

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

1. GRANT/AGREEMENT NO. NRC-HQ-11-G-38-0074	2. MODIFICATION NO.	3. PERIOD OF PERFORMANCE FROM: 8/22/2011 TO: 8/31/2012	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: 832127323 NAICS: 611310	7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS The Ohio State University Dr. Thomas Blue 1960 Kenny Road Columbus, OH 43210-1016 blue.1@osu.edu	
8. PROJECT TITLE: Development of a Nuclear Engineering Undergraduate Laboratory Course Utilizing Personnel and Physical Resources of the OSUNRL			
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 Xiaodong Sun bonsignore.l@osu.edu 1960 Kenny Road Columbus, OH 43210-1016	
12. NRC PROGRAM OFFICE (NAME and ADDRESS) 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	13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200 B&R NO: 2011-84-51-K-134 JOB CODE: T8453 BOC NO: 4110 OFFICE ID NO: RFPA: HR-11-272 FAIMS 680061		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 <u>\$94,977</u> PREVIOUS OBLIGATION _____ TOTAL <u>\$94,977</u>		16. TOTAL FUNDING AGREEMENT NRC <u>\$94,977</u> This action provides funds for Fiscal Year in the amount of See Page Two RECIPIENT <u>\$15,080</u> TOTAL <u>\$110,057</u>	
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. Signature Not Required		19. NRC CONTRACTING OFFICER <div style="text-align: right;"><u>Sheila Bumpass</u> <u>8/22/11</u> (Signature) (Date) NAME (TYPED) <u>Sheila Bumpass</u> TITLE <u>Contracting Officer</u> TELEPHONE NO. <u>301-492-3484</u></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 Nuclear Engineering Undergraduate Laboratory Course Utilizing Personnel and Physical Resources of the OSUNRL" 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:	\$94,977
2. Total Obligated Amount:	\$94,977
3. Cost-Sharing Amount:	\$0.00
4. Activity Title:	Development of a Nuclear Engineering Undergraduate Laboratory Course Utilizing Personnel and Physical Resources of the OSUNRL" as described in Attachment B entitled "Program Description
5. NRC Project Officer:	Tanya Parwani-Jaimes
6. DUNS No.:	832127323

B. SPECIFIC

RFPA No.:	HR-11- 272
FFS:	N/A
Job Code:	T8453
BOC:	4110
B&R Number:	2011-84-51-K-134
Appropriation #:	31X0200
Amount Obligated:	\$94,977

A.3 BUDGET

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

Personnel \$29,987
Fringe Benefits \$9,293
Equipment \$12,000
Contractual \$11,000
Total Direct \$62,280

Indirect Charges \$32,697 based on approved rate
Total Cost: \$94,977

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$94,977 for the one-year period.
2. NRC hereby obligates the amount of \$94,977 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

Purpose

The purpose of the proposed project is the development an undergraduate nuclear engineering laboratory class that will be taught by members of the lab staff using the facilities of the OSU NRL. The course will be developed with the intent of enhancing the education of students in the NE Undergraduate Minor Program and filling an existing gap in the current undergraduate offerings. In addition, it will leverage the capabilities of the OSU NRL staff to grow the NE Program's capabilities. As the OSU Nuclear Engineering faculty has only five tenured or tenure track faculty, it is important to utilize the capabilities of the OSU NRL staff for nuclear engineering education to enable the OSU NE Program to expand and maintain a vibrant undergraduate minor program and to potentially develop an NE undergraduate major. Undergraduate education is often strong in classroom lecture presentation and theoretical analysis (which is certainly an important component in engineering education), but is weak in practical experience. We believe that practical experience and real-world learning can reinforce and broaden classroom, textbook, and computer simulation learning. Often, taking this learn-by-doing approach results in greater student interest and motivation, which enhances retention of knowledge and development of critical skills and may in fact enhance retention of students is the NE minor.

Methods / Proposed Approach

The new course will be delivered via traditional lectures and laboratory sessions. The course lecture presentation materials will be documented and delivered using OSU's web-based course delivery system, named Carmen. The Carmen system is used extensively at OSU and is described in more detail below. In using Carmen to record lectures and deliver laboratory instructions and supplemental materials, an electronic record of the course will be established by the course developers. The Carmen materials will enable other NRL staff members to effectively teach this course in the future when the original developers are no longer available. Dr. Blue, as a full-time tenured NE Program faculty member will be actively involved. This involvement will include participation in development of lectures and laboratory experiments, attending and observing portions of the lectures and laboratory experiments. This level of participation will assure that the course is well integrated into the OSU NE Program's undergraduate curriculum with respect to the learning objectives for the course and the level at which the course is offered. Portions of the laboratory sessions will be video recorded and the equipment setups will be digitally photographed. The intent is to institutionalize this course in the NE curriculum and facilitate its future offering to regular and potential off-campus students.

