

NSTX Weekly Report (Aug. 22, 2008)

FY 2008 NSTX plasma operations

Planned: 15 run weeks

Completed: 16.62 run weeks, 2571 plasmas (run completed on July 14, 2008)

- There will be an NSTX Physics Meeting on Monday, 8/25 at 1:30 PM in LSB318. **David Gates will present an outline of his IAEA Overview talk for group discussion.** The talks will be found in http://nstx.pppl.gov/DragNDrop/NSTX_Meetings/Monday_Physics_Meetings/2008/8-25-08/ (S. Kaye)

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

The NSTX outage continued this week with the ongoing in-vessel diagnostic calibrations utilizing the Faro Measuring Arm. Power system maintenance is in progress with the completion of the neutral beam gradient grid divider repairs to the "B" or center ion source power supply, and the power testing of that system's modulator regulator. The preliminary design for upgrades to the NSTX TIV/Shutter control system was successfully held this past week.

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

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- Liquid Lithium Divertor (LLD)
 - A teleconference was held between Sandia National Lab (SNL) and NSTX to discuss the SNL bid process for the LLD fabrication, and follow-up plans for the bid review.
 - Information was sent to SNL to facilitate SNL interactions with vendors during the bid process.
 - Information was sent to SNL to help coordinate preparations for the forthcoming LLD Controls FDR.
 - Tests were completed on the feasibility of dropping Li powder on to the LLD as a means of reloading it. The tests were performed by dropping 50 micron Li powder on to a porous molybdenum sample in an Argon Glove Box. The sample surface was inclined at 22° to mimic the outer divertor. Both paraffin-coated 50 micron Li powder and carbonate-coated Li powder were tested, on both a dry sample surface and a sample surface pre-coated with liquid Li. Sample temperatures of 200°C and 300-350°C were tested. In all cases, the dropped Li powder stuck to the sample surface, but coagulated in a pile of unmelted particles, from which it did not spread, or wet, until manually kneaded with a tool. Data analysis is in progress.
- Sample Analysis

- Preparations were completed for shipping 20 graphite tiles to SNL (W.R.Wampler) for Nuclear Reaction Analysis, as soon as surface core samples are obtained from selected graphite tiles for analysis at Purdue Univ (J. P. Allain). Preparation of a special tool for obtaining the core samples was completed and preparations are in progress for obtaining the core samples.

- Materials Surface Analysis Probe

- Information was sent to Purdue to facilitate the probe assembly design needed for the FDR.
- Work was initiated at NSTX on a design for a generic probe support structure needed for the FDR.

Diagnostic Operations (R. Kaita)

- Calibrations were completed for the edge neutral density diagnostic (ENDD), tangential optical soft X-ray (tOSXR) array, and visible spectrometer (VIPS). Final measurements for the charge-exchange recombination spectroscopy (CHERS) diagnostic will be made at the beginning of next week.