

CERN LIBRARIES, GENEVA



CM-P00045441

CERN/SPSC/80-12
SPSC/M217
14 February 1980

MEMORANDUM

To: Members of the SPSC
From: WA18
Subject: Neutrino wide band running before the shutdown

The program of the neutrino facility before the shutdown foresees at present an antineutrino wide band beam run of $1.5 \cdot 10^{18}$ protons (WA21) and a run of $0.5 \cdot 10^{18}$ protons (WA59) to be equally shared between antineutrino and neutrino wide band beam running. There are only $2.5 \cdot 10^{17}$ protons allocated for neutrino running.

We would like to express our great interest in an additional 400 GeV neutrino run of 10^{18} protons before the shutdown.

This interest is motivated by the following considerations:

- 1) our work on elastic scattering of ν_{μ} and $\bar{\nu}_{\mu}$ on electrons is limited because of the lack of statistics in neutrino beams;
- 2) we have observed 171 events of the inverse muon decay reaction; a neutrino run of 10^{18} protons would triple that sample and allow more quantitative studies of that reaction;
- 3) we have observed a small sample of $\mu^+ \mu^-$ events associated with low hadron energy which may be candidates of charm baryon production. An additional 400 GeV neutrino run would give enough data to determine a cross-section and to study the form factor.