NSTX-U Weekly Report (March 27, 2015)

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

A TRANSP User's Group meeting was held at PPPL on March 23 and 24, 2015. The meeting brought together users from around the world, with representatives from the U.S. (NSTX-U, C-Mod, DIII-D, modelers from MIT and ORNL), Europe (JET, MAST/MAST-U, Asdex-U, EuroFusion), Asia (KSTAR, EAST) and ITER. Approximately 40 people attended on-site with approximately 15 people participating remotely. The purpose of the meeting was to discuss with present and potential TRANSP users and developers from around the world the present and future use of the code, including short- and long-term upgrades to the physics modules as well as code modernization and framework. Specifically, a goal was to find out what upgrades would make TRANSP more valuable to the international community, including ITER, for both analysis and prediction. A further goal was to identify and encourage development external to PPPL that could be used to enhance the TRANSP capabilities. The overall objective is to make the code more powerful and user-friendly. Talks were given by participants from each experimental device represented on how TRANSP is used at their facility icluding their future needs. Furthermore, talks were given on numerical frameworks and workflow managers. A strategic plan for TRANSP development both in the short (~years) and long- (~decade) terms, incorporating the input from the workshop, will be developed by July 1. (S. Kaye, PPPL)

Experimental Research Operations (S. Gerhardt, R. Kaita)

Installation of the MPTS laser beam exit hardware continued with all three beam turning mirror crosses and the connecting beam line sections installed (see the attached picture). Maintenance on the Ng:YAG lasers has been completed and they have been operated at good power levels. (B. Stratton, PPPL)

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

NSTX Upgrade activities continued with the installation of the upper umbrella lid (See Photo, below). Strain gauges have been installed and tested on the lid. Welding of connector plates on the lower umbrella has been completed, and that lid is being installed this weekend. Connection of water cooled bus, and installation of hoses and hose supports will also be completed this weekend.

The Digital Coil Protection System (DCPS) and the Power Supply Real Time Control (PSRTC) are complete and supporting Field Coil Power Conversion (FCPC) System dummy load testing. The redundant FCC and Junction Area DCPS's are supporting testing in their final configuration. DCPS limits have been established and reviewed.

Preparations of non-upgrade equipment for plasma operations in the NSTX-U configuration also continued with the completion of power testing of the supplies needed to support CD4 plasma operations. Dummy load testing of the supplies will continue into next week to complete verifications of the DCPS. Coil System flow switch calibrations will be performed next week with the restart of the cooling water systems, and systems are being configured for a bake of the vessel center column. Installation of ex-vessel MPTS equipment continues.

Access to the NSTX test cell will be available only through Work Permits approved by the D-Site Shift Supervisors.