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

1. GRANT/AGREEMENT NO.	2. MODIFICATION NO.	3. PERIOD OF PERFORMANCE	4. AUTHORITY
NRC-HQ-11-G-38-0041		FROM: 8/22/2011 TO: 8/31/2012	Pursuant to Section 31b and 141b of the Atomic Energy Act of 1954, as amended

5. TYPE OF AWARD	6. ORGANIZATION TYPE	7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS
[X] GRANT [ ] COOPERATIVE AGREEMENT	Public State-Controlled Institution of Higher ED DUNS: 003137015 NAICS: 611310	Virginia Polytechnic Institute & State University 1880 Pratt Dr, Suite 2006 Blacksburg, VA 24060

8. PROJECT TITLE:

Continued Development of Online Distance Learning Courses for a Nuclear Engineering Master's Degree

9. PROJECT WILL BE CONDUCTED	10. TECHNICAL REPORTS ARE REQUIRED	11. PRINCIPAL INVESTIGATOR(S) NAME, ADDRESS and EMAIL ADDRESS
PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED See Program Description AND APPENDIX A-PROJECT GRANT PROVISIONS	[X] PROGRESS AND FINAL [ ] FINAL ONLY [ ] OTHER (Conference Proceedings)	Virginia Polytechnic Institute & State University Attn: Mark A. Pierson Associate Professor Email: mark.pierson@vt.edu 540-231-9112

12. NRC PROGRAM OFFICE (NAME and ADDRESS)	13. ACCOUNTING and APPROPRIATION DATA	14. METHOD OF PAYMENT
NRC Attn: Tanya Parwani-Jaimes Office of Human Resources MS: GW5A06 (301) 492-2308 11545 Rockville Pike Rockville, Maryland 20852 Email: Tanya.Parwani-Jaimes@NRC.GOV	APPN. NO: 31X0200 B&R NO: 2011-84-51-K-134 JOB CODE: T8453 BOC NO: 4110 OFFICE ID NO: RFPA: HR-11-279 FAIMIS GR006B	[ ] ADVANCE BY TREASURY CHECK [ ] REIMBURSEMENT BY TREASURY CHECK [ ] LETTER OF CREDIT [X] OTHER (SPECIFY) Electronic ASAP.gov (See Remarks in Item #20 "Payment Information")

15. NRC OBLIGATION FUNDS		16. TOTAL FUNDING AGREEMENT		
THIS ACTION	$82,218.00	NRC	$82,218.00	This action provides funds for Fiscal Year in the amount of See Page Two
PREVIOUS OBLIGATION		RECIPIENT		
TOTAL	$82,218.00	TOTAL	$82,218.00	

17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS)

U.S. Nuclear Regulatory Commission
Div. of Contracts
Attn: Shashi Malhotra Email: Shashi.Malhotra@NRC.GOV
Mail Stop: TWB-01-B10M
Rockville MD 20852

18.	19. NRC CONTRACTING OFFICER
Signature Not Required	Sheila Bumpass (Signature) 8/22/11 (Date) NAME (TYPED) Sheila Bumpass TITLE Contracting Officer TELEPHONE NO. 301-492-3484

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 "Continued Development of Online Distance Learning Courses for a Nuclear Engineering Master's Degree: Virginia Polytechnic Institute & State University" as described in Attachment B entitled "Program Description."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is August 22, 2011. The estimated completion date of this Grant is August 31, 2012.

2. Funds obligated hereunder are available for program expenditures for the estimated period: August 22, 2011 – August 31, 2012.

A. GENERAL

1. Total Estimated NRC Amount:	$82,218.00
2. Total Obligated Amount:	$82,218.00
3. Cost-Sharing Amount:	$0
4. Activity Title:	Continued Development of Online Distance Learning Courses for a Nuclear Engineering Master's Degree
5. NRC Project Officer:	Tanya Parwani-Jaimes
6. DUNS No.:	003137015

B. SPECIFIC

RFPA No.:	HR-11-279
FAIMIS:	GR0063
Job Code:	T8453
BOC:	4110
B&R Number:	2011-84-51-K-134
Appropriation #:	31X0200
Amount Obligated:	$82,218.00

A.3 BUDGET

Revisions to the budget shall be made in accordance with Revision of Grant Budget in accordance with

	Year 1
Total Direct Cost	$54,198.00
Indirect Cost	$28,020.00
Yearly Total	**$82,218.00**

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is $82,218.00 for the one-year period.

