

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U. S. Department of Energy

Office of Nuclear Physics

Facility for Rare Isotope Beams

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CFDA Number: 81.049

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Letter of Intent Due Date:	Not Applicable
Pre-Application Due Date:	Not Applicable
Application Due Date:	07/21/2008

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your Central Contract Registry (CCR) registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements

There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the CCR, register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants who are not registered with CCR and Grants.gov should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

Microsoft Vista and Office 2007 Compatibility

Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel, and Power Point. In order to create and submit your application to Grants.gov, Applicants must use a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the application. HOWEVER, your entire application will not be able to be processed or accepted at Grants.gov and will not reach DOE. Grants.gov can accept applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See the http://www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

Questions

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this announcement explains how to submit other questions to the U.S. Department of Energy (DOE).

TABLE OF CONTENTS

PART I – FUNDING OPPORTUNITY DESCRIPTION	5
A. BACKGROUND/PROGRAM HISTORY	5
B. STATUTORY AUTHORITY	7
C. APPLICABLE REGULATIONS	8
D. PURPOSE/OBJECTIVES	8
E. CONSTRUCTION REQUIREMENTS.....	8
F. PRIORITIES/TECHNICAL FOCUS AREAS.....	9
A. TYPE OF AWARD INSTRUMENT	9
B. ESTIMATED FUNDING	10
C. MAXIMUM AND MINIMUM AWARD SIZE.....	10
D. EXPECTED NUMBER OF AWARDS	10
E. ANTICIPATED AWARD SIZE	10
F. PERIOD OF PERFORMANCE	10
G. DECONTAMINATION/ DECOMMISSIONING AND LIABILITY	10
H. TYPE OF APPLICATION	11
PART III - ELIGIBILITY INFORMATION.....	11
A. ELIGIBLE APPLICANTS	11
B. COST SHARING AND OTHER COMMITMENTS.....	11
C. OTHER ELIGIBILITY REQUIREMENTS	11
PART IV – APPLICATION AND SUBMISSION INFORMATION	13
A. ADDRESS TO REQUEST APPLICATION PACKAGE.....	13
B. LETTER OF INTENT AND PRE-APPLICATION.	13
C. CONTENT AND FORM OF APPLICATION – SF 424.....	13
D. SUBMISSION FROM SUCCESSFUL APPLICANT	25
E. SUBMISSION DATES AND TIMES	27
F. INTERGOVERNMENTAL REVIEW	27
G. FUNDING RESTRICTIONS	27
H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS	27
PART V - APPLICATION REVIEW INFORMATION.....	29
A. CRITERIA.....	29
B. REVIEW AND SELECTION PROCESS.....	34
C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES	34
PART VI - AWARD ADMINISTRATION INFORMATION	35
A. AWARD NOTICES	35
B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS	35
C. REPORTING	36
PART VII - QUESTIONS/AGENCY CONTACTS.....	37
A. QUESTIONS	37
B. AGENCY CONTACTS	37
PART VIII - OTHER INFORMATION.....	38
A. MODIFICATIONS.....	38
B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE	38
C. COMMITMENT OF PUBLIC FUNDS	38

D. PROPRIETARY APPLICATION INFORMATION..... 38
E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL 38
F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM 39
G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER 39
H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES 40
I. REAL PROPERTY..... 40
J. ENVIRONMENTAL, SAFETY AND HEALTH AND REGULATORY REQUIREMENTS 40
K. AVAILABILTY OF FUNDS..... 41
APPENDICES/REFERENCE MATERIAL..... 42

PART I – FUNDING OPPORTUNITY DESCRIPTION

A. BACKGROUND/PROGRAM HISTORY

Intense beams of rare isotopes (short-lived nuclei not normally found on earth) are needed to address forefront scientific questions in a wide variety of studies in nuclear structure, nuclear astrophysics, and fundamental symmetries. An accelerator facility for rare isotope beams (FRIB) is needed, for example, to understand the origin of the elements and the evolution of the cosmos, and offers a laboratory for exploring the limits of nuclear existence and identifying new phenomena, with the possibility that a more broadly applicable theory of nuclei will emerge. Experiments addressing questions of the fundamental symmetries of nature will similarly be conducted at a FRIB because of the ability to create and study certain special, rare isotopes. A U.S. FRIB is essential for the Nation to maintain scientific leadership in these fields of study.

This Funding Opportunity Announcement (FOA) by the Office of Science for Nuclear Physics requests that the eligible Applicants submit applications for the conceptual design and establishment of a FRIB that will meet the criteria described in this FOA. The proposed FRIB must be capable of mounting a world-class scientific research program at the start of operation, and can be designed, built and commissioned for less than or equal to a total project cost of \$550,000,000 in escalated “Then Year” dollars. The specifications in the FOA are formed from the recent reports of the Rare Isotope Beam Task Force of the Nuclear Science Advisory Committee (NSAC) <http://www.sc.doe.gov/np/nsac/nsac.html> and the Rare Isotope Science Assessment Committee (RISAC) of the National Research Council (NRC) <http://www.sc.doe.gov/np>.

The funding for the establishment of the proposed accelerator facility, to be expended for up to approximately a decade, does not include funding for the scientific research or experimental support base that will be needed to extract science from the facility once it is operational.

Progress in both nuclear structure and astrophysics studies depends upon the availability of rare isotope beams to produce and characterize nuclei that lie in unstudied regions of the nuclear chart and are involved in important astrophysics processes. While the U.S. today has facilities with capabilities for these studies, a facility with next generation capabilities for short-lived radioactive beams will be needed for the U.S. to maintain a leadership role. The NSAC 2002 and 2007 Long Range Plans recommend construction of such a facility, as does the 2007 Office of Science plan, *Four Years Later: An Interim Report on Facilities for the Future of Science: A Twenty-Year Outlook*. In 2005 the National Research Council of the National Academy of Science (NAS) was charged with carrying out an independent assessment of the importance of the science portfolio available to a next generation rare isotope beam facility. The NRC report concluded that nuclear structure and nuclear astrophysics are a vital part of the U.S. nuclear science portfolio; that the envisioned U.S. facility for rare isotope beams, based on a heavy-ion linear accelerator, would complement existing and planned international efforts, and provide capabilities unmatched elsewhere; and that such a facility should be a high priority for the U.S. As part of its long range planning process in 2007, a NSAC study has assessed that a next generation U.S. facility based on a super-conducting heavy-ion driver linear accelerator (linac), coupled to a gas catcher and post-accelerator, would allow scientists to pursue compelling scientific opportunities in this field of science with a world-class facility that would add both unique and complementary capabilities to the international research community. This unique facility will have outstanding capabilities for fast,

stopped, and reaccelerated beams. The proposed science program is expected to have short, intermediate, and long-term scientific goals.

For additional information concerning the references cited above please see the Appendices/Reference Material section of this FOA.

Facility Performance, Infrastructure and Operation

The minimum technical specifications of the FRIB are that the facility be based on a 200 MeV/u, 400 kW superconducting heavy-ion driver linac. The initial capabilities of the FRIB should include fragmentation of fast heavy-ion beams combined with gas stopping and reacceleration. The technical scope should include necessary facilities and equipment for the establishment and operation of the FRIB, including driver linac and switchyard, target facilities, cryogenics facilities, gas stopper, fragment separator(s), radioactive ion beam (RIB) post accelerator, experimental areas and instrumentation that will allow the community of facility users to shed light on important scientific issues.

