Furthering Oregon State University to Meet Nuclear Science and Engineering Research Challenges Through Reactor Upgrade Investment – Improving Material Science Capability

Applicant Name: Oregon State University

Project Director/Principal Investigator: Steve Reese

Co-Principal Investigators: Sam Briggs, Tianyi Chen, Wade Marcum, Mitchel Meyer, Robert Schickler, and Julie Tucker

Program: Scientific Infrastructure Support for Consolidated Innovative Nuclear – Research University Research Reactor Upgrades Infrastructure Support

Funding Opportunity Announcement: DE-FOA-0002129

ABSTRACT:

The objective of this proposal is to purchase and install a prefabricated hot cell, purchase a digital neutron radiography image plate system, and a liquid scintillation counter in order to increase utilization of the TRIGA® Mk II Oregon State TRIGA® Reactor (OSTR). This upgrade will provide opportunity for continued safe use of the reactor in the areas of nuclear science and engineering research as well as material science at Oregon State University (OSU) and development relevant to the DOE mission but also quality academic environment. This effort will focus on obtaining a hereto unavailable capability by providing researchers the ability to example highly radioactive materials in a safe and controlled environment. This will improve the reliability and safety of the handling of samples that have been irradiated in the OSTR for the benefit researchers and students interested in nuclear engineering, radiation health physics, radiochemistry, as well as other fields dependent upon nuclear technology. Furthermore, this will complement the recent investment by OSU in nuclear materials science faculty, providing them a local and cost effective method of examining materials that have been made radioactive. The unique learning experience utilizing the reactor will reinforce theoretical material from the traditional student classroom experience while developing advanced measurement skills. The successful realization of this effort will enable OSU to educate highly capable individuals who will be needed to fill the critical needs of tomorrow's nuclear infrastructure, while concurrently contributing to mission and needs of DOE-NE.