

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to the "Radiation Protection Education and Research at Florida A&M University."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is September 30, 2010. The estimated completion date of this Grant is September 30, 2012.
2. Funds obligated hereunder are available for program expenditures for the estimated period: September 30, 2010 – September 30, 2012.

A. GENERAL

1. Total Estimated NRC Amount: \$179,957.00
2. Total Obligated Amount: \$ 90,000.00
3. Cost-Sharing Amount: \$0
4. Activity Title: Radiation Protection
Education and Research at
Florida A&M University

5. NRC Project Officer: Tuwanda Smith, Esq.
6. DUNS No.: 623751831

B. SPECIFIC

- RFPA No.: SDB-27-10-1116
FFS: SBC10330
Job Code: L2284
BOC: 4110
B&R Number: 07-15-5C1-161
Appropriation #: 31X0200
Amount Obligated: \$90,000.00

A.3 BUDGET

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

	Year 1	Year 2
Direct Cost	\$29,615.00	\$101,023.00
Indirect Cost	<u>\$ 9,965.00</u>	<u>\$ 39,354.00</u>
Yearly Total	\$39,580.00	\$140,377.00

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

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$179,957.00 for the two year period.
2. NRC hereby obligates the amount of 179,957.00 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

Radiation Protection Education and Research at Florida A&M University

B. PROJECT DESCRIPTION

(a) Introduction and Problem definition

In all activities that utilize the benefits of ionizing radiations, effective protection, from the adverse effects of those radiations is a vital necessity. The same is true of any situation in which the risk of human exposure to radiation is present. Radiation protection is thus essential in a wide range of occupations and locations. These include medical facilities, where ionizing radiations are used in both diagnosis and therapy; university laboratories and research reactors; any building basements that may be subject to radon diffusion from subsurface earth; several industries, where ionizing radiations are produced or utilized in a variety of operations; and nuclear power generation plants, which currently contribute about 20% of United States (US) electrical energy and, in all likelihood, will have to contribute more in the foreseeable future.

Considering the wide scope of societal radiation protection needs, it appears that the size of the professional radiation protection workforce, a total of no more than 6700 full time professionals (Burk 2008), is grossly inadequate. Furthermore the minimal minority proportion of this workforce, estimated at less than 4%, implies a failure to adequately utilize the potential of 33% (US Census Bureau, 2006) of the nation's population; a state of affairs that is certainly not in the national interest. These unfortunate circumstances exist partly because the specialized education and training needed to develop qualified radiation protection professionals are not available widely enough. Although some US universities offer various degrees in radiation protection, health physics and

similar radiological sciences, the number is relatively small; and only a negligible proportion of that number are minority serving institutions.

(b) The Problem Solution

This proposal represents an endeavor by Florida A&M University (FAMU), to contribute to a solution of the radiological manpower shortage problem joining the community of colleges and universities which provide education and training in radiation protection. FAMU has gained recognition for actively recruiting the 'best and brightest' among African-American youth, and then creating for them the environment they need to succeed. The university has frequently been one of the top institutions, nationwide, in enrolling National Achievement Scholars; and it has often been cited as the top producer of African-American baccalaureates. With this proposal, Florida A&M University seeks, from the US Nuclear Regulatory Commission (NRC), the necessary financial assistance to establish a program of academic studies and practical training, in radiation protection, that would help alleviate the shortage of skilled manpower in radiation protection, while significantly increasing the numbers of qualified African-Americans and other minorities in radiation protection professions.

