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Non-Destructive Analysis of Natural Uranium Pellet[1] SAMANTHA WIGLEY, College of Wooster, KEVIN GLENNON, EVANS KITCHER, CODY FOLDEN, Texas AM University — As part of ongoing nuclear forensics research, samples of $^{nat}UO_2$ have been irradiated in a thermal neutron spectrum at the University of Missouri Research Reactor (MURR) with the goal of simulating a pressurized heavy water reactor. Non-destructive gamma ray analysis has been performed on the samples to assay various nuclides in order to determine the burnup and time since irradiation. The quantity of ^{137}Cs was used to determine the burnup directly, and a maximum likelihood method has been used to estimate both the burnup and the time since irradiation. This poster will discuss the most recent results of these analyses.

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