

NSTX Weekly Report (Jan. 30, 2009)

FY 2009 NSTX plasma operations

Planned: TBD

Completed: 0 run weeks

- Princeton University graduate student Joshua Kallman made a successful presentation on Thursday, January 29, 2009 on his proposal for doctoral thesis research on NSTX. It was entitled “Investigations of Density, Impurity, and Radiation Behavior during NSTX Lithium Operation.” (R. Kaita)

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

Start-up activities for the NSTX FY09 run continued this week with the ongoing bake of the NSTX vacuum vessel. Neutral beam ion source conditioning was performed in parallel with the bake, completing the low voltage (arc) conditioning, and making good progress on the high voltage (beam) conditioning on all three sources. Also this week, real-time data acquisition testing continued with the ongoing check-out of diagnostic systems and an end-to-end system latency measurement.

Access to the NSTX test cell is expected during the latter half of next week after the cool-down from the vessel bake.

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- Liquid Lithium Divertor (LLD) (M.E. Viola)

PPPL:

- 4 plates brazed; 3 plates water jet cut.
- Preparations of drawings for the step-bending vendor in progress.
- Work continued on upgrading the LLD CAD model.
- Candidate heaters from 2 different vendors tested.

SNL:

- Brazing vendor expecting to braze first plate in a few days as soon as equipment problems fixed.
- Active SNL/PPPL discussion on merits of using vendor heater control software versus a higher level programming approach.

- Lithium Powder Dropper (D. K. Mansfield)

- A lab test demonstrated the ability of powder dropped from an upper outer divertor port to be deflected sufficiently to reach the major radius of the LLD.
- A meeting was held to develop guidelines for establishing lithium dropper collaborations with other laboratories.

- An XP for 2009 Lithium Dropper experiments was reviewed by the Boundary Physics Topical Science Group.

- Edge Sample Probe (C.H. Skinner)

- A teleconference was held with the Purdue team and NSTX to review the latest sample holder design.

- This design was adopted and tasks were assigned progress toward offline testing by early March followed by installation during the first maintenance Week.

- An XP for 2009 use of the sample probe for gas retention measurements was reviewed by the Boundary Physics Topical Science Group.