

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Measuring (n,f) cross sections of plutonium nuclei via the surrogate method R.O. HUGHES, C.W. BEAUSANG, T.J. ROSS, K. GELL, E. GOOD, T. TARLOW, University of Richmond, J.T. BURKE, R.J. CASPERSON, LLNL, M. MCCLESKEY, A. SAASTAMOINEN, TAMU, N. COOPER, P. HUMBY, WNSL — Neutron-induced cross section measurements of exotic nuclei provide a significant experimental challenge due to the need for radioactive targets and high neutron fluxes. Over the past few years the surrogate method has been shown to provide a means of indirectly measuring certain neutron-induced cross sections. Recent results benchmarking (p,t-f) and (p,d-f) reactions as surrogates for (n,f) cross section measurements in uranium nuclei show good agreement with literature data [1]. Building on this work, the use of (p,t-f) and (p,d-f) reactions has very recently been extended to surrogate measurements of the poorly established $^{236}\text{Pu}(n,f)$ and $^{237}\text{Pu}(n,f)$ cross sections. The experiment was performed at Texas A&M University using a 30 MeV proton beam from the K150 cyclotron, incident on ^{239}Pu and ^{235}U targets. Charged particle-fission and charged particle- γ coincidence data were collected using the combined silicon telescope and γ -ray array: STARLiTe. Preliminary results will be presented. This work was supported by DoE Grant Numbers: DE-FG52-09 NA29454 and DE-FG02-05 ER41379 (UR) and DE-AC52-07 NA27344 (LLNL).

[1] R.O. Hughes *et al.*, PRC **85**, 024613 (2012).

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Date submitted: 03 Jul 2012

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