

## **NSTX Weekly Report (Sept. 10, 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)**

- The NSTX Program Advisory Committee (PAC) met on September 9-10, 2004 at PPPL to review and advise on the priorities and balance of the research elements on which research collaboration during CY 2005-2007 is encouraged. This Program Letter will be submitted to DOE in support of the present Notice (<http://www.science.doe.gov/grants/FAPN04-24.html>) to solicit grant proposals to carry out collaboration research on NSTX during this period, and will be posted on NSTX webpage on September 15, 2004. The present chair and members of the PAC are:

Jim VanDam, University of Texas-Austin, Chair

Cary Forest, University of Wisconsin

Chuck Greenfield, General Atomics

Martin Greenwald, Massachusetts Institute of Technology

Don Hillis, Oak Ridge National Laboratory

Tom Jarboe, University of Washington

Mitsuru Kikuchi, Japan Atomic Energy Research Institute

Brian Lloyd, UKAEA Fusion Science Center

T.K. Mau, University of San Diego

Mike Mauel, Columbia University

Bill Nevins, Lawrence Livermore National Laboratory

Paul Terry, University of Wisconsin

Mike Ulrickson, Sandia National Laboratory

Mike Zarnstorff, Princeton Plasma Physics Laboratory

A PAC report on this meeting will be available on September 24, 2004.

(Martin Peng, ORNL)

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

The NSTX outage continued this past week with the removal of the TF inner bundle and OH coil from the center column. All 36 of the TF lower flag boxes have been disassembled and the epoxy sleeves removed from the boxes. Machining of the bay K port cover in support of the Microwave Scattering diagnostic upgrade is in progress. UCSD engineers are preparing a procedure to remove the fast probe to provide access to Bay I for the removal of passive plates, also for Microwave Scattering diagnostic modifications. The installation of the Resistive Wall Mode error field coils continues, presently at Bays J-K. The new neutral beam duct bellows is on site and is being prepared for vacuum leak checking.

There are no NSTX test cell access restrictions this coming week. (A. von Halle)

### **Research Operations (M. Bell)**

#### Boundary Physics Operations (H. Kugel)

- A more sensitive dust detector was developed with more than an order of magnitude greater sensitivity than previous designs. The instrument is designed to detect dust settling on remote surfaces in next-step burning-plasma devices, and will be useful in assuring that their in-vessel dust inventory remains below safety limits. It will be tested in NSTX. The work was performed by Chris Voinier, an undergraduate student from The College of New Jersey, sponsored by the National Undergraduate Fellowship Program and Charles Skinner. The results will be presented at the upcoming DPP APS meeting in Savannah, Georgia. (C.H. Skinner)
- A Meeting of the Supersonic Gas Injector (SGI) Team was held to review results from the Run, and to plan future maintenance and improvements. After a radial position calibration was performed using the Faro Arm, the SGI was removed from NSTX and remounted on the off-line test stand. Work was started to test the post-run characteristics. An investigation of advanced nozzle designs is in progress. (V. Soukhanovskii, LLNL, A.L. Roquemore, H.W. Kugel)
- UCSD provided timely procedural information to facilitate the Fast Probe removal from Bay-I to allow initiating in-vessel diagnostic work. ( R. Hernandez, L.Chousal, J. Boedo, UCSD)