Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

X-Ray Imaging at High Neutron Yields DAVID BRADLEY, LLNL — X-ray imaging is an important and established diagnostic tool for ICF implosion experiments. The National Ignition will soon be producing radiation environments and neutron yields that will be higher than any produced in laboratory settings in the past. Even for a non-igniting plasma (1017 neutrons) an unshielded diagnostic situated outside the target chamber, but inside the target bay will be subjected to a neutron fluence in excess of 1010 /cm2, with a comparable gamma fluence. These conditions are sufficient to cause unacceptable backgrounds or permanent damage to detectors. We will present modeling, experimental data, and design concepts for x-ray imaging with increasing neutron yield. 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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Date submitted: 25 Jul 2011 Electronic form version 1.4