Financial Assistance
Notice of Funding Opportunity
Part 1

U.S. DEPARTMENT *of* ENERGY

Department of Energy (DOE)
Office of Nuclear Energy – Idaho Operations Office
Silicon Carbide Cladding Research and Development
Notice of Funding Opportunity Number: DE-FOA-0003577

Application due date: December 07, 2026

Amendment 001: October 26, 2026

Amendment 001:

1. Changes NOFO Part 2 cross references for documents listed in NOFO part 1 pages 17-18
2. Provides answers for questions received regarding this NOFO.

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Before You Begin

A. Navigating the Notice of Funding Opportunity

To reduce the burden on applicants in the Notice of Funding Opportunity (NOFO) process and limit the length of the NOFO information requests, we separated the NOFO into two parts.

The NOFO Part 1 describes the DOE program goals and evaluation criteria, eligibility, and other components specific to each funding opportunity. NOFO Part 2 includes the fixed DOE requirements that generally do not change from NOFO to NOFO, including standard information for the application phase, expectations for award negotiations, and post-award requirements. You must review both parts before applying. To assist you in the process, you will find references throughout this document to additional information in Part 2.

You must also take several one-time actions before applying. Some of these actions may take several weeks, so be sure to allow yourself enough time to complete them. If you don't complete all required steps, it could interfere with application and negotiation deadlines or your ability to receive an award if selected. If you have already completed these one-time registrations, make sure they are active and up to date. All registrations are free. You can find additional information about registration in NOFO Part 2, *Get Registered*.

Hyperlinks are provided for the applicant's ease of reference. Links, and the information contained in them, may change over time. It is up to an individual applicant to make sure that they have the current information that is contained in the links.

This announcement is published with NOFO Part 2 Version 4.

I. Basic Information

A. Key Facts

Issuing Agency	Department of Energy, Office of Nuclear Energy – Idaho Operations Office
Funding Opportunity Title	Silicon Carbide Cladding Research & Development
Announcement Version	Initial Notice of Funding Opportunity
Funding Opportunity Number	DE-FOA-0003577
Funding Instrument	Cooperative Agreement: in accordance with 2 CFR 200
Expected Total Available Funding	$ 50,000,000
Assistance Listing Number and Name	81.121
Announcement Type	Research and Development
Funding Opportunity Description	Research, development, and fabrication of Silicon Carbide cladding specimens for research reactor insertion, irradiation, and post-irradiation examinations by 2030.
Program Goals & Objectives	The objective of this program is to advance the scientific and technological maturity of silicon carbide cladding for nuclear fuel rods for future use in commercial light water reactors.
Eligible Applicants	Domestic Entities (Institutes of higher education; for-profit entities; non-profit entities; state and local government entities and Indian Tribes) Foreign Entities (see Part II.A.2) DOE and non-DOE Federally Funded Research and Development Centers (FFRDCs) and Federal Research Agencies may be eligible to apply as subrecipients but may not apply as Prime recipients. (Subject to Contracting Officer or Federal Agency approval)
Application Submission	Application Due Date: December 07, 2026 Submit Application via email to SiC_Cladding_NOFO@id.doe.gov

KEY DATES

All deadlines are 5:00 p.m. ET unless indicated otherwise

Notice of Funding Opportunity Issue Date:
October 05, 2026

Application Deadline:
December 07, 2026

Last Day to Submit NOFO Questions to DOE: November 30, 2026

Anticipated Selection Notification Date:
February 05, 2027

Anticipated Award Date:
April 06, 2027

Estimated Period of Performance:
3 year project - Start Date: April 06, 2027

Grants.gov	• Registration Link: https://grants.gov • HELP: Grants.gov provides 24/7 support. You can call 1-800-518-4776 or email support@grants.gov. It is advised you hold onto your ticket number

1. Funding Details

- Approximate total government available funding, contingent upon future appropriations: $50,000,000
- Approximate number of awards: 1
- Approximate total project costs (government share + recipient minimum cost share of project costs): $ 62,500,000
- Minimum cost share required: 20%
- Approximate award project period: 3 years
- Anticipated length of each budget period: 12 months

2. Period of Performance

We anticipate making awards under multiple periods. Project continuation will depend on several elements, including satisfactory performance throughout the period of performance and our Go/No-Go decision. You can find a complete list of post-award requirements and more information on the Go/No-Go review in NOFO Part 2, *Award Administration Information*.

B. Executive Summary

The goal of this award is to develop a potentially revolutionary Light Water Reactor (LWR) Silicon Carbide (SiC) cladding material that can withstand significant accident and transient conditions. This program seeks to support research and development of SiC cladding technology, including mechanical, thermal-hydraulic, high temperature, and corrosion testing for both unirradiated and irradiated SiC cladding samples. This will provide the useful performance data to enable future commercial lead test rods (LTRs) irradiation testing. Irradiation campaigns in research reactors (e.g., INL ATR, ORNL HFIR, MITR) and Post Irradiation Evaluations (PIEs) are expected to provide irradiation performance data for fuel vendor licensing and accident analyses methods needed for NRC licensing review. Improvements in SiC/SiC composite cladding fabrication methods are expected to be made.

C. Agency Contact Information

Office of Nuclear Energy - Idaho Operations Office
U.S. Department of Energy
1955 N. Fremont Avenue
Idaho Falls, ID 83415

For questions relating to this specific NOFO, please send emails to SiC_Cladding_NOFO@id.doe.gov

Subject title: NOFO DE-FOA-0003577: Silicon Carbide Cladding Research & Development.

DISCLAIMER: Applicants are discouraged from submitting information considered proprietary unless it is deemed essential for proper evaluation of the application. If the application contains information that the applicant organization considers to be trade secrets, information that is commercial or financial, or information that is privileged or confidential, the pages containing that information must be identified as specified in the application instructions. When such information is included in the application, it will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act, with the understanding that the information will be used or disclosed only for evaluation of the application. The information contained in the application will be protected by DOE from unauthorized disclosure, consistent with the need for merit review of applications of financial assistance awards to assure the integrity of the competitive process and the accuracy and completeness of the information. If a federal financial assistance award is made as a result of or in connection with an application, the federal government has the right to use or disclose the information to the extent authorized by law. This restriction does not limit the federal government's right to use the information if it is obtained without restriction from another source.

II. Eligibility

To be considered, your submission must meet the criteria set forth below. If your application does not meet these eligibility requirements, it will be removed from consideration for any award. DOE will not determine eligibility for potential applicants before the application due date. The information in this document is specific to this NOFO. You can find the eligibility requirements that apply to all NOFOs in NOFO Part 2, *Eligibility*.

