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Comparison of Radiative Properties of Wire Arrays and X-Pinches on the 1.7 MA Zebra Generator¹ A. STAFFORD, A.S. SAFRONOVA, V.L. KANTSYREV, M.E. WELLER, I. SHRESTHA, V.V. SHLYAPTSEVA, University of Nevada, Reno, NV 89557, USA, A.S. CHUVATIN, Laboratoire de Physique des Plasmas (CNRS/Ecole Polytechnique/UPMC/Université Paris Sud), Ecole Polytechnique, 91128 Palaiseau, France — The Zebra generator, a pulse power device, of 1 MA and 100 ns rise time was upgraded with a Load Current Multiplier (LCM) to implode wire loads at higher current of 1.7 MA. Radiative properties of two different wire load configurations, Cylindrical Wire Arrays (CWA) and X-Pinches, are considered and compared. The CWA is 6 Ni-60 wires, mostly Cu, arranged in a cylindrical pattern. The CWA has a total radiation yield of 16 kJ from a column like source including a precursor plasma column prior to the implosion of the wires. The X-pinch was composed of a Ti alloy (6% Al, 4% V). The total radiation yield was 19 kJ and was primarily a point like source with a higher density than the CWAs. Additionally K-shell Al radiated unexpectedly strong in X-pinches for its low percentage of the material. Plasma properties will be described using pinhole images to display the structure and spectra to estimate electron temperatures and densities.

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