The expected size for the proposed class is about 16 students for each offering. To optimize the learning experience, laboratory group sizes will be kept small, and lectures will be presented to the entire class. It is anticipated that there will be four laboratory groups, with each group containing about four students.

We believe that a laboratory class is not truly fully developed until it has been taught at least once, as teaching the class is an important part of course development. Laboratory equipment must be acquired and set-up, its operation must be confirmed, data must be analyzed and compared with theory. Only when the analysis of the processed data confirms that the data generally conforms to predictions of theory, and discrepancies between experiment and theory are understood, is the development of the lab complete. Then as a final step, the set-up of the equipment must be recorded (nowadays this step can be greatly simplified by digital photography and videography), the equipment setup must be broken down, and the equipment must be re-assembled into its form for the following experiment (or stored away) in such a manner that the equipment set-up can be easily reproduced the following year. Within the scope of this project, the class materials will be developed and one offering of the class will be made. Given the likely demand for the class, we anticipate that it may subsequently be offered both spring and autumn semesters each year.

Expected Output

The proposed program will result in the development of a laboratory course in the undergraduate minor curriculum in NE which makes use of the unique facilities and staff at the OSU NRL. The laboratory course will be tailored to a 14-week semester and will address a number of fundamental topics in the areas of radiation measurements, radiation protection, nuclear safety, and reactor operations. The project will develop materials for lectures, laboratories, demonstrations, and other necessary materials. This will include lecture presentation materials and a comprehensive laboratory manual containing procedures, list of required equipment, appropriate theory and references, and requirements for laboratory notebooks and reports.

In addition, teaching competencies and subject matter expertise will be enhanced as the staff develops the course material. The course will be presented with traditional lectures and labs with notes, lab handouts, and supplemental materials delivered (and simultaneously archived) using the web-based Carmen system. Recorded lectures and labs will be stored on Carmen. By utilizing the intellectual resources of the NRL staff and using the Carmen system, this project will improve, in an innovative and effective manner, the NE educational infrastructure at The Ohio State University. Adding this course to our curriculum will broaden the offerings available to undergraduate students. Better-educated and capable graduates will enter the workforce as well-trained industry professionals, and thereby add to the skilled nuclear workforce employed in private industry, government agencies, and academia.

Finally, this proposal presents a practical approach to enhancing on a long term basis the NE Program by leveraging the capabilities of the OSU NRL staff to grow the NE Program's capabilities. This addresses the issue of presently having a small number of full-time NE Faculty members, and it furthers collaboration between NE faculty and NRL staff, which will enhance OSU's nuclear education infrastructure.

Sustainability

The Chairman of the Mechanical and Aeronautical Engineering (MAE) Department, of which the Nuclear Engineering Program is a part, has pledged to support offering this course on an annual basis and has agreed that this course will be listed among the courses that are in the MAE

undergraduate program and, in particular, among the courses that are available to students in the Nuclear Engineering undergraduate minor program. This support establishes the sustainability of this course, and indicates a commitment of the university administration to maintaining the long-term viability of this course. Based on the ongoing popularity of nuclear engineering courses offered in the NE minor, we expect course enrollment to be maintained or grow as the availability of this course to undergraduates becomes more widely known among students contemplating further study in this field.

As was discussed above, use of the Carmen web-based course delivery system will ensure sustainability of the course materials and knowledge.

Partners in the Project and Collaborative Linkages

This proposal enhances the collaborative linkages among full-time nuclear engineering faculty and OSU NRL staff as they work together to deliver a high-quality education to students in the NE minor and graduate programs. In addition to OSU personnel, project participants include Mr. Rob Tayloe, a well-qualified individual who resides in the Columbus, Ohio area. Mr. Tayloe has worked at the Portsmouth Uranium Enrichment facility and as an employee of Battelle Memorial Institute (headquartered in Columbus). Mr. Tayloe has a proven record of accomplishment in nuclear engineering education. In prior years, Mr. Tayloe developed and offered an advanced course in radiation protection and two new courses, "Nuclear Criticality Safety" and "Nuclear Security", and a number of modules for reactor experiments at the graduate level, as a part of previously funded NRC curriculum development projects.

