

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Functionalized Porous Organic Polymers as Uranium Nano-Traps for Efficient Recovery of Uranium from Seawater – The University of South Florida

SECTION B. Project Description

The University of South Florida proposes to address the design, synthesis, and characterization of porous organic polymer (POP)-based uranium “nano-traps” as well as the investigation of their performance on UO_2^{2+} adsorption in the lab scale. Collaborators will engage in ambient seawater uranium adsorption experiments that involve bench-scale testing of lead candidates under practical conditions.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage / Chemical Waste Disposal – A variety of chemicals (ranging from grams to tens of grams for solid chemicals and milliliters to liters for solvent chemicals) will be used for the materials synthesis, and they will be properly stored in the cabinets in the PI’s laboratory. The generated chemical wastes will be accumulated in the labeled containers at the assigned satellite areas, and they will be timely collected by the Division of Environmental Health and Safety at USF for disposal.

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 the performance of POP-based “nano-traps” for adsorption of uranium in seawater.

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 09/16/2014