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## Upgrade of Gamma Spectroscopy Capabilities at the OSU Reactor

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**Program:** Reactor Upgrades

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### ABSTRACT:

**Project Objectives:** The Oregon State University Radiation Center (OSU-RC) proposes to upgrade gamma spectroscopy capabilities for two key facilities associated with our research reactor: (1) our main counting lab (home to a very active INAA program) and (2) our prompt gamma activation analysis (PGAA) facility. The upgrades will include both new hardware and custom-designed software, to enhance the stability and performance of these facilities and to ensure that they continue to play an important role in advancing OSU's nuclear science education and research missions.

**Project Description and Impacts:** Specifically, funds are requested to purchase new detector electronics for the OSU-RC INAA lab including one new HPGe gamma-ray detector, four digital spectrometers, and an additional UPS unit to ensure uninterrupted counting activity. Software upgrades include purchase of newly developed, integrated gamma spectroscopy/INAA software to run in a Windows environment as an add-on to Canberra Industries' Genie-2000 software package. Improvements to the PGAA set-up include purchase of a new mechanical cooler and a higher-capacity UPS unit to ensure uninterrupted cooling of the detector. We anticipate that both the INAA and PGAA program areas will continue to be major foci of activity for the OSU reactor, and the requested upgrades in infrastructure will provide a critical foundation for the Radiation Center's mission of teaching, training, and service in nuclear science applications.