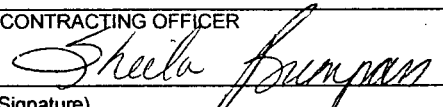


**NUCLEAR REGULATORY COMMISSION
OFFICE OF GRANT/ASSISTANCE AWARD**

1. GRANT/AGREEMENT NO. NRC-27-10-1124		2. MODIFICATION NO.		3. PERIOD OF PERFORMANCE FROM: 09/30/10 TO: 09/29/13		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 DUNS: 019018154 Tribally Controlled Colleges & Universities		7. RECIPIENT NAME, ADDRESS, and EMAIL ADDRESS CHIEF DULL KNIFE COLLEGE, INC 1 COLLEGE DR LAME DEER MT 590430098			
8. PROJECT TITLE: Chief Dull Knife College Research Lab Infrastructure Development							
9. PROJECT WILL BE CONDUCTED PER GOVERNMENT'S/RECIPIENT'S PROPOSAL(S) DATED 05/05/2010 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 Robert Madsen Chief Dull Knife College 1 College Drive Lame Deer, MT 59043			
12. NRC PROGRAM OFFICE (NAME and ADDRESS) U.S. Nuclear Regulatory Commission Ms. Tuwanda Smith Mail Stop 03H8 (301) 415-7394 Office of Small Business & Civil Rights 6003 Executive Boulevard Rockville, MD 20852		13. ACCOUNTING and APPROPRIATION DATA APPN. NO: 31X0200 B&R NO: 07P-15-5C1-161 JOB CODE: N7315 BOC NO: 4110 OFFICE ID NO: SDB-27-10-1124		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 \$25,000.00 PREVIOUS OBLIGATION TOTAL \$25,000.00		16. TOTAL FUNDING AGREEMENT NRC \$75,000.00 RECIPIENT \$0.00 TOTAL \$75,000.00 This action provides funds for Fiscal Year 2010 in the amount of \$25,000.00					
17. NRC ISSUING OFFICE (NAME, ADDRESS and EMAIL ADDRESS) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Mr. Michael Mills (301) 492-3621 Mail Stop: TWB-01-B10M Washington, DC 20555 Michael.Mills@nrc.gov							
18. Acceptance of or objections to the Terms and Conditions of Award must be Emailed to the NRC Issuing Office (Block #17) within three (3) business days following the Award issue date. NRC considers lack of response as acceptance by the grantee of the terms and conditions of award.				19. NRC CONTRACTING OFFICER <div style="text-align: right;"> 9/27/2010 (Signature) _____ (Date) NAME (TYPED) Sheila Bumpass TITLE Contracting Officer TELEPHONE NO. 301-492-3484</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

ADM001

ATTACHMENT A - SCHEDULE

A.1 PURPOSE OF COOPERATIVE AGREEMENT

The purpose of this Grant is to provide support to Chief Dull Knife College for the project entitled "Chief Dull Knife College Research Lab Infrastructure Development."

A.2 PERIOD OF COOPERATIVE AGREEMENT

1. The effective date of this Cooperative Agreement is September 30, 2010. The estimated completion date of this Grant is September 29, 2013; however, funding after year one is subject to the availability of funding.

2. Funds obligated hereunder are available for program expenditures for the estimated period: September 30, 2010 – September 29, 2011.

A. GENERAL

1. Total Estimated NRC Amount:	\$75,000.00
2. Total Obligated Amount:	\$25,000.00
3. Cost-Sharing Amount:	\$ 0.00
4. Activity Title:	"Chief Dull Knife College Research Lab Infrastructure Development"
5. NRC Project Officer:	Tuwanda Smith
6. DUNS No.	019018154

B. SPECIFIC

RFPA No.	SDB-27-10-1124
FFS:	RQSBC10336
Job Code:	N7315
BOC:	4110
B&R Number:	07P-15-5C1-161
Appropriation #:	31X0200
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.

