DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-13-053

SECTION A. Project Title: Advances in the Recovery of Uranium from Seawater: Studies under Real Ocean Conditions – Woods Hole Oceanographic Institution

SECTION B. Project Description

Woods Hole Oceanographic Institution proposes to study the effectiveness of uranium adsorbents using different field testing designs. Objectives include:

1) To test the extraction efficiency of the uranium adsorbents under changing environmental conditions in a controlled laboratory setting and then in the field.
2) To collect and measure radium extracted onto manganese oxide coated fibers to quantify the volume of water passing through the uranium adsorbents.
3) To determine by field-tests the most efficient methods for collecting and the best platform to expose, in high current regimes, these new fibers to the optimal extraction conditions.
4) To design a mooring contingent on the findings in objective 3 that will be amenable to scaling up small batch extraction of uranium to these large volume in-situ methods

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use/ Radioactive Waste Generation – Small amounts of radionuclides are used as standards on our radiation detectors at WHOI and in the preparation of new methods for radionuclide extraction from seawater. The use of these radionuclides and any wastes generated are regulated under practices specified under WHOI's Radiation Safety Manual and licensed with the NRC as administered by the WHOI Radiation Safety Officer.

Chemical Use/Storage / Chemical Waste Disposal – Small amounts of acid, base, and other chemical reagents used in the project are regulated by the WHOI safety office, including disposal of any chemical wastes.

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: B3.16 Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur within the boundary of an established marine sanctuary, or wildlife refuge, a governmentally proposed marine sanctuary, or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells.

Justification: The activity consists of evaluating uranium extraction from seawater 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 11/14/2013