

**DOE-ID NEPA CX DETERMINATION**  
**Idaho National Laboratory**

**SECTION A. Project Title: Offsite Vitrification Studies for Potential Calcine Treatment**

**SECTION B. Project Description and Purpose:**

In an effort to improve the treatment of difficult waste streams, including calcine material, the Department of Energy (DOE) proposes to evaluate the application of vitrification type technologies. This early evaluation will provide input to the DOE on potential treatment options for calcine. The proposed scope will occur at vendor operated offsite facilities for analysis of their technologies. The work includes bench scale and engineering scale testing using surrogate, non-radioactive material that will be specially formulated to act like calcine material but not include the radioactive constituents. The bench scale and engineering scale testing will be performed using existing systems, which include site specific off-gas systems, that will be used to provide insight into appropriate requirements for future treatment of calcine. After vitrification, the resultant glass forms will undergo testing at established laboratories for leaching, durability, etc. Vendors will summarize their testing and results in reports and provide those to BEA and DOE for review.

Off-site activities would occur in facilities that are designed and operated for performing the analysis of vendor technologies. These facilities adhere to all pollution prevention measures, chemical use, chemical waste disposal, industrial waste generation management, hazardous waste generation management as required by all applicable federal, state, and local laws, regulations, and ordinances. It is anticipated that any emissions, chemical use, waste generation from the proposed facilities would be similar to what these facilities currently produce.

**SECTION C. Environmental Aspects or Potential Sources of Impact:**

**Air Emissions**

N/A

**Discharging to Surface-, Storm-, or Ground Water**

N/A

**Disturbing Cultural or Biological Resources**

N/A

**Generating and Managing Waste**

N/A

**Releasing Contaminants**

N/A

**Using, Reusing, and Conserving Natural Resources**

N/A

**SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.**

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, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

**References:**

B3.6 "Small-scale research and development, laboratory operations, and pilot projects"

**Justification:**

The proposed scope would be considered a small-scale research and development project occurring in established facilities designed for similar type of activities. The proposed scope will use conventional laboratory operations to verify a concept before the demonstration on a larger scale activity. No construction or modifications to existing structures would be required under the proposed scope.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)       Yes     No

Approved by Jason L. Anderson, DOE-ID NEPA Compliance Officer on: 05/11/2023.