(c) Project Goals and Objectives

The ultimate goal is to create, at Florida A&M University, an educational program which will prepare students for radiation protection careers and thereby assist the growth of the radiation protection workforce, as well as significantly increase the numbers of African Americans, and other minorities, in that workforce. The focus area of the new program will be in Health Physics, with emphases on radiation dosimetry, operational radiation protection and environmental radioactivity, including the fate and transport of radioactive nuclides. It will, eventually, also include modules in radiochemistry and radioactive waste management. The project goal will be attained through pursuit of the following objectives:

- Development of a full curriculum for the Master's degree; and the preparation of students for professional careers in radiation protection;
- Development and continuous revision of teaching materials to maintain consistency with new developments in professional practice;
- Collaboration with professional staff from the Oak Ridge National Laboratory (ORNL), in the development and teaching of courses;
- Provision of facilities and opportunities for radiation protection research by students and faculty of FAMU and other minority-serving institutions;
- Pursuit of research and practicum programs at ORNL for students, and of

- research collaboration between FAMU faculty and ORNL scientists;
- Search for opportunities for student interactions with radiation protection professionals through Summer internships;
 - Provision of effective mentoring, and guidance for students of radiation protection science;
 - Adoption of modern course delivery methods, including classroom computer technology;
 - Negotiation of an articulation agreement for the admission of FAMU MS graduates into the University of Florida Ph.D. program in health physics.

(d) Innovative Instructional Approaches

The collaboration between FAMU faculty and ORNL staff, in the development and teaching of courses, is expected to enhance learning by providing students with multiple lines of communication for consultation, inquiry or problem resolution. This should lead to deeper understanding of subject material and also expose students to different perspectives on academic and practical issues in radiation protection; thereby increasing scientific curiosity and independent thought in students. The arrangement is also likely to improve teaching competencies and subject matter expertise among FAMU faculty.

(e) Provisional Curriculum

(i) Admission Requirements:

Qualifications for admission into the program shall include a bachelor's degree in the physical, chemical, biological or engineering sciences, with a minimum grade point average (GPA) of 3.0 and a minimum of two courses in chemistry, physics, and mathematics through calculus. In the event that a student is admitted who has not fully met these requirements, the deficiencies must be made up during the first year in the program. Students are required to maintain a GPA of 3.0 or higher throughout the MS studies and to achieve a grade of B or better in all core courses.

(ii) Graduation Requirements:

The Master's degree will require a minimum of 44 credit hours, including 32 from core courses and 10 from electives.

<u>Elective Courses:</u>	<u>Credits</u>
1. Radiation Biology	3
2. Hazardous Waste Management	3
3. Civilian Radioactive Waste management	3
4. Fate and Transport of Environmental Contaminants	3
5. Radioecology	3
6. Statistics	4
7. Operational Radiation Protection	3
8. Nuclear Physics	3

(f) Program Location in FAMU

The proposed program will be located in the FAMU Environmental sciences Institute (ESI), an autonomous academic unit within the FAMU Division of Academic Affairs. This location will afford the new program some advantages related to the following activities:

(i) Student Recruitment:

ESI is also the home of the NOAA Environmental Cooperative Science Center, a partnership for science research and education between the National Oceanic and Atmospheric Administration, on the one hand, and six universities, led by FAMU. Of the other five partner institutions; four are HBCU's from which the proposed program could successfully recruit promising BS graduates into its beginning graduate classes.

(ii) Practical Training at national laboratories and mentorship by leading radiation protection scientists:

As a beneficiary of the outreach program of the Oak Ridge National Laboratory, (ORNL), ESI has had a long standing collaborative relationship with ORNL, whereby ESI students have performed their thesis experimental work at ORNL, and scientists from ORNL have taught courses at ESI. A similar relationship with the Savannah River National Laboratory (SRNL) has also facilitated Summer

(Hi) Expedited Start of Graduate Course Delivery

The ESI graduate curriculum already contains radiation protection courses, as listed in Table B 1. Therefore the graduate program can be started with existing courses, while the newly developed courses go through the various stages of approval. Thus a selection of courses

from Table B1, such as RHT 5210:

Principles of Radiological Health Physics, CHS 5105: Radiochemistry,
EVS 5607:

Environmental Radioactivity can be offered as soon as the Fall semester
of 2010.

