April 24, 1998
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LEP SPECTROMETER PROJECT

Summary Notes of the 14^{th} meeting held on April 16, 1998

Present: W. Coosemans, D. Cornuet, B. Dehning, G. De Rijk, N. Hilleret, W. Kalbreier, J. Montes, G. Mugnai, Y. Muttoni, M. Placidi, J. Poole, M. Sassowsky, E. Torrence, L. Vos

Excused: R. Genand, S. Myers

10:30 - Comments to Summary Notes of previous meeting - None.

10:35 - Status of installation - Y. Muttoni gave the status of the installation.
The WPS (Wire Positioning System) sensors are at CERN ready for installation next week 17 as the supports will be made available.
The thermal protections for the PUs should be rady for Wednesday 22.04.
Some additional work has to be foreseen during the cold checkout in weeks 18 and/or 19.
The bake-out was terminated at the time of the meeting (N. Hilleret), well ahead of schedule, and the alignment will be checked on Monday 20.04(M. Hublin).
Vibration tests are scheduled for Tuesday 21.04 afternoon (W. Coosemans).

B. Dehning reported on the instrumentation. Everything looks on schedule; some cable connections foreseen for week 16 will be done on week 17. Same for the NMRs in the LEP octants and in the Injection MBIs.

10:50 - Planning modifications - J. Montes showed the last version of the planning where test on the recabled sextupoles are foreseen for Tuesday 21.04 at 5 PM with LEP to be closed for some hours as it was agreed in the last Spectrometer meeting (G. De Rijk).
J. Poole announced that in the last LET meeting it has been decided to **keep the machine under controlled access after the tests** as the PC group needs to recalibrate the sextupoles after changes in some of the SF DCCTs.
This last-minute change to the planning affects the activities scheduled for the last days before the start up. **A better communication towards BI is needed**. [1]

11:00 - Status of DAQ - E. Torrence gave a summary of his work on data acquisition and analysis (see copies of slides).
He showed a spectrometer channel list and the associated hardware (three Keithley DVMs, one Metrolab NMR magnetometer etc.). The instrumentation is the same as for the final version next year except for 12 more PU channels and some additional temperature probes.
He then described the phylosophy of the data logging and the connections to the LEP DB.
The spectrometer DAQ system is expected to be usable in one month with the first stable beams circulating.

[1] After the meeting M. Placidi made sure with A. Spinks that machine sections in IP1 and IP3 where there are no sextupoles can be excluded from the areas under controlled access. **Activities related to the installation of the NMRs in the other sectors of the machine are anyway lengthened by the procedures connected with the unplanned controlled access**.

11:20 - Magnetic mapping issues - W. Kalbreier reported on the meeting held on April 9.
The most interesting issue comes from M. Sassowsky's 2D modeling of the MBI magnet based on the construction drawings of the existing magnets. He found out that, contrary to all expectations, the MBI polefaces have a slope (gap closes towards the open side of the *C*) providing a field index of -10^{-5}/mm at about 105 GeV equivalent energy, which is clearly unacceptable for our purposes. Model results are confirmed by measurements taken in the past (M. Sassowsky contacted M. Giesch, now retired, for several other cross-checks).
3D modeling from M. Sassowsky will be available in a couple of weeks to confirm the above considerations on the integrated field strength. It seems in any case clear that the aim is to get an MBI dipole with flat and parallel pole faces In the meantime the magnet group will enquire on the time delay and financial involvments of either modifying the dies or remachining the lamination. **More at next meeting**.

M. Sassowsky also produced a 3D model for the MBI coils with the aim of controlling the core temperature via the cooling parameters of the coils (see slides).
J. Wenninger gave informations about the degaussing cycles of the MBIs in the injection sections (5X from 25A to 500A at a 50A/s speed). The ramp for physics is made at a 0.6A/s.

D. Cornuet announced that he will get help from 2 technical students for several aspects of the mapping campaign (DAQ, measuremets etc.).

12:00 - AOB - Following a request from N. Hilleret who asked to discuss the layout requirements for the next year concerning essentially the vacuum chamber to be installed in the new MBI, a discussion take place after the main meeting.
The aim is to try to make use of existing LEP dipole chambers to accomodate the requirements from the magnet group on one side and of the BI group from the other. After having put together the several pieces of information Y. Muttoni will produce a LEGO of a possible installation for the next year layout which will optimise the length of the lever arm covered by the PUs once the shielding at the MBI end sides will be defined (D. Cornuet).

12:40 - End of meeting

The **NEXT MEETING** will be held on

THURSDAY, April 30, 1998 at 10:30
in J. B. Adams Room 864/2-B14

Tentative AGENDA (to be confirmed later)

- Comments on Notes of previous meeting
- Status of the Project: Installation, Realignment, Vibration tests — Y. Muttoni, B. Dehning, M. Hublin, W. Coosemans
- Report from mapping meeting — W. Kalbreier
- Preliminary 1999 layout / MBI vacuum chamber — N. Hilleret, Y. Muttoni
- AOB

M. Placidi