

Minutes of the 4th FOM meeting held on 14.04.2009

Agenda:

- 1) Follow-up of the last meeting (B. Mikulec)
- 2) Status of the machines (Supervisors)
- 3) Schedule (B. Mikulec)
- 4) AOB
- 5) Special topics: MD schedule (E. Metral)

1. Follow-up of the last meeting

The follow up from last FOM concerned the maximum beam intensity that can be injected in the PS due to the radiation level restriction at the Route Goward.

R. Steerenberg said that the radiation level at the Route Goward is limited to 2.5 $\mu\text{Sv/h}$, due to the fact that the contractors working on the civil construction for the new MPS (POPS) are not equipped with dosimeters. The maximum intensity that can be injected under these conditions is depending on the losses and the injection setting up, but typically it is not possible to exceed significantly 200×10^{10} proton per pulse. This limitation is slowing down the setting up. The contractors without dosimeter are supposed to finish their work by Friday this week.

2. Status of the machines

Linac2 (F. GERIGK): The LINAC suffered on Wednesday evening of a problem with the water cooling of the air conditioning system (leak in a pipe) of the LINAC tunnel and the technical gallery. The LINAC kept running with some increased air-cooling, since the temperature was still acceptable. On Thursday, a timing fault appeared on the RF tuning. This seems to be related to the RF cooling water problem. As temporary solution it was decided to switch to town water. This slightly improved the temperature. In parallel, the cooling water regulation for the RF tanks was repaired, as since some months the temperature swing was too large. This allows easier tuning of the RF tanks. The broken pipe of the chilled water supply proved to be too rusty to be soldered and therefore it might be necessary to exchange a full part of the pipe. S. Delaval commented about the cooling problem. Work is ongoing and, in the worst case, a part of the circuit will be cut and exchanged. Everything should be solved by Wednesday evening.

The LINAC access special procedure is available at <https://edms.cern.ch/document/984989>.

PSB (G. RUMOLO): At the beginning of the week, one of the ring4 injection line magnets tripped many times, but has been fixed on Wednesday. The archives seem to be suffering from some problems: the reload worked only partially in one case and the 'save in reference' functions are not always working. Also the PPM copy is not working correctly. CO is following this up. The new fast wire scanner application is starting to work, but it needs quite some follow-up work since the emittance reconstructed is not correct and the measurement settings are not yet properly adjusted.

The LHC25 beam has been prepared within specifications. The AD and CNGS beam are in preparation.

The beams prepared or in preparation in order of priority are: SFTPRO, LHC25, MD1 (copy of SFTPRO for MTE studies), EAST beams and CNGS (middle of next week), LHCINDIV for non-linear chromaticity measurements in PS (rings 2 and 3, for ~20th of April), LHCPROBE, LHCPILOT, LHCINDIV, AD, NTOF.

ISOLDE (D. VOULOT): The setting-up of the two separators is ongoing. For HRS, the RFQ cooler is working since Thursday. Stable beam could be delivered to the Collaps experiment. For GPS, the target with the SEMGRIDS has been installed for setting up of the proton line, which started during the FOM meeting. Once finished, the SEMGRID target will be mounted on HRS for the same purpose.

For REX, the problem with the ventilation of the LINAC RF is not solved yet. Since the run should start on Monday, this problem is becoming critical. S. Delaval commented that nearly all the parts of the system that could be changed have been changed. The only remaining original parts are the compressor and the regulation electronics that will be substituted either on Tuesday or on Wednesday. Already three companies intervened without solving the problem or identifying the source of the troubles. The system has been modified last year and priority should be given to a full renovation to a water-cooled system for the RF amplifiers next year. B. Mikulec underlined that due to this problem, there is a risk for the physics start-up of REX next Monday.

ISOLDE users (A. HERLERT, mail): “Despite the delays for the setup of the ISCOOL buncher, the users obtained valuable data in a short off-line run. The users thank the ISOLDE technical group and everybody else involved in the HRS off-line run for all the support and effort before and during the run.”

PS (R. STEERENBERG): PS setting-up is ongoing, with the maximum intensity limited by the Road Goward radiation levels as mentioned in the Follow-ups.

The orbit measurements campaign for the orbit correction by magnet displacements has been concluded and a correction has been computed. After verification, the displacements are going to be transmitted to the geometers for the intervention on Thursday. In the meanwhile, the following beams are in preparation: SFTPRO (fast extracted), TSTLHC25, EASTA with the parasitic nTOF beam, EASTB for DIRAC.

Different problems related to controls reappeared. The number of the server subscriptions seems to be limited to 25. This problem might be so visible now due to the fact that all the equipments are using FESA and not anymore the GM to FESA interface. A. Bland will follow this up. During the second part of the week, OASIS suffered of many problems. The piquet CO solved most of them apart the following two: a) in some cases a trace shown by the scope belongs for half of the signal to one user and the other half to another user; b) the same signal visualised on two different scopes at the same time is different. CO will investigate. On Monday, one of the TT2 quadrupole interlock cables was repaired. On Tuesday, measurements with the BBQ showed a wrong measured tune when the CODD MRP was requested. The problem was traced back by BI to a wrong acquisition of the revolution frequency. Tests with the fast wire scanners started. Profiles were measured but the emittance is still not correct, since the PSB optics is taken instead of the PS one and the momentum is not acquired correctly. Changing one small power converter of the oil circuit has solved a problem with the KFA71. The KFA71 module 10 however is still tripping and its thyatron tube might be changed on Thursday. A problem with the interlock of one of the vertical low energy correctors is still under investigation. The offset observed on the transformers on Saturday and Sunday of $200e10$ proton has been fixed. The work on the B-field regulation is ongoing. S. Gilardoni asked if the alarms, which should be generated by the temperature sensors in the central building, have been tested. P. Sollander replied that the sensors have been tested, but not yet the alarms. This should be done as soon as possible.