TABLE B1: Existing Radiation Protection Courses

COURS PREFIX	COURS NUMBE	COURSE TITLE	CREDI
CHS	5105	Radiochem is try I	4
CHS	5106	Radiochem lstry II	4
EVS	5607	Environmental Radioactivity	3
EVS	5616	Civilian Radioactive Waste	3
EVS	5693	Radiation Instrumentation and	3
RHT	5124	Radiation Biology	3
RHT	5210	Principles of Radiological Health	3
RHT	5326	Internal Radiation Dosimetry	3

(9) Institutional Capability and Capacity

Table B1 also provides some indication of the capability of the FAMU Environmental Sciences Institute to provide graduate education in radiation protection and related sciences. In fact a number of ESI graduates have earned their Masters degrees in these areas; and they include:

Weaver, Judith L., Solid state methods to Detect Radon in marine Environments", Master of Science Thesis, Florida A&M University, Summer 1999.

FILZOW, Vladimir, Distribution of Radionuclides between Solid and Liquid Phases of Land Applied Biosolids, Master of Science Thesis, Florida A&M University, Summer 1999.

SURRATT, Donatto, Measurement of Uranium in the Scarborough Community of Oak Ridge, Tennessee, Master of Science Thesis, Florida A&M University, Spring 2000. **APETI, Denis A.**, Atmospheric Biomonitoring of Radionuclides and Heavy metals, Using Lichens and Mosses, Master of Science Thesis, Florida A&M University, Spring 2001. **MCKAY, Paul V.**, Radiological Safety in University Laboratories: A Case Study, Master of Science Thesis, Florida A&M University (2004).

ESI also has facilities for radiation protection education and research, which include:

- two well-equipped laboratories, one for radiochemistry and the other for teaching of radiation instrumentation and measurements;
- secure, restricted access storage cabinets for radioactive sources;
- counting room with a variety of instruments installed, the major ones being:
 - Ortec GMX 40-P High Resolution. Gamma Spectroscopy system;
 - Ortec GMX 400195-P High Resolution. Gamma Spectroscopy system;
 - Beckman LS 6500 Liquid Scintillation Counter;
 - Ortec Soloist Alpha Spectrometer.

(h) Program Sustainability

Program activities will be sustained as long as students continue to enroll, and funds are available to continue the necessary operations. These two sustainability criteria will be met by means of:

- wide dissemination, in minority-serving institutions, of information on the discipline of radiation protection, its services to society, its economic importance, the financial assistance to be offered to qualifying students, and the various opportunities for employment available to program graduates;
- This popularization of radiation protection will be made an integral part of an aggressive student recruitment effort aimed at enrolling at least 1 student in the first year, at least 2 more in the second year and higher numbers thereafter.

The program will also seek to establish alliances with organizations, both public and private, that could be potential employers, to keep them informed of our efforts and ensuing outcomes; and hopefully persuade them to assist our efforts with funds.

In this regard, the program will make itself visible to all radiation-oriented organizations such as:

- U. S. Department of Energy (DOE);
- U.S. Environmental protection Agency (USEPA)
- Institute for Nuclear Power Operations;
- Florida Power and Light;
- Florida Institute for Phosphate Research.

The program will also seek funding support from sources not specifically associated with radiation protection; such as the National Science Foundation (NSF) and private foundations.

(i) Evaluation and Documentation

For purposes of reporting to project sponsors, as well as for self evaluation and for assistance to FAMU administration or any external agency that may need to evaluate the program, thorough and detailed documentation of program activities and outcomes shall be maintained to show, among other things:

- the extent to which project objectives (e.g. recruitment targets, student performance expectations, graduation rates etc) are achieved;
- the proportion students completing the program in 4 years and finding employment;
- student evaluation of the program, periodically and in an exit survey upon graduation; employer satisfaction with graduates' training/competence;
- Program improvements arising from any failure to fully achieve an objective.

