A. Overview

To support nuclear energy innovation by companies working to develop advanced nuclear energy technologies, DOE-NE will provide fiscal year (FY) 2017 funds for small business 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 safe, reliable, and economic operation of the existing nuclear fleet. The objective of GAIN is accelerated and cost effective commercialization of innovative nuclear energy technologies. A Letter of Intent from a company intending to submit a voucher application is requested and strongly encouraged, but not mandatory, to be submitted no later than March 9, 2017. The Letter of Intent will enable GAIN to assist with identifying appropriate facilities and staff to support the voucher application and to assist the applicant as needed. 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 small business that is (1) organized for-profit; (2) has less than 500 employees; (3) is majority (51%) owned by a U.S. citizen or lawfully admitted permanent resident alien, or a U.S. based corporation; (4) is organized according to the laws of any of the 50 states, the District of Columbia, or any U.S. territory or possession; and (5) operates primarily within the U.S. Products embodying intellectual property developed under the assistance must be substantially manufactured in the U.S.
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 intention that the vouchered activities are completed within 12 months from the date the agreement is executed.

Terms and Conditions: 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. Both 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.

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.

DOE-NE is committed reducing the processing time; 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. This schedule is dependent upon the Department receiving FY 2017 appropriations.

- February 9, 2017 – Letter of Intent submission window is open
• March 9, 2017 – Letter of Intent submission window closes
• March 13, 2017 - Request for Assistance (RFA) submission window opens
• April 10, 2017; 6:00 p.m. MT- RFA closes
• Mid-May, 2017 – Expected notification of selections
• Mid-May to June 30, 2017 – Planned finalization of statement of work, budget and cost share
• July 1, 2017 to August 1, 2017 – Expected Finalization of agreements
• August 1, 2017 – Voucher work expected to begin

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)
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, but the scope of work must be distinct from existing SBIR/STTR projects.

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 Letter of Intent (LOI)

Submission of a Letter of Intent (LOI) in advance of submission of a Request for Assistance is requested and strongly encouraged. The website for submission of a LOI will be open per the schedule provided in Section D. Guidance is provided on the GAIN website (gain.inl.gov). LOIs will be used by the GAIN office to assist applicants as necessary and as time and resources allow. If an applicant already has a point of contact within the DOE complex, this point of contact should be identified in the LOI. Please do not include proprietary information in the LOI.

H. 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 February 28, 2017.

Please do not provide any proprietary information in the request or in supporting documentation or resumes.
Each eligible entity may submit up to two applications under the NE Voucher Program; however, no more than one voucher application will be selected/finalized for an eligible recipient. Those submitting two voucher applications must indicate which proposed project is preferred. This preference will be considered in addition to the merit review results in the selection of vouchers for funding. Applicants who received a voucher as a result of the FY 2016 voucher call are eligible to receive a new voucher from the February 2017 call.

I. 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.
U.S. Department of Energy (DOE) Office of Nuclear Energy (NE)  
Voucher Request for Assistance (RFA)

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).