

## **ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY**

### **EXECUTIVE SUMMARY**

Federal Agency Name: U.S. Nuclear Regulatory Commission

Funding Opportunity Title: U.S. Nuclear Regulatory Commission Nuclear Education Grant Program Announcement of Opportunity, Fiscal Year 2009.

Type of Award Instrument/Announcement Type: Grants.  
Initial Announcement – HR-FN-1008-EDU3.

Topics: Catalog of Federal Domestic Assistance (CFDA) Number: 77.006

Dates: The U.S. Nuclear Regulatory Commission (NRC) strongly encourages applicants to submit letters of intent prior to submitting full proposals. NRC must receive letters of intent by 5 p.m. (ET) on Monday, November 10, 2008. Applicants who submit letters of intent will receive notification either inviting or not inviting full proposal submission by Friday, December 5, 2008. NRC must receive full proposal submissions by 5 p.m. (ET) on Monday, January 12, 2009. NRC will not consider letters of intent or proposals received after their respective submission deadlines for this funding opportunity.

Proposal Submission: Applicants are strongly encouraged to submit letters of intent prior to submitting full proposals. Proposals preceded by a letter of intent will be given priority by the NRC. Applicants who we invite to submit proposals should follow the guidance in the announcement for the format, content, length, and review criteria for full proposals.

Funding Opportunity Description: The NRC Nuclear Education Grant Program's primary purpose is supporting and developing the educational infrastructure necessary to allow the Nation to safely move its nuclear energy initiatives forward. The program promotes and strengthens teaching programs in nuclear safety, nuclear security, nuclear environmental protection, and other fields that the Commission determines to be critical to the NRC's regulatory mission by enhancing curricula and increasing faculty teaching competencies at higher education institutions. The NRC anticipates having up to \$4.7 million available for this announcement.

Projects may develop, revise, implement, or improve nuclear education infrastructure, teaching competencies, subject matter expertise, and skills in serving students in significant nuclear programs. Projects should identify innovative instructional approaches or techniques to enhance student learning, including distance education and experiential learning. Emphasis may be on developing stand-alone modules or entire courses of study, curricula, individual courses, and teaching materials. Projects may include limited acquisitions of equipment directly associated with implementing new curricula or programs. Curriculum development projects may create teaching resources such as course materials and teaching guides on specific nuclear topics. Materials may use print or electronic formats, however NRC cannot fund preparing or publishing traditional textbooks. Projects must have an academic focus within the areas of nuclear safety, nuclear security, nuclear environmental protection, or the other fields the Commission determines to be critical to the NRC's regulatory mission.

NRC is prohibited from supporting some types of activities under this announcement including, but not limited to: research projects, fellowships, scholarships, courses on public policy related

to nuclear power utilization, large-scale computer equipment acquisitions, preparing or publishing textbooks, or activities by institutions other than U.S. accredited institutions of higher education as defined in Section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002).

The NRC currently supports curriculum development in the following technical areas:

#### Nuclear Engineering

- Criticality safety courses for nuclear professionals
- Thermal-hydraulics model development
- Reactor physics
- Nuclear power plant safety
- Nuclear power plant design and operations (including operating and emergency operating procedures)
- Fuel performance
- Fluid flow transport

#### Health Physics

- Health physics modeling
- Dosimetry and measurements
- Radioactive transport
- Radiochemistry and radio biology
- Environmental transport, dissolution, and migration
- Decontamination and decommissioning
- Reprocessing, recycle chemistry, and technology courses

#### Materials and Mechanical Engineering

- Welding principles, and nondestructive examination (NDE) technology
- Management of aging plants (components and systems)
- Material corrosion
- Reliability and risk analysis

#### Electrical Engineering

- Power generation and distribution or electrical components
- Digital instrumentation and control systems

#### Safeguards and Security

- Material control and accounting courses
- Vulnerability analysis

#### Human Factors and Human Reliability

- Human factors modeling
- Applied-experimental psychology, specializing in human performance and human factors

#### Fire Protection Engineering

- Fire Modeling for Fuel Cycle Facilities
- Fire Modeling for Nuclear Power Plants

## **ANNOUNCEMENT TEXT**

### **I. Funding Opportunity Description**

#### **A. Program and Notice Objective**

The U.S. Nuclear Regulatory Commission (NRC) is an independent agency, established by the Energy Reorganization Act of 1974, tasked with licensing and regulating the Nation's civilian use of byproduct, source, and special nuclear material to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.

The Energy Policy Act of 2005 authorized the NRC Nuclear Education Grant Program to support courses, studies, training, curricula, and disciplines pertaining to nuclear safety, nuclear security, nuclear environmental protection, and other fields that the Commission determines to be critical to the NRC's regulatory mission. The NRC Nuclear Education Grant Program's primary purpose is supporting and developing the educational infrastructure necessary to allow the Nation to safely move its nuclear energy initiatives forward.

The NRC currently supports curriculum development in the following technical areas:

#### **Nuclear Engineering**

- Criticality safety courses for nuclear professionals
- Thermal-hydraulics model development
- Reactor physics
- Nuclear power plant safety
- Nuclear power plant design and operations (including operating and emergency operating procedures)
- Fuel performance
- Fluid flow transport

#### **Health Physics**

- Health physics modeling
- Dosimetry and measurements
- Radioactive transport
- Radiochemistry and radio biology
- Environmental transport, dissolution, and migration
- Decontamination and decommissioning
- Reprocessing, recycle chemistry, and technology courses

#### **Materials and Mechanical Engineering**

- Welding principles, and nondestructive examination (NDE) technology
- Management of aging plants (components and systems)
- Material corrosion
- Reliability and risk analysis

#### **Electrical Engineering**

- Power generation and distribution or electrical components
- Digital instrumentation and control systems

### Safeguards and Security

- Material control and accounting courses
- Vulnerability analysis

### Human Factors and Human Reliability

- Human factors modeling
- Applied-experimental psychology, specializing in human performance and human factors

### Fire Protection Engineering

- Fire Modeling for Fuel Cycle Facilities
- Fire Modeling for Nuclear Power Plants

### B. Program Authority: 42 U.S.C. 2051 (b)

### II. Award Information

#### A. Funding Availability

The NRC anticipates having up to \$4.7 million available for this announcement. The agency's final FY09 appropriation determines the actual amount of available funding. Publishing this announcement does not obligate NRC to fund any specific projects or to obligate any or all of its available funds. There is no guarantee that sufficient funds will be available to initiate or continue grant activities where we recommend funding. The exact amount of funds that NRC may recommend to be granted is determined in pre-award negotiations between the applicant and NRC representatives. Future opportunities for submitting proposals may be available and depend on NRC's funding levels.

#### B. Project Award Period

Project periods may be for up to 3 years in duration. Funds will be provided on an annual basis. Funding beyond the first year of the grant is contingent upon satisfactory progress during the preceding year and availability of funds. Successful awardees must submit full proposals for renewal funding each year. The earliest start date for awards is approximately June 1, 2009. Please consider selection and processing time when proposing activities.

#### C. Types of Funding Instrument

Under the terms of this notice, NRC funds awards through grants.

### III. Eligibility Information

#### A. Eligible Applicants

Eligible applicants are regionally accredited U.S. public and private institutions of higher education as defined in Section 102 of the Higher Education Act of 1965 (20 USC 1002). Federal agencies are not eligible to receive Federal assistance under this announcement.

#### B. Cost Sharing or Matching Requirements

Cost sharing is not required.

## IV. Letter of Intent and Proposal Submission Information

We strongly encourage that you submit letters of intent prior to submitting proposals. E-mail letters of intent to [edu-grants@nrc.gov](mailto:edu-grants@nrc.gov) with a subject line that includes the institution's name. NRC does not accept facsimile or hard-copy submissions. Applicants may submit as many letters of intent as they wish.

### A. Content and Format of Letters of Intent and Full Proposals

#### 1. Letter of Intent Content

Applicants are strongly encouraged to submit letters of intent prior to submitting proposals. NRC uses letters of intent to help guide applicants to success and to keep them from investing resources in proposals that have a low probability of success. After we review the letters of intent, we will either invite or not invite applicants to submit full proposals. Proposals preceded by a letter of intent will be given priority.

#### 2. Required Elements for Letters of Intent:

Format: Write letters of intent using an 8.5 x 11-inch format with 11 pt. Arial font and 1-inch margins.

#### B. Contents: Letter of Intent must contain:

- The focus area (i.e., Nuclear Engineering, Health Physics, Materials and Mechanical Engineering, Electrical Engineering, Safeguards and Security, or Human Factors).
- The total amount of funding requested (include a one-page budget with a description of general costs associated with the project implementation).
- A list of all Principal Investigators involved in the project and all associated Universities and Colleges.
- Two-page maximum project description. This description should summarize the proposed project, expected output or product, project goals or impact, explain how the project will address course and curricula development, improvement, and/or training.
- Subject line of e-mail must contain the institution's name.

#### 3. Full Proposal Content

All submissions require full proposals. You may download full proposal submission packages from [www.grants.gov](http://www.grants.gov).

