Abstract Submitted
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Modernizing the Fission Basis[1] C. BHATIA, B. FALLIN, C. HOWELL, W. TORNOW, Duke University and TUNL, M. GOODEN, J. KELLEY, North Carolina State Univ. and TUNL, C. ARNOLD, E. BOND, T. BREDEWEG, M. FOWLER, W. MOODY, R. RUNDBERG, G. RUSEV, D. VIEIRA, J. WILHEMY, LANL, J. BECKER, R. MACRI, C. RYAN, S. SHEETS, M. STOYER, A. TONCHEV, LLNL, DUKE UNIVERSITY AND TUNL COLLABORATION, NORTH CAROLINA STATE UNIV. AND TUNL COLLABORATION, LANL COLLABORATION, LLNL COLLABORATION — A recent Fission Product Review Panel study has identified important issues associated with the possible neutron energy dependence of the fission product isotope ^{147}Nd. As a result, we initiated a program at TUNL to obtain high-precision and self-consistent data for the energy dependence of fission product yields in the 1 to 15 MeV energy range. Three dual fission ionization chambers dedicated to ^{235}U, ^{238}U, and ^{239}Pu thick target foils and thin monitor foils, respectively, were exposed to neutron beams produced via the reactions ^{2}H(d,n)^{3}He and ^{3}H(d,n)^{4}He. After irradiation, the characteristic γ rays from specific fission products were recorded over a period of many weeks using HPGe detectors in a low-background environment. Results for the yield of seven fission isotopes obtained at 4.6, 9.0 and 14.8 MeV are reported.

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