2. NRC hereby obligates the amount of $82,218.00 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

Continued Development of Online Distance Learning Courses for a Nuclear Engineering Master's Degree

1. Potential for Supporting or Advancing the Nuclear Educational Infrastructure

a. Project's Academic Focus

This project falls under the general focus area of nuclear safety. Within that area, the specific technical categories are:

Nuclear Engineering
- Reactor physics
- Nuclear power plant safety
- Nuclear power plant design and operations (including operating and emergency operating procedures)

This proposal is a request for a one year continuation of grant number NRC-38-10-984. At the end of this previous grant, four online nuclear engineering courses will have been implemented allowing students to complete a Graduate Certificate in Nuclear Engineering entirely in an online format. The next step is to progress toward an online Master's degree. A full online Master's degree in Nuclear Engineering will require seven to eight online courses. However, adding two more courses during this effort will bring us up to six online courses which will put us in reach of achieving a full online Master's degree. This follow-on proposal requests to place two more nuclear engineering courses in an asynchronous online format. These courses are Nuclear Reactor Safety Analysis (technical areas: reactor physics, nuclear power plant safety) and Nuclear Power Plant Systems and Operations (technical areas: nuclear power plant design and operations, nuclear power plant safety).

The following four online courses will already be available prior to start of this follow-on proposal: Nuclear Engineering Fundamentals, Radiation Detection & Shielding, Nuclear Fuel Cycle, and Nuclear Reactor Analysis. Development of the first two courses was paid for by the Provost's Enterprise Fund through our Institute for Distance and Distributed Learning (IDDL). The NRC is helping to support development of the second two courses with continued assistance and support of Virginia Tech's Institute for Distance and Distributed Learning. The third two courses in this follow-on proposal will be developed in a similar manner. Hence, in development of an online nuclear engineering Master's degree, the NRC will be leveraging its

funds with that of Virginia Tech. A support letter from the Institute of Distance and Distributed Learning is provided.

A brief description of the two new additional courses follows:

1) Nuclear Power Plant Systems and Operation

Description: Introduction to pressurized and boiling water reactors, detailed system functions and operation, reactor plant startup and shutdown procedures, reactor trip and casualty procedures, reactor transient response analysis, reactor plant licensing, ethics and integrity in the nuclear industry.

- Introduction to pressurized and boiling water reactors
- Reactor core and nuclear characteristics
- Reactor coolant system and components
- Auxiliary fluid systems
- Engineered safeguards systems
- Turbine generator and related systems
- Plant startup, shutdown, SCRAM, and normal operations
- Casualty procedures, transient and accident response analysis
- Fuel handling system and refueling operations
- Reactor plant licensing, 10CFR50, 10CFR52
- Ethics and integrity in the nuclear industry

Text: The Westinghouse Pressurized Water Reactor Nuclear Power Plant Information Book. Pittsburgh PA: Westinghouse Electric Company LLC, 2006.

Software: Micro-Simulation Technology's Personal Computer Transient Analyzer (PCTRAN) Professional

2) Nuclear Reactor Safety Analysis

Description: Hazards of nuclear reactors; analysis of hypothetical design basis accidents; engineered safeguards and safety design principles; nuclear criticality safety; reactor containment; reactor safety codes; and probabilistic risk assessment.

- Defense in depth, principle of multiple barriers
- Design basis accidents (DBA) and other analyzed events
- Reactor protection and engineered safeguards systems
- Emergency preparedness
- Fire suppression
- Probabilistic risk analysis
    - Safety Goals and Risk-informed Decision Making
    - Categorization by Safety Significance
    - Hazard Identification and Risk Reduction
    - Probabilistic Risk Assessment: PRA
    - Basic and System Event Qualification
    - Human-error Quantification
- Three Mile Island, Chernobyl and other accidents
- Safety assessment codes, licensing, standards, regulation

Text: Kumamoto, H. Satisfying Safety Goals by Probabilistic Risk Assessment. London: Springer, 2007.

