Precision photo-induced cross-section measurements using the monoenergetic and polarized photon beams at HI$\gamma$S$^1$ A.P. TONCHEV, C.R. HOWELL, E. KWAN, G. RUSEV, W. TORNOW, Duke, J.H. KELLEY, C. HUIBREGTSE, NCSU, S.L. HAMMOND, UNC, D. VIEIRA, J.B. WILHELMY, LANL — A research program has been initiated at TUNL to perform precision ($\gamma,\gamma'$) and ($\gamma,xn$) cross-section measurements on actinide nuclei using the novel source of radiation at the High Intensity Gamma-ray Source (HI$\gamma$S) facility. This facility provides nearly mono-energetic ($\Delta E/E \pm 2\%$) and intense ($10^8$ s$^{-1}$) photon beams after the recent upgrade. A precision knowledge of photoinduced processes is of practical importance for new reactor technologies, nuclear transmutation, and nuclear forensics. Our recent photodisintegration cross section measurements on radioactive $^{241}$Am targets in the energy range from $9 < E_\gamma < 16$ MeV will be presented. The experimental data for the $^{241}$Am($\gamma,n$) reaction in the giant dipole resonance energy region will be compared with statistical nuclear-model calculations.

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