



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 *the University of Alabama at Birmingham* for scientific research related to Studies on Rare Earth Metals and Alloys under Extreme Conditions in Support of the Stockpile Stewardship Program. The work scope involves carrying out high pressure/ high temperature studies on rare earth metals and alloys using diamond anvil cell devices. The electrical transport studies under high pressures in diamond anvil cells will be carried out at the University of Alabama at Birmingham using designer diamonds. The x-ray diffraction under high pressure high temperature conditions will be carried out at the Advanced Photon Source, Argonne National Laboratory. The magnetic structures of rare earth metals and alloys will be probed at the Spallation Neutron Source, Oak Ridge National Laboratory. The fabrication of designer diamonds for this project will be carried out at the Diamond Microfabrication Laboratory at the University of Alabama at Birmingham.

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.¹

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



Supported by the information provided by the applicant and my understanding of these activities, the proposal would not²:

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.

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