Supplemental Text: Bedford, T. & Cooke, R. Probabilistic Risk Analysis: Foundations and Methods. Cambridge: Cambridge University Press, 2001.

b. Project Emphasis

The project's emphasis is on completing an online nuclear engineering Master's degree through development of two additional online nuclear engineering courses. Moreover, we will implement two new venues for the courses: (a) converting the online courses to a DVD flexible-length course format to facilitate access for active duty and veteran military personnel and busy industry personnel and (b) extend our outreach to collaborate with minority serving institutions to expand the impact of this education grant beyond our institution.

c. How Project Will Improve the Educational Infrastructure

There is increased interest in nuclear power due to growing energy needs while at the same time trying to minimize the impact on global warming. By 2035, the projected increase in electricity demand in the United States is 30% [1]. The amount of U.S. electricity generated by nuclear power plants is expected to increase by 11% to meet this demand [1]. One of the challenges of this nuclear renaissance is the workforce crisis. To maintain the current nuclear work force, the industry will need to hire many new engineers to support construction and operation of the new plants. In addition, as the workforce ages, many of them are eligible for retirement. Thus, new engineers will be needed not only for the new plants that may be built but also to account for attrition of a graying workforce.

Virginia Tech responded to the industry's immediate needs by restarting its nuclear engineering program in August 2007 and teaching undergraduate and graduate nuclear engineering courses. Current enrollment for the fall 2010 semester was 213 students. Our graduate student enrollment has peaked at about 40 to 60 students. The majority of the graduate students are located off-campus and are employed in the nuclear industry at various sites within Virginia. Up to now, we have been limited by the number of graduate courses we could offer due to the small number of faculty. We are now in the process of hiring three more nuclear engineering faculty. This will increase the number of courses available. Moreover, moving courses online allows the number of courses to be taught per semester to be increased without increasing the resources required to the same extent. In addition, our nuclear engineering Master's and PhD degrees should be approved by the state next year. This will attract an even larger number of students. Once our courses are online we anticipate expanding the number of students served to over 200 and more. We will have a better feel for the exact numbers next fall when the advertising for online courses kicks in.

The Virginia Tech graduate program in nuclear engineering is currently offered via distance learning across Virginia through the Commonwealth Graduate Engineering Program (CGEP). This includes, as a minimum, the following locations in addition to the Blacksburg campus: Northern Virginia, Richmond, Lynchburg, Danville, Virginia Beach, and the Northrop Grumman Shipbuilding Newport News division VASCIC center. The various sites target employees from AREVA NP, Inc., The Babcock and Wilcox Company, Dominion Generation, Northrop Grumman Newport News Shipyard, and government personnel. Graduate students taking these distance learning offerings can obtain a Master's of Engineering (or Science) in Mechanical Engineering, Electrical Engineering, Systems Engineering, or Civil & Environmental Engineering with a

graduate certificate in Nuclear Engineering. Some industry personnel are only enrolled for the nuclear engineering certificate and will not pursue a Master's degree. We are also in the process of developing a Master's and Ph.D. in Nuclear Engineering expected to be approved by the state in January 2012. At that time, a Master's in Nuclear Engineering will be available via distance learning to the industry using live video teleconferencing. We want to move all of those courses into an online format as well as flexible-length DVD courses.

