

COMMENTS



As the new year begins, very significant changes have occurred in the U.S. fusion research and development (R&D) program. Because of severe budget constraints, the U.S. Department of Energy's (DOE's) magnetic fusion energy (MFE) program has undergone major reductions in both the number and the variety of projects and in program pace, while the inertial confinement fusion (ICF) program, which is under the organizational control of Defense Programs, has obtained initial construction funds for the National Ignition Facility (NIF) to study high-gain target physics. Meanwhile, the ICF power development component, inertial fusion energy (IFE) – mainly concentrated on the

development of heavy-ion drivers – remains with a small budget in the DOE Office of Fusion Energy, home of MFE.

Researchers in the field are all too aware of these changes and their effects, and the overall situation is far too complex to discuss in any detail here. It has been clear for years that a long-term R&D program, such as the development of fusion energy, would face periodic funding obstacles resulting from (a) the current national mood – which I think is in error – that the United States has ample energy supplies and hence no urgent need to develop fusion power and (b) the lack of continuity in energy leadership arising from Congressional and Executive Branch turnover and an emphasis on near-term projects that are of more immediate concern to voters.

While it is widely recognized that fusion has the distinction of being the longest running large-scale R&D program supported by the U.S. government to date, the devastation of components of the program by wild budgetary swings has also been obvious. Fission power development faced similar hurdles; however, the military's need for nuclear-powered submarines rapidly drove the development of light water reactors, ultimately providing a key database that greatly contributed to commercial development. With Defense Programs support of NIF, perhaps history will repeat itself.

Unlike early fission reactor development, however, a fundamental new element in fusion R&D is strong international collaboration. The International Thermonuclear Experimental Reactor (ITER) project is the prime example of this multinational approach. Sharing costs and combining talents across territorial borders in this manner may provide a new approach to maintain advances in development, despite budget fluctuations in the individual partner countries. Only time will tell.

What effect do these changes have on our journal, *Fusion Technology (FT)*? The reduction in budgets and corresponding decline in the numbers of scientists/engineers working on fusion in the United States can only have a

deleterious effect in terms of both manuscript submissions and subscriptions. For this reason, we have decided to reduce the number of issues by one for 1996, while increasing the number of pages per issue, so that the total published pages remain about the same but publication and distribution costs are reduced. (Subscribers will also receive two special issues in 1996: the *Second Carolus Magnus Summer School*, as a *Transactions of FT*, and the reviewed supplement *Proceedings of the 12th Topical Meeting on the Technology of Fusion Energy*.)

At the same time, we are asking our readers and subscribers to help once again by checking their libraries to ensure that subscriptions are renewed. I would hasten to add that there is reason to believe that the rather bleak national outlook for fusion R&D should have a minimal effect on *FT*. First, the international fusion program remains healthy, and contributions from outside the United States continue to increase. With the new initiative in ICF, papers from that area should also continue to expand. Also, the restructuring of the MFE program is to stress fusion science, and since basic studies typically result in more papers, contributions should grow in that area as well. In fact, with the re-emphasis on basic science, alternate concepts, and longer term goals in the new fusion program, the role of *FT* as an archival journal to preserve the experimental and theoretical database and to support and enhance communication throughout the community is as urgent as ever – perhaps even more so.

A handwritten signature in black ink that reads "George Miley". The signature is written in a cursive, flowing style with a large, prominent 'G' and 'M'.