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Energy Dependence of Fission Product Yields from ²³⁵U, ²³⁸U and 239 Pu for Incident Neutron Energies Between 0.5 and 14.8 MeV¹ MATTHEW GOODEN, Los Alamos Natl Lab, TODD BREDEWEG, MALCOLM FOWLER, DAVID VIEIRA, JERRY WILHELMY, Los Alamos National Laboratory, ANTON TONCHEV, MARK STOYER, Lawrence Livermore National Laboratory, MEGHA BHIKE, SEAN FINCH, FNU KRISHICHAYAN, WERNER TORNOW, Triangle Universities Nuclear Laboratory — The energy dependence of a number of cumulative fission product yields (FPY) have been measured using quasimonoenergetic neutron beams for three actinide targets, ²³⁵U, ²³⁸U and ²³⁹Pu, between 0.5 and 14.8 MeV. The FPYs were measured by a combi- nation of fission counting using specially designed dual-fission chambers and -ray counting. Each dual-fission chamber is a back-to-back ioniza- tion chamber encasing an activation target in the center with thin de- posits of the same target isotope in each chamber. This method allows for the direct measurement of the total number of fissions in the activa- tion target with no reference to the fission cross-section, thus reducing uncertainties. -ray counting of the activation target was performed on well-shielded HPGe detectors over a period of 2 months post irradiation to properly identify fission products. Reported are absolute cumulative fission product yields for incident neutron energies of 0.5, 1.37, 2.4, 3.6, 4.6 and 14.8 MeV. New data in the second chance fission region of 5.5 - 9 MeV are included.

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