March 9, 1998
/tex/projects/spectro/mtg11.tex

LEP SPECTROMETER PROJECT

Summary Notes of the 11^{th} meeting held on 05 March 1998

Present: C. Bovet, W. Coosemans, D. Cornuet, B. Dehning, G. De Rijk, M. Hildreth, N. Hilleret, W. Kalbreier, J. Montes, G. Mugnai, Y. Muttoni, S. Myers (chairman), M. Placidi, J. Poole, E. Torrence, L. Vos, J. Wenninger

Excused: E. Bravin, R. Genand, R. Perret, R. Valbuena

10:35 - Comments to Summary Notes of previous meeting - The horizontal corrector to be connected at **QF21.L3** is a **CH** one (no water cooling).

10:37 - Project status - The following points were covered:

1. **Production** - Y. Muttoni gave a status of the production for the several hardware components. Production of the BPM-Absorber modules is **terminated**. PU buttons are being vacuum tested next week. Installation and pre-alignment on the stone blocks will be done in Bdg. 927 and a visit is scheduled for Wednesday 11. Final installation and alignment in the tunnel will follow.
2. **Instrumentation** - The WPS alignment control system is being finalised within the budget constraints. As for the stability of the wire W. Coosemans suggested to increase the tension to 20 kg. This represents a minor change in the design.
3. **Planning** - J. Montes reviewed the **installation schedule** which will go on **from April 06 to 17 (weeks 15 and 16) just across Easter...**. Several activities are planned in week 17 till Friday April 24 when the LEP Cold Checkout starts. Possible conflicts with vacuum bake-out, limited access for sextupole tests and ground vibration tests in the spectrometer area (no people around...) will be discussed separately outside this meeting (B. Dehning, W. Coosemans, N. Hilleret, G. De Rijk, M. Placidi).

11:00 - Dipole Mapping - W. Kalbreier reported on a brainstorming meeting held to define the philosophy and to evaluate the needs and the volume of the measurements (see attached copies of slides).

It is foreseen to map the magnet **on the beam central orbit** defined to ± 0.5 mm consistent with the sensitive area of the probes and the orbit reproducibility and drifts during the operation. **Seven field levels** namely at 41, 44, 50, 55, 80, 95 and 100 GeV will be measured at a yoke temperature of $24\ ^{\circ}\mathrm{C}$. The measurements at 41 and 100 Gev will also be performed at $\pm 10\ ^{\circ}\mathrm{C}$ (**or maybe** $\pm 5\ ^{\circ}\mathrm{C}$ **as the thermal inertia of the yoke is considerable**) and the temperature effects at the intermediate field levels will be extrapolated from the behaviour at $24\ ^{\circ}\mathrm{C}$.

A special support has been conceived to handle the new BMI dipole in order to avoid deformations (**twisting**) during the transportation.

Ways of measuring $\int B\,dl$ **inside the vacuum chamber** are being studied and the LHC mapping team will be consulted. It is clear that w/out special tools a measurement with

moving parts in the vacuum chamber cannot be performed in the chamber to be installed in the ring due to cleaning difficulties.

Some test in the ISR tunnel will have to be performed wit top priority to assess the necessity of additional measurements in the LEP tunnel and to react in time for a cross-check. Effects from transportation and vacuum bake-out have been individuated but more might come out at the next brainstorming meeting (Wednesday 11.03 at 15:30 in room 865/1-D17).

D. Cornuet re-proposed his concern about the precision required in the longitudinal positioning of the Hall probe(s) at the position where it will take over the NMR ones in the end field regions. About 60μm reproducibility in the probes position is required to keep the error in the $\int B\,dl$ to 10^{-5} of the magnetic length. This justifies the use of the **incremental Heidenhain ruler** installed on the marble bench (thermal coefficient: 7 ppm/ $^{\circ}$C).

11:40 - AOB - Several points were discussed briefly.

1. **Visit to Bdg. 927** - M. Placidi and Y. Muttoni will organise a short visit to see the modules being installed and aligned on the Jura stone blocks before transportation in the tunnel.
2. **Project Report** - The tentative list of subjects and authors presented by M. Placidi has been slightly modified (see revised version attached).
   Authors are kindly requested to start producing short contributions compatibly with their involvements for the LEP start up. Please send your texts to M. Placidi.

11:50 - End of meeting

The **NEXT MEETING** will be held on

THURSDAY, March 19th 1998 at 10:30
in JBA ROOM 864/2-B14

Tentative AGENDA (to be confirmed later)

- Comments on Notes of previous meeting
- Follow up of installation — Y. Muttoni
- Plans for mapping campaign — W. Kalbreier
- AOB

M. Placidi