DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-11-011

SECTION A. Project Title: Acquisition of a 3 MV Tandem Accelerator for Research and Teaching in Nuclear Science and Engineering – University of Michigan

SECTION B. Project Description

The goal of this project is to provide upgraded, robust and long-term capability to conduct radiation damage studies, ion beam analysis of materials and processing of materials using ion beams, in support of the research and teaching mission in nuclear science and engineering at the University of Michigan. The university will acquire a new, 3 MV tandem ion accelerator to replace an aging 1.7 MV accelerator. The acquisition will provide new capabilities, improved reliability, enhanced functionality, superior versatility and greater efficiency in ion radiation, ion beam modification, and ion beam analysis of materials.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use /Radioactive Waste Generation – There is an established program for the management of radioactive waste at the University of Michigan. It is handled by the OSEH Department, Hazardous Materials Management Program. The program is regularly inspected by the MDEQ and the NRC and has had no notices of violation.

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: B3.10 Siting, construction, modification, operation, and decommissioning of particle accelerators, including electron beam accelerators, with primary beam energy less than approximately 100 million electron volts (MeV) and average beam power less than approximately 250 kilowatts (kW), and associated beamlines, storage rings, colliders, and detectors, for research and medical purposes (such as proton therapy), and isotope production, within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible), or internal modification of any accelerator facility regardless of energy, that does not increase primary beam energy or current. In cases where the beam energy exceeds 100MeV, the average beam power must be less than 250 kW, so as not to exceed an average current of 2.5 milliamperes (mA).

Justification: The activity consists of purchasing and operating a ion beam accelerator 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 11/28/2011