

NSTX Weekly Report (June 29, 2007)

FY 2007 NSTX plasma operations completed on June 22, 2007.

Planned: 12 weeks

Completed: 12.63 weeks with 1,879 plasma discharges

The members of NSTX attended and presented the following contributed papers at the 22nd IEEE/NPSS SOFE, Albuquerque, NM, June 17-21, 2007: "NSTX Coil Design Upgrade", M. Kalish, et al., and "A Fast Visible Camera Divertor-Imaging Diagnostic on DIII_D and Comparison with NSTX", by A. L. Roquemore, et al.

The members of NSTX attended and presented the following contributed papers at the Sixth IAEA Technical Meeting on Control, Data Acquisition, and Remote Participation for Fusion Research held in Inuyama, Japan, June 4 -8, 2007: "A Software Event Summation System for MDSplus", W. M. Davis, et al., "Flexible I/O and Time Stamping for FPDP", M.O. Isaacs, et al., and "Plasma Control System Upgrade on NSTX", D. Mastrovito, et al. (P. Sichta)

There will be a NSTX Physics Meeting **TODAY Monday 7/2 at 1:30 pm in B-318**. Martin Peng (ORNL) will present a talk entitled "Opportunities and Challenges of Nuclear Component Testing". There will be a ~30 min discussion after his talk. (M. Bell)

Run Coordination (D. Gates, M. Bell)

On Thursday June 21st four experiments were completed:

9AM-12PM	XP-728 RWM Active Stabilization and Optimization – ITER Scenario
12AM-2PM	XP-745 Relationship of ELM Severity and Electron Transport
2PM-4PM	XP-708 Divertor heat flux reduction in highly shaped plasmas
4-7PM	XP-720 Electron Bernstein Wave Conversion in H-Mode Plasmas

Each of these experiments, all of which had previously received run time allocations had identified gaps in the data set obtained during the initial run.

On Friday June 22nd the following activities were run performed:

9AM-11PM	ISTP-001 and Gas system ISTP
11AM-12:30PM	XMP-48 magnetics calibration
12:30-3:30PM	XP-702 Optimization of RFA and RWM detection algorithms
3:30-4:30PM	XP-737 Investigation of Ion Transport with Beam Modulation
5-6PM	XP-734 Te gradient and magnetic shear effects on core transport
6-7PM	ISTP-001

Each of these experiments, all of which had previously received run time allocations had identified gaps in the data set obtained during the initial run. The ISTP for the upgraded plasma control system was run and, on the last shot of the run, a modest plasma was made using the updated system.

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

The NSTX FY07 run concluded this past Friday after completing 12.63 run weeks during which there were 1879 plasma discharges. The vacuum vessel was partially vented in argon and then nitrogen this week to complete a calibration of the Multi-Pulse Thomson Scattering (MPTS) diagnostic. Several diagnostic windows will be removed next week to evaluate the extent of coatings after extensive use of lithium this run. Post-run calibrations will continue until mid-July when in-vessel outage activities will begin.

The NSTX test cell will be in unrestricted (card reader) access this coming week.

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- LITER-1d1 was retracted from the vessel and vented with argon to await offline testing.
- R. Ellis III, L. Roquemore, and H. Kugel visited Sandia National Laboratory (SNL) to discuss the Liquid Lithium Divertor (LLD) project plan and schedule with R. Nygren (SNL). The principal elements of a draft schedule were completed. Subsequently, the task linkage in this schedule was started and upon completion the schedule will be submitted for inclusion in the Rollover Schedule. A UIUC team (D. Ruzic, et al.) visited SNL to discuss possible lithium wetting experiments at UIUC to support the SNL /NSTX LLD effort.

Diagnostic Operations (R. Kaita)

- Calibrations of multipoint Thomson scattering diagnostic were completed with both argon and nitrogen as fill gases in the NSTX vacuum vessel. A schedule for calibrations that require in-vessel access is being prepared.