

# DOE-ID NEPA CX DETERMINATION

## SECTION A. Project Title: Horizontal Compact High Temperature Gas Reactor

## SECTION B. Project Description

The Massachusetts Institute of Technology (MIT), in collaboration with the University of Michigan, University of Buffalo, Argonne National Laboratory, and MRP Associates proposes to conduct research and development activities to support conceptual design for a high-temperature gas reactor.

MIT will use computational resources to complete the conceptual design and modeling tasks. The equipment used in this project beyond the available computational resources is to support compact steam generator work. The team will perform a selected set of performance testing in an existing high-temperature helium test facility to verify key parameters and quality assurance of the steam generator and obtain detailed experimental data to evaluate its thermal and mechanical performance.

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

MIT and the collaborating organizations have 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 occurring at the locations in which the activities are located.

## 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 research and development activities to support an advanced nuclear reactor design.

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

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on 2/4/2021