

Abstract Submitted  
for the DPP16 Meeting of  
The American Physical Society

**Megajoule Dense Plasma Focus Solid Target Experiments<sup>1</sup>** Y.A. PODPALY, S. FALABELLA, A. LINK, A. POVILUS, D.P. HIGGINSON, B.H. SHAW, C.M. COOPER, Lawrence Livermore National Laboratory, S. CHAPMAN, Alameda Applied Sciences Corporation, N. BENNETT, N. SIPE, National Security Technologies, R. OLSON, Los Alamos National Laboratory, A.E. SCHMIDT, Lawrence Livermore National Laboratory — Dense plasma focus (DPF) devices are plasma sources that can produce significant neutron yields from beam into gas interactions. Yield increases, up to approximately a factor of five, have been observed previously on DPFs using solid targets, such as CD<sub>2</sub> and D<sub>2</sub>O ice. In this work, we report on deuterium solid-target experiments at the Gemini DPF. A rotatable target holder and baffle arrangement were installed in the Gemini device which allowed four targets to be deployed sequentially without breaking vacuum. Solid targets of titanium deuteride were installed and systematically studied at a variety of fill pressures, bias voltages, and target positions. Target holder design, experimental results, and comparison to simulations will be presented.

<sup>1</sup>Prepared by LLNL under Contract DE-AC52-07NA27344

Yuri Podpaly  
Lawrence Livermore National Laboratory

Date submitted: 15 Jul 2016

Electronic form version 1.4