

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Fundamental Studies of Irradiation-Induced Modification in Microstructural Evolution and Mechanical Properties of Advanced Alloys – University of Illinois**

**SECTION B. Project Description**

The University of Illinois will conduct research that will: (1) establish ion-to-neutron irradiation correlations between available neutron-irradiated reference alloys (Grade 91, Grade 92 and NF709) and the ion irradiations on these materials, and (2) to use these correlations to provide a basis for estimating neutron performance of the optimized Grade 92 and Alloy 709 materials. The university will use existing facilities located at the university to test and characterize the alloys.

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

The University of Illinois will use existing procedures and policies to manage and dispose of all chemicals and waste. The action will 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). 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 investigating extraction systems for used nuclear fuel.

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 08/21/2014