

PMC-ND

(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Steven Winter Associates, Inc.

STATE: CT

PROJECT TITLE: Low Load HDAC Comfort System

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001824	DE-EE0008695	GFO-0008695-001	GO8695

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B3.6 Small-scale research and development, laboratory operations, and pilot projects Siting, construction, modification, operation, and decommissioning of facilities for smallscale 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 deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Steven Winter Associates, Inc. (SWA) to design, develop, fabricate, and test a novel integrated heating, dehumidification, and air conditioning (HDAC) unit. Prototypes would be developed and tested in both a laboratory setting and at a residential site. The project would be divided into two Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

BP1 would focus on development and testing of an initial prototype HDAC unit (alpha prototype). Proposed project activities would include development of design specifications and an Intellectual Property Management Plan (IPMP), development of alpha prototype components, integration of alpha prototype components, operational verification, and laboratory testing of the completed alpha prototype. BP2 would build on lessons learned from BP1. Proposed project activities would include development and fabrication of two beta prototypes, prototype testing in an environmental test chamber, and field testing in a residential home. Throughout both BPs, SWA would also engage with Building America partners via conference presentations and technical peer reviews.

All project activities would be completed by SWA and its project partner Therma-Stor at existing, purpose-built facilities. Laboratory and office activities would be performed at SWA's office/laboratory space in Norwalk, CT and Therma-Stor's manufacturing facility in Madison, WI. No change in the use, mission, or operation of existing laboratory, manufacturing or office facilities would be required as part of this project. Similarly, no additional permits would be required in order to conduct any of the work activities.

Field testing of prototypes would be performed in an existing home in a southern humid climate. This would most likely occur in either Texas or Florida, though ultimately would be decided later in the project in consultation with Therma-Stor's existing installing contractors in the region. Feedback would be solicited from these installers after development of the prototypes in order to select a site suitable for installation. Once a site is selected, setting up the prototype would consist of installation of an approximately 1 ton capacity outdoor heat pump unit measuring approximately 32" x 12" x 24" (W x D x H). The unit would then be sited on an A/C pad outside of the house or hung

from the structure with mounting brackets. The unit would be connected via refrigerant lines to an indoor handler unit. A dedicated ductwork system may also be installed, depending on the requirements of the residence selected.

SWA would seek to select a recently built home for the installation (e.g. built within the last 10 years) so that the residence would serve as a representative example of a structure built to current code construction levels. Accordingly, it is unlikely that a historical property or structure located within a historical district would be selected as the test site. Nonetheless, SWA would consult with DOE on potential test sites prior to initiating field testing.

Prototype installation would be temporary and would be removed upon completion of the study. The study would last for approximately two seasons (Spring/Summer or Summer/Fall). Potential risks associated with installation/removal would be mitigated via safety and hazard reviews of the prototype unit prior to laboratory or field testing. Removal of the unit would also be performed by a licensed heating, ventilation and air conditioning (HVAC) contractor, adhering to industry health, safety, and environmental hazards. Waste materials, including system refrigerants would be handled and disposed of properly. SWA and its project partners would observe all relevant Federal, state, and local health, safety, and environmental laws and regulations.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Field testing of prototypes is prohibited unless and until the following conditions have been met:

- (1) Once the Recipient selects the location for the field testing, the Recipient provides the location to the DOE NEPA Compliance Officer at gonepa@ee.doe.gov;
- (2) If DOE determines it necessary, DOE completes Section 106 (National Historic Preservation Act) consultation for the applicable project location; and
- (3) The Recipient receives written authorization from the DOE Contracting Officer to move forward with the field testing activities.

Notes:

Building Technologies Office

This NEPA determination does requires a tailored NEPA provision.

Review completed by Jonathan Hartman on 3/21/2019

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 3/21/2019
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager