Abstract Submitted
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Experimental details for determining neutron-induced fission cross sections of picosecond states R.J. CASPERSON, J.T. BURKE, I.J. THOMPSON, F.S. DIETRICH, J.E. ESCHER, J.J. RESSLER, N.D. SCIELZO, E. SWANBERG, W. YOUNES, Lawrence Livermore National Laboratory — The first excited state neutron-induced fission cross section of ^{239}Pu is not directly measurable, due to the short lifetime of the 8 keV 3/2+ excited state. We will use recent developments in transfer reaction theory to identify the angular momentum distribution of excited states in the pre-fission nucleus ^{240}Pu*. This nucleus will be produced in a (d,p) reaction on ^{239}Pu, and the fission probability as a function of outgoing proton angle and energy will be measured. By combining this measurement with (d,p) reaction theory, the fission probability of individual angular momenta can be determined, and recombined into the excited state fission probability. The experimental details for measuring the proton distributions and fission probabilities will be described in detail. Recent progress in the development of the VME based data acquisition system will be discussed. This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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