	Year 1	Year 2	Year 3
Total Salaries & Fringe	\$ 4,760.00	\$14,612.00	\$14,391.00
Total Alteration Costs	\$16,835.00	\$ 0.00	\$ 0.00
Total Travel	\$ 939.00	\$ 1,819.00	\$ 1,654.00
Total Materials & Supplies	\$ 0.00	\$ 0.00	\$ 0.00
Total Evaluation Costs	\$ 0.00	\$ 1,000.00	\$ 1,500.00
Subtotal	\$22,534.00	\$17,431.00	\$17,545.00
Indirect Costs (51.8%)	\$ 2,466.00	\$ 7,569.00	\$ 7,455.00
Yearly Total	\$25,000.00	\$25,000.00	\$25,000.00

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

A.4 AMOUNT OF AWARD AND PAYMENT PROCEDURES

1. The total estimated amount of this Award is \$75,000.00 for the three year period. Years two – three are subject to the availability of funding.
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 recipient will be given written notice by the Contracting Officer when additional funds will be added. NRC is not obligated to reimburse the recipient for the expenditure of amounts in excess of the total obligated amount.
3. Payment shall be made to the Recipient in accordance with procedures set forth in the Automated Standard Application For Payments (ASAP) Procedures set forth below.

Attachment B – Program Description

Introduction

Chief Dull Knife College (CDKC) is a fully accredited, open-admission, community based, tribally controlled institution, located on the Northern Cheyenne Reservation in southeastern Montana (120 miles away from the nearest city - Billings, Montana). The Mission of the College is to provide affordable, quality educational opportunities to residents of the Northern Cheyenne Reservation and surrounding communities. Chief Dull Knife College offers an Associate of Arts Degree in General Studies and Associate in Applied Science degrees in Office Management and Business. The college has 325 students (237 Full Time Equivalent) and 92% of the students are Native American. The average student age is 26, and 60% of the students are women (the female/male ratio is the same in math and science courses – 60% women to 40% men).

One of the goals of the college is to provide college transfer programs to increase the educational level and meet the training needs of students and the community. The reservation has a land base of 466,000 acres of agricultural and forest land, and 4,800 residents. About 65% of the population is under 25. Dropout rates at Northern Cheyenne high schools are approximately 50%.

As a Tribally Controlled Community College, Chief Dull Knife College does not receive any funding from the state of Montana. With the exception of tuition (\$90 per credit) all of CDKC funds come from federal sources. The College receives its base funding from the Bureau of Indian Education based on its annual Native American student FTE (full time equivalent) count. The amount per FTE varies from year to year but is usually around \$4,800. About half of CDKC's support comes from competitive federal grants.

Our science curriculum is designed to give students the basic courses they need to transfer to a four-year institution. The college offers an AA degree in General Studies with options in Allied Health, Biology/Pre-Med., and Agriculture. Transfer courses include; Biology of Cells and Biology of Organisms, General Organic and Bio. Chemistry, College Chemistry, Microbiology, Anatomy and Physiology, Pre-calculus, and Calculus I & II. We currently have 25 – 30 students majoring in science. Our largest identified group of science majors is in Allied Health with 15 – 20 students.

Tribal college science faculty typically have heavy teaching loads (15 + credit hours per semester), have little experience conducting research and are very often, conducting research outside of their field of expertise. Because of this, successful research programs at tribal colleges depend on partnerships with university research programs and faculty.

CDKC has three science faculty. Two, Mr. Brian Stiff and Dr. Valerie Houghton (a new hire), primarily teach; and the third, Mr. Bob Madsen, primarily does research. Mr. Madsen has been teaching and conducting student-based research at tribal colleges for the past 26 years. He has a degree in entomology and is currently conducting research in environmental microbiology with a strong molecular biology component. Mr. Stiff has taught at CDKC for the past 8 years and is initiating his first research project. He has a B.S. Degree in biology with a minor in chemistry and a Master of Science/Science Education (MSSE) Degree.

CDKC Research Programs

Chief Dull Knife College has a number of undergraduate research programs, including long-term research programs, short-term research programs (emphasizing teams of students), and an international research program.

The college has had two long-term collaborative research projects with The University of Montana. The first was conducted from 1997 – 2006, and investigated thermoregulation in honey bee colonies. The second was started in 2006, and involves environmental microbiological research on a number of rivers in eastern & western Montana.

Chief Dull Knife's Science Department has had a long association with The University of Montana (U of M). That association began in 1997, when Bob Madsen spent the summer conducting honeybee thermoregulation research with Dr. Delbert Kilgore and Dr. Jerry Bromenshenk. That research continued through the summer of 2005, with Mr. Madsen and his students conducting honeybee research at the University of Montana. Funding for Mr. Madsen's summer honeybee research came from the NIH and the American Physiological Society. The research supported 12 undergraduate students. Undergraduates presented posters on this research at 5 scientific meetings.

Starting in the fall of 2005, Mr. Madsen used his contacts at The University of Montana to develop a new research project that better integrated into 100 & 200 level science courses taught at Chief Dull Knife College. In the summer of 2006, Mr. Madsen started that new research project with Dr. James Gannon and Dr. Bill Holben at the University of Montana. Mr. Madsen and three students worked in Dr. Gannon's and Dr. Holben's labs on projects that involved the development of low-cost water filters and the characterization of bacterial communities in the Nyack Flood Plane. Mr. Madsen used a variety of funding sources to fund that research including NSF TCUP funds from CDKC, and NIH Bridges and NSF REU funds from The U of M. During the 2006/07 – 2007/08 academic years, Mr. Madsen and Dr. Gannon began to write proposals to the NSF to strengthen their collaboration: Mr. Madsen and Jeff Hooker from CDKC submitted a NSF TCUP II proposal that included a full-time research position for Mr. Madsen and academic year and summer research internships for students in the spring of 2006; Mr. Madsen submitted a DOE Equipment proposal, to equip a PCR lab at CDKC, in the fall of 2006; and Dr. Gannon, Mr. Madsen and Dr. Philip Ramsey submitted a two-year NSF research proposal "Chronic Stress in Ecosystems Project" that included summer research positions for CDKC students at The U of M in the spring of 2007. All of the proposals were funded and came on line in the fall of 2007 (TCUP II and DOD Equipment) and the summer of 2008 (NSF Research).

Dr. Gannon, Mr. Madsen and Dr. Ramsey had planned to begin a research project on the Tongue River (adjacent to the Northern Cheyenne Reservation in southwest Montana) in the summer of 2009. Those plans were accelerated in the spring of 2008 when CDKC received Montana NSF-EPSCoR funds. With those funds, CDKC was able to purchase a key piece of equipment for Dr. Gannon's NSF Research Project on the Clark Fork River and was able to hire Dr. Ramsey as a part-time Adjunct Faculty Member. EPSCoR funds allowed Mr. Madsen and Dr. Ramsey to train students and begin the Tongue River research in the summer of 2008. Chief Dull Knife College now has an active research project on the Tongue River and a fully functional PCR lab.

Students at CDKC are involved in academic year and summer research on the development of low-cost water filters and characterizing the bacterial communities on the Tongue, Clark Fork, and Big Horn Rivers. During the past four years that research has involved 16 students from Chief Dull Knife College, undergraduate and graduate students from Dr. Gannon's lab (including one student working with CDKC students on Tongue River and Big Horn River isolates using EPSCoR funds), and two research professors from The University of Montana (Dr. Ramsey and Dr. Sergio Morales). Mr. Madsen's, Dr. Gannon's and Dr. Holben's labs are linked through joint summer and academic year research projects, research methods classes delivered by Dr. Ramsey and Dr. Morales, and video conferencing capabilities (PolyCom) between the two labs.

CDKC's environmental microbiology research is currently funded through CDKC's TCUP II Grant, Montana EPSCoR's Large Rivers Project, and a NSF SBIR supplemental grant. Dr. Ramsey and Mr. Madsen have submitted a second, three-year, proposal to NSF for continued support of the "Chronic Stress in Ecosystems Project".

The college has participated in two short-term NASA-supported student research programs through NASA's Reduced Gravity Student Flight Opportunities Program. Through this program, teams of students design experiments that fly on NASA's "Vomit Comet" at The Johnson Space Center. The research involved teams of CDKC students, Montana State University engineering students, and 3rd – 8th grade students on the Northern Cheyenne Reservation. CDKC and MSU students travel to Houston, TX and flav with the experiment on the "Vomit Comet". CDKC has taken student experiments twice. In 2000, we flew an experiment on alfalfa leafcutting bee flight behavior in microgravity (The Bee Gs), and in 2003, we flew an experiment on baking soda & vinegar reactions in microgravity (The Fizz Kids). These projects involved 9 CDKC students and 80 3rd-8th grade students.

CDKC is currently conducting NASA-supported research through the Montana Space Grant Consortium and the NASA/AIHEC Tribal College and University Summer Research Experience Program. These programs have supported one CDKC faculty member and two students to do GIS/GPS and remote sensing research projects on the Northern Cheyenne Reservation. CDKC students used a tethered blimp, supplied by the Montana Space Grant Consortium, to conduct research on distribution of noxious weeds during the summer of 2009 and will conduct research to locate abandoned homesteads during 2010 summer. CDKC and Montana State University are developing and testing a near IR camera system to be used on a new "Kingfisher" tethered balloon (again supplied by the Montana Space Grant Consortium) for the 2010 research program. The "Kingfisher" and near IR camera will also be used to support Mr. Madsen's and Mr. Stiff's research (see below).

