

## **NSTX Weekly Report (Oct. 10, 2008)**

### **FY 2008 NSTX plasma operations**

**Planned: TBD**

**Completed: 0 run weeks**

- Members of the NSTX Research Team attended the 4th IAEA Technical Meeting on Spherical Tori and 14<sup>th</sup> International Workshop on Spherical Torus 2008, Oct. 7 – 8, 2008 in Rome, Italy and presented the following invited and contributed presentations: "NSTX: Facility/Research Highlights and Near Term Facility Plans" by M. Ono, "Progress in MHD and Transport and Boundary Studies and the Development of Integrated High-Performance Scenarios in NSTX" by M. Bell (PPPL), and "Coupling solenoid-free Coaxial Helicity Injection started discharges to induction in NSTX" by R. Raman (University of Washington).

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

The NSTX outage continued this week with the completion of the cleaning and replating of the upper TF bundle terminals and flags. The barbecue rails are being trimmed at Bay J as part of the bolometer installation. The modification of the RF Faraday Shields continues in the shop and the modification of the OH bus is in progress. Preparations are underway for the MSE platform extension and tests for the LLD continue. Preparations for switching the MDSplus data from VMS to Linux are in progress. NB work on the spare ion sources continues and the NSTX shutter system upgrade continues with the new cabinet nearing completion. The NSTX test cell will be in free (card reader) access this coming week. (W. Blanchard)

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

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

- Liquid Lithium Divertor (LLD)
  - A schedule and budget estimate for an LLD brazing and step-bending approach was submitted for review. (R. Ellis, M. Viola)
  - Precision measurements of an LLD step-bent, 304-SS/copper sample were completed. This was followed by a heat relaxation tests. Data analysis of the results is in progress. (S. Jurczynski)
  - IR measurements of an LLD step-bent, 304-SS/copper sample showed good thermal contact between the stainless steel liner and the copper baseplate brazed to it. (R. Maingi, ORNL)
  - After hydrogen glow discharge cleaning (HGDC) of a molybdenum-sprayed stainless steel sample, the first laboratory test of solid lithium loading was completed. The angled pieces of solid lithium were made to drop onto the plate without falling off, and when they melted, they spread over the surface indicating that they "wet" the surface very well. (R. Kaita)
  - A meeting was held to review candidate locations for the LLD control and diagnostic racks and their respective cabling requirements. (F. Jones)

- Lithium Powder Dropper

- A prototype lithium powder vibration technique to prevent coagulation was demonstrated successfully. (D. Mansfield)

- Edge Sample Probe

-A teleconference was held with collaborators at Purdue University (J.P. Allain, et al) and the NSTX team to discuss design progress on the NSTX Edge Sample Probe for a forthcoming Final Design Review. (C. H. Skinner)

Diagnostic Operations (R. Kaita)

- The collection mirror for the high-k scattering turbulence diagnostic was removed and cleaned of the coating that resulted from lithium evaporator operation during the last NSTX run period. After the mirror is reinstalled, an optical alignment of the system will be performed before final connections for remote control are made.