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Production of Neutron-Rich Isotopes from UC Targets for RIB Development E.H. SPEJEWSKI, H.K. CARTER, A. KRONENBERG, Oak Ridge Associated Universities, D.W. STRACENER, J.-C. BILHEUX, Oak Ridge National Laboratory, A.L. GADDIS, W.H. BRANTLEY, Furman University, J.A. NOLEN, JR., A.C.C. VILLARI, J.P. GREENE, T.A. BURTSEVA, Argonne National Laboratory, W.L. TALBERT, TechSource, Inc. — The Holifield Radioactive Ion Beam Facility (HRIBF) at Oak Ridge National Laboratory (ORNL) provides radioactive beams for research in nuclear physics. An essential function is to produce a variety of radioactive species to meet the intensity, energy, and purity requirements of specific experiments. A primary production method has been proton-induced fission of uranium. The principal targets employed have been constructed at ORNL in the form of uranium carbide (UC) bound within a matrix of carbon fibers ($\sim 0.8\text{--}1.3\text{ g/cm}^3$). Recently, pressed-powder targets of uranium carbide, fabricated at ANL from uranium oxide (2.61 g/cm^3) or uranium carbide (6.03 g/cm^3), have been used. These pellets (2.61 and 6.03 g/cm^3 , respectively) produced yields in ratios of approximately 1 to 10 compared to the fiber materials, with the amount of increase differing by chemical element. Deuteron-induced fission on an ANL pellet has also been investigated with, however, no significant improvement in yields observed. Possible causes for the differing results will be discussed. *Supported in part by the U. S. Department of Energy*

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