

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Experiments for Modeling and Validation of Liquid-Metal Heat Pipe Simulation Tools for Micro-reactors – Texas A&M University

SECTION B. Project Description

Texas A&M University proposes a series of experiments to validate the simulation tool, Sockeye (a joint Los Alamos National Laboratory (LANL) and Idaho National Laboratory (INL) heat-pipe simulation program) to support micro-reactor design and licensing activities. The proposed work will produce liquid-metal heat-pipe experimental data through both single and integrated heat-pipe experiments. Single heat-pipe experiments are designed to measure thermal-hydraulic parameters “inside a heat-pipe” in various operational modes to validate and develop the Sockeye models. Integrated heat-pipe experiments will be performed to investigate the performance of a multi-heat-pipe system under various scenarios to provide validation data.

SECTION C. Environmental Aspects / Potential Sources of Impact

The university has 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 university.

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 an investigation into thermal and hydraulic parameters within heat-pipes.

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 8/6/2020