

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Phase 1 NuScale SMR FOAK Nuclear Demonstration Readiness Project

SECTION B. Project Description

NuScale Power, LLC proposes to perform activities required to ensure both design completion and supply chain readiness for the first-of-a-kind (FOAK) NuScale small modular reactor plant. These activities include development and testing of instrumentation and control systems and sensors; prototyping, testing, and demonstrations of FOAK systems and applications; and identification and evaluation of candidate advanced materials, manufacturing methods, and innovative options for incorporation into the NuScale design.

SECTION C. Environmental Aspects / Potential Sources of Impact

Chemical Use/Storage / Chemical Waste Disposal / Hazardous Waste Generation / Industrial Waste Generation – NuScale will contract for system and component testing services to be conducted in contractor’s existing industrial and laboratory facilities. These services include fabrication and assembly of test apparatus used for steam generator flow induced vibration test, instrumentation and sensor development, control rod assembly drop tests, and thermal hydraulic performance testing. The fabrication of apparatus and conduct of testing requires small amounts of chemical use and generates shop level quantities of hazardous and industrial waste, which will be disposed of in accordance with existing supplier programs.

NuScale will contract for system and component prototypical development and fabrication. These systems include electronic board and chassis assemblies of control system components, steam generator tube bending manufacturing and assembly technique development, and forging/fabrication of valve bodies and internals. These activities generate shop level quantities of hazardous and industrial waste, which are handled appropriately by existing supplier programs.

Water/Well Use / Discharge of Wastewater – The larger flow test programs require the periodic use of bulk water (acquired from municipal water systems). The waste water is discharged to municipal sewer systems in accordance with local permits and regulatory requirements.

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 performing prototyping, testing and demonstrations for FOAK systems, development and testing of sensors and I&C systems, and evaluation of advanced materials, manufacturing methods, and innovative fabrication and construction options for the development of the NuScale 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 06/07/2018