Abstract Submitted
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Short Lived Fission Product Yield Measurements in ^{235}U, ^{238}U and ^{239}Pu[1] JACK SILANO, ANTON TONCHEV, Lawrence Livermore National Laboratory, WERNER TORNOW, FNU KRISHICHAYAN, SEAN FINCH, Duke University and TUNL, MATTHEW GOODEN, JERRY WILHELMY, Los Alamos National Laboratory — Yields of short lived fission products (FPYs) with half lives of a few minutes to an hour contain a wealth of information about the fission process. Knowledge of short lived FPYs would contribute to existing data on longer lived FPY mass and charge distributions. Of particular interest are the relative yields between the ground states and isomeric states of FPYs since these isomeric ratios can be used to determine the angular momentum of the fragments. Over the past five years, a LLNL-TUNL-LANL collaboration has made precision measurements of FPYs from quasi-monoenergetic neutron induced fission of ^{235}U, ^{238}U and ^{239}Pu [1]. These efforts focused on longer lived FPYs, using a well characterized dual fission chamber and several days of neutron beam exposure. For the first time, this established technique will be applied to measuring short lived FPYs, with half lives of minutes to less than an hour. A feasibility study will be performed using irradiation times of < 1 hour, improving the sensitivity to short lived FPYs by limiting the buildup of long lived isotopes. Results from this exploratory study will be presented, and the implications for isomeric ratio measurements will be discussed. [1] M. Gooden et al. Nucl. Data Sheets. 131, 319 (2016)

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