
Enhanced Reactor Operations Training, Elevating Undergraduate Student Experience in Nuclear Science, and Reactor Utilization Catalyzed from a Hot Cell Training Area

PI: C. Corey Hines, Director,
Nuclear Science Center,
Washington State University

Collaborators: Zachariah Heiden, Associate Director,
Nuclear Science Center, Washington State University

Clark Filip, Reactor Manager, Nuclear Science Center,
Washington State University

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ABSTRACT:

Project Objectives. The Nuclear Science Center at Washington State University operates the State of Washington's only research reactor and supports vibrant teaching, training, and research programs in support of many projects in nuclear science education and research. The overall goal of our proposed project is to enhance the capacity to attract high quality students in nuclear science, enrich the research and education capabilities, and increase the capability to perform research and development (R&D) that are relevant to DOE-NE programs at the institutional level at Washington State University (WSU). To accomplish this goal, our specific project objective is to enhance nuclear capabilities, education, and research in nuclear science, by procuring and installing a Hot Cell Training Area (HCTA) for students, staff reactor operators, and researchers at the WSU Nuclear Science Center (NSC). This project will also support and further stimulate nuclear science and engineering (NS & E) R&D and education at WSU and in the Pacific Northwest and contribute to strengthening national nuclear science and engineering infrastructure.

Project Description and Impact. Establishment of a Hot Cell Training Area will facilitate enhanced utilization of the WSU nuclear reactor through the ability to safely complete tasks/projects which cannot be completed with the current infrastructure, thus attracting new clients/research projects. With the capability to train reactor operators and researchers on manipulator operations outside of a hot cell environment at the Hot Cell Training Area, students and staff can better interact with objects within a hot cell environment, provide greater distance and shielding during the movement of radioactive components, and learn how to safely handle samples with high activity (> 10 Ci). The ability to build up a skillset on hot cell and manipulator operations is critical and essential to the success of the Hot Cell Facility. The presence of a Hot Cell Training Area is also envisioned as a training site to increase the pool of workers with hot cell operational experience to stabilize the nuclear workforce by acting as a pipeline of future employees for national laboratories and radiopharmaceutical companies and as the foundation for the creation of a class on hot cell operations.