

ELENA:
Commissioning Committee meeting Minutes

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Presence

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VEGUA	Bianca	
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PATROIX	Miriam	EN / DH0
M.E. ANGOLETTA		BE / RF
CENEDE	Jean	BE / BI
Jorgensen	Lars	BE / BI
Pasinelli	Sergio	BE / OP
FRASSIER	Alex	BE / BI
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INDEX

1	INTRODUCTION	3
2	RECENT BEAM PROGRESS	3
3	GBAR PROGRESS	4
4	RF PROGRESS, ISSUES AND PRIORITIES.....	4
5	E-COOLER & SEM NEWS	4
6	BEAM PROFILE MEASUREMENT	5
7	AOB.....	5

1 INTRODUCTION

The minutes of the previous meeting were approved.

2 RECENT BEAM PROGRESS

The 3rd of august circulating Pbars were established in the machine. It was possible to see during a few ms the beam smearing out in the machine.

With bunch rotation at ejection in AD, the bunch length is about 120 ns. With no bunch rotation, bunch length is 200ns & smaller dp/p. The corresponding change in filamentation rate could clearly be observed in ELENA.

With bunched beams, beam survival was observed till the end of the 5.3 MeV plateau (~ 1.2 seconds). As no AD to ELENA synchronization was operational, injection at random phase made it possible to obtain occasional bunch-to-bucket transfer.

Next foreseen steps are :

Consolidation of the injection line and injection into the ring:

- Improve reproducibility of injection – efficiency should be increased (H-)
- Further studies to understand and empirically improve line and injection

To send the First 85 keV beam (H- and/or protons) toward GBAR:

- It requires profile monitors – 2 out of 3 installed. No readout electronics yet.
- Setting up of RF synchro for Gbar H- ejection

Pbar transfer from AD

- Set-up RF synchro etc.

Acceleration(deceleration)

- Setting up of LL RF
- LPU signal quality vs. phase/radial loops

Pbar Cycle

- Requires electron cooler to be available and installed

3 GBAR PROGRESS

F. Butin is presenting the GBAR progress.

LNE50 is ready but the kicker has been locked out for safety reason. The beam stopper has been fully commissioned.

Gbar decelerator has been installed, the electrical inspection has been performed and the functional tests are foreseen for the week 35 & 36.

SEMs are installed but as far as there is no readout electronic they are not usable.

Beam permit EDMS document exists. The DSO access tests have been performed.

One wave guide of the GBAR positron LINAC is still missing. The beam permit is not ready because the risk analysis is still missing (P. Ninin).

The bunker roof shall be painted on week 34.

The first of September, the LINAC safety file will be presented and reviewed at the IEFC.

4 RF PROGRESS, ISSUES AND PRIORITIES

The R.F. next priority is to have the extraction synchro towards GBAR. M.E. Angoletta notes that this is to be considered as a new development in the LL RF and thus will take a certain amount of time.

With H- beam, it was impossible to close the phase loop. The H- lifetime is very poor and the phase is changing from cycle to cycle.

M.E. Angoletta reports that trying to develop this new functionality using H- is maybe not a good idea and it can lead to a loss of time.

M.E. says that it would be nice to have 3 prepared cycles. Tommy says that they are already ready (PBMD1 to PBMD3).

Further remarks by M.E. Angoletta:

The availability of Steve Hancock is very important.

The acceleration / deceleration can be done based on the Btrain only if it is highly reliable.

There are many questions to be answered that could be incompatible with starting new development.

Jorge is assembling the longitudinal pickups to be installed in the transfer lines.

M.E. reminds of the importance of receiving the combined signal from the high & low frequency longitudinal ring pickups.

5 E-COOLER & SEM NEWS

L.V. Joergensen says that 2 weeks ago Tesla finished the magnetic field measurements.

The horizontal magnetic field shows some surprising polarity inversions just outside the interaction region. Aberrations in these transverse measurements could be explained by contact between the external correctors and the chamber.

The e-cooler magnet system has arrived last Monday at CERN.

The next step are:

- Magnets to be transported to building 180 for certification.
- Certification will take 2-3 weeks.
- Then assembly in AD Hall and a few tests

Toroid chamber 1 has had the old NEG coating removed and is now back at the NEG coating lab to be re-coated.

Toroid chamber 2 has been leak-tested on its own and will now be fitted with electrodes and re-tested.

Concerning the SEM grids, 11 tanks are ready but not yet all leak tested. 5 mechanisms are ready and at cleaning service. 5 partial grid assemblies are ready.

2 – maybe 3 – systems ready for installation within a few weeks.

M.E Angoletta suggests that we may consider to postpone the installation of the e-cooler to 2018 if it's being delayed beyond mid-October since we would be getting close to the yearly shutdown once the installation is completed.

6 BEAM PROFILE MEASUREMENT

P. Grandemange shows the first detection of Pb ions by the profile measurement system.

When using the scrapers to kill the beam, it is possible to see signals on both scintillators and MCPs.

It is possible to see some tiny vacuum fluctuations when moving the blades. These fluctuations resorb in few seconds.

Conclusion

- Both acquisition systems respond well with poor tuning
- No vacuum issue due to MCPs
- Timing issue to synchronize scraper movement with the running cycle
- Still some issues with software acquisition
- Fine tuning needed to eliminate saturation of scintillators/MCPs

7 AOB

NONE.