

AWARD/CONTRACT		1. THIS CONTRACT IS RATED ORDER UNDER DPAS (15 CFR 700)		RATING N/A	PAGE OF PAGES 1 35		
2. CONTRACT NO. (Proc. Inst. Ident.) NRC-04-09-134		3. EFFECTIVE DATE block 19c		4. REQUISITION/PURCHASE REQUEST/PROJECT NO. 04-09-134			
5. ISSUED BY U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Adeline M Rodriguez, 301-492-3523 Mail Stop TWB-01-B10M Washington, DC 20555		CODE 3100	6. ADMINISTERED BY (if other than Item 5) U.S. Nuclear Regulatory Commission Div. of Contracts Mail Stop TWB-01-B10M Washington, DC 20555				
7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, State and ZIP Code) UNIVERSITY OF TEXAS AT AUSTIN 101 E 27TH STE 4308 AUSTIN TX 787121500			8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below)				
			9. DISCOUNT FOR PROMPT PAYMENT				
CODE 170230239 FACILITY CODE			10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN				
11. SHIP TO/MARK FOR U.S. Nuclear Regulatory Commission Attn: Jon Ake, MS: C5-A24M Washington DC 20555		CODE	12. PAYMENT WILL BE MADE BY Department of Interior / NBC NRCPayments@nbc.gov Attn: Fiscal Services Branch - D2770 7301 W. Mansfield Avenue Denver CO 80235-2230				
13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) <input checked="" type="checkbox"/> 41 U.S.C. 253(c)(1)		14. ACCOUNTING AND APPROPRIATION DATA Obligate : \$46,796.57 95015171277 N6828 352A 31X0200.960 RES-C09-552 DUNS: 170230239					
15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT		
	Research in Site Response Analysis for Seismic Hazard Studies at Nuclear Facilities Contract Type: Cost Reimbursement Contract Period of Performance: Three years from award date Total Contract Ceiling: \$390,246 Total Obligated Amount: \$46,796.57						
15G. TOTAL AMOUNT OF CONTRACT					\$46,796.57		
16. TABLE OF CONTENTS See Attached Table of Contents							
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CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE							
17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 1 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.) Jeanette Holmes				18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any condition sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.			
19A. NAME AND TITLE OF CONTRACTOR Associate Director Office of Sponsored Projects				20A. NAME OF CONTRACTING OFFICER Stephen Pool Contracting Officer			
19B. NAME OF CONTRACTOR BY Jeanette Holmes (Signature of person authorized to sign)		19C. DATE SIGNED SEP 01 2009		20B. UNITED STATES OF AMERICA (Signature of Contracting Officer)		20C. DATE SIGNED 8/19/09	

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STANDARD FORM 26 (REV. 4/2008)
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TEMPLATE - ADM001

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PART I - THE SCHEDULE**SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS****B.1 PROJECT TITLE**

The title of this project is as follows:

Research in Site Response Analysis for Seismic Hazard Studies at Nuclear Facilities

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

The purpose of this contract is to support NRO staff in their regulatory activities. The proposed research will help staff (and industry) better understand and address uncertainties and systematic bias in the RVT method of site response currently being used in the development of ESP and COL applications. This research will continue development of open-source numerical analysis tools to support independent review of applications using RVT based methods.

B.3 CONSIDERATION AND OBLIGATION--COST REIMBURSEMENT (JUN 1988) ALTERNATE I (JUN 1988)

- (a) The total estimated cost to the Government for full performance under this contract is \$390,246.
- (b) The amount presently obligated by the Government with respect to this contract is \$46,796.57.
- (c) It is estimated that the amount currently allotted will cover performance through three years after award date.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK**STATEMENT OF WORK
FOR CONTRACTOR TO PERFORM
RESEARCH IN SITE RESPONSE ANALYSIS FOR
SEISMIC HAZARD STUDIES AT NUCLEAR FACILITIES****I. BACKGROUND**

The effect of site-specific soil conditions on ground shaking is an important consideration when prescribing the site-specific ground motion response spectrum (GMRS) used in the seismic design and evaluation of nuclear facilities. The recommended procedures for accounting for seismic site response when developing the GMRS are outlined in NUREG/CR-6728 (McGuire et al. 2001) and Regulatory Guide 1.208 (2007). Several different approaches for developing a site-specific GMRS are presented in NUREG/CR-6728, and these approaches vary in complexity from simple deterministic amplification of probabilistically-derived rock response spectra (Approaches 1, 2A, and 2B) to rigorous treatment of soil amplification within the probabilistic seismic hazard analysis (Approaches 3, 3A, 3B, and 4). Regardless of which approach is selected, a suite of seismic site response analyses is required to define the site amplification for the site-specific soil properties at the site.

Currently, there are three methods of analysis used for seismic site response: equivalent linear methods, fully non-linear methods, and random vibration theory (RVT) based methods. All three are accepted by the NRC. Until recently the use of RVT-based methods was limited in practice for three reasons: a very limited number of people were versed in the RVT method, there is no publically available software that uses the RVT method, and the method is highly detailed and complex. Although rare in general geotechnical practice, RVT-based methods are now being used for the development of Early Site Permits (ESP) and Combined Operating License (COL) applications because the use of RVT is an efficient way to incorporate variability in soil amplification into probabilistic seismic hazard analyses. Previous research supported by the NRC Office of Research has led to the development of software tools (the site response program STRATA) that allow NRC staff to perform limited evaluation of RVT-based site response analyses. The research proposed herein builds upon the previous work.

