

# Princeton Plasma Physics Laboratory

## FY2018 Notable Outcomes for Goals 1-8

### **Goal 1.0 - Mission Accomplishment**

- **FES:** Deliver impactful science and provide strong and effective leadership for the PPPL- led multi-institutional interdisciplinary SciDAC partnerships "Center for Tokamak Transient Simulations" and "Partnership Center for High-Fidelity Boundary Plasma Simulation," as measured by 2018 progress reports, preparation of research publications and highlights, participation in periodic progress-review videoconferences and Principal Investigator meetings, and demonstration of effective synergy between these efforts and the PPPL-led Exascale Computing Project on Whole Device Modeling. (Objective 1.1)  
**Owner - A. Bhattacharjee**
- **FES:** Develop and utilize predictive models of the changes in the heat flux distribution induced by the U.S.-supplied trim coils in the Wendelstein 7-X island divertor. Compare the model results to data obtained in experiments during OPl.2. (Objective 1.1)  
**Owner - H. Neilson**
- **FES:** Provide leadership, coordination, and support to the FES joint research target with the goal of testing predictive models of fast-ion transport by multiple Alfvén eigenmodes. (Objective 1.2)  
**Owner - R. Nazikian**

### **Goal 2.0 - Design, Fabrication, Construction and Operation of Research Facilities**

- **FES:** For the NSTX-U recovery project, complete final design reviews for six inner poloidal magnetic field coils (viz., PF1A-upper, PF1A-lower, PF1B-upper, PF1B-lower, PF1C-upper, and PF1C-lower) by March 31, 2018. (Objective 2.1)  
**Owners - J. Menard/S. Gerhardt**
- **FES:** For the NSTX-U recovery project, build at least one prototype PF1A inner poloidal magnetic field coil. Qualify the coil by operating it at both the maximum required current and at maximum joule heating. Verify the quality of the coil's insulation system through electrical testing followed by destructive sectioning and inspection. Submit a final report documenting the results by July 15, 2018. (Objective 2.2)  
**Owners - J. Menard/S. Gerhardt**
- **FES:** For the NSTX-U recovery project, complete a preliminary design review (PDR) for the passive plates and helium bake-out line supports by July 31, 2018. (Objective 2.2)  
**Owners - J. Menard/S. Gerhardt**
- **FES:** For the NSTX-U recovery project, complete a final design review (FDR) for improved and redesigned plasma facing components by September 30, 2018. (Objective 2.2)  
**Owners - J. Menard/S. Gerhardt**

### **Goal 3.0 - Program Management**

- *No suggestions*

### **Goal 4.0 - Contractor Leadership/ Stewardship**

- **SC/FES:** The University will select and put in place a well-qualified, experienced person as the permanent new Laboratory Director to lead PPPL, no later than September 30, 2018. (Objective 4.1)  
**Owner - D. McComas (VP's Office)**

- **SC/FES:** The University, in concert with PPPL leadership, shall ensure that the necessary support is provided for efficient and effective management of the NSTX-U Recovery effort, such that this project will have completed a Director's Review by September 30, 2018. (Objective 4.2)  
**Owner – R. Hawryluk**
- **SC/PSO:** Princeton University shall enhance their oversight role of PPPL to provide assurance to DOE that the objectives of the contractor management and assurance systems are being accomplished and that the systems and controls are effective and efficient. This shall include the development of metrics and targets by December 31, 2017, to assess performance in key areas to identify and correct any negative performance/compliance trends before they become significant issues. Princeton University shall provide DOE/SC a quarterly written report of actions taken and metric measurements for this Notable report starting January 1, 2018. (Objective 4.3)  
**Owner – C. Reno (VP's Office)**

### **Goal 5.0 - Environment, Safety and Health**

- **PSO:** Successfully achieve ISO 14001:2015 Environmental Management System re-certification by the end of FY18. (Objective 5.2)  
**Owner – J. Levine**

### **Goal 6.0 - Business Systems**

- **PSO:** Achieve a DOE PSO approved new Quality Assurance Plan (QAP) (per DOE 0 414.ID) not later than December 31, 2017. Upon DOE approval, implement the requirements of the new QAP lab-wide. By the end of FY18 the lab shall have conducted an independent assessment across all QAP domains to determine the extent of lab-wide adoption of QAP processes specifically for NSTX-U and submit a report of the results to DOE PSO. (Objective 6.4)  
**Owner – T. Brog**

### **Goal 7.0 - Facilities and Infrastructure**

- **PSO:** Not later than December 31, 2017 refine processes and activities to insure that all required fire safety activities for inspection, testing, and maintenance (IT&M) are completed on-time by qualified staff. Beginning January 1, 2018, submit a quarterly report to PSO detailing all required fire IT&M activities and their respective status. (Objective 7.1)  
**Owner – D. Carle**
- **PSO:** Continue to improve workspace utilization by eliminating the storage of materials and equipment in offices and laboratories and more efficiently use available space. By the end of FY18, develop a space planning and continuous configuration management program to enhance facility and infrastructure planning that includes the use of automation to assist in timely and accurate space allocation and management. (Objective 7.1)  
**Owners – D. Carle/S. Zelick**
- **PSO:** For the IOI Project: A) complete the Level 1 and Level 2 Milestones that are due in FY18 within the tolerances established in the Project Execution Plan. B) Maintain Total Project Cost (CPI) and schedule (SPI) within +/- 5% of approved baseline during FY18. (Objective 7.2)  
**Owner – L. Hill**

### **Goal 8.0 - Security and Emergency Management**

- *No suggestions*