

NSTX Weekly Report (Dec. 19, 2008)

FY 2009 NSTX plasma operations

Planned: TBD

Completed: 0 run weeks

A manuscript entitled "Divertor heat flux mitigation in the National Spherical Torus Experiment" by V.Soukhanovskii (LLNL) based on his APS 2007 invited talk, has been accepted for publication in Physics of Plasmas. (V.Soukhanovskii)

There will be an NSTX Physics meeting on Monday, 12/22 at 1:30 PM in LSB318. Ben LeBlanc will give an update on the Thomson Scattering window coating issues and the recalibration of the MPTS data. (S. Kaye)

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

The NSTX outage continued this week with completion of the in-vessel HHFW antenna upgrades, and the re-installation of all machine tiles. In-vessel diagnostic calibrations have been completed, as well as cleaning and photographing of in-vessel surfaces. We expect to re-install the neutral beam to torus transition duct early this coming week. Also this past week, Sandia National labs conducted a design review for the new NSTX Liquid lithium Divertor control system. Access to the NSTX test cell will be limited to the hours of machine technician coverage after the start of NSTX machine area scrubs this coming week. Please contact Erik Perry or Al vonHalle to schedule time in the test cell.

PPPL received from ASIPP in Hefei, China, a new Ohmic Heating (OH) coil for NSTX. The new coil was fabricated by ASIPP as part of collaboration between PPPL and ASIPP. The coil was fabricated with design improvements and will be a backup to the existing unit already operating in NSTX. The new OH coil has successfully completed its electrical acceptance tests. Along with other tests, a 13 KV Hi pot test was performed with a resulting leakage current of only 0.2 micro amps. (J. Chrzanowski)

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- Liquid Lithium Divertor (LLD)
 - SNL (Sandia National Laboratory) has completed 2 of 6 copper segments and has sent the parts to the brazing vendor. Brazing of the first 2 units is scheduled to start 12/22/08.
 - SNL presented a design review of the LLD control rack. CHITS were derived and work is progress to resolve open items.
 - The step-bending of a second PPPL aluminum prototype plate test section was completed and the part has been received. Analysis is in progress.

- Lithium Powder Dropper

- Fabrication of addition dropper parts is in progress.
- A test vacuum chamber was upgraded, and preparations resumed to characterize the vacuum properties of paraffin coated lithium powder.
- Peer reviews were held for the second dropper and a re-entrant port to view the lithium powder. No issues were identified that would preclude completing their installation for the upcoming FY08 NSTX run.

- Divertor Region Sample Probe

- The sample probe bellows motion drive was moved into the test cell.
- The fabrication of the sample probe support stand was completed.
- Preparations are in progress to perform a trial fit up.

- Quartz Deposition Monitor (QDM)

- A new QDM was received and preparations are in progress for its installation on upper Bay-E .

- Sample Coupons

- Additional silicon wafer sample coupon were received and preparations are in progress for installation in vessel prior to pumpdown.

Diagnostic Operations (R. Kaita)

- Photometric calibrations have been completed for the poloidal CHERS plasma rotation diagnostic and the FIDA fast ion diagnostic.
- All three sets of bolometer detectors for the lower divertor region have been installed. Detailed (“FARO arm”) measurements were performed of their locations and orientations.