Parametric variability in site response analysis represents uncertainty and randomness in the site soil properties (i.e., shear wave velocity profile, nonlinear property curves, other nonlinear parameters). Monte Carlo simulation (also called randomization) is the most common approach for incorporating the effects of parametric variability on site response results. In Monte Carlo simulations, a large number of one-dimensional (1-D) shear wave velocity profiles and modulus reduction (G/G_{max}) and damping (D) curves are generated based on statistical models, and each set of properties is used in a site response analysis. As noted in NUREG/CR-6728, randomization of soil properties is used to model the aleatory variability of properties across the footprint of a structure, as well as to model the epistemic uncertainty in the measured baseline properties. However, the Monte Carlo simulation of parametric randomness implicitly assumes that multiple 1-D profiles accurately model the influence of lateral variability across the footprint of a site. However, it is not clear whether multiple 1-D profiles provide ground motions that are representative of a laterally variable 2-D geometry. This issue can only be resolved through the comparison of results from 1-D Monte Carlo simulations and results from stochastic 2-D dynamic finite element analysis in which the site properties are varied over the 2-D geometry.

The proposed research is focused on four main areas:

- (1) enhancement of the capabilities of the site response program STRATA
- (2) framework for incorporating parametric variability into site response analysis
- (3) quantification of modeling variability for different approaches to site response analysis (i.e., equivalent linear, fully non-linear, and RVT based methods)
- (4) implementation of site-specific soil probabilistic seismic hazard analysis (PSHA)

Undertaking this research will improve the NRCs confidence in the results of analyses used to determine the site specific hazard for new and existing Nuclear Power Plants (NPPs).

II. OBJECTIVE

The objective of this work is to support NRO staff in their regulatory activities. The proposed research will help staff (and industry) better understand and address uncertainties and systematic bias in the RVT method of site response currently being used in the development of ESP and COL applications. This research will continue development of open-source numerical analysis tools to support independent review of applications using RVT based methods.

III. SCOPE OF WORK

The contractor shall perform research and development work in the RVT method of site response for seismic hazard studies. The contractor shall also continue the development of open-source numerical analysis tools to support independent review of applications using RVT based methods in accordance with the requirements section of this contract.

IV. REQUIREMENTS

The contractor shall perform the following tasks:

- Task 1 Modify the equivalent linear STRATA site response program to include frequency-dependent shear modulus and damping (EQL-FD). The documentation for the program shall be revised to include a discussion of the theoretical approach as well as updates to the users guide.
- Task 2 Develop a module for the STRATA program that computes site-specific soil hazard from specified rock hazard inputs and an amplification factor (AF) predictive model. Provide documentation on the new module within the STRATA users' guide.
- Task 3 Provide to NRC staff the modified RVT site response software (STRATA) discussed in Tasks 1 and 2. Provide training on the software in the form of a one day workshop at NRC Headquarters.
- Task 4 Develop a technical white paper that describes and demonstrates the framework for incorporating parametric variability into site response analyses. As part of this task the paper should describe how parametric variability can be optimally incorporated into the software being developed for NRC staff use.
- Task 5 Perform a series of comparative calculations using 1-D Monte Carlo simulations and stochastic 2-D finite element simulations (varying the site properties over the 2-D model geometry). Provide a technical white paper that describes the comparison between the 1-D and 2-D simulations.
- Task 6 Technical presentation of the results from Tasks 4 and 5 at NRC headquarters.
- Task 7 Develop of a research report describing and quantifying the modeling variability for equivalent-linear approaches relative to fully non-linear site response techniques. Provide a technical presentation at NRC headquarters describing the results of this task.
- Task 8 Develop a technical white paper that describes recommendations for implementation of site-specific soil PSHA (Approach 3 from NUREG/CR-6728). Provide a technical presentation at NRC headquarters describing the results of this task.

V. RESEARCH QUALITY

The quality of NRC research programs are assessed each year by the Advisory Committee on Reactor Safeguards. Within the context of their reviews of RES programs, the definition of quality research is based upon several major characteristics:

- Results meet the objectives (75% of overall score)
 - Justification of major assumptions (12%)
 - Soundness of technical approach and results (52%)
 - Uncertainties and sensitivities addressed (11%)

- Documentation of research results and methods is adequate (25% of overall score)
 - Clarity of presentation (16%)
 - Identification of major assumptions (9%)

It is the responsibility of the contractor to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC project manager and technical monitor will review all research products with these criteria in mind.

VI. TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

This research shall be carried out by technical staff knowledgeable in the use of RVT-based site response analyses and are familiar with the STRATA software package

VII. PUBLICATIONS NOTE

RES encourages the publication of the scientific results from RES sponsored programs in refereed scientific and engineering journals as appropriate. If the laboratory proposes to publish in the open literature or present the information at meeting in addition to submitting the required technical reports, of the proposed article or presentation should be obtained from the NRC Project Manager. Additional information regarding the publication of NRC sponsored research is contained in NRC Management Directives 3.7, "NUREG Series Publications".

