

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Self-powered Wireless Dual-mode Langasite Sensor for Pressure/Temperature Monitoring of Nuclear Reactors – The Research Foundation of State University of New York at Stony Brook

SECTION B. Project Description

The State University of New York at Stony Brook proposes to develop a novel self-powered wireless hybrid sensor that can accurately monitor both pressure and temperature simultaneously even in extreme harsh environments of nuclear accidents, such as up to 1400°C and 10,000 psi, without requiring external electricity. Tasks include ion beam irradiations and gamma ray irradiation with an intensive Co-60 source.

SECTION C. Environmental Aspects / Potential Sources of Impact

Activities will include the use of an ion beam accelerator and Co-60 source. Although materials will be activated, they will decay fast, and the materials will not become contaminated. There is no safety concern to handle the materials. 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: 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 developing sensors 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 10/30/2013