Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Plasma Equilibrium Re-constructions of CDX-U[1] J. SPALETA, L. ZAKHAROV, R. KAITA, R. MAJESKI, T. GRAY, PPPL — Recent CDX-U experiments have focused on the effects of liquid lithium as a plasma first wall in tokamak environments. Evidence indicates that liquid lithium limiter operation in CDX-U provides access to a plasma with a much reduced level of wall re-cycling (see poster by T. Gray). Work has been on-going to create the first ever plasma equilibrium re-constructions of the CDX-U device using the ESC equilibrium code. The CDX-U re-constructions will be the first to use a novel calibration technique to account for time-dependent localized eddy currents near magnetic sensors. The goal is to contrast the equilibrium profiles obtained during liquid lithium and solid lithium limiter operation, looking for evidence of plasma current profile broadening as expected from transport simulations for very low re-cycling plasmas. A comparison of plasma equilibria during liquid lithium and solid lithium operation will be presented. An overview of the CDX-U diagnostics, including a new diamagnetic coil, and a description of the magnetic signal calibration technique used to account for eddy current contributions will also be shown.

[1]Supported by US DOE contract #DE-AC02-76CH-03073

Jeff Spaleta
PPPL

Date submitted: 26 Aug 2005 Electronic form version 1.4