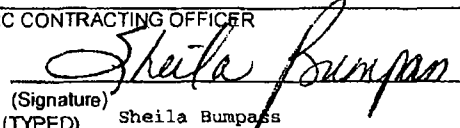


**U.S. NUCLEAR REGULATORY COMMISSION  
NOTICE OF GRANT/ASSISTANCE AWARD**

1. GRANT/AGREEMENT NO. NRC-HQ-11-G-04-0065		2. MODIFICATION NO.		3. PERIOD OF PERFORMANCE FROM: 9/01/2011 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 Nonprofit Publically Supported Organization NAICS: 541690  DUNS: 041964057  FAIMIS: GR0087		7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS  The National Academy of Sciences National Research Council 500 Fifth Street, NW, KECK 1057 Washington, DC 20001 DDenning@nas.edu			
8. PROJECT TITLE: Support to Committee on Geological and geotechnical Engineering (COGGE) NAS							
9. PROJECT WILL BE CONDUCTED PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED  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  National Academy of Sciences Attn: Ms. Samantha Magsino 500 Fifth Street Washington, DC 20001 Email: smagsino@nas.edu			
12. NRC PROGRAM OFFICE (NAME and ADDRESS) NRC ATTN: Robin Barnes, Robin.Barnes1@nrc.gov 21 Church Street MS: C6D20 Rockville, MD 20850 (301) 251-7401 Jacob Phillip, TA <a href="mailto:Jacob.Phillip@nrc.gov">Jacob.Phillip@nrc.gov</a>		13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200.160 B&R NO: 2011-60-17-6-161 JOB CODE: G6020 BOC NO: 4110 OFFICE ID NO: RFP-A: RES-11-249		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		16. TOTAL FUNDING AGREEMENT					
THIS ACTION \$25,000.00		NRC \$25,000.00 This action provides funds for Fiscal Year 11 in the amount of \$25,000.00					
PREVIOUS OBLIGATION \$0.00		RECIPIENT \$88,021.00					
TOTAL \$25,000.00		TOTAL \$113,021.00					
17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS)  U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Chris Walston email: <a href="mailto:Chris.Walston@NRC.GOV">Chris.Walston@NRC.GOV</a> Mail Stop: TWB-01-B10M Rockville MD 20852							
18.  Signature Not Required				19. NRC CONTRACTING OFFICER			
				<div style="text-align: center;">               (Signature) _____ (Date) <u>8/17/11</u>              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 National Academies of Sciences, Division on Earth and Life Studies, Support to the committee on Geological and Geotechnical Engineering (COGGE) NAS as described in Attachment B entitled "Program Description."

### A.2 PERIOD OF GRANT

1. The effective date of this Grant is September 01, 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: September 01, 2011 – August 31, 2012.

#### A. GENERAL

1. Total Estimated NRC Amount:	\$25,000.00
2. Total Obligated Amount:	\$25,000.00
3. Cost-Sharing Amount:	\$88,021.00
4. Activity Title:	Support to the committee on Geological and Geotechnical Engineering (COGGE) NAS
5. NRC Project Officer:	Robin Barnes
6. DUNS No.:	041964057

#### B. SPECIFIC

RFPA No.:	RES-11-249
FFS:	GR0087
Job Code:	G6020
BOC:	4110
B&R Number:	2011-60-17-6-161
Appropriation #:	31X0200.160
Amount Obligated:	\$25,000.00

### A.3 BUDGET

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

Budget Line Items	Amount
Direct Labor	\$7,170.00
Overhead	\$4,237.00
Overhead Cost of Money	\$298.00
Travel	\$6,559.00
Technology/Communication	\$695.00
Meeting Expense	\$990.00
Other Direct Costs	\$708.00

<b>Subtotal</b>	<b>\$20,657.00</b>
General and Administrative Costs	\$4,241.00
G&A Cost of Money	\$102.00
<b>Total</b>	<b>\$25,000.00</b>

#### **A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES**

1. The total estimated amount of this Award is \$25,000.00 for the one-year period.
2. NRC hereby obligates the amount of \$25,000.00 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**

##### **PROGRAM DESCRIPTION**

##### **The Committee on Geological and Geotechnical Engineering**

##### **SUMMARY**

The Committee on Geological and Geotechnical Engineering (COGGE) is the focal point within the Board on Earth Sciences and Resources for scientific, technical, and public-policy issues pertaining to the engineering applications of Earth Sciences. The committee's scope encompasses Earth processes and materials, including the mechanics of rock and soil, and focuses on safe and responsible human development, risk assessment, and mitigation of natural anthropogenic hazards. The committee organizes and oversees studies:

- 1) to identify, investigate, and report on questions relating to geological and geotechnical engineering to government, industry, academia, and the public;
- 2) to provide scientific and technical information to inform public policy on geological and geotechnical engineering issues;
- 3) to identify new technologies and potential applications; and
- 4) to promote the acquisition and dissemination of knowledge.

