

## **NSTX Weekly Report (November 24, 2010)**

**FY 2011 NSTX plasma operations started on October 4, 2010**

**FY 2011 NSTX Outage started on Oct. 25, 2010**

**Planned Run Weeks: TBD**

**Run Weeks Completed: 4.21 run weeks and 839 plasma shots**

The 2010 NSTX Results and Theory Review will be held at PPPL on Tues-Thurs AM, 11/30-12/2, 2010 in conference room B318. Because of the large number of presentations, the Review was extended into Thurs morning. The talk and the agenda will be available at [http://nstx.pppl.gov/DragNDrop/NSTX\\_Meetings/Results\\_Reviews/2010/](http://nstx.pppl.gov/DragNDrop/NSTX_Meetings/Results_Reviews/2010/). (S. Kaye)

The NSTX Project will conduct an assessment of the FY10 run on Friday morning, December 3rd, from 9AM to noon in conference room B318. This meeting is planned as an open forum to discuss opportunities to improve NSTX operations in the areas of Program Coordination/Research Planning, Collaborator Support, and Run Staffing/Equipment needs. Facilitators will be assigned to take notes and develop summaries of the discussions/suggestions presented. These summaries will be distributed to the NSTX team for any additional comments, and a subsequent meeting will then be scheduled to present an NSTX project response. (Al von Halle)

A letter "Taming the plasma material interface with the "snowflake" divertor in NSTX" by V. A. Soukhanovskii (LLNL) et al. has been accepted for publication in Nuclear Fusion. The paper describes initial results from the snowflake divertor configuration in NSTX obtained with only two divertor coils. A significant divertor peak heat flux reduction simultaneously with good H-mode confinement and reduced core impurity concentration were obtained with the snowflake divertor configuration. These results provide support for the snowflake divertor configuration as a viable candidate divertor solution for present and future high divertor power density magnetic confinement fusion devices. (V. A. Soukhanovskii)

"Taming thermonuclear plasma with a snowflake" by V. A. Soukhanovskii (LLNL) et al. was highlighted in the latest edition of DOE Pulse (<http://www.ornl.gov/info/news/pulse/>) (P. J. Wieser, PPPL)

### **Engineering Operations (A. von Halle, C. Neumeier)**

The NSTX outage continued this past week with in-vessel diagnostic calibrations utilizing the Romer measuring arm, and the removal of three secondary passive plates to provide access to the Liquid Lithium Divertor (LLD) bellows and ceramic breaks. Nine diagnostic windows have been removed and brought to the Vacuum Prep Lab for transmission testing. A water leak was discovered in the Neutral Beam Ion Source "A", and preparations are underway to replace that source with a rebuilt spare. Electricians continued installations for the new MSE-LIF diagnostic and for the upgrade to add a second Switching Power Amplifier system.

Access to the NSTX test cell will be available this coming week.

### **Research Operations (M. Bell)**

### Diagnostic Operations (R. Kaita)

- In-vessel calibrations are continuing. Position measurements were made with a metrology instrument (“Romer Arm”) for the fast X-ray camera, gas puff imaging diagnostic, and the movable supersonic gas injector. Spatial calibrations were completed for the “Bay C” optical fiber array, and the divertor spectroscopy diagnostic (DIMS) was also calibrated. The calibration setup for the beam emission spectroscopy (BES) system was tested, and good images were obtained.