

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

1. GRANT/AGREEMENT NO. NRC-HQ-11-G-38-0062		2. MODIFICATION NO.		3. PERIOD OF PERFORMANCE FROM: 8/4/2011 TO: 8/3/2014		4. AUTHORITY Pursuant to Section 31b and 141b of the Atomic Energy Act of 1954, as amended	
5. TYPE OF AWARD <input checked="" type="checkbox"/> GRANT <input type="checkbox"/> COOPERATIVE AGREEMENT		6. ORGANIZATION TYPE Public State-Controlled Institution of Higher ED DUNS: 010628170 NAICS:611310		7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS Colorado School of Mines 1500 Illinois St. Golden, CO 80401-1887			
8. PROJECT TITLE: Colorado School of Mines Nuclear Science and Engineering Faculty Development Program							
9. PROJECT WILL BE CONDUCTED PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED See Program Description AND APPENDIX A-PROJECT GRANT PROVISIONS		10. TECHNICAL REPORTS ARE REQUIRED <input checked="" type="checkbox"/> PROGRESS AND FINAL <input type="checkbox"/> FINAL ONLY <input type="checkbox"/> OTHER (Conference Proceedings)		11. PRINCIPAL INVESTIGATOR(S) NAME, ADDRESS and EMAIL ADDRESS Colorado School of Mines Attn: Thomas Boyd Division Director, Nuclear Science and Engineering Program Email: tboyd@mines.edu 303-273-3020			
12. NRC PROGRAM OFFICE (NAME and ADDRESS) NRC Attn: Nancy Hebron-Isreal Office of Human Resources MS: GW5E06 (301) 492-2231 11545 Rockville Pike Rockville, Maryland 20852 Email: Nancy.Hebron-Isreal@nrc.gov		13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200 B&R NO: 2011-84-51-K-164 JOB CODE: T8480 BOC NO: 4110 OFFICE ID NO: RFPA: HR-11-150 FAIMIS 6-20080		14. METHOD OF PAYMENT <input type="checkbox"/> ADVANCE BY TREASURY CHECK <input type="checkbox"/> REIMBURSEMENT BY TREASURY CHECK <input type="checkbox"/> LETTER OF CREDIT <input checked="" type="checkbox"/> OTHER (SPECIFY) Electronic ASAP.gov (See Remarks in Item #20 "Payment Information")			
15. NRC OBLIGATION FUNDS THIS ACTION <u>\$450,000.00</u> PREVIOUS OBLIGATION _____ TOTAL <u>\$450,000.00</u>		16. TOTAL FUNDING AGREEMENT NRC <u>\$450,000.00</u> RECIPIENT <u>\$150,000.00</u> TOTAL <u>\$600,000.00</u> This action provides funds for Fiscal Year in the amount of <u>See Page Two</u>					
17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Mark Lohrmann Email: Mark.Lohrmann@NRC.GOV Mail Stop: TWB-01-B10M Rockville MD 20852							
18. Signature Not Required				19. NRC CONTRACTING OFFICER <u>Sheila Bumpass</u> <u>8/4/2011</u> (Signature) (Date) NAME (TYPED) <u>Sheila Bumpass</u> TITLE <u>Contracting Officer</u> TELEPHONE NO. <u>301-492-3484</u>			
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

AUG 09 2011

ADM002

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF GRANT

The purpose of this Grant is to provide support to the "Colorado School of Mines Nuclear Science and Engineering Faculty Development Program" as described in Attachment B entitled "Program Description."

A.2 PERIOD OF GRANT

1. The effective date of this Grant is August 4, 2011. The estimated completion date of this Grant is August 3, 2014.
2. Funds obligated hereunder are available for program expenditures for the estimated period: August 4, 2011 – August 3, 2014.

