DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-15-035

SECTION A. Project Title: Assessment of Aging Degradation Mechanisms of Alloy 709 for Sodium Fast Reactors – Colorado School of Mines

SECTION B. Project Description

The Colorado School of Mines proposes to develop sufficient understanding of the mechanisms responsible for behavior of NF 709 under accelerated testing conditions to confidently predict long-term creep and creep-fatigue behavior at the times (500,000 hours) and temperatures (550^{o}C) of interest for fast reactor structural applications.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage / Chemical Waste Disposal / Hazardous Waste Generation – Chemicals will be used for metallographic procedures. Procedures and laboratories have been established to ensure safe use of chemicals for these applications. These chemicals will be disposed as hazardous waste. The Colorado School of Mines has an Environmental Health and Safety Department that has set up procedures and training for users to safely contain waste and then arrange with to safely remove and dispose of the waste.

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 aimed at investigating long-term creep and creep-fatigue behavior of NF 709.

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 06/17/2015