#### 4. Required Elements for Full Proposals

Develop full proposals using an 8.5 x 11-inch format, with 11 pt. Arial font, and 1-inch margins. Adobe PDF format is preferred. Each page should include a page number and the Principal Investigator's last name in the bottom right-hand corner. You must include the following in your full proposal submission, packaged in the order listed.

A. Maximum half-page Executive Summary:

Describe the proposed project's essential elements.

- State the project title.
- List the names, contact details, and affiliations of each investigator who will significantly contribute to the project.
- List all collaborators names, contact details, and affiliations.
- Include the project's total funding request.
- Provide a concise statement of the projects objectives and benefits.

B. Project Description:

- Identify innovative instructional approaches or techniques to enhance student learning, including distance, educational, and experiential learning.
- Describe how the proposed project will improve the education infrastructure, teaching competencies, subject matter expertise, and skills in serving students in the target disciplines.
- State the project's academic focus within the nuclear safety, nuclear security, nuclear environmental protection or any other stated areas. Projects may develop, revise, implement, or improve nuclear education infrastructure, teaching competencies, subject matter expertise, and skills in serving students in significant nuclear programs.
- Identify the project's innovative instructional approaches or techniques to enhance student learning, including distance education and experiential learning.
- Discuss if the project's emphasis is on developing stand-alone modules or entire courses of study, curricula, individual courses, and teaching materials.
- Describe the institution's capability and capacity to implement the proposed project and long-term ability to sustain the project.
- Include quantifiable criteria for demonstrating that the program is successful.

Keep the project description to 15 pages or less, including text, tables, and visual materials (e.g., charts, graphs, maps, photographs). The 15-page limit does not include the:

- Executive Summary
- Budget and Budget Narrative
- Literature Citation
- Current and Pending Support
- Curriculum Vitae, Letters of Commitment
- Summary of Results from Past NRC Funding
- Summary of Relevant Current Funding Support
- Past NRC Funding
- Other required forms.

C. Summary of Results from Past NRC Funding (if applicable):

Applicants must provide a concise summary of results and achievements from any past NRC funding.

D. Summary of Relevant Current Funding Support:

Applicants must provide information on all their current and pending Federal support for ongoing projects and proposals, including potential subsequent funding in the case of continuing grants. Include the proposed project and all other projects or activities using Federal assistance or that require a portion of time of the principal investigator or other senior personnel. Describe the relationship between the proposed project and these other projects and state the number of person-months per year to be devoted to the projects.

E. Resumes:

Include a two-page maximum resume for each Principal and Co-Principal Investigator involved in carrying out the proposal, including recent relevant publication references.

F. Detailed Budget Justification:

All applications must have a detailed budget narrative explaining and justifying the Federal and the non-Federal expenditures. List all expenditures using the same object class categories on SF-424A, Section B (Budget Category).

For clarification and simplicity, discuss each expense by object class in the order that they appear on the SF424A. Include the dollar amounts in the discussion and how the dollar amounts were derived. Include detailed descriptions of all cost justifications (see website <http://www.nrc.gov/about-nrc/grants/budget-justification.pdf> for more detail).

Additionally, provide any cost sharing or matching cost details in a separate budget narrative. Separate budgets within the single proposal must be provided if more than one funding action is anticipated (e.g., if funds are to be allocated to more than one institution through subcontracts).

Make sure that the budget narrative you submit with the application exactly matches the dollar amounts on all required forms, i.e. SF424 and SF424A.

G. Forms:

The following forms are required:

- SF 424 – Application for Federal Assistance - CFDA Number 77.006
- SF 424A – Budget Information fill out Section A and B
- SF 424B – Assurances
- SF LLL – Disclosure of Lobbying Activities (if you participate in lobbying activities)

B. Submission Dates and Times

Letters of Intent:

Submit letters of intent by e-mail to [edugrants@nrc.gov](mailto:edugrants@nrc.gov), so that they are received by Monday, November 10, 2008. Applicants who submit letters of intent will be notified by Friday, December 5, 2008, that they are either invited or not invited to submit a full proposal. Proposals for which a letter of intent was submitted will be given priority. NRC will not consider materials received after the submission deadline. If you have not received a reply by Monday, December 8, 2008, e-mail a query to [edugrants@nrc.gov](mailto:edugrants@nrc.gov).

Submit full proposals via [www.grants.gov](http://www.grants.gov), so that they are received by 5 p.m. (ET) Monday, January 12, 2009. Grants.gov provides a date and time receipt indication with your submission that NRC uses to determine timeliness. NRC does not accept facsimile transmissions or electronic mail submissions of full proposals.

