

## NSTX Weekly Report (May 6, 2011)

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

**FY 2011 NSTX Outage started on October 25, 2010**

**Planned Run Weeks: TBD**

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

Several NSTX researchers attended the 2011 international Sherwood fusion theory conference held in Austin, TX May 2-4. Jack Berkery (Columbia University) gave an invited talk entitled "Resistive Wall Mode Kinetic Stability Theory Advancements for Refined Comparison with Experiments", Jon Menard presented a poster on "The Role of Kinetic Dissipation in Modifying RWM Eigenfunctions", and Rob Goldston presented a poster on a "Heuristic Drift-Based Model of the Power Scrape-Off Width in H-Mode Tokamaks". (J. Menard, PPPL)

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

The NSTX outage is drawing to a close with the alignments of the MPTS diagnostic lasers into the vessel, and the completion of laser timing tests and burn patterns. Final vacuuming and cleaning of vessel internals are now in progress and will be followed by a full set of photographs before reinstalling the neutral beam to torus transition duct. Pump-down of the NSTX vessel is scheduled for the latter part of this coming week. Also this past week, the last two bolometers (Bays I & J) were installed and spatially calibrated, and piping to the neutral beam calorimeter was completed.

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

### Research Operations (M. Bell)

#### Physics Operations (D. Mueller)

All the required software and hardware components for the control of the second switching power amplifier (SPA) unit are now in place. Testing of the control system has begun. Work is underway to develop the more advanced algorithms for physics operations. (D. Gates)

#### Boundary Physics Operations (H. Kugel)

- Materials Analysis Particle Probe (MAPP)
  - The Final Design Review for the mechanical design of the Materials Analysis Particle Probe (MAPP) was scheduled for May 10, 2011, at 9:00am in B318. The Assembly drawing and cables were received from the MAPP bellows motion drive vendor, who reported that the drive unit is assembled, and is scheduled to undergo testing and QC inspection next week, ahead of schedule.
- Lithium Evaporators (LITERs)
  - The LITER 2010 probe garage spool units were removed for inspection and cleaning. They exhibited lithium deposition from the probe shutters reaching about two thirds of their lengths. No lithium was found on the bellows support tube bearings located about an

equal distance further outboard.

- The recently repaired LITER 6-channel bellows motion drive controller was installed, and tested. The unit is now operational, and one of its channels was used to control the Supersonic Gas Injector probe during its in-vessel position calibration.