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# Final Report - Improving Data for Short Lived Actinides

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## FINAL REPORT

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This document constitutes the final report for the “Improving Nuclear Data for Short Lived Actinides” research project. During this project 29 papers were published (or are about to be) in peer reviewed journals and conference proceedings which document the research and results extensively. The publications are listed below. Numerous invited and contributed talks were given at national and international nuclear physics meetings. The data collected during this project has in large part made it into the relevant databases for use by the customers. Numerous undergraduate, graduate and post-doctoral researchers were trained in the area of nuclear physics from over 12 different institutions and multiple countries during this research effort. That is reflected in the names and affiliations of the co-authors in the journal articles listed below.

We look forward to continued efforts in this program under a new funding profile focused on the next set of challenges for the relevant programs. This work was performed under the auspices of the U.S. Department of Energy under the Department of Energy’s NNSA Office of Defense Nuclear Nonproliferation Research and Development.

### Publications:

“Study of the surrogate-reaction method applied to neutron-induced capture cross sections”, Boutoux G.; Jurado B.; Meot V.; et al., PHYSICS LETTERS B Volume: 712 Issue: 4-5 Pages: 319-325 Published: JUN 12 2012

“Measurement of the entry-spin distribution imparted to the high excitation continuum region of gadolinium nuclei via (p,d) and (p,t) reactions“, Ross T. J.; Beausang C. W.; Hughes R. O.; et al., PHYSICAL REVIEW C Volume: 85 Issue: 5 Article Number: 051304 DOI: 10.1103/PhysRevC.85.051304 Published: MAY 24 2012

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“To the continuum and beyond: structure of U nuclei”, Hughes, R.O.; Beausang, C.W.; Ross, T.J.; et al. Conference: Rutherford Centennial Conference on Nuclear Physics Location: Manchester, UK Date: 8-12 Aug. 2011, Journal of Physics: Conference Series Volume: 381 Pages: 012064 (6 pp.) DOI: 10.1088/1742-6596/381/1/012064 Published: 01 01 2012

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method”, R.O. Hughes et al, Phys. Rev. C 85, 024613 (2012)

“Neutron-induced cross sections of short-lived nuclei via the surrogate reaction method”

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