A. GENERAL

1. Total Estimated NRC Amount: \$450,000
2. Total Obligated Amount: \$450,000
3. Cost-Sharing Amount: \$150,000
4. Activity Title: Colorado School of Mines Nuclear Science and Engineering Faculty Development Program
5. NRC Project Officer: Nancy Hebron-Isreal
6. DUNS No.: 010628170

B. SPECIFIC

- RFPA No.: HR-11-150
FFS: N/A
Job Code: T8460
BOC: 4110
B&R Number: 2011-84-51-K-164
Appropriation #: 31X0200
Amount Obligated: \$450,000

A.3 BUDGET

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

	Year 1	Year 2	Year 3	Total
Direct Participant Cost	\$117,583.00	\$118,017.00	\$116,938.00	
Indirect Cost	<u>\$32,417.00</u>	<u>\$31,983.00</u>	<u>\$33,062.00</u>	
Subtotal	\$150,000.00	\$150,000.00	\$150,000.00	
Yearly Total	\$150,000.00	\$150,000.00	\$150,000.00	\$450,000.00
Cost Share				<u>\$150,000.00</u>
				\$600,000.00

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$600,000.00 for the three-year period of which NRC will contribute \$450,000.00 and Colorado School of Mines will contribute \$150,000.00. Cost share must conform to the provision in 2 Code of Federal Regulation 215.

2. NRC hereby obligates the amount of \$450,000 for program expenditures during the period set forth above and in support of the Budget above. The Grantee will be given written notice by the Contracting Officer when additional funds will be added. NRC is not obligated to reimburse the Grantee for the expenditure of amounts in excess of the total obligated amount.

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

Attachment B – Program Description

PROGRAM DESCRIPTION

Colorado School of Mines Nuclear Science and Engineering Faculty Development Program

P.I.: Thomas Boyd, Professor and Dean, Office of Graduate Studies

Co-P.I.: Jeffrey C. King, Assistant Professor and Interim Director, Nuclear Science and Engineering Program

1. Proposed Program

Starting in the 2007/2008 academic year, the Colorado School of Mines (CSM) began offering programs of study leading to graduate degrees in Nuclear Engineering. The Nuclear Engineering graduate degree program at CSM (the only program of its type in Colorado) is interdisciplinary in nature and draws substantial contributions from eight supporting Departments and Divisions (Chemistry, Engineering, Environmental Science and Engineering, Geology and Geological Engineering, Liberal Arts and International Studies, Metallurgical and Materials Engineering, Mining Engineering, and Physics). While delivering a traditional Nuclear Engineering course core, the CSM Nuclear Science and Engineering program emphasizes the nuclear fuel life cycle. Faculty bring to the program expertise in all aspects of the nuclear fuel life cycle – nuclear fuel exploration and processing, nuclear power systems production, nuclear reactor design and operation, nuclear fuel recycling, storage and waste remediation, and radiation detection and measurement, as well as the policy issues surrounding each of these activities. Graduate Nuclear Engineering degrees (M.S. and Ph.D.) are offered, along with several Nuclear Science and Engineering graduate minors. Research is conducted in the participating departments, at the USGS (U.S. Geological Survey) TRIGA reactor, and at the CSM High Performance Computing cluster.

In support of the Nuclear Science and Engineering academic program, a Nuclear Science and Engineering Center (NuSEC) has been established to integrate nuclear-related research efforts across campus. The Nuclear Science and Engineering Program and NuSEC have worked hard to build relationships nationally and have pursued collaborative relationships with the nuclear energy programs at several national laboratories. CSM research groups are part of GNEP, NERI-C, and NEUP funded collaborations in nuclear energy research with LANL, LLNL, and INEL. In particular, the CSM Nuclear Science and Engineering Program has been a very strong participant in the Advanced Test Reactor-National Scientific User Facility (ATR-NSUF) and is the process of developing a NSUF partner facility in conjunction with NuSEC. The program is also in good standing with the Nuclear Engineering Department Heads Organization (NEDHO).

In the spring of 2007, the Colorado Commission of Higher Education (CCHE) approved the following degrees to be offered at CSM:

- *Master of Science (Nuclear Engineering), Thesis option*
36 total credit hours, consisting of core coursework (21 h), nuclear science and engineering seminar (2h) and research (13 h). Students must write and orally defend a research thesis.
- *Master of Science (Nuclear Engineering), Non-thesis option*
36 total credit hours, consisting of core coursework (21 h), nuclear science and engineering seminar (2h), additional elective courses (9 h) and Independent Study (4 h) working on a research project with a faculty member from the Nuclear Science and Engineering Program.
- *Doctor of Philosophy (Nuclear Engineering)*

72 total credit hours, consisting of coursework (21 h of core and at least 12 h electives), nuclear science and engineering seminar (4h) and research (at least 24 h). Ph.D. students must also successfully complete the program's quality control process (which includes a dissertation proposal and defense) as well as write and defend a doctoral dissertation. The quality of the research is expected to rise to the level where it can be submitted for publication in scholarly journals.

