

Abstract Submitted
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Sample Collection for the National Ignition Facility¹ SARAH NELSON, DAWN SHAUGHNESSY, KEN MOODY, LEE BERNSTEIN, DARREN BLEUEL, RICHARD FORTNER, DIETER SCHNEIDER, WOLFGANG STOEFL, MARK STOYER, GARY GRIM, ROBERT RUNDBERG, UWE GREIFE, Lawrence Livermore National Laboratory — The National Ignition Facility (NIF) is slated to come online in 2010. A variety of experiments are planned for the facility, and diagnostic techniques such as gas- and solid-phase capsule debris analysis may prove to be successful methods for establishing the success or failure of ignition experiments at NIF. Samples in the gas phase offer the most direct method of collection by simply pumping out the large target chamber following a NIF shot. The target capsules will be prepared with dopants which will produce radioactive noble gas isotopes upon activation with neutrons. We have designed the Radchem Apparatus for Gas Sampling (RAGS) in order to collect post-shot gaseous samples for NIF capsule diagnostics. We will present preliminary results of the gas collection (or separation) efficiency, as well as a construction update. The ability to collect solid debris following a NIF capsule shot will also be required. We are currently developing a solid debris collection capability, and various design ideas will be presented. In addition, experimental results will be discussed. LLNL-ABS-413318.

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