CDKC international research is supported through a Montana State University USDA Challenge Grant and through CDKC's TCUP Grant. Through this program, CDKC students travel to Mali, West Africa to research the effectiveness of integrated pest management strategies delivered by Peace Corps Volunteers to Malian farmers. Students spend 10-12 days in Mali working with Malian agricultural researchers, Malian farmers, and Peace Corps Volunteers. Eleven CDKC students have traveled to Mali as participants in this program (2003, 2005, 2006, 2007, 2008 & 2009). Four students have returned to Mali for a second time.

Additional CDKC faculty have become involved with projects related to Mr. Madsen's research. Mr. Jim Bertin (math instructor, funded by The U of M's Chemistry REU) has worked with Mr. Madsen, Dr. Ramsey and chemistry faculty at The University of Montana for the past three summers. Mr. Vince Hurtig (math instructor) was the faculty member working with students on the GIS/GPS remote sensing project in the summer of 2009 and he will continue to work with students on this project in 2010. Mr. Brian Stiff (science instructor) is starting a research project on West Nile Virus funded by the Montana INBRE Program (NIH).

Mr. Stiff's research is a collaborative effort between Chief Dull Knife College, two other Montana Tribal Colleges, Montana State University, and Carroll College, located in Helena, Montana to determine the spatial temporal risk of exposure to West Nile Virus (WNV). The original research proposal, "*Spatial Epidemiology of West Nile Virus Infection Risk across Montana*," was developed by Dr. Grant Hokit of Carroll College and submitted to the Montana INBRE program. The primary goal of this project is to develop a landscape-scale model of West Nile Virus (WNV) infection risk for the state of Montana. A null model of WNV infection risk for Montana will be constructed using a geographic information system (GIS) and landscape modeling techniques to create a spatially explicit model of *C. tarsalis* populations, the primary mosquito vector in Montana. Further mosquito sampling at both the microhabitat and landscape scales will help validate the model and augment current mosquito surveillance efforts in Montana. RT-PCR and a TaqMan assay will be used to test for the presence of WNV in pools of 50 or fewer mosquitoes. Blood meals from engorged mosquitoes will be used to isolate the DNA of hosts and identify the bird species at risk for WNV infection. To characterize the spatiotemporal variation in genetic structure of WNV, RNA from samples testing positive for WNV will be sequenced and analyzed using phylogenetic techniques.

Throughout this project, undergraduate researchers will be trained in the techniques of spatial epidemiology, molecular biology, and phylogenetics. Chief Dull Knife College was funded in year-one to develop the infrastructure necessary to participate as an effective collaborator in this research project. The College provided the space and the INBRE grant funded the basic setup for the new West Nile Virus Laboratory however to produce a fully functional, multipurpose laboratory facility requires additional funding for specific equipment, materials and remodeling of the facility.

Statement of Need

This grant will cover two main areas: the hiring of a full-time PCR/lab technician, and completion of a second research lab at Chief Dull Knife College. The College has been unable to secure funds to support these two critical areas. When the lab is completed and a full time PCR/lab technician is hired the College will be able to fully realize its student-based research potential.

In the summer of 2009 a senior microbiology student from The University of Montana, Anne Larcom, worked with CDKC science interns on research projects. With her assistance, students made great strides toward becoming confident and competent in basic and advanced microbiology techniques, DNA extraction and PCR, and preparing amplified 16s samples for sequencing. Her presence made it clear that the college needs additional technical assistance in order to fully utilize the equipment and resources we now have. The part-time PCR/Research Advisor would be responsible for training and mentoring students and faculty in the highly technical PCR and RT-PCR

process, and will assist instructors doing molecular biology research in developing their experimental designs and laboratory protocols.

The College currently has two student research labs; a 110 sq. foot fully-functional PCR lab and a 259 sq. foot partially equipped RT-PCR/multipurpose lab. Finishing the second lab is critical to the college's research program for two reasons. First, with the expanded amount of research going on at CDKC, two separate lab spaces are necessary to provide sufficient room for student-researchers. Secondly, the college currently houses potentially dangerous equipment, such as its gel reader, in a place easily accessed by the general student population. For safety reasons, we need to move this equipment to a more secure location.

The college's second lab is currently furnished with a 12-foot lab bench, a laminar flow isolation hood, small freezer, a minus 70 degree freezer and some tables. In order to make it fully functional, the lab needs water and sewer, gas, some electrical work, and additional lab furniture.

