

TOWARD THE FUTURE OF HIGH-ENERGY PHYSICS

The Trilling Committee (the HEPAP Subpanel on Long Range Planning for the United States High Energy Physics Program) has made its final report. Its recommendations are given for various program levels. For a level of \$345 million (in FY 82 dollars) for the Department of Energy and \$34 million for the National Science Foundation (as in the President's budget), it recommends:

- Adequate utilization and maintenance of existing accelerator and storage ring facilities, and support of important non-accelerator particle physics projects.
- Expeditions completion of the Energy Meter at Fermilab.
- Implementation of the Tevatron II (TeV II) fixed-target program at Fermilab in all three experimental areas.
- Completion of the Tevatron I (TeV I) proton-antiproton collider at Fermilab, including the provision of a major detector facility.
- Continuation of the major R&D effort at SLAC on the Stanford Linear Collider (SLC), with construction of associated conventional facilities to begin in FY 1984 such that the R&D phase can be completed in FY 1986. Funding of major new detectors and provision of a second beam-beam intersection region could occur once the R&D program has demonstrated adequacy for expanded physics research.
- Pursuit of other advanced accelerator R&D activities on items such as high field superconducting magnets, high gradient accelerating rf structures, superconducting rf cavities, and novel means of acceleration.

For a funding level of \$440 million (in FY 82 dollars), the Trilling Committee recommends in addition construction of ISABELLE at Brookhaven with completion by the end of this decade.

There are other initiatives for the future of the field. The Division of Particles and Fields of the American Physical Society is convening a workshop at Aspen in July under the present chairman, Charles Baltay of Columbia University, to consider, independently of funding constraints and shorter-range problems, steps toward long-range experimental facilities.

Second, the International Committee for Future Accelerators, (ICFA), has proposed to set up study teams to work on design of two "typical" accelerators, one for e^+e^- and one for pp or $\bar{p}p$, with each major laboratory contributing the effort of a few people to this work. ICFA hopes to stimulate detailed consideration of accelerator designs for the long range and to move toward a future World Laboratory containing accelerators in

the multi-TeV range. Here, a candidate technology is the Fermilab approach with superconducting magnets, perhaps going to 10 Tesla. But other approaches will be considered, for example, exotic acceleration devices such as the laser accelerator or other forms of coherent or collective acceleration.

Fermilab, up to its eyebrows in the Tevatron program, has a very real problem: on the one hand, we cannot afford to be diverted from completing the Saver and building TeV I and TeV II, but neither can we ignore completely the plans and programs which may very well involve our future in the 1990's. At least these are not dull issues!



A new remote target manipulator built for use in the Neutrino Area.

(Photograph by Fermilab Photo Unit)