The prospective science community is estimated at over 1,000 users with perhaps 400 to 500 users utilizing the facility per year with up to approximately 100 users on site at any given time. The technical scope of FRIB should include support infrastructure items such as office space and lab space to support local staff and the user community. In addition, the facility should include any necessary support space (e.g. shop space, etc.), testing space, and utility systems such as water supply and distribution, sanitary sewer, electrical services, and communications.

Staffing

Establishment of the FRIB should be led by an experienced team of project managers, internationally recognized scientists, accelerator physicists, engineers, and technicians. The team responsible for establishing the FRIB may be comprised of diverse institutions including DOE national laboratories, academia, non-profit research institutes, and the private sector.

Oversight/Collaboration

The Department of Energy's Office of Science recognizes that effective management of scientific facilities, programs, and projects is critical to the success of research and the achievement of project goals. It is essential that the FRIB have well-designed management plans for the establishment of the facility in order to successfully contribute to the Nuclear Physics program, the Office of Science, and the DOE mission. In common with other major Office of Science supported programs, the FRIB will be subject to regular and rigorous peer review of its scientific goals, project performance, and management structure, policies, and practices. The successful Applicant will be expected to generate documentation that describes project plans and performance, in accordance with industry or DOE project management standards/practices. The successful Applicant will be expected to report project performance to the DOE on a regular basis.

Project Management

Applicants are expected to generate a proposal that is consistent with industry or DOE project management standards/practices. Applicants must consider the following hypothetical assumptions in preparing applications:

- Funding for conceptual design activities and R&D associated with FRIB establishment will not commence prior to FY 2009.
- Funding for preliminary and final engineering activities will not commence prior to FY 2011.
- Funding for construction and procurement activities will not commence prior to FY 2013, and for the purposes of this FOA, should span five years.
- Funding for pre-operations activities will not commence prior to FY 2016. Pre-operations activities are considered part of the project cost.

The FRIB must meet or exceed, the minimum technical specifications described in the above section “Facility Performance, Infrastructure and Operation”.

Deliverables/ Benchmarks After Award

The Awardee shall complete a plan to establish the FRIB project in a cost effective and timely manner that meets DOE’s objectives and performance requirements for the facility. The Awardee must have deliverables and milestones to enable DOE to monitor project performance.

The Awardee will be required to meet project management requirements, including:

- Defining project objectives up front that can be used to judge project success;
- Identifying project performance risks (technical, financial, and any others) and developing a corresponding mitigation plan;
- Managing the project with qualified individuals;
- Generating project documentation including, but not limited to, conceptual design report, project management or execution plan, data and analyses to support DOE’s National Environmental Policy Act documentation, procurement and acquisition strategies, hazard analysis plans, and quality assurance plans;
- Establishing a scope, schedule, and budget to serve as a basis for project management; and
- Managing and reporting project performance against the established scope, schedule, and budget on a frequent and regular basis that would include an earned value management system.

Other Considerations

DOE-supported university and national laboratory research groups are considered foundational resources for the Nuclear Physics program, serving as independent and collaborative resources for the research facility funded by this announcement. Funding of these groups for scientific efforts outside of project construction activities is determined and administered separately from this announcement and should not be included in the budget requests of applications to this announcement.

B. STATUTORY AUTHORITY

Public Law 95-91, U.S. Department of Energy Organization Act

Public Law 109-58, Energy Policy Act of 2005

C. APPLICABLE REGULATIONS

U.S. Department of Energy Financial Assistance Rules, codified at 10 CFR Part 600

U. S. Department of Energy, Office of Science Financial Assistance Program Rule, codified at 10 CFR Part 605

D. PURPOSE/OBJECTIVES

As part of the National Nuclear Physics program and to fulfill its public purpose, the DOE Office of Science for Nuclear Physics proposes to proceed with the establishment of a U.S. facility for rare isotope beams with forefront scientific research capabilities that will complement existing or planned facilities world-wide and to exploit the scientific potential of rare isotope beams as a research tool for discovery-oriented science, in support of the national science objectives embodied in the DOE mission and assigned to the Office of Science.

The primary objectives of this FOA are as follows:

- Select the application that best satisfies the criteria of the FOA within budget guidelines in a manner that will successfully deliver a world-class research facility to enable the Nuclear Physics program to achieve its research mission and fulfill its public purpose; and
- Select the application that identifies a site located entirely in the United States of America which is sufficient in area to establish the proposed FRIB, DOE will determine whether the project is suitable after a post-selection National Environmental Policy Act (NEPA) review; and
- Select the application that best provides the leadership and management to design, construct, and operate the proposed FRIB as a National User Facility in a manner that will successfully deliver a research facility to enable the Nuclear Physics program to achieve its research mission.

E. CONSTRUCTION REQUIREMENTS

Construction associated with the establishment of the FRIB complex will be required to the extent necessary to provide facilities that meet DOE's objectives and performance requirements referenced in Part 1, Section A: *Facility Performance, Infrastructure and Operation*. Construction may include the establishment of new facilities or modifications to existing facilities at the Applicant's proposed site. After award, DOE will require all work associated with construction activities, including any radiation/hazardous work resulting from new construction or modification to existing facilities, be consistent with DOE policies and practices.

All capital assets (facilities and equipment) constructed/fabricated with Government funds will be the property of the Government. If the land on which any new Government constructed facility is not Government owned, the Applicant will describe its proposed arrangement for land ownership/usage. It is expected that if the Applicant is a non-DOE entity, it will enter into a long-term lease or similar agreement with DOE for use of the land on which the FRIB is constructed. At a minimum, the title to the land may remain with the Applicant. The Applicant will grant the Government use and occupancy of the FRIB complex to carry out its mission so long as the Government has title to Government-owned property at the FRIB site.

F. PRIORITIES/TECHNICAL FOCUS AREAS

The research mission will be nuclear physics and the knowledge produced and the experiments conducted will be unclassified from a security perspective.

A FRIB will offer capabilities for exploring the limits of nuclear existence and identifying new phenomena, with the possibility that a more broadly applicable theory of nuclei will emerge. The facility will enable investigations of new structures of nuclear matter such as nuclei with large neutron excesses occurring near the neutron drip line and hence studies of matter made essentially of pure neutrons, and possible breakthroughs in the ability to fabricate the super heavy elements that are expected to exhibit unusual stability in spite of huge electrostatic repulsion.

A FRIB will lead to a better understanding of key issues in nuclear astrophysics by creating exotic nuclei that, until now, have existed only in nature's most spectacular explosion, the supernova. A FRIB will offer new glimpses into the origin of the elements, produced mostly in processes occurring in nuclei very far from stability, many of which are not within the reach of present facilities. The FRIB will provide information on weak interaction rates in nuclei within stellar cores critical to understanding how and why stars explode. A FRIB will also probe properties of nuclear matter important to theories of neutron-star crusts.

Experiments addressing questions of the fundamental symmetries of nature will similarly be conducted at a FRIB through the creation and study of certain exotic isotopes. These nuclei could enable important experiments on basic interactions because aspects of their structure greatly magnify the size of the symmetry-breaking processes probed. For example, a possible explanation for the observed asymmetry between matter and anti-matter in the universe could be studied by searching for a permanent electric dipole moment larger than Standard Model predictions for heavy radioactive nuclei.

Scientific applications benefiting stockpile stewardship, materials science, medical research and nuclear reactors have long relied on a wide variety of isotopes. Each of these areas will advance significantly by a facility with high isotope production rates especially for producing high specific activity samples for experimental use.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE may award either a field work authorization or a cooperative agreement under this FOA. A DOE field work authorization will be awarded to a successful DOE Federally Funded Research and Development Center (FFRDC) contractor. A cooperative agreement will be awarded to any other successful entity including, but not limited to, universities, nonprofit organizations, and for-profit organizations.