In addition, the committee provides a forum for discussion among academic and professional groups, government agencies, and private industry to enhance national and international cooperation and exchange of information.

The COGGE's mission is driven by the need to promote the responsibility of the geological and geotechnical engineer throughout the life-cycle of engineered facilities and structures: from site

selection and facility design, to construction, operation, maintenance, and finally to closure and decommissioning. Issues include engineering concerns associated with natural and built environments, radioactive and hazardous waste isolation and remediation, mitigation of natural hazards (e.g., earthquakes, landslides, rising sea levels), environmentally sound and safe recovery of natural resources, and interest in defense structures in rock. The expertise, judgment, and strategic perspective of the members of COGGE serve to define topics meriting inquiry through the National Research Council.

The U.S. Nuclear Regulatory Commission Environmental Transport Branch of the Office of Research has been a long-time supporter of COGGE activities. The National Research Council requests partial support of \$25,000 for the one-year period from January 1, 2011 through December 31, 2011 for the activities of the COGGE. Additional support has been requested from the National Science Foundation and the National Institute for Occupational Safety and Health.

### **Study Selection**

Like all National Research Council standing committees, the Committee on Geological and Geotechnical Engineering (COGGE) is expected to advance understanding and resolution of critical public and research problems. Typically, study activities will fall into three types: agenda setting, synthesis or review, and primary research. Agenda setting involves the articulation of an emerging research problem that will stimulate new insights or needed fields of study. Synthesis and review activities are those in which a large body of research has been undertaken that requires a state-of-the-art assessment or synthesis of its major findings. Finally, many new research problems require large or longer-term collaborative and comparative study, the kind that is difficult for individual institutions to undertake or fund.

Studies approved by the National Research Council Governing Board will be carried out by separately appointed panels that will function under the aegis of the COGGE. This standing committee will assist the BESR in maintaining oversight of such studies.

### **Ongoing Studies**

#### *Underground Engineering/or Sustainable Development*

An ad hoc committee of the National Academies will summarize current geoengineering knowledge about underground development in the urban environment, identify pressing research needed to capitalize on opportunities for enhancing urban sustainability through underground development and develop an enhanced public and technical community understanding of the role of geoengineering in the sustainability of the urban built environment. Issues to be addressed include geologic site characterization, construction and geotechnical monitoring techniques, energy requirements, and lifecycle costs and benefits of sustainable underground infrastructure development. The study will recommend directions for a new geoengineering research track focused on earth systems engineering and management to ensure future human resources for sustainable underground development. The study also will consider policy, economic, and human behavioral drivers promoting or inhibiting the development of the subsurface, but will not make policy or funding recommendations. Expected publication date: March, 2011. Sponsor: NSF.

## *Integrating Dam and Levee Safety and Community Resilience*

An ad hoc committee of the National Research Council will analyze and provide conclusions on how dam and levee safety programs may be broadened to include community- and regional-level preparation, response, mitigation, and recovery from potential infrastructure failure. The study will examine holistic systematic approaches to safety analysis; current practices for identifying and communicating risk with local and regional stakeholders; and decision-making and decision support systems for both infrastructure management and improving community- and regional level resilience against the primary (e.g., inundation) and secondary impacts (e.g., regional power loss) of infrastructure failure. The committee will identify tools, products, and guidance that could be developed at the federal level to address the issues above. The human behavioral drivers that may promote or inhibit the expansion of dam and levee safety programs to promote community resilience will be considered. Expected publication date: April, 2012. Sponsor: FEMA.

