

**U.S. NUCLEAR REGULATORY COMMISSION
NOTICE OF GRANT/ASSISTANCE AWARD**

1. GRANT/AGREEMENT NO. NRC-38-10-985		2. MODIFICATION NO.		3. PERIOD OF PERFORMANCE FROM: 7/1/2010 TO: 6/30/2011		4. AUTHORITY Pursuant to Section 31b and 141b of the Atomic Energy Act of 1954, as amended	
5. TYPE OF AWARD <input checked="" type="checkbox"/> GRANT <input type="checkbox"/> COOPERATIVE AGREEMENT		6. ORGANIZATION TYPE Public State-Controlled Institution of Higher ED DUNS: 072051394		7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS Purdue University 155 South Grant Street Tippecanoe, Indiana 47907-2114			
8. PROJECT TITLE: Development of a Curriculum in Nuclear Power Plant Safety, Reliability and Risk Analysis							
9. PROJECT WILL BE CONDUCTED... PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED See Program Description AND APPENDIX A-PROJECT GRANT PROVISIONS		10. TECHNICAL REPORTS ARE REQUIRED <input checked="" type="checkbox"/> PROGRESS AND FINAL <input type="checkbox"/> FINAL ONLY <input type="checkbox"/> OTHER (Conference Proceedings)		11. PRINCIPAL INVESTIGATOR(S) NAME, ADDRESS and EMAIL ADDRESS Purdue University Attn: Shripad Revankar Email: Shripad@ecn.purdue.edu 765-496-1782			
12. NRC PROGRAM OFFICE (NAME and ADDRESS) NRC Attn: Randi Neff Office of Human Resources MS: GW5A6 (301) 492-2301 11545 Rockville Pike Rockville, Maryland 20852		13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200 B&R NO: 0-8415-5C1116 JOB CODE: T8453 BOC NO: 4110 OFFICE ID NO: RFPA: HR-10-985		14. METHOD OF PAYMENT <input type="checkbox"/> ADVANCE BY TREASURY CHECK <input type="checkbox"/> REIMBURSEMENT BY TREASURY CHECK <input type="checkbox"/> LETTER OF CREDIT <input checked="" type="checkbox"/> OTHER (SPECIFY) Electronic ASAP.gov (See Remarks in Item #20 "Payment Information")			
15. NRC OBLIGATION FUNDS THIS ACTION \$120,000 PREVIOUS OBLIGATION TOTAL \$120,000		16. TOTAL FUNDING AGREEMENT NRC \$120,000 RECIPIENT TOTAL \$120,000 This action provides funds for Fiscal Year in the amount of See Page Two					
17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Sheila Bumpass Mail Stop: TWB-01-B10M Rockville MD 20852							
18. Signature Not Required				19. NRC CONTRACTING OFFICER <div style="text-align: right;"><i>Sheila Bumpass</i> 7/1/2010 (Signature) (Date) NAME (TYPED) Sheila Bumpass TITLE Contracting Officer TELEPHONE NO. 301-492-3484</div>			
20. PAYMENT INFORMATION Payment will be made through the Automated Standard Application for Payment (ASAP.gov) unless the recipient has failed to comply with the program objectives, award conditions, Federal reporting requirements or other conditions specified in 2 CFR 215 (OMB Circular A110).							
21. Attached is a copy of the "NRC General Provisions for Grants and Cooperative Agreements Awarded to Non-Government Recipients. Acceptance of these terms and conditions is acknowledged when Federal funds are used on this project.							
22. ORDER OF PRECEDENCE In the event of a conflict between the recipient's proposal and this award, the terms of the Award shall prevail.							
23. By this award, the Recipient certifies that payment of any audit-related debt will not reduce the level of performance of any Federal Program.							

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

ADM002

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to the "Development of a Curriculum in Nuclear Power Plant Safety, Reliability and Risk Analysis" as described in Attachment B entitled "Program Description."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is July 1, 2010. The estimated completion date of this Grant is June 30, 2011.

2. Funds obligated hereunder are available for program expenditures for the estimated period: July 1, 2010 – June 30, 2011.

A. GENERAL

1. Total Estimated NRC Amount:	\$120,000
2. Total Obligated Amount:	\$120,000
3. Cost-Sharing Amount:	\$0
4. Activity Title:	Development of a Curriculum in Nuclear Power Plant Safety, Reliability and Risk Analysis
5. NRC Project Officer:	Randi Neff
6. DUNS No.:	072051394

B. SPECIFIC

RFPA No.:	HR-10-985
FFS:	N/A
Job Code:	T8453
BOC:	4110
B&R Number:	0-8415-5C1116
Appropriation #:	31X0200
Amount Obligated:	\$120,000

A.3 BUDGET

Revisions to the budget shall be made in accordance with Revision of Grant Budget in accordance with 2 CFR 215.25.

	Year 1
Direct Participant Cost	\$80,555.00
Indirect Cost	<u>\$39,445.00</u>
Yearly Total	\$120,000.00

All travel must be in accordance with the Purdue University Travel Regulations or the US Government Travel Policy absent Grantee's travel regulation.

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$120,000 for one year period.

2. NRC hereby obligates the amount of \$120,000 for program expenditures during the period set forth above and in support of the Budget above. The Grantee will be given written notice by the Contracting Officer when additional funds will be added. NRC is not obligated to reimburse the Grantee for the expenditure of amounts in excess of the total obligated amount.

3. Payment shall be made to the Grantee in accordance with procedures set forth in the Automated Standard Application For Payments (ASAP) Procedures set forth below.

Attachment B – Program Description

Development of a Curriculum in Nuclear Power Plant Safety, Reliability and Risk Analysis

1. Introduction

Purdue University's School of Nuclear Engineering has been a champion of nuclear engineering education, training, and research for over 50 years. It has maintained an independent department in the Purdue University College of Engineering since its inception in 1960 offering initially MS and PhD degrees. A full undergraduate program was instituted in 1973 and the department became the School of Nuclear Engineering in 1974 in recognition of its conferring BS and MS and Ph.D. degrees in Nuclear Engineering. The School has maintained a strong nuclear engineering program with curriculum covering all the traditional nuclear engineering areas including neutronics, radiation detection and measurement, shielding, reactor design, nuclear materials, fuels, fuel cycle, nuclear waste management, fusion, thermal hydraulics, and reactor safety. Over the years these courses have been updated. The School's core research areas have traditionally been thermal hydraulics, neutronics and radiation measurement and detection. Purdue University School of Nuclear Engineering is one of the few Nuclear Engineering programs that have a research reactor. The Purdue University Reactor, named as PUR-1, has been in operation since the inception of the school. Recently PUR-1 fuel elements were changed to low enrichment fuel. The reactor is currently undergoing a power up-rate from 1 kW to 1 OkW.

