Abstract Submitted
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Energy Dependence of Neutron-Induced Fission Product Yields of ^{235}U, ^{238}U and ^{239}Pu Between 0.5 and 14.8 MeV MATTHEW GOODEN, NC State University and TUNL, WERNER TORNOW, Duke University and TUNL, ANTON TONCHEV, Livermore National Laboratory, DAVE VIEIRA, JERRY WILHELMY, CHARLES ARNOLD, MALCOLM FOWLER, Los Alamos National Laboratory, MARK STOYER, Livermore National Laboratory — Under a joint collaboration between TUNL-LANL-LLNL, a set of absolute fission product yield measurements have been performed. The energy dependence of a number of cumulative fission products between 0.5 and 14.8 MeV have been measured using quasi-monoenergetic neutron beams for three actinide targets, ^{235}U, ^{238}U and ^{239}Pu, between 0.5 and 14.8 MeV. The FPYs were measured by a combination of activation utilizing specially designed dual-fission chambers and γ-ray counting. The dual-fission chambers are back-to-back ionization chambers encasing a target with thin deposits of the same target isotope in each chamber. This method allows for the direct measurement of the fission rate in the activation target with no reference to the fission cross-section, reducing uncertainties. γ-ray counting was performed on well-shield HPGe detectors over a period of 2 months per activation to properly identify fission products. Reported are absolute cumulative fission product yields for incident neutron energies of 0.5, 1.37, 2.4, 4.6 and 14.8 MeV.

Matthew Gooden
NC State University and TUNL

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