

Fusion, NASA cuts spark urgent 'science alert'

by Marsha Freeman

If the Congress of the United States does not reverse the severe science and energy budget cuts proposed by the Reagan administration for the fiscal year 1982 budget, the nation's frontier research and development programs will be gutted and directed American science education all but dismantled.

As released on March 10, the Office of Management and Budget is proposing \$604 million in cuts in next year's budget for the National Aeronautics and Space Administration; a \$65 million cut, about 20 percent, in the proposed funding for the magnetic fusion effort of the Department of Energy—repudiating the Fusion Energy Engineering Act of 1980; and the elimination of the science education directorate of the National Science Foundation.

Given the relationship of basic science, R&D, and forced-march technological development to cost-cheapening advances in industrial and agricultural productivity throughout the economy—a relationship well documented during the NASA moonshot program and the Manhattan Project—the science cuts would mean a potential disaster for U.S. economic performance.

The proposed cuts have already stirred opposition in Congress and the scientific community. The Fusion Energy Foundation, a 15,000-member organization whose educational efforts were widely credited with shaping the climate for passage of the Fusion Engineering Act, has declared a "national science alert" of its 15,000 members, and issued a statement March 3 denouncing the cuts in the sharpest terms. "The Soviet Union, at last week's Party Congress, took a five-year science strategy com-

pletely opposite . . . resolving to rapidly expand its space exploration, its fusion power program, and widen its growing lead over the United States in science manpower," the Fusion Energy Foundation pointed out in its alert.

In at least two aspects of the budget proposals, the budget-balancers at the OMB are violating the law. The Fusion Engineering Act, passed by an overwhelming majority of the House and Senate last fall and signed into law by President Carter on Oct. 7, 1980, requires the DOE to pursue a 20-year fusion effort, including the operation of a Fusion Engineering Device by 1990. The act authorizes a 25 percent increase in the 1982 budget, to a level of \$525 million, and a doubling of the budget, in real dollars, within the next seven years.

In testimony in the House and Senate over the past two weeks, DOE representative Dr. N. Douglas Pewitt repeatedly stated that "this administration is not going to commit" itself to the engineering device and that another review of the fusion program would take place—despite two recent reviews of the program by the DOE and Congress which have concurred that the program is ready for full-scale development.

Pewitt, a Carter holdover and former official at the OMB, described the fusion bill as a "permissive piece of legislation" during congressional hearings and stated that he has tried to explain to Energy Secretary James Edwards, who has publicly urged an accelerated fusion effort, that fusion will take longer than he thinks!

Pewitt stated before the House Subcommittee on Appropriations that there "is no need for a crash pro-

gram in fusion because we have so many other energy sources," and that "crash programs waste a lot of money."

At the official DOE budget briefing March 10, Ray Romatowski, acting undersecretary of the DOE, responded to my question on the DOE's stated attempt to disobey the law by stating that "a lot of legislation has been passed by Congress in the last few years and some of those statutes are incompatible with our budget requests. We will recommend changes in the statutes during 1982."

The goals of the Fusion Act were strongly supported on Capitol Hill because Congress recognized fusion as a critical, unlimited, safe, clean energy source needed as soon as possible to meet the world's energy needs. The move to junk the law is not sitting well with legislators.

Congressional objections

Representative Barry Goldwater, Jr. (R-Calif.) on the House Science and Technology Committee reminded Pewitt that the commercial development of fusion would cost \$2 billion more in real dollars if the program were stretched out. Representative Manuel Lujan (R-N.M.) asked Pewitt if he could try to "force himself" to take the additional money for fusion that the OMB wanted to give the program.

Senator Mark Hatfield (R-Ore.), the chairman of the Energy and Water Development subcommittee for Senate Appropriations quizzed Pewitt during hearings on March 4. "Last year you indicated a change in direction for the fusion program from basic research toward engineering development. There was a comprehensive program review by a scientific group headed by Dr. Sol Buchsbaum of Bell Labs. The conclusion was that the program is ready for engineering and the initiation of a Fusion Engineering Device. Do the administration's views concur with the Buchsbaum report? I assume you represent the administration's views."

Pewitt said he did not disagree with the technical evaluation, but that no commitment would be made to build a Fusion Engineering Device. Hatfield stated for the record that "at a press conference on Feb. 26, DOE Secretary Edwards indicated strong support for fusion and asked a rhetorical question, 'Why haven't we moved faster?' How does that square with your statements before the House Science and Technology Committee on not continuing on with the FED?" Pewitt, somewhat rattled, answered that he tried to explain to the secretary that fusion would take longer than he thought!

Senator Harrison Schmitt (R-N.M.), also on the subcommittee, stated he was "very bullish on fusion" and that he hoped the momentum could be maintained to "sustain the motivation of young people" to go into fusion research and development.

The most outspoken statements on the fusion pro-

gram came the following day at the appropriations hearings on the House side, where Rep. John T. Myers (R-Ind.) asked Pewitt point blank to provide the committee a written statement from the secretary's office saying the DOE was not going to obey the law. "Even the President can be wrong," Myers emphasized. "Just because I voted for him doesn't mean I will march in lock step with everything the President says."

During cross-examination from Congresswoman Boggs (D-La.), Pewitt revealed that important fusion experiments are slated for extinction in the proposed budget, including the shutdown of the world's pace-setting tokamak experiment, the Princeton Large Torus. Scientists in the fusion community have been shocked by those who pretend that there is no international consensus to go ahead with fusion development.

The OMB was no more warmly received by the Congress in its attempt to decimate the NASA space programs. The slated 10 percent cut of \$604 million would delete the International Solar Polar Mission, a joint project with the European Space Agency (ESA). In addition, the Galileo mission to Jupiter, the Gamma Ray Observatory, and other critical space science programs will be deferred. Flights of the European Space-lab flown on the U.S. space shuttle would be curtailed.

Gutting space science

In testimony on the NASA budget, Mr. E. Quistgaard, director-general of ESA, stated that "the governments of the eleven member states of ESA and ESA itself have voiced strong objections to" the unilateral withdrawal of the U.S. from the Solar Polar Mission, with protests going all the way to Secretary of State Haig.

Quistgaard reminded the Congress that ESA has spent \$1.2 billion in cooperative projects with the United States over the past 10 years, and that hundreds of millions will be lost if these projects are deferred or canceled.

Subcommittee Chairman Rep. Ronnie Flipppo (D-La.) asked the ESA representative if there was a European fallback position on the Solar Polar Mission, in which the U.S. was supposed to build one of two spacecraft, and Mr. Quistgaard stated that the only fallback was to cancel the mission.

The disappointment in the Congress was summed up by Congressman Nelson, who joined the NASA hearings late, having just come from a meeting of the House Budget Committee.

"The Budget Committee is trying to puts the cuts in areas that won't be counterproductive," he stated. "The NASA programs have significant merit that should not suffer these cuts. There is a ray of hope. We don't want to penalize the parts of the budget that help productivity . . . like NASA, that stimulate high technology, and increase the productivity of the national economy."