



FY 2021 Scientific Infrastructure Support Funding Opportunity Announcement DE-FOA-0002362

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Nuclear Science User Facilities

*DOE Headquarters
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Outline

- FOA Overview
- NSUF Integration
- Reactor Upgrades
- General Scientific Infrastructure
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- Contact Information

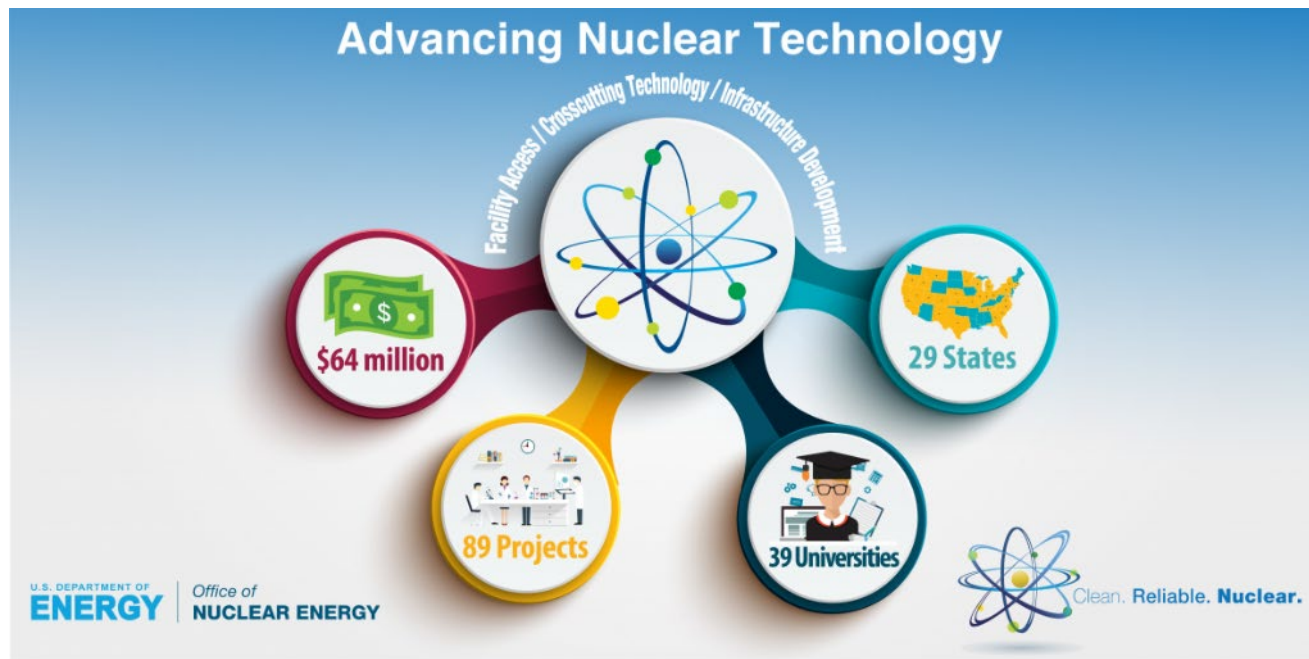


FOA Highlights

- Funding Mechanism
 - Funding supplied by DOE-NE
 - Grants issued by DOE-ID
- Two Funding Opportunities for US Universities
 - Reactor Upgrades
 - General Scientific Infrastructure
- Find the FOA (DE-FOA-0002362) at www.grants.gov
- Submit applications at www.neup.gov
- Additional information at nsuf.inl.gov/Page/infrastructurefoa

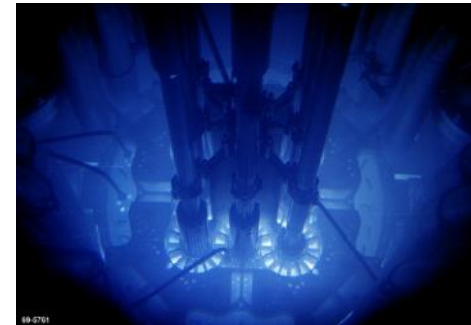
Important Dates

- FOA release date: [August 17, 2020](#)
- Applications due: [November 12, 2020](#)
- Anticipated award announcement: [July 31, 2021](#)



