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Cross-Section Measurement of the ^{169}Tm(n,3n)^{167}Tm Reaction and Constraining the Branching Ratio of ^{167}Tm BRIAN CHAMPINE, UC Berkeley, MATTHEW GOODEN, Los Alamos National Laboratory, KEENAN THOMAS, UC Berkeley, F. KRISHICHAYAN, Triangle University Nuclear Lab, ERIC NORMAN, UC Berkeley, NICK SCIELZO, ANTON TONCHEV, Lawrence Livermore National Laboratory, WERNER TORNOW, Triangle University Nuclear Lab — The cross section of the ^{169}Tm(n,3n)^{167}Tm reaction has been measured from 17.5 to 21.5 MeV using activation technique. This energy region was chosen to resolve the two different trends of the previous (n,3n) cross section measurements on ^{169}Tm. In addition, the branching ratio of the 207.8 keV γ-ray line stemming from electron capture of ^{167}Tm was measured to be 0.419(16). The result of these measurements provide more accurate diagnostic estimation of the so called reaction-in-flight neutrons produced via the internal confinement fusion plasma in deuterium-tritium capsules at the National Ignition Facility.

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