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Total Kinetic Energy and Mass Yield Curves from the Fast Neutron-Induced Fission of ^{239}Pu ¹ ALEXANDER CHEMEY, ASHLEY PICA, WALTER LOVELAND, LARRY YAO, Department of Chemistry, Oregon State University, HYE YOUNG LEE, SEAN KUVIN, P-27 Physics Division, Los Alamos National Laboratory — The total kinetic energy (TKE) release in fission constitutes the bulk of the energy released ($Q_f \approx 200$ MeV). While TKE release in the $^{239}\text{Pu}(n,f)$ reaction was previously measured from 0.5 to 50 MeV (Phys. Rev. C **94**, 034611 (2016)), the highest energies in the evolution of $\text{TKE}(E_n)$ were puzzling. Notably, there was a high incident neutron energy flattening of TKE from $E_n = 30$ to 50 MeV, contra the clear trend of decreasing TKE observed in the range of 0 to 30 MeV. Presented herein are measurements of TKE in $^{239}\text{Pu}(n,f)$ from $E_n = 2.5$ to 100 MeV using PIN detectors, mass-yield curves using the 2E-method, and discussions of the symmetric fission contribution to TKE at high energies.

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