

## **NSTX Weekly Report (Feb. 5, 2009)**

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

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

**Completed: 0 run week and 0 plasma shot**

Yevgeny Raites attended the Workshop on Unipolar Arcs in Argonne, National Laboratory, January 29. He gave a talk entitled, "Examples of Unipolar Arcs" in which he discussed observations and possible mechanisms of unipolar arcs in laboratory magnetized plasmas. (Yevgeny Raites)

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

The NSTX start-up activities continued this past week with the Rayleigh and Raman scattering calibrations of the MPTS diagnostic. Systems have been configured for the upcoming vacuum-vessel bake, which will start upon the successful conclusion of the Liquid Lithium Divertor (LLD) system integrated testing now in progress. The neutral beam helium refrigerator compressors have been started and helium process gas clean-up is underway. Also this week, the annual pre-operational testing of safety interlock and E-Stop testing began

Access to the NSTX test cell will be restricted after the start of vessel bake-out operations next week.

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

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

- Liquid Lithium Divertor (LLD)
  - The 4 plates of the LLD were heated up to 360°C for the first time in the NSTX vacuum as part of the Integrated Systems Test Procedure (ISTP) now in progress.
  - The air cooling lines of the 4 plates of the LLD were tested up 75% of full pressure as part of the ISTP, and no vacuum leaks were found.
  - The downward viewing IR camera was used to monitor the LLD during the ISTP.
  - Toward end of the ISTP, an arc failure of heater wires in one of the four LLD plates has occurred which cause is now being investigated.

#### **\*Lithium Evaporators (LITERs)**

- The connectorization of the first of 4 LITER units started.
- A prototype system for loading LITERs with liquid lithium was tested, and promptly loaded a laboratory LITER unit with 33.25g of liquid lithium.

#### **Diagnostic Operations (R. Kaita)**

- The laser alignment and Rayleigh/Raman scattering calibration of the multipoint Thomson scattering diagnostic has been completed.
- A peer review was held on Tuesday, February 2, that covered the electronics being prepared by the University of Illinois at Urbana-Champaign for the new high-density Langmuir probe array in the lower divertor region of NSTX.