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## Priority Hardware Replacement for the AGN-201M Reactor at The University of New Mexico

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**Collaborators:** N/A

**Program:** University Research Reactor Upgrades Infrastructure Support

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### **ABSTRACT:**

The University of New Mexico (UNM) requests funding to restore damaged, unreliable, and obsolete components which are critical to the continued reliable, safe operation of its AGN-201M nuclear reactor.

The UNM reactor has experienced a doubling of operational use each year since the pandemic and strives to continue significant growth in the next few years. The objective of this proposal is to maintain this capacity by restoring the components necessary to ensure sustained operation without lengthy unplanned outages. This reactor is only one of two operating AGN types in the US which offer this unique level of inherently safe student learning experience. It serves a vital role in UNM's Nuclear Engineering curriculum to facilitate research, education, and service efforts related to the DOE Office of Nuclear Energy's program-related objective of research and development of general nuclear energy and advanced reactor technologies.

Since its initial criticality in 1957, some of these components have remained original to the reactor. One priority for the UNM reactor is to replace five obsolete power supplies with industry-supported, more reliable upgrades. Currently, each of these supplies constitutes a single-point failure for the system, including protective functions. The failure of one would cause inoperability of the reactor for an indeterminate duration. Another priority is to upgrade the scram logic chassis with a more reliable, analog equivalent to mitigate faults due to the current chassis' worn, fragile wiring. Finally, we seek to replace an obsolete, glitching console computer which is crucial to the reactor's interface with operators, students, professors, and industry.

The successful realization of this effort will enable UNM to educate highly capable individuals who are needed to meet the industry's nuclear infrastructure needs, while concurrently contributing to mission of DOE-NE.