

June 12, 2006

Professor Stewart C. Prager, Chair
Fusion Energy Sciences Advisory Committee
Department of Physics
University of Wisconsin
1150 University Avenue
Madison, Wisconsin 53706

Dear Professor Prager:

I would like to express my appreciation to FESAC for successfully completing the request made for the third and final committee of visitors (COV) to review the Office of Fusion Energy Science's procedures for reviewing and funding work in the tokamak research and enabling technologies programs. A special thanks goes to the COV Panel, chaired by Dr. Kathryn McCarthy (INL), for a thorough examination of the program and for the excellent report that clearly states the panel's findings and recommendations.

I consider the COV process to be an important way for us to ensure that the Office of Fusion Energy Sciences review and award process is both sensible and fair and results in a balanced portfolio of excellent science and technology. This third effort, just like the previous two, went very well and I believe any future reviews will benefit from this as well as the other two COV Panel's recommendations.

I have enclosed a detailed response to your report.

Sincerely,

/s/

James F. Decker
Acting Associate Director
for Fusion Energy Sciences
Office of Science

Enclosure

Response to Recommendations of the third Committee of Visitors review of the Office of Fusion Energy Sciences Tokamak Research and Enabling Technologies

This document provides the Office of Fusion Energy Sciences (OFES) response to recommendations of the Third Committee of Visitors (COV). On February 13-14, 2006, a COV reviewed the OFES programs in the areas of Enabling Technologies Research and Development, Alcator C-Mod, Diagnostics, DIII-D, NSTX, and MST. The review was conducted in response to a charge from Dr. Raymond L. Orbach, Director of the Office of Science, to the Fusion Energy Sciences Advisory Committee (FESAC) chaired by Prof. Richard Hazeltine of the University of Texas. The COV was chaired by Dr. Kathryn McCarthy (Idaho National Laboratory), a member of FESAC.

Overall Summary of COV

Based on this COV's review of the proposal folders and discussions with OFES staff, it is the opinion of this COV that the OFES supports a high-quality research program in Tokamak Research and Enabling Technologies. The OFES staff is working diligently to improve processes, and thus the quality of the overall program.

COV Recommendations and OFES Response

COV #1: A first recommendation is that **the content of the folders should be complete and consistent across the programs**. This is similar to earlier COV recommendations, but this COV felt it was important enough to repeat. It is clear that DOE is working in this direction, and folders documenting more recent actions are generally more complete than those documenting earlier actions.

OFES Response: The office accepts this recommendation. With the new electronic submission of proposals to the office, and for awards sent electronically, a CD of the proposal will be placed in the OFES file. Copies of the reviews along with documentation on the award will be included as paper copies until the full electronic award process is in place. Afterwards, a CD with all documentation relating to the award in PDF format will be retained. This will be the standard format for all future reviews.

COV #2: There were several instances where the COV felt that **statistics would have been helpful in the evaluation process, as well as to DOE program managers**. For example, the fraction of projects that are renewed, funding awarded versus funding requested, the correlation between ratings and funding, the duration of contracts that do not undergo competitive review, and demographics for awards. This should not be considered an exhaustive list, but rather examples of statistics that would be useful.

OFES Response: Because of the large number of solicitations and reviews that the office conducts, we have an internal solicitation tracking system that we use to keep everyone up to date on the solicitations and reviews. We have recently increased the information

that we track to include statistical information on the reviews. We will increase this further. The system is easy to modify and we will be able to add additional information if needed.

COV #3: The COV recommends that **the review sheet used for program renewals should explicitly include a review of progress**. The reviewer should have a copy of the original proposal as well as the associated progress report.

OFES Response: The office accepts this recommendation. This has already been implemented in the theory solicitations, and we will change the standard review sheet to include an explicit review of previous work. This recommendation will be implemented in two ways. First, the format for all proposals, as recommended by a previous COV, will include a section dealing with previous work. The current theory solicitation states:

Recent Accomplishments - this subsection is mandatory for renewal applications and should summarize the proposed work and the actual progress made during the previous funding period, as well as how the results of this work were communicated

Second, the review sheet will have an additional section as part of the review asking the reviewer to explicitly comment on the past work. As an example, the current theory solicitation asks the reviewers to include a section on:

4. Performance under existing award (for renewal applications);

- Assess the progress the applicants made toward the research goals during the most recent performance period and the impact of the research on the fusion program.
- Have the applicants disseminated the results of their research through publications in peer-reviewed journals, meeting and conference presentations, workshops, or other appropriate means?
- If appropriate, have the applicants attempted to validate their theoretical predictions against experimental results?

COV #4: **Some form of the proposal score should be communicated to the PI in addition to reviewer comments**. It may be better to communicate the quartile in which the proposal fell rather than the raw score to compensate for variability in scoring and OFES management actions.

OFES Response: We agree with this, and in the future we will communicate the score or some measure of how well the proposal has done in the technical reviews to the PI. We have not had a uniform policy on this in the past, leaving it up to the individual program managers to decide if the scores should be provided. One reason is that the reviewer's score is only one part of the basis for the funding decision.

COV #5: **The reviewer pool size should be increased.** This is important both to spread the work around amongst a larger number of reviewers, and to increase the overall quality of the reviews. The COV recognizes that recruiting reviewers is very difficult as potential reviewers are very busy. The COV recommends using more international reviewers, and using reviewers outside fusion (*but only where appropriate*).

OFES Response: Increasing the reviewer pool is a high priority for the program managers. OFES will investigate the possibility of developing a reviewer database that allows us to track the number of proposals that a reviewer evaluates, their institutional affiliations, technical specialty, and other information that will make selecting reviewers more efficient and effective. The plan would be to eventually include all fusion program scientists in this database, so that the pool of US reviewers is as large as possible. OFES expects all researchers with fusion funding to review proposals for this office, and these reviewers will be the first pool contacted by OFES program managers. OFES also plans to look for plasma scientists that are funded by other areas of the government and include as many of those in the database as is feasible. Furthermore, we are starting to use the full range of web-enabled search tools to look for reviewers.

COV #6: During our discussions with OFES staff, the COV learned that Junior Faculty awards are eligible only to those working in basic plasma science. Although the Junior Faculty Award program was not within the responsibility of this COV, the COV agreed that **the Junior Faculty Award program should be eligible to those outside of basic plasma science.**

OFES Response: We agree that the Junior Faculty Award program should be expanded to include other programmatic areas. We should however reformulate the criteria and the basis for the expanded program. OFES feels that this change should wait for the appointment of the new Associate Director for Fusion Energy Sciences.

COV #7: Finally, there were two issues that the COV agreed warranted attention. The first is providing opportunities to young/new PIs. The COV recommends that DOE consider ways to provide new opportunities in various funding environments (flat, increasing, decreasing). The second is the balance between competitive versus noncompetitive processes, especially for the collaborations on the large machines. The process is not uniform across the various parts of the fusion program. The COV recommends that DOE look into this issue, and determine whether it warrants further attention.

OFES Response: OFES will look into these two issues.