

NSTX Weekly Report (Aug. 13, 2004)

For FY2004 Joule milestone: 18 weeks; programmatic goal: 20 weeks.
Completed: 21.1 weeks producing 2460 plasmas (Aug. 5, 2004).

Department, Project, Program (M. Ono, M. Peng, M. Williams, E. Synakowski)

- This year, NSTX will hold two major events at PPPL during the week of September 20 - 24. They are the NSTX Results Review (September 20 – 22), and the NSTX Research Opportunities Forum (September 22 – 24). The Results Review will consist of short talks that are concise accountings of the research status in both NSTX experiment and ST-related theory. The Research Opportunities Forum is the annual opportunity to discuss experimental proposals and to enter the process of run planning and prioritization. Breakout sessions and related discussions will be organized and led by Experimental Task Group leaders. (E. Synakowski)
- D. Pacella from the Frascati Laboratory in Italy is visiting NSTX in July and August in collaboration with Johns Hopkins. He has been obtaining data with his two-dimensional tangential X-ray system that has been modified to obtain images over a wider energy range. (R. Kaita)
- N. Nishino from Hiroshima University is visiting NSTX in July and August. He has brought and installed fast visible cameras for imaging transient edge structures during H-mode discharges. (R. Kaita)
- Due to the summer vacation period, we will not have any NSTX physics meetings in August. The meetings will begin in September 3 as given below (C. K. Phillips):
 - September 3 (Friday) "Recent progress in ETG turbulence simulation: do streamers produce significant transport?" by Z. Lin (U.C. - Irvine)
 - September 13 "Edge turbulence imaging results and plans" by S. Zweben
 - September 20 -- no meeting because of Results Review and Research Forum this week
 - September 27 "Modeling of Low-frequency MHD-induced Beam-ion Transport In NSTX" by N. Gorelenkov and S. Medley

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

NSTX has concluded experimental operations for this year and has begun a six month outage for maintenance and upgrades. The NSTX vacuum vessel has been back-filled to varying pressures of nitrogen and argon to complete Rayleigh and Raman scattering calibrations of the MPTS diagnostic, followed by a filament calibration of diagnostic windows. The vessel was then vented and a neutron detector calibration was completed. Procedures are being

prepared for a vessel entry early next week. The neutral beam transition duct will be removed next week, along with the disassembly of the TF joints in preparation for the removal of the NSTX center column.

There are no NSTX test cell access restrictions this coming week other than the local restrictions associated with lifting and construction activities (A. von Halle)

Research Operations (M. Bell)

Diagnostic Operations (R. Kaita)

- Calibration measurements with a gas-filled torus were completed for the motional Stark effect diagnostic, and the data are being analyzed.
- Data were obtained with the new VUV spectrometer installed and operated by personnel from the Lawrence Livermore National Laboratory and PPPL.
- Measurements were being made routinely by the end of present operating period with magnetic sensors installed near the end of the probe drive for the supersonic gas injector.
- A fast visible camera was used to observe the gas trajectory from a supersonic gas injector. The tangential view permitted imaging of the gas plume as it emerged from the injector.
- The MPTS post-run Rayleigh and Raman calibration has been completed. The work was done with nitrogen and also argon. When cross-section and pressure are folded in, these two calibrations agree very well. A set of "alignment" channels were calibrated as well by moving the collecting optics by known amounts. The time synchronization of the detecting electronics was verified to be correct. (B. LeBlanc)