Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Studies of transitional Gadolinium nuclei by particle-gamma coincidence techniques T.J. ROSS, R.O. HUGHES, C.W. BEAUSANG, University of Richmond, J.M. ALLMOND, J.T. BURKE, J.E. ESCHER, L.W. PHAIR, N. SCIELZO, C.T. ANGELL, M.S. BASUNIA, D.L. BLEUEL, R.J. CASPERSON, P. FALLON, R. HATARIK, J. MUNSON, S. PASCHALIS, M. PETRI, J.J. RESSLER, STARS-LIBERACE Collaboration — Nuclei in the N=90 transitional region have been the focus of intense study for a number of years. In spite of this, recent particle-gamma coincidence studies of ^{155}Gd revealed inconsistencies in the present single particle assignments [1]. Expanding on these findings, an experiment was performed using the STARS-LIBERACE array at the 88-Inch Cyclotron in Lawrence Berkeley National Laboratory. A 25 MeV proton beam incident on ^{154}Gd and ^{158}Gd targets was used to populate states in ^{152,153,156,157}Gd via (p,d) and (p,t) reactions. The silicon telescope STARS provided particle identification, residual nucleus energy and angular information. Coincident gamma rays were detected using the LIBERACE clover array. Details of new states identified in ^{153}Gd and ^{157}Gd will be presented as well as a method of extracting the spin distribution imparted to the nucleus via transfer reactions. [1] J.M. Allmond et. al. Phys. Rev. C 81 064316 (2010).
This work supported in part by U.S. DOE grant numbers DE-FG02-05 ER41379 & DE-FG52-06 NA26206(University of Richmond), DE-AC52 07NA27344(LLNL) and DE-AC02 05CH11231(LBNL).

T.J. Ross
University of Richmond

Date submitted: 01 Jul 2011 Electronic form version 1.4