For both the MS and PhD degrees, graduates in Nuclear Engineering are exposed to a broad systems overview of the complete nuclear fuel cycle and acquire detailed expertise in a particular component of the cycle. Breadth is assured by requiring all students to complete a rigorous set of core courses. The core consists of a 21 credit-hour course sequence:

- Introduction to Nuclear Reactor Physics
- Radiation Detection and Measurement
- Nuclear Reactor Laboratory (taught in collaboration with the USGS reactor)
- Nuclear Materials Science and Engineering
- Stewardship of Nuclear Materials
- Nuclear Reactor Design
- Nuclear Power and Public Policy

PhD and non-thesis MS students specialize in a particular aspect of Nuclear Engineering under the guidance of a student advisory committee by selecting additional coursework beyond the required core. This additional coursework may include offerings from all of the academic units participating in the degree program, as well as including electives offered by the Nuclear Science and Engineering Program. Through these additional courses, students gain in-depth knowledge of one particular facet of the Nuclear Engineering industry. In the 2010/2011 academic year, 9 Ph.D. and 15 M.S. students are pursuing a graduate degree in nuclear engineering at CSM. Two M.S. students have already graduated and five more are expected to graduate this academic year. The first Ph.D. graduate is expected in the 2011-2012 academic year.

In addition, graduate students majoring in science and engineering fields may complete a minor degree program, consisting of 12 credit hours of coursework, through the Nuclear Science and Engineering Program. Minor programs are designed to allow students in allied fields to acquire and then indicate, in a formal way, specialization in a nuclear-related area of expertise.

Building a strong core of qualified faculty is a key goal of the new program. Since its inception in 2007, the program has successfully recruited an Assistant Professor of Nuclear Engineering. This hire was enabled by an NRC faculty development grant that was awarded in June, 2008. The program is currently conducting a search for a full or associate professor of Nuclear Engineering, who will be hired at a level appropriate to his or her experience, with the intention that the selected person will become the Academic Program Director.

Strategic planning for the program, which has been informed by discussions with the US Nuclear Regulatory Commission, the Department of Energy, and nuclear energy industry representatives, has established a goal of hiring an additional Nuclear Science and Engineering faculty member in the next year. In keeping with theme of having a broad, fuel-cycle focused program, the next Nuclear Science and Engineering faculty hire is planned to be an Assistant Professor with expertise in Nuclear Engineering, Nuclear Materials, or Nuclear Radiochemistry. This third faculty member is felt to be key in establishing the long-term sustainability of the Nuclear Science and Engineering Program at CSM. The national pool of candidates in these areas is small, and the Faculty Development Grants from the NRC have been shown to be vital tools in attracting well-qualified junior faculty to new nuclear science and engineering

programs nationwide.

The proposed CSM Nuclear Science and Engineering Faculty Development Program is intended to provide a junior, tenure-track faculty hire in the Nuclear Science and Engineering Program with a competitive start-up package, along with focused professional development support. NRC funding would supply \$450,000 (\$150,000 per year for 3 years) and CSM would provide a match of \$150,000 (\$50,000 per year for 3 years). The CSM contribution represents a typical start-up package that has been supplied in past years to starting tenure-track assistant professors at our institution. While this is competitive in many fields, market forces have placed junior nuclear science and engineering professors in high demand. Additionally, as a new nuclear science and engineering program that is still establishing name recognition, CSM faces an additional burden in convincing junior professors (most of whom will have multiple offers from other universities) to join our program. CSM is dedicated to establishing a nationally recognized nuclear program and the proposed joint award with NRC is one avenue towards alleviating the disadvantage in attracting excellent junior faculty. In addition to a cash startup (to be expended along the guidelines outlined in the NRC solicitation), incoming assistant professors receive a faculty office, adequate laboratory space and a reduced (50%) teaching load for the first two years. Depending on the department, research-active faculty have a teaching load of 2-3 courses per year.