If the presentation or paper is in addition to the required technical reports and the RES Project Manager determines that it will benefit the RES project, the Project Manager may authorize payment of travel and publishing costs, if any, from the project funds. If the Project Manager determines that the article or presentation would not benefit the RES project, the costs associated with the preparation, presentation, or publication will be borne by the contractor. For any publication or presentations falling into this category, the NRC reserves the right to require that such presentation or publication will not identify the NRC's sponsorship of the work.

VIII. NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS

The U.S. Nuclear Regulatory Commission (NRC) began to capture most of its official records electronically on January 1, 2000. The NRC will capture each final NUREG-series publication in its native application. Therefore, please submit your final manuscript that has been approved by your NRC Project Manager in both electronic and camera-ready copy.

All format guidance, as specified in NUREG-0650, Revision 2, will remain the same with one exception. You will no longer be required to include the NUREG-series designator on the bottom of each page of the manuscript. The NRC will assign this designator when we send the camera-ready copy to the printer and will place the designator on the cover, title page, and spine. The designator for each report will no longer be assigned when the decision to prepare a publication is made. The NRC's Publishing Services Branch will

inform the NRC Project Manager for the publication of the assigned designator when the final manuscript is sent to the printer.

For the electronic manuscript, the Contractor shall prepare the text in Microsoft Word, and use any of the following file types for charts, spreadsheets, and the like.

File Types to be Used for NUREG-Series Publications	
File Type	File Extension
Microsoft® Word®	.doc
Microsoft® PowerPoint®	.ppt
Microsoft® Excel	.xls
Microsoft® Access	.mdb
Portable Document Format	.pdf

This list is subject to change if new software packages come into common use at NRC or by our licensees or other stakeholders that participate in the electronic submission process. If a portion of your manuscript is from another source and you cannot obtain an acceptable electronic file type for this portion (e.g., an appendix from an old publication), the NRC can, if necessary, create a tagged image file format (file extension.tif) for that portion of your report. Note that you should continue to submit original photographs, which will be scanned, since digitized photographs do not print well.

If you choose to publish a compact disk (CD) of your publication, place on the CD copies of the manuscript in both (1) a portable document format (PDF); (2) a Microsoft Word file format, and (3) an Adobe Acrobat Reader, or, alternatively, print instructions for obtaining a free copy of Adobe Acrobat Reader on the back cover insert of the jewel box.

IX. DELIVERABLES/SCHEDULES AND/OR MILESTONES

The contractor shall provide the following deliverables as part of this contract:

Related Task	Deliverable Name	Due date
1	EQL-FD modification to STRATA	December 2009 – exact date TBD
1*	Revised documentation for program	December 2009 – exact date TBD
2	Site-specific AF predictive model for STRATA	Spring 2010 – exact date TBD
2*	Documentation for the Model	Spring 2010 – exact date TBD
3	Modified RVT site response software	Summer 2010 – exact date TBD
3	One day training session at NRC HQ	Summer 2010 – exact date TBD
4*	White paper on incorporating parametric variability in site response analyses	Fall 2010 – exact date TBD
5*	White paper on comparison of 1-D and 2-D simulations	Summer 2011 – exact date TBD

6	Presentation at NRC on Tasks 4 and 5	Fall 2011 – exact date TBD
7*	Report on modeling variability	Winter 2012 – exact date TBD
7	Presentation at the NRC on the research report	Winter 2012 – exact date TBD
8*	White paper on implementation of Approach 3	Spring 2012 – exact date TBD
8	Final Presentation at NRC	Spring 2012 – exact date TBD
Section F.4 and F.5 of the terms and conditions	Monthly technical and financial status report	By the 20 th of each month

*For each of the white papers and documentation reports, the contractor shall provide the NRC a draft version of these documents for review and comments. The NRC will have 5 business days to review the document and provide feedback to the contractor to be incorporated into these reports.

X. MEETINGS AND TRAVEL

Location	Qty of Trips	Qty of days per trip	Qty of people
NRC Headquarters	3 total	2	Up to 2 people per trip
Meetings / Conferences	1 per year, 3 total	3	Up to 2 people per trip

It is expected that up to 2 people will travel from the Contractor location to NRC Headquarters 3 times (approx. one per year) for two days each. It is also expected allowable that up to 2 people will travel to one meeting or conference for up to 3 days during each of the three years for the purpose of presenting NRC research. In these cases, travel and presented material must be approved by the NRC project manager prior to travel and the NRC must be identified as the sponsoring entity. All travel must be in compliance with US Federal Travel Regulations (FTR).

SECTION D - PACKAGING AND MARKING**D.1 PACKAGING AND MARKING (MAR 1987)**

The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Interstate Commerce Commission Regulations, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation. On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

SECTION E - INSPECTION AND ACCEPTANCE**E.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE**

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
52.246-9	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1) INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM)	APR 1984

E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)

Inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the Project Officer at the destination.

