

NSTX-U Weekly Report (January 23, 2015)

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

Prof. Oliver Schmitz from UW Madison visited to present and discuss the research plan for work at NSTX-Upgrade on "Optimization of Neutral Fueling and Exhaust by 3D Magnetic Control Fields" funded by the Department of Energy under grant DE-SC0012315. Dr. Heinke Frerichs, Assistant Scientist from UW Madison is visiting to start collaboration on EMC3-Eirene modeling for QUASAR and for initial discussions on NIMROD modeling for NSTX-Upgrade. BSc Kurt Flesch, PhD student UW Madison visited to start work on neutral gas characterization in NSTX-U with optical Penning gauges in collaboration with Vlad Soukhanovskii (LLNL). (O. Schmitz)

Engineering Operations (A. von Halle, P. Titus)

NSTX Upgrade activities continued with the completion of the first round of vacuum leak checking of the NSTX-U vessel. Pre-operational testing of the Torus Vacuum Pumping System (TVPS) has now been completed, and the vessel pressure is at the E-6 Torr range. Another round of vacuum leak checking will start this week. Welding of the upper umbrella plate continues (See the attached recent photo).

The Digital Coil Protection System (DCPS) and the Power Supply Real Time Control (PSRTC) development efforts are working towards the start of Field Coil Power Conversion System dummy load testing. DCPS pre-operational tests are being exercised, and the development of the procedure for setup and daily check of the DCPS is in progress. Parameter trees are being established to exercise DCPS protection features during rectifier dummy load testing. Work on commissioning PSRTC also continued with PTP-ECS-035 (PSRTC I/O testing) and PTP-ECS-034 (PSRTC Simulation Tests). Control issues are being identified and addressed.

Preparations of non-upgrade equipment for plasma operations in the NSTX-U configuration also continued. Balancing of D-MG#1 was completed this week, and the set was successfully run to its rated speed of 375 RPM with measured vibrations within specified allowables. The set is now ready to support NSTX-U operations. Commissioning of the four lithium evaporators (LITERs) and lithium lifters continued in the CS High Bay shop, and preparations are underway to fit-up the LITER mounting brackets on the NSTX-U vessel. Construction of the new shield wall outside the North door of the NSTX-U Test Cell has been completed.

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

Upper umbrella rid welding (Jan. 22, 2015)