The nuclear engineering distance learning courses are currently offered via live video teleconferencing to the remote sites. Students therefore need to be available to attend the classes when scheduled. In general, while the classes are recorded for later viewing, students who have an extensive travel schedule or a heavy work load during the week are unable to take these classes. This has limited some employees from taking any kind of graduate course. Even for those who can attend classes, there is significant stress in balancing classroom and homework deadlines with family and work obligations. In addition, we get many frequent requests to transmit the classes to sites that cannot support the high resolution live video teleconferencing or to many other sites out of state. Thus, there is motivation to create an asynchronous or online option for the nuclear engineering Matster's degree. One of the appeals of asynchronous technologies is that learners can access materials, complete assignments, participate in discussions, and take exams according to schedules that they largely determine themselves. In addition, the hypermedia learning environment offers particular advantages to adult learners who are inherently self-directed [2]. Finally, the online, asynchronous nature of this program is in line with the mission of Virginia Tech, a Land Grant university, to fulfill its obligation to meet the needs of citizens who cannot attend classes on campus due to various job obligations or lack of access to an extended campus site.

As indicated above, we are limited to sending live video teleconferencing to a limited number of sites. The students must be geographically available to attend those sites in person. By putting the nuclear engineering courses online and using an asynchronous format, we will be able to market the nuclear engineering courses and a nuclear engineering Master's degree to a much broader audience to include not only the entire Commonwealth of Virginia but also the entire United States. This will rapidly open the door to increased opportunity to enhance the skills of the existing nuclear workforce and to improve the mobility of non-nuclear engineers into the nuclear workforce.

Furthermore, we want to open the door to students who do not necessarily have high speed internet available at all times and may need more than the standard one semester time period to complete a course due to work commitments. One example is in the case of industry students who travel frequently to support work at other nuclear power plants or are assigned overseas and may be deployed for several months at a time. Another example includes active military officers who are deployed overseas, on a mission, or at sea. To further extend the availability of nuclear courses, we will modify the online courses to be offered via a DVD sent in the mail. Students will still need to submit homework assignments and exams online, but the formal timeline of the semester will be eliminated to allow students to progress at their own pace. However, a maximum 9-month limit will be applied. Students can also complete the course at a faster pace than a regular semester if desired.

Finally, we will work with minority-serving institutions in the Commonwealth of Virginia to make the online graduate nuclear engineering certificate and Master's degree available to them. This will require exploring collaborations during this effort with all the institutions in the state to maximize the impact of nuclear engineering within the Commonwealth. This will further the availability of high technology nuclear engineering jobs to an underserved population.

2. Proposed Approach and Collaborative Linkages

a. Project's Innovative Instructional Approaches and Techniques

Online format: An online format increases access nationwide to Virginia Tech's graduate nuclear engineering certificate program for off-campus students as well as for on-campus students who like to take online courses or need the flexibility in schedule. The online nature of this course increases our pool of students and promotes the accessibility of nuclear engineering courses to a wider audience without the constraints of time and distance. The asynchronous nature of this course allows learners to self-pace their learning. However, they are asked to participate in the discussion forum and contribute to the problem solving process with regular frequency. In addition, they will have set deadlines which must be met.

Take Advantage of Benefits of Hypermedia Learning: Among the frequently cited benefits of hypermedia learning are factors such as: 24 hour access to the learning environment; nonlinear access to vast amounts of information and international resources; information can be explored in-depth on demand; different levels of support or scaffolding can be offered in parallel; the pace of interaction with instructional material is controlled by the learner; and opportunities for facilitating a range of learning strategies such as small group discussion and collaborative projects. These benefits of hypermedia learning could vary depending on the characteristics of the learners and the types of task performed. Recent learning theories stress the direct link between cognition and instruction. It is shown that learning is the result of integrating new knowledge with existing knowledge in the long-term memory [3]. Feedback from students indicated that short video recordings of key lessons helped their learning because they could view them multiple times at their discretion. In fact, research shows that the online learning tools could be adjusted to fit in with the way people learn. We will therefore implement a nonlinear path through each module.

Technology also allows us to enhance the diversity of our nuclear engineering program by attracting students with different cognitive approaches in assimilating information. The technology and feedback in our project are intended to help students' cognition in two ways: first, to reduce individual cognitive loads[1], and second, to allow students to monitor and integrate the information with the help of peers. The feedback from our off-campus students indicated even though they were not in the same classroom as the professor, they liked being in a classroom with other students so they could ask each other questions and get peer help with homework problems. In addition, hypermedia allows students to use the tools best suited for their learning style. Some students learn best by hearing, others by seeing, and yet others by doing. We will address all three aspects of learning during course development. Thus, the online feedback resources and the interactive collaborative technology accommodate students' differences in regard to their information processing rate.