A. Eligible Applicants

1. Domestic Entities

- The following types of domestic entities are eligible to participate as a recipient or subrecipient of this NOFO:
- Institutions of higher education (as defined in Title 20 U.S.C. § 1001)
- For-profit organizations
- Nonprofit organizations
- State and local government entities
- Indian Tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act, 25 U.S.C. § 5304)[1]

[1] "Indian Tribe," as defined in section 4(e) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. § 5304), means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village

To qualify as a domestic entity, the entity must be:

- Organized, chartered, or incorporated (or otherwise formed) under the laws of a state or territory of the United States or under the laws of the United States
- Have majority domestic ownership and control
- Have a physical place of business in the United States

Participation of the following entities is limited as follows:

- Provided there is no conflict, DOE FFRDCs[2] are eligible to apply for funding as a subrecipient.
- Non-DOE FFRDCs are eligible to participate as subrecipients but are not eligible to apply as a recipient
- Federal agencies and instrumentalities (other than DOE) are eligible to participate as a subrecipient but are not eligible to apply as a recipient.
- NETL is eligible to apply as a subrecipient

2. Foreign Entity Participation

Foreign entities are not eligible to apply as either a recipient or subrecipient. In limited circumstances, we may approve a waiver to allow a foreign entity to participate as a recipient or subrecipient, but the application must be accompanied by an explicit written waiver request in your application for each proposed foreign subrecipient.

A foreign entity may not apply to this NOFO without an explicit written waiver request. Likewise, if you want to include a foreign entity as a subrecipient, you must submit a separate explicit written waiver request in your application for each proposed foreign subrecipient. NOFO Part 2, *Application Content Requirements*, explains the requirements for submitting a foreign entity waiver request. DOE's determination of a waiver request is final, and you cannot appeal an adverse decision on a waiver request.

3. Performance of Work in the United States

All work for the awards under this NOFO must be performed in the United States. To request a waiver of this requirement, you must submit an explicit waiver request in the application. Without an approved waiver, such costs will not be allowed under the award. NOFO Part 2, *Application Content Requirements*, lists the requirements for submitting a foreign work waiver request.

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corporation as defined in or established according to the Alaska Native Claims Settlement Act (85 Stat. 688) [43 U.S.C. § 1601, et seq.], which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

[2] FFRDCs are federally funded research and development centers that conduct research for the U.S. government. You can find a list of FFRDCs at https://ncses.nsf.gov/resource/master-gov-lists-ffrdc.

4. Ineligible Participants

The following entities are ineligible for this NOFO as a recipient, subrecipient, or subcontractor:

- In accordance with 2 CFR 200.214, Entities banned from doing business with the U.S. government, such as entities debarred, suspended, or otherwise excluded from or ineligible for participating in federal programs (2 CFR § 200.214)
- Entities identified in the Department of the Treasury Office of Foreign Assets Control Treasury's Sanctions Program Specially Designated Nationals list. (OFAC – Sanctions List Service [treas.gov])
- Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995

Entity of Concern Prohibition

Entities of Concern are prohibited from participating in projects under this NOFO. You can find details and definitions in NOFO Part 2, *Eligibility, Other Eligibility Information, Entity of Concern Prohibition*.

B. Limitation on Number Applications Eligible for Review

You can submit only one application for this NOFO. If you submit more than one, we will only review the last timely submission. Any other submissions listing the same entity as the applicant for the same topic area will not be eligible. This limitation does not prohibit you from collaborating on other applications (e.g., as a potential subrecipient or partner) if you are not listed as the applicant on more than one application for each topic area of this NOFO.

C. Cost Sharing

You must follow through on the estimated cost share commitments you proposed in your application if selected for award negotiations. You can find more information on cost sharing in NOFO Part 2, *Eligibility*.

1. Cost Share Requirements

The cost share must be at least 20% of the total project costs[3] for research and development projects.[4]

Applications that do not meet the minimum required cost share will be deemed ineligible during the initial compliance review. The cost share must come from nonfederal sources unless otherwise allowed by law.

The cost share percentage is calculated by dividing the *cost share* by the *total allowable project costs* for the award. Total allowable project costs include the government share

[3] Total project costs are the sum of the government share, including Federal Funded Research and Development Center (FFRDC) costs if applicable, and the recipient share of project costs.

[4] Energy Policy Act of 2005, Pub. L. 109-58, sec. 988. Also see 2 C.F.R. 200.306 and 2 C.F.R. 910.130 for additional cost sharing requirements.

(including Federal Funded Research and Development Center [FFRDC] costs, if applicable) and cost share. You can find a cost share information sheet and sample cost share calculation in NOFO Part 2, *Eligibility—Cost Sharing, Cost Share Calculation Examples*.

2. Unallowable Cost Share Sources

The recipient or subrecipients may not use the following sources to meet cost share obligations including but not limited to:

- Cost share derived from Federal sources (unless otherwise authorized by law).
- Cost share that does not meet:
  - Requirements set forth in 2 C.F.R. §§ 200.306 and 910.130
  - Cost principles set forth in 2 C.F.R. §§ 200.400-476 and 2 C.F.R. §§ 910.352
  - For State Energy Programs, requirements set forth in 10 C.F.R. §§ 420
- Cost share derived from the DOE Energy Dominance Financing Program
- Revenues or royalties from the prospective operation of an activity beyond the project period
- Proceeds from the prospective sale of an asset of an activity
- Federal funding or property (e.g., Federal grants, equipment owned by the Federal Government)
- Expenditures that were reimbursed under a separate Federal program
- Cash or in-kind contributions used to meet cost share requirements for another Federal project or program
- Existing data as an in-kind contribution (e.g., data owned by an entity that is not routinely sold commercially but is instead donated to the project and assigned a value)

D. FFRDC Eligibility Criteria

DOE and Non-DOE FFRDCs as a Subrecipient

If no conflict exists, DOE and non-DOE FFRDCs may be proposed as subrecipients on another entity's application subject to the following guidelines.

Authorization for non-DOE FFRDCs

The Federal agency sponsoring the FFRDC must authorize in writing the FFRDC's participation on the proposed project, and you must submit this authorization with the application. The FFRDC's use must be consistent with its authority under its award.

Authorization for DOE FFRDCs

The Cognizant Contracting Officer for the FFRDC must authorize in writing the FFRDC's participation on the proposed project, and you must submit this authorization prior to any award. The FFRDC's use must be consistent with the contractor's authority under its award.

Funding, Cost Share, and Sub-Award with FFRDCs

DOE FFRDCs participating as a subrecipient on a project will be funded directly through the DOE Work Authorization process in accordance with DOE O 412.1A, *Work Authorization System, subject to availability of funding.* The total available DOE funding listed in Section 1 includes any funding that needs to be provided directly to the FFRDC(s). Non-DOE FFRDCs

participating as a subrecipient will be funded through an interagency agreement with the sponsoring agency.

