DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-17-024

SECTION A. Project Title: Capacitive Discharge Resistance Welding of 14YWT and Ferritic ODS Alloys for Cladding Applications – Los Alamos National Laboratory

SECTION B. Project Description

Los Alamos National Laboratory (LANL), in collaboration with Process Equipment Company and the University of Tennessee, proposes to examine the feasibility for using capacitor-discharge resistance welding to join samples of 14YWT and MA956 alloys. The project will involve performing welding experiments and process monitoring to develop a welding process with the high reliability necessary for nuclear applications. Proton and iron ion irradiation will be performed to compare and contrast radiation effects on the microstructures of weld and base metal regions of select 14YWT and MA956 samples. Characterization and testing of welded and welded/irradiated samples will be conducted to reveal changes in welded and welded/irradiated structures and properties that may impact performance of 14YWT and oxide dispersion strengthened alloys in cladding applications.

SECTION C. Environmental Aspects / Potential Sources of Impact

LANL and its partners 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.

B3.10 Siting, construction, modification, operation, and decommissioning of particle accelerators, including electron beam accelerators, with primary beam energy less than approximately 100 million electron volts (MeV) and average beam power less than approximately 250 kilowatts (kW), and associated beamlines, storage rings, colliders, and detectors, for research and medical purposes (such as proton therapy), and isotope production, within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible), or internal modification of any accelerator facility regardless of energy, that does not increase primary beam energy or current. In cases where the beam energy exceeds 100MeV, the average beam power must be less than 250 kW, so as not to exceed an average current of 2.5 milliamperes (mA).

Justification: The activity consists of research on capacitor-discharge resistance welding to join samples of 14YWT and MA956 alloys.

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 06/28/2017