Timeline and Program Assessment

The development and initial offering of the proposed program is to take place over the course of a year, starting on July 1, 2011. Initial actions will include procurement of equipment necessary for the laboratories and performing the necessary steps to get the course listed in the OSU Master Schedule. Course materials necessary for the laboratory sessions will be generated over the first six months of the project, and the materials for the lectures that will support the laboratories will be generated over the first nine months of the project. During this time, benchmark data will be generated for the laboratory sessions. The initial offering will be given during Spring quarter 2012, which runs from March 26 to Jun 10, 2012. Note that while the materials to be developed are for a 14-week semester, the initial offering will be done during a 10-week quarter. This cannot be avoided. OSU is in the midst of a transition from the quarters system to the semesters system. Since, OSU will not switch to the semester system during the project period, we will not be able to teach all of the labs that we develop during the project period. We will present about 2/3 of the developed coursework during the initial offering.

Milestone Chart

To assess the quality of the developed materials, we will make use of the university's existing infrastructure for anonymous student evaluations, which is an online system called the "Student Evaluation of Instruction". Improvements to course materials will be made using this feedback, as well as feedback which we generate as instructors of the course material. In addition, students will be encouraged to provide feedback to us directly.

Laboratory Course to Be Developed

We will develop a 3-credit hour course that will reinforce and build upon material that is

presented in the prerequisite courses, which are the mandatory courses in the undergraduate major curriculum. It will consist of two weekly 1-hr lectures and a weekly 3-hr lab. It will provide a reasonably high-level view of a number of topics in the categories of measurement of radiation, shielding of radiation, radiation protection, reactor physics, reactor operations, and reactor uses. We plan to develop laboratory sessions and lectures focused on the following topics:

- 1. Radiation measurements basics: detection by gas ionization:** Students will be introduced to the concept of detecting radiation by gas ionization. They will learn about different types of gas-filled detectors (GM detectors, ionization chambers, and proportional counters) and their advantages and disadvantages with respect to measurement of radiation of various types (alpha, beta and gamma-ray) of various energies and intensities. Students will be introduced to the concepts of pulse and current mode operation and the electronics necessary for measurements via these two modes.
- 2. Radiation measurements basics: detection of gamma rays with scintillation and solid state detectors:** Students will be introduced to gamma-ray radiation detection with scintillating (NaI) and various types of solid-state gamma-ray detectors (HPGe, CZT), as well as the use of an MCA to create histograms of counts per channel versus radiation energy. They will learn about the difference in response among the different detector types and their advantages and disadvantages with respect to the measurement of gamma-ray radiation including energy resolution, detection efficiency, cost, mass, and portability.
- 3. Radiation protection: shielding and dose rate vs. distance:** Students will learn about the use of time, distance (including handling tools), and shielding to minimize personnel dose. They will measure, using an ionization chamber, exposure rate versus distance for an unshielded gamma-ray source in the OEMA Cs-137 calibration range and exposure rate attenuation for the same gamma-ray source with aluminum and iron shielding plates stacked to various thickness. They will learn that the effects of geometrical attenuation and attenuation as a consequence of shielding are multiplicative. They will also be introduced to the concept of radiation buildup as the measurements will be made and compared with the following shielding combinations: aluminum alone, iron alone, iron followed by aluminum and finally aluminum followed by iron.
- 4. Radiation protection part 2: operational health physics:** Students will learn about performing radiation dose rate surveys with different instrument types and about performing smear surveys to determine activity concentration. They will learn about personnel dosimetry (including electronic alarming dosimeters) and about area monitoring. They will also learn about personnel protective equipment, such as gloves, shoe covers, respirators, etc.
- 5. Reactor instrumentation:** Students will learn about the different types of neutronsensitive detectors used for monitoring reactor power, building on the concepts of detecting radiation by gas ionization which is the subject of Lab 1 above. The concept of operation in the pulse and current modes that is introduced in Lab 1 will be reinforced. Also the students will be introduced to the measurement channel components necessary for reactor instrumentation for the OSURR fission chamber and uncompensated and compensated ion chambers.
- 6. Reactor criticality:** The students will learn about and perform an approach to critical

exercise using the OSURR. Concepts such as delayed neutrons and subcritical multiplication that were introduced in the "Introduction to Nuclear Science and Engineering" course will be reinforced.

7. Radioactive half-life: Students will measure the half-life of foils irradiated in the reactor, reinforcing concepts from the "Introduction to Nuclear Science and Engineering" course. Simple radioactive decay will be demonstrated. Also, they will learn about measuring the half-lives of sources with radioactive isotopes decaying, either independently, or as a part of a multi-component serial radioactive decay series.

8. Reactor neutron flux measurement: Students will be introduced to the concept of a neutron energy spectrum and using activation foils to measure the spectrum. They will

measure bare and cadmium-covered foils and determine the cadmium ratio for the foil material in the OSURR's pneumatic transfer "rabbit" facility.

9. Neutron flux profile measurements: Building on their understanding of reactor flux shape from the "Introduction to Nuclear Science and Engineering" course, students will activate an iron wire in the reactor and use the induced activity to measure the axial neutron flux profile of the core in the OSURR's central irradiation facility. The results will be compared to the predicted profile for a parallelepiped reactor and with the results of an existing MCNP model of the OSURR which will be given to the students.

