

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Real-Time In Situ Characterization of Molecular and Complex Ionic Species in Forced-Flow Molten Salt Loops and a Molten Salt Research Reactor – Abilene Christian University**

**SECTION B. Project Description**

Abilene Christian University (ACU) proposes to add Raman and gamma spectroscopies to its Nuclear Energy eXperimental Testing (NEXT) Lab's series of existing and planned forced-flow molten salt loops and planned molten salt reactor for enhanced radioactive materials characterization capability. NEXT Lab will acquire a high-resolution research-grade Raman spectrometer and build required interfaces with the flowing molten fluoride salt. The proposed equipment purchases fall into two categories: 1) radiation protection equipment, and 2) chemical analysis instrumentation (Raman system). As a result of support for the radiation protection equipment, a new radioactive materials handling laboratory will be instantiated and made available to faculty, students, and researchers at ACU, with particular value to the nuclear energy education and research.

**SECTION C. Environmental Aspects / Potential Sources of Impact**

The university has procedures in place to handle any waste that will be generated through this project. The action would not create additional environmental impacts above those already occurring at the university.

**SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s):** Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: B3.6 Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). For purposes of this category, "demonstration actions" means actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment. Demonstration actions frequently follow research and development and pilot projects that are directed at establishing proof of concept.

Justification: The activity consists of purchasing and installing equipment to enhance radiation protection and support enhanced radioactive materials characterization capability.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)  Yes  No

Approved by Jason Anderson, DOE-ID NEPA Compliance Officer, on 07/23/2021.