

**SECTION A. Project Title: Experimental Investigations and Numerical Modeling of Near-wall and Core Bypass Flows in Pebble Bed Reactors – Texas A&M University****SECTION B. Project Description**

Texas A&M University proposes a series of experiments to understand better near-wall and bypass flow effects in pebble bed reactors (PBRs). Graphite blocks and pebbles will be provided directly by industry partners for installation in a validation-scale facility. The experimental results will be coupled with high-fidelity numerical simulations of transport processes for near-wall flow regions in PBRs at both test-scale conditions (moderate temperature and pressure) and validation-scale conditions (higher temperatures and pressures representative of operating conditions).

**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 near-wall and bypass flow effects in pebble bed reactors.

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