

Minutes of the 21st FOM meeting held on 11.08.2009

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 20th FOM meeting were approved.

Open actions from last FOM (short term):

- a) Coherence of equipment AQN refreshment in the PS for supercycles longer than 30bp. K. Sigerud said that the implemented solution seems to work, but more checks are ongoing.
- b) LEIR transformer acquisition. D. Manglunki said that some progress has been made and that the transformer values are available on the VISTARS. A meeting with BI will be held to revise the situation.
- c) AD FTA9012 and extraction transformers not acquiring correctly. K. Mikluha said that currently the acquisition is frozen. U. Raich will follow this for BI, with the problem that the expert is on holiday.
- d) Tune measurements for ions in the PS. U. Raich said the BI is checking if it is possible to make the BBQ card available which has been installed specifically for ions during the last shutdown. Unfortunately the HW specialist will be back from holidays only next week. In the meanwhile, the orbit measurement expert could measure the ion trajectories with the new orbit system.

2. Status of the machines

Linac2 (G. BELLODI):

Linac2 had a good week. The availability was 100%. All interventions foreseen for the technical stop were completed, in particular the replacement of the Franck-James tetrode tube of the RFQ. It was decided not to change the H2 bottle since the gas pressure was good and it should last for another next 2-3 weeks.

PSB (G. RUMOLO):

The PSB had a good week. The instability observed for the ISOLDE beam on ring 3 was due to beam loading on the C16 cavity, which has been re-tuned.

The commissioning of the BWS continued. The discrepancy observed recently between the measurements in the rings and the SEMGRID seems to have disappeared, and the exchange of one BWS has been cancelled.

The restart after the technical stop was delayed due to problems with BI2.QNO50 and the BT.QNO30 quadrupoles. The PO piquet and the equipment specialist had to intervene to restart them. Later BI2.SMV was pulsing only at 1/3 of the programmed value. Again the PO piquet and the equipment specialist had to intervene. In the meanwhile, TOF and LHCINDIV were delivered using other rings.

On Tuesday, the ISOLDE beam had to be cut to inspect the TT70 tunnel for a water leak. Water pumping was necessary, but unfortunately had to be stopped during the night because the operation needs the survey of the specialist. This intervention also stopped the AD beam. The technicians responsible of the intervention have been informed that the work has a direct impact on the machine operations, and that they should speed it up as much as possible.

K. Hanke added that some work was done on the power converter of BT.QNO30 during the technical stop, which apparently was also the cause of the problem after the restart.

G. Vandoni commented about the status of the sieve. After its survey, it is clear that the rust on the equipment constitutes a danger for the vacuum. A vacuum leak happening in short time is not excluded. To cope with this emergency, a vacuum chamber will be produced to replace the sieve temporarily in case of a vacuum failure. The sieve is mainly needed during MDs but not for the production of operational beams. Discussions about the production of a spare sieve are ongoing. The replacement vacuum chamber will be ordered to the central workshop with high priority, i.e. it should be ready in a couple of weeks.

ISOLDE (E. PISELLI):

HRS: the target change was done on Thursday. Setting up with stable beam started yesterday on Monday. During the target change there were no problems with the robot.

GPS: the RFQ and central beam line vacuum were restarted by the vacuum group (H. Vestergard and S. Blanchard) on Tuesday. The vacuum had stopped the week before because one balloon was full and the system did not switch automatically to the second one. Therefore, the specialists forced the system to switch to the second balloon and the vacuum recovered. The separator and RFQ were tuned until late evening. After the proton scan the beam could be sent to the user in the night.

On Friday, beam was delivered to the users until the evening when a vacuum problem appeared: the RC0 stopped pumping and it went to a safe mode closing 2 valves. H. Vestergard was called and restarted the system. The users got beam back at 22.00.

Everything was working until 6:40 AM on Sunday, when a vacuum valve after the RFQ closed. The valve was closed from an interlock in the RFQ, although it showed "Pumping OK" in the HRS working set. The vacuum expert found a gauge not working properly in the RFQ section which triggered an interlock. The gauge interlock was bypassed, with no risk for the RFQ since it is protected by another gauge. After lunch, the users got beam back until 18.30 when all the front-end devices (Target/Line/SRCMAG/Anode1/...) stopped working showing "No IP Connection". The PLC controlling these devices was in a faulty status. The CO piquet intervened but, after checking network connection, he contacted PO First Line because this PLC belongs to the EPC group. The power piquet could not help much, but fortunately an EPC software engineer was able to connect to the PLC and to restart the main process. Beam could be delivered to the users again from 22.30.