Thanks to the current rejuvenated interest in nuclear engineering, the school is experiencing an unprecedented increase in enrollment and interest in undergraduate programs. In response to this and recent developments in the nuclear industry and government agencies, the school is developing new focus areas in research and education, particularly in radiation detection, nuclear proliferation, plasma fusion and fusion materials, fuel cycle and waste management, nuclear hydrogen generation, GEN IV reactor designs, and advanced reactors.

The undergraduates in the College of Engineering at Purdue University enter the professional schools during their sophomore year. The freshmen year is common for all engineering students. A typical plan of study (POS) for a BS in Nuclear Engineering is shown in Table 1. In Table 1, the numbers in the parentheses for each course show the credit hours. While the Nuclear Engineering curriculum includes comprehensive coverage of the concepts related to basic nuclear engineering, radiation, thermal hydraulics, reactor physics, and materials, the important topic of nuclear power plant safety and related topics such as risk and reliability are not covered through regular course work and not even as short topics in existing courses. Every undergraduate student in Purdue's Nuclear Engineering program has been required to take two radiation detection laboratory courses (NUCL 205 and NUCL 305), and a power plant systems course (NUCL 402), which provide adequate background on radiation, radiation detection, and nuclear plant system description. However, the current curriculum does not address nuclear power plant safety, risk, and reliability.

Recent power upgrade and re-licensing efforts in nuclear plants require thorough understanding of the reliability, risk, and safety of the plant. Risk assessment methods based on probabilistic methods have led to a considerable change in safety philosophy. As a result, passive safety systems have evolved in advanced reactor designs such as GEN IV. These recent advances require substantial improvement in current nuclear engineering education curricula. The Purdue nuclear engineering program graduates about ten percent of all BS nuclear engineers graduating in the U.S. It is of paramount importance that this deficiency in the current curriculum be addressed. In view of this need, the Purdue Nuclear Engineering faculty and staff propose to develop a series of courses on the topics of nuclear power plant safety, and reliability and risk analysis. It is proposed to develop undergraduate and graduate level courses in each of these areas along with online courses for distance learning and for training.

2. Aims and Objectives

The aim of the proposed project is to develop new curriculum on power plant safety, risk, and reliability. Specifically, the objectives are: (i) Develop undergraduate level courses in nuclear power plant safety and probabilistic risk assessment (PRA); (ii) Develop graduate level courses in nuclear power plant safety and PRA; (iii) Develop video courses and short lectures on nuclear power plant safety and PRA; (iv) Develop online undergraduate courses and graduate courses in nuclear power plant safety and PRA. The impact of these courses could be increased by collaboration with other nuclear-related programs whose students would also benefit from the material presented. We plan to collaborate with Prof. Rob Stewart of the Health Physics program at Purdue University and Prof. Jason Harris at Idaho State University who are also working on curriculum development. We will make all or parts of our courses

available to their students to enhance their curricula. This effort will be complimentary and synergistic.

3. Approach and Methods

It is proposed to develop both undergraduate and graduate level courses on nuclear power plant safety, risk and reliability during two-year period. The proposed components of this portion of the curriculum are listed in Table 2. The courses planned are one undergraduate course on nuclear power plant safety and one on PRA. These two undergraduate courses will complement the courses that are currently taught in radiation detection, nuclear thermal hydraulics, power plant systems, and materials for the undergraduate. The undergraduate courses will be developed and offered during the first year of the proposed project. It is planned that the courses will be developed during the fall semester of 2010 and offered for the first time spring semester of 2011.

The second year plans include development of graduate courses, online courses for undergraduate and graduates students, short courses and the video course. In addition, in the second year we will assess the first year's undergraduate courses' outcomes and modify the courses as necessary before offering them in the spring of 2012. The graduate courses, one each on nuclear power plant safety and PRA, will be developed to provide advanced methods of analyzing reactor plant safety in normal, abnormal and severe accident scenarios and to evaluate the reliability of plant systems and associated risks. These graduate level courses open up avenues for MS and PhD students to pursue research and careers in the integrated application of plant safety and risk studies.

The following tasks have been identified for the first year.

Task 1 Project Initiation: The project is initiated with assignment of tasks between the PI and Co-PI and identifying undergraduate students to participate in the project.

Task 2 Literature Search: A thorough survey of the existing courses in Nuclear Power Plant Safety, Risk and Reliability Analysis and PRA is carried out. The course structure and syllabus are first developed, and then the material required for the course development is collected.

Task 3 Course Material Preparation: The preparation of course material is carried out under this task. This includes development of course notes, quizzes and homework assignments, solutions to homework and class power point slides.

Task 4 Online Course Preparation: Here the PI and Co-PI will undergo training on the tools and software for online course development with the help of Purdue University Continuing Education Distance Learning Center.

Task 5 Introduction of Courses as technical electives for Spring 2011: During fall 2010 the courses Introduction to Nuclear Power Plant Safety and Introduction to PRA are listed as technical elective courses available to be offered in Spring 2011 semester to undergraduate seniors and juniors from engineering and science areas. The courses are offered as 3 credit technical elective courses for the first time during Spring semester 2011. The courses will be available to juniors and seniors from nuclear engineering as well to students from other engineering and sciences colleges with nuclear background. The existing Purdue University blackboard vista platform will be used for instruction.

Task 6 Evaluate and Analyze the Courses: An initial assessment is performed on the courses by using student feedback and comments. Both courses will be evaluated on their effectiveness and impact using the student feedback and their comments on course evaluation sheets administered through Purdue University.

