May 14, 1998
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LEP SPECTROMETER PROJECT

Summary Notes of the 15^{th} meeting held on April 30, 1998

Present: C. Bovet, M. Chalmers, W. Coosemans, D. Cornuet, B. Dehning, G. De Rijk, M. Hublin, W. Kalbreier, Th. Lemaire, J. Montes, G. Mugnai, A. Müller, Y. Muttoni, S. Myers (chairman), M. Placidi, J. Poole, M. Sassowsky, E. Torrence, L. Vos

Excused: W. Coosemans, N. Hilleret

Comments to Summary Notes of previous meeting - None.

A warning for our PUs! - C. Bovet reported on problems recorded on some position monitors (PU.QD20 at right side of IPs) showing **large offsets (up to 5mm) for electrons only**, probably related to the presence of the nearby horizontal collimators COLH.QD20 on their right (incoming electrons) side when closed to physics settings.
We must check out as soon as possible similar effects on our PUs from the absorbers, as **even 1% of what seen at PU.QD20 would be lethal for the project**.

Status of installation - M. Placidi summarised the status of the installation.
After the frantic activity preceding continuously modified date of the LEP closure (up to 15 people were registered on Thursday along the 15m of the installation...) everything is properly installed and cabled. At the time of writing the 39 temperature monitors, and the eight WPS sensors are readable while three out of four NMRs in the dipole doublet are locking correctly. Controlled access will still be needed for one NMR, the final tuning of the WPS and vibration tests.

Th. Lemaire gave a summary of the alignment results obtained in different phases of the project (see copies of slides). Changes w.r.t. the pre-alignment done in the lab. before transportation were recorded after the installation and the bake out in the tunnel. One PU was found 0.5mm out in the horizontal plane w.r.t. the two others (corrected) and the three were 0.5mm too high but well aligned w.r.t. each other (not corrected).
Suggestions for construction and installation of the other spectrometer arm were also presented.

Looking towards 1999 - G. De Rijk confirmed that **the iron for the new MBI is ready at the factory**. The magnet is expected to be at CERN by **end September**.

W. Kalbreier acknowledged help from EST Div. for the realisation of the MBI support. To this purpose W. Weterings/EST will be transferred to the MS group.

Y. Muttoni showed a '99 spectrometer layout: a 8.55m existing chamber fits into the 5.75m **left-type MBI**, providing enough room for end-field shielding and 4.00m spacing between position monitors compared to 2.73m of the '98 version. Still to be defined is the 1.14m vacuum chamber before QL17.L3 which should accommodate the additional CV corrector, symmetric to the CV.QL18.L3, as suggested by J. Wenninger (Notes of meeting 12.12.97) to reduce bump length and vertical dispersion in the vertical beam steering scheme.

G. De Rijk suggested to **schedule the activity for the installation of the new MBI in the LEP tunnel starting January '99 and have the magnet installed by March**. This would help in concentrating manpower on other activities till end '98 and would cope with the time to be allocated for the mapping (Nov. '98-Jan. '99, February kept as reserve), see Notes of meeting 18.02.98.

Magnetic mapping issues - W. Kalbreier reported on the second part of the mapping meeting held on April 2 with temperature measurements in the ISR tunnel (G. Mugnai) and requirements on magnetic measurements errors (B. Dehning). The last point gave the opportunity to stress, once more, that **the spectrometer project aims at a beam energy relative error of** $\leq 1.5 \times 10^{-4}$ (≤ 15 MeV at 100 GeV). This requires the contributing physical quantities ($\int B\,dl$, etc.) to be known to a **few** 10^{-5} **otherwise the project is not justified!**.

AOB - D. Cornuet presented two slides, from CAS '92/J.P. Gourber, on origin and control of the spread of magnetic parameters in the process of understanding the choice of the parameters which guided the design of the MBI injection dipoles.

G. De Rijk is in contact with TESLA Engineering/UK for the modifications of the dies for the MBI pole profiles (flat) and the construction of the support. He will report on the matter at the next meeting.

The **NEXT MEETING** will be held on

THURSDAY, May 28, 1998 at 10:30
in J. B. Adams Room 864/2-B14

Tentative AGENDA

- Comments on Notes of previous meeting
- Status of the Project: Active PU cooling, Vibration tests — B. Dehning, W. Coosemans
- Report on discussion with TESLA Engineering — G. De Rijk
- First measurements with/without beam — E. Torrence
- Report from mapping meeting — W. Kalbreier
- AOB

M. Placidi