
Science & Technology

No substitute for a U.S. fusion program

by Marsha Freeman

For the past four years, the Reagan administration has been insisting that the magnetic fusion energy program of the United States be redirected away from a science and technology effort, back to a "science only" program.

Scientists have been told that "international cooperation"—i.e., trying to make our allies pay for part of our fusion program—will be an adequate substitute for a commitment to designing and building next-step fusion experiments or an engineering reactor here at home. Recent hearings showed this shell game for what it is.

In September 1983, the National Research Council established a Committee on International Cooperation in Magnetic Fusion Energy to "study and recommend a worthwhile course of action in fusion cooperation." The Committee was headed by Joseph Gavin, chairman of the executive committee of the Grumman Corporation.

At hearings of the Energy Research and Production Subcommittee of the House Committee on Science and Technology on March 18, Mr. Gavin presented the findings of his committee. The question of international cooperation was also addressed by other witnesses, representing various fusion-experiment laboratories.

A reliable partner?

The Reagan administration has made the assumption that the scientists and administrators of fusion programs in Western Europe and Japan will jump at the opportunity to cooperate more closely with the United States in this long-term energy research. Mr. Gavin reported that after members of his committee made two international trips, they found that this was not necessarily the case.

Gavin began his remarks by stating that there had been much "wishful thinking about international cooperation." The Europeans "believe they're on the threshold of assuming world leadership in fusion research," Gavin stated. "They

don't see the United States having a detailed future plan."

"People overseas see the U.S. program as having peaked out and losing momentum," he explained, "and that we don't have a well-thought-out program. We have been an unreliable partner in the past. International cooperation will require a long-term U.S. commitment."

Indeed, why should the Europeans or Japanese be anxious to hitch their program to an aimless star, when they already have plans to build their own next-step tokamak devices without help from the United States?

This theme was stressed by other hearing witnesses. The most interesting was Dr. Tihoro Ohkawa, vice-president of GA Technologies. GA has an active cooperative program with the Japanese, which has included the input of tens of millions of dollars from Japan.

Ohkawa's statement was also a warning: Although he "finds great appeal in the potential benefits of international cooperation, our reliance upon it should not extend to abrogating technical responsibility in any of the research areas that are critical to the fusion energy option. . . . We must remain self-reliant in all the key scientific and technological disciplines."

"After all," he continued, "who would want to cooperate with us if our capabilities were inferior to their own? The burning plasma experiment is a natural candidate for international cooperation. The United States must take the initiative in such a venture, however. The preferred approach is to commit to such a project and bring in partners to expand the program's scope."

Unfortunately not mentioned by any of the witnesses, the current NASA Space Station effort is just the kind of project appropriate to large-scale international cooperation. The United States, starting with the President, made a commitment to build the station, and has invited allies to contribute to it, which will greatly increase its capabilities.

In her opening statement for the hearings, subcommittee chairman Rep. Marjlyn Lloyd reported that Gavin's committee had found that it would take from three to five years to arrive at a multinational agreement to go forward with a large joint project. Everyone from the fusion community at the hearings who had been involved with negotiating such agreements agreed on that time estimate.

Congressman Lloyd's evaluation was that "while the United States should welcome international cost-sharing" for a next-step fusion experiment, "it should not be a requirement for a go-ahead in the near future."

The administration's attempt to convince the Congress that international cooperation could substitute for adequate funding and planning in the U.S. program has fallen flat on its face. The question is whether the Congress will take the responsibility of restoring the nearly \$50 million the White House has cut out of the fusion program budget, and put it back on a track toward developing commercial fusion power.