Task 7 Develop preparatory materials for online Course Material: The online course material is prepared with the help of Purdue University Continuing Education Distance Learning Center. Both online courses, Introduction to Nuclear Power Plant Safety and Introduction to PRA, will be advertised for offering in Summer 2012 through Purdue University Continuing Education Distance Learning Center.

Task 8 Planning for Curriculum Development for Graduate Courses: Based on the experience of the undergraduate courses and the students' feedback, plans will be developed for graduate level courses on Nuclear Power Plant Safety and PRA.

Task 9 Final Report: The final report on the course work is prepared that highlights the course objectives, contents, course valuation and sustainability assessment.

Table 2. Curriculum in Nuclear Power Plant Safety and Risk and Reliability Analysis

<i>Type of Material development</i>	<i>Undergraduate level Course Title (tentative)</i>	<i>Graduate Level</i>
Course on Nuclear Power Plant Safety	NUCL 300 series Introduction to Nuclear Power Plant Safety (Junior or for Senior)	NUCL 500/NUCL 600 series Advanced Nuclear Power Plant Safety
Courses on PRA	NUCL 300 series	NUCL 500/ NUCL 600 series

	Introduction to PRA (Junior or for Senior)	PRA Methods
Online Courses	Online NUCL 300 level Introduction to Nuclear Power Plant Safety; Video courses and short lectures on nuclear power plant safety	Online NUCL 500 Course Advanced Nuclear Power Plant Safety
Online Courses	Online NUCL 300 series Introduction to PRA; Video courses and short lectures on PRA	Online NUCL 500 Course Advanced PRA

4. Course Structures

Both the courses, Introduction to Nuclear Power Plant Safety and Introduction to PRA, will be designed as 3 credit courses. The three credit courses have three classroom lectures per week of one hour duration. The instructor for the course has an additional three hours of office time dedicated to the course where students can seek help and discuss course-related material with the instructor. The courses will have clearly defined course objectives which will be used in developing the course content. For example, for the course Introduction to Nuclear Power Plant Safety, the following (tentative) course objectives are defined:

Course Objectives for course Introduction to Nuclear Power Plant Safety:

1. Understand basic principles behind nuclear reactor safety
2. Review current commercial light water reactor safety systems and their workings
3. Develop understanding of the engineering and physical principles of a reactor safety systems.
4. Lead and perform qualitative analysis and quantitative calculations based on engineering and physical principles for safety systems
5. Understand reactor safety system and design limits in advanced reactor systems
6. Enhance systematic problem solving skills and sharpen written communication skills through a short technical project report.

To inform development of the course content and the course syllabus, existing similar courses at different institutions are examined and reviewed. Based on the course objectives and the state-of-the-art in the subject area, the course syllabus is developed. Then the syllabus is cast into 44 lectures. A textbook or books and reference books will be identified to match the course content. During course development class notes will be prepared as handouts to students. The course will include weekly

homework assignments. There will be at least one mid term exam and one comprehensive final examination to evaluate students' performance on the course. In addition, there will be one team project. Teams of 3-4 students will each complete a project on chosen topic related to reactor safety systems or components and submit a report

5. Course assessment

Every nuclear engineering course is assessed by the students each time it is taught. Results of the assessment are reported to the instructor and to the Head of the School of Nuclear Engineering. Weaknesses identified in each course are expected to be addressed in the next course offering. The assessment instrument includes a standard set of questions. In addition, the instructor can ask a set of questions specific to his or her course. The course evaluations will be used in assessing learning objectives and concerns of the students.

6. Course Outcome and Impact for undergraduate courses proposed for first year:

Outcomes from the Course on Nuclear Power Plant Safety: Students must be able to: (i) identify safety systems and their functions during normal operation, transients and accidents in LWR plants, (ii) perform first order safety analysis during postulated accidents, and (iii) develop reports on the safety analysis of a power plant

Outcomes from the Course on PRA: Students must be able to: (i) estimate system failure probability using fault tree analysis, (ii) estimate accident frequency using event tree analysis, (iii) understand effects of human error and external events on risk, and (iv) propagate uncertainties through some simple models.

7. Innovative Approach

The proposed plan for curriculum development involves an innovative approach that blends classroom and online instruction. This will enhance student learning for students on campus and those at a distance. Fortunately Purdue University has unique tools and facilities to implement this plan. The 300 level courses, Introduction Nuclear Power Plant Safety and Introduction to PRA, will be developed along with parallel online courses that are offered for distance learning. Purdue University Continuing Education Distance Learning Center provides tools and support to develop and offer distance learning courses. Through the help of this center the courses first developed for the classroom will be adapted into the

online course. The development of online courses involves the following steps.

(A) *Analysis*: while designing course content, analysis is performed from both the instructor's and learner's point of view. This involves analysis of essential traits for an instructor to be effective .. A successful online student will have the following traits: (i) The online student is willing to commit a significant amount of time to his or her studies weekly and does not see the course as the "softer, easier way." (ii) The online student has access to a computer and modem, or high-speed connection; and the skills to use them. (iii) The online student is open-minded about sharing personal details about his or her life, work, and other educational experiences in written format. (Palloff, R, & Pratt, K. 2003. The virtual student. San Francisco, CA: Jossey-Bass.)

(B) *Design*: The online course interface is designed such that the course embodies both Web design principles and instructional design principles. Purdue has web based online tools such as WebCT and Blackboard which will be used for this purpose.

(C) *Development*: For this Purdue University Instructional Development Center (IDC) consulting and training staff support is sought.

(D) *Implementation*: That includes actual online teaching with tips from IDC.

(E) *Evaluation*: A evaluation rubric is used to clarify expectations and evaluation methods. Purdue faculty members developing distance courses can use this rubric as a guideline for their course design and development. They can also perform self-assessment using the rubric, prior to the completion of course development.

8. Time Line of Activates for First Year

The overall project period is for two years. For the first year the proposed curriculum development and implementation plans are given in Table 3, where the tasks identified and deliverables are listed.