R. Steerenberg wanted to thank everyone for the excellent support during the start-up.

East Area (L. GATIGNON, mail): “Les aimants Q120 sont en place et le toit de la zone primaire est en train d’être fermé. Les tests électriques de tous les aimants commenceront mercredi. Un MTV en T7 (le MTV03) a été réparé. L’autre (le MTV01) est prévue pour la semaine. Pas de retard prévu pour le démarrage.

Premier schedule meeting (Zone Est seulement) mercredi 11 heures.”

East Area Users (H. BREUKER): The first user meeting will take place on Wednesday morning.

AD (T. ERIKSSON): Work is ongoing in the target area for the magnet 6024 and 6025. The strip line tests were successful. The floor boards are going to be reinstalled during the FOM to be able to roll out the quadrupole 6020 for replacement with its spare. The maintenance of the water-cooling is finishing. On the 20th the AD target area and the ring will be closed and the HW tests will start.

AD users (H. BREUKER): No users yet.

SPS (K. CORNELIS): The commissioning is coming to the end. All the main power converters (main quadrupoles and dipoles) are pulsing correctly and synchronously. The first electrical problem appeared during the week: the compressed air of one of the main compensators did not work. All the tests ongoing are compatible with a start-up with beam for next Thursday.

CNGS: No news. Work is ongoing on the target.

SPS North Area (L. GATIGNON, mail): “Pour la zone Nord rien de spécial [...]. Il reste un petit accès en TCC2 pour l’eau du TAX T6 -> fin avril”.

North area users (H. BREUKER): No news.

LINAC3: LINAC3 will start the shutdown work by the end of April.

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

CTF3 (D. MANGLUNKI): CALIFES has finished the run. The water interlock of the MKS30 has been repaired last Thursday. The specialists of the MKS03 are back at CERN and the possible intervention on the tank will be discussed this week. During the long weekend, the CTF3 run was dedicated to the 30 GHz PETS. Everything was fine, apart a 12 h stop of OASIS on Sunday night. D. Manglunki wanted to thank the PS team for the excellent machine supervision during the long weekend. The CLEX zone is going to be consigned for installation works.

TI (P. SOLLANDER): Nothing special to add.

3. Schedule / Supercycle / MD planning

The 2009 schedule (V3.3) is available at:

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

The INCA control tests have been postponed to the 20-21 April. On Thursday the complex will stop to allow the PS orbit correction by magnet re-alignment. The access will take all day. The “consignation” of the power converters and the “autorisation de travail” will be done on Thursday morning. During the access, no beam can be delivered to the PSB or ISOLDE. ISOLDE physics will start next week.

4. AOB

H. Vincke proposed a presentation at the next FOM by M. Widorski about the new ARCON-RAMSES bridge.

5. Special topics

E. Metral presented the schedule for the MDs for the current run. The slides can be found [here](#). The detailed schedule of the MDs in the complex is available at the [MD web page](#).

Three types of MD times are available: in parallel with physics, dedicated and 3-day long injector MDs. During the MD in parallel with physics, the beam will be delivered to the experiments. During the dedicated MD, on Wednesday of weeks 27, 31, 35, 39 and 43, beam could be delivered to the experiment depending on the subject of the MD, but this is rather unlikely. For the 3-day long injector MDs, the first one in week 25 will be prolonged by 1 day to allow the setting up of the beam for the UA9 (Crystal collimation) experiment. For this MD, the nominal LHC25 beam should be ready for the electron cloud studies in the SPS. For the MTE start-up, during the weeks 22 and 23 there will be an MTE or LHCFast cycle in the SPS supercycle, but no other MDs will be possible in order to keep a reasonable duty cycle. Parallel MDs will start in the SPS in week 24.

Work on the LHC75 and LHC50 will be done in weeks 21-23 as parallel MD with the goal of producing the nominal beams in the PS with a single batch PSB injection.

During the first dedicated MD in the PS of week 27, no beam will be delivered to the users and there will be eventually a possibility for UA9 to finalise the installation in the SPS.

M. Ferro-Luzzi asked why the single bunch beams used for the LHC are not mentioned in the schedule. E. Metral replied that those beams are already considered operational and they are included in the normal setting-up time like the other operational beams.

6. Next meeting

The next meeting will be held on Tuesday, April 21st at 10:00 in 874-1-011.

Preliminary Agenda:

- Follow-up of the last meeting
- Status of the machines
- Schedule
- ARCON-RAMSES bridge (M. Widorski)

Minutes edited by S. Gilardoni