

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Determination of Microstructure and Chemical State Changes in Ion-Irradiated Fuels and Structural Components with a High Kinetic Energy Electron Detector – Illinois Institute of Technology

SECTION B. Project Description

The Illinois Institute of Technology will purchase a High Kinetic Energy (HiKE) instrument for measuring the structural and chemical changes in ion-irradiated fuels and structural materials for verification of radiation damage models.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use – The action consists of funding the purchase of equipment and instruments for an existing program. The action would not create additional environmental impacts above those already occurring at the university. This project limits the allowed radioactive materials to uranium and thorium compounds. All samples will be returned to the researchers' host institution for disposal as current operating conditions require.

Radioactive Waste Generation – Nanogram quantities of waste may be created during sample cleaning. This waste will be disposed of according to the Argonne rules due to operating agreements with Argonne.

Chemical Use/Storage/Chemical Waste Disposal – The action consists of funding the purchase of equipment and instruments for an existing program. 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). 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 purchasing equipment 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 5/22/2012