NSTX Weekly Report (January 11, 2008)

FY 2008 NSTX plasma operations

Planned: TBD

Completed: 0 weeks

On January 7, Bick Hooper (LLNL) gave the NSTX Physics Meeting talk entitled "Physics Results from Experiment and Simulation." Recent experimental results from the SSPX spheromak were presented and compared to simulations using the NIMROD code. The general theme was that experiment and full-device, resistive-MHD simulations (NIMROD) together are successful in generating significant, new physics understanding of the MHD characteristics of the spheromak. Following his talk a group discussion was held to look into the use of NIMROD for NSTX inductive and CHI discharges. (R. Raman – U. Washington)

There will be an NSTX Physics Meeting on Monday, 1/4 at 1:30 PM in LSB318. There will be a talk entitled "**Modeling of Active Stability Control on KSTAR and NSTX"** by Oksana Katsuro-Hopkins (Columbia University).

Upcoming Talks:

Monday, 1/21, 1:30 PM in B318: Dr. Mickey Wade of General Atomics will give a talk on Recent DIII-D Results and Plans

Tues, 1/22, 10 AM: Dr. Hartmut Zohm of MPI will give a talk entitled "The W-Programme in ASDEX Upgrade: A Plasma Physicist's View"

Thurs, 1/24, 1 PM, B318: Dr. Brian Lloyd will give a talk on recent MAST results and plans

David Gates will run the Monday meetings (1/14 and 1/21), so please contact him if there are issues. (S. Kaye)

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

Rayleigh and Raman scattering calibrations of MPTS are in progress (to be completed on Friday, 1/11/08). Leak checking of the vacuum vessel and the scrub of NSTX and the test cell have been completed. Start-up activities continued this week with nearly all of the subsystem testing completed and NSTX on schedule to begin coil testing on Monday, 1/14/08. RWM DC CT installation work is scheduled for the weekend.

The NSTX test cell is in restricted access and all work must be coordinated through the machine operations group in order to ensure the scrub is maintained.

Research Operations (M. Bell)

Diagnostic Operations (R. Kaita)

• The major diagnostic operations activity during the past week was the calibration of the multipoint Thomson scattering system. Rayleigh scattering measurements were completed, and preparations are in progress for obtaining window transmission data prior to plasma operations with a new in-vessel illumination probe.

Boundary Physics (H. Kugel)

• Lithium Evaporator (LITER) FY08
- The assembly of LITER Bay-K was started.
- Work is in progress to install at least one LITER unit (Bay-K) on NSTX during the first Maintenance Week (Feb 4-8) to allow integrating the new shutter interlocks and testing the bellows motion drive.
- The second LITER unit can be installed at the same time if convenient.
- The NEPA Form for LITER FY08 was approved.

• LIQUID LITHIUM DIVERTOR
- The assembly of a special chamber for off-line LLD wetting tests reached the 90% level. Vacuum gaging and special sample shutter were installed. The assembly of a reflectometer diagnostic for monitoring sample surface conditions is in progress.
- An LLD design Team meeting was held and achieved preliminary specifications for diagnostics to be installed on the LLD trays and the inter-segment graphite tiles.

• LITHIUM POWDER DEVELOPMENT (D. Mansfield)
- The prototype lithium powder dropping device was tested successfully with glass beads.
- Work is in progress on instrumenting the test apparatus with based computer data acquisition.
- The proposed procedure for testing with lithium powder is under ES&H review.

• FY08 IMPURITY ASSESSMENT (C. H. Skinner)
- A meeting was held to review NSTX impurity assessment and fiducial requirements for the FY08 run.