Abstract Submitted
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Temperature Control for the VELOCE Electromagnetic Driver A.W. SHAY, J.J. LYNCH, D.G. DALTON, KTech Corporation, R.J. HICKMAN, M.D. WILLIS, A.J. LOPEZ, J.L. WISE, S. ROOT, Sandia National Laboratories — Sandia's VELOCE pulsed-power generator has been used extensively to perform shockless compression experiments on various materials. Preheating and precooling (i.e., cryogenic) systems have now been developed for VELOCE that allow control of the initial sample temperature, thereby dramatically expanding the range of achievable thermodynamic end states. The designs and capabilities of these systems are described, along with their application to dynamic material testing (e.g., equation-of-state, phase transition, and strength studies). Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Company, for the U. S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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