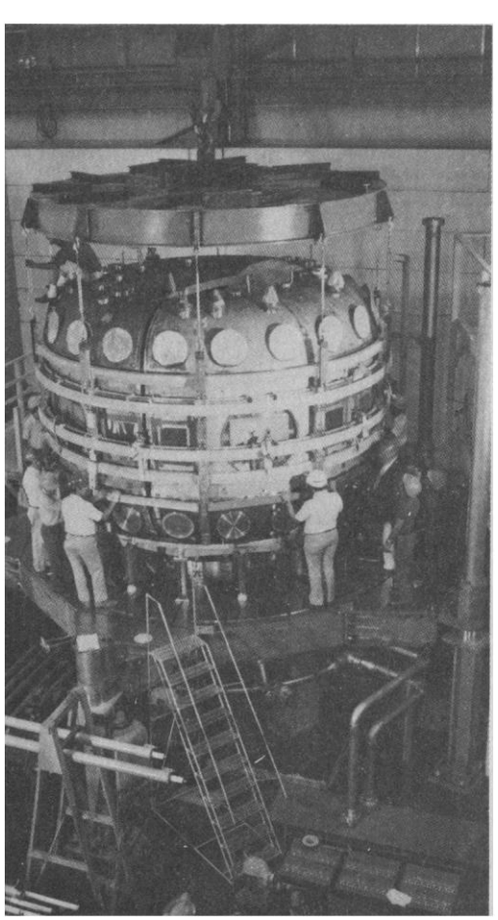
Legislators Accept Fast-Paced Fusion Program

A personal triumph for Mike McCormack, Congress' Mr. Nuclear

Congress late last month approved with little fanfare a bill intended to accelerate the invention of a potentially inexpensive, inexhaustible supply of energy. The energy is to be derived from nuclear fusion, which uses a component of water as fuel and replicates the operation of the sun. Fusion remains entirely unproved as a source of commercial power. But the bill provides that a demonstration fusion power plant be operating within 20 years, and that a test facility tackling the most severe engineering problems be completed within the decade.

The deadlines are 10 to 20 years ahead of what scientific wisdom and the Carter Administration previously thought prudent. But fusion scientists have been encouraged by the smooth progress of the research program so far (*Science*, 8 February), and their increasing enthusiasm proved infectious. As with most of the supposedly inexpensive energy technologies on the horizon, fusion requires lots of cold cash now. Development of the power plant may require $20 billion.



Plasma tester

Researchers at Princeton are trying to limit energy-wasting impurities in plasma, the high-temperature gas that produces fusion energy.

Congress shrewdly deferred a large increase in the fusion budget until next year. The bill then calls for a precipitous rise toward the goal of $1 billion annually, more than a doubling of the current effort.

Given the general clamor for reduced government spending and numerous competing claims for funds, the fusion bill's smooth passage would appear to be an extraordinary achievement. It attracted 160 cosponsors in the House and 24 in the Senate, and was eventually approved by unanimous voice vote. This success is largely the handiwork of its initial sponsor, Representative Mike McCormack (D-Wash.).

McCormack, formerly a research scientist with the Atomic Energy Commission in Hanford, is a man with a gleam in his eye. Fusion, he says, "promises an absolutely unlimited supply of cheap energy in a practical form for all mankind forever." Development of a commercial fusion plant runs a close second to the discovery of fire as an important energy-related event, he says. Not only that, it will provide energy independence for all the nations of the world, improve the economic posture of the United States, and lessen the pressures for international strife in the Middle East and elsewhere. He has accepted this dogma since he first began work with nuclear issues on the Hill, and previously has supported fusion funding increases. As chairman of the subcommittee on energy research and production, he was particularly distressed when the Carter Administration in 1977 appeared to let the fusion power plant timetable slip by 20 years, reflecting what many thought was a more reasonable prediction than that offered by President Ford.

After an attempt to increase fusion funds that ended partly in frustration, McCormack impaneled his own advisory committee of scientists, set up to counter a DOE committee that had been considerably less fervent. The director was Robert Hirsch, former head of fusion research at the Energy Research and Development Administration and now with Exxon; he is a known booster for the fusion budget. The other committee members were drawn from companies doing fusion research with federal funds, and those interested in the fruits of such work. Included were top officials of Boeing, Grumman, General Atomic, Westinghouse, Stone & Webster, Public Service Electric & Gas of New Jersey, and the heads of Princeton and Lawrence Livermore fusion labs. The committee heartily recommended acceleration of the program. "I felt we were at the point of acceleration," McCormack says, "but I didn't want to take it upon myself to make that claim without adequate scientific and technical expertise to back it up." Several months later, the same conclusion was reached by separate panels of the Atomic Industrial Forum and the International Atomic Energy Agency.

McCormack decided he needed a fusion expert on his committee staff and so hired Allan Mense, a nuclear physicist then working at Oak Ridge National Laboratory. Mense helped write the fusion acceleration bill, which was introduced last January. Since then, Mense says he has spent about 80 percent of his time attempting to get it passed.

The first goal was simply to provide congressmen and their staff aides with information about fusion and its potential. McCormack signed up most of his colleagues on the Science and Technology Committee as cosponsors, and Mense followed up with detailed technical information for their staffs. McCormack sent numerous "Dear Colleague" letters to the full House, and received a lukewarm response to the request for support he sent to President Carter. McCormack and Mense talked of the need for an Apollo-type national commitment, with a Manhattan Project follow-through. Like the NASA program, fusion research would generate technological spin-offs, probably in such areas as medical diagnostics and cancer therapy, they claimed.