No fee will be payable to the successful awardee under a Cooperative Agreement resulting from this FOA.

B. ESTIMATED FUNDING

The Administration has requested up to \$550,000,000 in escalated “Then Year” dollars which could be available in the FY 2009-FY 2018 for this program. The actual level of funding, if any, depends on the appropriations for this program. There is no funding identified in the FY 2008 Federal Budget for these efforts.

C. MAXIMUM AND MINIMUM AWARD SIZE

- Ceiling (i.e., the maximum amount for an individual award made under this announcement):
\$ 550,000,000
- Floor (i.e., the minimum amount for an individual award made under this announcement):
None

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making one award under this announcement. However, the Government reserves the right to make no award if it is considered to be in the Government's best interest to do so.

E. ANTICIPATED AWARD SIZE

DOE anticipates that a single award will be made for up to \$550,000,000 for the establishment of the FRIB.

F. PERIOD OF PERFORMANCE

DOE anticipates funding levels that will vary on an annual basis for the period of the agreement. For the purposes of the FOA, the Applicant should assume that funding in any single year will not exceed \$170,000,000. The funding levels will need to be in the context of constraints on activities as defined in Part I, Section A, “Project Management”. DOE anticipates the period of performance will run from fiscal year 2009 to fiscal year 2018.

G. DECONTAMINATION/ DECOMMISSIONING AND LIABILITY

DOE will not be responsible for returning a site back to its original condition or previous function resulting from work performed under this award. DOE’s responsibility will be limited to the costs of decommissioning and decontamination to industrial use standards of those facilities constructed with government funds.

The successful Applicant will be expected to indemnify, defend, and hold harmless the Government, its agents, officers, and employees from and against any and all liabilities resulting from work under this award.

H. TYPE OF APPLICATION

DOE will accept new applications under this announcement.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

Domestic entities, including DOE/NNSA Federally Funded Research and Development Centers (FFRDC) are eligible to apply as prime awardees. This competition is not open to other Federal agencies and their national laboratories. Therefore, such entities may not be included in applications as part of this competition. Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995 are not eligible to apply.

B. COST SHARING AND OTHER COMMITMENTS

Cost sharing is not required but encouraged. Cost sharing is defined at 10 CFR 600.123. Cost sharing applies only to items within the \$550,000,000 scope. Proposed items outside of the scope are considered 'Other Commitments'. Other commitments must be firm written commitments in order to be considered. Cost sharing and other commitments will not be evaluated as part of the merit review criteria, but will be a consideration as part of the Program Policy Factors. In addition, during the consideration of cost sharing as part of the application of the Program Policy Factors, the soundness of any assumptions of cost sharing will be considered to the extent that cost sharing assumptions may influence total project costs. Cost sharing and other commitments proposed in the application will be accepted by DOE and a provision will be included in the resulting award requiring the awardee to provide all proposed commitments.

C. OTHER ELIGIBILITY REQUIREMENTS

DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractors

DOE/NNSA FFRDC Applicants are eligible to apply for funding under this announcement if the cognizant contracting officer provides written authorization and this authorization is submitted with the application as part of the DOE/NNSA FFRDC Budget File. If a DOE/NNSA FFRDC is selected for award, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's M&O contract. The following wording is acceptable for the authorization:

“Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory.”

Value/Funding: If a DOE/NNSA FFRDC contractor is proposed as the prime awardee,

DOE will directly fund the DOE/NNSA FFRDC contractor through the DOE field work authorization system. If a DOE/NNSA FFRDC contractor is proposed as a team member of another DOE/NNSA FFRDC prime awardee, the prime awardee is to propose an optimum method to distribute funds to each DOE/NNSA FFRDC contractor portion of the work. If the DOE/NNSA FFRDC contractor is proposed as a team member for a non-FFRDC awardee, the non-FFRDC awardee is to propose the optimum method to distribute funds to each DOE/NNSA FFRDC contractor portion of the work.

DOE/NNSA FFRDC Contractor Effort: The scope of work to be performed by any DOE/NNSA FFRDC subawardee may not be more significant than the scope of work to be performed by the Applicant.

Responsibility: The Applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the Applicant and any DOE FFRDC contractor if the latter is a team member. If an award is made to a DOE FFRDC, all Disputes and Claims will be resolved in accordance with the terms and conditions of the FFRDC's M&O contract with DOE.

Team Arrangements and Ineligible Entities

Entities proposing as a team must designate a lead organization. Applications must be submitted on behalf of the team members by the lead organization and DOE will enter into a prime award relationship with the designated lead organization.

The definition of Eligible Applicants set forth above in section A of Part III applies to all parties involved in an application, including the lead organization that actually submits the application (prime Applicant) and all other institutions involved in any way in the proposed facility (team members or lower-tier Applicants). DOE/NNSA FFRDC contractors are the only types of FFRDC contractors eligible to apply. Additionally, nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, may not be the lead Applicant, team members, or lower-tier Applicants; nor be involved in any way in the application. Foreign entities may not be the lead Applicant, but may be proposed as a team member, or as an unfunded scientific contributor to the project.

If an application is received that includes an ineligible entity, or an employee of an ineligible entity performing activities as a team member, or as an unfunded contributor to the project, **the application will be deemed non-responsive and returned without further review.** Note, however, that otherwise ineligible entities are not precluded from serving as vendors of materials, supplies, equipment, and providing scientific and technical advisory services to a proposed facility, if they are acting purely in that role. Scientific and technical advisory services allow for the provision of scientific and technical expertise without actually performing research activities; examples of such services include serving as members of advisory committees and technical peer review panels or participation in scientific workshops or conferences. In the event that Federal agencies and/or their FFRDC contractors provide materials, supplies, equipment or scientific and technical advisory services, DOE will fund such entities through an interagency agreement under the Economy Act.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download Application Package.” Enter the Catalog of Federal Domestic Assistance (CFDA) and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

Letters of Intent are not required.

2. Pre-application

Pre-applications are not required.

3. Funding Opportunity Announcement Conference

A conference will not be held for this funding opportunity announcement.

4. Site Visits

Site visits to the proposed FRIB facility site of the highest ranked proposals will be required as part of the merit review process.

5. Presentation To The Merit Review Panel

Applicant(s) will be required to travel to a designated location (s) for presentation(s) to the Merit Review Panel and in order to present additional information and to field questions from the Merit Review Panel as part of the merit review process.

C. CONTENT AND FORM OF APPLICATION

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL-Disclosure of Lobbying Activities) in accordance with the instructions on the forms. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

SF 424 - Application for Federal Assistance: Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 21 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm under Certifications and Assurances.

Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach mandatory file. Click on “Add Optional Other Attachment,” to attach the other files. PLEASE NOTE THAT GRANTS.GOV USES THE TERM ‘ADD OPTIONAL OTHER ATTACHMENT’ FOR MANDATORY ATTACHMENTS. For a complete list of all attachments please see Summary of Required Forms/Files beginning on page 24 of this FOA.

Submission of an electronic application through Grants.gov constitutes the submission of a signed document. Type the name of the person responsible for providing the certifications and assurances in the signature block.