Typical online learning modules are processed from beginning to end by the student. Our modules with allow the student to follow various paths through a given learning module. Certain blocks within the module will be mandatory to ensure the minimum learning objectives are achieved. But optional supplemental blocks will be available such as a "just-in-time" mathematics review block for material in that module, an advanced topics block for drilling down deeper into the material, hyperlinks to external Web sites for further exploration, a technical vocabulary block, a block containing short iPod recordings and videos for those learners who prefer other technologies, and group collaboration tools to answer questions which build off of the learning blocks. Each module will also have a built in self-test quiz which will link the student back to the appropriate sections of the module for additional review if required.

In addition, in the normal classroom environment we often have to implement accommodations for students who need more time to take tests because of ADHD or need a room with no distractions. We may even have to provide translators and note takers for students with hearing impairment. In the hypermedia learning format, all of these issues can be addressed and easily accommodated by the technology and the self-pacing of the individuals in their own personal environment. This significantly improves the quality of learning for these individuals and opens up the classes to a more diverse group of students who could not otherwise handle the normal distance-learning classroom environment. To assist in this area, our online exams will not be timed. By providing multimedia lesson options including information slides, short video lectures, and short audio lectures, a majority of students will be able to be accommodated.

The technology in this project is tightly integrated into the curriculum. A networked Web-based feedback technology such as the discussion forum and chat room is used to enable students to interact with the teacher and each other by providing and receiving feedback. This system transforms the concept of technology to an environment for social interaction and also provides a medium for recording reflection from peers, instructor, and students themselves. In addition, students can access this technology from anywhere in the country with an Internet connection. We will also look into using other social interaction methods such as Facebook and Twitter. Our modules will therefore incorporate many collaboration tools. The main purpose is to get the students to interact with each other and the instructor/teaching assistant and to learn the material in the process. It should give them the experience of being in an interactive classroom.

Office Hours/Tutoring: We will provide weekly online and telephone office hours and tutoring for those who prefer to have real-time interaction. We also plan to use live connections with CentraOne for two review sessions - one for each midterm. CentraOne permits live or recorded transmission directly to the student's desktop personal computer. In addition to the instructor, we plan to make a graduate teaching assistant available for timely feedback on questions and concerns.

Pilot Testing: As various modules are completed, they will be pilot-tested in current courses with current students. This will allow course improvement during the course design phase before it is even implemented.

Assessment and Continual Improvement: The classical approach to design and delivery of online courses is a linear model relegating assessment of teaching/learning objectives to the end. We will be using a parallel model of development by integrating the assessment design into the initial phases of the online course development. This new paradigm allows for more effective integration of course objectives with online strategies, pedagogies, and best practices to enhance our nuclear curriculum. Using this dual formative and summative assessment approach allows rapid feedback to not only the instructor teaching the course but also to the course designers.

Given the structured life-cycle model that will be used to develop the online courses, initially clear goals and objectives will be outlined for a) the increased enrollment that will result from offering these courses online and b) the learning that will result among students completing the courses. Following identification of the goals, assessment tools will be developed so that evaluation can occur at multiple points in the course delivery. Design of these tools will include satisfaction surveys, instruments that measure student achievement of course materials and rubrics employed for direct observation of student learning. As these methods are developed they will be piloted so that the populations enrolled in the courses are ensured access to appropriate resources that enhance their learning and so that the most effective methods of

instructional technology are being employed to improve the competencies of engineers enrolled in the course.

In the past, knowledge assessment was achieved through hand-written homework assignments which were scanned and submitted online and by proctored midterm and final exams that were mailed back to the university. Short online quizzes will be provided for self-testing at the end of each learning module. A question exam bank will be generated and exams will now be given online. However, exams will incorporate short essay answers and true/false questions as well as multiple choice calculation problems. If done right, this will actually provide a better assessment of student learning outcomes. Thus, it is most important that these assessment tools be included upfront in the course design.