Attachment C – Standard Terms and Conditions

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

Preface

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

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

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

A-21 (now 2CFR 220): <http://www.whitehouse.gov/omb/circulars/a021/print/a021.html>
A-87 (now 2CFR 225): <http://www.whitehouse.gov/omb/circulars/a087/print/a087-all.html>
A-122:(now2 CFR 230) <http://www.whitehouse.gov/omb/circulars/a122/print/a122.html>
A-102, SF 424: <http://www.whitehouse.gov/omb/circulars/a102/print/a102.html>
Form 990: <http://www.irs.gov/pub/irs-pdf/i990-ez.pdf>

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

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

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

I. Mandatory General Requirements

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

1. Applicability of 2 CFR Part 215

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

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

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

2. Award Package

Grant Performance Metrics:

The Office of Management and Budget requires all Federal Agencies providing funding for educational 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 SBCR grant awards, in addition to the customary performance progress report requested on the SF-PPR, SF-PPR-B, and SF-PPR-E forms, SBCR requires the following metrics to be reported on by the awardees as follows:

Fellowship Awards

1. The number and percentage of STEM graduates who take a job in a STEM or STEM-related field;

2. The number and percentage of students who participate in scientific activities or research experiences in industry, government, or the not-for-profit sector;
3. The number and percentage of students who present research findings at scientific meetings or student science exchange events;
4. The number of students who participate in interdisciplinary research or educational experiences;
5. The number of students who engage in research experiences in an academic, government, or non-for-profit industry;
6. The number and percentage of graduate and postdoctoral fellowships who complete a STEM graduate or postdoctoral program;
7. The number and percentage of program completers who are employed in a STEM or STEM-related field;
8. The number and percentage of students who participate in scientific activities or research experiences in industry, government, or the not-for-profit sector. This metric will include internships;
9. The number and percentage of students who present research findings at scientific meetings or student science exchange events.

Service Agreement

A signed service agreement and resume are required for all student recipients of scholarships or fellowships funded by the US Nuclear Regulatory Commission. The Service Agreement is attached to the Terms and Conditions.

§ 215.41 Grantee responsibilities.

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

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

Subgrants

Appendix A to Part 215—Contract Provisions

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

Nondiscrimination

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

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

Title VI of the Civil Rights Act of 1964 (42 USC §§ 2000d et seq)
Title IX of the Education Amendments of 1972 (20 USC §§ 1681 et seq)
Section 504 of the Rehabilitation Act of 1973, as amended (29 USC § 794)
The Age Discrimination Act of 1975, as amended (42 USC §§ 6101 et seq)
The Americans with Disabilities Act of 1990 (42 USC §§ 12101 et seq)
Parts II and III of EO 11246 as amended by EO 11375 and 12086.
EO 13166, "Improving Access to Services for Persons with Limited English Proficiency."
Any other applicable non-discrimination law(s).

Generally, Title VII of the Civil Rights Act of 1964, 42 USC § 2000e et seq, provides that it shall be an unlawful employment practice for an employer to discharge any individual or otherwise to discriminate against an individual with respect to compensation, terms, conditions, or privileges of employment because of such individual's race, color, religion, sex, or national origin. However, Title VII, 42 USC § 2000e-1(a), expressly exempts from the prohibition against discrimination on the basis of religion, a religious corporation, association, educational institution, or society with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities.

Modifications/Prior Approval

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

Lobbying Restrictions

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

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

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

including those received from sub-recipients, contractors, and subcontractors, to the Grants Officer.

§ 215.13 Debarment And Suspension.

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

(1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;

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

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

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

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

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

'Debarment, Suspension, Ineligibility, and Voluntary Exclusion

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

Drug-Free Workplace

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

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

The Grantee is reminded that U.S. Executive Orders and U.S. law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. It is the legal responsibility of the Grantee to ensure compliance with these Executive

Orders and laws. This provision must be included in all contracts/sub-awards issued under this grant/cooperative agreement.

