

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Integrated Approach to Fluoride High Temperature Reactor (FHR) Technology and Licensing Challenges – Georgia Tech**

**SECTION B. Project Description**

Georgia Tech, in collaboration with Ohio State University, Texas A&M, Texas A&M – Kingsville, Oak Ridge National Laboratory and several industry and international partners, proposes to follow an integrated approach to address several key technology gaps associated with fluoride high temperature reactors, thereby reducing technical uncertainties. The project will address several technology gaps such as tritium management; liquid salt coolant impurity removal and redox and corrosion control; advanced instrumentation under extreme conditions; qualification of alloys for structural applications; design, fabrication, testing, demonstration, and modeling of novel heat exchangers; and verification and validation of neutronics and thermal hydraulics modeling and simulation tools in support of licensing.

**SECTION C. Environmental Aspects / Potential Sources of Impact**

Each university and ORNL has processes and procedures in place to handle any waste that will be generated through this project. The action would not create additional environmental impacts above those already permitted at the universities and the national lab.

**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 university scale research aimed at investigating key technology gaps of fluoride high temperature reactor development.

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 04/16/2015