Once the course design is initially completed and the course has been implemented we do not intend to rest on our laurels. We will continue to use the built-in assessment tools to evaluate the quality of the modules and the quality of the technology tools used in the course. Each course will be updated based on the assessment results on at least a biannual basis with a goal of annually. Obviously, any technology problems will be fixed as they arise.

Methodology. Online course development at Virginia Tech follows a structured life-cycle methodology based on a sequential progression of seven phases: (a) Planning Phase; (b) Analysis Phase; (c) Design Phase; (d) Development Phase; (e) Testing Phase; (f) Implementation Phase; and (g) Evaluation, Support, and Maintenance Phase. Each phase is distinguished by activities, techniques, best practices and procedures that combine to construct viable, sustainable, efficient, and useful technology systems. Benefits of following a structured life-cycle methodology for eLearning course development include: (a) lack of problems and reduced errors associated with ad-hoc or haphazard instructional design and development, (b) construction of sustainable and efficacious eLearning systems and courses, (c) online courses that meet specified quality standards, (d) higher levels of learning and eLearner satisfaction [4], (e) fewer support and maintenance issues, (f) clear understanding of project scope and resources needed, and (g) improved understanding of instructional design and online teaching among faculty [5].

The online courses will be developed by the PIs, Mark Pierson and Simin Hall, in conjunction with the staff at the Virginia Tech Institute for Distance and Distributed Learning (IDDL). The first step involves developing the course learning objectives. These will be at a higher, big picture level. Then, the different subject modules are determined that would satisfy each learning objective. Each module under a learning objective will also have its more detailed learning objectives specified. One module is then chosen to be developed using all the various types of blocks and nonlinear paths discussed previously. The assessment tools needed for each module are determined and incorporated during its development. This module is examined thoroughly and is then pilot-tested. Once, satisfied with this module it becomes the template for use in creating all the subsequent modules.
The Institute of Distance and Distributed Learning (IDDL) staff will be responsible for the technology tools used in development of each module. The PIs are responsible for the subject matter content and navigation mapping for each module. Catherine Amelink on the IDDL staff will assist in development of the assessment tools and in determination of the overall course assessment.

Quality Matters Rubric [6]: The Virginia Tech Institute for Distance and Distributed Learning follows the Quality Matters rubric in development of online courses. Quality Matters (QM) is a faculty-centered, peer review process that is designed to certify the quality of online courses.

QM is a leader in quality assurance for online education and has received national recognition for its peer-based approach and continuous improvement in online education and student learning. QM subscribers include community and technical colleges, colleges and universities, K-12 schools and systems, and other academic institutions. Quality Matters processes benefit both individual faculty and their institutions in the following ways: improved student learning outcomes and retention; adoption of a systematic and comprehensive continuous quality assurance process that includes faculty training, course development, and course revisions that are aligned with accreditation standards; incorporation of new technologies and research findings; opportunity to engage in benchmarking activities with peer institutions; ongoing faculty professional development; increased flexibility, creativity, and divergent thinking; and increased efficiency in using institutional resources. The Quality Matters rubric is a set of forty specific elements, distributed across eight broad standards, by which to evaluate the design of online and hybrid courses. The web-based, fully interactive rubric is complete with annotations that explain the application of the standards and relationship between them. The eight broad standards include:

1. Course Overview and Introduction
2. Learning Objectives
3. Assessment and Measurement
4. Resources and Materials
5. Learner Engagement
6. Course Technology
7. Learner Support
8. Accessibility

Dissemination: We will publish the results of our pilot testing and implementation and present them in annual conferences for the American Nuclear Society (ANS) and the American Society

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 CRF 220, 2 CFR 225, and 2 CFR 230 this URL to the Office of Management and Budget Cost Circulars is included for reference to:
A-21 (now 2 CFR 220)
A-87 (now 2 CFR 225)
A-122 (now 2 CFR 230
A-102:

http://www.whitehouse.gov/omb/circulars_index-ffm

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.

