

# FES Response to the FESAC Committee of Visitors Review of the Fusion Energy Sciences Program

**Date of the COV Visit to USDOE (Germantown, MD):** August 7-9, 2018

**Date of Delivery of the COV Report to FES:** December 6, 2018

**Date of FES Response:** March 12, 2019

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## 1.0 INTRODUCTION

No recommendations.

## 2.0 SUMMARY

### 2.1 Overarching Findings, Comments, and Recommendations

#### 2.1.1 Efficiency and Quality of the FES Processes

No recommendations.

##### 2.1.1.1 Review Documentation

<b>RECOMMENDATION #1</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(1) We recommend that FES establish a uniform standard for documenting selection/declination decision rationale within PAMS or other suitable repository. If a panel review informed the decision, it should be summarized in the repository by the program manager (PM).	FES concurs with this recommendation; more uniformity in this area is desirable. In most cases PAMS gives FES the ability to record this information, and we will strive to achieve consistency across program areas. Program managers will record selection statements and declination explanations, including relevant input from panel reviews.

##### 2.1.1.2 Monitoring

<b>RECOMMENDATION #2</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(2) We recommend implementing systematic documentation having uniform fields/content/format for the recording of achievements, progress, products, and recognition, whether in PAMS or other suitable repository, for universities, industry, and national laboratories.	FES concurs with this recommendation; consistent reporting across universities, industry, and laboratories is a worthy goal. The new PAMS reporting system for non- laboratories has helped make significant progress in this area, and it will continue to be improved upon. FES will explore the possibility of implementing similar reporting systems for the national laboratories.

### 2.1.1.3 Staffing

<b>RECOMMENDATION #3</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(3) We recommend that FES place a high priority on filling the vacant U.S. ITER PM position in the Facilities, Operations, and Projects Division.	FES concurs with this recommendation. This position has been filled.

### 2.1.1.4 Institutional Priorities

No recommendations.

### 2.1.2 Effect of Award Process on Portfolio

#### 2.1.2.1 Breadth and Depth of the Program

No recommendations.

#### 2.1.2.2 Quality of Program

No recommendations

#### 2.1.2.3 Validation

<b>RECOMMENDATION #4</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(4) We recommend that FES find an effective mechanism to fund multi-faceted collaborations that target validation and involve theory, simulation, advanced-diagnostics, and experiment.	FES concurs with the recommendation and has begun testing the value of jointly funding such collaborations within and across program areas. FES will continue to look for additional opportunities of this nature.

### 2.1.3 Management of Line Item Construction and Major Items of Equipment Projects

<b>RECOMMENDATION #5</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(5) Because the NSTX-U Recovery Plan will be based on an "operations project" treated like a DOE Order 413.3B project, it is critical that the FES program office formally define and document the internal roles and responsibilities for both the Research and FOP Division PMs to support the return to operations of the NSTX-U research facility.	FES concurs with this recommendation. On October 22, 2018, the Project Management Executive approved a Preliminary Project Execution Plan (PPEP) for the NSTX-U Recovery Project. This fully executed PPEP document formally defines the roles and responsibilities of the Research and FOP Division program managers in both the "Management Structure & Integrated Project Team" section and in the "Appendix A: Integrated Project Team Charter" section. At the time of ESAAB Critical Decision

	equivalent - 2 baseline approval, a final fully executed Project Execution Plan (PEP) will formally document the roles and responsibilities of the Research and FOP Division program managers in a manner similar to the PPEP. This PEP will be in force for the duration of the project.
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## 2.2 Recommendations on Each Topical Program

### 2.2.1 Group 1 - MFE Experiments Domestic

No recommendations.

### 2.2.2 Group 2 - MFE Experiments International and Diagnostics

<b>RECOMMENDATION #6</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(6) Regarding the innovative solicitation "Measurement Innovations for Magnetic Fusion Systems," FES should assess the effectiveness and/or success rate of the 13 awarded high-risk, high-reward Category- I proposals after two years and, if the result is deemed successful, FES should consider this model approach for future solicitations.	FES concurs with this recommendation and will monitor and evaluate the progress and results of the Category 1 proposals to determine the value of repeating this approach in the future.

### 2.2.3 Group 3 - Theory and Simulation

No recommendations.

### 2.2.4 Group 4 - Enabling Research and Development, Fusion Nuclear Science, and Materials Research

<b>RECOMMENDATIONS #7-9</b>	
<b>COV Recommendation</b>	<b>FES Response</b>
(7) Design and release effective competitive solicitations/ Funding Opportunity Announcements (FOAs) (in areas of E-R&D, FNS, and MR), targeting narrow scientific or technical challenges, that enable ideas to be openly vetted by the fusion community. The currently funded national laboratory and non-laboratory projects should (when appropriate) submit and compete within these solicitations. Use of parallel (non-laboratory and national laboratory) solicitations is suggested.	FES concurs with the recommendation and will use competitive solicitations/Funding Opportunity Announcements (FOAs) as appropriate.

<p>(8) Utilize panels to assess the scientific and technical quality and progress R&amp;D activities associated with awards to national laboratories. We suggest that these are held at a minimum of once every three years (which also agrees with the most common duration of awards).</p>	<p>FES concurs with this recommendation. Utilizing review panels is consistent with current FES practice in the E-R&amp;D, FNS, and MR programs. These reviews will be held every 3-5 years, aligned with the schedule for future COVs.</p>
<p>(9) Assemble documents that capture and rapidly convey connections between FES technical priorities, projects funded through the E-R&amp;D, FNS, and MR programs, and major project or user facilities to ensure that information needed by the COV to assess the breadth, depth, and quality of these programs is readily available. We suggest including: funds granted by FES to E-R&amp;D, FNS, and MR projects; use (if any) by those projects of user-facilities or major-project facilities; and the key capabilities and the funding channel for (general) operations of user-facilities and major-projects that are considered elements of the E-R&amp;D, FNS, and MR portfolio.</p>	<p>FES concurs with this recommendation. Detailed information will be provided at the next COV.</p>

### **2.2.5 Group 5 - General Plasma Science, Exploratory Magnetized Plasmas, High Energy Density Laboratory Plasmas, and Early Career Research Program**

No recommendations.

### **2.2.6 Group 6 - Facility and Project Management**

Recommendation: See Recommendation-5 within Section 2.1.3.

## **2.3 FES Response to 2014 COV Recommendations**

No recommendations.

### **2.3.1 Community Input**

No recommendations.

### **2.3.2 Panel Reviews**

No recommendations.

### **2.3.3 Use of Portfolio Analysis and Management System**

No recommendations.