

U. S. Department of Energy (DOE) Office of Nuclear Energy (NE) Notice of Opportunity: NE Voucher Program Request for Assistance (RFA)

A. Overview

To support nuclear energy innovation by companies working to develop advanced nuclear energy technologies, DOE-NE will provide fiscal year (FY) 2018 funds for vouchers to assist applicants seeking access to the world-class expertise and capabilities available across the United States (U.S.) DOE complex. This is one component of the Gateway for Accelerated Innovation in Nuclear (GAIN), a DOE initiative to provide the nuclear industrial community with access to the technical, regulatory, and financial support necessary to move new or advanced nuclear technologies toward commercialization while ensuring the continued reliable and economic operation of the existing nuclear fleet. The objective of GAIN is accelerated and cost-effective commercialization of innovative nuclear energy technologies. While not mandatory, it is strongly suggested that prospective voucher applicants contact the GAIN office, or known contacts at DOE laboratories, to establish feasibility prior to submitting an application. This can be very helpful in formulation of an acceptable application. The Nuclear Energy Infrastructure Database (NEID) provides a list and description of many nuclear energy R&D capabilities and can be accessed after an initial registration via the GAIN website, gain.inl.gov, or directly at nsuf-infrastructure.inl.gov.

DOE-NE will accept applications focused on innovation that support production and utilization of nuclear energy (e.g., for generation of electricity, supply of process heat, etc.) in the following general topic areas:

- Analysis and evaluation of, and for, advanced reactor concepts and associated designs, including development of licensing information or strategies
- Structural material and component development, testing, and qualification
- Advanced nuclear fuel development, fabrication, and testing (includes fuel materials and cladding)
- Development, testing, and qualification of instrumentation, controls, and sensor technologies that are hardened for harsh environments and secured against cyber intrusion
- Modeling and simulation, high-performance computing, codes, and methods
- Technical assistance from subject matter experts and/or data/information to support technology development and/or confirm key technical or licensing issues.

Note that applications applicable to isotope production or fusion energy will not be considered for award unless there is a clear indication that the focus of the underlying technology supports the production of nuclear fission energy.

B. Eligibility Requirements and Certifications

Eligible Requester - An eligible requester is a business that (1) is majority (51%) owned by a United States (U.S.) citizen or lawfully admitted permanent resident alien, or a U.S.-based corporation; (2) is organized according to the laws of any of the 50 states, the District of Columbia, or any U.S. territory or possession; and (3) operates primarily within the United States of America. Products embodying intellectual property developed under the assistance must be substantially manufactured in the United States.

Small Businesses – Extra consideration (see section E.4) during the review process will be given to those companies who qualify as a small business (in addition to those qualities listed above, has less than 500

employees).

Foreign Affiliation - U.S. organized/incorporated requesters with foreign ownership, control, or influence may be required to enter into negotiated CRADAs as appropriate. The transfer of technology and data resulting from the work done under an NE Voucher award by any recipient to a foreign entity will be subject to U.S. Government export control laws and regulations.

Company Certifications - Requestors must certify that they will accept the NE Voucher Program Agreements and they will provide the required 20 percent or more cost-share upon selection for a voucher. Details on NE Voucher Agreements can be found in Section C of this document. Further details on cost-share requirements can be found in Section F.

Eligible Types of Assistance - Assistance can provide access to unique capabilities and facilities within the DOE complex. Vouchers cannot be used to obtain a service or use equipment that is available in the private sector.

C. Voucher Details

Funding: Vouchers are not financial awards made directly to applicants. Vouchers provide funding to a facility within the DOE complex to help eligible businesses overcome critical technology and commercialization challenges. DOE anticipates awarding as many as 20 vouchers, each with value of approximately \$50K - \$500K contingent upon Congressional appropriation in the areas described in Section A. Requests for awards larger than \$500K may be considered in cases where there is a clear need involving a truly exceptional innovation or technology. In all cases, a 20 percent cost share calculated based on the full project cost (the sum of the government share and the voucher recipient share equals the full project cost) is required.

Period of Performance: It is the Department's intent that the voucher activities be completed within 12 months from the date the agreement is executed.

Terms and Conditions: It is anticipated that all voucher recipients will sign one of two standard Cooperative Research and Development Agreements (CRADAs) depending on whether or not intellectual property (IP) is developed as a result of the project. Templates will be available at gain.inl.gov.

- Eligible businesses may engage with DOE National Laboratories on collaborative research and development (R&D) that may result in the development of IP. In that case, a Cooperative R&D Agreement (commonly known as a CRADA) may be the most appropriate contractual vehicle.
- Alternatively, vouchers may be awarded to requesters who do not anticipate the development of IP (i.e. only seeking measurement, calibration, data analysis, non-R&D Consulting, etc.), and in those cases a non-IP Cooperative Research and Development Agreement may be signed.
- Although it is anticipated that voucher recipients will sign a non-negotiable CRADA as described above, factors including but not limited to, the scope of work of the application and the requestor's foreign affiliations/ownership, may result in the negotiated use of alternate CRADA provisions.

Products embodying intellectual property developed with NE Voucher Program assistance must be substantially manufactured in the U.S. Please refer to the specific agreements referenced above for further details.

Voucher awardees will be the sole recipient of technology transferred to them as a result of this voucher work. Any transfer of technology to foreign entities requires specific authorization under federal export control laws and regulations including 10 CFR Part 810.

DOE-NE is committed reducing the processing time needed for vouchers; therefore terms and conditions in the CRADAs will not be negotiated.

D. Key Dates – The following notional schedule is provided to help understand general time frames expected. The schedule is dependent upon the Department receiving FY2018 appropriations.

