Minutes of the 26th FOM meeting held on 26.07.2011

Agenda:

1) Follow-up of the last meeting (B. Mikulec)
2) Status of the machines
3) Schedule (B. Mikulec)
4) AOB
5) Next agenda

1 Follow-up of the last meeting

The minutes of the 24th FOM meeting were approved.

Follow-up from the last FOM:

Pending actions:

Problems with POPS (3 actions)

Studies will be resumed when POPS is back. Actions not closed.

2 Status of the machines

LINAC2 (A. Lombardi for D. Küchler):

It was in general a good week.

Tuesday morning there was a problem with the transformer readings. This was traced down to a cable which was pulled out of the DLINTRAF.

In the afternoon the PSB operator noted some strange watchdog behavior. An OP issue request was sent.

Friday morning some short tests on the missing pulses were done: if the gas flow for the source is too low the number of missing pulses is going up. Despite of this, the reason for the missing pulses is not yet known.

On Friday afternoon Tank3 tripped, but came back after reset.

LINAC3 (A. Lombardi for D. Küchler):

The stripper in the linac was set up and measured.

On Thursday there was an incident with the vacuum in the ITFS line. The local control of this line is quite hidden in a corner and it is not visible in PVSS. TE/VSC is informed about this problem.

The controls for the ramping cavity PPM mode are ready and tested without beam. The test with beam will be done this Wednesday afternoon.

Today the oven will be refilled.

As a manual valve has been opened although the vacuum in one adjacent sector was bad, G. Vandoni reminded everybody that vacuum equipment that is not in the control system should not be touched without the supervision of the vacuum group.

PSB (G. Rumolo):

On Tuesday the extraction septum BE.SMH15L1 was down and could not be reset. The Piquet PO intervened and performed a few tests (total downtime ~1h), then the situation was back to normal.

On Wednesday that same septum had to be fixed as bad injections in the PS for CNGS and TOF were observed. The acquisition reading was 40A lower.

Besides, several ISOLDE watchdog resets occurred, probably due to Ring1 being debunched at extraction. The Piquet low level RF was called and put local observation to check why the phase loop goes off before extraction on some shots. This issue seems to affect all rings except Ring 3 and will be followed up by the PSB supervisor over the next days.

On Friday the magnet team accessed the tunnel to repair the water leaks around QDE16 and QFO21 during the two-hour LEIR intervention. After the access, the MPS could not be switched on, as it was on external fault (grounded). The piquet First line intervened, and found that the TRIM QFO and QDE were blocking the MPS in external fault.

On Saturday some more ISOLDE Watchdog resets happened over night.

On Sunday, several trips of the Ring 4 extraction kicker BE4.KFA14L1 occurred. Finally the kicker specialist had to intervene and exchange a thyratron. Beam was back in Ring 4 at 5pm, after almost 7 hours of downtime. It is important to note that this issue only affected ring 4.

On Monday, investigations were ongoing on high intensity ISOLDE beams, but the watchdog problem is intermittent and did not occur during observation time. A correlation is suspected between the trigger of the ISOLDE watchdog and a 0.1% fluctuation on the septum current. Various elements are now under surveillance.

ISOLDE (E. Piselli):

The beam was sent to users without major problems since Tuesday.

A radiation alarm was triggered on Wednesday by a contaminated Faraday cup used to measure the beam intensity (450 microSv on contact - R. Catherall mentioned after the meeting that this Faraday cup is confined in a vacuum chamber). It then went back to normal.

Two other radiation alarms occurred again after using other Faraday cups. This is followed up by RP.

M. Kowalska said that the Faraday cup was used for intense radioactive beam this time and that they are normally not used with this type of beam. S. Hutchins and M. Lamont said that this is a very high dose rate and that the use of these Faraday cups should be restricted to low intensity beams. This issue will be discussed at the ISOLDE technical meeting and a report will be given next week.

After the meeting, R. Catherall informed that this incident is being followed up and that the installation of additional BLMs in critical sections is under investigation.

ISOLDE users (M. Kowalska):

The first run was quite successful even though the expected isotope was not seen. The second run experienced initial problems with tuning, but was in the end very successful.

PS (Y. Papaphilippou):

It was a quiet week.

The beam was cut twice on request of LEIR on Tuesday and Friday morning for diagnosing and intervening on a faulty magnet of the ETP line (LEIR to PS). During the 2nd intervention the piquet CO changed a card of the ejection elements processor (dscpsej1), which was suspected to be the origin of certain bad ejections observed last week. Since then it was ok.

