

NSTX-U Weekly Report (Jan. 25, 2013)

NSTX-U is in the Upgrade Project outage in FY 2013

During the week of January 21, Roger Raman (University of Washington) visited the Quest ST at Kyushu University to work on the final design of a CHI system for QUEST. Good progress was made in arriving at a viable CHI configuration for QUEST. Productive discussions were also held with a technical representative from an engineering company. He also participated in CT fueling experiments on Quest, which is led by the University of Hyogo group. In preparation for a long-term CT Fueling campaign on Quest, these initial experiments exercised the CT hardware to test its capability and compatibility with inductively generated plasmas on Quest. A fast framing camera was used to view the CT injection port, which showed the ejection of a CT plasmoid from the CT port, which was then seen to disperse toroidally. Bright toroidal filaments were seen in the camera images following CT injection. (R. Raman)

Masa Ono (PPPL) visited the QUEST facility, Kyushu University, Japan during the week of Jan. 21, 2013. He has participated in the long-pulse non-inductive plasma experiment. The QUEST plasma is solely driven by the 8.2 GHz, ~ 100 kW steady-state ECH source, and the plasma was sustained for up to 3 minutes in the experiment. He also discussed the CHI experiment on QUEST in collaboration with Roger Raman of University of Washington and Prof. Hanada. (M. Ono)

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

NSTX Upgrade construction activities continued this week with the completion of all in and external vessel welding for the new bay J-K cap needed to connect the second neutral beam to NSTX. The bay L vessel cut needed for the MPTS Diagnostic was completed this week, and the new Bay L spool piece is in vacuum prep.

Preparations for plasma operations in the NSTX-U configuration also continued with the ongoing fabrication of the new field coil power conversion (FCPC) system firing generators. A review of the new FCPC fault detector design was held this week, and included test data from the recent power testing using the prototype. The neutral beam group has begun the engineering of control and hardware upgrades to the Sulfur Hexafluoride (SF₆) skid intended to streamline operations and reduce SF₆ losses.

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