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 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

§ 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 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 VI 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 VI, 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's 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 should 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, 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. § 215.40-48
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 must be in accordance with the Grantee's Travel Regulations or the US Government Travel Policy and Regulations at: www.gsa.gov/federaltravelregulation and the per diem rates set forth at: www.gsa.gov/perdiem, absent Grantee's travel regulation. Travel costs for the grant must be consistent with provisions as established in Appendix A to 2 CFR 220 (J.53). All other travel, domestic or international, must not increase the total estimated award amount.

Domestic Travel:
Domestic travel is an appropriate charge to this award and prior authorization for specific trips are not required, if the trip is identified in the Grantee's approved program description and approved budget. Domestic trips not stated in the approved budget require the written prior approval of the Grants Officer, and must not increase the total estimated award amount.

All common carrier travel reimbursable hereunder shall be via the least expensive class rates consistent with achieving the objective of the travel and in accordance with the Grantee's policies and practices. Travel by first-class travel is not authorized unless prior approval is obtained from the Grants Officer.

International Travel:
International travel requires PRIOR written approval by the Project Officer and the Grants Officer, even if the international travel is stated in the approved program description and the approved budget.

The Grantee shall comply with the provisions of the Fly American Act (49 USC 40118) as implemented through 41 CFR 301-10.131 through 301-10.143.

Property and Equipment Management Standards
Property and equipment standards of this award shall follow provisions as established in 2 CFR 215.30-37.

Procurement Standards
Procurement standards of this award shall follow provisions as established in 2 CFR 215.40-48

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 and retain title 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 for this award shall follow OCOI requirements set forth in Section 170A of the Atomic Energy Act of 1954, as amended, and provisions set forth at 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 an intra-agency Appeal Board to review a grantee appeal of an agency action, if required, which will consist of the program office director, the Deputy Director of Office of Administration, and the Office of General Counsel.

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 215.60-62.

Monitoring and Reporting § 215.50-53

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 or deducted from the total project cost allowable cost as directed by the Grants Officer or the terms and conditions of award.
- Budget Revision – 2 CFR 215.25
    - The Grantee is required to report deviations from the approved budget and program descriptions in accordance with 2 CFR 215.25,and request prior written approval from the Program Officer and the Grants Officer.
    - The Grantee is not authorized to rebudget between direct costs and indirect costs without written approval of the Grants Officer.

- The Grantee is authorized to transfer funds among direct cost categories up to a cumulative 10 percent of the total approved budget. The Grantee is not allowed to transfer funds if the transfer would cause any Federal appropriation to be used for purposes other than those consistent with the original intent of the appropriation.
- Allowable Costs – 2 CFR 215.27

b. **Federal Financial Reports**

The Grantee shall submit a "Federal Financial Report" (SF-425) on a quarterly basis for the periods ending March 31, June 30, September 30, and December 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 is due within 90 days after expiration of the award. The report should be submitted electronically to: Grants_FFR@NRC.GOV. ***(NOTE: There is an underscore between Grants and FFR).***

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 should 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 may 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 on a semi-annual basis unless otherwise authorized by the Grants Officer. Performance reports should be sent to the Program Officer at the email address indicated in Block 12 of the Notice of Award, and to Grants Officer at: Grants_PPR.Resource@NRC.GOV. ***(NOTE: There is an underscore between Grants and PPR).***

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.

c. The Office of Human Resources requires the submission of the semi-annual progress report on the SF-PPR, SF-PPR-B, and the SF-PPR-E forms. The submission for the six month period ending March 31st is due by April 30th, or any portion thereof. The submission for the six month period ending September 30th is due by October 31st or any portion thereof.

d. Grant Performance Metrics:

The Office of Management and Budget requires all Federal Agencies providing funding for educational scholarships and fellowships as well as other 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 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:

Curriculum Development Awards

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.

