DOE-ID NEPA CX DETERMINATION

CX Posting No.: DOE-ID-21-010

SECTION A. Project Title: U.S. DOE Advanced Reactor Demonstration Project

SECTION B. Project Description

Holtec International proposes to conduct research and development activities to support an advanced small modular reactor design. Holtec International will team with Idaho National Laboratory (INL) to address technical and regulatory risks associated with the plant's advanced design features. Holtec and INL scientists and engineers will specifically address fundamental phenomena associated with the unique passive reactor coolant system and engineered safety features as needed to validate system design and safety analysis codes. Fuel design, engineering, and testing will also be performed to ensure a readily licensable and manufactured fuel system with assured performance and safety margins is available for a demonstration plant. The plant simulator will be matured to emulate all plant operational controls to evaluate how the plant responds to normal and transient operating conditions for enhanced plant safety and be poised for implementing operator training to begin for a first plant.

SECTION C. Environmental Aspects / Potential Sources of Impact

Holtec International 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 Anderson, DOE-ID NEPA Compliance Officer on 3/11/2021