Timeline

The new, unfinished, lab will be renovated in the fall of 2010. Three additional lab benches, overhead cabinets, and a framed glass chemical storage cabinet will be purchased and installed. In addition, the lab will be connected to water, a sewer line will be installed, two of the lab benches will be connected to gas lines, and additional electrical outlets will be installed. The renovations should be completed by end of the 2010 fall semester.

Once funding is secured, we will begin the search for the part-time PCR/Research Advisor. It is anticipated that we will hire the PCR/Research Advisor (as adjunct faculty) in the spring of 2011. We will look for a person working part-time at The University of Montana with a Master's degree in biology/microbiology with significant experience in molecular biology and PCR (the college has hired research professors at The University of Montana as part-time adjunct faculty for the past three years).

The PCR/Research Advisor will be hired for 4 ½ weeks in the spring of 2011. He/she will assist Mr. Stiff & Mr. Madsen in designing their summer research activities and train CDKC faculty and research students in the appropriate molecular biology lab and field techniques. The PCR/Research Advisor will travel to CDKC for 5 days for the initial training. Additional training and consulting will be done through the College's existing video conferencing system (Poly Com – CDKC has been using this system with university collaborators for the past 3 years).

The PCR/Research Advisor will continue these part-time activities in Years 2 and 3 of the grant (the PCR/Research Advisor will be hired for 13 weeks of consulting in both years).

Evaluation

The project will be evaluated by Dr. Carol Ward from Brigham Young University in Provo, Utah. She has evaluated science development and research projects at Chief Dull Knife College for the past twelve years (including our TCUP I and TCUP II grants). Dr. Ward will evaluate the program in years 2 & 3, she will develop surveys to evaluate

the effectiveness of NRC MSIP activities, in particular the impact of the enhanced student-based research on faculty and students. She will also travel to Lame Deer in the spring of 2012 and 2013 (as part of her yearly spring evaluation visit) with 1-2 graduate assistants to interview CDKC faculty and student researchers. Dr. Ward's evaluation reports will be used to make "mid course" corrections in NRC MSIP activities in Year 3 of the grant.

Duties and Responsibilities

Mr. Madsen is fully funded by CDKC's TCUP II grant and will not require NRC MSIP funding. His responsibilities will include hiring and supervising the PCR/Research Advisor, supervising (with Mr. Stiff) the renovation of the new RT PCR/multipurpose lab, coordinating the training provided by the PCR/Research Advisor, and insuring that NCR MSIP reports are turned in a timely manner

The PCR/Research Advisor will be responsible for training CDKC faculty and students in molecular biology techniques and the day to day running of the two PCR/molecular biology labs. The PCR/Research Advisor will also help CDKC researchers design their research and help coordinate research projects between The University of Montana and CDKC. He/she will also assist CDKC faculty in looking for additional research funding and writing grant proposals.

Sustainability

Chief Dull Knife College has built its science and math programs for the past 14 years through the MSEIP (Dept. of Ed.), RISE (NIH) and TCUP (NSF). These programs have made a difference. Science and math programs have since grown from 1 science instructor and 1 math instructor in 1996 to 3 science instructors and 3 math instructors today. Early programs have also demonstrated value and led to permanent additions and growth to CDKC faculty ranks and increased capacity to support students participating in advanced math and science courses through increased FTE generated by these new and enhanced STEM programs.

By year three of this grant it is likely that CDKC could hire the PCR/Research Advisor as full-time faculty at the College. This could be accomplished with the procurement of additional research support funds and an increase in the number of science classes taught at the College. At the end of the grant period, the position would be maintained through the FTE generated by 1/2 to 2/3 teaching responsibilities and the funding generated from grant support for student-based research projects.

Attachment C – Standard Terms and Conditions

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

Preface

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

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

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

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

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

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

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

I. Mandatory General Requirements

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

1. Applicability of 2 CFR Part 215

a. All provisions of 2 CFR Part 215 and all Standard Provisions attached to this grant/cooperative agreement are applicable to the Grantee and to sub-recipients which meet the definition of "Grantee" in Part 215, unless a section specifically excludes a sub-recipient from

coverage. The Grantee and any sub-recipients must, in addition to the assurances made as part of the application, comply and require each of its sub-awardees employed in the completion of the project to comply with Subpart C of 2 CFR 215 Part 180 and include this term in lower-tier (subaward) covered transactions.

