DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-13-082

SECTION A. Project Title: Long-Term Prediction of Emissivity of Structural Material for High Temperature Reactor Systems – University of Missouri

SECTION B. Project Description

The University of Missouri, in collaboration with the University of Wisconsin, proposes to study long-term predictions of emissivity of steels and alloys. Objectives include:

1. Defining materials for long-term emissivity in cross-cutting reactor applications – procurement, preparation, and analyses of materials.
2. High temperature materials testing in various environments and post-test surface analysis.
3. Independent hemispherical and spectral emissivity testing.
4. Development of models to gain predictive capability for long-term emissivity and application and validation in current reactor cavity cooling system (RCCS) research programs.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage – Small quantities of chemicals will be used to treat test samples as needed. All chemicals will be stored in EHS approved storage, used in an appropriate manner consistent with MSDS recommendations and after use will be disposed of by EHS in the normal manner. Unused chemicals will also be disposed of by EHS in the normal manner. No significant quantities of waste are anticipated as test specimens are small and quantities of chemicals to be used are similarly small.

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 evaluating long-term emissivity of metal alloys 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 12/9/2013