Although the FFRDC portion of the work is excluded from the award, your cost share requirement will be based on the total cost of the project, including the applicant's, all subrecipient's, and all FFRDC's portions of the project.

All DOE FFRDCs must enter into either a Cooperative Research and Development Agreement[5] (CRADA) or a Technical Assistance Agreement (TAA) with at least the recipient. Use the TAA if the DOE FFRDC's role is limited to technical assistance and is not expected to generate any intellectual property. A fully executed CRADA or TAA must be in place or comply with a Master Scope of Work process before the FFRDC starts work directly related to the award.

A CRADA ensures accountability for project work and provides the appropriate management of intellectual property (IP), e.g., data protection and background IP. The Data Management and Sharing Plan is not suited for this purpose.

Limit on FFRDC Effort

The FFRDC's scope of work should not be more significant than the applicant's scope of work.

III. Program Description

A. Background and Context

The DOE's Office of Nuclear Energy is issuing this Notice of Funding Opportunity (NOFO). Awards made under this NOFO will be funded, in whole or in part, with appropriations under the Next Generation Fuels (NGF) Silicon Carbide Cladding Program.

The NGF Silicon-Carbide Cladding program focuses on continued fabrication development, thermal-hydraulic, corrosion resistance, and mechanical strength testing, irradiation performance experimentation, and accident simulation code development. So far, the Silicon Carbide Cladding program has successfully demonstrated the initial fabrication of small, short-length SiC cladding rodlets and has used smaller specimen sections for unfueled SiC cladding performance testing and initial neutron irradiation experiments.

The activities to be funded under this NOFO are authorized by the Energy Water Development appropriations package (H.R. 6938), which became Public Law No. 119-74 on January 23, 2026. This initiative aims to advance nuclear fuel cycle cladding technologies to ensure a safe, sustainable, and efficient supply. The programmatic authority for this initiative stems from SEC. 953. FUEL CYCLE RESEARCH, DEVELOPMENT, DEMONSTRATION, AND COMMERCIAL APPLICATION of the Energy Act of 2020 (P.L. 116-68), and Part (a) of

[5] A cooperative research and development agreement is a contractual agreement between a national laboratory contractor and a private company or university to work together on research and development. You can find more information in DOE O 483.1B.

Section 2001 "Advanced Nuclear Fuel Availability" of the 2020 Energy Act (P.L. 116-260) and the Inflation Reduction Act (P.L. 117-169). Awards are anticipated to be awarded in Fiscal Year 2027.

B. Program Purpose

The primary mission of DOE's Office of Nuclear Energy (DOE-NE) is to advance nuclear power as a resource capable of meeting the Nation's energy and national security needs. This is accomplished by resolving technical, cost, regulatory, and safety issues through research and development as appropriate. The development of advanced nuclear reactor technologies and improvements in the operation of the existing domestic fleet of nuclear power plants are important aspects of assuring that nuclear power will remain an effective and productive energy option for the United States energy needs for generations to come.

DOE-NE is operating the SiC Cladding Development Program. This program is focused on de-risking and supporting industry efforts to develop next generation cladding for nuclear fuel, with an emphasis on maintaining or improving current fuel cladding neutronic and irradiation performance, while improving accident scenario safety margins.

This NOFO supports the goals laid out in section C below by funding United States commercial nuclear industrial entities, institutions of higher learning, non-profit organizations or government entities to produce vital work to qualify SiC clad fuel rods for use in power reactors.

C. Program Goals and Objectives

SiC Cladding for nuclear fuel offers many potential advantages over historical cladding materials but further study is warranted to evaluate how to best develop those advantages and explore the potential for widespread adoption in the U.S. commercial nuclear fleet at large.

The fundamental objective of this NOFO is to drive the development of this technology to the point of qualification and licensing of this technology for testing and use in power reactors. Further developments to include insertion of Lead Test Rods (LTRs) and Lead Test Assemblies (LTAs) in commercial power reactors are anticipated in later stages of this program.

The SiC Cladding Development program is oriented toward efforts that can improve the maturity of SiC cladding in all areas, including technology and science, mechanical testing, irradiation performance, and post-irradiation experimentation, supply chain, economics, commercial viability, regulatory and licensing readiness, and all other necessary considerations.

D. Expected Performance Goals

DOE is seeking proposals that leverage SiC cladding to achieve greater nuclear accident tolerance and safety while maximizing its irradiation performance for power generation and reactor efficiency. Areas of study needed to develop SiC cladding for nuclear fuel include:

- SiC cladding irradiation performance qualification
- SiC cladding response to irradiation damage

- SiC cladding thermal-hydraulic corrosion and erosion characteristics
- SiC cladding thermal/mechanical characteristics
- Effect of fabrication methods on SiC cladding characteristics
- Development of advanced SiC cladding and fiber/tow fabrication methods
- Accident and transient scenarios testing
- Modeling and simulation tool development
- Methods to quantify and evaluate SiC cladding fuel rods
- SiC cladding supply chain and infrastructure development

The intent of this award is to support research and development of SiC cladding along the lines of the above topics.

This award will support awardees in their licensing efforts with the Nuclear Regulatory Commission.

All research and development supported by this award must be completed within the United States. Materials for research and development may be acquired from foreign sources.

To address the needs of this funding opportunity, DOE is considering SiC cladding concepts that include SiC-only composite structure as well as concepts that incorporate SiC with other cladding materials. Applications will describe how the unique characteristics of SiC will be utilized to produce nuclear fuel cladding with superior performance.

Meritorious applications will demonstrate understanding of nuclear fuel and cladding development, provide a description of the improvements that are being pursued and developed, and will present a reasonable path to NRC licensure and, ultimately, commercial adoption.

E. Applications Specifically Not of Interest

DOE will not review or consider the following types of applications as determined by DOE without appeal (also refer to the Responsiveness Review section below):

- Applications that fall outside the technical parameters specified in technical volume in section IV.B.4.
- Project concepts or approaches not based on established scientific principles.

F. Statement of Subsantial Involvement

DOE anticipates awarding cooperative agreements under this NOFO, which include a statement of DOE's "substantial involvement" in the work performed under the resulting awards. For cooperative agreements, DOE does not limit its involvement to the administrative requirements of the award. Instead, DOE has substantial involvement in the direction and redirection of the technical aspects of the project. DOE's substantial involvement in resulting awards may include the following:

A. DOE shares responsibility with the recipient for the management, control, direction, and performance of the project.

B. DOE may intervene in the conduct or performance of work under this award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
C. DOE may redirect or discontinue funding the project based on the outcome of DOE's evaluation of the project at the Go/No-Go decision point(s) as identified in the applicant's workplan.
D. DOE participates in major project decision-making processes.