- December 7, 2017 - Request for Assistance (RFA) submission window opens
- January 31, 2018; 6:00 p.m. MT- Due Date for initial quarterly review and selection of applications
- March 16, 2018 – Expected notification of 1st quarter selections
- April 30, 2018 – Planned finalization of statement of work, budget and cost share
- May 31, 2018 – Expected Finalization of agreements
- June 1, 2018 – Voucher work expected to begin

Subsequent quarterly voucher application due dates will be April 30, July 31, and October 31 on an annual basis.

E. Merit Review Criteria

Requests for assistance will be evaluated in accordance with the following criteria:

1. Technical Merit (50 Points)

- Extent to which the requestor has clearly identified the problem or challenges the company is facing in developing innovative nuclear energy systems and how the assistance from the host institution can assist in overcoming these challenges. (10 points)
- Extent to which the applicant’s approach is realistic and feasible with respect to technical considerations, and is appropriately aligned with the host institution’s capabilities. (20 points)
- Extent to which the innovation/concept/technology will contribute in a significant manner in one of more of the following areas towards the deployment of advanced nuclear energy systems or components. Examples of improvements could include but are not limited to: (20 points)
 - Economic competitiveness (capital cost, operations cost, enhanced performance)
 - Capability to penetrate non-electricity market
 - Enhanced safety
 - Reduced environmental impact
 - Improved management of used nuclear fuel
 - Reduced proliferation risk

- Increased regulatory acceptance.

2. Business and Market Impact (40 Points)

- Quality of the requestor's plan to utilize the results to advance their nuclear energy business, industry, or marketplace. (15 points)
- Extent to which the innovation/concept/technology will contribute to the overall nuclear energy marketplace or state of technology development. (15 points)
- Extent to which the requestor has a feasible plan for deploying the innovation/concept/technology to the market. (10 points)

3. Qualifications and Experience (10 Points)

- Extent to which the requester is capable of executing a successful project and subsequent implementation or deployment with respect to qualifications and resources. (10 points)

4. Small Business Consideration

- Requesters who qualify as a small business (see eligibility requirements above) will receive an additional 5 points of consideration that will be added to their overall score.

F. Cost-Share

Cost-share of no less than 20% is required. Requesters may provide cost share in the form of cash or in-kind contributions. Allowable in-kind contributions include, but are not limited to personnel costs; indirect costs; facilities and administrative costs; rental value of buildings or equipment; and the value of a service, other resource, or third party in-kind contribution.

Cost-share contribution must be reasonable, allowable, and allocable under the applicable Federal cost principles. In addition, cost share must be verifiable upon submission of the full application.

Requesters may use funding or property received from state or local governments to meet the cost-share requirement, as long as the funding was not provided to the state or local government by the Federal Government.

The following sources may NOT be used by the requester to meet its cost-share obligations, including, but not limited to, 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); or expenditures that were reimbursed under a separate Federal Technology Office. For example, Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) funding cannot be used to provide in-kind or direct cost-share. Small businesses with SBIR/STTR funding can make a request for assistance under the NE Voucher Program, however, SBIR/STTR awarded funds cannot be used to meet the voucher recipient's cost-share requirements.

Requesters may not use the same cash or in-kind contributions to meet cost-share requirements for more than one project or program.

G. Submitting a Request for Assistance (RFA)

If you are interested in submitting an application, please access the NE Voucher Program RFA on the GAIN Website at gain.inl.gov. The final NE Voucher Program RFA and submission instructions will be available by December 7, 2017.

Please do not provide any proprietary information in the request or in supporting documentation or resumes.

Each eligible entity may submit only one application to this RFA. It is the intent of DOE-NE to leave this funding opportunity open continuously for applications, and these applications will be reviewed for selection on the nominal quarterly dates identified in Section D. Applicants who received a voucher as a result of the FY 2016 and/or FY 2017 voucher calls are eligible to receive a new voucher from the 2018 calls.

H. Request for Assistance (RFA)

The RFA template is provided below. Once completed, this document must be uploaded into the electronic NE Voucher Application available on gain.inl.gov per the schedule provided in Section D. This also applies to the maximum of three, 2-page resumes, which are optional.

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Requests for assistance are limited to five pages of text to address Sections I, II, and III. An additional two-page appendix may be used for supporting documentation, such as graphs, tables, and images. In addition, up to three, 2-page resumes for key personnel may be included to support Section III, Qualifications and Experience. Please use 11.5 Times New Roman font and 1" margins.

Section I: Technical Merit

1. Company Summary: Describe the mission and vision for your company. What differentiates your company from others in this market?
2. Problem Statement: Describe the challenge your company is facing and how this assistance, if granted, will help you overcome that challenge.
3. Work Scope: Describe the national laboratory or partner facility capability you need and the work you would like completed.
4. Nuclear Energy Impact: Describe how this project, if successful, will contribute to advancing nuclear energy deployment in one or more of the following areas:
 - a. Energy generation economics
 - b. Economic competitiveness (capital cost, operations cost, enhanced performance)
 - c. Capability to penetrate non-electricity market
 - d. Enhanced safety
 - e. Reduced environmental impact
 - f. Improved management of used nuclear fuel
 - g. Reduced proliferation risk
 - h. New processes or materials
 - i. New products or markets.

Section II: Business & Market Impact

1. Use of Project Results: Describe how the results of the proposed assistance will be used to advance the development of your company's products or services.
2. Market Analysis: Describe the expected impact on the broader market if the project is successful.
3. Deployment Approach: When and how will these new or improved products or services be introduced to the market or otherwise benefit your company?

Section III. Qualifications & Experience

List the key members of your company's leadership and technical team. Briefly describe their qualifications and experience. (Respondents may include up to three resumes).