10. Isotope production: Building on the half-life and flux measurement exercises, students will use an isotope's published half-life and the measured cadmium ratio in the OSURR's pneumatic transfer "rabbit" facility to predict the activity produced in a sample. The actual activity induced in the sample will be measured using the gamma-ray spectroscopy system and compared to the prediction. Students will also be introduced to techniques for preparing and handling samples that are to be irradiated in the reactor.

11. Neutron activation analysis: Building on the MCA measurement and isotope production concepts introduced in previous lab sessions, students will analyze samples such as soil or sediment for elemental composition.

12. Material damage: Students will be introduced to the concept of damage to materials from radiation and will learn about the effects of material damage. They will measure signal loss in a fiber-optic cable during a reactor irradiation to observe the accumulation of radiation damage firsthand.

Development of these laboratory sessions will require purchase of several items of noncapitalized (minor) instructional equipment, such as alarming dosimeters, portable survey instruments, and flux wire holder assemblies. These instruments and materials will be purchased for the exclusive use of this laboratory course, thereby avoiding conflict with instruments used in routine NRL operations or other instructional and research applications. We anticipate that development of this course will strongly emphasize experiential learning and as much operational activity as possible. This may include instrument setup and calibration, reactor system checkout and operation, material preparation and handling, and data collection and analysis.

3. Ohio State University Nuclear Engineering Educational Infrastructure

As is described in the following sections, the necessary infrastructure is in place and available to

be leveraged to make proposed laboratory course a success.

3.1 NE Program Description

As is described above, OSU NE Program is a College of Engineering program administratively housed in the Department of Mechanical Engineering. The OSU NE Program offers an undergraduate minor, M.Sc. and Ph.D. graduate degrees. The NE Undergraduate Minor Program is described below in more detail, since the course that will be developed is for undergraduate students.

NE Undergraduate Minor Program

Recognizing the need to augment the nuclear industry workforce as the current generation of nuclear professionals reaches retirement age, the OSU NE Program has developed an NE Minor for undergraduate students enrolled in the engineering disciplines. In addition to nuclear engineers, electric utilities, national laboratories, and government regulatory agencies need

scientists and engineers specializing in other fields who have some knowledge of nuclear technology. The OSU NE Undergraduate Minor has been designed to address this need and provide students with the knowledge and skills that are necessary for many entry level positions in the nuclear industry. The program objectives for the NE Undergraduate Minor are:

- Enhance the employment prospect for graduates with the nuclear engineering minor in combination with their major in another engineering or technical discipline in the nuclear industry.
- Stimulate interest for graduates with appropriate aptitude in undertaking graduate work in nuclear engineering.
- Instill in students graduating with the nuclear engineering minor the need to be informed and involved members of their communities, and responsible engineering professionals.

Achieving these objectives will result in a student attaining the following:

- An understanding of the basics of nuclear engineering, reactor physics, radiation protection, nuclear power plant design, and nuclear safety
- The ability to work on multi-disciplinary teams
- The capacity to identify, formulate, and solve engineering problems
- An understanding of professional, ethical, security and social issues and responsibilities, particularly as they relate to nuclear risks
- The ability to communicate effectively with a range of audiences
- A recognition of the need for, and an ability to engage in life-long learning and continuing professional development
- A knowledge of contemporary issues, particularly related to reactor safety, nuclear proliferation, and the disposal of radioactive waste
- The capability to use the techniques, skills and modern engineering tools necessary for practice as a nuclear engineering professional
- An ability to apply mathematical foundations and algorithmic principles in the solution of engineering problems

The undergraduate nuclear engineering minor coursework augments the students' undergraduate major curriculum. There are presently two mandatory courses:

- Introduction to Nuclear Science and Engineering
- Nuclear Reactor Systems

A student must complete these two courses with satisfactory performance to satisfy the basic elements of the program. Following completion of these courses, students must select at least

two more courses from the following list:

- Radiological Safety
- Reactor Safety
- Probabilistic Risk Assessment
- Radioactive Waste management/Nuclear Fuel Cycles
- Nuclear Radiations and Their Detection
- Power Plant Operations
- Nuclear Reactor Thermal Hydraulics
- Reactor Theory
- Reactor Dynamics
- Reactor Dynamics Laboratory

The proposed course will be added to the above list. The new course will make extensive use of the OSU NRL and will focus on topics that can be demonstrated in reactor laboratory experiments and learning exercises, thus providing students with knowledge and experience beyond that available in a classroom lecture environment.

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 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 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 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 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 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."

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)).

Award Term

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.