G. Statutory Authority

The programmatic authorizing statute is Section 953, "Fuel Cycle Research, Development, Demonstration, and Commercial Application," of the Energy Policy Act of 2005 (42 U.S.C. § 16273), as amended by Section 2003(b) of the Energy Act of 2020, Division Z of P.L. 116-260.

Awards made under this announcement will be supported using $30 million in funds appropriated through the Commerce, Justice, Science; Energy and Water Development; and Interior and Environment Appropriations Act, 2026 (P.L. 119-74). Additional funding of up to $20 million may be made available for awards under this NOFO, subject to the availability of future appropriations in fiscal years (FYs) 2027 and 2028.

Awards made under this announcement are subject to the OMB Guidance for Federal Financial Assistance (e.g., 2 C.F.R. Part 200), as adopted by DOE, and DOE's Financial Assistance Regulations, 2 C.F.R. Part 910.

IV. Application Content and Form

This section includes application information specific to this NOFO. Refer to NOFO Part 2, *Application Content and Form*, for standard information that applies to all DOE NOFOs, such as formatting and content requirements and other requirements.

A. Summary

The application process includes submission of the application package. DOE may ask for further information concerning submitted application packages.

Application Submission Phase	Eligibility for Submission
Application	Must be submitted by the specified due date and time to be eligible for comprehensive merit review.

B. Application Content Requirements

Each application must be limited to a single conceptual design. Applications must conform to the following requirements and must not exceed the stated page limits. NOFO Part 2, *Application Content and Form*, includes a complete list of application requirements. You can

find detailed guidance on the content and form of NOFO-specific requirements in the Summary of Application Requirements table below.

1. Covered Individual Definition, Designation, and Responsibility

Several of the Application Content Requirements in the table below and in NOFO Part 2 are required for Covered Individuals.

For this NOFO, *Covered Individual* is an individual who both:

- Contributes in a substantive, meaningful way to develop and execute the scope of work of a project proposed for DOE
- Is designated as a Covered Individual by DOE

Often, these individuals have doctoral or other professional degrees, although the following may be considered Covered Individuals if their involvement meets this definition:

- Individuals at the master's or PhD-candidate level
- Consultants
- Graduate students
- Individuals with a postdoctoral role

DOE designates Covered Individuals as any:

- Principal investigator (PI)
- Project director (PD)
- Co-principal investigator (Co-PI)
- Co-project director (Co-PD)
- Project manager
- Any individual functionally performing as a PI, PD, Co-PI, Co-PD, or project manager

You must assess how DOE's definition of a Covered Individual applies to each person listed on your application. You are also responsible for identifying any individual to DOE who should be designated as a Covered Individual if DOE does not already designate them as described above.

When you submit a current and pending support disclosure and biosketch or resume for a person, you are acknowledging that DOE designates that person as a Covered Individual.

We may further designate Covered Individuals during award negotiations or the award period of performance.

Throughout the life of the award, you have an ongoing responsibility to submit:

- Current and pending support disclosure statements and resumes or biosketches for any new Covered Individuals.
- Updated disclosures if a current and pending support disclosure statement, resume, or biosketch previously submitted to DOE changes.

2. Summary of Application Requirements

Component	File Format	Page Limit	File Name
***Application for Federal Assistance (SF-424) ** (NOFO Pt. 2 pg. 13)**	PDF	N/A	Lead Applicant Name_SF-424
Technical Volume ** (NOFO Pt. 1 pg. 17)	PDF	30	Lead Applicant Name _Technical Volume
Letters of Commitment ** (NOFO Pt 2 pg. 13)	PDF	1 page each	Applicant Name _ Letter of Commitment
Impacted Indian Tribes Documentation (If applicable) ** (NOFO Pt. 2 pg. 14)	PDF	n/a	Lead Applicant Name _ Impacted Tribes
***Statement of Project Objectives (SOPO) ** (NOFO Pt. 2 pg. 13)**	MS Word	5	Lead Applicant Name _SOPO
***Project Management Plan ** (NOFO Pt. 2 pg. 14)**	PDF	10	Lead Applicant Name _PMP
***Budget Justification-Applicant ** (NOFO Pt. 2 pg. 14)**	PDF	n/a	Lead Applicant Name_ Budget Justification-Applicant
***Budget Justification-Subrecipient (If Applicable) ** (NOFO Pt. 2 pg. 14)**	PDF	n/a	Lead Applicant Name Budget_ Justification-Subrecipient Name
***Research and Related Budget – Section A-B Form ** (NOFO Pt. 2 pg. 14)**	MS Excel	n/a	Lead Applicant Name_ Budget Justification Workbook-Applicant
***Budget Justification workbook-Subrecipient (If Applicable) ** (NOFO Pt. 2 pg. 14)**	MS Excel	n/a	Lead Applicant Name __Budget Justification Workbook-Subrecipient Name
***Field Work Proposal for FFRDC, (see DOE O 412.1A) ** (DOE O 412.1A)**	PDF	n/a	Lead Applicant Name_ FFRDC Work Proposal
Authorization for Non-DOE or DOE FFRDCs ** (DOE O 412.1A)	PDF	n/a	Lead Applicant Name _FFRDC Authorization
Resumes (Research and Development-R&D) (Includes Subrecipients and Consultants) ** (NOFO Pt. 2 pg. 17)	PDF	2 pages each	Lead Applicant Name _Partner Docs
***Current and Pending Support (for each covered individual) ** (NOFO Pt. 2 pg. 35)**	PDF	n/a	Lead Applicant Name _CPS
Digital Persistent Identifier (for each covered individual) * (NOFO Pt. 2, pg. 17)***	n/a	n/a	Include in Current & Pending Support Document
Research Security Training Requirement (for each covered individual) * (NOFO Pt. 2, pg. 17)***	n/a	n/a	Include in Current & Pending Support Document

Transparency of Foreign Connections ***** (NOFO Pt. 2, pg. 17)***	PDF	n/a	Business Sensitive_ Lead Applicant Name_ TFC
Potentially Duplicative Funding Notice ***** (NOFO Pt. 2, pg. 18)***	PDF	n/a	Lead Applicant Name_ PDFN
Data Management Plan ***** (NOFO Pt. 2, pg. 38)***	PDF	n/a	Lead Applicant Name_DMP
***Location(s) of Work ** (NOFO Pt. 2 pg. 18)**	PDF	n/a	Lead Applicant Name_LOW
***Environmental Report ** (NOFO Pt. 2 pg. 19)**	PDF	n/a	Lead Applicant Name _EIV
***Disclosure of Lobbying Activities, if applicable (SF-LLL) – (Two Forms) ** (NOFO Pt. 2 pg. 19)**	PDF	n/a	Lead Applicant Name _DLL
Certification Regarding Lobbying (use if Disclosure of Lobbying Activities (SF-LLL) is not required) ** (NOFO Pt. 2 pg. 31)	PDF	n/a	Lead Applicant Name_ Certification Regarding Lobbying
***Summary for Public Release ** (NOFO Pt. 2 pg. 31)**	PDF	1	Lead Applicant Name _ Summary
Summary Slide ** (NOFO Pt. 2 pg. 32)	MS Power Point	1	Lead Applicant Name_ Slide

* DOE forms are provided as part of this NOFO solicitation package.