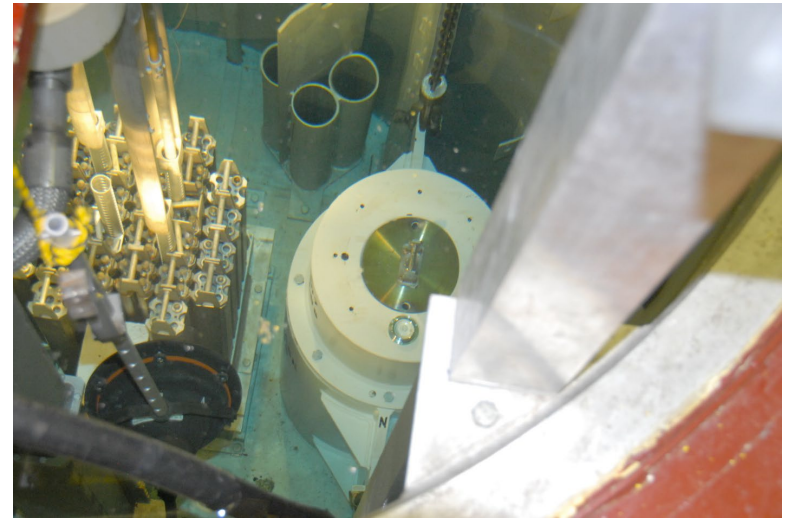
Nuclear Science User Facilities (NSUF)

- DOE-NE provides nuclear energy researchers access to world-class capabilities to facilitate the advancement of nuclear science and technology through the NSUF.
 - Access to the NSUF and its partner facilities is granted through a separate competitive proposal process.
- To apply to any of the areas in this FOA, the applicant is required to demonstrate the ability and willingness to join the NSUF as a partner should NSUF offer an invitation.
- If the NSUF determines the new equipment/capability adds significant value to DOE, the awarded institution may be invited to join the NSUF, so the equipment is available to other researchers.



FOA Organization

Area 1 – University Reactor Upgrades Infrastructure Support



Area 2 – University General Scientific Infrastructure Support

University Reactor Upgrades (RU)

- **Award Size**
 - Maximum individual award: \$5,000,000
 - Expected award range: Up to \$1,500,000
 - DOE anticipated to award several smaller awards
- **Estimated Funding Level**
 - Approximately \$2.5 million
- **Period of Performance**
 - 1 year (ask for what you need)



Only educational reactors fueled by DOE are eligible

- List can be found in Part I.C.1.1 of FOA
- Each institution is permitted to submit a single, separate application for each research reactor they operate.

RU Review Criteria

Each application will receive a merit review by DOE, university peers, and NSUF reviewers

Review Criteria

- (55%) **Safety and/or Security** – Potential of the requested equipment, instrumentation, or modification to:
 - Enhance the safety, performance, control, or operational reliability of research reactor systems; or
 - Increase the quality, safety/security, or efficiency of the operation of the research reactor facility.
- (15%) **Impact** – Potential of the requested equipment, instrumentation, or modification to facilitate, improve, or expand ongoing Office of Nuclear Energy research and training capabilities;
- (15%) **Utilization** – As a result of the proposed equipment, the amount of student and faculty usage of the research reactor facility, and the amount and variety of research and/or services actually provided by the facility;
- (15%) **Execution** – Capability to implement the full scope of the project, including timely project completion, personnel qualifications, budget, and feasibility.

RU Focus Area – Console Spare Parts

- A high priority for this call is the procurement of spare parts and associated hardware for research reactor control consoles.
 - These systems are vital for continued safe and reliable reactor operation.
 - Established vendors are leaving the market.
- Proposals to support continued long-term operation of the university research reactor by purchasing spare parts, subsystems, channels, and detectors will be highly regarded.



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General Scientific Infrastructure (GSI)



- Award Size
 - Maximum DOE funding per individual university award: **\$5,000,000**
 - Anticipated award size **\$250,000**
- Period of Performance
 - 1 year (*ask for what you need*)
- Eligibility
 - US universities are eligible to submit applications
 - One application per institution can be submitted to the GSI area of this FOA.
 - University cost match (1:1) required after \$250,000
- Estimated Funding Level
 - Approximately **\$2.5 million**

GSI General Requirements

- Applications can be submitted for equipment, software, instrumentation, and associated non-reactor upgrade requests that support nuclear energy-related R&D or education.
- Funding requests may include, but are not limited to, equipment and instrumentation for specialized facilities, classrooms and teaching laboratories, and non-reactor NS&E research.
- Infrastructure requests that support the sharing and use of equipment and instrumentation by multiple campuses of a university, multiple universities, or national laboratories are encouraged.



