

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: A 3D Metal Printer to Enable Innovations in Nuclear Materials and Sensors – Boise State University

SECTION B. Project Description

Boise State University (BSU) proposes to acquire a 3D metal printer to advance innovations in materials and sensors for nuclear energy applications. The technology will allow direct integration of electronic sensors onto metal additive manufactured (AM) packaging. The printer will be placed at the Center for Advanced Energy Studies (CAES) in Idaho Falls to ensure it is accessible to students, scientists, researchers, and engineers from academia, industry, and government agencies along with complementary state-of-the-art manufacturing and characterization facilities co-located at CAES.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage – Minimal quantities of non-reactive metal powders will be stored and used for metal printing. Adequate facilities (metal powder vacuum and printer enclosure) are included with the equipment purchase to safely handle the powders and any accidental releases of powdered material outside the enclosure.

Air Emissions – All recommended and required facilities for proper containment and air-handling while storing and working with the non-reactive metal powders are in place at CAES or provided with the equipment to ensure that air emissions will not be impacted.

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 to fabricate advanced prototypes for in-core experiments and next generation nuclear reactor technologies.

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 7/20/2020