Table 3. Project Schedule and Tasks

Period	Tasks	Deliverables/Remarks
06/01/10-08/31/10	(1) Project initiation, (2) Literature search and relevant course material collection for Nuclear Power Plant Safety and Risk and Reliability Analysis	7/15/2010 Quarterly Federal Financial Report submitted
09/01/10-11/30/10	(3) Introduction to Nuclear Power Plant Safety and Introduction PRA Course materials preparation (4) Train and practice on web tools for online course development (5) List Introduction to Nuclear Power Plant Safety and Introduction PRA Course as tech elective courses at the	10/15/2010 Quarterly Federal Financial Report submitted 10/15/2010 Semi-Annually Performance Report

	NUCL 300 level as part of the Nuclear Engineering curriculum	submitted
12/01/10-02/28/11	(5) Offer the courses Introduction to Nuclear Power Plant Safety and Introduction PRA Courses as tech elective for Spring 2011 semester for junior and senior students	01/15/2011 Quarterly Federal Financial Report submitted
03/01/11-05/31/11	(5) Offer courses for Spring 2011 semester as tech electives (continued) (6) Evaluate and Analyze the courses offered using feedback (7) Development of preparatory tools for online course material for both courses and advertise the course for summer 2012 offering (8) Planning for Second Year curriculum development for graduate courses on Nuclear Power Plant Safety and PRA	01/15/2011 Quarterly Federal Financial Report submitted 4/15/2011 Semi-Annually Performance Report submitted
06/01/11-07/31/11	(9) Final report on the course performance including course evaluation and sustainability assessment	7/15/2011 A Final Performance Progress Report (SF-PPR, B and E) and Federal Financial Report (SF-425)

9. Proposed Projects Broader Objectives in Purdue Education Infrastructure and Service

As described in the Introduction section, the current Purdue University School of Nuclear Engineering curriculum does not address nuclear power plant safety, risk, and reliability. Given recent power upgrades, re-licensing efforts, and new generation reactor design and licensing efforts, risk informed licensing and design process have been adopted by the Nuclear Regulatory Commission (NRC) and Department of Energy (Sorensen, J. N., Apostolakis, G. E., Kres, T. S., and Powers, D. A., "On the Role of Defense in Depth in Risk-Informed Regulation," *Proceedings of PSA '99, International*

Topical Meeting on Probabilistic Safety Assessment, pp. 408-413, Washington, DC, August 22 -26, 1999, American Nuclear Society, La Grange Park, Illinois). For example, NRC is developing a new risk informed licensing process for future reactors. The DOE NERAC goals address reliable reactivity control and decay heat removal. The combination of defense in depth and risk-based safety philosophies are now considered in the design and licensing process of new reactors. This important aspect must be brought into the nuclear engineering curriculum. This is the main objective of this project. Hence it is proposed to develop a series of courses on the topics of nuclear power plant safety, and reliability and risk analysis. Thus the academic focus of the project is Nuclear Engineering Power Plant Safety, Reliability, and Risk Assessment.

The proposed courses will provide the nuclear engineering students with a thorough understanding of the reliability, risk, and safety of the plant. This will be substantial improvement in current nuclear engineering education curricula. The Purdue nuclear engineering program graduates about ten percent of all BS nuclear engineers graduating in the U.S. Hence it is important that we include the Nuclear Engineering Power Plant Safety, Reliability, and Risk Assessment topics in the curriculum. The proposed courses under this project will complement the learning of the existing courses specifically, NUCL 300, NUCL 310, NUCL 350, NUCL 351, NUCL 402, and NUCL 450 (please refer Table 1 for course descriptions). It is planned to develop graduate courses on Nuclear Engineering Power Plant Safety, Reliability, and Risk Assessment, because graduate students have an interest in this area. The new courses will also help faculty who are conducting research in this area.

Purdue University Health Physics Department together with Idaho State University is developing radiation health physics curriculum. The courses developed here will be made available for the students from the Health Physics Department. The planned online courses and the short lecture and video courses will be useful for distance learning for students from other institutions. This will help broaden the scope of the current educational objectives of the Purdue University School of Nuclear Engineering to support synergistic educational missions.

10. Purdue Capability to Implement the Proposed Project

Purdue University has well-established processes to implement and assess new curriculum and courses. The School of Nuclear Engineering evaluates its curriculum on yearly basis. The curriculum is reviewed and assessed each year through accreditation process directed by the Accreditation Board for Engineering and Technology (ABET) and North Central Association of Colleges and Schools (NCA) programs. The Faculty Affairs Committee at the College of Engineering will process the proposed courses once the Curricular Committee of the School of Nuclear Engineering introduced them.

During the fall of 2010 the courses will be introduced with temporary course numbers. The courses will be offered during Spring 2011 semester as technical elective courses available to junior or senior students from nuclear engineering, and other engineering and science departments. Once a course is offered two or three times with a temporary number, the course can be made permanent with a permanent course number. It is expected that all nuclear engineering students will enroll in these courses as they relate to and enhance learning in other required courses in nuclear engineering. In addition, the students from health physics who currently take some of nuclear engineering radiation related courses are expected to enroll in these two courses.

11. Project Sustainability

The proposed undergraduate and graduate courses will be integrated into the existing curriculum for the School of Nuclear Engineering at Purdue University. All of the materials needed to teach the courses will be prepared under the NRC grant.

Sustaining the project requires only that the courses be offered, which is highly likely. A process for offering new, experimental courses with very minimal administrative impediments is in place and ensures that the new course can be implemented quickly. In addition, a streamlined process for converting an experimental course to a permanent one exists, and the Nuclear Engineering faculty members are familiar with it. Student enrollment in the School of Nuclear Engineering, both at the undergraduate and graduate levels, is near an all-time high, and many students have expressed an interest in courses on nuclear power plant safety and reliability and risk analysis. In addition, the School of Nuclear Engineering at Purdue has been authorized to hire new faculty members when most universities are cutting staff, and at least two current faculty members are interested in teaching courses in the areas covered by this project. Thus, we will have the faculty to teach the courses. Once the course materials are complete, no additional financial resources will be required to sustain the courses. Both courses have continued interests by several faculty members of the school.

Several members of the School of Nuclear Engineering faculty have strong research programs in nuclear power plant safety. There is further interest in developing research programs in risk and reliability of power plants. Thus there is a student body who will be taking these courses and there is a faculty resource to offer these courses regularly in the coming years.

