

West Germany, in August and September, of letters of intent to join in the project (SN: 9/28, p. 320); and the conclusion last week of a CERN study which showed that the basic project could be built, even without Britain's contribution, for 75 percent of the original cost estimate. (Another cheering element is the widespread conviction that Britain, in two or three years, will finally join.)

Under the new program, total project cost would be chipped from 1,776 million Swiss francs to 1,330 million (about \$309 million, at the present rate of exchange).

No actual design changes are foreseen for the accelerator. Its 2.4 kilometer diameter stays the same, and so does its performance potential of 300 Gev and 10^{13} (ten thousand billion) protons per second. But it would not reach total performance right away. The idea is to run the machine with only part of the radio-frequency and magnet power equipment installed, and with a simplified injection system. This would temporarily cut intensity to 2×10^{12} (two thousand billion) protons per second for about two years. The energy level would also be temporarily reduced to 200 Gev, unless it was decided to take about 20 million francs from some other part of the project.

Significant cuts—totaling about \$50 million—would come in the preparations for high energy physics:

- Number of users would be held down to 60 to 75, or 80 percent of "what could be hoped for."
- A "small fraction" of the initial equipment would have to be brought in from the outside by visiting groups.
- Construction of the planned large track chamber is canceled or postponed.
- Preparations for experiments would start about one year later than originally planned.

As CERN Director General B. P. Gregory told the council, the feasibility study conclusions are "just a model, not a final design. There are lots of options the project leader can take. We are not freezing the character of the machine."

Despite the high feelings, the project is not off the launching pad. The five letters of intent correspond to almost 60 percent of the total contribution for the original project. "This," says Gregory, "puts the 75 percent project within range."

But to reach the 75 percent commitment, about five more countries would have to come in.

The big bargaining will be over the site choice. The field has been narrowed to eight possibilities: in Sweden, Greece, Spain, Austria, France, Belgium, Germany and Italy.

Pointedly, Gregory told the council delegates that "in a sense we already have a short list. It is clear that the sites in the five countries which have already sent in their letters of intent will be in the forefront of everybody's mind. . . ."

According to one informed staffer, the field is already narrower than it looks. Each of the possible sites have disadvantages, but the most promising seem to be the sites at Drensteinfurt, Germany, and Doberdò, Italy.

"No one will pull their knives out," says one CERN official, "but they will certainly be wielding their can openers."

The aim is to have the site and the name of a director general ready for a first vote by the December council meeting. The hope is that final decisions would then be able to be taken in March, which would allow construction to start in the second half of 1970.

Officials at CERN admit that in fact a March target may be too early. "But," says one, "for the first time we are really moving toward the project. I don't think anyone doubts that we will go ahead."

VIOLENCE COMMISSION

Social scientists respond

In the wake of the assassination of Senator Robert F. Kennedy, in naming a commission to probe the nature and causes of violence in the United States (SN: 6/22, p. 589), President Johnson asked: "What in the nature of our people and the environment of our society makes possible such murder and violence?"

It was a challenge thrown to the professions that make up the social and behavioral sciences—those disciplines whose laboratory is the human environment. And they have taken up the challenge.

The violence commission, born of the shock that followed the Kennedy assassination, promises, unlike its predecessors, to be an effort of major scientific importance.

Judging by the number of psychiatrists, sociologists, biologists and other scientists who have readily accepted the commission's call for information, and by the scope of the investigation now getting underway, this should be the first thorough analysis of individual and group violence in the United States.

"I don't believe I have ever seen such enormous enthusiasm and receptivity by the scientific community wishing to help in a Federal effort," says Dr. Marvin E. Wolfgang, a University of Pennsylvania criminologist and one of the two research directors appointed by the commission. Enthusiasm has been evident since last July, he says, when 50

scholars, given eight days notice, left their vacations to meet in Washington and lay down guidelines.

Such response contrasts markedly with the scientific suspicion which greeted the Kerner Commission on civil disorders last year (SN: 4/20, p. 386). At that time, social scientists expected a political whitewash of the nation's racial problem, and many would not participate in the investigation. No whitewash occurred and the final document, although an honest statement on black-white relations, suffered from lack of scientific depth.

The new study has been planned by scientists, and according to Dr. James F. Short, sociologist at Washington State University in Pullman, Wash., and co-director with Dr. Wolfgang, the integrity of their input is guaranteed.

Scientific quality, however, does nothing to guarantee political results on any of the issues raised. Federal commissions are effective tools for studying a problem; their output is typically shelved by a political establishment unwilling to make major social changes. That has been the fate of both the Kerner Commission's work and the recent commission on crime. Each called for sweeping political action, one to open the society to greater Negro participation, the other to reform the criminal justice system.

If their recommendations had been implemented, both Dr. Wolfgang and Dr. Short agree, the need for a new study would have been greatly muted.

But they were not implemented, and the new commission will explore, among other things, the idea that protest is part of the Democratic process.

"Protest can be called the lubricant of social change," says Dr. Wolfgang. "The question is, can we do this without violence?"

For one of its studies, the commission will look into the theories and attitudes motivating student protest, antiwar protest and black protest.

Last week, it surveyed the general public on degrees of hostility felt against political figures and institutions and the question of firearms.

Possible psychological effects of television entertainment, and the news media will be analyzed during subsequent hearings, as well as violence stemming from police action.

At the individual level, the commission will pull together recent neurological and genetic work indicating biological roots for some criminal violence.

The XYY syndrome, a defect in sexual chromosomes, has, for instance, been linked to criminal behavior in some men. And brain surgeons suspect there may be a neurological cause for certain types of homicidal rage.