

PMC-ND  
(1.08.09.13)

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



RECIPIENT: Superconductor Technologies Inc

STATE: TX

PROJECT TITLE : Process Innovations for High Temperature Superconducting (HTS) Wire Manufacturing

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001467	DE-EE0007871	GFO-0007871-001	GO7871

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

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

<b>A9 Information gathering, analysis, and dissemination</b>	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.)
<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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.
<b>B3.15 Small-scale indoor research and development projects using nanoscale materials</b>	Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Superconductor Technologies Inc. (STI) to develop and fabricate high-performance Second Generation High Temperature Superconducting (2G HTS) wires for use in advanced power transmission, power generation, and other advanced electromagnetic applications.

The 2G HTS wires would be designed and fabricated at the STI manufacturing facility in Austin, Texas. The University of North Texas (UNT) would perform metrology and materials analysis on these wires at their existing labs in Denton, TX. Once proven ready, the 2G HTS wires would be installed in an electric motor designed and assembled by TECO Westinghouse (TECO) at their Round Rock, TX manufacturing facility. Additional magnetic coil design and testing would be performed at labs located at Massachusetts Institute of Technology (MIT) in Cambridge, MA.

At STI, the risks and hazards would involve the handling and use of metals, metal oxides and industrial solvents to create the 2G HTS wire as well as use of liquid nitrogen. Once the 2G HTS wire is formed, it does not pose any specific health or safety hazards. The risks and hazards would be mitigated by utilizing existing health and safety training policies in place at STI. At UNT, mitigation efforts for x-ray risks/hazards would be in accordance with existing safety precautions and practices in place at UNT. At TECO and MIT, cryogenic and compressed gases handling and use would be performed by trained personnel following established handling and disposal guidelines.

There would be no modifications to the existing facilities, ground disturbance, or the need for any equipment to be installed outdoors. The proposed project would generate industrial and hazardous wastes which would be managed by existing industrial and hazardous waste procedures and registrations. At STI, nanoscale materials would be used in the coating of the 2G HTS wire in vacuum chambers which would minimize the risk of exposure. Disposal of excess nanomaterial would be handled under established procedures and permit requirements.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Advanced Manufacturing Office  
This NEPA determination does not require a tailored NEPA provision.  
Review completed by Chris Rowe, 4/14/2017

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:  Casey Strickland  Date: 4/14/2017  
NEPA Compliance Officer

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Field Office Manager