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 herby 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 Leadership of Reducing Text Messaging While Driving
Pursuant to EO 13513, Grantees should encourage employees, sub-awardees, and contractors to adopt and enforce policies that ban text messaging while driving company-owned, rented vehicles or privately owned vehicles when on official Government business or when performing any work for or on behalf of the Federal Government.

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 form 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."

Trafficking In Victims Protection Act Of 2000 (as amended by the Trafficking Victims Protection Reauthorization Act of 2003)

Section 106(g) of the Trafficking In Victims Protection Act Of 2000 (as amended as amended, directs on a government-wide basis that:

"any grant, contract, or cooperative agreement provided or entered into by a Federal department or agency under which funds are to be provided to a private entity, in whole or in part, shall include a condition that authorizes the department or agency to terminate the grant, contract, or cooperative agreement, without penalty, if the grantee or any subgrantee, or the contractor or any subcontractor (i) engages in severe forms of trafficking in persons or has procured a commercial sex act during the period of time that the grant, contract, or cooperative agreement is in effect, or (ii) uses forced labor in the performance of the grant, contract, or cooperative agreement." (22 U.S.C. § 7104(g)).

Executive Compensation Reporting

2 CFR 170.220 directs agencies to include the following text to each grant award to a non-federal entity if the total funding is $25,000 or more in Federal funding.

Reporting Subawards and Executive Compensation.

a. *Reporting of first-tier subawards.*

1. *Applicability.* Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates $25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111–5) for a subaward to an entity (see definitions in paragraph e. of this award term).

2. *Where and when to report.*

i. You must report each obligating action described in paragraph a.1. of this award term to *http://www.fsrs.gov.*

ii. For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)

3. *What to report.* You must report the information about each obligating action that the submission instructions posted at *http://www.fsrs.gov specify.*

b. *Reporting Total Compensation of Recipient Executives.*

1. *Applicability and what to report.* You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if—

i. the total Federal funding authorized to date under this award is $25,000 or more;

ii. in the preceding fiscal year, you received—

(A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) $25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

iii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and

Exchange Commission total compensation filings at *http://www.sec.gov/answers/execomp.htm.*)

2. *Where and when to report.* You must report executive total compensation described in paragraph b.1. of this award term:

i. As part of your registration profile at *http://www.ccr.gov.*

ii. By the end of the month following the month in which this award is made, and annually thereafter.

c. *Reporting of Total Compensation of Subrecipient Executives.*

1. *Applicability and what to report.* Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if—

i. in the subrecipient's preceding fiscal year, the subrecipient received—

(A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) $25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and

ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at *http://www.sec.gov/answers/execomp.htm.*)

2. *Where and when to report.* You must report subrecipient executive total compensation described in paragraph c.1. of this award term:

i. To the recipient.

ii. By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (*i.e.*, between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.

d. *Exemptions*

If, in the previous tax year, you had gross income, from all sources, under $300,000, you are exempt from the requirements to report:

i. Subawards,

and

ii. The total compensation of the five most highly compensated executives of any subrecipient.

e. *Definitions.* For purposes of this award term:

1. *Entity* means all of the following, as defined in 2 CFR part 25:

i. A Governmental organization, which is a State, local government, or Indian tribe;

ii. A foreign public entity;

iii. A domestic or foreign nonprofit organization;

iv. A domestic or foreign for-profit organization;

v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

2. *Executive* means officers, managing partners, or any other employees in management positions.

3. *Subaward:*

i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.

ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. __ .210 of the attachment to OMB Circular A–133, "Audits of States, Local Governments, and Non-Profit Organizations").

iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

4. *Subrecipient* means an entity that:

i. Receives a subaward from you (the recipient) under this award; and

ii. Is accountable to you for the use of the Federal funds provided by the subaward.

5. *Total compensation* means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):

i. *Salary and bonus.*

ii. *Awards of stock, stock options, and stock appreciation rights.* Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.

iii. *Earnings for services under non-equity incentive plans.* This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.

iv. *Change in pension value.* This is the change in present value of defined benefit and actuarial pension plans.

v. *Above-market earnings on deferred compensation which is not tax-qualified.*

vi. Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds $10,000.