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THE U.S. FUSION ENERGY PROGRAM

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Dr. James Decker, Acting Director of Energy Research at the Department of Energy (DOE), regrets very much not being able to be here to discuss DOE's fusion policy development.

When Dr. Decker agreed to speak, we anticipated a different situation for fusion than we now have. We were preparing to proceed with a more goal-oriented fusion policy, as was recently recommended by the Fusion Policy Advisory Committee (FPAC). We thought we would be implementing something like the FPAC-recommended, budget-constrained program. However, the early October 1990 congressional cut of $50M to the magnetic fusion program has interrupted our plans.

By way of brief background, U.S. Secretary of Energy James Watkins established a prestigious panel in March 1990, called FPAC, to advise him on a new policy direction for fusion—"to help the Nation establish a wise, practical, and enduring policy for fusion, one that will enable fusion energy to be a valuable energy source in the next century." At the end of September, they finalized a strong recommendation to proceed with a goal-oriented program to operate a demonstration power plant by the year 2025. Within FPAC's vision, fusion energy was to have two distinct paths in this endeavor: magnetic and inertial.

On October 1, at the beginning of DOE's consideration of FPAC's recommendations, Secretary Watkins gave a speech to the International Atomic Energy Association (IAEA) conference on Plasma Research and Controlled Nuclear Fusion Research in which he set the tone for DOE's deliberations. Even though we will not now be able to proceed with all elements discussed in the FPAC final report and the Secretary's speech, I believe these two documents will remain guideposts for our current policy development.

I know that all of you are encouraged by the fact that FPAC and the recent National Academy of Sciences review of inertial fusion (the Koonin Panel), both selected heavy-ion drivers as the leading concept to develop for energy applications of inertial fusion. If we are able to proceed with an inertial fusion energy program in the United States, the heavy-ion driver will have a central role.

By way of further encouragement to this international audience, I want to quote from the Secretary's speech of October 1. He said, "I have directed the Department of Energy's staff to undertake a comprehensive review of the classification of our programs in inertial confinement fusion. The goal is to eliminate unnecessary

restrictions on information relevant to the energy applications of inertial confinement fusion. ... I see this review as necessary if the U.S. government is to reassess its current policy that discourages U.S. participation in international research on inertial fusion. If inertial fusion has promise as an energy source—and I believe that it does—we should pursue that promise with the sort of cost effective collaboration that marks magnetic fusion efforts such as the International Thermonuclear Experimental Reactor (ITER)." Through this quote, I wanted to emphasize to you that DOE believes inertial fusion has potential and that international collaboration is viewed as valuable in the effort to develop fusion energy.

Because of the recent $50M cut to the fiscal year 1991 magnetic fusion budget, which interrupted our policy development and demoralized the dedicated magnetic fusion community, I cannot, today, predict anything about a future DOE inertial fusion energy program. Before fusion can move forward, DOE must decide how to respond to the congressional cuts to magnetic fusion and begin working with Congress to establish a common vision for the future of fusion. Today, I am personally encouraged that we are trying to move forward with a fusion program plan even though that means that I must return to Washington before the end of this symposium. More information as to the possible future for an inertial fusion energy program within DOE will appear about February when the FY 1992 President's Budget begins to be publicly debated.

In the meantime, what can you do? Continue the excellent technical work that I'm sure will be exhibited at this meeting and discuss how you might move forward, including opportunities for international collaboration. As represented by our attendance at this meeting, some of us at DOE are interested in your work and we promise to listen.

Note added at publication deadline. Since the symposium, Congress has restored $25M in FY 1991 funding to magnetic fusion, and DOE has submitted an FY 1992 budget for fusion energy that includes an Inertial Fusion Energy (IFE) component. While the FY 1992 IFE funding is only $9M, this includes a modest increase specifically to develop the Induction Linac Systems Experiments (ILSE) for testing of heavy-ion driver concepts. In addition, the National Energy Strategy, released in February 1991, has a chapter on "Fusion Energy" specifying an approach to "develop both magnetic and inertial confinement approaches to fusion separately until sufficient R&D exists to permit a choice."