

Abstract Submitted  
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**The LIFE Dynamic Chamber System**<sup>1</sup> MARK RHODES, JAVE KANE, JEFFERY LATKOWSKI, ANDREW COOK, LAURENT DIVOL, GWENDOLEN LOOSMORE, HOWARD SCOTT, CHRISTIAN SCULLARD, MAX TABAK, SCOTT WILKS, LLNL, GREGORY MOSES, THAD HELTEMES, RYAN SACKS, U. Wisconsin, CARLOS PANTANO, RICHARD KRAMER, U. Illinois — Dry-wall IFE designs such as LIFE utilize Xe fill gas to protect the target chamber first wall from x-ray heating and ionic debris. A key question is how cool, settled and clean the Xe must be to permit beam propagation and target transport, and how to reach this state at a 10+ Hz shot repetition rate. Xe is at low density in the target chamber, and purified Xe is reinjected at higher density and lower temperature into the larger outer chamber. Maintenance of this density difference due to blast waves generated by implosion of the target capsules is being assessed with HYDRA and 3D VTF, and possible validation experiments are being investigated. Detailed gas response near the wall is being studied using 3D Miranda. A laboratory-scale theta pinch experiment will study cooling and beam propagation in Xe.

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