Project Narrative File: The project narrative (see below for detailed contents) must not exceed 150 pages total, printing on both sides, including Executive Summary (described below), charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right). All completely blank pages will not be counted against the 150 pages. Applicants may use 11 x 17 sized sheets; however, such sheets will be counted as two pages when determining page limitations. EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. A cover page and table of contents should be included at the beginning of the project narrative but may be excluded from the page limitation. Headers/footers containing page numbers and project titles/logos may be inserted within the required 1” margins. The font must not be smaller than either Arial 12 point or Times New Roman 12 point, with the exception of use in tables and figures, including captions, where the font must be no smaller than 9 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named “**Project.pdf**,” and click on “Add Mandatory Other Attachment” to attach.

Executive Summary: This section is informational and part of the Project Narrative, however it will not be evaluated. The Summary must not exceed five pages and should provide a clear, substantive overview summarizing the vision for the proposed FRIB including:

- Define the scientific goals of the facility; and
- Define the performance capabilities of the FRIB that will be achieved at the end of the facility establishment; and
- Define the technical scope of the FRIB; and
- Define the proposed location for the site of the FRIB; and
- Define the estimated cost of the FRIB.

The contents of the project narrative are specified in order to ensure that the merit reviewers have the necessary information to conduct proper evaluations. All project narratives are to use the following outline.

1. Scientific and Technical Merit of the Project, and User Community

a. FRIB Nuclear Physics Mission. Applicants should describe their understanding of the FRIB objectives and performance requirements and how they support the DOE Nuclear Physics research program, including:

- Describe the short, mid- and long-term scientific goals of the facility and how they drive the specifications for facility design/construction.
- Describe plans to utilize FRIB to fulfill the research goals and major scientific thrust areas as articulated in the NSAC 2007 Long Range Plan.
- Describe the scientific reach and complementarities of FRIB in the context of existing and planned facilities elsewhere in the world.

b. FRIB Technical Merit

- Describe the technical scope, including facilities and infrastructure, and the approach to meet/exceed the FRIB objectives and technical specifications.
- Describe the technical status associated with the project and feasibility of achieving technical specifications and performance goals.
- Describe the scientific instrumentation, both inside and outside the technical scope of the FRIB project, which would be used to achieve the scientific goals.
- Describe the preliminary facility performance specifications at the end of the FRIB project which would be used to indicate that the technical specifications had been met.

c. User Research Community and Collaborations

- Describe the plans for external input and guidance for the scientific and technical development of FRIB.
- Describe how the Applicant proposes to encourage and support research projects and users of the FRIB.
- Describe how the Applicant proposes to develop and maintain a broad program of national and international collaboration of interest to FRIB and DOE.

2. Appropriateness of the Proposed Method or Approach

Beyond achieving the fundamental scientific objectives described elsewhere, DOE's principal goal in constructing a facility, such as the FRIB, is to deliver it safely, on schedule, within budget, and fully capable of meeting its intended purpose. In selecting a single Applicant for the FRIB, DOE must therefore assure itself that the successful Applicant is fully cognizant of all related requirements and can demonstrate related experiences and capabilities. Further, DOE will execute its federal responsibilities for overseeing the design/construction of the FRIB in accordance with industry or DOE project management standards/practices.

a. Project Management

- Describe the proposed project management system for designing and constructing the FRIB. The project management system includes the processes (tools and techniques) to define, plan, integrate, administer, and execute all the diverse activities of the project, including quality assurance and safety.

- Describe the mechanisms that would clearly assess and quantify project progress for cost and schedule against established baseline plans and that would be used to estimate impacts of current conditions and trends against completion limits. DOE typically utilizes earned value methods as described in ANSI/EIA-748-A-1998 for projects such as the FRIB to quantify progress against the baseline, describe variances, and estimate impacts at completion for both cost and schedule targets. This ANSI standard can be purchased at <http://webstore.ansi.org/RecordDetail.aspx?sku=ANSI%2FEIA-748-A-1998>.
 - Describe the mechanisms that would be used to establish and maintain technical, schedule, and cost baselines and ensure accurate, timely, and properly controlled changes. The change control process will formally control changes to the project baseline, thereby ensuring changing conditions are routinely identified, evaluated, and approved within thresholds provided by DOE.
 - Summarize the preliminary risk management plan that discusses risk factors, as well as a preliminary risk mitigation strategy. Include the identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues. Describe how the proposed cost and schedule estimates are reflective of the estimated risk. The entire plan will be requested as an attachment from the Applicant and not subject to the page restrictions in the project narrative.
 - Summarize the research and development plan to support the design of the FRIB, including goals and activities. The entire plan will be requested as an attachment from the Applicant and not subject to the page restrictions in the project narrative.
 - Describe the preliminary Work Breakdown Structure (WBS), expanded down to a level adequate to capture all major efforts in facility establishment.
 - Describe the planned activities associated with transitioning from a construction project to operation and how the performance specifications for project completion will be demonstrated.
 - Provide a preliminary project schedule, organized by the proposed WBS that identifies the critical path, major milestones, supporting tasks, and logical dependencies aligned with scientific goals and facility specifications. Each milestone should include a title and planned completion date. Milestones should be quantitative and show progress toward budget period and/or project goals.
- b. Suitability of the Proposed Site
- Describe and provide a schematic showing the land size and configuration of the FRIB facility, including the flexibility to adjust the position of the FRIB in the nearby vicinity and/or the potential for future site expansion.
 - Describe any existing facilities and infrastructure proposed for FRIB and demonstrate that these facilities and infrastructure are adequate, available and will be maintained for these purposes.

- Describe whether the land on which the FRIB is proposed to be constructed is currently owned by Applicant (describe Applicant's ownership interest in the proposed land) or will it be acquired to perform this agreement.
- Describe how the proposed site is capable of supporting the FRIB staff, user community, and visitors. Describe the accessibility of the site to the user community.
- Describe the suitability of the topography, geology, and associated geohydrology for efficient and timely construction of any proposed FRIB underground structures.
- Describe the projected ability to comply with all applicable, relevant, and appropriate Federal, State and local environmental/safety requirements within reasonable bounds of time, cost and litigation risk.
- Describe any past or current use of the proposed site and identify any known or potential environmental concerns that might impact the construction of FRIB. Describe any potential environmental effects that may apply as a result of constructing and operating the FRIB at the proposed site. This information will also be documented in the DOE Environmental Evaluation Notification Form as an attachment.

3. Competency of Applicants Personnel and Adequacy of Proposed Resources

FRIB design and construction will most likely consist of formal teaming or subaward arrangements that could include Universities, DOE National Laboratories, and/or private companies (i.e. architects, engineers, construction firms, and specialty consultants). DOE is interested in the Applicant's experience, including that of currently known team members or currently known major subaward participants, as well as the Applicant's capability to successfully manage/coordinate the efforts of proposed organization. It is recognized that teaming and sub-award information is only preliminary at this stage of a project. Applicants must clearly identify their proposed project management team, as well as approaches and processes for managing all project participants working together toward the successful achievement of FRIB mission goals.

a. Management Team

- Identify Key Personnel positions and the proposed individual for each position, and provide a resume for each of these individuals. These resumes will be requested as supporting documentation in the Additional Material File section and are not subject to the page restrictions of the Project Narrative, but will be used in support of the evaluation of this personnel section. The Applicant shall propose Key Personnel to be, as a minimum, the FRIB Laboratory Director and the FRIB Project Manager and the first tier direct reports whose responsibilities include the management and administration of the design and construction of FRIB.