REX had a good week.

G. Vandoni added that the gauge problem was due to the hardware that needs to be exchanged as soon as possible.

ISOLDE users (A. HERLERT):

The users want to thank all the people intervened to solve the different problems of the week. The users could do at least the calibration run.

It is however a bit frustrating that the runs are dominated by vacuum and control problems.

J. P. Burnet mentioned that a procedure to reboot the mentioned PLC will be communicated to the EPC piquet.

PS (R. Steerenberg for A. Grudiev):

The PS had a good week. An intermittent problem caused the CNGS beam not to be properly extracted. In some cases, one of the QKEs was not giving any acquisition. On Thursday, the MTG was not generated properly. A series of pulse repeaters needed to be changed by the CO piquet, in particular one which is used to trigger the internal dump and another to generate the injection timings. This weakness observed for the pulse repeaters might be also the cause of the bad extractions.

During the week, there was also a problem with the digital video signals of the access system. Sometimes, the image during the access was blocked. Due to this, it is not possible for the operator to check how many people were entering or exiting in a given zone. The specialists are following the problem.

East Area (L. GATIGNON):

The runs of DIRAC (T8) and MICE with ASACUSA (T10) were without any problems. On T11 CLOUD finished the first tests. T9 was off due to the water leak mentioned during the last week meeting. The magnet could be checked and repaired during the technical stop and the line is ready for the next users, which will arrive the 27th of August.

For T10, the overheating of the BHZ turned out to be due to a loose connection, fixed the 1st of August. The inspection of the magnet did not revealed any damage from the overheating.

East Area Users (H. BREUKER):

It was agreed that on T7 installation work will be done from Monday to Wednesday between 9:00 and 18:00. The other users are happy.

There will be a meeting for the nTOF survey of the experimental zone.

AD (T. ERIKSSON):

On Tuesday the machine had fully recovered from the MD. On Wednesday access was given to check the water in the TT70 line. On Thursday, a PLC needed to be rebooted since there was a bad switch in the experimental line. On Friday, there was low intensity at low energy. The machine had to be retuned, probably due to some residual conditions from the MD. The same problem appeared on Saturday morning during the ASACSA shift. On Saturday afternoon there was a problem with the access system of the experimental zone. On Sunday, a dipole of the

extraction line had to be fixed by the PO piquet. Also on Sunday, a thunderstorm caused a machine stop of about 2 hours. The recovery time was unusually short. On Monday, during the technical stop, a water leak was found and repaired. The vacuum sublimation was also done. The recovery after the technical stop was tedious, since the VISTAR and the transformers were not available. The beam was ready at about 10:30 PM but at 11:00 PM the beam stopper of the DE0 zone closed. TIM, however, did not show the change of the stopper status.

The AD is presently down due to the pumping of the water in TT70.

AD users (H. BREUKER):

ATRAP lost very little time during the week, as well as ASACUSA. No report from the ALPHA experiment was done during the user meeting.

NTOF (H. BREUKER):

The intensity is increasing and approaching the theoretical curve.

SPS (D. MANGLUNKI):

The SPS had a very good week, with more than 93% availability. The CNGS intensity is above the predicted line. On Tuesday, since the acquisition of the intensity was not available, the machine had to be stopped for about 1 hour. On Friday, the MPS tripped twice and the expert had to intervene. During the night, the triggering of the interlock of the LHC collimator stopped the machine and it was not possible to clear the fault. Time was lost because that there is no piquet for the BT devices to be contacted in case like this. Finally an expert could be found who could solve the problem remotely. The thunderstorm caused few trips of the MPS.

Beams (CNGS+SFTPRO) were stopped on Sunday at 24:00 to allow for the cool-down of the PS before the technical stop. At the restart, the ion cycle has been set up together with the CNGS and the SFTPRO.

For the MD block, the LHC25 ns beam and the LHCINDIV were taken from the PS.

