

SECTION A. Project Title: Enhancement of the Extraction of Uranium from Seawater – University of Maryland**SECTION B. Project Description**

The University of Maryland, in collaboration with Catholic University, proposes to develop novel technologies in the form of adsorbent fabrics for the extraction of uranium from seawater. Objectives include:

1. Enhancing the loading capacity of uranium on the adsorbent fabric.
2. Acceleration of kinetics of uptake of uranium on the adsorbent fabric.
3. Improving the regeneration capacity of adsorbent fabric.
4. Developing a reliable and reproducible procedure for grafting the adsorbing species on the polymer under “green chemistry” conditions (aqueous medium).

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use / Radioactive Waste Generation / Chemical Use/Storage / Chemical Waste Disposal – A Co-60 source will be used in fabrication of grafted adsorbents, and uranium from seawater and laboratory solutions will accumulate on adsorbents. The radioactive material use and waste disposal and chemical waste use/storage and disposal will be handled according to procedures established by the Environmental Safety offices of the respective institutions (University of Maryland and Catholic University). Only licensed radiation worker operators will conduct the irradiation experiments. All procedures will be followed according to our radiation license and the Radiation Safety 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 developing a method for extraction uranium 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 12/10/2013