

U.S. fusion budget to become a PR joke?

by Mary McCourt

The Fusion Energy Foundation has obtained a copy of the minutes of the June 1-2, 1982 meeting of the Department of Energy's Magnetic Fusion Advisory Committee (MFAC) which confirm the warnings of retiring DOE Fusion Office Director Edwin Kintner last December that the fusion "program is being destroyed" by ending the "national mission orientation" to fusion power development under massive budget-cutting pressure. Under former director Kintner, the meetings of the MFAC were the means for the DOE to assess the quality and progress of research in the nation's labs.

But the minutes of the June meeting reveal that the leaders of national laboratory fusion work, the nation's most advanced science and technology program, are being forced to assess their scientific and technological progress on the basis of "the country's perceived notion of the value of fusion support," i.e. Fed Chairman Paul Volcker's vicious austerity policies, rather than the actual energy needs of an advanced industrial economy.

The basis for a new "mission orientation" does exist in the proposals of the Fusion Energy Foundation and its founder and board member, Lyndon H. LaRouche, to use the recently discovered polarized fuel properties of plasmas to engineer commercial fusion reactors by 1995. Work by two scientific teams in the United States, one at Princeton University and the other at Brookhaven National Laboratory, has shown that polarization of the plasma fuel within the fusion reactor could enhance fusion fuel cycles by 1.5 times. If polarization of the fuel nuclei can be maintained for the time necessary for the fusion reaction to take place, fusion can be achieved at lower temperatures than previously thought necessary. If these results can be demonstrated experimentally, it would mean that several large-scale fusion machines would have already achieved breakeven, i.e. the temperature at which the machine produces as much fusion energy as the energy required to ignite the reaction.

Reagan Science Adviser George Keyworth made an unusual appearance before the Advisory Committee to enforce the austerity mentality. Claiming that "there was no more difficult technological problem than producing fusion power," Keyworth stated that "no one could predict" when there would be results. Keyworth said that

the present level of funding "is viewed as adequate" and that it would be difficult to argue for any significant increase in funds. This budget-tightening process is international, Keyworth noted, but due to the fact that it would not be possible for the United States to achieve a demonstration of fusion power on its own, only by international cooperation might it be possible to keep the program going. This, however, would require decisions "from the highest levels of government" on the issue of control of technology transfer, a policy never before forced on magnetic fusion programs.

The response of the laboratory scientists present was a "consensus" that no significant engineering work could begin on fusion reactors until the present series of stretched-out experiments are completed by the end of this decade, which are marked by competition for an "optimum design," rather than scientific cooperation.

Dr. John Clarke, Acting Associate Director for Fusion Energy, of the Office of Energy Research, reiterated Keyworth's assessment. Because "the administration perceives that we do not need a new power source before the end of the century," Clarke stated, "we should not take extreme risks." Using language more appropriate to Madison Avenue advertising campaigns that the question of the future of the nation's energy supply, Clark called the top priority "maximum progress in developing the data base to permit those outside to enthusiastically support the program. . . . The program can be accelerated without structural change if fusion is perceived as a national need. He likened the new strategy to how a company markets a new product.

"There must be sufficient scientific and technical data to demonstrate feasibility, which leads to product definition, which leads to sufficient belief in the product to justify investment. . . . By this strategy we can hope to select an attractive fusion concept that will merit development. . . ."

Dr. Stephen Dean, president of Fusion Power Associates and a former official in the DOE magnetic fusion program, who supports the policy-outlook being organized for by the Fusion Energy Foundation, made the only response based on a realistic assessment of national and world energy needs. He told the committee that he believed that many industry people are opposed to this "new strategy" outlined in the Comprehensive Program Management Plan (CPMP). He cited as the major problems that the strategy puts the focus of the program 10 years off in the future, and that rather than attempting to build an ambitious Engineering Test Reactor (ETR) for which there is insufficient data, the program should go ahead to build a facility that makes a lot of fusion power—something achievable within 2 to 3 years. Dean asserted that CPMP had no resemblance to the intent of the Magnetic Fusion Energy Engineering Act of 1980, and the committee is thus alienating Congress and the nuclear industry.