- Explain the planning for retaining Key Personnel such as the FRIB Laboratory Director and Project Manager during the establishment of FRIB.
- b. Organizational Structure
- The Applicant shall provide an organizational chart that depicts the proposed organizational structure and includes the identification of the Key Personnel and DOE interfaces. Describe the functions, roles, and responsibilities for each element of the management organization. Describe the composition of and rationale for the structure and which activities will be performed by any known team member(s) or any currently known major subawardee(s).
 - Identify how the overall organizational structure will operate, including lines of authority and an explanation of how effective communication is conducted across organizational lines.
 - Provide a staffing plan showing the number of personnel and percentage of effort costed to this project, and disciplines and expertise needed for the project. The staffing plan should describe the methodology and schedule for staffing the needed personnel.
 - Describe the proposed communication system and approach, both internal and external to the organization, which includes reporting to DOE for project status, progress and issues, while providing effective feedback mechanisms, and communication with laboratories, contractors, universities and the local community during the establishment of the facility.
- c. Relevant Experience
- The Applicant, known team member institutions and known major subawardee(s) shall address their relevant experience and achievements in operating and/or managing nuclear physics accelerator facilities for conducting successful nuclear physics research program(s).
 - The Applicant, known team member institutions and known major subawardee(s) shall describe their experience in integration of multi-faceted, large scale projects; design and construction; construction management; operational start-up; materials management (e.g. radiological materials, hazardous materials, etc.); waste management; environment, safety and health programs; interfacing with local, State, and Federal governments, regulatory agencies, the community and other stakeholders.

4. Reasonableness, Realism, and Appropriateness of the Proposed Budget

In addition to the weighted criteria above, the Applicant will be evaluated based on the reasonableness, realism, and appropriateness of their proposed estimated total project cost range.

Proposed Budget

The Applicant shall provide estimates for all effort required to establish the FRIB. The Applicant shall establish the lower limit of the estimated total project cost range and the upper limit shall not exceed \$550,000,000 in escalated (“Then Year”) dollars. Submittals should include both the escalated project cost, and a base year FY2008 project cost with escalation shown separately. Methodology for calculation of escalation rates is to be provided. The methodology should include the annual escalation rates assumed, identify the source of the rates, and show, by example, how the escalation was calculated. Project cost estimates shall be calculated assuming that DOE will provide all funding, unless the Applicant proposes alternate financing arrangements or optional cost sharing arrangements, as discussed in Part III, Section B of this FOA. Supporting documentation will be requested in the Additional Material File that is not subject to the page restrictions of the Project Narrative, but which will be used in support of the evaluation of this project cost section, including a resource-loaded WBS down to a level which captures anticipated project activities, a WBS dictionary and WBS cost books describing the basis of cost. Estimates within a total project cost range should capture all phases of project implementation consistent with industry or DOE project management practices/standards, including technical, engineering and project management labor costs associated with the implementation of the FRIB. The following bullets describe information that should be included in the project narrative and is subject to the page limitation:

- Describe the resources included in the estimated total project cost range of the project in escalated dollars, fully burdened, by budget period, and broken down into conceptual design, research and development, National Environmental Policy Act (NEPA) associated costs, engineering and design, construction and pre-operations. Describe the direct and indirect costs and burdens, and their impact to the project costs.
- Describe the estimated total project cost broken down into labor, procurements, contingency and escalation:
 1. Describe the annual labor costs and number of Full Time Equivalent (FTE) personnel needed for the implementation of the FRIB, broken into technical, engineering and project management efforts.
 2. Describe the annual costs for procurements needed for the implementation of the FRIB. The basis of cost estimates for procurements should be included in the cost books requested in the additional materials section.
 3. Describe and justify the escalation rates.
 4. Describe the cost and schedule contingency and the analysis to support it.
- Describe the plan for acquiring and preparing the space to house the FRIB and the associated costs.
- Describe the strategy for the development of funding for the FRIB, including, but not limited to, optional cost sharing and possible non-DOE contributions. This may include sharing of existing facilities, equipment, scientific instrumentation, services, etc. The FRIB proposal should include the cost associated with maintenance and upgrades of

existing facilities proposed for use as FRIB, necessary to ensure an equivalent life and operational reliability to that of a new FRIB.

- Describe the estimated operating budget and life cycle costs associated with FRIB.

Additional Material Files (Not Included in the Project Narrative Page Limits Above)

- **Project Summary/Abstract File**

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the Applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed one (1) page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font no smaller than 11 point. Save this information in a file named “Summary.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Resume File**

Provide a resume for each key person identified in 3a. Save all resumes in a single file named “Bio.pdf” and click on “Add Optional Other Attachment” to attach. The biographical information for each resume must not exceed 2 pages when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right) with font no smaller than 11 point and must include the following information, if applicable:

Education and Training: Undergraduate, graduate, and postdoctoral training; provide institution, major/area, degree, and year.

Professional Experience: Beginning with the current position list, in reverse chronological order, professional/academic positions with a brief description. Describe the experience in constructing new facilities and/or large scale projects, and/or operating an accelerator facility.

Publications: Provide a list of up to 20 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities: List no more than 5 professional and scholarly activities related to the effort proposed.

Commitment Statement: Provide for each key person a signed commitment statement that reflects their commitment to this project for a minimum period of three years. Letters of commitment signed by key personnel, including their level of time commitment to the project, should be included in this section. In addition, letters of commitment are required from each organization known at this time to be participating as a team member. Letters of commitment from organizations participating as team members must be signed by the person authorized to commit the organization to a legally binding agreement. It is understood that at this stage of a project, not all teaming agreements will have been identified. Multiple key personnel representing the same institution may sign the same letter of commitment, as applicable. Each letter of commitment is limited to one page (this page is not included in the 2 page resume limit).

- **Current and Pending Support:**

Provide a list of all current and pending support (both Federal and non-Federal) for all key personnel for ongoing projects and pending applications. For each organization providing support, show the number of person-months per year to be devoted to the project by the key personnel. Save this information in a file named “Support.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Third Parties Contributing to Cost Sharing or Other Commitments Appendix:**

If you are proposing cost sharing as part of your response to the FOA, at the time you submit your application, you must include a letter from each third party contributing to cost sharing (i.e., a party other than the organization submitting the application). The letter must state that the third party is committed to providing a specific minimum dollar amount of cost sharing. By submitting your application, you are providing assurance that you have signed letters of commitment. In an appendix to your Project Narrative, you must identify the following information for each third party contributing to cost sharing: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing – cash, services, or property. This appendix will not count in the project narrative page limitation. Save this information in a file named “Thirdparty.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Bibliography & References Cited Appendix:**

Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. Save this information in a file named “References.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Facilities & Other Resources Appendix:**

This information is used to assess the capability of the organizational resources, including subawardee resources, available to perform the effort proposed. Identify the facilities to

be used (Laboratory, Computer, Office, and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. Save this information in a file named “Facilities.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Equipment Appendix:**

List major equipment already available for this project and, if appropriate identify location and pertinent capabilities. Save this information in a file named “Equipment.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Preliminary Risk Management Plan:**

The preliminary risk management plan should discuss risk factors, as well as a preliminary risk mitigation strategy. Include the identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues. Save this information in a file named “Risk.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Research and Development Plan:**

Describe the research and development (R&D) plan to support the design of the FRIB, including goals and activities. The estimated costs associated with the R&D activities should be identified. The plan should include the activities needed to establish technical feasibility and reduce project risk. Save this information in a file named “Rdplan.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Supporting WBS documentation**

A resource-loaded WBS down to a level appropriate to capture all project activities, a WBS dictionary and WBS cost books describing the basis of cost must be submitted. Estimates within the total project cost range should capture all aspects of project implementation. To submit these with the application, save the information in individual files named “WBSresource.pdf”, “WBSdictionary.pdf” and “WBScostbook.pdf” and click on “Add Optional Other Attachment” to attach.