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

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

2. Award Package

This award is composed of an award face page, which incorporates the recipient's proposal by reference, and the NRC Standard Provisions for U.S. Nongovernmental Recipients. This award constitutes acceptance by the NRC of the Recipient's proposal and budget unless otherwise indicated on the face page, Block 9.

§ 215.41 Grantee responsibilities.

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

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

Subgrants

Appendix A to Part 215—Contract Provisions

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

Nondiscrimination

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

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

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

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

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

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

Modifications/Prior Approval

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

Lobbying Restrictions

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

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

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

§ 215.13 Debarment And Suspension.

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

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

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

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

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

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

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

'Debarment, Suspension, Ineligibility, and Voluntary Exclusion

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

Drug-Free Workplace

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

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

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

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

Procurement Standards. § 215.40

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

Travel

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

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

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

Property Management Standards

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

Equipment procedures shall follow provision established in 2 CFR 215.34.

Procurement Standards

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

Intangible and Intellectual Property

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

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

Patent Notification Procedures- Pursuant to EO 12889, NRC is required to notify the owner of any valid patent covering technology whenever the NRC or its financial assistance Grantees, without making a patent search, knows (or has demonstrable reasonable grounds to know) that technology covered by a valid United States patent has been or will be used without a license from the owner. To ensure proper notification, if the Grantee uses or has used patented

technology under this award without license or permission from the owner, the Grantee must notify the Grants Officer. This notice does not necessarily mean that the Government authorizes and consents to any copyright or patent infringement occurring under the financial assistance.

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

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

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

Organizational Prior Approval System

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

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

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

Dispute Review Procedures

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

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

c. The Grants Officer will promptly acknowledge receipt of the request for review and shall forward it to the Director, Office of Administration, who shall appoint a review committee consisting of a minimum of three persons.

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

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

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

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

Monitoring and Reporting § 215.51

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

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

b. Federal Financial Reports

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

http://www.whitehouse.gov/omb/fedreg/2008/081308_ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr.pdf

http://www.whitehouse.gov/omb/grants/standard_forms/ffr_instructions.pdf

The Grantee shall submit a Federal Financial Reports (SF-425) are due quarterly, for the periods ending 3/31, 6/30, 9/30 and 12/31. Reports are due no later than 30 calendar days following the end of each reporting period. A final SF-425 shall be submitted within 90 days

after expiration of award. The reports must be emailed to Grants_FFR@nrc.gov. The SF-425 forms and instructions are available at the following url:

http://www.whitehouse.gov/omb/grants_forms/

Period of Availability of Funds 2 CFR § 215.28

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

Automated Standard Application For Payments (ASAP) Procedures

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

Audit Requirements

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

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

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

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

4. Certify the Submission
5. Click "Submit."

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

III. Programmatic Requirements

Performance (Technical) Reports

- a. The Grantee shall submit performance (technical) reports electronically to the NRC Project Officer and Grants Officer as specified in the special award conditions in the same frequency as the Federal Financial Report unless otherwise authorized by the Grants Officer.
- b. Unless otherwise specified in the award provisions, performance (technical) reports shall contain brief information as prescribed in the applicable uniform administrative requirements 2 CFR §215.51 which are incorporated in the award.
- c. The Office of Human Resources requires the submission of the semi-annual progress report on the SF-PPR, SF-PPR-B, and the SF-PPR-E forms. The submission for the six month period ending March 31st is due by April 30th. The submission for the six month period ending September 30th is due by October 31st.

Unsatisfactory Performance

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

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

Other Federal Awards With Similar Programmatic Activities

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

Prohibition Against Assignment By The Grantee

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

Site Visits

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

IV. Miscellaneous Requirements

Criminal and Prohibited Activities

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

American-Made Equipment And Products

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

Increasing Seat Belt Use in the United States

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

Federal Employee Expenses

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

Minority Serving Institutions (MSIs) Initiative

Pursuant to EOs 13256, 13230, and 13270, NRC is strongly committed to broadening the participation of MSIs in its financial assistance program. NRC's goals include achieving full participation of MSIs in order to advance the development of human potential, strengthen the

Nation's capacity to provide high-quality education, and increase opportunities for MSIs to participate in and benefit from Federal financial assistance programs. NRC encourages all applicants and Grantees to include meaningful participations of MSIs. Institutions eligible to be considered MSIs are listed on the Department of Education website:
<http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html>

Research Misconduct

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

Publications, Videos, and Acknowledgment of Sponsorship

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

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