

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Dynamic Natural Convection – Passive Cooling For The LWR Fleet – NuVision Engineering, Inc.

SECTION B. Project Description

NuVision, in collaboration with DYNAC Systems and Mississippi State University, proposes to characterize the performance of a 1MW Conjector, a condensing ejector that creates a form of natural circulation in an enclosed pressurized piping system. This will be accomplished by designing, procuring, and assembling a 1MW test loop. Characterization consists of performing a series of tests on the loop with varying inputs and conditions to refine models so that it can be used to scale the design to a fullscale Conjector to be deployed in an operating nuclear power plant.

SECTION C. Environmental Aspects / Potential Sources of Impact

Water/Well Use – NuVision will be using demineralized water that is heated in a boiler and then cooled back to water within a closed loop system. None of the water will be contaminated or considered waste.

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 on Conjector performance to establish scalability.

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 06/12/2018