

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Innovative Coating of Nanostructured Vanadium Carbide on the F/M Cladding Tube Inner Surface for Mitigating the Fuel Cladding Chemical Interactions – University of Florida

SECTION B. Project Description

The University of Florida proposes to conduct applied and fundamental research towards the development of diffusion barrier coatings on the inner surface of ferritic/martensitic fuel cladding tubes.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage – The organometallic precursor, vanadocene will be used for low temperature thin film deposition. Acetone and methanol will be used for sample cleaning. All chemicals will be stored in PI’s lab following the laboratory safety protocol approved and regulated by UF’s EHS. All the involved researchers will receive the required chemical safety training prior to working on the project.

Chemical Waste Disposal – For the samples preparation, a small volume of organic solvent waste will be generated. The organic waste will be collected in designated carboys and then be collected by the UF Environmental Health and Safety (EHS) Office.

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 fuel cladding 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 10/29/2013