

DIRECTOR'S REPORT

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(The following is a Director's Report to the Fermilab staff)

I would like to provide all Laboratory personnel with a status report on Fermilab projects, prospects, and problems over the next few years. We have the following major tasks:

- (1) Construction of the Energy Saver
- (2) Operation of the 400-GeV Program
- (3) Preparation for Fixed Target, 1000-GeV Physics (Tevatron II)
- (4) Preparation for Colliding Beams of protons and anti-protons (Tevatron I).

Energy Saver

The Saver is paced by the Magnet Assembly Facility. After a number of technical problems involving cryostat weakness and correction coil quenching, ten models have passed an exhaustive set of tests, and we are now in production on a final accelerator package. Dipole magnet assembly has been proceeding at a rate of one a day and almost one-third of the required coil assemblies have been completed. Progress has been made in most of the many other systems associated with the Saver.

400 GeV

This program ran for only 28 weeks in FY 80 and there is no question that this hurt the research effort. We must keep this program going, limited as it is, since the physics potential now in our experimental areas is very strong and many of these experiments will evolve into Tevatron research. In the sense of a department store, these are our customers and, even though we are renovating (in order to provide better service), we must remain open or we'll find them all at Macy's!

Tevatron II

The planning for 1000-GeV beams has culminated in a book which has been submitted to the DOE. A set of priorities has been endorsed by our PAC and we continue to generate new ideas and new scientific prospects by workshops and summer studies. Some head start on all of this has been going on as we upgrade the 400-GeV program in small construction packages (as everyone can see in front of the high rise).



Tevatron I

This is limping along, being held back by a shortage of research and development funds--generated principally by more urgent Saver problems. Nevertheless, significant progress has been made partially due to the collaborative efforts of our colleagues at LBL, Wisconsin, Argonne, and Novosibirsk for which we are thankful. We have achieved stochastic cooling in the cooling ring. Work is proceeding on a demonstration of electron cooling, and on an extracted beam for \bar{p} production. The associated colliding detector group is firming up a good design. In addition an overall design for a colliding beam proton-antiproton facility exists and is being sharpened.

Problems

Last June a DOE advisory panel met at Woods Hole and issued a report which had the effect of strongly supporting the entire Fermilab program outlined above. Nevertheless, budgets in FY 81 and FY 82 are generally expected to be tight.

The resources which the DOE will be able to make available to the Laboratory are not enough to pursue all of these projects with the efficiency and vigor which they require. Therefore we must set priorities and adjust the pace of our projects to bring us to our goals in the best possible way.

In general the Saver must take first priority. This establishes the superconducting ring of magnets and this is the key to the future of the Laboratory. The Saver is the basis of Tevatron I and II, and in fact of any future, more ambitious project beyond these. It is a key to giving our users a unique resource for exploring new physics.

In FY 81 we will call on all divisions and sections of the Laboratory to assist in Saver-related problems. This will conflict with their normal tasks and will clearly impact on our capability relative to the 400-GeV program. Nevertheless, the capability of carrying on a reduced 400-GeV program is extremely important. People with skills and expertise in such diverse groups as, for example, the Booster group, the Neutrino Laboratory, the 15-ft bubble chamber or Research Services may be asked to take on Saver-related projects and to carry these out with the same love and dedication as they put on their own specialties. This is because the future of Fermilab hinges on this plan. We must also be able to demonstrate the technical adaptability to return to the 400-GeV activities when these are called for and make them work. **This will be the most difficult challenge for many of us at Fermilab in the next two years!** If we survive the dangers of schizophrenia and carry it off we will be **the pre-eminent laboratory in the world.** This is the only way we can overcome the funding handicaps generated by having our peak activity coincide with a national fiscal crisis. I hope we are good enough to meet this challenge.