

Abstract Submitted  
for the DPP10 Meeting of  
The American Physical Society

**ALEGRA Modeling of Gas Puff Z-Pinch Experiments at the ZR Facility\*** C.S. KUENY, Hewlett-Packard Company, C.A. COVERDALE, D.G. FLICKER, Sandia National Labs, M. KRISHNAN, P.L. COLEMAN, Alameda Applied Sciences — Gas puff z-pinch experiments have been proposed for the refurbished Z (ZR) facility for CY2011. Previous gas puff experiments [Coverdale et. al., Phys. Plasmas 14, 056309, 2007] on pre-refurbishment Z established a world record for laboratory fusion neutron yield. New experiments would establish ZR gas puff capability for x-ray and neutron production and could surpass previous yields. We present validation of ALEGRA simulations against previous Z experiments including X-ray and neutron yield, modeling of gas puff implosion dynamics for new gas puff nozzle designs, and predictions of X-ray and neutron yields for the proposed gas puff experiments. \*Sandia is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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Date submitted: 21 Jul 2010

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