

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Advanced Nuclear Materials Laboratory Enhancements for Corrosion and Stress Corrosion Testing – North Carolina State University

SECTION B. Project Description

North Carolina State University proposes to purchase and install a full system for stress corrosion cracking in light water reactor environments, two individual high pressure autoclaves for teaching purposes, and electrochemical corrosion testing equipment. The stress-corrosion cracking equipment consists of a pressurized autoclave with an internal 4-point bend load frame, a recirculating loop with pressurized sparging tank and dissolved oxygen and hydrogen sensors, a DCPD controller for crack and safety monitoring, and a floor model load frame for slow strain rate (SSR) / constant extension rate (CER) testing within the pressure vessel. The equipment for electrochemical measurements includes polarization cell, sample holders, reference and counter electrodes, and potentiostat with acquisition software.

SECTION C. Environmental Aspects / Potential Sources of Impact

The action consists of purchasing equipment to be used in research and teaching. 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: 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 07/20/2017