

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



RECIPIENT: General Atomics

STATE: CA

PROJECT TITLE: Silicon Carbide Pre-Ceramic Polymer Pre-Preg: Efficient Manufacturing of High Performance CMCs

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002864	DE-EE0011028	GFO-0011028-001	GO11028

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 General Atomics (GA) to pursue a composite-based, new manufacturing method for high performance, high temperature silicon carbide and silicon carbide composites. These materials are deemed to be more energy- and time-efficient than the current materials.

The award would be limited to intellectual and laboratory-scale activities. The proposed project activities include the production of precursor and composite materials, mechanical, thermal and microstructural characterizations, manufacturing efficiency assessments, slitting specification development, inspection of material and evaluation, exposure testing, processing of fabricated articles and overall program management. These activities are proposed to be conducted in two laboratory facilities in San Diego, California (General Atomics) and two laboratory facilities in Wichita, Kansas (Wichita State University).

The project would involve the use and handling of various hazardous chemicals and gases and the generation of hazardous waste. These include solvents, pre-ceramic polymer precursors, coating precursors, graphite tooling, ceramic fiber and powders. All activities at the GA sites in San Diego, California would be conducted in accordance with GA's Hazardous Work Authorization process, authorized by GA's Licensing, Safety, and Nuclear Compliance – Health and Safety Department. All activities would occur within a secure in-laboratory environment, in accordance with US Environmental Protection Agency (USEPA), State of California Department of Toxic Substances (DTSC) and Control and GA's chemical and hazardous waste handling and management practices. All hazardous materials would be managed according to USEPA, DTSC and Local San Diego County environmental and safety regulations.

Work performed in the Wichita State laboratories entail the handling of the subject material based on the recommendation of the Safety Data Sheets, which would be provided with the material and in accordance with Kansas Department of Health and Environment Regulations. Existing GA health and safety policies and procedures would be followed, including employee training, proper use of personal protective equipment, engineering controls, work practice and administrative controls, monitoring and internal assessments/audits. These include the use of scrubbers and cleaning procedures to minimize exposure to hazardous chemicals. Additional policies and procedures would be implemented, as necessary, as new health and safety risks arise, to help ensure compliance with all applicable health and safety regulations and minimize health and safety risks to employees and the public.

All project work would be performed at four existing, purpose-built facilities, with no modification of the existing

facilities, ground disturbances, changes in use of facilities or outdoor equipment installations. No additional permits, licenses, or authorizations would be required. DOE does not anticipate any impacts to resources of concern due to the proposed award activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Advanced Materials and Manufacturing Technologies Office
NEPA review completed by Chris Akios, 04/23/2024

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: 4/25/2024
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