** These references explain where further information can be found within NOFO Parts 1 or Parts 2 concerning the application topic.

Submit completed applications via email to :
Application Submission: SiC_Cladding_NOFO@id.doe.gov

3. Technical Volume

The Technical Volume must conform to the following content and form requirements and address the technical review criteria in Technical Review Criteria.

You must provide sufficient citations and references to the primary research literature to justify the claims and approaches made in the Technical Volume. However, DOE and reviewers are under no obligation to review cited sources.

The Technical Volume to the application may not be more than 30 pages. The page count includes the cover page; table of contents; all citations, charts, graphs, maps, photos, or other graphics and all information below. You should consider the weight of each technical review criteria (see Technical Review Criteria) when preparing the Technical Volume.

Technical Volume Content Requirements Overview	
Section	**Approximate Percent Content of the Technical Volume**

Cover Page	N/A
Project Overview	10%
Technical Description, Innovation, and Impact	30%
Workplan in Statement of Project Objectives	40%
Technical Qualifications and Resources	20%

Cover Page:

- The project title
- Specific NOFO topic areas (if applicable)
- Technical and business points of contact
- The project team, including recipient name, entity type, and names of all team member organizations
- The project locations
- The proposed Federal funding level, cost share, and performance period
- Senior and key personnel and other individuals
- Statements regarding confidentiality

Project Overview

- **Background:**
  - Discuss the history, successes, and current research and development status (i.e., the technical baseline) relevant to the technical topic addressed in the application
- **Project Goal:**
  - Explicitly identify the targeted improvements to the baseline technology and the critical success factors in achieving that goal
- **DOE Impact:**
  - Discuss the impact DOE funding would have on the proposed project, specifically how DOE funding, relative to prior, current, or anticipated funding from other public and private sources, is necessary to achieve the project objectives

Technical Description, Innovation, and Impact

- **Relevance and Outcomes:**
  - Provide a detailed description of the technology or focus area, including the scientific and other principles and objectives you will pursue during the project
  - Describe the relevance of the proposed project to the program and performance goals and objectives as described in section III of this NOFO, including the potential to meet specific DOE technical targets or other relevant performance targets
  - Clearly specify the expected outcomes of the project
- **Feasibility:**
  - Demonstrate the technical feasibility of the proposed technology and the likelihood it will achieve anticipated performance targets, including a description of previous work done and prior results

  - Address the project's access to necessary (including existing) infrastructure (e.g., transportation, water, electricity transmission) and to a skilled workforce
- **Innovation and Impacts:**
  - Describe the current state-of-the-art in the applicable field, the specific innovation of the proposed technology or focus area, the advantages of proposed technology over current and emerging technologies, and the overall impact on advancing the state-of-the-art and technical baseline if the project is successful

Workplan

A detailed statement of project objectives (SOPO) is a separate part of the application. The summaries provided below should be consistent with the SOPO, which will contain a more detailed description of the WBS and tasks. The required elements of the Workplan are outlined below:

- **Project objectives:**
  - Provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcome

- **Technical scope:**
  - Provide a summary description of the overall work scope and approach to achieve the objectives
  - Divide the overall work scope by performance periods that are separated by discrete, approximately annual, Go/No-Go decision points (you can find more information in NOFO Part II, Section XIII.A.2)
  - Describe the specific expected outcome(s) of each performance period

- **WBS and Project tasks:**
  - Describe the work to be accomplished and how you will achieve the milestones, accomplish the final project goals, and produce all deliverables
  - Structure the Workplan with a hierarchy of performance period (approximately annual) and tasks and subtasks
  - Describe concisely the specific activities to be conducted over the life of the project, which must be a full explanation and disclosure of the project being proposed (i.e., a statement such as "we will then complete a proprietary process" is unacceptable)
  - Prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this NOFO

- **Milestones:**
  - Summarize the appropriate milestones (either a progress measure, which can be activity based, or a SMART technical milestone) throughout the project to demonstrate progress and success
  - Must be Specific, Measurable, Achievable, Relevant, and Timely (SMART), and they must demonstrate a technical achievement rather than simply completing a task

  - Must have at least one milestone per quarter for the duration of the project with at least one SMART technical milestone per year (depending on the project, more milestones may be necessary to comprehensively demonstrate progress).
  - Explain how the milestone will be verified
  - Ensure the summary is consistent with the Milestone Summary Table in the SOPO

- **Go/No-Go decision points:**
  - Summarize the project-wide Go/No-Go decision points at appropriate points in the Workplan
  - Have at least one project-wide Go/No-Go decision point for each budget period (typically a 12-month period) of the project (Key Facts provides Go/No-Go and budget period information)
  - Provide specific technical criteria to evaluate the project at the Go/No-Go decision point
  - Ensure the summary is consistent with the SOPO
  - Consider Go/No-Go decision points as SMART milestones, which can fulfill the requirement for an annual SMART milestone

- **End of project goal:**
  - Include a summary of the end-of-project goals
  - Have at least one SMART end-of-project goal

- **Project schedule (Gantt Chart or similar):**
  - Provide a schedule for the entire project, including task and subtask durations, any milestones, and any Go/No-Go decision points

- **Build America, Buy America (BABA) Requirements for Infrastructure Projects:**
  - Include a short statement in the first two pages of the Workplan on whether the project will involve construction, alteration, maintenance, or repair of public infrastructure in the United States
  - See Build America, Buy America and 2 C.F.R. 184 for definitions and other information regarding Infrastructure Projects and the Buy America Requirement

- **Project management:**
  - Discuss the team's proposed management plan, including:
    - The overall approach to and organization for managing the work
    - The roles of each project team member
    - Any critical handoffs or interdependencies among project team members
    - Technical and management aspects of the management plan, including systems and practices, such as financial and project management practices
    - The approach to project risk management, including a written plan for mitigating risks to project performance such as the strategy to address known resource constraints or challenges, including intellectual property and real property

