Abstract Submitted for the DNP06 Meeting of The American Physical Society

Modeling a Graphite Diagnostic System using MCNPX J. DEAVEN, S.L. STEPHENSON, Gettysburg College, S.J. PADALINO, SUNY Geneseo, V. YU. GLEBOV, T.C. SANGSTER, Laboratory for Laser Energetics — Inertial Confinement Fusion (ICF) implosions can be characterized by the target areal density ( $\rho$ R). The  $\rho$ R of ICF targets in the National Ignition Facility (NIF) target chamber can be determined by tertiary-induced neutron activation of elements with appropriately high thresholds. In such materials as <sup>12</sup>C, neutron activation results in beta decay and the emission of 511-keV coincidences which are detected by a pair of NaI(Tl) detectors. Optimal diagnostic thickness, contamination effects, and detector response have been modeled using MCNPX. Results will be presented.

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