

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Structural Health Monitoring of Nuclear Spent Fuel Storage Facilities – University of California, Berkeley**

**SECTION B. Project Description**

The University of California-Berkeley, in collaboration with Argonne National Laboratory, proposes to demonstrate that the recoil-ion approach to  $\beta$ -delayed neutron spectroscopy can be an innovative method to collect high-quality measurements of neutron emission branching ratio and energy spectrum that are needed for nuclear-energy applications.

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

Radioactive Material Use – At Argonne National Laboratory, we will make use of a  $^{252}\text{Cf}$  source to produce the radioactive ions used in our experiments. All of our activities will be conducted in accordance with ANL EH&S rules and regulations.

**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). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial development.

Justification: The activity consists of demonstrating a novel delayed-neutron spectroscopy technique for research purposes.

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

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on 11/21/2013