SECTION F - DELIVERIES OR PERFORMANCE**F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE**

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.242-15	STOP-WORK ORDER	AUG 1989
	ALTERNATE I (APR 1984)	
52.247-34	F.O.B. DESTINATION	NOV 1991

F.2 2052.211-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)

All technical reports required by Section C and all Technical Progress Reports required by Section F are to be prepared in accordance with the attached Management Directive 3.8, "Unclassified Contractor and Grantee Publications in the NUREG Series." Management Directive 3.8 is not applicable to any Contractor Spending Plan (CSP) and any Financial Status Report that may be included in this contract. (See List of Attachments).

F.3 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)

The contractor shall provide a monthly Technical Progress Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, appropriate financial tracking code specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task/task order:

- (a) A listing of the efforts completed during the period, and milestones reached or, if missed, an explanation provided;
- (b) Any problems or delays encountered or anticipated and recommendations for resolution. If the recommended resolution involves a contract modification, e.g., change in work requirements, level of effort (cost) or schedule delay, the contractor shall submit a separate letter to the contracting officer identifying the required change and estimated cost impact.
- (c) A summary of progress to date; and
- (d) Plans for the next reporting period.

F.4 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)

The contractor shall provide a monthly Financial Status Report (FSR) to the project officer and the contracting officer. The FSR shall include the acquisition of, or changes in the status of, contractor-held property acquired with government funds valued at the time of purchase at \$50,000 or more. Whenever these types of property changes occur, the contractor shall send a copy of the report to the Chief, Property and Acquisition Oversight Branch, Office of Administration. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, the appropriate financial tracking code (e.g., Job Code Number or JCN) specified by the NRC Project Officer, project manager and/or

principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task:

- (a) Total estimated contract amount.
- (b) Total funds obligated to date.
- (c) Total costs incurred this reporting period.
- (d) Total costs incurred to date.
- (e) Detail of all direct and indirect costs incurred during the reporting period for the entire contract or each task, if it is a task ordering contract.
- (f) Balance of obligations remaining.
- (g) Balance of funds required to complete contract/task order.
- (h) Contractor Spending Plan (CSP) status: A revised CSP is required with the Financial Status Report whenever the contractor or the contracting officer has reason to believe that the total cost for performance of this contract will be either greater or substantially less than what had been previously estimated.
 - (1) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.
 - (2) Indicate significant changes in the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the change, whether there is any projected overrun, and when additional funds would be required. If there have been no changes to the original NRC-approved CSP projections, a written statement to that effect is sufficient in lieu of submitting a detailed response to item "h".
- (i) Property status:
 - (1) List property acquired for the project during the month with an acquisition cost between \$500 and \$49,999. Give the item number for the specific piece of equipment.
 - (2) Provide a separate list of property acquired for the project during the month with an acquisition cost of \$50,000 or more. Provide the following information for each item of property: item description or nomenclature, manufacturer, model number, serial number, acquisition cost, and receipt date. If no property was acquired during the month, include a statement to that effect. The same information must be provided for any component or peripheral equipment which is part of a "system or system unit."
 - (3) For multi-year projects, in the September monthly financial status report provide a cumulative listing of property with an acquisition cost of \$50,000 or more showing the information specified in paragraph (i)(2) of this clause.
 - (4) In the final financial status report provide a closeout property report containing the same elements as described above for the monthly financial status reports, for all property purchased with NRC funds regardless of value unless title has been vested in the contractor. If no property was acquired under the contract, provide a statement to that effect. The report should note any property requiring special handling for security, health, safety, or other reasons as part of the report.
- (j) Travel status: List the starting and ending dates for each trip, the starting point and destination, and the traveler(s) for each trip.

(k) If the data in this report indicates a need for additional funding beyond that already obligated, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

F.5 PLACE OF DELIVERY--REPORTS (JUN 1988)

The items to be furnished hereunder shall be delivered, with all charges paid by the Contractor, to:

(a) Project Officer (1 hard copy and one electronic copy)

US Nuclear Regulatory Commission Mail Stop C5A24M Washington DC 20555

(b) Contracting Officer (1 hard copy) deliver to:

US Nuclear Regulatory Commission
Attn: Contract NRC-04-09-125
Mail Stop: TWB-01-B10M
Washington DC 20555

(c) RESDEMLSR.Resource@nrc.gov

(d) Technical Monitor (one electronic copy)

F.6 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on award date and will expire three years after.

SECTION G - CONTRACT ADMINISTRATION DATA**G.1 2052.215-71 PROJECT OFFICER AUTHORITY (NOVEMBER 2006)**

(a) The contracting officer's authorized representative (hereinafter referred to as the project officer) for this contract is:

Name: Jon Ake

Address: US Nuclear Regulatory Commission
Mail Stop C5A24M
Washington, DC 20555

Telephone Number: 301-251-7626

Email: jon.ake@nrc.gov

(b) Performance of the work under this contract is subject to the technical direction of the NRC project officer. The term "technical direction" is defined to include the following:

(1) Technical direction to the contractor which shifts work emphasis between areas of work or tasks, authorizes travel which was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work (SOW) or changes to specific travel identified in the SOW), fills in details, or otherwise serves to accomplish the contractual SOW.

(2) Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.

(3) Review and, where required by the contract, approval of technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

(c) Technical direction must be within the general statement of work stated in the contract. The project officer does not have the authority to and may not issue any technical direction which:

(1) Constitutes an assignment of work outside the general scope of the contract.