### C. Intergovernmental Review

Proposals under this program are not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs."

### D. Funding Restrictions

No special restrictions apply.

### E. Procedures and Addresses for Letter of Intent and Proposal Submission

#### 1. Letters of Intent

NRC only accepts letter of intent submissions by e-mail at [edugrants@nrc.gov](mailto:edugrants@nrc.gov). Please put your institution's name in the subject line. Adobe PDF format is preferred. NRC does not accept facsimile or hard copies of letters of intent.

**Note 1: Letters of intent or full proposals received after their respective deadlines will not be considered.**

**Note 2: NRC has determined that grant funds awarded under this authority may not be used for the renovation or refurbishment of research, education, or extension space; or the planning, repair, rehabilitation, acquisition, or construction of buildings or facilities (i.e., laboratories or other structures).**

#### 2. Full Proposals

NRC only accepts full proposals through [http://www.grants.gov/applicants/apply\\_for\\_grants.jsp](http://www.grants.gov/applicants/apply_for_grants.jsp)

### V. Proposal Review Information

#### A. General:

NRC evaluates each proposal using a two-part process. First, each application is screened to ensure that it meets the administrative requirements set forth in this Request for Application. Second, proposals meeting the administrative requirements are technically evaluated by a review panel. NRC selects reviewers based upon education and experience in relevant scientific, technical, or academic fields, taking into account the following factors: (a) the level of the individual's relevant formal scientific, technical, or academic experience, as well as the



extent to which the individual is engaged in relevant scientific, technical, or academic activities; (b) the need to include as reviewers experts from various specialization areas within relevant scientific, technical, or academic fields; (c) the need to include as reviewers other experts who can assess relevance of the applications to targeted audiences and to program needs; (d) the need to include as reviewers experts from a variety of organization types (e.g., colleges, universities, professional, industry, state and private profit and nonprofit organizations), and geographic locations. Both Federal and non-Federal experts in the field may be used in this process.

#### B. Letter of Intent Evaluation Criteria:

The NRC decides whether to invite or not invite full proposal submissions based on the likelihood of the project supporting or advancing courses, studies, training, curricula, and disciplines pertaining to nuclear safety, nuclear security, nuclear environmental protection, and other fields that the Commission has determined to be critical to the NRC's regulatory mission and on the nature of the proposed activities. Applicants who are invited to submit full proposals make the final decision whether or not to submit full proposals.

#### C. Full Proposal Criteria:

NRC evaluates and rates full proposals using both Federal and non-Federal experts in the field. The following criteria are used to review proposals using the corresponding weighted value:

1. Potential for Supporting or Advancing the Nuclear Safety, Nuclear Security, or Nuclear Environmental Protection Educational Infrastructure, and other fields that the Commission determines to be critical to the NRC's regulatory mission (50 points).

The NRC uses this criterion to assess the likelihood of the project supporting or advancing courses, studies, training, curricula, and disciplines pertaining to nuclear safety, nuclear security, or nuclear environmental protection. Some of the elements we consider include institutional long-range goals, identification of problems or opportunities to be addressed, project justification, innovation, and effectiveness in advancing the educational infrastructure necessary to allow the Nation to safely move its nuclear energy initiatives forward.

2. Proposed Approach and Collaborative Linkages (20 points).

This criterion, related to the soundness of the proposed approach, assesses objectives, methodology, operating plan, timetable, expected products and results, evaluation, and dissemination plans. Emphasis is placed on the quality of educational support provided to the applicant institution through its partnerships and collaborative initiative, and on the potential cooperative linkages likely to evolve as a result of this project.

3. Institutional Capability and Capacity Building (20 points).

This criterion addresses the institution's capability to perform the project and the degree to which the project will strengthen its course offerings, curriculum, or teaching capacity. Elements include the institution's commitment to the project, the adequacy of institutional resources (administrative, facilities, equipment, or materials) available to carry out the project, academic enhancement potential, and plans to continue or expand the project beyond the NRC support period.

#### 4. Key Personnel (5 points).

This criterion relates to the adequacy of the number and qualifications of key persons developing and carrying out the project, and the qualification of project personnel assessing project results and disseminating findings.

#### 5. Budget and Cost-Effectiveness (5 points).

This criterion relates to the extent to which the total budget adequately supports the project and is effective. Elements considered include the necessity and reasonableness of costs to carry out project activities and achieve project objectives; the appropriateness of budget allocations between the applicant and any collaborating institution(s); the adequacy of time committed to the project by key project personnel; and the degree to which the project maximizes the use of limited resources, optimizes educational value for the dollar, achieves economies of scale, and focuses expertise and activity on high priority educational or research need areas.

