

September 10, 2002

Professor Richard D. Hazeltine, Chair
Fusion Energy Sciences Advisory Committee
Institute for Fusion Studies
University of Texas at Austin
Austin, TX 78712

Dear Professor Hazeltine:

I would like the Fusion Energy Sciences Advisory Committee (FESAC) to comment, from our present state of understanding of fusion, on the prospects and practicability of electricity into the U.S. grid from fusion in 35 years.

In addition, I would like FESAC to develop a plan with the end goal of the start of operation of a demonstration power plant in approximately 35 years. The plan should recognize the capabilities of all fusion facilities around the world, and include both magnetic fusion energy (MFE) and inertial fusion energy (IFE), as both MFE and IFE provide major opportunities for moving forward with fusion energy.

The report would be most helpful if it could be done in two phases. Building as much as possible on previous work of FESAC, the first phase would be a preliminary report, completed by December 1, 2002, which would both provide a general plan to achieve the aforementioned goal and identify those significant issues that deserve immediate attention. As a second phase, I would like by March 2003, or earlier, a more detailed plan upon which budgeting exercises can be based. This detailed plan would be most useful if it:

- Identifies all important technical and scientific issues, the tasks that would lead to their resolution, and the sequence in which these tasks should be accomplished in order to reach the program goal most effectively;
- Identifies specifically all of the major facilities needed to support the tasks, and provides the mission and approximate cost of each facility;
- Provides a set of general performance measures by which the progress toward the accomplishment of the tasks and/or the mission of related facilities can be measure;
- Identifies key decision points where choices can be made among the various concepts and technologies being pursued; and
- To the extent possible, an estimate of the overall cost of such a plan, and optimum funding scenario(s).

These are historic times for the fusion program, and the work of FESAC will help ensure that the policy issues before us are fully informed.

Sincerely,

Raymond L. Orbach
Director
Office of Science