

# DOE-ID NEPA CX DETERMINATION

## SECTION A. Project Title: Additive Manufacturing of Advanced Ceramics for Nuclear Applications – Alfred University

## SECTION B. Project Description

Alfred University proposes to establish an additive manufacturing (AM) capability of ceramic materials. The proposed system proposed to be purchased and installed is a CeraFab 8500, which builds components using a patented process called lithography-based ceramic manufacturing (LCM). Novel ceramic materials and components can be processed at higher throughput with minimal exposure to handlers and health risk. Overall the AM methods will also lead to significant cost reduction.

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

Chemical use – Only surrogate chemicals (e.g., Cerium oxide) and compounds will be used in this equipment.

Chemical waste disposal – Small chemical wastes (about 50 g/month) will be generated. Chemical waste handling procedures and protocols are in place for the laboratory space where the equipment will be located.

Hazardous waste generation – Small quantity of hazardous (about 10 g/month) may be generated in some cases. Hazardous waste handling procedures and protocols are in place for the laboratory space where the equipment will be located.

Water/well use – Laboratory water is available in the laboratory space where the equipment will be located.

## 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: B1.31 Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

Justification: The activity consists of purchasing and installing equipment for teaching and research purposes.

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

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on 08/17/2017