The CSM Nuclear Science and Engineering Faculty Development Program will be a key step in completing the goal of establishing a stable Nuclear Science and Engineering Program led by nationally-recognized faculty members. The recruiting and selection processes described in the next section will ensure that the most qualified candidates will be identified as part of the faculty search for this position, which will begin as soon as the Program is funded.

2. Recruitment and Selection Process

The CSM Nuclear Science and Engineering Faculty Development Program will support an upcoming junior, tenure-track faculty hire for CSM's Nuclear Science and Engineering Program. The search committee for the new position will consist of the following persons or their representative:

- The Dean of Graduate Studies (chair) (the P.I. of this proposal),
- the Director of the Nuclear Science and Engineering Program (co-P.I. of this proposal),
- the Director of the Nuclear Science and Engineering Center,
- 2 or 3 faculty members from the Nuclear Science and Engineering Program selected by the Dean of Graduate Studies and the Director of the Nuclear Science and Engineering Program.

The announcement will be prepared by the search committee and will be advertised for several months via the channels and publications of the American Nuclear Society and sent to targeted departments at other universities with a demonstrated focus on radiochemistry. Additionally, it will be distributed to our contacts at the U.S. National Laboratories (INEL, LLNL, LANL, ORNL and ANL) and in the nuclear industry. The advertisement will contain specific language referring to the Colorado School of Mines Nuclear Science and Engineering Faculty Development Program. As CSM is a state university, our search processes are highly formalized. CSM is also an EEO/AA employer and is committed to enhancing the diversity of its campus community.

We understand that the pool of underrepresented candidates with an appropriate nuclear science and engineering background is small. We therefore plan to maximize our opportunities within this small pool through targeted marketing, established connections, and creating new networks of access. CSM has strong connections at several Hispanic Serving Institutions (e.g.

University of Southern Colorado, University of New Mexico, and the University of Houston), Historically Black Colleges and Universities (e.g. Tennessee State University, Howard University, Southern University, and Tuskegee University), and universities with higher Native American and Alaskan Native populations (e.g., University of New Mexico, Arizona State University, University of Oklahoma, Montana State University, Northern Arizona University, Fort Lewis College and the South Dakota School of Mines and Technology). While most of these schools do not have Nuclear Engineering Programs (with the exception of the University of New Mexico), we will use our contacts at these schools to help us to identify qualified underrepresented candidates and directly encourage them to apply.

The faculty search will accept applications until the position is filled. All resumes will be received by the Office of Human Resources. After the search committee has met and developed a set of evaluation criteria, the Office of Human Resources will review and approve them. At this point resumes can be released to the search committee, and a first evaluation is performed which usually leads to a subset of applications for which references are requested. After references have been received, finalists are selected by the search committee and invited for a campus visit by the Provost. At this point recruitment packages will be sent to the invited finalists, which will include information on the CSM Nuclear Science and Engineering Faculty Development Program. Interviews will be conducted on campus with all the members of the search committee, interested members of the Nuclear Science and Engineering Program and several members of the Administration including the Provost and the Vice-President for Research. The finalists will also present a lecture on their research. Additionally, each applicant will submit statements of his or her research and teaching plans. After the interview, when the finalists will have gotten an idea of the intellectual and physical climate at CSM, we will request a revised version with specific information on how their research relates to and will use the funding provided by the CSM Nuclear Science and Engineering Faculty Development Program. After informal talks with their colleagues, the search committee will meet and provide a ranking of the finalists. This will be transmitted to the Provost who will approve the hire. The CSM Nuclear Science and Engineering Faculty Development Program funds (including the CSM match) will become part of the new faculty's start-up package, which might be augmented above the amount of the award based on negotiations with the selected candidate.

3. Management Structure and Administration

The newly hired Nuclear Science and Engineering Assistant Professor will be supported in his or her career by the Nuclear Science and Engineering Academic Program Director, the Nuclear Science and Engineering Research Center Director, and the Dean of Graduate Studies. They will assume an official faculty mentor role, along with a senior faculty member in the new faculty member's home department. (In support of the interdisciplinary nature of the CSM Nuclear Science and Engineering Program, faculty hired into the Program also have a home in one of the eight supporting Departments or Divisions.) The faculty mentoring program at CSM teams up junior, tenure-track faculty members with senior, tenured faculty until the junior faculty member has achieved tenure.

