Abstract Submitted for the DPP15 Meeting of The American Physical Society

Design Options for the High-Foot Ignition Capsule Series on NIF¹ T.R. DITTRICH, O.A. HURRICANE, L.F. BERZAK HOPKINS, D.A. CALLA-HAN, D. CLARK, T. DOEPPNER, S.W. HAAN, B.A. HAMMEL, J.A. HARTE, D.E. HINKEL, T. MA, A.E. PAK, H.-S. PARK, J.D. SALMONSON, C.R. WEBER, G.B. ZIMMERMAN, Lawrence Livermore National Laboratory, R.E. OLSON, J.L. KLINE, R.J. LEEPER, Los Alamos National Laboratory — Several options exist for improving implosion performance in the High-Foot series of ignition capsules on NIF. One option is to modify the fill tube used to supply DT to the capsule. Simulations indicate that a gold-coated glass tube may reduce implosion hydro effects and allow fielding a larger diameter tube capable of supporting the capsule, eliminating the need for the nominal tent support. A second option adds a fourth shock to the implosion history. According to simulation, this extra shock improves fuel confinement and capsule performance. A third option studies the feasibility of holding the DT fuel in liquid form in a foam layer inside the shell. This "wetted foam" concept, advanced by Olson, has existed for several years and may allow some control over the convergence of the capsule during implosion.

¹This work was performed under the auspices of the Department of Energy by Lawrence Livermore National Laboratory under contract DE-AC52-07NA27344

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Date submitted: 23 Jul 2015

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