Attachment C – Standard Terms and Conditions

The Nuclear Regulatory Commission's Standard Terms and Conditions for U.S. Nongovernmental Grantees

Preface

This award is based on the application submitted to, and as approved by, the Nuclear Regulatory Commission (NRC) under the authorization 42 USC 2051(b) pursuant to section 31b and 141b of the Atomic Energy Act of 1954, as amended, and is subject to the terms and conditions incorporated either directly or by reference in the following:

- Grant program legislation and program regulation cited in this Notice of Grant Award.
- Restrictions on the expenditure of Federal funds in appropriation acts, to the extent those restrictions are pertinent to the award.
- Code of Federal Regulations/Regulatory Requirements - 2 CFR 215 Uniform Administrative Requirements For Grants And Agreements With Institutions Of Higher Education, Hospitals, And Other Non-Profit Organizations (OMB Circulars), as applicable.

To assist with finding additional guidance for selected items of cost as required in 2 CFR 220, 2 CFR 225, and 2 CFR 230 these URLs to the Office of Management and Budget Cost Circulars are included for reference:

A-21 (now 2CFR 220): <http://www.whitehouse.gov/omb/circulars/a021/print/a021.html>
A-87 (now 2CFR 225): <http://www.whitehouse.gov/omb/circulars/a087/print/a087-all.html>
A-122 (now 2CFR 230): <http://www.whitehouse.gov/omb/circulars/a122/print/a122.html>
A-102, SF 424: <http://www.whitehouse.gov/omb/circulars/a102/print/a102.html>
Form 990: <http://www.irs.gov/pub/irs-pdf/i990-ez.pdf>

Any inconsistency or conflict in terms and conditions specified in the award will be resolved according to the following order of precedence: public laws, regulations, applicable notices published in the Federal Register, Executive Orders (EOs), Office of Management and Budget (OMB) Circulars, the Nuclear Regulatory Commission's (NRC) Mandatory Standard Provisions, special award conditions, and standard award conditions.

By drawing funds from the Automated Standard Application for Payment system (ASAP), the recipient agrees to the terms and conditions of an award.

Certifications and representations. These terms incorporate the certifications and representations required by statute, executive order, or regulation that were submitted with the SF424B application through Grants.gov.

I. Mandatory General Requirements

The order of these requirements does not make one requirement more important than any other requirement.

1. Applicability of 2 CFR Part 215

a. All provisions of 2 CFR Part 215 and all Standard Provisions attached to this grant/cooperative agreement are applicable to the Grantee and to sub-recipients which meet the definition of "Grantee" in Part 215, unless a section specifically excludes a sub-recipient from coverage. The Grantee and any sub-recipients must, in addition to the assurances made as part of the application, comply and require each of its sub-awardees employed in the completion of the project to comply with Subpart C of 2 CFR 215 Part 180 and include this term in lower-tier (subaward) covered transactions.

b. Grantees must comply with monitoring procedures and audit requirements in accordance with OMB Circular A-133. <

http://www.whitehouse.gov/omb/circulars/a133_compliance/08/08toc.aspx >

2. Award Package

Grant Performance Metrics:

The Office of Management and Budget requires all Federal Agencies providing funding for educational related funding to report on specific metrics. These metrics are part of the Academic Competitiveness Council's (ACC) 2007 report and specifically relates to Science, Technology, Engineering, and Mathematics (STEM) curricula.

As part of the FY 2010 HR curriculum development grant awards, in addition to the customary performance progress report requested on the SF-PPR, SF-PPR-B, and SF-PPR-E forms, HR requires the following metrics to be reported on by the awardees as follows:

1. Overall number of new courses developed in NRC designated STEM areas;
2. Number of students enrolled in new STEM courses;
3. Number of these enrolled students retained in STEM major.

§ 215.41 Grantee responsibilities.

The Grantee is obligated to conduct such project oversight as may be appropriate, to manage the funds with prudence, and to comply with the provisions outlined in 2 CFR 215.41. Within this framework, the Principal Investigator (PI) named on the award face page, Block 11, is responsible for the scientific or technical direction of the project and for preparation of the project performance reports. This award is funded on a cost reimbursement basis not to exceed the amount awarded as indicated on the face page, Block 16., and is subject to a refund of unexpended funds to NRC.

The standards contained in this section do not relieve the Grantee of the contractual responsibilities arising under its contract(s). The Grantee is the responsible authority, without recourse to the NRC, regarding the settlement and satisfaction of all contractual and administrative issues arising out of procurements entered into in support of an award or other agreement. This includes disputes, claims, protests of award, source evaluation or other matters of a contractual nature. Matters concerning violation of statute are to be referred to such Federal, State or local authority as may have proper jurisdiction.

Subgrants

Appendix A to Part 215—Contract Provisions

Sub-recipients, sub-awardees, and contractors have no relationship with NRC under the terms of this grant/cooperative agreement. All required NRC approvals must be directed through the Grantee to NRC. See 2 CFR 215.180 and 215.41.

Nondiscrimination

(This provision is applicable when work under the grant/cooperative agreement is performed in the U.S. or when employees are recruited in the U.S.)

No U.S. citizen or legal resident shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity funded by this award on the basis of race, color, national origin, age, religion, handicap, or sex. The Grantee agrees to comply with the non-discrimination requirements below:

Title VI of the Civil Rights Act of 1964 (42 USC §§ 2000d et seq)

Title IX of the Education Amendments of 1972 (20 USC §§ 1681 et seq)

Section 504 of the Rehabilitation Act of 1973, as amended (29 USC § 794)

The Age Discrimination Act of 1975, as amended (42 USC §§ 6101 et seq)

The Americans with Disabilities Act of 1990 (42 USC §§ 12101 et seq)

Parts II and III of EO 11246 as amended by EO 11375 and 12086.

EO 13166, "Improving Access to Services for Persons with Limited English Proficiency."

Any other applicable non-discrimination law(s).

Generally, Title VII of the Civil Rights Act of 1964, 42 USC § 2000e et seq, provides that it shall be an unlawful employment practice for an employer to discharge any individual or otherwise to discriminate against an individual with respect to compensation, terms, conditions, or privileges of employment because of such individual's race, color, religion, sex, or national origin.

However, Title VII, 42 USC § 2000e-1(a), expressly exempts from the prohibition against

discrimination on the basis of religion, a religious corporation, association, educational institution, or society with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities.

