

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Wireless Reactor Power Distribution Measurement System Utilizing an In-Core Radiation and Temperature Tolerant Wireless Transmitter and a Gamma-Harvesting Power Supply – Westinghouse Electric Company

SECTION B. Project Description

Westinghouse Electric Company, in collaboration with the Pennsylvania State, proposes to design, manufacture, and operate a vacuum micro-electronic- (VME) based wireless transmitter that continuously broadcasts vanadium self-powered neutron detector signal measurements from inside the test reactor core to receivers located outside the reactor core, but within the reactor pool.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Waste Generation – Some radioactive material waste will be generated after the irradiation test at the Penn State Breazeale Reactor (PSBR). Some of this material will remain at the PSBR facility’s hot cell and some will be shipped to the Westinghouse Churchill facility for post irradiation examination. The PSBR facility has over 60 years of experience in the handling of radioactive waste and the quantities for this test will be relatively small. The Westinghouse Churchill staff receives radioactive material shipments regularly, which are stored and examined in the high level hot cells or clean hot cells depending on the material.

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 small-scale research and development aimed at investigating wireless transmitters in a reactor environment.

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 6/30/2016