NSTX Weekly Report (July 16, 2010)

FY 2010 NSTX plasma operations
Planned: Total - 15 run weeks (Base - 14 run weeks, ARRA - 1 run week)
Completed: Base – 5.35 run week and 1020 plasma shots
Completed: ARRA -1.01run week and 171 plasma shots

Egemen Kolemen attended the ITER I&C IPT Plasma Control Group Meeting, Cadarache, July 15-16 2010. The aim of the meeting was to approve the common terminology, methodology, structure and implementation plan for the ITER Plasma Control System (PCS) and develop of a conceptual design for the ITER PCS. First, we were given up to date information on the progress on CODAC development and Instrumentation and Control ITP groups. Continuing on the discussion from December meeting, the hieratical structure of the PCS was discusses with inputs from ITER Organization and Domestic Agencies (DA). We agreed on a final terminology, structure and classification of the eleven groups of the control infrastructure and the interaction between the subgroup. Workload distribution among institutions to work on the conceptual design of the different parts of these groups was arranged on volunteering basis. As part of the USA DA, I volunteered to take part on the kinetic control and plasma basic control. We agreed on a timetable to finish the work by October and meet again in December to start working on the next step ITER PCS design. (E. Kolemen)

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

NSTX resumed plasma operations this past week after completing a repair of the OH coil lead insulation. However on Thursday July 15, the morning "hipot" tests of the OH coil again exhibited leakage current to ground. Data from current-injection measurements indicated that the potential fault appears to be near the cooling water feed at the top of OH coil. Inspections in this area have started. Flexible buswork is being removed to improve access.

IE Power Corp completed the manufacture of a new Switching Power Amplifier (SPA) supply which has arrived at PPPL. This new SPA supply, used in conjunction with the original unit, will provide individual power control to each of the six Resistive Wall Mode and Error Field Correction coils.

Access to the NSTX test cell will be restricted this coming week during plasma operations. Access is expected to be available each evening.

Research Operations (M. Bell)

Boundary Physics Operations (H. Kugel)

• Liquid Lithium Divertor (LLD)
- Testing of LLD controls prior to operting with discharge clock cycles was completed.
- Parts were received for developing a method to remove lithium compounds from the LLD following an air vent.

• Lithium Evaporators (LITER) - Testing of the bakeout system for the LITER Fill Stand in the

High Bay via remote operation was completed.

• Lithium Powder Research - The second dropper unit was loaded with lithium powder and is awaiting installation.

• Fusion Device Dust Research - An upgraded Dust Detector Test Stand resumed operation for dust detector calibration.

• A review of "Conceptual Design for Molybdenum Horizontal Inner Divertor Tiles" by H. W. Kugel et al., was declared a success pending completion of chits.

• Divertor Imaging Spectrometer (DIMS) - A new broadband UV-Vis-NIR imaging lens and two fiber arrays (a new 48-fiber array and the old 26-fiber array) have been installed in an optical mount at Bay C top on NSTX. This imaging arrangement will enable multi-point 1D profile measurements across the lower divertor area, including the LLD. The fibers will be connected to the new DIMS spectrometer, VIPS-2 spectrometer, and filterscopes. (V. Soukhanovskii, LLNL)