

## NSTX Weekly Report (August 19 2011)

**FY 2011 NSTX plasma operations started on October 4, 2010**

**FY 2011 NSTX Outage started on October 25, 2010**

**Planned Run Weeks: 14 run weeks**

**Run Weeks Completed: 4.21 run weeks and 839 plasma shots**

A paper on the PPPL pilot plant study, "Prospects for pilot plants based on the tokamak, spherical tokamak and stellarator" by J. E. Menard (PPPL) et al was published in Nucl. Fusion **51** 103014 (2011). The paper assesses the pilot plant as a potentially attractive next-step towards fusion commercialization. The pilot plant is defined as a device ultimately capable of small net electricity production in as compact a facility as possible and in a configuration scalable to a full-size power plant. A key capability for a pilot-plant programme is the production of high neutron fluence enabling fusion nuclear science and technology (FNST) research. Three configurations for a pilot plant are considered in the paper: the advanced tokamak, spherical tokamak, and compact stellarator. The paper is available on <http://iopscience.iop.org/0029-5515/51/10/103014/>. (J. Menard)

M. Ono (PPPL) visited the Fusion Science & Technology Center at UCLA to discuss the ongoing liquid lithium/metal research and possible collaborations at the center and at NSTX. He met with members of the UCLA center including Mohamed Abdou (Director), Neil B. Morley, Tom Sketcheley, Sergey Smolentsev, and Alice Ying. He also visited the MTOR (Magneto-Thermofluid Omnibus Research) experimental facility. M. Ono gave an overview presentation of the NSTX lithium research program. (M. Ono)

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

Investigation of the faulted TF inner bundle continued this past week. Dissection of the failed bundle to further evaluate conductor-to-conductor insulation and compare to original test data is in progress, and an outside lab has been contracted to perform metallurgical analysis on the failed conductors. An external committee has been selected to participate in a review of all analysis on September 7th.

Also this week, testing of the new Diagnostic Neutral Beam for the Motional Stark Effect (MSE) diagnostic was performed into a gas filled torus, and work began on the installation of control racks needed for the NSTX Upgrade Project.

Access to the NSTX test cell is expected to be available this coming week.