

Abstract Submitted  
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**Efficiency of Moderated Neutron Lithium Glass Detectors Using Monte Carlo Techniques** BRIAN JAMES, Brigham Young University — Due to national security concerns over the smuggling of special nuclear materials and the small supply of He-3 for use in neutron detectors, there is a great need for a new kind of neutron detector. Using Monte Carlo techniques I have been studying the use of lithium glass in varying configurations for neutron detectors. My research has included the effects of using a detector with two thin sheets of lithium at varying distances apart. I have also researched the effects of varying amounts of shielding a californium source with varying amounts of water. This is important since shielding would likely be used to make nuclear material more difficult to detect. The addition of one sheet of lithium-6 glass on the front surface of the detector significantly improves the efficiency for the detection of neutrons from a moderated fission source.

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