

NSTX-U Weekly Report (May 25, 2012)

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

NSTX-U was well represented at the 20th International Conference on Plasma Surface Interactions held in Aachen, Germany, on May 21-25, 2012. R. Maingi (ORNL) gave an invited talk entitled "Physics of the H-mode pedestal and its possible role in setting the power flux channel" and V. Soukhanovskii (LLNL) gave an invited talk entitled "Advanced divertor configurations with large flux expansion." Both talks were very well received. In addition, the NSTX-U team presented 13 posters by T. Abrams (PPPL) et al., R. Kaita (PPPL) et al., F. Scotti (PPPL) et al., A.G. McLean (ORNL) et al., J-W. Ahn (ORNL) et al., T.K. Gray (ORNL), D. Stotler (PPPL) et al., M.A. Jaworski (PPPL) et al., D.P. Boyle (PPPL) et al., J.D. Lore (ORNL) et al., C.H. Skinner (PPPL) et al., C.N. Taylor (Purdue University) et al., and R. Goldston (PPPL). (R. Maingi / R. Kaita)

The article "Impurity analysis of NSTX using a transmission grating-based imaging spectrometer" by D. Kumar (Johns Hopkins University) et al. was recently published in Plasma Phys. Control. Fusion 54, 065010 (2012). The paper describes the measurements of space resolved impurity emission from NSTX campaign run in 2010. The spectrometer measured charge exchange signals from C and O in the XUV, and electron excited emission from C, Li (edge only), Cl (only in NB heated shots) and Cu (when RF antenna arced). The paper presents space resolved emissivities and the derived impurity concentrations under the various auxiliary heating scenarios of NSTX. Link: <http://stacks.iop.org/0741-3335/54/065010> (K. Tritz, JHU)

M. Ono (PPPL) visited the QUEST Laboratory at Kyushu University, Japan on May 21 – 24, 2012 under the US-Japan collaboration agreement to discuss the US-Japan QUEST / NSTX-U collaboration plan. He discussed various collaboration topics including ECH/EBW current drive and tungsten limiter plasma wall interaction experiments with a number of QUEST researchers including K. Hanada, H. Idei, K. Matsuoka, M. Nishikawa and H. Zushi. He also visited the vendor of the movable actively cooled tungsten limiter. The limiter is being installed on QUEST to test the long-pulse high heat flux handling capability for the upcoming experimental campaign. He gave a seminar entitled "NSTX-U Program Plan and the NSTX Upgrade Project Status" to the QUEST group. (M. Ono)

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

NSTX Upgrade construction activities continued this week with the removal of the outer TF coil #11. New scaffolding is now being erected at vessel bays I-K for the removal of the RWM and locked mode coils, as needed for the upcoming vessel modifications for the second neutral beam. Procedures for cutting the vacuum vessel for the new neutral beam bay J-K Cap have been generated and are out for review. Other machine platforms are being disassembled in preparation for the removal of outer TF coil #7. The first inner TF conductor has been primed and oven cured, and is now being prepared for taping with epoxy wrap. The cooling tube has been soldered into the second inner TF conductor, which will now be moved to the coil fabrication facility for cleaning and priming. On the neutral beams, reassembly of components for the 2nd neutral beam-line continued, and the fabrication of a lift fixture for that beam-line was completed and is ready for load testing. Neutral beam cryogenic line fabrication and installation in the NSTX Test Cell continues.

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