NSTX Weekly Report (Dec. 4, 2009)

FY 2010 NSTX plasma operations
Planned: TBD run weeks
Completed: 0 run week and 0 plasma shot

• The NSTX Research Forum for FY2010 was held at PPPL on Tuesday through Thursday Dec 1-3, 2009, involving NSTX Team members who attended or participated remotely by teleconference. The forum began with a plenary session where programmatic issues for the next experimental run were discussed and the plans of other facilities, MAST, C-Mod and DIII-D, were presented. Then in three consecutive half-days of two or three parallel sessions, each of the seven NSTX Topical Science Groups, discussed over 160 proposals for research on NSTX. New this year is a Topical Science Group on Lithium Research tasked with developing high-performance plasma scenarios utilizing the new liquid lithium divertor and studying its operation. In the final plenary session on Thursday morning, the prioritized lists of proposals were presented by the group leaders and the plan for organizing the run time was presented by the NSTX Run Coordinator for 2010, E. Fredrickson. The presentations at the forum are available through the website http://nstx-forum-2010.pppl.gov/index.html. *(M. Bell)*

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

The NSTX outage continued this week with the installation of diagnostic and secondary passive plate tiles, and the start of the calibration of the test cell neutron detectors. All in-vessel activities associated with the installation of the new Beam Emission Spectroscopy (BES) diagnostic have been completed, along with the modifications to the Resistive Wall Mode (RWM) error field coil #4 at bays F/G. Pre-operational testing of the Liquid Lithium Divertor (LLD) plate thermocouples has been completed, and testing of the LLD plate heaters is in progress. Also this week, electricians completed cable installations for the future installation of a second Switching Power Amplifier (SPA) supply intended to provide individual RWM coil control.

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)
- All LLD intergap diagnostic tiles have been installed, except for the 99 probe Langmuir Array tile to be installed after the diagnostic calibrations are completed.
- Pre-operational testing of the 128 LLD plate thermocouples has been completed.
- Pre-operational testing of the 48 LLD plate heaters started.

• Lithium Evaporator (LITER2010)
- Work planning started for fabrication of 2 probe to vessel-umbrella supports.

Diagnostic Operations (R. Kaita)

• The installation of the divertor biased electrode and probe (BEaP) system was completed. Electrical continuity and resistance measurements of the in-vessel components were made through feedthroughs to the exterior of NSTX.

• The calibration of the neutron detectors has begun. It involves simulating the neutron emission from the plasma with a radioactive source carried around the vacuum vessel on a model train. An "ALARA" ("As Low As Reasonably Achievable") review of the methodology was successfully conducted prior to its implementation.