

NSTX Weekly Report (June 17, 2011)

FY 2011 NSTX plasma operations started on October 4, 2010

FY 2011 NSTX Outage started on October 25, 2010

Planned Run Weeks: TBD

Run Weeks Completed: 4.21 run weeks and 839 plasma shots

M. Ono (PPPL) visited Seoul National University (SNU) in Seoul, Korea on June 14 – 15 under the US-Korea collaboration agreement. He visited the CARFRE (Center for Advanced Research in Fusion Reactor Engineering) and met with Y-S Hwang, T-S. Hahm, J. H. Han, and Y-S. Na. He discussed various collaborative activities at CARFRE including spherical torus (ST) reactor design, the VEST ST device which is being installed at SNU, and possible future collaborations with NSTX and PPPL. He then visited the National Institute of Fusion Science (NIFS), Gifu, Japan on June 16 – 17 under the US-Japan collaboration agreement to discuss the US-Japan NSTX collaboration plan. He met with a number of Japanese researchers including T. Mutoh, Y. Takase, H. Kasahara, N. Tamura, H. Hirooka, and T. Imai. He gave a seminar at NIFS on the recent NSTX results and plans. (M. Ono)

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

Preparations for upcoming NSTX operations continued this week with the start and ongoing bake of the vacuum vessel. The neutral beam-line cryogenic-panels were cooled to liquid helium temperatures, and conditioning of the ion source plasma chambers is in progress. Also this week pre-operational testing of the ECH system interlocks was completed, and the final design of a prototype FCPC rectifier fault detector was successfully reviewed.

Access to the NSTX test cell will be restricted this coming week during the vessel bake and neutral beam ion source conditioning.

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- Liquid Lithium Divertor (LLD)
 - The 12 newly installed 2011 LLD thermocouples were functioning normally during the vessel takeout now in progress.
- Molybdenum Tiles
 - The newly installed Mo tile thermocouple was functioning normally during the vessel takeout now in progress.
- Lithium Evaporators (LITERs)
 - The heater installation and thermocouple wiring for 4 units has been completed in preparation for starting the installation of the thermal radiation shield covers.
- Materials Analysis Particle Probe (MAPP)
 - MAPP instrumentation rack, currently undergoing development and testing at Purdue Univ. (JP Allain et al.) is being prepared for shipment to NSTX in early July. After its

delivery, two Purdue Univ students will visit NSTX for about 4 weeks to assist in its integration.

- The Purdue collaboration has obtained a test X-ray Photoelectron Spectrum (XPS) with a Helmholtz coil surrounding the MAPP analysis chamber (generated 8-10 gauss residual field), and preliminary results indicate that such a field will not effect an XPS spectrum. Preparations are in progress for additional testing.
 - The Purdue collaboration is finalizing all MAPP remote control systems, and optimizing the energy resolution and intensity of the MAPP analyzer system. Preparations are in progress for obtaining calibration samples for Au, Ag, and Li-C and D2 on Li-C to calibrate the system before sending to NSTX.
- Lithium Centrifugal Granule Injector for ELM Pacing
 - Preparations are in progress for the Final Design Review scheduled for Thursday, June 23, 9:30am in the CRA.