
— New reactor designs and materials, reprocessing efforts, and transmutation of nuclear waste play significant roles in the future of nuclear energy. New or improved neutron measurements on a number of isotopes are needed to determine feasibility, effectiveness, and safety issues for the novel engineering efforts. Data collection is often hampered by the need for radioactive targets; the use of such targets is limited to longer-lived isotopes due to the large background induced by the decay of the material. However, cross sections for isotopes of interest can be obtained indirectly using light-ion reactions on long-lived neighbors. Decay from the compound state is assumed to be independent of the production reaction, allowing reactions with the neighboring isotopes to be used as a surrogate for the reaction of interest. Results from the neutron-induced fission cross sections of $^{241}$Am and $^{242}$Am, performed via surrogates $^{243}$Am($^3$He, $\alpha'$f) and $^{243}$Am($^3$He, $^3$He'f), respectively, will be shown.

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