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FY2021 GSI Focus Areas

- NSUF performs an annual Nuclear Energy R&D capabilities gap analysis to identify areas for investment.
 - Applications addressing these identified needs will be given higher priority.
- **For FY 2021, specific areas of interest are:**
 - In situ radiation-enhanced corrosion capabilities
 - Nuclear fuel and materials (characterization) including high throughput characterization
 - Non-LWR environment material testing capabilities
 - Capabilities to perform work on radioactive/irradiated materials (>5mr/hr @ 30 cm, beta/gamma only)

GSI Reminder of Excluded Areas

NSUF provides access to high-performance computational resources at INL at no cost to users

- Applications requesting to purchase scientific computing equipment (such as institutional clusters, high-performance computing (HPC) nodes, etc.) will not be entertained.
- See nsuf.inl.gov or hpc.inl.gov for information on accessing HPC resources



Courtesy of Eric Whiting, Director of Scientific Computing (INL)

GSI Review Criteria

Each application will receive a merit review by DOE, university peers, and NSUF reviewers

Review Criteria

- (25%) **Impact** – Potential of the requested equipment, instrumentation, or modification to facilitate, improve, or expand ongoing Office of Nuclear Energy research and training capabilities;
- (25%) **Utilization** – As a result of the proposed equipment, the amount of student, faculty, or researcher usage of the capabilities, and the amount and variety of research and/or services actually provided by the facility;
- (25%) **NSUF Priority** – Importance of the proposed upgrade to the Nuclear Science User Facilities as either improving an existing partner facility or as a potential partner facility.
- (25%) **Execution** – Capability to implement the full scope of the project including timely project completion, personnel qualifications, budget, and feasibility.

GSI Cost Sharing & Cost Match

Cost Matching

- Cost match is required on university **GSI projects** that exceed **\$250,000**
- Dollar for dollar matching requirement, up to the project ceiling of \$1,500,000
 - e.g. If the total project's cost was \$350,000; the university would be responsible for \$50,000 and DOE's share would be \$300,000
- Anticipated award range will be around **\$250,000** for most applications

Cost sharing is encouraged, but is not required in any part of this FOA

Contact the DOE-ID Contracting Office with questions.

Best Practices

The infrastructure requested should be individual, discrete, and definable items or capabilities that will:

1. Support, maintain, or enhance the institutions' capacities to attract and teach high quality students interested in nuclear energy-related studies
2. Build the institutions' research or education capabilities
3. Enhance the institutions' capabilities to perform R&D that is relevant to DOE-NE's mission

Focus on a single, synergistic goal or capability.

- A proposal made of several uncorrelated equipment requests in does not meet the goals of this FOA.

Try not to duplicate existing capabilities.

- To see NE R&D capabilities in the US, review the Nuclear Energy Infrastructure Database (NEID) available at <https://nsuf-infrastructure.inl.gov>

Specifically list any DOE-NE R&D program relevance.

Pitfalls to Avoid

Restrictions on the use of funds under this FOA:

- The application cannot include hiring or other human capital costs. Personnel or indirect costs are not allowed, except as specified in this FOA.
- The application cannot include the cost of routine operation and maintenance of equipment.
- Non-standard installation costs for equipment and instrumentation that are beyond the vendor's standard installation cost are not allowed.
- Institution-specific costs, not specific to the equipment or instrumentation, are the responsibility of the applicant.
 - For example, if a vendor needs to meet safety and health requirements to access the campus or a facility, these costs are the responsibility of the applicant.
- Funds are restricted to equipment for activities supporting research, teaching, and education.
- Upgrades to increase operational profit or support for commercial activities are not allowed.

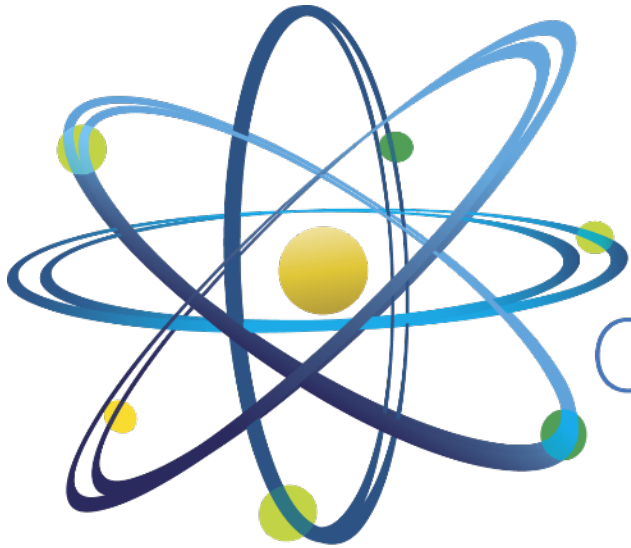
Ensure that you have the most recent version of the FOA and that you have reviewed it and are in compliance with a all requirements.

Contact Information



- Technical questions can be submitted to:
 - Brenden Heidrich (TPOC)
 - NSUF@INL.gov
 - The Infrastructure FOA Q&A section at <https://nsuf.inl.gov/Page/infrastructurefoa>
- Procurement questions can be submitted to:
 - Trevor Bluth (DOE-ID Contract Specialist)
 - bluthtm@id.doe.gov
- Application Site
 - www.neup.gov

Questions?



Clean. **Reliable. Nuclear.**