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## University of Wisconsin Nuclear Reactor University Research Reactor Upgrades Infrastructure Support

**Applicant Name:** University of Wisconsin - Madison

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**Major Participants:** NA

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### Project Objective

The specific objective of this proposal is to upgrade personnel radiation monitoring equipment and calibration standards to support the operation and research being conducted at the University of Wisconsin Nuclear Reactor (UWNR) and associated Characterization Laboratory for Irradiated Materials (CLIM).

### Project Description

The UWNR-CLIM maintains various radiation detecting equipment for personnel monitoring, regulatory compliance, research and education. All radiation detection equipment at the UWNR-CLIM are maintained and calibrated in accordance with American National Standards (ANSI/ANS). The facility is currently utilizing calibration standards that date back to 1973. While it is still possible to use some of the calibration sources, the activity from others have literally decayed to undetectable levels. The remaining standards' limited activity results in excessively long count times, which increase the time the equipment is out of service for calibrations. Additionally Electronic Personal Dosimeters (EPD) are utilized to monitor radiation exposure to researchers and visitors to the UWNR-CLIM. The existing EPDs have been in continuous service for the past 13 years and many have been taken out of service as a result of malfunction or failure. Since the EPDs do not have any serviceable parts UWNR staff cannot repair them. It is proposed to acquire new higher activity, NIST traceable, Eckert & Ziegler Isotrak Calibration Sources and Miron Technologies brand model DMC 3000 personal electronic dosimeter to maintain access for researchers at the UWNR-CLIM and visitor through the UWNR Educational Outreach Program.

### Potential Impact of the Project

The proposed effort of acquiring the electronic personal dosimeters and calibration standards are necessary to maintain the infrastructure and enhance the capabilities at the UWNR-CLIM. These capabilities are relevant to the objectives of the Department of Energy's (DOE) Office of Nuclear Energy (NE) in the following ways

- The equipment is necessary to maintain the UWNR-CLIM as a cutting edge facility which is a strong incentive when attracting high quality students interested in nuclear energy related studies
- The radiation detecting equipment is integral to the undergraduate curriculum within the UW's NE program enabling the education and training of a strong work force in nuclear science and engineering
- The proposed enhancements to the UWNR-CLIM infrastructure supports research and development (R&D) that is relevant to the DOE-NE mission through DOE-NE funded research programs at the UW