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Comprehensive Analysis of Radiative Properties of Brass and Al Arranged in Nested Cylindrical Wire Arrays* M.E. WELLER, N.D. OUART, A.S. SAFRONOVA, V.L. KANTSYREV, A.A. ESAULOV, K.M. WILLIAMSON, I. SHRESTHA, G.C. OSBORNE, V. SHLYAPTSEVA, S.F. KEIM, A. STAFFORD, University of Nevada, Reno, C.A. COVERDALE, Sandia National Laboratories, Albuquerque — Experimental results of nested cylindrical wire arrays (NCWA) consisting of brass (70% Cu and 30% Zn) wires on one array and Al (5056, 5% Mg) wires on the other array performed on the UNR Zebra generator at 1.0 MA current are compared and analyzed. Specifically, radiative properties of K-shell Al and Mg ions and L-shell Cu and Zn ions are compared as functions of the placements of the brass and Al wires on the inner and outer arrays. A full diagnostic set which included more than ten different beam-lines was implemented. Identical loads were fielded to allow the timing of time-gated pinhole and x-ray spectrometers to be shifted to get a more complete understanding of the evolution of plasma parameters over the x-ray pulse. The importance of the study of NCWAs with different wire materials is discussed. *This work was supported by NNSA under DOE Cooperative Agreements DE-FC52-06NA27588, DE-FC52-06NA27586, and in part by DE-FC52-06NA27616. Sandia is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy under Contract DE-AC04-94AL85000.

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