### **Recently Completed Studies and Activities**

#### *Assessing the Performance of Surface and Subsurface Engineered Barriers (2007)*

President Carter's 1980 declaration of a state of emergency at Love Canal, New York recognized that residents' health had been affected by nearby chemical waste sites. The Resource Conservation and Recovery Act, enacted in 1976, had just ushered in a new era of waste management disposal designed to protect the public from harm. It required that modern waste containment systems use "engineered" barriers designed to isolate hazardous and toxic wastes and prevent them from seeping into the environment. These containment systems are now employed at thousands of waste sites around the United States, and their effectiveness must be continually monitored. At the request of the U.S. Environmental Protection Agency, U.S. Department of Energy, National Science Foundation, and U.S. Nuclear Regulatory Commission, this National Research Council report assesses the performance of waste containment barriers to date. Existing data suggest that waste containment systems with liners and covers, when constructed and maintained in accordance with current regulations, are performing well thus far. However, they have not been in existence long enough to assess long-term (postclosure) performance, which may extend for hundreds of years. The report recommends expansion of data collection and reporting, improvement of models, and development of new monitoring techniques to improve future assessments and increase confidence in predictions of barrier system performance.

The COGGE received funds from the National Academies to hold a two-day planning meeting November 28-29, 2007 in order to assemble a statement of task and identify funding options for a study regarding the responsibilities of the geoengineer throughout the lifecycle of critical civil infrastructure and engineered facilities. The meeting was held at the Beckman Center in Irvine, California to draw on West coast case studies and enhance the attractiveness of the workshop to, and participation by, geoengineering and regulatory professionals in that region.

### **Projects in Development**

The selection of a topic to go forward will depend on the interests of the geological and geotechnical engineering communities and on agencies (or other sources) willing to provide the resources necessary to study the topic. All proposed topics require approval by the Executive Committee of the National Research Council Governing Board prior to initiation. The following topic has been approved by the Governing Board:

### *Subsurface Characterization, Monitoring, and Remediation of Fractured Porous Rocks*

Geological and geotechnical characterizing, modeling, and monitoring of the subsurface are integral to safe, economical, and environmentally responsible development, maintenance, operation, remediation, and decommissioning of infrastructure related to energy, water, waste, and transportation. Modeling and monitoring fluid travel paths and velocities through subsurface fractures and pore space are among the most significant engineering challenges associated with these tasks. Monitoring and modeling of subsurface fluid flow and transport are especially important at sites where wastes or hazardous substances are produced, stored, or unintentionally released. An ad hoc committee of the National Research Council will conduct a study to address issues relevant to how flow and transport in fractured porous rocks affect groundwater quality near existing and planned facilities. Subsurface characterization, modeling, monitoring, and remediation (SCMMR) aspects applicable throughout the lifecycle of engineered facilities that have potential to release contaminants will be considered. The committee will plan and hold a workshop to examine the state-of-art and state-of-practice in

- Subsurface fracture and matrix characterization, especially relevant geotechnical and hydrological properties, and the development of conceptual models;
- Detection of fluid and contaminant pathways and travel times;
- Detection and modeling of factors that affect change in geotechnical and hydrological properties over time;
- Groundwater and contaminant transport modeling, monitoring, and remediation, and how these can aid decision making during facility design, operation, remediation, and decommissioning;
- Early indicators (such as change in fracture properties; moisture levels) of system failures resulting in unintentional release of fluids; and
- Potential mitigation measures to eliminate or reduce adverse impacts of system failures and related releases.

The committee will issue a final report that will include recommendations with respect to (i) where research and development could improve the current state-of-art in SCMMR, and (ii) where incorporation of scientific and technical advances could enhance the state-of-practice in SCMMR and inform federal regulations and implementing guidance.

The following topic has been explored with potential sponsors:

### *The Role of Geotechnology in Sustainable Energy Production and Management*

The next generation of tools, technological breakthroughs, and new field procedures necessary for sustainable energy production and management is critically dependent on a greater fundamental understanding of soil and rock behavior and properties. Little attention, however, is given to the field of geotechnology when developing policy or designing research and implementation programs. An ad hoc committee will organize workshop designed to raise awareness of the role of geotechnology in assuring an adequate, sustainable, and diverse supply and distribution of energy. The workshop will identify key geotechnical issues in energy production and use, the gaps in geotechnical knowledge to address these issues, and the elements of a potential research agenda to fully capitalize on the knowledge of geotechnologists to support the design, development, and implementation of sustainable energy production and management. The workshop will focus on geotechnical issues associated with two aspects of sustainable energy production: (1) the sustainable management of traditional energy sources and their waste *NAS Proposal IO-DELS-168-02* Page 5 products; and (2) the role of geotechnology in capturing energy from renewable sources such as wind, solar, tidal, and

geothermal. The workshop will specifically consider energy from methane hydrates as one example. COGGE has received commitment of partial support from the NSF and the Department of Energy and is looking for partnering sponsors.