#### D. Review and Selection Process

After receiving full proposals, NRC conducts an initial administrative review to determine that the proposal is complete and complies with the announcement's requirements. Proposals that are complete and compliant are next peer-reviewed and rated using the evaluation criteria and point values provided above. Both Federal and non-Federal experts in their fields may be used in this process. Individual peer reviewers' scores are averaged to produce a rank order to present to the selecting official. The selecting official generally makes awards in rank order unless other factors require making an award out of rank order. Principal Investigators may be asked to modify objectives, work plans or budget levels, or provide supplemental information required by the agency prior to the award.

The NRC keeps names of submitting institutions and individuals, as well as application content and peer evaluations confidential, except to those involved in the review process, to the extent permitted by law. Peer reviewers' identities also remain confidential throughout the entire review process and are not released.

#### E. Selection Factors

The selecting official generally makes awards in rank order. Some awards may be made out of rank order based on one or more of the following factors:

- Availability of funding.
- Balance and distribution of funds to:
  - support geographic diversity
  - diversity in disciplines
- Whether this project duplicates other projects NRC is funding or considering funding.
- Program priorities and policy factors.
- Needs that the Commission determines to be critical to the NRC's regulatory mission.

#### F. Anticipated Dates of Award Announcement

NRC notifies all applicants of the final recommendation to award or decline funding of proposals via e-mail. Successful applicants receive written notification from the NRC's Grant Officer that

their proposals have been funded. Official funding notification, signed by NRC's Grant Officer, is the authorizing document that allows NRC to begin funding the project. NRC issues notifications via fax or U.S. mail directly to the proposing institutions' authorizing officials.

## VI. Award Administration Information

### A. Award Notices

Successful applicants may be asked to modify objectives, work plans, or budgets prior to final award approval. The pre-award negotiations between the applicant and the NRC determine the exact amount of funds awarded, the final scope of activities, the collaboration duration, and specific NRC cooperative involvement in the activities of each partnership. Do not initiate any project activities until a notice of award document is received from the NRC Grant Officer.

### B. Administrative and National Policy Requirements

The NRC general provisions for grants awarded to institutions of higher education and other nonprofit organizations contain the administrative and national policy requirements for all NRC awards. NRC Terms and Conditions can be found on our website at: <http://www.nrc.gov/about-nrc/grants/terms-and-conditions.pdf>.

The link to 2 CFR Part 215, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education" can be found at:

[http://nascsp.org/documents/DenesTobie\\_Fiscal1012CFRPart215-A-110circular.pdf](http://nascsp.org/documents/DenesTobie_Fiscal1012CFRPart215-A-110circular.pdf) and OMB Circular A-21, "Cost Principles for Educational Institutions" can be found at: <http://www.whitehouse.gov/omb/circulars/a021/a021.html>.

The National Environmental Policy Act (NEPA) of 1969, as amended: "As defined in Sec. 42 USC 4321, this is an educational grant program for which there are no significant individual or cumulative environmental effects, as determined by the NRC in its 73 Fed. Reg. 34050." This finding will be updated and published for FY2009 before awards are made under this announcement.

### C. Limitation of Liability

The NRC is not responsible for any proposal costs if agency priorities cause it to cancel this program prior to awarding any grants. Publishing this announcement does not obligate NRC to award any specific project.

### D. Reporting

Progress reports are due semiannually and cover 6-month periods beginning with the project's start date. Submit progress reports electronically directly to the NRC Grant Officer and Program Manager no later than 30 days after each 6-month project period. A final report is due no later than 90 days after the award expiration date. Progress reports must detail activities that have occurred during the reporting period that correspond with the goals and objectives identified in the narrative, as well as provide specific, project-related information.

Financial Status Reports (SF-269) are due on a semiannual basis for the periods ending March 31 and September 30, or any portion thereof, unless otherwise specified in a special award

condition. Reports are due no later than 30 days following the end of each reporting. A final SF-269 shall be submitted within 90 days after expiration of the award.

#### VII. Agency Contacts

Contact: For further information contact:

Technical Questions: Randi Neff, U.S. NRC, at 301-492-2301, or by e-mail at [Randi.Neff@nrc.gov](mailto:Randi.Neff@nrc.gov)

Financial Questions: Kathleen Shino, U.S. NRC, at 301-492-3636, or by e-mail at [Kathleen.Shino@nrc.gov](mailto:Kathleen.Shino@nrc.gov)

#### VIII. Other Information

None.