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

Procurement Standards, § 215.40

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

Travel

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

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

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

Property Management Standards

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

Equipment procedures shall follow provision established in 2 CFR 215.34.

Procurement Standards

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

Intangible and Intellectual Property

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

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

addition, the invention must be reported in continuation applications (competing or non-competing).

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

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

Copyright - The Grantee may copyright any work produced under a NRC federal financial assistance award subject to NRC's royalty-free nonexclusive and irrevocable right to reproduce, publish or otherwise use the work or authorize others to do so for Government purposes. Works jointly authored by NRC and Grantee employees may be copyrighted but only the part authored by the Grantee is protected because, under 17 USC § 105, works produced by Government employees are not copyrightable in the United States. On occasion, NRC may ask the Grantee to transfer to NRC its copyright in a particular work when NRC is undertaking the primary dissemination of the work. Ownership of copyright by the Government through assignment is permitted under 17 USC § 105.

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

Organizational Prior Approval System

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

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

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

Dispute Review Procedures

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

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

Monitoring and Reporting § 215.51

- a. Grantee Financial Management systems must comply with the established provisions in 2 CFR 215.21
 - Payment – 2 CFR 215.22
 - Cost Share – 2 CFR 215.23
 - Program Income – 2 CFR 215.24
 - Earned program income, if any, shall be added to funds committed to the project by the NRC and Grantee and used to further eligible project or program objectives.
 - Budget Revision – 2 CFR 215.25
 - In accordance with 2 CFR 215.25(e), the NRC waives the prior approval requirement for items identified in sub-part (e)(1-4).
 - The Grantee is not authorized to rebudget between direct costs and indirect costs without written approval of the Grants Officer.
 - Allowable Costs – 2 CFR 215.27
- b. **Federal Financial Reports**

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

http://www.whitehouse.gov/omb/fedreg/2008/081308_ffr.pdf
http://www.whitehouse.gov/omb/grants/standard_forms/ffr.pdf
http://www.whitehouse.gov/omb/grants/standard_forms/ffr_instructions.pdf

The Grantee shall submit a "Federal Financial Report" (SF-425) on a quarterly basis, for the periods ending 3/31, 6/30, 9/30 and 12/31, or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-425 shall be submitted within 90 days after expiration of the award.

Period of Availability of Funds 2 CFR § 215.28

- a. Where a funding period is specified, a Grantee may charge to the grant only allowable costs resulting from obligations incurred during the funding period and any pre-award costs authorized by the NRC.
- b. Unless otherwise authorized in 2 CFR 215.25(e)(2) or a special award condition, any extension of the award period can only be authorized by the Grants Officer in writing. Verbal or written assurances of funding from other than the Grants Officer shall not constitute authority to obligate funds for programmatic activities beyond the expiration date.
- c. The NRC has no obligation to provide any additional prospective or incremental funding. Any modification of the award to increase funding and to extend the period of performance is at the sole discretion of the NRC.
- d. Requests for extensions to the period of performance shall be sent to the Grants Officer at least 30 days prior to the grant/cooperative agreement expiration date. Any request for extension after the expiration date shall not be honored.

Automated Standard Application For Payments (ASAP) Procedures

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

Audit Requirements

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

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

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

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

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

III. Programmatic Requirements

Performance (Technical) Reports

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

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

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. The submission for the six month period ending September 30th is due by October 31st.

Unsatisfactory Performance

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

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

Other Federal Awards With Similar Programmatic Activities

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

Prohibition Against Assignment By The Grantee

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

Site Visits

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

IV. Miscellaneous Requirements

Criminal and Prohibited Activities

- a. The Program Fraud Civil Remedies Act (31 USC §§ 3801-3812), provides for the imposition of civil penalties against persons who make false, fictitious, or fraudulent claims to the Federal government for money (including money representing grant/cooperative agreements, loans, or other benefits.)
- b. False statements (18 USC § 287), provides that whoever makes or presents any false, fictitious, or fraudulent statements, representations, or claims against the United States shall be subject to imprisonment of not more than five years and shall be subject to a fine in the amount provided by 18 USC § 287.
- c. False Claims Act (31 USC 3729 et seq), provides that suits under this Act can be brought by the government, or a person on behalf of the government, for false claims under federal assistance programs.
- d. Copeland "Anti-Kickback" Act (18 USC § 874), prohibits a person or organization engaged in a federally supported project from enticing an employee working on the project from giving up a part of his compensation under an employment contract.