The Nuclear Science and Engineering Faculty Development Program will be administered by the P.I. and co-P.I., who will carry out all reporting functions, track the progress of the new faculty member, and monitor compliance with award conditions. CSM (research volume above \$58 million per year) has significant experience with the management and administration of federal grants. The progress of the new faculty member towards tenure, and the overall successfulness of the CSM Nuclear Science and Engineering Faculty Development Program in attracting and supporting a top-tier nuclear science and engineering faculty member to will be monitored and evaluated as described in Section 4.

As expressed in the attached letter of support from the Colorado School of Mines Provost and detailed in Section 5, CSM is fully committed to the new Nuclear Science and Engineering Program and to the success of the new faculty member to be supported by the proposed Faculty Development Program. The addition of the new faculty hire to the other recently hired core NSE faculty members, and to the participants from other departments, will be an important step to achieving critical mass for the program (with three dedicated core faculty members and strong additional support from faculty members in eight Divisions/Departments). Infrastructure being built up through NuSEC, together with access to the USGS reactor and the CSM High Performance Computing Center, will provide a research portfolio and environment for all participants to thrive. The new hire will intensify CSM's collaborations with the national laboratories active in nuclear science and engineering research - in particular, the Idaho National Laboratory.

4. Evaluation Plan

The evaluation plan for the proposed Faculty Development Program has two objectives: 1) to measure the Program's impact and effectiveness in attracting, preparing, and retaining faculty in an academic career; and, 2) to ensure that the new faculty member makes satisfactory progress towards promotion and tenure. Both objectives include comparison with both internal and external competitors. The internal comparison will be with other junior engineering faculty at CSM and the external comparison will be with programs at other universities. The external comparison will focus primarily on faculty at the other new nuclear science and engineering programs (primarily those created after the year 2000), but will also consider other, more mature, programs in order to provide a broad cross-section for analysis.

The effectiveness in attracting highly qualified individuals (success in recruiting) will be assessed by analyzing the applicant pool and the outcome of the hiring cycle. Information to be collected will include:

- The total number of applicants,
- the academic merit of applications (undergraduate and graduate GPA, research and/or industry experience, publications and presentations, teaching experience),
- the diversity of applicant pool (gender, race, citizenship), and
- the viability of proposed research plan.

Additionally, the search committee will provide a narrative on the influence they felt that the availability of the Faculty Development Program had on the resulting research plans and attitudes towards the CSM position, based on the committee's interviews with the finalists. This information will be compared to the Program's qualification and diversity goals. In addition, the results of our search will be compared to the results of other junior faculty searches conducted by CSM and by competitive programs at other schools.

The effectiveness of preparing the new faculty member to excel and succeed in the areas of teaching, research and service will be assessed by collecting data on the quality and extent of the new faculty member's efforts. The P.I. and co-P.I. will collect semi-annual reports from the faculty mentors of the new assistant professor. These reports will look at the following metrics:

- Quality of courses developed and taught,
- external research funding sought and received,
- publications and presentations,
- service duties at CSM and to the larger nuclear science and engineering community, and
- graduate and undergraduate students involved in research.

In each of the metrics, the role of the availability of the CSM Nuclear Science and

Engineering Faculty Development Program will be evaluated. This semi-annual feedback will allow the junior faculty member to revise his or her allocation of efforts to address weaknesses. The progress of the new faculty member in his or her career will be compared to other new junior hires at CSM.

The effectiveness of retaining the new faculty member in an academic teaching career in nuclear science and engineering will be evaluated as part of the preliminary tenure review process. Near the end of the Faculty Development Program period a preliminary tenure review will be conducted (normally at CSM this happens near the end of the third year of employment). This review looks at the metrics above and evaluates the progress that the tenure-track faculty member has made towards tenure. The results of this review will be compared to other preliminary tenure reviews with the help of the Office of the Provost.

The faculty mentors will work with the new faculty member until the tenure decision. This decision (normally after 5-6 years) will provide the final data on the effectiveness of the Faculty Development Program in attracting, preparing, and retaining new faculty in CSM's Nuclear Science and Engineering Program. The outcome of this process will be compared with the results of similar cases in other comparable programs.

The results of both objectives of the evaluation plan will be compiled, evaluated, and used to improve the year-to-year function of the proposed Faculty Development Program. The results will also be reported to NRC on a yearly basis.