- **Conflict of Interest Management Plan**

The Applicant shall prepare and submit a Conflict of Interest Management Plan along with its application. The plan shall describe the Applicant’s approach to potential, apparent, or actual organizational and individual conflicts of interest regarding Applicants, their team members, and key personnel named in their application. To submit this with the application, save the information in a single file named “OCI.pdf,” and click on “Add Optional Other Attachment” to attach.

- **Compliance with the National Environmental Policy Act (NEPA)**

The Environmental Evaluation Notification Form available at <http://www.ch.doe.gov/offices/ACQ/docs> must be completed and submitted to address any potential environmental effects of constructing and operating the FRIB at the proposed site. Save this information in a file named "NEPA.pdf," and click on "Add Optional Other Attachment" to attach. The information will be used by the Government to conduct an environmental critique/synopsis per 10 CFR 1021.216.

Note that this pre-selection process is separate from the preparation of a NEPA document such as an environmental impact statement or an environmental assessment which will occur post-selection. This later process must be completed by DOE, with the participation of the awardee, prior to taking any action on the proposed project that could have adverse environmental effects or that could limit the choice of reasonable alternatives. The inability to satisfy the NEPA requirements after a selection would result in cancellation of any said selection per 10 CFR 1021.216 (i).

- **SF-LLL Disclosure of Lobbying Activities**

If applicable, complete SF- LLL which is an Optional form in the application package. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
Application for Federal Assistance – SF424	Form	N/A
Other Attachments Form: Attach the following files to this form:	Form	N/A
Project Narrative File	PDF	Project.pdf
Resource-Loaded WBS	no special format	WBSresource.X
WBS Dictionary	no special format	WBSdictionary.X
WBS Cost Book	no special format	WBScostbook.X
Current and Pending Support File	PDF	Support.pdf
Project Summary/Abstract File	PDF	Summary.pdf
Resume File	PDF	Bio.pdf
Preliminary Risk Management Plan	PDF	Risk.pdf
Research and Development Plan	PDF	Rdplan.pdf
Organizational Conflict of Interest Plan	PDF	OCI.pdf
Third Parties Contributing to Cost Sharing Appendix (if applicable)	PDF	Thirdparty.pdf
Bibliography & References Cited Appendix	PDF	References.pdf
Equipment Appendix	PDF	Equipment.pdf
Facilities & Other Resources Appendix	PDF	Facilities.pdf
Environmental Evaluation Notification Form	PDF	NEPA.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable.	Form	N/A

D. SUBMISSION FROM SUCCESSFUL APPLICANT

The successful Applicant must submit the information listed below not later than 30 calendar days after notification of selection. The successful Applicant who fails to provide the information within the required time period may be eliminated from further consideration. Furthermore, DOE reserves the right to request additional or clarifying information from the successful Applicant for any reason deemed necessary.

What to submit	Required Form or Format
<p>Designated Responsible Employee for complying with national policies prohibiting discrimination. Provide organization name, project title, DOE application tracking number and the name, title, and phone number of Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5).</p>	<p>No special format.</p> <p>E-mail information not later than 30 calendar days after selection to Christopher.Swierczek@ch.doe.gov.</p>
<p>Representation of Limited Rights Data and Restricted Software</p>	<p>Use form on Applicant and Recipient Page http://www.management.energy.gov</p> <p>E-mail this representation not later than 30 calendar days after selection to Christopher.Swierczek@ch.doe.gov.</p>
<p><u>Budget Related Files</u></p> <p>SF 424A File - Budget Information for Non-Construction Programs, if applicable</p> <p>Budget Justification File, if applicable</p> <p>Budget for FFRDC Contractor, if applicable</p>	<p>As per the guidance provided below, appropriate budget files shall be provided not later than 30 calendar days after selection to Christopher.Swierczek@ch.doe.gov.</p>

Budget Related Files

- **SF 424 A Excel, Budget Information- Non-Construction Programs File, if applicable**

Applicants must provide a separate budget for the first year of support requested. Use the SF 424 A Excel, “Budget Information – Non Construction Programs” form on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm as a guide. For item 6a. ‘Personnel’, the labor amounts should be broken out by individual labor classifications, i.e. Senior Engineer, Junior Engineer, Senior Technician, Junior Technician etc. The labor hours and labor rates should be listed for each labor classification with a total cost for each labor classification and a grand total for all of the personnel costs. For item 6b., the fringe rate should be listed and the dollar amount that this rate is applied to in arriving at the fringe benefit cost should be listed. All cumulative total costs should reconcile to the cumulative total cost for the WBS. Applicants may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G).

Budget Justification File, if applicable

Applicants must justify the costs proposed in each Object Class Category/Cost Classification category for the first year funds that will be received for the performance of these activities (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers, and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). The Applicant should disclose their allocation base for their indirect cost. They should provide the name of their cognizant/oversight agency, if they have one, and the name and phone number of the individual responsible for negotiating their indirect rates.

- **Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor, if applicable**

If a DOE FFRDC contractor is to perform any portion of the work, they must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1A, Work Authorization System. This order and a sample of the DOE Field Work Proposal (FWP) form are available at <http://www.management.energy.gov/documents/o4121.pdf>. For purposes of satisfying this requirement, Applicants are required to submit the DOE FWP face and budget pages (pages 1 and 2 of the sample form) with the application as part of this DOE FFRDC Budget file. Furthermore, the information requested in blocks 1. through 15. and 17. through 19. of the sample FWP must be furnished with the application. The remainder of the information requested in blocks 16., 20., and 21. of the sample form will be required to be submitted through the Work Authorization System by the successful Applicant after selection. In addition, include the required cognizant Contracting Officer approval authorizing the participation of the FFRDC as described in Part III.C.

E. SUBMISSION DATES AND TIMES.

1. Pre-application Due Date.

Pre-applications are not required.

2. Application Due Date.

Applications must be received by July 21, 2008 not later than 12:00 PM, noon, Eastern Time.

F. INTERGOVERNMENTAL REVIEW.

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS.

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600 or the Contract Cost Principles in FAR Part 31 and DEAR Part 931.

Pre-award Costs. Recipients, other than DOE FFRDC's, may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the approval of the Contracting Officer for any pre-award costs that are for periods greater than this 90-day calendar period prior to incurrence of such costs.

Pre-award costs are incurred at the Applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the Applicant does not receive an award or if the award is made for a lesser amount than the Applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS.

1. Where to Submit.

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD.

Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or

submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

2. Registration Process.

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least three weeks before the application due date.** It may take 21 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationRegCheck.doc> to guide you through the process. **IMPORTANT:** During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called a “Marketing Partner identification Number” (MPIN). When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

3. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. You will know that your application has reached DOE when the AOR receives email Number 5. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 - Grants.gov Submission Receipt Number

Number 2 - Grants.gov Submission Validation Receipt for Application Number

Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

Part V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 CFR 605.10(b) to determine that (1) the Applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) the effort is consistent with program funding priorities; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement.

