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Measurement of Short-Lived Fission Product Yields for ^{237}Np via γ-ray Spectroscopy[1] SEAN BURCHER, J.T. HARKE, S.W. PADGETT, N. GHARIBYAN, N. HOWARD, K. ROBERTS, G. SLAVIK, P. ZHAO, Lawrence Livermore Natl Lab, A.S. TAMASHIRO, Oregon State University, B.D. PIERSON, L. GREENWOOD, Pacific Northwest Natl Lab, J. GODA, D. HAYES, J. HUTCHINSON, J. WALKER, Los Alamos Natl Lab — Accurate fission product yields (FPYs) for neutron-induced fission of ^{237}Np are important for applied nuclear science. The yields of short-lived fission products ($t_{1/2}$ hours) are of particular interest, and are experimentally challenging to measure. High-resolution γ-ray spectroscopy can be used to determine the amount of various fission fragments produced by the unique γ-ray signatures of their decay, and does not require time-consuming chemical separation processes. Samples of ^{237}Np have been irradiated in the Godiva-IV critical assembly, and then measured in a γ-ray counting setup for approximately 7 days. Hundreds of unique γ-rays were observed, allowing for the measurement of FPYs for many short-lived isotopes.

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