

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Localized Imaging, Surveying and Mapping for Nuclearized Underwater Robots – Carnegie Mellon University**

**SECTION B. Project Description**

Carnegie Mellon University proposes to develop, demonstrate, and infuse a leap of sensing, robotics, spatial positioning and visualization capability into underwater nuclear operations relevant to DOE environmental management. The program will develop and demonstrate a prototype robotic system to maneuver in a water-filled basin, obtain high-resolution color video, perform simultaneous localization and mapping, map radiation, NDE basin structure, and integrate/correlate this data for analysis, visualization and computer simulation.

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

Radioactive Waste Generation – Sensor pod A developed under this proposal will eventually be tested at Savannah River site and may remain as waste since there is a potential for radioactive contamination of the newly developed equipment while being tested.

**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 and development of underwater robots for surveying and mapping underwater nuclear operations.

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 06/28/2016