5. Institutional Support and Sustainability

As mentioned in Section 1 and in the attached letter of support from CSM's Provost, the Colorado School of Mines is committing to providing \$150,000 in matching money for the proposed Nuclear Science and Engineering Faculty Development Program, to be provided as supplemental startup money to the new tenure-track nuclear science and engineering faculty hire. In addition to this direct and formal cost-share, CSM will continue to provide leveraged funding and support to the Nuclear Science and Engineering Program. While still new, Mines is fully committed to building the Nuclear Science and Engineering Program into the premier graduate enterprise specializing in nuclear fuel-cycle issues. To this end, Mines has:

- provided salary support for adjunct and research professors who are contributing to program development and implementation;
- continued to provide \$40,000/academic year to the NSE Program for student support;
- hired, with NRC support, a new tenure-track Nuclear Engineering faculty member who started Fall 2009;
- approved, and has begun the search for, a second Nuclear Engineering hire to start January 2011;
- received substantive commitment to the Nuclear Science and Engineering Program from over thirty faculty across eight academic departments;
- established a Nuclear Science and Engineering Center (NuSEC) to coordinate all nuclear science and engineering related research efforts across campus;
- implemented an agreement with the United States Geological Survey (USGS) for access to their TRIGA research reactor for research and instructional use;
- developed, with NRC support, Nuclear Reactor Physics and Nuclear Reactor Laboratory graduate courses;
- developed, using internal funding, graduate courses in Materials Science and Engineering of Nuclear Materials, Stewardship of Nuclear Resources, Nuclear Reactor Design, and Nuclear Power and Public Policy;

- established a five-year combined BS/MS nuclear engineering degree program as a pipeline into our graduate program;
- founded a Colorado School of Mines Student Chapter of the American Nuclear Society and participated in the revitalization of the Colorado Chapter of the American Nuclear Society;
- begun development of an Active Materials Characterization Laboratory adjacent to the USGS TRIGA reactor, dedicated to the study of radioactive materials and radiation damage effects and intended to become a partner facility to the Advanced Test Reactor National Scientific User Facility;
- nurtured collaborative relationships with several national laboratories on nuclear science and engineering projects, including the Idaho National Laboratory, the Sandia National Laboratory, the Los Alamos National Laboratory, and the Oak Ridge National Laboratory;
- focused campus advancement activities related to the NSE program in order to identify potential donors who can support the new program; and
- begun actively exploiting contacts with its partners in the uranium mining, milling, fuel production and environmental remediation industries to support and enhance the program.

The Colorado School of Mines is dedicated to establishing a national presence as a source of highly-qualified graduates with experience in nuclear science and engineering. To that end, CSM is aggressively pursuing involvement in the national nuclear energy program. As mentioned previously, CSM is engaged with several national laboratories (and is a member in good standing of the Nuclear Engineering Department Heads Organization (NEDHO).

One particularly strong example of CSM's commitment to the national nuclear energy effort is the school's strong and continued participation in the Advanced Test Reactor National Scientific User Facility. As detailed in the attached letter of support from the Scientific Director of the ATR-NSUF, CSM has been involved with the NSUF since the Facility's inception. CSM organized one of the first irradiation experiments sponsored by the ATR-NSUF and has contributed to an ATR-NSUF Faculty/Student Research Team in both years of that program. CSM has heavily participated in the ATR-NSUF users week, giving three invited presentations during the 2010 session. Finally, negotiations are currently underway for CSM's Active Materials Characterization Laboratory to become an ATR-NSUF partner facility. This partnership will place the CSM Nuclear Science and Engineering Program along-side those at the Massachusetts Institute of Technology, North Carolina State University, the University of Michigan, the University of Nevada – Las Vegas, the University of Wisconsin, and the Advanced Photon Source at the Illinois Institute of Technology. All of these universities, and the Colorado School of Mines, are dedicated to supporting the national nuclear science and engineering research program.

In summary, the Nuclear Science and Engineering Program at the Colorado School of Mines is dedicated to becoming a nationally-recognized provider of engineers in support of the national nuclear energy effort. This includes producing well-educated M.S. And Ph.D. Nuclear Engineers, as well as engineers of other disciplines with experience relevant to nuclear science and engineering. The proposed Nuclear Science and Engineering Faculty Development Program will be a key component in attracting an additional junior-level Nuclear Science and Engineering faculty member, in support of building a high quality and sustainable nuclear energy program at CSM.

