

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Fundamental Understanding of Creep Fatigue Interactions in 9Cr1MoV Steel Welds – The Ohio State University**

**SECTION B. Project Description**

Ohio State University proposes to advance the state of knowledge and fundamental understanding of creep-fatigue interactions in 9Cr-1MoV steels and their welds, especially under loading conditions where creep is the dominant damage mechanism. This will be accomplished by doing baseline characterization of 9Cr-MoV steel and welds, creep fatigue testing, in-situ diffraction based observation, in-situ SEM mechanical testing, microstructure characterization of creep-fatigue damage, and modeling.

**SECTION C. Environmental Aspects / Potential Sources of Impact**

Chemical Use/Storage – Chemical etchants will be used for routine sample preparations for metallographic analysis. Safety procedures for handling these chemicals and their storage are in place.

**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 creep-fatigue 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 11/4/2013