



**Application of DOE NEPA Procedure:** Categorical Exclusions A1 and A9, Applicable to General Agency Actions (10 CFR Part 1021, Subpart D, Appendix A) and Categorical Exclusion B3.6, Applicable to Specific Agency Actions (10 CFR Part 1021, Subpart D, Appendix B).

**Rationale:** The U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA) proposes to provide financial assistance to *Clemson University* for scientific research related to Robust Extractive Scintillating Resin and Adsorptive Membranes for Plutonium Isotopic Analyses of Aqueous Media. The PI is Timothy DeVol. The objective of this research is to advance scientific understanding in the development of high-selectivity sensor materials and high-sensitivity sensors for ultra-trace-level isotopic analysis of plutonium in aqueous media. The capability brought about by this research program to concentrate and detect plutonium in natural water with a single material is currently not available. Activities associated with this research include:

1. Design, synthesize, and characterize a new class of extractive scintillator resins that incorporate covalently bound scintillator molecules and selective ligands for simultaneous concentration and detection of plutonium in aqueous media.
2. Design, synthesize, and characterize a new class of adsorptive membranes for the selective concentration of plutonium.

A more in depth discussion on the objectives and activities can be found in the technical proposal submitted by the applicant. Non-proprietary information within this document is hereby incorporated by reference.

Categorical Exclusions A1 and A9 apply in cases of:

(A1) Routine actions necessary to support the normal conduct of DOE business limited to administrative, financial, and personnel actions.

(A9) Information gathering, data analysis, modeling, simulation, applied mathematics, information dissemination .....

Categorical Exclusion B3.6 applies in cases of:

....operation/ decommissioning of facilities for bench-scale research, conventional laboratory operations, small-scale research and development and pilot projects

This proposal fits within the parameters of Categorical Exclusions A1, A9, & B3.6.

Based upon the information from the environmental questionnaire, the technical proposal, my knowledge, this proposal does not present any extraordinary circumstances of a unique or



uncertain nature. It is not connected to other actions with potentially or cumulatively significant impacts.<sup>1</sup>

Supported by the information provided by the applicant and my understanding of these activities, the proposal would not<sup>2</sup>:

1. threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders;
2. require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities;
3. disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; or
4. adversely affect environmentally sensitive resources ( including but not limited to those listed in paragraph B.(4)); or
5. Involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10CFR Part 1021, Subpart D, Appendix B.

Therefore, this proposal meets the conditions that are the Integral Elements of the Class of Actions and application of Categorical Exclusions A1, A9, & B3.6 are appropriate.

If changes are made to the scope of actions as described in the proposals, or if the scope is expanded to encompass other actions, NEPA requirements for the action will need to be reassessed at that time.

John Weckerle  
NEPA Compliance Officer  
NNSA Office of General Council

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<sup>1</sup> See 10 CFR § 1021.410(b)(2)and(3)for full text of regulation.

<sup>2</sup> See 10 CFR Part 1021 Subpart D Appendix B (B(1)through(5)).