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 to:

A-21 (now 2 CFR 220)

A-87 (now 2 CFR 225)

A-122 (now 2 CFR 230)

A-102:

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

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

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

I. Mandatory General Requirements

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

1. Applicability of 2 CFR Part 215

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

of the project to comply with Subpart C of 2 CFR 215 and include this term in lower-tier (subaward) covered transactions.

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

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

2. Award Package

§ 215.41 Grantee responsibilities.

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

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

Subgrants

Appendix A to Part 215—Contract Provisions

Sub-recipients, sub-awardees, and contractors have no relationship with NRC under the terms of this grant/cooperative agreement. All required NRC approvals must be directed through the Grantee to NRC. See 2 CFR 215 and 215.41.

Nondiscrimination

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

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

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

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

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

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

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

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

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

Any other applicable non-discrimination law(s).

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

Modifications/Prior Approval

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

Lobbying Restrictions

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

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

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

§ 215.13 Debarment And Suspension.

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

- (1) Are presently excluded or disqualified from covered transactions by any Federal department or agency;
- (2) Have been convicted within the preceding three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or

destruction of records, making false statements, tax evasion, receiving stolen property, making false claims, or obstruction of justice; commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects your present responsibility;

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

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

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

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

'Debarment, Suspension, Ineligibility, and Voluntary Exclusion

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

Drug-Free Workplace

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

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

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

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

Procurement Standards. § 215.40-48

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

Travel

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

Domestic Travel:

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

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

International Travel:

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

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

Property and Equipment Management Standards

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

Procurement Standards

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

Intangible and Intellectual Property

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

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

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

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

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

Records Retention and Access Requirements for records of the Grantee shall follow established provisions in 2 CFR 215.53.

Organizational Prior Approval System

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

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

Conflict Of Interest Standards for this award shall follow OCOI requirements set forth in Section 170A of the Atomic Energy Act of 1954, as amended, and provisions set forth at 2 CFR 215.42 Codes of Conduct.

Dispute Review Procedures

a. Any request for review of a notice of termination or other adverse decision should be addressed to the Grants Officer. It must be postmarked or transmitted electronically no later than 30 days after the postmarked date of such termination or adverse decision from the Grants Officer.

b. The request for review must contain a full statement of the Grantee's position and the pertinent facts and reasons in support of such position.

c. The Grants Officer will promptly acknowledge receipt of the request for review and shall forward it to the Director, Office of Administration, who shall appoint an intra-agency Appeal Board to review a grantee appeal of an agency action, if required, which will consist of the program office director, the Deputy Director of Office of Administration, and the Office of General Counsel.

d. Pending resolution of the request for review, the NRC may withhold or defer payments under the award during the review proceedings.

e. The review committee will request the Grants Officer who issued the notice of termination or adverse action to provide copies of all relevant background materials and documents. The committee may, at its discretion, invite representatives of the Grantee and the NRC program office to discuss pertinent issues and to submit such additional information as it deems appropriate. The chairman of the review committee will insure that all review activities or proceedings are adequately documented.

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

Termination and Enforcement. Termination of this award by default or by mutual consent shall follow provisions as established in 2 CFR 215.60-62.

Monitoring and Reporting § 215.50-53

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

- Payment – 2 CFR 215.22
- Cost Share – 2 CFR 215.23
- Program Income – 2 CFR 215.24
 - Earned program income, if any, shall be added to funds committed to the project by the NRC and Grantee and used to further eligible project or program objectives or deducted from the total project cost allowable cost as directed by the Grants Officer or the terms and conditions of award.
- Budget Revision – 2 CFR 215.25
 - The Grantee is required to report deviations from the approved budget and program descriptions in accordance with 2 CFR 215.25, and request prior written approval from the Program Officer and the Grants Officer.
 - The Grantee is not authorized to rebudget between direct costs and indirect costs without written approval of the Grants Officer.
 - The Grantee is authorized to transfer funds among direct cost categories up to a cumulative 10 percent of the total approved budget. The Grantee is not allowed

to transfer funds if the transfer would cause any Federal appropriation to be used for purposes other than those consistent with the original intent of the appropriation.

