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Nuclear Structure in Neutron Rich Gd NATHAN BREWER, Vanderbilt, J.C. BATCHELDER, UNRIB/ORAU, J.H. HAMILTON, A.V. RAMAYYA, Vanderbilt, C.J. GROSS, ORNL, K.P. RYKACZEWSKI, ORNL, Warsaw Univ., R. GRZYWACZ, M. MADURGA, D. MILLER, U. Tennessee, D. STRACENER, C. JOST, ORNL, E. ZGANJAR, Louisiana State, J.A. WINGER, Mississippi State, M. KARNY, ORNL, ORAU, Warsaw University, S.V. PAULAUSKAS, U. Tennessee, S.H. LIU, ORNL, M. WOLINSKA-CICHOCKA, ORNL, ORAU, S. PADGETT, U. Tennessee, T. MENDEZ, K. MIERNIK, ORNL, A. KUZNIAK, U. Tennessee, Warsaw Univ. — Deformed nuclei at midpoints between closed spherical shells form some of the best nuclear rotors known. Only a few nucleons away from the exact midshell in Z=66 and N=104, these nuclei have been shown to have very consistent I(I+1) spacing in the yrast band. By studying the energy systematics of the non-yrast and parent ground states we can further probe the structure of these nuclei. Nuclei for this study were produced via proton induced fission of ^{238}U at HRIBF at ORNL. They were measured at the Low-energy RIB Spectroscopy Station (LeRIBSS) which utilizes beta and gamma detection as well as a MTC (Moving Tape Collector) which allows for parent lifetime measurements. In addition to 5 new levels in ^{162}Gd,levels in ^{162,164}Gd are both populated via beta- decay up to the 8^+ yrast levels. We will present and discuss new results from the beta decay of these isotopes.

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