(2) Constitutes a change as defined in the "Changes" clause of this contract.

(3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.

(4) Changes any of the expressed terms, conditions, or specifications of the contract.

(5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

(d) All technical directions must be issued in writing by the project officer or must be confirmed by the project officer in writing within ten (10) working days after verbal issuance. A copy of the written direction must be furnished to the contracting officer. A copy of NRC Form 445, Request for Approval of Official Foreign Travel, which has received final approval from the NRC must be furnished to the contracting officer.

(e) The contractor shall proceed promptly with the performance of technical directions duly issued by the project officer in the manner prescribed by this clause and within the project officer's authority under the provisions of this clause.

(f) If, in the opinion of the contractor, any instruction or direction issued by the project officer is within one of the categories as defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request the contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.

(g) Any unauthorized commitment or direction issued by the project officer may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.

(h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect thereto is subject to 52.233-1 -Disputes.

(i) In addition to providing technical direction as defined in paragraph (b) of the section, the project officer shall:

(1) Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the contracting officer changes in requirements.

(2) Assist the contractor in the resolution of technical problems encountered during performance.

(3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(4) Assist the contractor in obtaining the badges for the contractor personnel.

(5) Immediately notify the Security Branch, Division of Facilities and Security (SB/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return of any NRC issued badge to SB/DFS within three days after their termination.

(6) Ensure that all contractor employees that require access to classified Restricted Data or National Security Information or matter, access to sensitive unclassified information (Safeguards, Official Use Only, and Proprietary information) access to sensitive IT systems or data, unescorted access to NRC controlled buildings/space, or unescorted access to protected and vital areas of nuclear power plants receive approval of SB/DFS prior to access in accordance with Management Directive and Handbook 12.3.

(7) For contracts for the design, development, maintenance or operation of Privacy Act Systems of Records, obtain from the contractor as part of closeout procedures, written certification that the contractor has returned to NRC, transferred to the successor contractor, or destroyed at the end of the contract in accordance with instructions provided by the NRC Systems Manager for Privacy Act Systems of Records, all records (electronic or paper) which were created, compiled, obtained or maintained under the contract.

G.2 2052.215-77 TRAVEL APPROVALS AND REIMBURSEMENT (OCT 1999)

(a) All foreign travel must be approved in advance by the NRC on NRC Form 445, Request for Approval of Official Foreign Travel, and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. The contractor shall submit NRC Form 445 to the NRC no later than 30 days before beginning travel.

(b) The contractor must receive written approval from the NRC Project Officer before taking travel that was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work, or changes to specific travel identified in the Statement of Work).

(c) The contractor will be reimbursed only for those travel costs incurred that are directly related to this contract and are allowable subject to the limitations prescribed in FAR 31.205-46.

(d) It is the responsibility of the contractor to notify the contracting officer in accordance with the Limitations of Cost clause of this contract when, at any time, the contractor learns that travel expenses will cause the contractor to exceed the estimated costs specified in the Schedule.

(e) Reasonable travel costs for research and related activities performed at State and nonprofit institutions, in accordance with Section 12 of Pub. L. 100-679, shall be charged in accordance with the contractor's institutional policy to the degree that the limitations of Office of Management and Budget (OMB) guidance are not exceeded. Applicable guidance documents include OMB Circular A-87, Cost Principles for State and Local Governments; OMB Circular A-122, Cost Principles for Nonprofit Organizations; and OMB Circular A-21, Cost Principles for Educational Institutions.

G.3 2052.216-71 INDIRECT COST RATES-ALTERNATE 2 (OCT 1999)

(a) For this contract, the ceiling amount reimbursable for indirect costs is as follows:

INDIRECT COST POOL	RATE	BASE	PERIOD
Indirect Cost		Modified Total Direct Costs	9/1/2008-8/31/10
Fringe		Base salary	Contract duration

(b) In the event that indirect rates developed by the cognizant audit activity on the basis of actual allowable costs result in a lower amount for indirect costs, the lower amount will be paid. The Government may not be obligated to pay any additional amounts for indirect costs above the ceiling rates set forth above for the applicable period.

SECTION H - SPECIAL CONTRACT REQUIREMENTS**H.1 MODIFICATION TO 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)**

(a) The principal investigator(s)/contractor shall comply with the provisions of NRC Management Directive 3.7 regarding publication in refereed scientific and engineering journals or dissemination to the public of any information, oral or written, concerning the work performed under this contract. This unclassified fundamental research project requires the development of research methodologies. The scope of work of this project does not involve making conclusions or recommendations regarding NRC policy.

(b) The principal investigator(s)/contractor may publish the results of this work in refereed scientific and engineering journals or in open literature and present papers at public or association meetings at interim stages of work, in addition to submitting to NRC the final reports and other deliverables required under this contract.

(c) The principal investigator(s) shall coordinate all such publications with, and transmit a copy of the proposed article or paper to, the NRC Contracting Officer or Project Officer, prior to publication. The NRC agrees to review and provide comments within thirty (30) days after receipt of a proposed publication. However, in those cases where the information to be published addresses and/or discusses NRC policy, the NRC reserves the right to have the contractor add the following disclaimer that states "Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the NRC". If the NRC does not agree with the publication, it will not be responsible for publication costs, nor will it pay for hours dedicated to work on that particular publication.