- o Allowable Costs – 2 CFR 215.27

b. Federal Financial Reports

The Grantee shall submit a "Federal Financial Report" (SF-425) on a quarterly basis for the periods ending March 31, June 30, September 30, and December 31, or any portion thereof, unless otherwise specified in a special award condition. Reports are due no later than 30 days following the end of each reporting period. A final SF-425 is due within 90 days after expiration of the award. The report should be submitted electronically to:

Grants FFR@NRC.GOV. **(NOTE: There is an underscore between Grants and FFR).**

Period of Availability of Funds 2 CFR § 215.28

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

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

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

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

Automated Standard Application For Payments (ASAP) Procedures

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

Audit Requirements

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

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

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

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

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

III. Programmatic Requirements

Performance (Technical) Reports

a. The Grantee shall submit performance (technical) reports electronically to the NRC Project Officer and Grants Officer on a semi-annual basis unless otherwise authorized by the Grants Officer. Performance reports should be sent to the Program Officer at the email address indicated in Block 12 of the Notice of Award, and to Grants Officer at:

Grants_PPR.Resource@NRC.GOV. **(NOTE: There is an underscore between Grants and PPR).**

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

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

d. Grant Performance Metrics:

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

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

Curriculum Development Awards

1. Overall number of new courses developed in NRC designated STEM areas;

2. Number of students enrolled in new STEM courses;
3. Number of these enrolled students retained in STEM major.

Unsatisfactory Performance

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

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

Other Federal Awards With Similar Programmatic Activities

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

Prohibition Against Assignment By The Grantee

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

Site Visits

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

IV. Miscellaneous Requirements

Criminal and Prohibited Activities

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

American-Made Equipment And Products

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

Increasing Seat Belt Use in the United States

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

Federal Leadership of Reducing Text Messaging While Driving

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

Federal Employee Expenses

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

Minority Serving Institutions (MSIs) Initiative

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

Research Misconduct

Scientific or research misconduct refers to the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. It does not include honest errors or differences of opinions. The Grantee organization has the primary responsibility to investigate allegations and provide reports to the Federal Government. Funds expended on an activity that is determined to be invalid or unreliable because of scientific misconduct may result in a disallowance of costs for which the institution may be liable for repayment to the awarding agency. The Office of Science and Technology Policy at the White House published in the Federal Register on December 6, 2000, a final policy that addressed

research misconduct. The policy was developed by the National Science and Technology Council (65 FR 76260). The NRC requires that any allegation be submitted to the Grants Officer, who will also notify the OIG of such allegation. Generally, the Grantee organization shall investigate the allegation and submit its findings to the Grants Officer. The NRC may accept the Grantee's findings or proceed with its own investigation. The Grants Officer shall inform the Grantee of the NRC's final determination.

Publications, Videos, and Acknowledgment of Sponsorship

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

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

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

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

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

Award Term

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

Reporting Subawards and Executive Compensation.

a. Reporting of first-tier subawards.

1. *Applicability.* Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates \$25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment

Act of 2009, Pub. L. 111-5) for a subaward to an entity (see definitions in paragraph e. of this award term).

2. Where and when to report.

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

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

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

b. Reporting Total Compensation of Recipient Executives.

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

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

ii. in the preceding fiscal year, you received—

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

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

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

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

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

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

c. Reporting of Total Compensation of Subrecipient Executives.

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

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

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

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

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

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

i. To the recipient.

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

d. *Exemptions*

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

i. Subawards,

and

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

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

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

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

- ii. A foreign public entity;
- iii. A domestic or foreign nonprofit organization;
- iv. A domestic or foreign for-profit organization;
- v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

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

3. *Subaward*:

- i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
- ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. ____ .210 of the attachment to OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations").
- iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

4. *Subrecipient* means an entity that:

- i. Receives a subaward from you (the recipient) under this award; and
- ii. Is accountable to you for the use of the Federal funds provided by the subaward.

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

- i. *Salary and bonus*.
- ii. *Awards of stock, stock options, and stock appreciation rights*. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
- iii. *Earnings for services under non-equity incentive plans*. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
- iv. *Change in pension value*. This is the change in present value of defined benefit and actuarial pension plans.

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

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