Modifications/Prior Approval

NRC prior written approval may be required before a Grantee makes certain budget modifications or undertakes particular activities. If NRC approval is required for changes in the grant or cooperative agreement, it must be requested of, and obtained from, the NRC Grants Officer in advance of the change or obligation of funds. All requests for NRC prior approval must be made, in writing (which includes submission by e-mail), to the designated Grants Specialist and Program Office no later than 30 days before the proposed change. The request must be signed by both the PI and the authorized organizational official. Failure to obtain prior approval, when required, from the NRC Grants Officer may result in the disallowance of costs, termination of the award, or other enforcement action within NRC's authority.

Lobbying Restrictions

The Grantee will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

The Grantee shall comply with provisions of 31 USC § 1352. This provision generally prohibits the use of Federal funds for lobbying in the Executive or Legislative Branches of the Federal Government in connection with the award, and requires disclosure of the use of non-Federal funds for lobbying.

The Grantee receiving in excess of \$100,000 in Federal funding shall submit a completed Standard Form (SF) LLL, "Disclosure of Lobbying Activities," regarding the use of non-Federal funds for lobbying within 30 days following the end of the calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed. The Grantee must submit the SF-LLL, including those received from sub-recipients, contractors, and subcontractors, to the Grants Officer.

§ 215.13 Debarment And Suspension.

The Grantee agrees to notify the Grants Officer immediately upon learning that it or any of its principals:

- (1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;
- (2) Have been convicted within the preceding three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

(3) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b); and

(4) Have had one or more public transactions (Federal, State, or local) terminated for cause or default within the preceding three years.

b. The Grantee agrees that, unless authorized by the Grants Officer, it will not knowingly enter into any subgrant or contracts under this grant/cooperative agreement with a person or entity that is included on the Excluded Parties List System (<http://epls.arnet.gov>).

The Grantee further agrees to include the following provision in any subgrant or contracts entered into under this award:

'Debarment, Suspension, Ineligibility, and Voluntary Exclusion

The Grantee certifies that neither it nor its principals is presently excluded or disqualified from participation in this transaction by any Federal department or agency. The policies and procedures applicable to debarment, suspension, and ineligibility under NRC-financed transactions are set forth in 2 CFR Part 180.'

Drug-Free Workplace

The Grantee must be in compliance with The Federal Drug Free Workplace Act of 1988. The policies and procedures applicable to violations of these requirements are set forth in 41 USC 702.

Implementation of E.O. 13224 -- Executive Order On Terrorist Financing

The Grantee is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the Grantee to ensure compliance with these Executive Orders and laws. This provision must be included in all contracts/sub-awards issued under this grant/cooperative agreement.

Award Grantees must comply with Executive Order 13224, Blocking Property and Prohibiting Transactions with Persons who Commit, Threaten to Commit, or Support Terrorism. Information about this Executive Order can be found at: www.fas.org/irp/offdocs/eo/eo-13224.htm.

Procurement Standards. § 215.40

Sections 215.41 through 215.48 set forth standards for use by Grantees in establishing procedures for the procurement of supplies and other expendable property, equipment, real property and other services with Federal funds. These standards are furnished to ensure that such materials and services are obtained in an effective manner and in compliance with the provisions of applicable Federal statutes and executive orders. No additional procurement standards or requirements shall be imposed by the Federal awarding agencies upon Grantees, unless specifically required by Federal statute or executive order or approved by OMB.

Travel

Travel is an appropriate charge to this award and prior authorization for specific trips are not required, as long as the trip is identified in the Grantee's original program description and original budget. All other travel, domestic or international, must not increase the total estimated award amount. Trips that have not been identified in the approved budget require the written prior approval of the Grants Officer.

Travel will be in accordance with the US Government Travel Regulations at: www.gsa.gov/federaltravelregulation and the per diem rates set forth at: www.gsa.gov/perdiem.

Travel costs to the grant must be consistent with provisions as established in Appendix A to 2 CFR 220 (J.53)

Property Management Standards

Property standards of this award shall follow provisions as established in 2 CFR 215.30.

Equipment procedures shall follow provision established in 2 CFR 215.34.

Procurement Standards

Procurement standards of this award shall follow provisions as established in 2 CFR 215.40.

Intangible and Intellectual Property

Intangible and intellectual property of this award shall generally follow provisions established in 2 CFR 215.36.

Inventions Report - The Bayh-Dole Act (P.L. 96-517) affords Grantees the right to elect title and retain ownership to inventions they develop with funding under an NRC grant award ("subject inventions"). In accepting an award, the Grantee agrees to comply with applicable NRC policies, the Bayh-Dole Act, and its Government-wide implementing regulations found at Title 37, Code of Federal Regulations (CFR) Part 401. A significant part of the regulations require that the Grantee report all subject inventions to the awarding agency (NRC) as well as include an acknowledgement of federal support in any patents. NRC participates in the trans-government Interagency Edison system (<http://www.iedison.gov>) and expects NRC funding Grantees to use this system to comply with Bayh-Dole and related intellectual property reporting requirements. The system allows for Grantees to submit reports electronically via the Internet. In addition, the invention must be reported in continuation applications (competing or non-competing).

Patent Notification Procedures- Pursuant to EO 12889, NRC is required to notify the owner of any valid patent covering technology whenever the NRC or its financial assistance Grantees, without making a patent search, knows (or has demonstrable reasonable grounds to know) that technology covered by a valid United States patent has been or will be used without a license from the owner. To ensure proper notification, if the Grantee uses or has used patented technology under this award without license or permission from the owner, the Grantee must notify the Grants Officer. This notice does not necessarily mean that the Government authorizes and consents to any copyright or patent infringement occurring under the financial assistance.

Data, Databases, and Software - The rights to any work produced or purchased under a NRC federal financial assistance award are determined by 2 CFR 215.36. Such works may include data, databases or software. The Grantee owns any work produced or purchased under a NRC federal financial assistance award subject to NRC's right to obtain, reproduce, publish or otherwise use the work or authorize others to receive, reproduce, publish or otherwise use the data for Government purposes.

