Saturday afternoon. S. Deval explained that the problem was caused by an intervention on a superheated water circuit in the gallery TP9 coordinated by GS. K. Hanke noted that this kind of interventions must be coordinated by FOM to avoid problems like the one of last week. K. Hanke will follow-up the problem with GS.

During the same intervention, CEGELEC pointed out that the air conditioning system in that room is no longer maintained since it is not conform to the current law. S. Deval said that it is on their consolidation list.

On Saturday and later on Sunday the MPS tripped few times. The EPC piquet changed a card.

Another stop was due to a door interlock. The door was opened by the Fire Brigade during a patrol. The concerned door is not properly marked as interlocked. P.Sollander and K. Hanke are following up the problem with the Fire Brigade.

The LHCPROBE beam and LHCINDIV were delivered all along the week without any particular problems.

ISOLDE (M. ERIKSSON):

ISOLDE had a good week.

GPS: the last physics run was done with a CaO target. This is a plasma target used to produce Argon with low Chlorine contamination. The yields were very good as the data taken by the experiment. On Monday, tests on the yields of isotopes produced by a synchronized or unsynchronized beam from the PSB revealed that there is no difference between the two cases.

HRS: due to problems with the exchange of the currently installed target, it was decided to stop sending protons to this front-end for this year. The FE has been heated-up for the separator course on Monday.

ISOLDE users (A. HERLERT):

The users are very happy.

PS (S. GILARDONI):

The PS had another very good week, reaching 99% availability.

MTE was delivered rather regularly to the SPS with intensity of up to $1.75e13$ per extraction.

As from Tuesday morning, all CNGS cycles were delivered using MTE for 7 h and a radiation survey outside the PS tunnel was done. The goal is to compare the differences in radiation with respect to the CT extraction. The data analysis is ongoing.

LHCPROBE and LHCINDIV were delivered regularly to the SPS.

There were some difficulties with the measurements of the BWS with such small intensity/emittance beams. BI will follow the issue.

The BFA9s, the BFA21s will be unavailable until 7 December for maintenance. D. Manglunki will check if the CT extraction will be needed before that date.

I. Floret mentioned that for the radiation survey on Tuesday afternoon, the MPS should be OFF in the PS and the PSB. Also the power converters of TT2 should be switched OFF.

During the access, R. Brown will check one ventilation station and the fire detection system of a second ventilation station.

D. Manglunki mentioned that Tuesday was the 50th anniversary of the PS.

East Area (S. GILARDONI for L. GATIGNONG):

The users are happy and CLOUD will continue the data taking for the next two weeks.

East Area Users:

No report.

AD (T. ERIKSSON):

The AD had a good week, with few stops.

On Tuesday, some thyristors of the injection kicker had to be changed because of frequent tripping.

On Thursday, the filament of the electron cooler cathode broke. The cathode had to be re-heated after fixing the problem. The power converter of the cooler had to be checked. The problem caused a stop of 14 hours, with a difficult restart.

On Saturday morning, there were large losses at high energy, typical of a wrong behaviour of the stochastic cooling. After the reboot of few DSCs the situation went back to normal. At the same time DIAMOND was showing a lot of errors although the equipments were in the right status.

The weekend was pretty calm. On Monday there was the last MD of the year.

The run will continue according to the two weeks extension, during which the FIRST LINE piquet service has been confirmed.

AD users:

No news.

NTOF :

No news.

SPS (D. MANGLUNKI):

The SPS had a reasonably good with beam availabilities of 89% for SFTPRO and 78% for CNGS.

On Tuesday, the beam was turned off at 01:00, to prepare for access to the CNGS zone where the magnet QID410100 had tripped several times by overheating. The access took place at 9:15 after RP survey. The problem was quickly fixed by increasing the cooling water flow and the beam was back at 10:30. For the following 7 hours all CNGS cycles were programmed to use MTE on the CNGS2 cycle.

The other beam stops in the week were essentially due to trips of RF transmitters TRX2 and TRX5, and problems in the injector complex.

From Friday afternoon onwards, the SPS reliably delivered a low-intensity ($\sim 3E9$) LHCPROBE beam to the LHC. Its emittances were artificially blown up by injection mis-steering (respectively ~ 3 microns in H, ~ 2 microns in V) for fear of quench in case of beam loss.

The North Area and CNGS beams stopped at 8:00 Monday morning.

CNGS reached $3.5E19$ protons on target on Saturday morning.

CNGS (E. GSCHWENDTNER):

The run of CNGS finished with an integrated intensity of $3.529 \cdot 10^{19}$ pot.

SPS North Area (S. GILARDONI for L. GATIGNON):

The users were happy. Nothing special to report.

SPS North Area Users:

No report.

LINAC3 (R. SCRIVENS):

The spare bellow is in production, and the installation should be concluded by this week. R. Scrivens wanted to thank all VSC colleagues for their help.

CTF3 (D. MANGLUNKI):

Last week's operation was mainly dedicated to streak camera measurements of the bunch structure of the combined beam from DL and CR.

The measurements show that the CR path length is correct and that the DL path length is close to the correct value and can be adjusted with the wiggler.

One day was devoted to TBL studies, where the Twiss parameters were measured, the optics re-matched and the beam transported down the line.

On Tuesday, the CCC supervised operation for PETS RF power production in the TBTS line was tried for the first time, after the relevant interlocks were made operational to stop the beam in case of excessive losses. Already the first night was successful and the beam was still present in the morning after several resets of klystron by the CCC crew. This was repeated in the following nights. D. Manglunki wanted to thank the CCC colleagues for the supervision.

During the weekend, the klystron MKS06 tripped and could not be reset any more. On Monday it was found that the tube had reached its end of life after 33.000 hours and had to be exchanged. CTF will remain off until Tuesday evening for this maintenance.

Monday and Tuesday, colleagues from LAPP (Annecy) were at CERN to investigate problems with the BPM system in TL2 and CLEX, where the digital electronics of many BPMs does not work properly any more.

TI (P. SOLLANDER):

GS will restart in the afternoon a certain number of TIM servers.

Concerning the AUG tests, they will be done exclusively on the administrative sector of the Meyrin site on Sunday 3 January. See [here](#) for a detailed list of the tests.

LHC interface with injectors (M. LAMONT):

M. Lamont presented the first results of the LHC commissioning. Finally collision could be done at all the IPs at injection energy. The beam could be accelerated up to 540 GeV/c.

3. Schedule / Supercycle / MD planning

The 2009 schedule (V3.7) is available at:

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

The detailed schedule of the activities until the Xmas stop are available [here](#) and the list of the activities has been included in the intervention agenda accessible at <https://espace.cern.ch/be-dep/FOM/Lists/Agenda/calendar.aspx>. The schedule and the intervention agenda will be kept up to date as things evolve.

The MD in the PS foreseen after the stop of the SPS, the 16 December, has not been confirmed yet since RP required 8 hours radiation cooling before allowing the access to the PS for the Xmas stop activities. This would make the MD impossible. R. Steerenberg said that the MD could be done during the LHC running. S. Gilardoni replied that, since the MD requires the use of the screens in BTP, the risk to interfere with the LHC running due to a failure of one of the screens is too high.

The planning of the MD will be re-discussed at the next FOM.

4. AOB

TI should be informed by the colleagues in case of expected higher power consumption, like the one following a possible restart of Linac3 for the ion source tests.

5. Next meeting

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

Preliminary Agenda:

- 1) Follow-up of the last meeting
- 2) Status of the machines
- 3) Schedule
- 4) Update on PS access system video (F.Havart)
- 5) AOB

Minutes edited by S. Gilardoni