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## **Increase Our Understanding of the Maryland University Training Reactor Core**

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**Program:** Infrastructure

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### **ABSTRACT:**

#### **Project Objective:**

The objective of this proposal is to obtain critical items necessary to understand the reactor core. The purchase of a radiation hard, underwater camera will allow for the viewing of a core that has not been seen since originally installed in 1974. The installation of a digital chart recorder will begin to modernize the reactor console.

#### **Description of the Project:**

The Maryland University Training Reactor (MUTR) is a 250 kW conversion type TRIGA reactor. The MUTR was the recipient of 19 lightly irradiated fuel elements in March 2017. In order to successfully install the elements in our grid plate, a radiation hard, underwater camera must be obtained. A camera for viewing the core will assist the fuel handler with successful placement of the 4-element fuel bundle about the guide pins on the grid plate. Once the fuel is successfully installed, a digital chart recorder will provide data-logging capabilities for up to 10 channels. This data will be useful to monitor core trends and provide inputs for modeling software. The fuel installation will yield many training opportunities for our undergraduate reactor operator training program. The focus of our reactor operations is the training and re-qualification of operators. This increased demand for powered operations requires reliable components. The digital chart recorder will replace a pen and paper recorder that scribes a single channel in a format not easily translatable to a digital system. A successful award would allow for the continued safe and reliable operation of the MUTR in our continued support of research and operator education.