

NSTX Weekly Report (May 8, 2009)

FY 2009 NSTX plasma operations

Planned: Base - 11 run weeks, ARRA - 5 run weeks (pending funding approval)

Completed: Base - 5.2 run weeks, ARRA - 0 run weeks

Charles Skinner attended the 12th Div/SOL ITPA meeting Amsterdam 5-8 May 2009. This meeting discussed progress in key topics for ITER, including tungsten qualification, ion cyclotron wall cleaning, He implantation and retention, outgassing with disruptions, material migration, divertor reattachment, Dust R&D, modelling of detachment, and heat flux R&D. Contributions from NSTX on retention and dust were discussed. (C. Skinner)

R. Maingi (ORNL) presented a talk at the Edge Coordinating Committee to foster theory/experiment cooperation for the FY10 Joint Research target on SOL heat transport: "The FY 2010 Joint Research Target on SOL heat transport: Status and Plans". (R. Maingi)

R. Maingi (ORNL) presented an invited talk at the TTF meeting: "Modification of edge plasma profiles in ELM-suppressed discharges with Lithium coatings in NSTX." (R. Maingi)

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

NSTX completed a two week scheduled maintenance period, and is resuming plasma operations on May 11th. Both LITER probes have been reinstalled and commissioned after being topped-off to 60 grams of lithium each. Good progress was made on the installation of the HHFW transmission lines this week, fitting and tuning sections for all of the lower antenna feedthroughs. The NSTX Test cell will be in restricted access this coming week during plasma operations. Extended run days (to 7PM) are planned for Tuesday and Thursday this week.

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

- Liquid Lithium Divertor (LLD)
 - A teleconference was held with SNL and PPPL to discuss LLD progress and planning.
 - The molybdenum spray vendor completed calibration of repaired equipment. LLD plate samples will be sprayed on 5/11/09; samples to arrive at PPPL 5/12-13/09; PPPL evaluates samples 5/13-19; plates sprayed on or about 5/19/09, plates shipped to PPPL about 5/20/09.
 - The Control Rack will arrive at PPPL from SNL 5/18/09. (M. Viola)
- Lithium Evaporator - LITER 2009
 - The LITER system was reloaded; the present total loads are about 60 g each.
 - The bellows transport system was outgassed; the melting and outgassing of the Li load is in progress. (J. Winston)
- Edge Sample Probe

- Cables for automating the probe were installed. (M. Cropper)

Diagnostic Operations (R. Kaita)

- Diagnostic activities during the past maintenance week included the replacement of defective high voltage cables for the new Johns Hopkins University multi-energy tangential optical soft X-ray (ME-tOSXR) array, and the installation of the camera for the Long Wavelength Extreme Ultraviolet Spectrometer (LoWEUS) of the Lawrence Livermore National Laboratory.
- A peer review for additional halo current sensors was held on May 7. The goal is to provide better measurements in the lower divertor region to support liquid lithium divertor research, and improve understanding of halo currents in general in tokamaks.