DOE-ID NEPA CX DETERMINATION

SECTION A.	Project Title: Development of Cable Aging Acceptance Criteria for Nuclear Facilities – Analysis and Measurement Services Corporation

SECTION B. Project Description

The Analysis and Measurement Services Corporation (AMS), in collaboration with Pacific Northwest National Laboratory (PNNL) and Oak Ridge National Laboratory (ORNL), proposes to develop acceptance criteria for mechanical, electrical, thermal, and chemical condition monitoring (CM) tests that trend with age-related degradation of electrical cables. The work to be performed under the project includes subjecting cables to thermal accelerated aging, radiation exposure, and periodic testing using CM techniques to trend their properties as they age. After the cable samples have been subjected to thermal and radiation aging, they will then be exposed to loss of coolant accident (LOCA) conditions to determine their point of failure. These LOCA test results will be used in conjunction with the CM data collected during the aging process to develop acceptance criteria that directly correlates with the end-of-life-condition of a cable polymer.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use - The project will involve the use of PNNL gamma irradiation facilities, and will involve sealed radioactive sources and radiation producing machines. Gamma irradiation of materials will not produce residual radioactivity in the materials being irradiated and will not require special processing or treatment prior to being shipped from PNNL to AMS.

AMS, PNNL, and ORNL have procedures in place to handle any waste that will be generated through this project. The action would not create additional environmental impacts above those already permitted at the facilities.

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 research and development activities aimed at aging electrical cables to develop acceptance criteria.

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 02/26/2019