

NSTX Weekly Report (September 28, 2007)

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

Planned: 12 weeks

Completed: 12.63 weeks with 1,879 plasma discharges.

- The NSTX Team Meeting was held on September 26, 2007. The update on the NSTX outage, a summary of the NSTX Run Assessment meeting, the Tokamak Workshop summary, and the NSTX Program Plan were presented. The presentation material is available on the NSTX web page at http://nstx.pppl.gov/DragNDrop/Team_Meetings/2007-09/.
- There will be an NSTX Physics Meeting on Monday, 10/1 at 1:30 pm in LSB318. A talk entitled "Gyrocenter shift of low temperature plasmas and the retrograde motion of arc discharges" will be given by K. C. Lee, UC Davis (S. Kaye)

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

The NSTX outage continued this past week with the completion of the in-situ cleaning of the plasma facing surfaces of in-vessel tiles, and the reassembly of the HHFW antenna in the vessel. The mounting brackets for the new halo current sensors have been welded into place in the vessel, and the sensors installed. In-vessel measurements of the high-k scattering diagnostic collection mirror were completed, and the mirror removed for modifications. In the evenings, a HeNe alignment laser was used to test illumination schemes for the new MPTS diagnostic calibration probe. Also this week, electricians continued to work on the new diagnostic ground buss and the PCHERS installations.

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

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- A Quartz Deposition Monitor crystal from Bay I midplane, and silicon and graphite coupons exposed to LITER-1d1 off-line evaporation tests were analyzed at the main campus Image Analysis Center (IAC) of the Princeton Institute for the Science and Technology of Materials (PRISM). The Quartz Deposition Monitor crystal from Bay I midplane exhibited metal accumulation similar to previously measured coupon and graphite tile samples from other locations. The silicon and graphite coupons exposed to LITER-1d1 off-line evaporation tests which deposited on each coupon a lithium layer about 1 mm thick exhibited no metals.

- The FDR for the 2 unit LITER FY08 configuration has been scheduled for Thursday 10/04/07, B318. Work Planning #1401 was approved. Analysis of duplicating the Bay F LITER mount for a Bay-K installation started.

- LLD design team meetings discussed the respective engineering and research efforts. Engineering is

proceeding with thermal analysis of two heater concepts for a candidate Divertor Lithium Containment ("tray") system. Research is proceeding with plans for L-245 wetting tests of a flat metal surface to start after current near term work is completed.

Diagnostic Operations (R. Kaita)

- The cause of the scanning problem with the collection mirror on high-k scattering turbulence diagnostic was identified by checking the extremes in its motion inside the NSTX vacuum vessel. The mirror has been removed to machine away the interferences in the support structure.
- All of the welding required to attach the supports for the new halo current coils has been completed. The installation of the sensors themselves has begun.