On Thursday, the Septum 57 tripped twice with a resettable temperature interlock fault. The piquets CO and PO fixed a faulty cable the next day during the morning stop. Yesterday the septum tripped again with a temperature fault and the interlock threshold was increased from 37 to 39 deg., although it is unclear why the temperature of the septum increased to 38 deg. M. Hourican suspects a problem with the cooling circuit, which will be checked at the next occasion.

One module (out of 12) of KFA71 has been down due to a faulty cable since Sunday. M. Hourican mentioned that there is only one module in reserve left, and that the faulty cable needs intervention in the PS tunnel (2h).

A. Bland said that there will be an intervention tomorrow by IT on the PS access network (problems with the cameras). It will be inconvenient for access for about an hour. People have already been informed, but D. Chapuis will precise the exact time. A. Bland will be in the CCC. This has to be coordinated with the access foreseen for EAST and NTOF (no camera).

East Area (L. Gatignon):

EAST area has been running smoothly. The North target was switched back to the standard target.

CLOUD terminates today. Steering can be done in the usual way again with the telescope.

East Area Users (H. Breuker)

IRRAD comes back this week.

CLOUD stops and has been running smoothly.

Now the spills have to be redistributed.

TOF (H. Breuker):

TOF is running with a gold target.

AD (P. Belochitskii):

There has been no beam for physics this week following a vacuum leak found on an HV connector of an ion pump.

G. Vandoni presented slides, in which she detailed the actions taken since the vacuum leak was found. In particular she showed that since the pressure decrease during the first 20h was low and the extrapolated pressure decrease was not quick enough (even with sublimation), a 40h bake-out of the sector with a special procedure was chosen. Inspection showed that other connectors are also corroded and should be taken care of. A leak detection was performed this morning and it is now ok from the vacuum point of view. M. Hourican mentioned that ABT colleagues are also working on the kickers in AD and they should be ready by 5pm. G. Vandoni said that there is a need to change these corroded connectors, but a technical stop would be too short to recover the vacuum conditions. S. Hutchins mentioned this replacement should be included in the winter shutdown list of activities and G. Vandoni said that humidity is thought to be the reason for the corrosion.

AD Users (H. Breuker):

Despite the absence of beam, ALPHA and ASACUSA made good use of the time last week.

SPS (D. Manglunki):

It has been an eventful week for the SPS.

Since the beginning of the double batch operation, there had been differences between the 12- and 36-bunch LHC beams both in transverse and longitudinal planes. On Monday evening the PS set the settings of the 12- and 36-bunch beams in conformity and the 36-bunch beam was retuned in the SPS, so that both beams were exactly the same. Since then, no retuning is needed in the SPS when switching between 12 and 36 bunches. D. Manglunki thanked the PS for this nice improvement.

On Tuesday night, H8 was down for 4.5h due to magnets tripping (BEND02 and QUAD09 were fixed by the Piquet First line).

On Wednesday a similar problem occurred with magnet BEND01 in H2, which tripped often due to overheating. It is a hot zone, and a short access was granted after 2h of cooldown, but it revealed no fault. The power supply was restarted and it was decided to live with that for the night. The following day, it was found it was a timing to start pulsing H2 during LHC cycles that had not been removed after an MD.

On Thursday a first issue with the dump kicker was fixed by the piquet. More resettable trips of the MKD occurred and it was decided to change the switch of PFN3. Downtime was finally 4.5h, as reconditioning took more time than expected. Besides, a water leak on quadrupole QF50610 required an access.

On Saturday, H2 and COMPASS requested more intensity, and this was granted at the expense of lower intensity for CNGS to reduce overall losses in the PS (which is close to the radiation alarm limit).

On Sunday, the missing PSB ring caused a lot of beam dumps (BPM extraction authorization could not be granted) so that CNGS beam had to be stopped. During the night DREAM (H8) asked for more intensity and it was taken from COMPASS.

Several problems occurred with the access system. The most serious one was thought to be when H8 users were about to enter a zone while the TAX02 did not move in. They called the CCC, but in fact they were entering a zone for which the TAX02 was not supposed to move in, so that there was no fault of the access system in this case.

North Area (L. Gatignon)

The SPS report already covered the main aspects.

