LBNL-57129 Abs
HIFAN 1406a

The NDCX Load and Fire Injector

C. Peters, D. Beck, F.M. Bieniosek, S. Eylon, W.G. Greenway, E. Henestroza, J. Kwan, M.A. Leitner, B.G. Logan, P.K. Roy, D.B. Shuman, D.L. Vanecek, W.L. Waldron, S.S. Yu, LBNL

The Neutralized Drift Compression Experiment (NDCX), a significant component of the U.S. Heavy Ion Fusion Program, is being constructed at the Lawrence Berkeley National Laboratory. NDCX will help develop novel, still unexplored beam manipulation techniques in order to establish the physics limits on compression of heavy ion beams for creating high energy density matter and fusion ignition conditions. A critical early component being developed in this series of experiments is the Load-and-Fire Injector which will enable a dramatic increase in ion beam line charge density after extraction from the ion source. The Load-and-Fire Injector presents a significant engineering challenge. This paper will describe the critical engineering issues considered in this design. Details of the superconducting magnet system, a novel acceleration structure, and the mechanical packaging of these elements will be presented.