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**Neutron Imager for the National Ignition Facility** D.N. FITTINGHHOFF, D.E. BOWER, B. FELKER, M. FRANK, J.R. HOLLAWAY, D.H. KALANTAR, J.L. KLINGMANN, R.A. NYHOLM, B.A. QUIVEY, G.P. ROBERSON, P.B. WEISS, Lawrence Livermore National Laboratory, Livermore CA 94550, R. BUCKLES, National Security Technologies, Livermore, CA 94550, D. CLARK, D. ESQUIBEL, V. FATHERLEY, G. GRIM, E. LOOMIS, F. MERRILL, G. MORGAN, J. OERTEL, I. TREGILLIS, C. WILDE, M. WILKE, D. WILSON, Los Alamos National Laboratory, Los Alamos, New Mexico, 87545 — The goal of the National Ignition Campaign at the National Ignition Facility is to obtain ignition of an inertially confined fusion capsule. In this work, we describe the neutron imaging system that we are installing at the National Ignition Facility to provide information on the spatial distribution of material in the compressed capsule and any uncompressed fuel. The imager uses an array of 37 gold and tungsten apertures 20-cm long with an apex at 26.5 cm from the source to produce images in a scintillator array at 28-m. By imaging the front and back of the scintillator and gating those images with properly gated microchannel plate gated intensifiers, we expect to obtain two images: one of the primary neutrons from 13-17 MeV and one of the downscattered neutrons from 10-12 MeV. This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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