The repair of the North Area rectifier control was delicate, but went very well.

North Area users (H. Breuker)

On H6 there are the usual transitions between ATLAS users.
On H8 DREAM running is not trivial.
COMPASS is doing fine.

CNGS ()

CNGS has to stop at midnight for an access. D. Manglunki said that the "protons on target" are 10% above the line (or equally 3 weeks in advance).

CTF3 ():

No report.

TI (J. Nielsen):

There were perturbations on Tuesday, Wednesday (water infiltration stopped the UPS), Thursday in point 4, and yesterday on 400 kV (which stopped the LHC). See the TI report.

B. Mikulec asked whether thunderstorms are always to blame in this case. J. Nielsen answered that thunderstorms in various areas of Switzerland can cause these perturbations or manipulations by the Swiss or French networks.

LHC interface with injectors (M. Lamont):

LHC is running with 1380 bunches (not more than 1.2e11p/b as vacuum pressure increases otherwise). Transverse emittances of 2 µm are extracted from SPS leading to 2.4 µm at collision. Peak luminosity of 1.7e33 $s^{-1}.cm^{-2}$ was obtained.

A major conference for experiments is taking place in Grenoble and the newest analysis results are presented. The main message is "more data".

25 ns scrubbing at 450 GeV will be discussed in the LMC.

S. Hancock asked whether the satellites that he prepared following M. Lamont's question at last FOM should be undone. S. Hancock said that the scheme is ready for an MD. M. Lamont said that an MD in SPS should be done first before sending beam with satellites to LHC. S. Hancock said that satellites with 1 to 2% of the intensity was achieved and that below 1% is not visible with the diagnostics. M. Lamont said that around 1% would be desirable, but would therefore need LHC beam time to test. This will be discussed at the LMC.

LEIR (S. Pasinelli):

The cold checkout is going fine.

Interlocks on 6 magnets were not easy to reset (after some time power, magnets and interlock found together a ground fault on ETP QFN20). On Friday, access was granted in this hot zone in the machine and the interlock was bypassed. There is now one interlock instead of the series of interlocks. The system will be put back in place at the next technical stop.

A stop of 1h would be needed to validate the control system of the debunching cavity. It is planned tomorrow at 14h30. M.E. Angoletta said that they would need 2h if LINAC3 is available.

D. Manglunki said that the "consigne" is to close the valves each time there is an access and asked whether the vacuum group should be called every time. G. Vandoni said that these valves are in the control system and that this operation should be allowed. However she will check with P. Chiggiato if it is still required at each access to close the valves and separate therefore the sectors.

3 Return of POPS (J.P. Burnet) - slides

The POPS team is ready to restart POPS and put it back into operation.

It would need 2h to switch, 4h-6h with beam to validate the performance and potentially 2h to switch back to the MPS if problems are found.

The preferred date to switch back to POPS would be next week as all experts would be available.

B. Mikulec said that the problem is that R. Steerenberg and G. Métral are not here now to take the decision for PS operation. She also argued that the experiments lost quite a lot of beam time already (AD, North Area…). S. Gilardoni would prefer to wait for the end of measurements with the MPS for LIU-SPS and MTE studies as they see interesting things.

On the other hand, S. Gilardoni said that the experience of the difficult restart after the technical stop should be taken into account when adding the difficulty of the switch back to POPS. G. Rumolo added that it is very likely that one of the very few slots available for dedicated MDs would suffer if the switch back to POPS occurred during the technical stop and that he was against doing it during the technical stop. M. Lamont added that there was not so much stable beams lately and that it could be difficult to fit 8h in, but that it should anyway be considered.

J.P. Burnet said that this switch can be cancelled at any time (with ~2h delay), and if planned should start between 8am and 4pm.

A provisional date could be Thursday August 4th after the floating MD, but it should be agreed by all parties.

The decision will be taken at the FOM next week after the LMC tomorrow.

4 Schedule / Supercycle / MD planning

The 2011 schedule (V3.1) is available at:
https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/injector_schedule.pdf

All planned interventions for the injector complex are available via the on-line agenda:

https://espace.cern.ch/be-dep/FOM/Lists/Agenda/calendar.aspx

5 AOB

6 Next meeting

The next meeting will be held on Tuesday, 2nd of August, at 10:00 in 874-1-011.

Preliminary Agenda:

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Minutes edited by B. Salvant
with the help of the machine reports sent by supervisors