Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Heat Deposition on Inner and Outer Wall During Diverted DIII-D Discharges[1] C.J. LASNIER, W.H. MEYER, S.L. ALLEN, LLNL, M.A. VAN ZEELAND, GA — In order to get more complete information on power loss, we have quantified heating of the inner and outer wall of DIII-D in diverted DIII-D discharges due to several effects, using a wide-angle tangential viewing IR camera system. These effects include prompt fast ion losses to outer wall and bumper limiters during counter-toroidal-field neutral beam injection; shine-through of neutral beam power on the inner wall accentuated during low-density operation; small amounts of heat deposited on inner and outer walls during edge localized modes, and anomalous heat deposition on the outer wall near beam ports, which may be due to re-ionization of neutral beam particles. Prompt losses of fast ion losses distributed on the outer wall with counter-injected beams have resulted in a surface temperature rise of 25°C, but localized heating of a bumper limiter has resulted in a temperature rise of up to 245°C. Heating of the same limiter by an ELM has been observed to increase the surface temperature by 50°C.

[1]Work supported by the US Department of Energy under DE-AC52-07NA27344 and DE-FC02-04ER54698.

C.J. Lasnier
LLNL

Date submitted: 12 Jul 2014 Electronic form version 1.4