H.2 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST (JAN 1993)

(a) Purpose. The primary purpose of this clause is to aid in ensuring that the contractor:

(1) Is not placed in a conflicting role because of current or planned interests (financial, contractual, organizational, or otherwise) which relate to the work under this contract; and

(2) Does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described apply to performance or participation by the contractor, as defined in 48 CFR 2009.570-2 in the activities covered by this clause.

(c) Work for others.

(1) Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees under this contract abide by the provision of this clause. If the contractor has reason to believe, with respect to itself or any employee, that any proposed consultant or other contractual arrangement with any firm or organization may involve a potential conflict of interest, the contractor shall obtain the written approval of the contracting officer before the execution of such contractual arrangement.

(2) The contractor may not represent, assist, or otherwise support an NRC licensee or applicant undergoing an NRC audit, inspection, or review where the activities that are the subject of the audit, inspection, or review are the same as or substantially similar to the services within the scope of this contract (or task order

as appropriate) except where the NRC licensee or applicant requires the contractor's support to explain or defend the contractor's prior work for the utility or other entity which NRC questions.

(3) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site, the contractor shall neither solicit nor perform work in the same or similar technical area for that licensee or applicant organization for a period commencing with the award of the task order or beginning of work on the site (if not a task order contract) and ending one year after completion of all work under the associated task order, or last time at the site (if not a task order contract).

(4) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site,

(i) The contractor may not solicit work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate.

(ii) The contractor may not perform work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate, and for one year thereafter.

(iii) Notwithstanding the foregoing, the contracting officer may authorize the contractor to solicit or perform this type of work (except work in the same or similar technical area) if the contracting officer determines that the situation will not pose a potential for technical bias or unfair competitive advantage.

(d) Disclosure after award.

(1) The contractor warrants that to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest as defined in 48 CFR 2009.570-2.

(2) The contractor agrees that if, after award, it discovers organizational conflicts of interest with respect to this contract, it shall make an immediate and full disclosure in writing to the contracting officer. This statement must include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract if termination is in the best interest of the Government.

(3) It is recognized that the scope of work of a task-order-type contract necessarily encompasses a broad spectrum of activities. Consequently, if this is a task-order-type contract, the contractor agrees that it will disclose all proposed new work involving NRC licensees or applicants which comes within the scope of work of the underlying contract. Further, if this contract involves work at a licensee or applicant site, the contractor agrees to exercise diligence to discover and disclose any new work at that licensee or applicant site. This disclosure must be made before the submission of a bid or proposal to the utility or other regulated entity and must be received by the NRC at least 15 days before the proposed award date in any event, unless a written justification demonstrating urgency and due diligence to discover and disclose is provided by the contractor and approved by the contracting officer. The disclosure must include the statement of work, the dollar value of the proposed contract, and any other documents that are needed to fully describe the proposed work for the regulated utility or other regulated entity. NRC may deny approval of the disclosed work only when the NRC has issued a task order which includes the technical area and, if site-specific, the site, or has plans to issue a task order which includes the technical area and, if site-specific, the site, or when the work violates paragraphs (c)(2), (c)(3) or (c)(4) of this section.

(e) Access to and use of information.

(1) If in the performance of this contract, the contractor obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), the contractor agrees not to:

- (i) Use this information for any private purpose until the information has been released to the public;
 - (ii) Compete for work for the Commission based on the information for a period of six months after either the completion of this contract or the release of the information to the public, whichever is first;
 - (iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public; or
 - (iv) Release the information without prior written approval by the contracting officer unless the information has previously been released to the public by the NRC.
- (2) In addition, the contractor agrees that, to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat the information in accordance with restrictions placed on use of the information.
- (3) Subject to patent and security provisions of this contract, the contractor shall have the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.
- (f) Subcontracts. Except as provided in 48 CFR 2009.570-2, the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms contract, contractor, and contracting officer, must be appropriately modified to preserve the Government's rights.
- (g) Remedies. For breach of any of the above restrictions, or for intentional nondisclosure or misrepresentation of any relevant interest required to be disclosed concerning this contract or for such erroneous representations that necessarily imply bad faith, the Government may terminate the contract for default, disqualify the contractor from subsequent contractual efforts, and pursue other remedies permitted by law or this contract.
- (h) Waiver. A request for waiver under this clause must be directed in writing to the contracting officer in accordance with the procedures outlined in 48 CFR 2009.570-9.
- (i) Follow-on effort. The contractor shall be ineligible to participate in NRC contracts, subcontracts, or proposals therefore (solicited or unsolicited), which stem directly from the contractor's performance of work under this contract. Furthermore, unless so directed in writing by the contracting officer, the contractor may not perform any technical consulting or management support services work or evaluation activities under this contract on any of its products or services or the products or services of another firm if the contractor has been substantially involved in the development or marketing of the products or services.
- (1) If the contractor, under this contract, prepares a complete or essentially complete statement of work or specifications, the contractor is not eligible to perform or participate in the initial contractual effort which is based on the statement of work or specifications. The contractor may not incorporate its products or services in the statement of work or specifications unless so directed in writing by the contracting officer, in which case the restrictions in this paragraph do not apply.
- (2) Nothing in this paragraph precludes the contractor from offering or selling its standard commercial items to the Government.