American-Made Equipment And Products

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

Increasing Seat Belt Use in the United States

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

Federal Employee Expenses

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

Minority Serving Institutions (MSIs) Initiative

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

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

Research Misconduct

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

Publications, Videos, and Acknowledgment of Sponsorship

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

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

2010 Trade School Scholarship Program Service Agreement

1. This service agreement is required for all student recipients of scholarships (hereinafter referred to as the "recipient") funded by the U.S. Nuclear Regulatory Commission (NRC) through the _____ (name of institution).
2. This agreement confirms the recipient's obligations to maintain satisfactory academic progress and serve 6 months in nuclear-related employment for each full year of academic support. The employment may be with nuclear-related industry, State agencies, Department of Energy laboratories, the NRC or other Federal agencies, or academia in the recipients' sponsored fields of study.
3. The scholarship recipient must:
 - a. remain matriculated in the degree program for the field of study for which the scholarship was approved,
 - b. maintain satisfactory academic progress in the recipient's field of study, and
 - c. maintain a course load of at least 12 credit hours per semester as a full-time student in good standing.
4. If a recipient fails to maintain satisfactory academic progress, the scholarship will be terminated and the recipient could be obligated to repay the NRC the full amount of the scholarship/fellowship.
5. If a recipient receives any subsequent scholarship(s) through this program, the service obligation periods will be consecutive.
6. At the discretion of the NRC, the service obligation period may be delayed to allow the recipient to continue a subsequent degree program immediately following that sponsored under this program. For example, if a recipient receives a scholarship to earn a baccalaureate degree, he/she may request and be permitted to delay fulfilling their service obligation until after they complete a subsequent terminal degree program. Any such requests must be made to the NRC before a student enrolls in a subsequent degree program. If a student enrolls in a subsequent degree program before or without NRC approval, and the NRC does not subsequently approve the request, the NRC will not be held liable for any expenses incurred to dis-enroll, or for failure to otherwise meet the terms of this service obligation. Recipients only incur a service obligation to NRC for funded periods of study.
7. If the student receives no employment offers or does not accept any of the offers received, the student is not relieved of the service obligation, unless, pursuant to this service agreement, the student applies for and receives a waiver from the NRC. Implicit in the waiver request is data or explanation by the student that efforts to secure employment in a nuclear-related field were undertaken. This can be in the form of job searches, referrals, etc. Absent a waiver from the NRC, rejection of one or more job offers could trigger the service agreement obligation.

8. If a recipient voluntarily leaves the employment of an approved employer in a field related to nuclear power during the period of obligated post-academic service, the recipient may immediately become liable to the U.S. Government for repayment of the entire amount of the assistance provided under the scholarship for which the service obligation has not been fulfilled.
9. By accepting this scholarship/fellowship, I agree to provide the NRC with current contact information (address, telephone, email), and employment information, subject to the provisions of the Privacy Act, for as long as I remain under obligated service. This information will be used solely for the purposes of verifying appropriate nuclear related employment in compliance with the service obligation requirements of this service agreement. In accordance with the Privacy Act, providing this information is voluntary; however, failure to do so may result in removal from the scholarship/fellowship program and/or repayment of all scholarship/grant money received. Contact information should be reported to: eduscholar@nrc.gov.
10. By signing this agreement, the recipient certifies that he or she has read this agreement and agrees to all of the obligations it entails.

Scholarship Recipient

Date

Institution Program Coordinator

Date

NRC Office of Human Resources

Date