

NSTX Weekly Report (August 3, 2007)

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

Planned: 12 weeks

Completed: 12.63 weeks with 1,879 plasma discharges

A new paper "Study of statistical properties of edge turbulence in NSTX with gas puff imaging" was accepted for publication in the Physics of Plasmas. The authors are Matteo Agostini, Stewart Zweben, R. Cavazzana, P. Scarin, G. Serianni, R.J. Maqueda, and D.P. Stotler. The first author is a graduate student at the RFX experiment in Padova, Italy, who spent two months visiting NSTX during the summer of 2006. This paper applies to NSTX data several turbulence analysis techniques originally developed for the RFX reversed field pinch experiment. These techniques clarify the difference between edge turbulence as seen in the L-mode and H-mode of NSTX. (S. Zweben)

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

NSTX In-vessel work continued this week with calibrations of the high-k and P-CHERS diagnostics, and post-run inspections of the HHFW antennas. Also, the NSTX umbrella lid was removed to complete visual inspections and resistance measurements of coil system bus-work and flags. The neutral beam ion source shop is busy refurbishing three ion sources for the next run period, and the LITER lithium evaporator has been installed on a test stand and vacuum chamber to evaporate and analyze its remaining inventory of lithium.

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

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- A bakeout procedure for minimizing LITER initial outgassing in NSTX was tested using LITER 1d unit 2 without lithium at about 400°C and relatively little outgassing was observed relative to the reference conditions. Additional testing at 650°C is in progress.
- An initial wetting test of an LLD candidate substrate consisting of molybdenum plasma sprayed on stainless steel was successful in argon. (J. Timberlake)