Copyright - The Grantee may copyright any work produced under a NRC federal financial assistance award subject to NRC's royalty-free nonexclusive and irrevocable right to reproduce,

publish or otherwise use the work or authorize others to do so for Government purposes. Works jointly authored by NRC and Grantee employees may be copyrighted but only the part authored by the Grantee is protected because, under 17 USC § 105, works produced by Government employees are not copyrightable in the United States. On occasion, NRC may ask the Grantee to transfer to NRC its copyright in a particular work when NRC is undertaking the primary dissemination of the work. Ownership of copyright by the Government through assignment is permitted under 17 USC § 105.

Records retention and access requirements for records of the Grantee shall follow established provisions in 2 CFR 215.53.

Organizational Prior Approval System

In order to carry out its responsibilities for monitoring project performance and for adhering to award terms and conditions, each Grantee organization shall have a system to ensure that appropriate authorized officials provide necessary organizational reviews and approvals in advance of any action that would result in either the performance or modification of an NRC supported activity where prior approvals are required, including the obligation or expenditure of funds where the governing cost principles either prescribe conditions or require approvals.

The Grantee shall designate an appropriate official or officials to review and approve the actions requiring NRC prior approval. Preferably, the authorized official(s) should be the same official(s) who sign(s) or countersign(s) those types of requests that require prior approval by NRC. The authorized organization official(s) shall not be the principal investigator or any official having direct responsibility for the actual conduct of the project, or a subordinate of such individual.

Conflict Of Interest Standards of this award shall follow provisions as established in 2 CFR 215.42 Codes of Conduct.

Dispute Review Procedures

- a. Any request for review of a notice of termination or other adverse decision should be addressed to the Grants Officer. It must be postmarked or transmitted electronically no later than 30 days after the postmarked date of such termination or adverse decision from the Grants Officer.
- b. The request for review must contain a full statement of the Grantee's position and the pertinent facts and reasons in support of such position.
- c. The Grants Officer will promptly acknowledge receipt of the request for review and shall forward it to the Director, Office of Administration, who shall appoint a review committee consisting of a minimum of three persons.
- d. Pending resolution of the request for review, the NRC may withhold or defer payments under the award during the review proceedings.
- e. The review committee will request the Grants Officer who issued the notice of termination or adverse action to provide copies of all relevant background materials and documents. The committee may, at its discretion, invite representatives of the Grantee and the NRC program office to discuss pertinent issues and to submit such additional information as it deems appropriate. The chairman of the review committee will insure that all review activities or proceedings are adequately documented.

f. Based on its review, the committee will prepare its recommendation to the Director, Office of Administration, who will advise the parties concerned of his/her decision.

Termination and Enforcement. Termination of this award by default or by mutual consent shall follow provisions as established in 2 CFR 215.60.

Monitoring and Reporting § 215.51

a. Grantee Financial Management systems must comply with the established provisions in 2 CFR 215.21

- Payment – 2 CFR 215.22
- Cost Share – 2 CFR 215.23
- Program Income – 2 CFR 215.24
 - Earned program income, if any, shall be added to funds committed to the project by the NRC and Grantee and used to further eligible project or program objectives.
- Budget Revision – 2 CFR 215.25
 - In accordance with 2 CFR 215.25(e), the NRC waives the prior approval requirement for items identified in sub-part (e)(1-4).
 - The Grantee is not authorized to rebudget between direct costs and indirect costs without written approval of the Grants Officer.
 - Allowable Costs – 2 CFR 215.27

b. Federal Financial Reports

Effective October 1, 2008, NRC transitioned from the SF-269, SF-269A, SF-272, and SF-272A to the Federal Financial Report (SF-425) as required by OMB:

http://www.whitehouse.gov/omb/fedreg/2008/081308_ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr_instructions.pdf

The Grantee shall submit a "Federal Financial Report" (SF-425) on a quarterly basis, for the periods ending 3/31, 6/30, 9/30 and 12/31, 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 period. A final SF-425 shall be submitted within 90 days after expiration of the award.

Period of Availability of Funds 2 CFR § 215.28

a. Where a funding period is specified, a Grantee may charge to the grant only allowable costs resulting from obligations incurred during the funding period and any pre-award costs authorized by the NRC.

b. Unless otherwise authorized in 2 CFR 215.25(e)(2) or a special award condition, any extension of the award period can only be authorized by the Grants Officer in writing. Verbal or written assurances of funding from other than the Grants Officer shall not constitute authority to obligate funds for programmatic activities beyond the expiration date.

c. The NRC has no obligation to provide any additional prospective or incremental funding. Any modification of the award to increase funding and to extend the period of performance is at the sole discretion of the NRC.

d. Requests for extensions to the period of performance shall be sent to the Grants Officer at least 30 days prior to the grant/cooperative agreement expiration date. Any request for extension after the expiration date shall not be honored.

Automated Standard Application For Payments (ASAP) Procedures

Unless otherwise provided for in the award document, payments under this award will be made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system < <http://www.fms.treas.gov/asap/> >. Under the ASAP system, payments are made through preauthorized electronic funds transfers, in accordance with the requirements of the Debt Collection Improvement Act of 1996. In order to receive payments under ASAP, Grantees are required to enroll with the Department of Treasury, Financial Management Service, and Regional Financial Centers, which allows them to use the on-line method of withdrawing funds from their ASAP established accounts. The following information will be required to make withdrawals under ASAP: (1) ASAP account number – the award number found on the cover sheet of the award; (2) Agency Location Code (ALC) – 31000001; and Region Code. Grantees enrolled in the ASAP system do not need to submit a "Request for Advance or Reimbursement" (SF-270), for payments relating to their award.

Audit Requirements

Organization-wide or program-specific audits shall be performed in accordance with the Single Audit Act Amendments of 1996, as implemented by OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

<http://www.whitehouse.gov/omb/circulars/a133/a133.html> Grantees are subject to the provisions of OMB Circular A-133 if they expend \$500,000 or more in a year in Federal awards.

The Form SF-SAC and the Single Audit Reporting packages for fiscal periods ending on or after January 1, 2008 must be submitted online.

1. Create your online report ID at <http://harvester.census.gov/fac/collect/ddeindex.html>
2. Complete the Form SF-SAC
3. Upload the Single Audit
4. Certify the Submission
5. Click "Submit."

