

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: – Computational & Experimental Studies of Microstructure-Scale Porosity in Metallic – University of Arkansas

SECTION B. Project Description

The University of Arkansas, in collaboration with Texas A & M University (TAMU) and Georgia Tech, proposes to investigate the stability of bimodal pore size distributions, and the potential to microstructurally design metallic fuels along such lines, by closely-coordinated computational modeling and experiments.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use – This project will involve the laboratory use of depleted uranium metal as rods and powder. Appropriate permits, procedures, and training is already in place.

Radioactive Waste Generation – All radioactive waste will be disposed according to procedures through the TAMU radiation safety office in the Environmental Health and Safety Division (EHSD).

Mixed Waste Generation – Mixed waste may be generated as acids are used to clear uranium metal surfaces. All mixed waste will be disposed according to procedures through the TAMU radiation safety office in the Environmental Health and Safety Division (EHSD).

Chemical Use/Storage – Multiple chemicals will be used and stored in the TAMU Fuel Cycle and Materials Laboratory. All activity of this type is performed using the TAMU College of Engineering protocol for Personal Safety Assessments.

Chemical Waste Disposal – All chemical waste will be disposed according to procedures through the TAMU chemical safety office in the Environmental Health and Safety Division (EHSD).

Hazardous Waste Generation – All RCRA hazardous waste will be disposed according to procedures through the TAMU chemical safety office in the Environmental Health and Safety Division (EHSD).

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 pore size distributions of metallic fuels.

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 09/09/2014