

## NSTX Weekly Report (May 14, 2010)

### **FY 2010 NSTX plasma operations**

**Planned: Total - 15 run weeks (Base - 14 run weeks, ARRA - 1 run week)**

**Completed: Base - 0.99 run week and 157 plasma shots**

**Completed: ARRA - 1.01 run week and 171 plasma shots**

David Ruzic (Professor at the University of Illinois at Urbana-Champaign) visited NSTX from May 3 through May 14. He is the principal investigator for a collaboration that provides electronics and data analysis for the new Liquid Lithium Divertor (LLD) Langmuir probe array. D. Ruzic worked with PPPL staff on the evaluation of measurements with this diagnostics during recent LLD experiments on NSTX. He also joined in the study of lithium coatings on LLD samples in one of the NSTX lithium technology development laboratories. (R. Kaita)

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

The extended NSTX maintenance period to address an OH coil lead water leak continued this week with the successful testing of the completed repair. The re-insulation of the repaired OH coil lead was completed, and the reassembly of support structures and connections is in progress. An argon vent of the NSTX vessel to remove and refurbish the bay K lithium evaporator (LITER) shutter was performed, and that assembly will be ready to re-install on the vessel early next week. Also this week, the Vacuum Prep Lab completed a set of pressure/temperature tests on a Liquid Lithium Divertor (LLD) ceramic break/bellows assembly to verify calculated parameters for an air-based LLD heating system.

Access to the NSTX test cell will be available on Monday evening and all day on Tuesday and Wednesday this coming week. Access to the test cell will be restricted on Thursday and Friday during TF reassembly and machine area scrubs in preparation for high power operations on Monday, May 24th.

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

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

- Liquid Lithium Divertor (LLD)
  - Preparations continued for testing an upgraded heater assembly for hot-air heating of an LLD plate.
- Lithium Evaporators (LITERs)
  - The vessel was vented with argon so the LITER K2 port cover, feed-through and the damaged shutter blade assembly could be removed. The vessel was then re-evacuated while the shutter was cleaned of deposited lithium, and repaired. The shutter assembly will be reinstalled in a similar argon vent.
- Lithium Powder Dropper
  - Dennis Mansfield installed an NSTX lithium powder dropper on the EAST tokamak facility at ASIPP, China, and successfully injected trial amounts of lithium into several discharges on May 14 in preparation for the main experiment to be conducted shortly.