

Abstract Submitted
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Using the $^{152}\text{Sm}(p,3n)^{150}\text{Eu}^*$ Reaction as a Means to a Clean ^{150}Gd target¹ B. BARQUEST, J. CERNY III, C. JEWETT, LBNL & UC Berkeley, D. BLEUEL, M.A. MCMAHAN, LBNL, L. AHLE, L. BERNSTEIN, J. BURKE, LLNL — As part of an ongoing program to measure direct neutron cross sections on radioactive targets, we have been investigating the feasibility of making a clean ^{150}Gd target - a long-lived alpha-emitter of interest for stockpile stewardship - by making isomeric ^{150}Eu , which decays to ^{150}Gd with an 89% branching ratio. In the first part of this study, the $^{152}\text{Sm}(p,3n)$ reaction was studied at several energies ranging from 19-27 MeV, using an array of five clover Ge detectors to look at the relative population of the ground state ($\tau_{1/2} = 36.9$ years) and the isomer ($\tau_{1/2} = 12$ hour) of ^{150}Eu . In the second experiment, we bombarded a thicker ^{152}Sm target at 25 MeV and measured the delayed gamma rays from the ground state and isomer to get an absolute production yield. Preliminary results from these studies will be presented including a tentative excitation function.

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