

NSTX Weekly Report (Mar. 27, 2009)

FY 2009 NSTX plasma operations

Planned: 16 run weeks

Completed: 1.13 run weeks

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

NSTX completed a two-week maintenance period this past week, installing both LITER evaporators and a portion of the wave-guides for the HHFW balanced power feed upgrade. Both LITER evaporators are loaded with lithium, have been baked, and cycled via their control systems through the full range of travel into the vacuum vessel. Control cables and air lines for the two Lithium Droppers and the new Sample probe were installed and tested, and are awaiting the installation of those devices. Also this week, calibrations of the NSTX vacuum vessel pressure gauges were completed, and measurements of the vessel pumping speeds and intrinsic outgassing rates were taken. A vacuum vessel boronization will be performed over the weekend before the start of plasma operations on Monday morning. 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 plates are at the molybdenum coating vendor.
- A molybdenum coated sample will be delivered to PPPL 4/6 and analyzed 4/6-4/10.
- Then molybdenum coating tooling will be installed and the 6 plates will be coated about 4/13. The completed plates should be received at PPPL ~4/20.
- Hans Schneider and Mike Viola are visiting SNL 3/27/09 to inspect control rack assembly, review drawings, and the software programming.

PPPL Status

- Drawings for the plate hardware have been submitted to the shop.
- The bias tile fabrication drawings are complete and released.
- The Langmuir Probe Array design was completed and work on the fabrication drawings started.
- Work started on the 2D Mirnov tile fabrication drawings.
- Planning started for the inspection of the received main tiles.
- Vacuum testing of a test array of three, 325w heaters was completed. Work started on preparing for the 470w heater testing.

- Lithium Evaporator - LITER 2009
 - LITER-F and LITER-K were each loaded with 46g of lithium, and installed on NSTX. Leak checking and cabling is in progress. (J. Winston)
- Lithium Dropper (D. Mansfield)
 - Calibration measurements using unit-1 were completed.
 - Work started on the assembly of unit-2.
- Edge Sample Probe (C. H. Skinner)
 - The assembly of the bellows section of the probe was completed and work started on the final assembly of the sample holder.
 - Preparations to begin laboratory testing prior to installation are in progress.
- FUEL GAS RETENTION (C. H. Skinner)
 - Comprehensive calibrations of NSTX vessel pressure gauges, Residual Gas Analyzer, and Neutral Beam cryopanel pumping speeds were completed.

Diagnostic Operations (R. Kaita)

- Personnel from the Johns Hopkins University performed installation and repair work on soft X-ray diagnostics. Vacuum components for a new multi-energy “optical” soft X-ray array were mounted on a tangential NSTX port. A leak at a feedthrough nipple on an ultrasoft X-ray array was sealed.