
MURR Facility Access Control Upgrades

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Program: Reactor Upgrades

ABSTRACT: Our proposal to the DOE Nuclear Energy University Program (NEUP) Reactor Upgrades Infrastructure Support Program requests \$378,255 to acquire hardware and software necessary to upgrade the University of Missouri Research Reactor's facility access control system to a more secure system to maintain facility protection and to meet increased demands from faculty and student researchers authorized to use various areas of the MURR facility. The security system currently in place was installed in 2002, with upgrades to various parts of the system since then. However, the current system uses a legacy card system, where the cards operate at 125 kHz (low frequency). Until the past few years, the existing technology was considered quite safe, due to the size and high cost of equipment needed to clone a card. However, recent advances in technology have dramatically reduced the size and price for acquiring equipment that can crack a proxy system. These advances are now readily available in devices available at online retailers -- for under \$20 -- that can read the data from most 125 kHz proxy cards, store it, then write it to an unprogrammed card with just the press of a button. Therefore, an upgrade to current state-of-the-art technology is essential to MURR's overall physical security system. MURR requests funding to acquire a modern, high frequency system. These systems operate at 13.56 MHz, which is more secure and requires sophisticated encoding that improves security. In addition to the need for an overall security system upgrade, a key situation with our current biometric reader (Fujitsu) and the remaining biometric system in the facility is that the manufacturer no longer supports their technology, thus replacement parts are not available. Upgrade of MURR's primary and secondary security technology will ensure continuous, secure access throughout the facility for MU researchers and students and our collaborators.

Upon award, the PI will coordinate with MURR's senior engineering and operations managers and the Research and Education Group for any final considerations in specifying a new access control system. We anticipate that the work will be conducted in two major phases:

Phase 1: Procurement. As final specifications are determined, the PI will work with MU's Office of Procurement Services to determine the appropriate procurement strategy (competitive bid, or sole source acquisition) needed for acquiring the requested security system. Once the strategy is determined and acquisition is underway, the vendor's delivery schedule will help refine the Phase 2 schedule.

Phase 2: Installation and Testing. With the complexity of replacing the facility-wide security system, pre-planning and staging will be essential. As discussed in more detail in the Project Narrative, this phase will involve several tasks to occur on normal, scheduled maintenance days, with each task planned in such a way as to minimize facility downtime to avoid disruption of faculty and student research.

Replacement of MURR's facility access control system is a critical upgrade. The higher level of reliability and secure access will ensure the continued safe and reliable operations of MURR in support our growing base of nuclear science and engineering students and faculty, to support the research and workforce needs of the DOE Office of Nuclear Energy, other government and regulatory agencies, and the overall nuclear industry.