

Nuclear Criticality Safety: A Graduate Certificate Program

Executive Summary

This proposal will develop and deliver a comprehensive, graduate-level Nuclear Criticality Safety (NCS) Graduate Certificate Program that will be available to local university students and nuclear employees, and nationally via distance learning. The program will help educate a new generation of engineers, scientists and technicians in the field of nuclear criticality safety and ensure that vital information is not lost with a retiring workforce. Knowledge of NCS is fundamental to many steps within current and advanced nuclear fuel cycles.

The program will directly benefit nuclear workforce personnel tasked with the safe handling of fissile materials by:

- providing the necessary theoretical background in criticality physics, safety analysis, the double contingency principle, and the development of sub-critical operating limits;
- disseminating lessons learned from criticality accidents and contemporary violations of nuclear safety standards and regulations to ensure this knowledge is not lost with a retiring workforce, but rather is incorporated as part of continuing education;
- using innovative techniques to reach more workforce personnel, including DVD format with interactive web-based message boards;
- training instructors to improve subject matter expertise and faculty competency.

This proposal requests funds to be used for the development and delivery of a four-course, 12-semester-hour certificate program. All courses will be locally available to university students from the University of Idaho (UI), Idaho State University (ISU) and Brigham Young University-Idaho (BYU-I); employees from Idaho National Laboratory (INL), Idaho Cleanup Project (ICP), Bechtel Bettis, Inc. (BBI), and other local industry contractors; and nationally accessible via web-assisted DVD distance learning. These courses may also be used to help satisfy curriculum requirements for graduate degree programs.