        - The approach to addressing permits and other approvals, including compliance with any current permits and any permits and natural or cultural resource issues that could require discretionary permits or approvals
        - A description of how project changes will be handled
        - The approach to Quality Assurance and Control in accordance with ASME NQA-1
        - How communications will be maintained among project team members

- **Technical Qualifications and Resources**
    - The project team's unique qualifications and expertise, including those of key subrecipients
    - The project team's existing equipment and facilities or equipment or facilities already in place on the proposed project site that will facilitate the successful completion of the proposed project; include a justification of any new equipment or facilities requested as part of the project
    - Relevant, previous work efforts, demonstrated innovations, and how these enable you to achieve the project objectives
    - The commitment of the key team members to support the project
    - The technical services to be provided by DOE FFRDCs, if applicable
    - The skills, certifications, or other credentials of the construction and ongoing operations workforce
    - For multi-organizational projects, describe succinctly:
        - The roles and the work to be performed by the project manager and senior or key personnel at the recipient and subrecipient levels
        - Business agreements between the applicant and subrecipient
        - How the various efforts will be integrated and managed
        - Process for making decisions on technical direction
        - Publication arrangements

4. Biographical Sketch

Every Covered Individual at the applicant and subrecipient levels must submit a biographical sketch (biosketch). Use SciENcv (Science Experts Network Curriculum Vitae) to produce a DOE-compliant PDF version of the biosketch. The biosketch does not have page limits, though some fields in SciENcv have character limitations for consistency.

Use the NOFO-Specific Biosketch Instructions and the NSPM-33, Implementation Guidance Pre- and Post-Award Disclosures Relating to the Biographical Sketch and Current and Pending (Other) Support[6] to develop the biosketch.

Instructions for First-Time SciENcv Users:

1. Navigate to SciENcv (Science Experts Network Curriculum Vitae)
2. To log in, click More Options, Login.gov, then sign in

[6] This table supersedes in its entirety Table 2a and Paragraph 7 of the Disclosure Requirements and Standardization Section of the NSPM-33 Implementation Guidance.

3. From the dashboard, click Manage SciENcv, then click Create New Document
4. Select DOE Biographical Sketch
5. From there, it's an easy web interface to add education and work history
6. When ready, click Download PDF, which will prompt the user to certify their responses, then the document will download and can be added to the NOFO application

The biosketch must include a list of all sponsored activities, awards, and appointments, and weather:

- Paid or unpaid
- Full-time, part-time, or voluntary
- Faculty, visiting, adjunct, or honorary
- Cash or in-kind
- Foreign or domestic
- Governmental or private sector
- Directly supporting your research
- Indirectly supporting your research by supporting students, research staff, space, equipment, or other research expenses.

Every covered individual must also identify all connections with malign foreign talent recruitment programs.

Please note the following:

- All definitions in the biosketch except Covered Individual (which is defined in the NOFO Part 1, *Application Content and Form—Application Content Requirements, Covered Individual Definition, Designation and Responsibility)* are available at: NSPM-33, Definitions.
- If the NOFO-Specific Biosketch Instructions conflict with the NSPM-33, Implementation Guidance Pre- and Post-Award Disclosures Relating to the Biographical Sketch and Current and Pending (Other) Support, follow the DOE NOFO-Specific Biosketch Instructions.

DOE/NNSA NOFO-Specific Biosketch Instructions	
Persistent Identifier (PID) of the Covered Individual	The PID field is required for all NOFOs and awards for R&D activities or technical assistance to support R&D activities. For NOFOs and awards that do not meet the criteria above, the PID field is optional.
Appointments and Positions Reporting Timeframe	Identify all domestic and foreign professional appointments and positions, both inside and outside the primary organization. There should be no lapses in time over the past 10 years or since age 18, whichever is shorter.
Products: Limitation on Number Provided	List up to 10 products most closely related to the proposed project.

5. Current and Pending (Other) Support

Current and pending (other) support (CPS Common Form) helps us identify potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support.

Every Covered Individual at the applicant and subrecipient levels must submit a CPS Common Form. Use SciENcv (Science Experts Network Curriculum Vitae) to produce a DOE-compliant PDF version of the CPS Common Form. The *CPS* Common Form does not have page limits, though some fields in SciENcv have character limitations for consistency.

Use the NSPM-33 Implementation Guidance Pre- and Post-award Disclosures Relating to the Biographical Sketch and Current and Pending (Other) Support[7] and the DOE NOFO-Specific CPS Instructions below to develop the CPS Common Form. The *CPS Common Form* and *Biosketch Common Form* must together include a list of all sponsored activities, awards, and appointments, whether:

- Paid or unpaid
- Provided as a gift with terms or conditions
- Full-time, part-time, or voluntary
- Faculty, visiting, adjunct, or honorary
- Cash or in-kind
- Foreign or domestic
- Governmental or private sector
- Directly supporting your research
- Indirectly supporting your research by supporting students, research staff, space, equipment, or other research expenses.

Every covered individual must identify all connections with malign foreign talent recruitment programs in current and pending support.

Please note:

- All definitions in the CPS Common Form, except Covered Individual (which is defined in the NOFO Part 1, *Application Content and Form—Application Content Requirements, Covered Individual Definition, Designation and Responsibility)* are available at: NSPM-33, Definitions.
- If the DOE NOFO-Specific CPS Instructions conflict with NSPM-33, Implementation Guidance Pre- and Post-Award Disclosures Relating to the Biographical Sketch and Current and Pending (Other) Support, follow the DOE NOFO-Specific CPS Instructions.

DOE/NNSA NOFO-Specific CPS Instructions	
Persistent Identifier (PID) of the Covered	The PID field is required for all NOFOs and awards for R&D activities or technical assistance to support R&D activities.

[7] This table supersedes in its entirety Table 2a and Paragraph 7 of the Disclosure Requirements and Standardization Section of the NSPM-33 Implementation Guidance.

Individual	For NOFOs and awards that do not meet the criteria above, the PID field is optional.
Reporting Timeframe for Proposals, Projects, and In-Kind Contributions	Disclose only **current** and **pending** support, as defined in the "Status of Support" field of the SciENcv CPS Common Form.
Types of Proposals and Active Projects to Disclose	In addition to the guidance listed above, consulting activities must be disclosed under the proposals and active projects section of the form when any of the following scenarios apply: • The consulting activity will require the Covered Individual to perform research as part of the consulting activity. • The consulting activity does not involve performing research but is related to the Covered Individual's research portfolio and may have the ability to impact funding, alter time or effort commitments, or otherwise impact scientific integrity. • The consulting entity has provided a contract that requires the Covered Individual to conceal or withhold confidential financial or other ties between the Covered Individual and the entity, irrespective of the duration of the engagement.
Disclosure Instructions for In-Kind Travel	Follow the disclosure instructions for travel in NSPM-33, Implementation Guidance Pre- and Post-Award Disclosures Relating to the Biographical Sketch and Current and Pending (Other) Support.
Current and Pending (Other) Support Addendum	All Covered Individuals who submit a Current and Pending (Other) Support disclosure must **also submit the Current and Pending (Other) Support Addendum**. The Addendum is available on SciENcv at the bottom of the SciENcv Current and Pending Other Support form.

