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X-pinch Wire-number Scan at 1 MA D.B. SINARS, M.E. CUNEO, D.F. WENGER, Sandia National Laboratories, J.D. DOUGLASS, R.D. MCBRIDE, S.A. PIKUZ, J.B. GREENLY, D. CHALENSKI, T.A. SHELKOVENKO, A. MINGALEEV, D.A. HAMMER, B.R. KUSSE, Cornell University, J.P. CHITTENDEN, Imperial College — X pinches driven by 0.2-0.4 MA produce 1 μm, 10-100 ps, $\sim$1 keV, $\sim$0.1x solid-density plasmas. We consider whether $\sim$1 μm plasmas are also produced at 1 or 6 MA, since such plasmas could have more extreme properties [e.g., Chittenden et al., Phys Rev Lett (2007)]. A 6 MA X-pinch on SATURN is massive at $\sim$100 mg/cm, requiring either large numbers of wires or a few very thick wires. To understand the issues with such an extrapolation, we studied 3 mg/cm X pinches on the 1 MA COBRA facility. Results from 2- to 64-wire W X pinches will be shown, along with results with novel configurations and large numbers of Ti, Al, and Mo wires. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the National Nuclear Security Administration (NNSA) under DE-AC04-94AL85000. This work was supported by Laboratory Directed Research and Development at Sandia, DOE Grant No. DE-FG03-98ER54496, by Sandia National Laboratories Contract No. AO258, and by the NNSA SSAA program, Cooperative Agreement No. DE-FC03-02NA00057.

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