

# Fusion Energy Foundation Spokesman Addresses Diplomats, Congressional Aides On Necessity For Crash Nuclear Fusion

Two special briefings were given in Washington, D.C. by scientists from the Fusion Energy Foundation (FEF) on March 22.

At the monthly luncheon of the Association of Scientific Counsellors and Attaches at the city's Cosmos Club, FEF Executive Director Dr. Morris Levitt and Professor of Physics Winston Bostick of Stevens Institute of Technology and the FEF addressed scientific representatives of 17 embassies. Dr. Levitt reviewed the recent success in both "brute force" and "self-ordering" plasma physics experimental approaches to controlled fusion and the unique role of fusion in transforming processing and extractive industries through its high energy density.

Prof. Bostick, an editor of the FEF's just-initiated International Journal of Fusion Energy, reviewed the history of the pinch effect in the plasma focus device as an example of high-efficiency low-budget research based on self-ordering behavior in plasma — research that could reach the energy break-even point for as little as \$10 million. Bostick then proposed to the scientists from Latin America, Africa, Asia, and Western and Eastern Europe that they send graduate students to Stevens to be trained in advanced plasma physics research of the sort Stevens has already helped to set up in Buenos Aires, Argentina.

Questions following the presentations included the FEF's position on the breeder reactor, and how the scientific question of high energy density technologies was connected to the political and economic issues of development. Levitt replied that the nuclear fuel cycle had to be closed — requiring the breeder — if rates of economic development sufficient to resolve international tensions and bring a fusion-based economy on line were to be realized. Bostick reemphasized that nature provided in the vortex filaments of energy dense plasmas the most efficient and high-intensity fusion outputs, which could solve the world's energy and materials needs for the foreseeable future.

### *Physics and Biology*

At a later afternoon briefing session for congressional aides held in the hearing room of the House Education and Labor Committee, 15 staff members, a reporter from UPI and an observer from the embassy of Jamaica attended the first in-depth report on the relationship between energy policy, fusion prospects, and fundamental research to be held on Capitol Hill. Prof. Bostick stressed that 25 years of basic research, with practically no government support, had brought science to the "next to

the last chapter" in understanding the critical role of microscopic fine structure in determining plasma stability and energy transport processes. Breakthrough to a qualitatively new understanding of the "almost biological" properties of plasmas, he added, now required vigorous government support of basic research in U.S. universities.

Questioning opened with an aide to Rep. Lujan (R-N.M.) asking Dr. Levitt if it might not be politically realistic to divert funds cut from the federal breeder reactor program into fusion research. "Absolutely not," Levitt replied, "that would be playing directly into the hands of the forces politically committed to killing fission and fusion and splitting the pro-development forces. As a practical matter, we need the energy, technology and skilled workers that the breeder will provide in the transition to fusion. We have to be willing to take losses in these early battles to build the coalition of unionists, industrialists, and pro-development forces in the Democratic and Republican Parties to win the war."

Dr. Bostick was asked about the effects on scientific research of security classification restrictions. He characterized security classification as a "poison" in the body of research, which protected scientific mediocrity more than national security.

In the hour of close questioning that followed, the major issues that were raised included the safety and radioactive levels of fusion, whether fusion involved reprocessing of fuel, the size and cost of fusion reactors, and again, why fusion couldn't be developed while fission is cut back. While some of the questions reflected the influence of the latest Ford Foundation strategy to kill nuclear power by attrition, most questioning reflected the growing commitment of Congress to arm itself with the advanced scientific conceptions required to defeat the Carter deindustrializers.

Symptomatic of this tendency, one staffer asked Prof. Bostick a series of questions to elaborate on his earlier statements on the relation between micro-biology and micro-physics and the more general implications of his research, which Bostick had characterized as the advent of the "Pasteur Era" in plasma physics. It is just this relationship between scientific breakthroughs in the understanding of plasmas and the more general unified field problem and the rapid development of the most economical fusion reactors that the FEF, in concluding its briefings, called for the Congress to now fully investigate through extended hearings and to act on in the form of a crash program.