

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

HAGRID/ VANDLE spectroscopy of Rb decays¹ THOMAS KING, ROBERT GRZYWACZ, STEVEN TAYLOR, STANLEY PAULAUSKAS, KARL SMITH, Univ of Tennessee, Knoxville, VANDLE COLLABORATION — Many neutron-rich isotopes that contribute in both decay heat production and r-process nucleosynthesis have substantial beta-delayed neutron branching ratios. Beta-delayed neutron emission is a relatively complicated mechanism which can leave the daughter in an gamma-emitting excited state. A comprehensive understanding of their energy output and decay strength, $S_{\beta n}$, therefore requires the detection of both neutrons and gamma rays in coincidence. A series of measurements of delayed neutron precursors were performed at the On-Line Test Facility (OLTF) at the Oak Ridge National Laboratories using chemically selective ion sources and an enhanced VANDLE array. The main goal of this experiment was to revisit the decays of IAEA-marked priority precursors, including bromine, rubidium, cesium, and iodine, that are required to model the global properties in the fission of ^{238}U [1]. The unique data set, with neutron and gamma ray coincidences, benefited from the addition of a high-efficiency gamma-ray array, consisting of 16 LaBr₃ crystals (HAGRID), and a set of large volume NaI detectors to the VANDLE array. Characterization of and preliminary results from the new gamma-ray array for the decays of ^{94}Rb and ^{97}Rb will be presented.[1] IAEA BDN working group, private communication.

¹National Nuclear Security Administration under the Stewardship Science Academic Alliances program through DOE Award No. DE-NA0002132 and the Office of Nuclear Physics, U.S. Department of Energy under Award No. DE-FG02-96ER40983

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Date submitted: 30 Jun 2017

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