Abstract Submitted for the DPP06 Meeting of The American Physical Society

CR39 based Neutron Yield Measurements on the Z-Accelerator G.A. CHANDLER, Sandia National Laboratories, F.H. SEGUIN, MIT, J.A. TORRES, SNL, G.W. COOPER, UNM, J.A. FRENJE, MIT, C.L. RUIZ, SNL, J.K. FRANKLIN, K-tech Corp, A.J. NELSON, UNM, J.E. BAILEY, C.A. COVERDALE, C. DEENEY, SNL, R.D. PETRASSO, MIT, G.A. ROCHAU, S.A. SLUTZ, R.J. LEEPER, T.A. MEHLHORN, SNL — Implosion dynamics of both Zpinch driven Deuterium gas puffs producing $\sim 3x10^{13}$ DD neutrons as well as ignitionsize 2-mm-diameter capsules driven by Dynamic hohlraums producing $\sim 1 \times 10^{11}$ neutrons have been studied at the Z-accelerator. CR39 based neutron yield measurements are being explored to compliment existing yield measurements based on Indium activation. One possible advantage to the CR39 based diagnostic is it's relative insensitivity to the significant high-energy Bremsstrahlung radiation produced in these z-pinch experiments. The diagnostic configuration and initial results for a set of measurements comparing the two diagnostic techniques for both of these neutron sources will be presented. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the U.S. Dept. of Energy under contract No. DE-AC04-94AL85000.

> Gordon Chandler Sandia National Laboratories

Date submitted: 07 Sep 2006 Electronic form version 1.4