H.3 2052.215-70 KEY PERSONNEL (JAN 1993)

(a) The following individuals are considered to be essential to the successful performance of the work hereunder:



The contractor agrees that personnel may not be removed from the contract work or replaced without compliance with paragraphs (b) and (c) of this section.

(b) If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 work days, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall immediately notify the contracting officer and shall, subject to the concurrence of the contracting officer, promptly replace the personnel with personnel of at least substantially equal ability and qualifications.

(c) Each request for approval of substitutions must be in writing and contain a detailed explanation of the circumstances necessitating the proposed substitutions. The request must also contain a complete resume for the proposed substitute and other information requested or needed by the contracting officer to evaluate the proposed substitution. The contracting officer and the project officer shall evaluate the contractor's request and the contracting officer shall promptly notify the contractor of his or her decision in writing.

(d) If the contracting officer determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work is not reasonably forthcoming, or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the contract or the service order, the contract may be terminated by the contracting officer for default or for the convenience of the Government, as appropriate. If the contracting officer finds the contractor at fault for the condition, the contract price or fixed fee may be equitably adjusted downward to compensate the Government for any resultant delay, loss, or damage.

H.4 2052.235-71 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)

The contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of its employees and of members of the public, including NRC employees and contractor personnel, and to minimize danger from all hazards to life and property. The contractor shall comply with all applicable health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission and the Department of Labor. If the contractor fails to comply with these regulations or requirements, the contracting office may, without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work. Thereafter, a start work order for resumption of work may be issued at the discretion of the contracting officer. The contractor may not make a claim for an extension of time or for compensation or damages by reason of, or in connection with, this type of work stoppage.

H.5 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY - NONE PROVIDED (JUN 1988)

The Government will not provide any equipment/property under this contract.

H.6 SEAT BELTS

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

H.7 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (JULY 2006)

(a) The U.S. Nuclear Regulatory Commission (NRC) contractor and its subcontractor are subject to the Whistleblower Employee Protection public law provisions as codified at 42 U.S.C. 5851. NRC contractor(s) and subcontractor(s) shall comply with the requirements of this Whistleblower Employee Protection law, and the implementing regulations of the NRC and the Department of Labor (DOL). See, for example, DOL Procedures on Handling Complaints at 29 C.F.R. Part 24 concerning the employer obligations, prohibited acts, DOL procedures and the requirement for prominent posting of notice of Employee Rights at Appendix A to Part 24.

(b) Under this Whistleblower Employee Protection law, as implemented by regulations, NRC contractor and subcontractor employees are protected from discharge, reprisal, threats, intimidation, coercion, blacklisting or other employment discrimination practices with respect to compensation, terms, conditions or privileges of their employment because the contractor or subcontractor employee(s) has provided notice to the employer, refused to engage in unlawful practices, assisted in proceedings or testified on activities concerning alleged violations of the Atomic Energy Act of 1954 (as amended) and the Energy Reorganization Act of 1974 (as amended).

(c) The contractor shall insert this or the substance of this clause in any subcontracts involving work performed under this contract.

PART II - CONTRACT CLAUSES**SECTION I - CONTRACT CLAUSES****I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE**

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.204-7	CENTRAL CONTRACTOR REGISTRATION	APR 2008
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	SEP 2006
52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT 1997
52.216-11	COST CONTRACT--NO FEE	APR 1984
52.216-15	PREDETERMINED INDIRECT COST RATES	APR 1998
52.217-2	CANCELLATION UNDER MULTIYEAR CONTRACTS	OCT 1997
52.222-3	CONVICT LABOR	JUN 2003
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB 1999
52.222-26	EQUAL OPPORTUNITY	MAR 2007
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	SEP 2006
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	JUN 1998
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	SEP 2006
52.222-50	COMBATING TRAFFICKING IN PERSONS	FEB 2009
52.223-6	DRUG-FREE WORKPLACE	MAY 2001
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	JUN 2008
52.227-14	RIGHTS IN DATA - GENERAL	DEC 2007
52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR 1996
52.232-18	AVAILABILITY OF FUNDS	APR 1984
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-25	PROMPT PAYMENT	OCT 2008
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-33	PAYMENT BY ELECTRONIC FUNDS--CENTRAL CONTRACTOR REGISTRATION	OCT 2003
52.233-1	DISPUTES	JUL 2002
52.233-3	PROTEST AFTER AWARD ALTERNATE I (JUN 1985)	AUG 1996
52.233-4	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	OCT 2004

52.242-1	NOTICE OF INTENT TO DISALLOW COSTS	APR 1984
52.243-2	CHANGES--COST REIMBURSEMENT	AUG 1987
	ALTERNATE V (APR 1984)	
52.244-2A	SUBCONTRACTS	JUN 2007
	ALTERNATE I (JUNE 2007)	
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS	MAR 2009
52.245-1	GOVERNMENT PROPERTY	JUN 2007
	ALTERNATE II (JUNE 2007)	
52.245-9	USE AND CHARGES	JUN 2007
52.246-23	LIMITATION OF LIABILITY	FEB 1997
52.246-25	LIMITATION OF LIABILITY--SERVICES	FEB 1997
52.249-5	TERMINATION FOR CONVENIENCE OF THE	SEP 1996
	GOVERNMENT (EDUCATIONAL AND OTHER	
	NONPROFIT INSTITUTIONS)	
52.253-1	COMPUTER GENERATED FORMS	JAN 1991

I.2 52.216-7 ALLOWABLE COST AND PAYMENT (DEC 2002)

(a) Invoicing.