Organizations expending less than \$500,000 a year are not required to have an annual audit for that year but must make their grant-related records available to NRC or other designated officials for review or audit.

III. Programmatic Requirements

Performance (Technical) Reports

a. The Grantee shall submit performance (technical) reports electronically to the NRC Project Officer and Grants Officer as specified in the special award conditions in the same frequency as the Federal Financial Report unless otherwise authorized by the Grants Officer.

b. Unless otherwise specified in the award provisions, performance (technical) reports shall contain brief information as prescribed in the applicable uniform administrative requirements 2 CFR §215.51 which are incorporated in the award.

Unsatisfactory Performance

Failure to perform the work in accordance with the terms of the award and maintain at least a satisfactory performance rating or equivalent evaluation may result in designation of the Grantee as high risk and assignment of special award conditions or other further action as specified in the standard term and condition entitled "Termination".

Failure to comply with any or all of the provisions of the award may have a negative impact on future funding by NRC and may be considered grounds for any or all of the following actions: establishment of an accounts receivable, withholding of payments under any NRC award, changing the method of payment from advance to reimbursement only, or the imposition of other special award conditions, suspension of any NRC active awards, and termination of any NRC award.

Other Federal Awards With Similar Programmatic Activities

The Grantee shall immediately provide written notification to the NRC Project Officer and the Grants Officer in the event that, subsequent to receipt of the NRC award, other financial assistance is received to support or fund any portion of the program description incorporated into the NRC award. NRC will not pay for costs that are funded by other sources.

Prohibition Against Assignment By The Grantee

The Grantee shall not transfer, pledge, mortgage, or otherwise assign the award, or any interest therein, or any claim arising thereunder, to any party or parties, banks, trust companies, or other financing or financial institutions without the express written approval of the Grants Officer.

Site Visits

The NRC, through authorized representatives, has the right, at all reasonable times, to make site visits to review project accomplishments and management control systems and to provide such technical assistance as may be required. If any site visit is made by the NRC on the premises of the Grantee or contractor under an award, the Grantee shall provide and shall require his/her contractors to provide all reasonable facilities and assistance for the safety and convenience of the Government representative in the performance of their duties. All site visits and evaluations shall be performed in such a manner as will not unduly delay the work.

IV. Miscellaneous Requirements

Criminal and Prohibited Activities

- a. The Program Fraud Civil Remedies Act (31 USC §§ 3801-3812), provides for the imposition of civil penalties against persons who make false, fictitious, or fraudulent claims to the Federal government for money (including money representing grant/cooperative agreements, loans, or other benefits.)
- b. False statements (18 USC § 287), provides that whoever makes or presents any false, fictitious, or fraudulent statements, representations, or claims against the United States shall be subject to imprisonment of not more than five years and shall be subject to a fine in the amount provided by 18 USC § 287.

- c. False Claims Act (31 USC 3729 et seq), provides that suits under this Act can be brought by the government, or a person on behalf of the government, for false claims under federal assistance programs.
- d. Copeland "Anti-Kickback" Act (18 USC § 874), prohibits a person or organization engaged in a federally supported project from enticing an employee working on the project from giving up a part of his compensation under an employment contract.

American-Made Equipment And Products

Grantees are hereby notified that they are encouraged, to the greatest extent practicable, to purchase American-made equipment and products with funding provided under this award.

Increasing Seat Belt Use in the United States

Pursuant to EO 13043, Grantees should encourage employees and contractors to enforce on-the-job seat belt policies and programs when operating company-owned, rented or personally-owned vehicle.

Federal Employee Expenses

Federal agencies are generally barred from accepting funds from a Grantee to pay transportation, travel, or other expenses for any Federal employee unless specifically approved in the terms of the award. Use of award funds (Federal or non-Federal) or the Grantee's provision of in-kind goods or services, for the purposes of transportation, travel, or any other expenses for any Federal employee may raise appropriation augmentation issues. In addition, NRC policy prohibits the acceptance of gifts, including travel payments for Federal employees, from Grantees or applicants regardless of the source.

Minority Serving Institutions (MSIs) Initiative

Pursuant to EOs 13256, 13230, and 13270, NRC is strongly committed to broadening the participation of MSIs in its financial assistance program. NRC's goals include achieving full participation of MSIs in order to advance the development of human potential, strengthen the Nation's capacity to provide high-quality education, and increase opportunities for MSIs to participate in and benefit from Federal financial assistance programs. NRC encourages all applicants and Grantees to include meaningful participations of MSIs. Institutions eligible to be considered MSIs are listed on the Department of Education website:

<http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html>

Research Misconduct

Scientific or research misconduct refers to the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. It does not include honest errors or differences of opinions. The Grantee organization has the primary responsibility to investigate allegations and provide reports to the Federal Government. Funds expended on an activity that is determined to be invalid or unreliable because of scientific misconduct may result in a disallowance of costs for which the institution may be liable for repayment to the awarding agency. The Office of Science and Technology Policy at the White House published in the Federal Register on December 6, 2000, a final policy that addressed research misconduct. The policy was developed by the National Science and Technology Council (65 FR 76260). The NRC requires that any allegation be submitted to the Grants Officer, who will also notify the OIG of such allegation. Generally, the Grantee organization shall investigate the allegation and submit its findings to the Grants Officer. The NRC may accept the Grantee's findings or proceed with its own investigation. The Grants Officer shall inform the Grantee of the NRC's final determination.

Publications, Videos, and Acknowledgment of Sponsorship

Publication of the results or findings of a research project in appropriate professional journals and production of video or other media is encouraged as an important method of recording and reporting scientific information. It is also a constructive means to expand access to federally funded research. The Grantee is required to submit a copy to the NRC and when releasing information related to a funded project include a statement that the project or effort undertaken was or is sponsored by the NRC. The Grantee is also responsible for assuring that every publication of material (including Internet sites and videos) based on or developed under an award, except scientific articles or papers appearing in scientific, technical or professional journals, contains the following disclaimer:

"This [report/video] was prepared by [Grantee name] under award [number] from [name of operating unit], Nuclear Regulatory Commission. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the view of the [name of operating unit] or the US Nuclear Regulatory Commission."