2. Merit Review Criteria

Applications will be evaluated by a Merit Review Panel using the criteria listed below. Following completion of an initial electronic merit review, a team comprised of Federal officials will review the applications and the Merit Review Panel evaluations and identify the highest ranked proposals. The next step of the Merit Review Process will be a panel review at a specified location to hear verbal presentations of the proposal and obtain clarifications on the submitted proposal. A site visit of the highest ranked proposals will be arranged to tour the proposed site of the facility, including any existing equipment or infrastructure that is proposed to be part of the project. After site visits, the Applicants may be asked to give further presentations to the Merit Review Panel (see Part IV, section C.5) at a separate meeting to provide any further needed clarification on the submitted proposal. Upon completion of this final merit review step, a team comprised of Federal officials will review the applications and the Merit Review Panel evaluations; summarize the Merit Review Panel's independent evaluations of, and recommendations regarding, the applications submitted; and recommend the application of the program policy factors, as appropriate. **The reasonableness and realism of the budget will be an important consideration in the evaluation of the submitted proposals, both by the Merit Review Panel and Federal officials.**

Applications will be subjected to formal merit review and will be evaluated against the following criteria. Included within each criterion are the detailed questions that reviewers should consider.

Evaluation criteria and relative weights of weighted factors are below.

Criterion 1 – Scientific and Technical Merit of the Project, and the User Community 45

(a) FRIB Nuclear Physics Mission

- Are the short-, mid- and long-term scientific goals of the facility defined, appropriate and compelling? Do they drive the proposed technical design?
- Is there an understanding of the goals of DOE's Office of Nuclear Physics regarding major scientific thrusts of basic nuclear physics research and the utilization of FRIB to fulfill those goals, as articulated in the Nuclear Science Advisory Committee (NSAC) 2007 Long Range Plan?

- Will the planned scientific program for the facility allow U.S. researchers to play a leading role? Do FRIB capabilities complement those of existing and planned facilities elsewhere in the world?

(b) FRIB Technical Conceptual Approach

- Is the technical scope clearly defined? Does the pre-conceptual technical approach meet/exceed the technical specifications as defined in this FOA in Part I, section A, Facility Performance, Infrastructure and Operation? Have the needed infrastructure and facilities been defined adequately and appropriately?
- Is the proposed approach technically feasible?
- Are the plans for scientific instrumentation adequate and appropriate for delivering the short-term science goals?
- Are the preliminary performance specifications for declaring the project successful and complete clearly defined and appropriate?

(c) User Research Community and Collaborations

- Are the plans for external input and guidance for the scientific development of FRIB appropriate?
- Does the approach encourage and support research projects and users of the FRIB facility?
- Is the approach to developing and maintaining a broad program of national and international collaboration of interest to FRIB and DOE reasonable and appropriate?

Criterion 2- Appropriateness of the Proposed Method or Approach

30

(a) Project Management

- Are the project management systems and approach for effectiveness in establishing the FRIB identified and appropriate? Are safety and quality integrated into the overall project?
- Are the proposed mechanisms that would assess and quantify project progress against established baselines appropriate and effective?
- Are the proposed mechanisms to establish and maintain technical, schedule and cost baselines and ensure controlled changes appropriate and effective?
- Is the approach to identify and mitigate potential cost, schedule, and technical risks appropriate and sound? Have the technical, resource, and management risks been appropriately defined? Is the approach to risk management during the implementation sound?
- Is the Applicant's R&D plan to support the design of the FRIB risk-based and appropriate?
- Is the WBS for the implementation of the FRIB appropriate and does it capture all major project efforts?

- Is the approach for transitioning from a construction project to operation reasonable? Is the approach for demonstrating the performance specifications at project complete sound and feasible?
 - Is the project schedule for the implementation of the FRIB reasonable, sound and aligned with scientific goals and facility specifications? Are milestones appropriately and adequately defined? Are dependencies properly defined?
- (b) Suitability of the Proposed Site
- Does the site location support the size and configuration to accommodate the FRIB including the flexibility to adjust the position of the FRIB in the nearby vicinity and/or the potential for future site expansion?
 - The adequacy, availability, and maintainability of any existing facilities, infrastructure proposed for FRIB, and availability of community resources will be evaluated.
 - The Applicant's response to whether the land on which the FRIB is proposed to be constructed is currently owned by Applicant, or if it will be acquired to perform this agreement, will be evaluated.
 - Does the site location provide accessibility and capability to support FRIB staff, user communities, and visitors?
 - Is the site topography, geology, and associated geohydrology suitable for efficient and timely construction of any proposed FRIB underground structures?
 - Does the project team have an understanding of the applicable, relevant, and appropriate Federal, State and local environmental/safety requirements needed to establish the FRIB and do they have the ability to comply with all within reasonable bounds of time, cost and litigation risk?
 - Do any potential environmental effects exist without a reasonable mitigation approach that may impact constructing and operating the FRIB at the proposed site.

Criterion 3- Competency of Applicant's Personnel and Adequacy of Proposed Resources 25

- (a) Management Team
- Do the Applicant's organization and the Applicant's proposed Key Personnel have relevant qualifications, experience, and demonstrated performance to establish the FRIB facility?
 - Is the plan for retaining stable levels of Key Personnel reasonable?
- (b) Organizational Structure
- Is the organizational structure appropriate to meet the goals of the proposal? Are the functions, roles and responsibilities clearly and appropriately defined?
 - Are the lines of authority clearly defined and planned reporting and communicating processes appropriate and effective?

- Are the staffing levels and skills mix within the staffing plan appropriate and adequate for the successful establishment of FRIB?
 - Is the approach to internal and external communication with DOE, laboratories, universities, contractors, and the community effective?
- (c) Relevant Experience
- Is the experience and achievements of the Applicants, team member institutions and known major subawardee(s) in conducting and managing successful nuclear physics research program(s) and operating and/or managing nuclear physics accelerator facilities relevant and adequate to the requirements of the FRIB project?
 - The Applicant’s relevant experience and successes of the Applicants, team member institutions, and known major sub awardee(s) on projects (including current projects) similar in size, scope and complexity to the work described will be evaluated.

Summary of Weights

Criterion 1 – Scientific and Technical Merit/User Community	45
(a) FRIB Nuclear Physics Mission	
(b) FRIB Technical Conceptual Approach	
(c) User Research Community	
Criterion 2 – Appropriateness of the Proposed Method/Approach	30
(a) Project Management	
(b) Suitability of the Proposed Site	
Criterion 3 – Competency of Applicant’s Personnel/Proposed Resources	25
(a) Management Team	
(b) Organizational Structure	
(c) Relevant Experience	
 Total Weights	 100

Within Criterion 1, sub-criteria (a) and (b) are more important than (c). The sub-criteria within each of the remaining criteria are approximately equal in importance.

Criterion 4- Reasonableness, Realism, and Appropriateness of the Proposed Budget

In addition to the weighted criteria above, the reasonableness, realism, and appropriateness of the proposed budget will be an important consideration in the evaluation process. Although the evaluation of the proposed budget will not be point scored, it is a substantial criterion in the merit review process, relevant to the evaluation of the other criteria, and will be input into the overall adjectival rating of the proposal.

