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Validation of $(d,p\gamma)$ as a Surrogate for (n,γ) A. RATKIEWICZ, J.A. CIZEWSKI, A. ADEKOLA, S. BURCHER, M.E. HOWARD, B. MANNING, S.L. RICE, C. SHAND, Rutgers University, J.T. BURKE, R.J. CASPERSON, N. SCIELZO, Lawrence Livermore National Lab, R.A.E. AUSTIN, St. Mary's University, N. FOTIADES, Los Alamos National Lab, R.O. HUGHES, T.J. ROSS, University of Richmond, M. MCCLESKEY, Texas A&M University, S.D. PAIN, Oak Ridge National Lab, W.A. PETERS, Oak Ridge Associated Universities — Although the importance of neutron capture on very exotic nuclei to nucleosynthesis is well known, direct measurements of these reactions are impossible. The $(d,p\gamma)$ reaction at low energies was identified as a promising surrogate for (n,γ) , as both reactions transfer relatively little angular momentum to the system. We report on a program to validate $(d,p\gamma)$ as an (n,γ) surrogate reaction, using ^{95}Mo as a target. The completed components of the experimental campaign include measurements of $(d,p\gamma)$ in normal kinematics and of the intensities of transitions from excited states populated in (n,γ) as a function of neutron energies. Preliminary results from completed measurements and plans for an inverse kinematics measurement of $^{95}\text{Mo}(d,p\gamma)$ will be presented.

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