

## **NSTX-U Weekly Report (Mar. 7, 2014)**

### **NSTX-U is in the Upgrade Project outage in FY 2014**

R.Kaita presented a PPPL seminar at the liquid metal PFC seminar series titled "The NSTX Liquid Lithium Divertor: A Study in Addressing Technical and Programmatic Challenges". The motivations and goals of the NSTX liquid lithium divertor deployment were discussed, along with important considerations for future liquid lithium deployment in NSTX-U. (R. Maingi, PPPL)

R. Raman (U. Washington) visited Kyushu University in Japan from Feb. 24 to March 5 to complete the CHI engineering design for the QUEST ST, which is now finalized. On March 3, he gave the talk "Overview of Research Plans for NSTX Upgrade" to the QUEST Research Team. (R. Raman)

### **Experimental Research Operations (M. Ono - Acting)**

A test installation of the Materials Analysis and Particle Probe Upgrade (MAPP) was completed. The MAPP is a collaborative effort involving researchers from the University of Illinois at Urbana-Champaign and PPPL, with the goal of in situ analysis of samples exposed to tokamak plasmas. The MAPP chamber containing instruments for surface analysis was mounted on a port on the lower NSTX-U dome, and attached to a probe drive used for sample positioning. The successful alignment of the MAPP components was demonstrated by the insertion of the sample holder into the divertor gap that allows access to the plasma chamber. The MAPP has been moved to the Lithium Tokamak Experiment (LTX), where further commissioning of surface analysis diagnostics will occur prior to final implementation on NSTX-U. (R. Kaita, PPPL)

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

NSTX Upgrade activities continued with the ongoing work to wind the new OH coil on the inner TF bundle. The second layer of OH winding is complete, and OH conductors are being aligned for the brazing to make the transition to the third layer of turns. The ceramic break and bellows assembly were fit-up on the new turbo pump ducts and successfully vacuum leak checked. Assembly of the turbo pump tables and spool pieces has started with plans to install on NSTX next week.

Preparations for plasma operations in the NSTX-U configuration also continued with the preparations of the Field Coil Power Conversion (FCPC) rectifiers for upcoming power testing. Testing of the FCPC incoming power protective relays is now complete. New fiber-optics between FCPC and the Controls Junction Area are being installed. Parts lists for the new plasma current calculator have been finalized, and parts are being ordered.

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