



November 8, 2001

Rajendran Raja
MS 122

Dear Raja,

Thank you for your presentation on P-907 at the recent meeting of the Physics Advisory Committee (PAC). The Committee had the following comments:

The program of P-907 is a broad one, including the measurement of particle production on NuMI targets, the test of scaling laws in high-energy particle production, and the exploration of a variety of phenomena in hadron-nucleus and proton-nucleus interactions. In the view of the Committee, the utility of the results of this experiment justifies its inclusion in the Laboratory's portfolio. The Committee deferred consideration of P-907 when the proposal was considered in November 2000, and asked for an enhanced proposal for this meeting. The critical issues which the Committee identified included the strength of the collaboration, sources of external funding, the schedule for installing and commissioning the detector and running the experiment, and clarification of the relevance of the experiment to MINOS. The Committee was pleased by the progress made by the collaboration in the past year. The Committee now believes that the collaboration has the personnel and resources to mount this experiment successfully. Most components (TPC, RICH, TOF, drift chambers, Cerenkov counters, calorimeter) are reused from decommissioned experiments, and external funding has been identified for most of the non-beamline project costs.

The experiment would run with proton intensities of 10^8 - 10^9 particles per spill, a small fraction of a booster batch. However, taking a conventional slow spill from the Main Injector would have an unacceptable impact on collider luminosity for Run II. To address this issue, the proponents have proposed a "double slow spill" scheme, which would allow a slow spill of a small number of protons without significantly compromising antiproton production. Although the Beams Division has endorsed as reasonable the principles underlying this scheme, it has not yet been shown to work in practice.

The Committee would like to see this experiment go forward, but it believes strongly that the highest priority of the Beams Division is Run II collider luminosity, including the commissioning of the Recycler. Implementing the double slow spill scheme is of a lower priority, and may not be achieved before 2003. In the period before this can be done, the experiment could run in a "test beam" mode, receiving the occasional conventional slow spill

from the Main Injector in such a manner as to have a minimal impact on Run II. Moreover, double slow spill running is incompatible with NuMI, so P-907 must either complete data taking before NuMI commissioning or return to a “test beam” mode at that time.

The Committee must assign this experiment a low priority within the Laboratory’s program. No Laboratory funds will be available for building the experiment. The Committee notes that while the proponents have identified funding for construction, the budget which was presented contained no contingency. The Committee urges the collaboration to continue to develop new outside sources of funding.

With these constraints in mind, the Committee recommends Stage I approval.

I accept the Committee’s recommendation and hereby grant Stage I approval to P-907. However, I also accept their constraints, namely, that the experiment has a low priority within the context of the overall Laboratory program, and that no Laboratory funds will be available for building the experiment. In addition, the experiment must not interfere with collider running. The next step is for you to develop a Memorandum of Understanding which will identify running conditions, manpower, funding sources, etc. Mike Shaevitz will provide you guidance in this effort.

Congratulations and good luck!

Sincerely,

Michael Witherell

cc: K. Stanfield
M. Shaevitz
S. Holmes
P. Meyers
M. Goldberg