

## NSTX-U Weekly Report (Aug. 10, 2012)

### **NSTX-U is in the Upgrade Project outage in FY 2012**

Two papers about the Thomson scattering diagnostic system on NSTX(-U) have been published within the frame of the HTPD conference held in Monterey, CA, May 6-12, 2012. (1) *Radial resolution enhancement of the NSTX Thomson scattering diagnostic*, by B.P. LeBlanc, A. Diallo, G. Labik and D.R. Stevens of PPPL, Rev. Sci. Instrum. 83, 10D527 (2012), describes the radial array upgrade from 30 to 42 channels and discusses the evaluation of the measurement radial range; (2) *Prospects for the Thomson scattering system on NSTX-Upgrade* by A. Diallo, B. P. LeBlanc, G. Labik, and D. Stevens, Rev. Sci. Instrum. 83, 10D532 (2012), describes the optical design modification needed for Thomson scattering on NSTX-U and discusses the challenges presented by the higher power, longer duration and higher temperatures expected. (B. LeBlanc)

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

NSTX Upgrade construction activities continued this week with the ongoing rework of welding on the new bay J-K cap and port extension needed to install the 2nd neutral beam on the NSTX vessel. Welding is nearing completion, and additional engineering inspections have been prescribed to make sure it is ready for installation. The planned cutting of the vessel to install the bay J-K cap has been placed on hold during this work, and crews have moved ahead with the cutting of the vessel to install the new Bay L port. Welders are also continuing to install new TF clevis pads on the vessel, and fitting up new new umbrella legs. Material has been received to complete the first inner TF quadrant mold, and a full complement of TF inner conductors for that first quadrant are now in the coil fabrication shop in various stages of cleaning, priming and taping. A trial VPI was performed this past week. Also this week, the cutting of wall and floor penetrations began as needed for the various services for the second NSTX neutral beam.

Preparations of non-upgrade equipment for plasma operations in the NSTX-U configuration also continued. Parts are being procured to assemble the new firing generators for the field coil power system rectifiers, and installation/test procedures are being generated to test the prototype fault detector. Locations and routings of the MPTS Diagnostic Laser Dump and flight tubes external to the NSTX vessel have been established and agreed upon.

Access to the NSTX test cell will be available only through previous arrangement with the Upgrade Work Control Center.