The proposed budget will be evaluated based on the following factors:

- Is the estimated total project cost range for establishing the proposed FRIB appropriate, complete and sound? Is the basis for the lower limit of the cost range reasonable and justifiable? Are the resources proposed as needed for the total cost of the project dollars broken down into conceptual design, research and development, NEPA associated costs, engineering and design, construction and pre-operations reasonable and justifiable?
- Is the estimated total project cost in escalated “Then Year” dollars of the FRIB to DOE within the total amount of funds available? Is the basis of cost estimates reasonable and sound?
- Are the direct and indirect costs/burdens on the project reasonable, and are they accurately captured in the project costs provided?
- Have appropriate labor efforts been costed to the project?
- Have appropriate and adequate procurements been costed to the project?
- Are the applied escalation rates for the project costs reasonable and justifiable?
- Is the contingency analysis methodology risk-based and appropriate, and is the resulting level of cost and schedule contingency adequate for a project at this stage of development?
- Is the plan for acquiring and preparing the space to house the FRIB appropriate and cost-effective?
- Is the strategy for development of funding for the FRIB including, but not limited to, proposed cost sharing (if any) and non-DOE funding sound and appropriate? Although cost-sharing in itself is not evaluated here, the assumptions made about cost sharing and how it impacts the overall costing of the project will be assessed. Are the proposed costs associated with maintenance, and upgrades of existing facilities proposed for use as FRIB facilities necessary to ensure an equivalent life and operational reliability to that of a new FRIB justifiable?
- Are the estimated operating budget and life-cycle costs appropriate and reasonable for the proposed FRIB?

3. Other Selection Factors

a. The Selection Official will consider the following program policy factor in the selection process:

- The magnitude, robustness and impact of any cost-sharing and other commitments as further described in PART III, Section B.

b. Conflict of Interest Management Plan

A Conflict of Interest Management Plan will be reviewed for completeness and adequacy.

During the merit review, the Applicant may be requested to provide additional information pertaining to their Organizational Conflict of Interest Plan.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria codified at 10 CFR Part 605.10(d) as set forth in Part V.A.2. of this FOA. DOE may, as part of the merit review process, schedule face-to-face meetings between representatives of one or more Applicant(s) and members of the merit review panel, in order that the panel members may receive clarifications or additional information to their questions about the contents of the most meritorious applications.

2. Selection

The Selection Official will consider the merit review recommendation, Federal official's review, program policy factors, and the amount of funds available. As part of the selection process, DOE reserves the right to seek clarifications or additional information in writing from those applications deemed to have the highest scientific merit in order to facilitate the selection process.

3. Discussions and Award

The Government may enter into discussions with a selected Applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the Applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

DOE anticipates notifying Applicants selected for award by December 31, 2008 and making awards in Fiscal Year 2009, subject to appropriated funds.

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify the Applicant selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.) Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

If the selected Applicant is a non-FFRDC, a Notice of Financial Assistance Award issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE; 4. DOE assistance regulations at 10 CFR Part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances To Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist and Instructions, which identifies the reporting requirements.

If the selected Applicant is a DOE/NNSA FFRDC contractor, DOE will fund the DOE/NNSA FFRDC contractor through the DOE field work authorization system.

DOE/NNSA FFRDC contractors participating as team members will be funded directly by DOE through the DOE field work authorization system.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants and cooperative agreements made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://management.energy.gov/business_doe/business_forms.htm. The National Policy Assurances To Be Incorporated As Award Terms are located at DOE http://management.energy.gov/business_doe/business_forms.htm.

3. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/financial_assistance_awards.htm.

4. Statement of Substantial Involvement

Either a cooperative agreement or DOE field work authorization may be awarded under this program announcement. If the award is a cooperative agreement, the DOE Contract Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

5. DOE Subaward Consent

DOE reserves the right to require the awardee to obtain written approval of the Contracting Officer prior to placement of any subaward(s).

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. See the Office of Science Financial Assistance Program Page at <http://www.sc.doe.gov/grants> for information on reporting requirements that may be required if a cooperative agreement is awarded. In addition, for informational purposes, DOE anticipates requiring at least quarterly reports for purposes of tracking schedule, costs, and performance to ensure implementation of appropriate project controls. However, DOE reserves the right to negotiate reporting requirements after selection but prior to award.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the “Submit Question” feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the “Submit Question” button. Enter required information. Those asking a question will receive an electronic notification that their question has been answered. DOE/NNSA will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Due to the time required to conduct research and provide complete and accurate answers to questions, DOE is requesting that all questions be submitted through IIPS no later than 12 noon Eastern Time on 07/03/08. DOE will not be responsible for responding to questions submitted after the designated time on 07/03/08.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE/NNSA cannot answer these questions.

B. AGENCY CONTACTS

Name: Chadsey Kittock
Email: Chadsey.Kittock@ch.doe.gov
Fax: 630-252-5045

Name: Christopher Swierczek
Email: Christopher.Swierczek@ch.doe.gov
Fax: 630-252-5045

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the Applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the Applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this Applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the Applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of Applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The Applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

User Facility Class Waiver.

DOE may issue a class waiver for activities to be conducted at the User Facility to be constructed under this FOA. The class waiver will set forth how Users will take title to all or part of the rights in inventions conceived or first actually reduced to practice in performance of work at the User Facility. The intellectual property rights set forth in the class waiver will be reflected in a user agreement established by the User Facility.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. REAL PROPERTY

With respect to the use, management, and disposition of all real property, 10 CFR Part 600.132 shall be applicable to cooperative agreements with institutions of higher education, hospitals, and other nonprofit organizations; 10 CFR Part 600.321 shall be applicable to cooperative agreements with for-profit organizations; and it is anticipated that the terms and conditions of the respective management and operating contract shall apply to awards to DOE FFRDC contractors.

J. ENVIRONMENTAL, SAFETY AND HEALTH AND REGULATORY REQUIREMENTS.

The Office of Science (SC) requires the FRIB start-up and operation to have the same integrity and to be as state-of-the-art as the science that is expected to result from the research at the facility. Applications to site the FRIB, therefore, should demonstrate that consideration of ES&H risks and issues is an integral component of the early planning for this facility. Early identification of ES&H risks and issues can alleviate problems that can affect people and the environment, as well as affect the cost, schedule and management of the FRIB from the start of construction through their research operation of the facility. SC, therefore, will consider ES&H criteria, as described in Part V.A.2.Criterion 2 (b) among its merit review criteria. This will provide a measure of the capability of the Applicant in providing for sound ES&H planning as part of the project. SC requires that its state-of-the-art research facilities “start clean and stay clean” with respect to ES&H.

The Department of Energy requires the recipient to remain in full compliance with all applicable Federal, State, and local environmental, safety and health rules, regulations, and requirements through all phases of construction and operation of this facility. The Department of Energy requires that the recipient maintain an environment, safety and health management system for overseeing the risks and hazards associated with the construction and operation of this facility in pursuit of preventing the occurrence of death, and/or minimizing occupational injury and illness, property damage, and negative environmental impacts.

The recipient will be required to maintain a comprehensive fire and related hazards protection program sufficient to minimize the potential for: (1) the occurrence of a fire or related event; (2) a fire that causes an unacceptable on-site or off-site release of hazardous or radiological material that will threaten the health and safety of employees, the public, or the environment; and (3) DOE programs suffering unacceptable interruptions as a result of fire and related hazards. DOE activities shall be conducted in facilities characterized by a sufficiently high level of fire protection to fulfill requirements for insurability by private industrial fire insurance companies who limit their underwriting to the best protected class of industrial risks. This includes meeting the building code of the authority having jurisdiction and National Fire Protection Association Codes and Standards, or exceeding them.

K. AVAILABILTY OF FUNDS

Funds are not presently available for this award. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this award and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

APPENDICES/REFERENCE MATERIAL

Reference Material

The Frontiers of Nuclear Science, DOE/NSF Nuclear Science Advisory Committee, December 2007 Long Range Plan. <http://www.sc.doe.gov/np/nsac/nsac.html>

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Four Years Later: An Interim Report on Facilities for the Future of Science: A Twenty-Year Outlook, August 2007. <http://www.science.doe.gov>