

NSTX Weekly Report (Feb. 10, 2006)

FY2006 weeks of research operations

Planned: 11 weeks

Completed: 0 weeks

- J. Menard visited UC San Diego on Feb 3 and presented a seminar in the physics department entitled "Recent physics results from the NSTX". He then attended the full committee meeting of the Plasma 2010 to discuss progress on getting community input and report writing in Irvine, CA. The decadal study of plasma science is conducted by the National Research Council of the National Academies. (J. Menard)

- There will be no NSTX Physics Meeting on Monday, 2/13. (S. Kaye)

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

The NSTX outage drew to a close this week with the completion of hardwired safety interlock, fault detection, and emergency stop system testing, and the successful insulation testing (HiPots) of the magnetic coil systems. Pre-operational testing of the plasma control system and the power system real time controls is complete and ready to start integrated system power testing this coming week. Alignments of the Multi-pulse Thomson Scattering Lasers are in progress, as well as the assembly of the new lithium evaporator probe (LITER) and the pre-operational testing of the lithium pellet injector. The three neutral beam ion sources have been conditioned to operating levels of 65kV, and a new capability for notching the NBI up to 24 times in a pulse has been tested.

Access to the NSTX test cell will be limited during the 1st shift this coming week during power testing. Access to the test cell is expected after 5:00PM. Daily access restrictions will be announced in the morning meeting notes. (A. von Halle)

Research Operations (M. Bell)

Diagnostic Operations (R. Kaita)

- Plasma shots this past week were used to check out diagnostics. Cables for magnetic sensors that were not reconnected properly were corrected. The detector for the SPRED vacuum ultraviolet spectrometer that was replaced after the last run is operating, and initial data on impurity levels were obtained. The problem data acquisition hardware for the hard X-ray monitor was also solved, and this diagnostic is operational as well.

Boundary Physics Operations (H. Kugel)

- The LITER probe assembly of the feedthroughs and associated vacuum flanges was completed. This part of the probe system which includes the bellows motion drive system was evacuated for the first time, pumped overnight with a turbomolecular pump, and successfully passed the leak tests. The probe was vented and connection of the oven cartridge to the probe was started and is in progress. In the Offline Test facility, the computer interfacing for the thermocouple instrumentation was completed. The computer

interfacing for the power connections is in progress. A convenient design for the sample coupon mounting was achieved, and fabrication of the parts is in progress. A theoretical calculation of the LITER deposition profile predicted for the Off-line Test facility was received and is being used to guide the placement of the diagnostics. A Run Copy and Work Permit were obtained for installation of LITER controls and cabling during the next Maintenance Week. The results from the Safety Review Committee (SRC) of the safety and engineering control documentation for the NSTX LITER installation were received and the requested changes are in progress.

- The results of very sensitive exothermic nuclear reaction ${}^7\text{Li}(p, {}^4\text{He}){}^4\text{He}$ measurements performed at SNL on NSTX FY05 lithium sample coupons were received and are under review. (W.R. Wampler)