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Measurements of short-lived photofission product yields using a rapid transfer system[1] INNOCENT TSORXE, North Carolina State University , SEAN FINCH, Duke University , MATTHEW GOODEN , Los Alamos National Laboratory, CALVIN HOWELL , NFN KRISHICHAYAN, Duke University , JACK SILANO, ANTON TONCHEV, Lawrence Livermore National Laboratory, Livermore, WERNER TORNOW, Duke University , JERRY WILHELMY, Los Alamos National Laboratory — Photon-induced fission product yield (FPY) studies were conducted on the three major actinide isotopes: ^{235}U, ^{238}U, and ^{239}Pu. Fission was induced at the Triangle Universities Nuclear Laboratory's High Intensity γ-ray Source using monoenergetic γ-rays of E_γ = 11.2 and 13.0 MeV. To measure the short-lived FPYs, a RApid Belt-driven Irradiated Target Transfer System (RABITTS) was used. The RABITTS is a fully automated 1 m track system which performs cyclic activation by moving the target between irradiation and counting positions. Following γ-ray activation, the target was rapidly (0.4 s) transferred to two well-shielded Highly Purity Germanium detectors, which measure the induced activity. The irradiation-counting cycle was repeated until the summed data are sufficient for statistical analysis. The counting data was used to validate the half-lives for most identified fission products. More than 40 fission products with half-lives ranging from 1 s to 240 s were uniquely identified, and their yield values computed. The results are compared with previous photon and neutron induced FPY measurements.

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