

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Used Fuel Storage Monitoring Using Novel  $^4\text{He}$  Scintillation Fast Neutron Detectors and Neutron Energy Discrimination Analysis – University of Florida**

**SECTION B. Project Description**

The University of Florida proposes to build and demonstrate a prototype detector device capable of unambiguously verifying the declared contents of dry storage casks in a non-intrusive manner for the safeguarding and monitoring of used fuel storage installations. This will be achieved through a neutron spectroscopy and imaging system using high-efficiency Helium-4 ( $^4\text{He}$ ) gas scintillation fast neutron detectors.

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

Radioactive Material Use – A neutron generator, which is licensed as an accelerator by the State of Florida and under control of the Radiation Safety Officer at UF, will be used. The project will also use a Californium-252 source which is licensed and maintain similarly. No waste will be generated or disposal required.

**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 university-scale research aimed at developing a detector device for monitoring used fuel storage.

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 06/18/2015