V. Chohan commented about the fact that the stop of the CT extracted beams from the PS has been postponed from 20:00 to 24:00 on Sunday, reducing the cooling of the PS by 4 hours and not respecting the decision taken during the last FOM. During the access of the technical stop, the PS was found quite hot. K. Hanke replied that the decision to postpone the beam stop was taken later in the week in agreement with RP and the colleagues involved in the different interventions. In particular, after the RP prediction of the collective doses, the interventions on the PS septa were postponed from Monday morning to the afternoon. J. Borburgh added that the dose taken during the intervention on the PS septa was finally less than what predicted by RP. K. Hanke stressed that the cooling down time period imposed by RP is always precisely respected.

CNGS (L. GATIGNON):

The run was very smooth during the last week. The CNGS will restart on Thursday.

SPS North Area (L. GATIGNON):

The NA had a smooth run, apart from an unexplained intensity fluctuation in the H2 beam on Thursday. The fluctuation disappeared by itself after some tuning.

North Area users (H. Breuker):

On H2, the NA61 is ongoing with a 30 GeV proton beam.

The CALICE run finished on H4 on Friday, replaced by a COMPASS test beam. On H6, next week there will be an experiment organised for the summer students. On H8, the UA9 run finished one day early to recover the day lost for TOTEM. Currently there are tests for the ATLAS roman pots.

LINAC3 (G. BELLODI):

The tuning of the source led to a minor increase of the intensity, still below of the expected one. On Wednesday afternoon, the intervention on the RFQ could be finished. On Thursday morning, the knobs left open from the previous night were found frozen. K. Hanke asked if CO could find a solution for this. A. Bland replied that the console is pretty old and probably needs to be upgraded. A. Bland will have a look together with D. Kuchler.

The oven refill was done on Monday, and stable beam should be available already by Tuesday afternoon.

K. Hanke asked if there is any solution for the reduced intensity delivered by the source. G. Bellodi replied that most probably is a matter of optimisation and conditioning of the source.

LEIR (D. MANGLUNKI):

Frequent trips of the e-cooler power converter were solved by the intervention of the EPC expert. The acquisition of the transformer is improving. The intensities are available on the VISTAR but not yet via the samplers. LEIR has been restarted on Tuesday after the technical stop, with about 14 μ A delivered by the Linac.

PS WITH IONS (D. MANGLUNKI):

The energy matching between the PS and LEIR was done on Tuesday to center the beam on both machines. The EARLY beam is almost ready. Optics measurements done in TT2 showed some doubts about the horizontal dispersion. A polarity check was done during the technical stop with S. Gilardoni and A. Newborough for the TT2 quadrupoles. The polarity of the quadrupoles was found correct.

The lifetime measurements have been concluded with the current lifetime estimated to be about 9s, thanks to the automatic sublimation. Beam could not be produced immediately following the technical stop because the source had just been refilled. Beam is expected in the SPS during the dedicated MD on Thursday.

During the next week, two ion beams should be present in the super-cycle, one for the EARLY and one for the preparation of the NOMINAL beam.

CTF3 (P. SKOWRONSKI):

On Monday, the phases of the klystrons were jumping by about 3-4 degrees. Unfortunately this jitter was appearing and disappearing by itself. On Tuesday, operation was moved to the delay loop, but with a problem on a septum. On Thursday, a bad flow meter caused a problem to a quadrupole of the combiner ring. After this, for some time no timing telegram was available. The beam was sent to CLEX on Friday.

CTF3 was not affected by the technical stop, during which 6 A were delivered to the re-combiner ring.

TI (J. NIELSEN):

It was a quiet week, apart from the problem with the access system.

After the technical stop it was difficult to restart the TOF water station.

The problem with the HV cable was found near SM18. The digging will start on Tuesday.

3. Schedule / Supercycle / MD planning

A new version of the schedule 2009 schedule (V3.5) is available at:

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

The supercycle composition is available at [this web page](#).

There will be no TI2-TI8 tests previously foreseen for next week.

The MDs are ongoing until Wednesday.

The first ion beam will be delivered to the SPS on Thursday.

4. AOB

J. NIELSEN mentioned that a phone call has been received from the authorities about the fact that dead fishes were found in the Allondon.

5. Next meeting

The next meeting will be held on Tuesday, August 18th at 10:00 in 874-1-011.

Preliminary Agenda:

1. Follow-up of the last meeting
2. Status of the machines
3. Schedule
4. Recent incidents with the ISOLDE robots (R.Catherall)
5. AOB

Minutes edited by S. Gilardoni