C. Additional Requirements

Program-specific requirements that apply to awards funded under this NOFO are identified below. Standard requirements are described in NOFO Part 2, *Additional Requirements*.

Funding Restrictions		
Title	**Location**	**Additional Information**

Allowable Costs	NOFO Part 2	Applies to awards made under this NOFO
Pre-Award Costs	NOFO Part 2	Applies to awards made under this NOFO
Performance of Work in the United States (Foreign Work Waiver Requirement)	NOFO Part 2	Applies to awards made under this NOFO
Foreign Travel	NOFO Part 2	Foreign Travel is not allowed for awards made under this NOFO
Equipment and Supplies	NOFO Part 2	Purchasing American-made equipment and supplies applies to this award.

1. Buy America Preference for Infrastructure Projects

Awards funded through this NOFO that are for or contain construction, alteration, maintenance, or repair of public infrastructure in the United States require that:

- All iron, steel, and manufactured products used in the infrastructure project are produced in the United States
- All construction materials used in the infrastructure project are manufactured in the United States

Refer to the DOE's Standard Terms and Conditions and 2 C.F.R. Part 184 to determine whether the Buy America Preference applies and should be in the proposed project's budget and schedule. The Buy America Preference does not apply to prime recipients that are for-profit entities.

V. Submission Requirements and Deadlines

You **must** take several one-time actions before applying to this NOFO. Some of these tasks may take several weeks. These requirements are outlined in detail in the NOFO Part 2, *Get Registered and Required Registrations*.

A. Submission Date and Times

Applicants are strongly encouraged to submit all required application documents at least 48 hours before the submission deadline. Under normal conditions (i.e., at least 48 hours before the submission deadline), set aside at least one hour to submit application documents. Once you submit the application documents, you can revise or update your submission before the deadline passes. If you change any of your documents, you must resubmit them before the deadline. We will not extend the submission deadline for server or connection congestion.

B. Intergovernmental Review

This NOFO is not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

VI. Application Review Information

A. Standards for Application Evaluation

Eligible applications will be evaluated based on this NOFO and the guidance in the "DOE Merit Review Guide for Financial Assistance," effective October 1, 2020.

B. Responsiveness Review

We will not review or consider the following concept papers and applications:

- Project concepts or approaches identified as NOT of interest (see the Applications Specifically Not of Interest section above)
- Applicants and applications that do NOT meet the Eligibility Criteria in NOFO Parts 1 and 2

C. Review Criteria

1. Compliance Criteria

All submissions for concept papers and applications must:

- Comply with the content and form requirements listed in *NOFO Parts 1 and 2, Application Content Requirements and Submission Requirements and Deadlines of the NOFO*
- Include all required documents
- NOFO submitted successfully via email to SiC_Cladding_NOFO@id.doe.gov
- Meet the submission deadlines stated in Key Facts no later than 5 p.m. ET
- DOE will not review or consider submissions submitted that are submitted after the due date and time or that are incomplete.

2. Technical Review Criteria

Applications

Applications will be evaluated against the technical review criteria shown below. All sub-criteria are of equal weight.

Review Criterion Overview	
Criterion	**Weight**
Technical Merit	50%
Project Management	25%
Team Capabilities and Resources	25%

Criterion 1: Technical Merit (50%)

This criterion involves consideration of the following:

1. The technical approach answers the NOFO Objective, is thoroughly described, and is supported with background information and scientific analysis.
2. The project has the potential to have a significant impact on the technological maturity and commercial readiness of silicon carbide cladding.
3. The proposed experiments, testing, modeling, and fabrication are logical, well justified, and are sufficient to accomplish the project goals.
4. The proposal identifies specific technical challenges and knowledge gaps and describes how they will be addressed.

Criterion 2: Project Management (25%)

This criterion involves consideration of the following factors:

1. The prime applicant and all sub-applicants identify key personnel with appropriate experience, education, and expertise to accomplish the project goals.
2. The number of involved personnel, their respective expertise, time commitments, and levels of pay are reasonable and sound.
3. Adequacy of proposed project management systems including the ability to track scope, cost, schedule progress and changes, and the identification of risks and "timely" and appropriate strategies for mitigation and resolution.
4. The proposal includes key planning elements sufficient to allow reviewers to assess the preparedness of the applicant to execute the proposed project. Expected elements include project milestones, Go/No-Go decision points, project schedule, task breakdown, risk analysis and mitigation plan, NQA-1 quality assurance plan, spending plan, task/equipment cost estimates, and statement of work scope.
5. Completeness, comprehensiveness, accuracy, and strength of the application deliverables, such that DOE and independent experts will be able to identify project risks.

Criterion 3: Team Knowledge, Skills, Capabilities and Resources (25%)

This criterion involves consideration of the following:

1. The team possess sufficient knowledge, skills, capabilities and resources to accomplish the project goals (e.g. silicon carbide cladding fabrication, performance irradiation testing and post irradiation examination, nuclear fuel manufacturing, material characterization, utility and regulatory licensing engagement, end user engagement, etc.)
2. The team demonstrates specific experience in research and testing of silicon carbide cladding for nuclear applications.

D. Other Selection Factors

In addition to the above criteria, the Selection Official may consider the following program policy factors in determining which applications to select for award negotiations:

1. The degree to which the proposed project, including cost share, optimizes the available DOE funding to achieve programmatic objectives.

2. The level of industry involvement and degree to which the proposed team has a demonstrated history of overcoming barriers and producing timely, high-quality results.
3. The degree to which the project is likely to increase high-quality employment within the United States.
4. The degree to which the project is likely to increase technological expertise within the United States.
5. The degree to which the project is likely to increase advanced manufacturing capabilities within the United States.
6. The degree to which the project relies on materials and services sourced from within the United States.
7. The degree to which the proposed work applies across key reactor designs and fuel forms.
8. The degree to which the proposed work minimizes the logistical burden on governmental administrative resources.

Any combination of the above factors may be considered by the Selection Official. These factors, while not indicative of application merit, may be essential in selecting applications that best achieve the program objectives. Applicants should recognize that some high-quality proposals may not receive an award because of the applicability of these factors.

VII. Selection and Award Notices

The NOFO Part 2, *Selection and Award Notices*, provides information on notifications for concept papers (if applicable), applications, award negotiations, and post-selection information requests. DOE anticipates making one award under this NOFO. However, DOE reserves the right to make any number of awards, or no award, if it is in the Government's best interests to do so.