Additionally, at the request of the Earthquake Engineering Research Institute, COGGE is exploring the need for a National Research Council study related establishing the criteria for liquefaction susceptibility analysis.

## **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 this URL to the Office of Management and Budget Cost Circulars is included for reference: [http://www.whitehouse.gov/omb/circulars\\_index-ffm](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**

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.

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

## **2. Award Package**

### **§ 215.41 Grantee responsibilities.**

The Grantee is obligated to conduct 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 and obtained from the NRC Grants Officer in advance of the change or obligation of funds. All requests for NRC prior approval, including requests for extensions to the period of performance, should be made, in writing (which includes submission by e-mail), to the designated Grants Specialist and Program Office 30 days before the proposed change. The request should be signed 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 will 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.

The Grantee 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](http://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 will 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](http://www.gsa.gov/federaltravelregulation) and the per diem rates set forth at: [www.gsa.gov/perdiem](http://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 will 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.

### **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

**Patent Notification Procedures**- If the NRC or its 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, EO 12889 requires NRC to notify the owner. 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 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, such as data, databases or software are determined by 2 CFR 215.36. 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.

**Conflict Of Interest Standards** for this award will 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 will follow provisions as established in 2 CFR 215.60-62.

**Monitoring and Reporting § 215.50-53**

Grantee Financial Management systems must comply with the 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, will 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

Federal Financial Reports - The Grantee is required to 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**

If 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.

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.

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.

### **Automated Standard Application For Payments (ASAP) Procedures**

Unless otherwise stated, grantee payments are made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system <http://www.fms.treas.gov/asap/index.html>, through preauthorized electronic funds transfers. To receive payments, 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 is required to make ASAP withdrawals: (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).

### **Audit Requirements**

Organization-wide or program-specific audits are 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." 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 are 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**

The Grantee will 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 are 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](mailto:Grants_PPR.Resource@NRC.GOV). ***(NOTE: There is an underscore between Grants and PPR).***

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 31<sup>st</sup> is due by April 30<sup>th</sup>, or any portion thereof. The submission for the six month period ending September 30<sup>th</sup> is due by October 31<sup>st</sup> or any portion thereof.

#### **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.

The performance (technical) reports will contain brief information as prescribed in the applicable uniform administrative requirements 2 CFR §215.51. In addition to the customary performance progress report requested on the SF-PPR, SF-PPR-B, and SF-PPR-E forms.

### **Unsatisfactory Performance**

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

Failure to comply with the award provisions may result in a negative impact on future NRC funding. In addition, the Grants Officer may withhold payments; change the method of payment from advance to reimbursement; impose special award conditions; suspend or terminate the grant.

### **Other Federal Awards With Similar Programmatic Activities**

The Grantee will immediately notify the Project Officer and the Grants Officer in writing if after award, other financial assistance is received to support or fund any portion of the program description stated in the NRC award. NRC will not pay for costs that are funded by other sources.

### **Prohibition Against Assignment By The Grantee**

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

### **Site Visits**

The NRC, through authorized representatives, has the right to make site visits to review project accomplishments and management control systems and to provide technical assistance as 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.

## **IV. Miscellaneous Requirements**

### **Criminal and Prohibited Activities**

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.)

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.

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.

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 encouraged to purchase American-made equipment and products with funding provided under this award.

#### **Increasing Seat Belt Use in the United States**

EO 13043 requires Grantees to 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**

EO 13513 requires Grantees to 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 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)).

#### **EXECUTIVE COMPENSATION REPORTING**

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

Reporting Subawards and Executive Compensation.

##### *a. Reporting of first-tier subawards.*

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

##### *2. Where and when to report.*

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

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

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

*b. Reporting Total Compensation of Recipient Executives.*

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

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

ii. in the preceding fiscal year, you received—

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

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

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

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

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

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

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

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

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

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

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

ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/excomp.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 \$10,000.00.

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