Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Fueling Of The C-2U Device By Cryogenic Pellet Injection ERIK TRASK, SANGEETA GUPTA, MARCO ONOFRI, Tri Alpha Energy, IGO VINYAR, PELIN, LLC, TAE TEAM — The major goal of the C-2U device [1] at Tri Alpha Energy is sustainment of the plasma equilibrium for more than five milliseconds by a combination of neutral beam injection, boundary control, and fueling. Studies of fueling and particle inventory responses have been performed by injection of high speed frozen deuterium pellets. Synchronization of the pellet injector [2] with the shot control system has allowed delivery of a pellet with sub-millisecond accuracy. Pellet injection at different points in the plasma discharge has been done to study ablation parameters and plasma performance. Model simulations of pellet ablation including the effects of fast ions compare well with experimentally estimated ablation rates.

[1] M. Binderbauer et al., *Physics of Plasmas* **22**, 056110 (2015)
[2] I. Vinyar et al., *Instrumentation and Experimental Techniques* **57** No. 4, 508-515 (2014)

Erik Trask
Tri Alpha Energy

Date submitted: 23 Jul 2015 Electronic form version 1.4