

## **NSTX Weekly Report (Mar. 06, 2009)**

### **FY 2009 NSTX plasma operations**

**Planned: TBD**

**Completed: 0 run weeks**

Jon Menard, Rob Goldston, Rajesh Maingi (ORNL), and Martin Peng (ORNL) visited UCLA March 2-6 to participate in the ReNeW "Harnessing Fusion Power" (Theme IV) and "Taming the Plasma Material Interface" (Theme III) workshops. Rob Goldston made 4 presentations including NHTX-related talks such as: "An Initiative to Tame the Plasma Material Interface" and 2 talks describing "The Role of a Long-Pulse, High-Heat-Flux, Hot-Walls Experiment" for plasma-wall interactions and plasma-facing components. Jon Menard gave 2 presentations at ReNeW including "Capability Requirements for a PMI Research Thrust Fusion Facility" and "Physics and engineering research thrust for 3D coil systems for a tokamak DEMO". Jon Menard also gave a seminar to the UCLA physics department entitled "Recent research highlights, and future directions for NSTX" on March 2. Rajesh Maingi led several sessions acting as Vice Chair of the Plasma material Interface theme, and Martin Peng described the potential contributions of the spherical torus to fusion nuclear science in a presentation entitled "Fusion Nuclear Science Research Thrust Using a Full Fusion Nuclear Environment". Finally, Daren Stotler and Charles Skinner made remoted presentations on "Integrated Edge-Plasma and Plasma-Wall Interaction Research" and "Management of dust in fusion devices", respectively. The ReNeW Theme III and IV presentations are downloadable from: [http://www.fusion.ucla.edu/FNST/Renew\\_Presentations/](http://www.fusion.ucla.edu/FNST/Renew_Presentations/). (J. Menard)

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

NSTX plasma operations with neutral beam injection continued this past week to develop the reference shots needed to support upcoming experiments. Also this week, the machine was operated at 5.5 kG with neutral beam injection into a gas-filled torus to calibrate the Motional Stark Effect (MSE) diagnostic. In the off-hours, work continued on the installation of new HHFW transmission lines, and cabling to the PF Absorber coils. The NSTX Test cell will be in restricted access this coming week during plasma operations. Limited access will be available after 5PM each evening

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

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

##### **• Liquid Lithium Divertor (LLD) (M. Viola)**

A teleconference was held with SNL and PPPL to discuss LLD progress and planning:

SNL Status:

- 6 brazed, shaped, copper plates were completed and shipped to the molybdenum coating vendor.
- Good progress was made on the control rack cross-connect wiring design.

- The design of the control rack LabView software continued, and it is now able to read 25 of the 48 heater control thermocouples.

PPPL Status:

- Vacuum testing of a single heater testing was completed. Work initiated to prepare for performing simultaneous 3 heater testing was interrupted to prepare for LITER installation.
- Lithium Evaporator - LITER 2009 (J. Timberlake)
  - The preparation of sufficient lithium pellets to load and install 2 LITER units was completed.
- Edge Sample Probe (C. H. Skinner)
  - Substantial progress was made in several areas, and the sample probe design is now ready for the Final Design Review on Tuesday March 10 at 2pm in B318.
  - Installation is scheduled for the week of March 23.