

NSTX-U Weekly Report (January 16, 2015)

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

Conference Report on the 3rd International Symposium on Lithium Application for Fusion Devices by Giuseppe Mazzitelli (EURATOM-ENEA, Frascati, Italy) et al. was published in Nuclear Fusion 55 027001 (2015) and is available at <http://stacks.iop.org/0029-5515/55/027001>. (M. Ono, PPPL)

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

NSTX Upgrade activities continued with the ongoing leak checking of the NSTX-U vessel. The two new turbo-molecular pumps (TMPs) were used to pump the NSTX-U vacuum vessel, and the residual gas analyzer (RGA) has been set up and is in use. Both neutral beams are under vacuum and appear to be leak tight. Testing of the vessel bakeout power supplies was successfully completed this week. A trial fit of the upper umbrella lid with tacking of the new lid flange in place was performed (see the attached picture).

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. PSRTC commissioning continues to make good progress with the set up/testing of the DC current feedback signal conditioning circuitry, and the system is being prepared for I/O and simulation pre-operational testing. We expect to be able to utilize the PSRTC for initial rectifier dummy load testing next week.

Preparations of non-upgrade equipment for plasma operations in the NSTX-U configuration also continued. Operational tests of the D-Site Motor generator Set #1 continued, and the set has been successfully run up and cycled to 90% of its maximum speed (more than needed to resume NSTX-U operations). Arrangements have been made to complete balancing of the set this coming week. The four lithium evaporators LITERs and lithium lifters have been moved to the CS High Bay shop for re-commissioning. A design review of new Gas Injection System control electronics was held this week, and procurement of parts is now in progress. Installation of fire protection systems for the new deuterated trimethylboron (dTMB) injection system continued, and installation of the Multi-Pulse Thompson Scattering (MPTS) diagnostic flight tubes continues.

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

NSTX-U Test Cell (Jan. 19, 2014)

