

M E M O R A N D U M

CERN LIBRARIES, GENEVA

To: J. Lefrançois, Chairman of the SPSC
From: WA1/2 Collaboration
Subject: Schedule of neutrino running in 1984 and 1985



CM-P00045072

We have been asked to clarify our position with regard to the running of the WA1/2 neutral-current experiment: running NBB and completion of data taking in 1984, as agreed at the time of approval of WA1/2; or sharing the NBB data taking between 1984 and 1985, with WBB running at the beginning of 1984.

The collaboration agrees unanimously that the running and completion of data taking in 1984 is the much preferred solution. We face serious problems if part of the running is deferred to 1985. In short, these problems are:

- i) Some hardware experts whose expertise is essential for the correct operation of the detector, are not available beyond the end of 1984.
- ii) The technical support for the detector will decrease as the technicians become more and more involved in other projects. Moreover, part of the apparatus is now eight years old, and its proper maintenance requires more attention than ever. Optimal hardware conditions are necessary to carry out the proposed experiment.
- iii) The physicists involved in the project are also involved in the preparation of LEP experiments. The particular attraction of only taking data in 1984 is that the interference with LEP activities is kept to a tolerable level, while maintaining an interesting physics programme at the SPS. Data taking in 1985 would delay the completion of the experiment by one year, which is significant on the time-scale of LEP preparation.

We are aware of the wish of the BEBC WA21 collaboration to continue data taking in WBB in early 1984. As we cannot compromise any further on the total number of protons on target, we cannot accept a reduction of our beam time in 1984 if we are to complete the experiment in that year.

We estimate that the BEBC WA21 collaboration at the end of 1983 will have data from 2.9×10^{18} p for ν , and 3.6×10^{18} p for $\bar{\nu}$, of which 1.1×10^{18} p for ν , and 2.2×10^{18} p for $\bar{\nu}$ are taken with the internal picket fence. In

our opinion, a further substantial increase of this already sizeable exposure is not justified in view of the difficulties it generates.

We are already quite advanced in the preparation of our experiment and are determined to carry it out. Should the SPSC come to the conclusion that the WBB running of WA21 is to be continued beyond the end of this year, we have no choice other than to accept this decision. We can even see two advantages in sharing the running between 1984 and 1985: the experiment is safer from the point of view of recovery from unforeseen difficulties, and the number of protons could be achieved without stress.

We reiterate however our strong preference for running in 1984. If we have to accept running split between 1984 and 1985 we would like the SPSC to take note of the following requests:

- i) The data taking of WA1/2 in 1984 starts not later than the beginning of Period 3. Cool-down time required for the switch-over from WBB to NBB beyond the shutdown between Periods 2 and 3 is taken from Period 2.
- ii) As all major installation work for the new 160 GeV NBB line will be carried out in the long 1983/1984 shutdown, the WBB neutrino flux will be slightly changed.
- iii) The fixed target data taking in 1985 is at the *beginning* of 1985.
- iv) WA1/2 takes data in 1985 until the originally requested 6×10^{18} p on target have been obtained under satisfactory running conditions. WA1/2 will require another month after the completion of NBB data taking for calibration purposes with cosmic ray muons.
- v) The WA1/2 detector must be operated in complete darkness. Since we expect there to be a fair amount of activity in Hall 182 during the installation of the CHARM II apparatus, the two parts of the hall must be optically separated.
- vi) We count on the help of the EP Division to extend the contracts of those physicists whose participation is essential for the correct functioning of our apparatus.