Outside interest and assistance was

plentiful. Information was mailed to members of Congress by Fusion Power Associates, an industry trade association located in Gaithersburg, Maryland. Paying members of the association include McDonnell-Douglas, KMS Fusion Inc., General Atomic, and Westinghouse. Its head is Steven Dean, formerly the director of fusion magnetic confinement systems at DOE. Somewhat propitiously, Dean left DOE to form the association several months before McCormack's bill was first introduced.

The General Atomic Company, which receives about $18 million annually in DOE fusion grants, assigned Kathryne Brunner, a lobbyist, to work on the bill full time. "Opposition was limited, because fusion is viewed as fairly benign; it's like motherhood and apple pie right now," Brunner says. "Congress needed to vote for an energy *thing*, particularly one with the potential to save the world. Also, no extra money would be spent at first." Brunner arranged for Harold Furth of the Princeton Plasma Physics Laboratory, Ken Fowler of Lawrence Livermore and several industry officials to visit Washington in an attempt to increase the number of cosponsors. Brunner also arranged for the corporate lobbyist for TRW, Inc., to contact Barry M. Goldwater, Jr., who has a TRW office in his California district. Additional corporate lobbying support was provided by Grumman.

Vigorous lobbying and letter writing was undertaken at the 30 or so universities where fusion research is now under way. Each stands to double its federal fusion receipts under the accelerated development program, according to a House staff aide. Princeton scientists contacted Senator William Bradley (D-N.J.), University of Wisconsin scientists contacted Representative Robert Kastenmeier (D-Wis.), University of Texas scientists contacted Representative J. J. Pickle (D-Texas), and so on, with the result that virtually all congressmen with fusion research in their districts were urged to sign on as a cosponsor, and did.

The Massachusetts Institute of Technology (MIT), which receives about $12 million annually from DOE for fusion research, was particularly helpful. Because of a dispute between the staff aides to McCormack and Senator Henry Jackson (D-Wash.), chairman of the energy committee, McCormack was unable to persuade Jackson to introduce his bill. Eventually he settled on Senator Paul Tsongas of Massachusetts, who agreed to the task after hearing from three MIT fusion researchers, Ronald Davidson, Bruno Coppi, and David Rose.

Finally, congressmen from key states were contacted by constituents and senior scientists from DOE's national laboratories. Employees of the labs are technically prohibited from lobbying. Nonetheless, as McCormack himself says, "the national labs helped a great deal." Lawrence Livermore and Lawrence Berkeley scientists (both affiliated with the University of California) contacted Senator Alan Cranston of California, the majority whip. Oak Ridge scientists contacted Senator Howard Baker, the minority leader, and Senator Jim Sasser, both of Tennessee. Los Alamos scientists contacted Senator Pete Domenici of New Mexico. Each congressman agreed to be a cosponsor.

With this show of strength, McCormack and Tsongas had little difficulty persuading the House and Senate leadership to bring the bills up for a quick vote, despite the crowded calendar just before the recess. (House Majority Leader Tip O'Neill had been contacted by MIT as well.) Opposition appeared to arise only from a few liberals opposed to all nuclear power plans and from those conservatives opposed to more federal spending. Supporters brandished a new report by DOE's own advisory committee, containing recommendations consistent with the bill.

As Brunner notes, the real test of strength for fusion will occur next year, when the appropriations committees must be persuaded to accept the actual budget increases necessary to meet the newly imposed construction deadlines. A staff aide says some of the members might conclude that fusion is an expensive fad with only long-term potential. But McCormack is confident that he will prevail, and also that the federal Office of Management and Budget will support the higher figure, "no matter which Administration is in power, Carter's or Reagan's." Few would belittle his determination to see that it comes true.

—R. JEFFREY SMITH

Charges of Piracy Follow Alsabti

Charged with pirating seven of his 60 published papers, Elias A. K. Alsabti, 26, who quit a medical residency program at the University of Virginia in July as administrators there were convening a panel to investigate the plagiarism charges and whose whereabouts were unknown, has turned up in a residency program at a hospital affiliated with Boston University. Administrators are preparing to confront Alsabti with the charges, which they learned about in only the past few days.

Alsabti for the past 3 years has zig-zagged his way across the United States and the Caribbean, going from one school and hospital to another (*Science*, 27 June, 11 July, 22 August). On 2 July he quit the University of Virginia program after failing to answer tentative questions put forward by administrators concerning the charges. He put up his $70,000 house for sale and was said to have left for England. This was not the case.

He instead apparently flew directly to Boston, where he enrolled in an internal medicine residency program at Carney Hospital in Dorchester, Massachusetts. According to Carney's executive vice president John Logue, Alsabti was at work by the second week of July. Alsabti told Carney officials that he had experienced "personal" problems in Virginia, but he mentioned nothing about the charges of piracy. Alsabti had applied to Carney earlier in the year, around February, Logue recalls, and "his credentials had already been authenticated" by the time of his arrival.

To confront Alsabti with the charges of plagiarism, which administrators at Carney first learned about in a September article in *Forum on Medicine*, they have scheduled a meeting for Monday 6 October. As of this writing, the results of that meeting are not known. It is also not known whether Alsabti claimed on his résumé the seven papers he is charged with having pirated. Attempts to contact Alsabti have not been successful.

Pending the outcome of the scheduled meeting with administrators at Carney, Alsabti's fate is up in the air. But possibly not for long. "He did not tell us that there were any allegations or accusations or anything that would raise questions regarding his character or competence or ethics," says Logue. "In any application there is a presumption of honesty. If we hire an employee for a dishwashing job and they lie on the application, we consider that grounds for dismissal."—WILLIAM J. BROAD

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