VIII. Award Administration Information

A. Post-Award Requirements and Administration

DOE requires all award recipients to follow and accept requirements governed by applicable laws and policies—both Federal and DOE. These post-award requirements may include:

- National and administrative policy requirements
- National Assurance Policies
- Financial assistance, general certifications, and representations
- Build America, Buy America requirements
- Davis-Bacon Act requirements
- Infrastructure Investment and Jobs Act-specific requirements
- Fraud, waste, and abuse requirements
- Safety, security, and regulatory requirements
- Environmental review with the National Environmental Policy Act requirements

Please review the Standard Award Terms and Conditions, the sample Federal Assistance Reporting Checklist, and standard Intellectual Property (IP) Provisions to better understand post-award requirements and administration.

Post-award requirements and administration that apply to awards funded under this NOFO are identified below. Detailed descriptions of standard requirements are provided in NOFO Part 2, *Post-Award Requirements and Administration*. Detailed descriptions of NOFO-specific requirements are provided below the table.

Post Award Requirements and Administration		
Title	**Location**	**Additional Information**
Cybersecurity Plan	NOFO Part 1	Applies to awards made under this NOFO
Government Rights in Data	NOFO Part 1	Applies to awards made under this NOFO
Real Property and Equipment Continued Use	NOFO Part 2	Applies to awards made under this NOFO
Program Down-Select	NOFO Part 2	Does not apply to awards made under this NOFO
Go/No-Go Review	NOFO Part 2	Applies to awards made under this NOFO
Energy Data eXchange	NOFO Part 2	Does not apply to awards made under this NOFO
Invoice Review and Approval	NOFO Part 2	Applies to awards made under this NOFO
Cost-Share Payment	NOFO Part 2	Applies to awards made under this NOFO
Data Management and Sharing Plan (DMSP)	NOFO Part 2	Applies to awards made under this NOFO
Subject Invention Utilization Reporting	NOFO Part 2	Applies to awards made under this NOFO
U.S. Manufacturing Commitments	NOFO Part 2	Applies to awards made under this NOFO

1. Cybersecurity Plan

Applicants selected for award negotiations must submit a cybersecurity plan to DOE prior to receiving funding (Infrastructure Investment and Jobs Act [IIJA] section 40126).[8] These plans are intended to foster a cybersecurity-by-design approach for IIJA efforts. We will use these plans to ensure effective integration and coordination across our research, development, and demonstration programs. A cybersecurity plan is **not** required when you submit your

[8] 42 U.S.C. § 18725

application for this NOFO, but all projects selected under this NOFO must submit a cybersecurity plan during the award negotiation phase.

We recommend using open guidance and standards, such as the National Institute of Standards and Technology's (NIST) Cybersecurity Framework (CSF) and the DOE Cybersecurity Capability Maturity Model (C2M2).[9] The cybersecurity plan you create under IIJA section 40126 should explain any deviation from open standards, including when proprietary standards are applied where you determine is appropriate.

Please note:

- Cybersecurity plans should be adequate to meet the threats and vulnerabilities associated with the proposed efforts and demonstrate the cybersecurity maturity of the project.
- Cybersecurity plans may cover a range of topics relevant to the proposed project—e.g., software development lifecycle, third-party risks, and incident reporting.
- At a minimum, cybersecurity plans should address questions noted in IIJA section 40126(b), Contents of Cybersecurity Plan.[10]

Supplementary guidance on the cybersecurity plan requirement is available at https://www.energy.gov/ceser/infrastructure-investment-and-jobs-act-implementation.

2. Government Rights in Data

You can find the U.S. government rights to application information in the Use and Disclosure of Application Information section. The U.S. Government rights to data produced under an award or used in the performance of the award varies according to the following classifications.

Limited Rights Data:

Limited-Rights Data are data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. For limited-rights data used in the performance of an award, the U.S. Government may inspect such data to verify the limited-rights data and restricted rights assertion or to evaluate work

[9] NERC critical infrastructure protection (CIP) standards for entities responsible for availability and reliability of the bulk electric system. NIST IR 7628: 2 Smart grid cyber security strategy and requirements. NIST SP800-53, Recommended Security Controls for Federal Information Systems and Organizations: Catalog of security controls in 18 categories, along with profiles for low-, moderate-, and high-impact systems. NIST SP800-82, Guide to Industrial Control Systems (ICS) Security. NIST SP800-39, Integrated Enterprise-Wide Risk Management: Organization, mission, and information system view. AMI System Security Requirements: Security requirements for advanced metering infrastructure. ISO (International Organization for Standardization) 27001, Information Security Management Systems: Guidance on establishing governance and control over security activities (this document must be purchased). IEEE (Institute of Electrical and Electronics Engineers) 1686-2007, Standard for Substation Intelligent Electronic Devices (IEDs) Cyber Security Capabilities (this document must be purchased). DOE Cybersecurity Capability Maturity Model (C2M2).

[10] 42 U.S.C. § 18725

performance. However, award recipients are not normally required to deliver such data. For awards that require an award recipient to deliver limited-rights data and to ensure the protection of such data, you must properly mark these data as described in the award's intellectual property terms and conditions.

Unlimited Rights:

Unlimited-Rights Data are data first produced under an award or are unmarked data delivered to the U.S. Government as part of an award. *Unlimited rights* mean the U.S. Government has the right to (in any manner and for any purpose whatsoever and to have or permit others to) take the following actions with these data:

- Use
- Disclose
- Reproduce
- Prepare derivative works
- Distribute copies to the public
- Perform publicly and display publicly.

Patentable Information:

In addition to any other protection allowed under the award, invention disclosures and other patentable information may be protectable from public disclosure for a reasonable time to allow you to file a patent application.

Protected Data:

Despite the unlimited rights the U.S. Government normally obtains in data first produced under an award, under special statutory authority and with DOE concurrence, certain categories of data first produced under awards resulting from this NOFO may be marked as *protected data*. Protected data are technical data or commercial or financial data first produced under the award that, if obtained from and first produced by a nonfederal party, would be privileged or confidential. These data are protected from public disclosure for up to 5 years after the data were first produced. To qualify as protected data, we must agree with the classification, and you must properly mark the data as set forth in the award's intellectual property terms and conditions.

Extended Data Protection:

For this NOFO you may request an extended protection period of more than 5 years and not to exceed 30 years when reasonably required to reach commercialization for specific categories of protected data first produced under the resulting awards. You can request further instructions during the negotiation process.

IX. Other Information

Please see NOFO Part 2, *Other Information*, for additional information, acronyms, and requirements that apply to all DOE NOFOs.