

NSTX-U Weekly Report (September 15, 2017)

FY 2017 status: NSTX-U is in a maintenance and repair outage.

The NSTX-U FY2017 year-end report covering NSTX-U notable outcomes, milestones, and research, facility, and diagnostic highlights has been submitted to FES and is downloadable from the NSTX-U homepage or from this [link](#).

Recovery

Joe May (DoE-FES) visited NSTX-U this week to tour the NSTX-U facility, meet with NSTX-U Recovery effort leadership, and meet with other laboratory leaders and staff.

Loading on the new inner PF coil configurations and interactions with the toroidal field have been quantified and are being factored in to the design of new coil supports. Physics and engineering group members met on September 13 to discuss the approach to qualifying field errors for the inner PF coils and for other areas of the machine. To minimize net loads and magnetic field errors, spiral-wound coils are being specified for NSTX-U replacement inner PF coils. In the Coil Winding Facility, the test copper bundle has been fit into the mold enclosure in preparation for an upcoming test VPI.

Metrology of the centerstack case inboard diverter continued. The removal of the CHI gas injector has been completed, and the installation of the MSE- LIF gas injection system continues. The neutral beam group successfully completed test runs of the Helium Refrigerator compressor water system this week.

Research

Nicola Bertelli, Robert Ellis, Joel Hosea, Eun-Hwa Kim, Rory Perkins, and Gary Taylor traveled to Santa Monica to attend the 2017 US/EU/JPN Workshop on RF Heating Technology and 2017 US/JPN Workshop on RF Physics in Santa Monica, CA. N. Bertelli gave a presentation entitled "Self-consistent calculation of the effects of the RF wave-field on the evolution of beam ion population in toroidal plasmas for HHFW heating regimes". R. Ellis gave a presentation entitled "Conceptual design of a 2-channel steady-state ECH launcher for KSTAR". J. Hosea gave a presentation entitled "RF Rectified Current Flow for HHFW and Minority ICRF Heating". E. Kim gave a presentation entitled "2D full-wave simulation of HHFW in the scrape-off layer of NSTX". R. Perkins gave a presentation entitled "RF rectification in LAPD in support of fusion research: relationship between rectified currents and potentials". G. Taylor gave a presentation entitled "Predictive simulations of low- I_p NSTX-U discharges heated by 30 MHz FW power that achieve a high non-inductive current". During the visit they also toured the LAPD facility.