Advancing Radiation Detection Education at the Maryland University Training Reactor

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Collaborators: N/A
Program: FY 2021 Reactor Upgrades

ABSTRACT:

Project Objectives: *To modernize the radiation safety equipment and radiation detection capabilities at the Maryland University Training Reactor. This instrumentation will support the long-term safe operation of the reactor as it fulfills its primary goal of educating the future nuclear workforce.*

Project Description (methods to be employed, potential impacts, major participants):
The University of Maryland Radiation Facilities consists of our training reactor, linear accelerator, and panoramic Co-60 irradiator. These devices support a wide variety of research and educational training for both on and off campus users. Unfortunately, our radiation detection equipment that is depended on for operational reliability, personnel safety, and reactor control is either out of date or simply not available at the Radiation Facilities. The equipment identified in this grant request will support the replacement of radiation area monitors required by our operating license, handheld detectors to support our ALARA program, and laboratory items to train our students in proper detection methods.

This equipment will greatly impact our reactor training program and lab class. Started in 2015, students from all departments across campus are invited to participate in an extracurricular program designed to end with a US NRC issued operator's license. Enrollment has grown consistently over the past couple of years. While the nuclear engineering department on campus is gone, we are pleased to continue our support of the nuclear engineering minor with a course covering reactor operations and radiation detection.

To keep our program going, we must ensure the continued safe and predictable operation of the reactor and other devices. Students need to be familiar with the equipment that they will encounter once they enter the workforce. The equipment identified will keep our facilities relevant, secure, and reliable for many years.

Students will gain valuable experience while assisting staff with the setup of the equipment. Continuing with the tradition of allowing our trainees to participate in all aspects of operations, maintenances, and surveillances, we encourage their involvement in the installation and use of the detectors. Students will become familiar with the properties and application of each detector. Once we have established standard operating procedures, students will continue to use the equipment to support operations.