(1) The Government will make payments to the Contractor when requested as work progresses, but (except for small business concerns) not more often than once every 2 weeks; in amounts determined to be allowable by the Contracting Officer in accordance with Federal Acquisition Regulation (FAR) Subpart 31.3 in effect on the date of this contract and the terms of this contract. The Contractor may submit to an authorized representative of the Contracting Officer, in such form and reasonable detail as the representative may require, an invoice or voucher supported by a statement of the claimed allowable cost for performing this contract.

(2) Contract financing payments are not subject to the interest penalty provisions of the Prompt Payment Act. Interim payments made prior to the final payment under the contract are contract financing payments, except interim payments if this contract contains Alternate I to the clause at 52.232-25.

(3) The designated payment office will make interim payments for contract financing on the 30TH day after the designated billing office receives a proper payment request.

In the event that the Government requires an audit or other review of a specific payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date.

(b) Reimbursing costs.

(1) For the purpose of reimbursing allowable costs (except as provided in paragraph (b)(2) of the clause, with respect to pension, deferred profit sharing, and employee stock ownership plan contributions), the term "costs" includes only--

(i) Those recorded costs that, at the time of the request for reimbursement, the Contractor has paid by cash, check, or other form of actual payment for items or services purchased directly for the contract;

(ii) When the Contractor is not delinquent in paying costs of contract performance in the ordinary course of business, costs incurred, but not necessarily paid, for--

(A) Supplies and services purchased directly for the contract and associated financing payments to subcontractors, provided payments determined due will be made-

(1) In accordance with the terms and conditions of a subcontract or invoice; and

(2) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government;

(B) Materials issued from the Contractor's inventory and placed in the production process for use on the contract;

(C) Direct labor;

(D) Direct travel;

(E) Other direct in-house costs; and

(F) Properly allocable and allowable indirect costs, as shown in the records maintained by the Contractor for purposes of obtaining reimbursement under Government contracts; and

(iii) The amount of financing payments that have been paid by cash, check, or other forms of payment to subcontractors.

(2) Accrued costs of Contractor contributions under employee pension plans shall be excluded until actually paid unless-

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's indirect costs for payment purposes).

(3) Notwithstanding the audit and adjustment of invoices or vouchers under paragraph (g) of this clause, allowable indirect costs under this contract shall be obtained by applying indirect cost rates established in accordance with paragraph (d) of this clause.

(4) Any statements in specifications or other documents incorporated in this contract by reference designating performance of services or furnishing of materials at the Contractor's expense or at no cost to the Government shall be disregarded for purposes of cost-reimbursement under this clause.

(c) Small business concerns. A small business concern may receive more frequent payments than every 2 weeks.

(d) Final indirect cost rates.

(1) Final annual indirect cost rates and the appropriate bases shall be established in accordance with Subpart 42.7 of the Federal Acquisition Regulation (FAR) in effect for the period covered by the indirect cost rate proposal.

(2)(i) The Contractor shall submit an adequate final indirect cost rate proposal to the Contracting Officer (or cognizant Federal agency official) and auditor within the 6-month period following the expiration of each of its fiscal years. Reasonable extensions, for exceptional circumstances only, may be requested in writing by the Contractor and granted in writing by the Contracting Officer. The Contractor shall support its proposal with adequate supporting data.

(ii) The proposed rates shall be based on the Contractor's actual cost experience for that period. The appropriate Government representative and the Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the Contractor's proposal.

(3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.

(4) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.

(5) Within 120 days (or longer period if approved in writing by the Contracting Officer) after settlement of the final annual indirect cost rates for all years of a physically complete contract, the Contractor shall submit a completion invoice or voucher to reflect the settled amounts and rates.

(6)(i) If the Contractor fails to submit a completion invoice or voucher within the time specified in paragraph (d)(5) of this clause, the Contracting Officer may--

(A) Determine the amounts due to the Contractor under the contract; and

(B) Record this determination in a unilateral modification to the contract.

(ii) This determination constitutes the final decision of the Contracting Officer in accordance with the Disputes clause.

(e) Billing rates. Until final annual indirect cost rates are established for any period, the Government shall reimburse the Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates--

(1) Shall be the anticipated final rates; and

(2) May be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.

(f) Quick-closeout procedures. Quick-closeout procedures are applicable when the conditions in FAR 42.708(a) are satisfied.

(g) Audit. At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be (1) reduced by amounts found by the Contracting Officer not to constitute allowable costs or (2) adjusted for prior overpayments or underpayments.

(h) Final payment. (1) Upon approval of a completion invoice or voucher submitted by the Contractor in accordance with paragraph (d)(5) of this clause, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs and that part of the fee (if any) not previously paid.

(2) The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract, to the extent that

those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee whose assignment is in effect at the time of final payment shall execute and deliver--

(i) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits, or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and

(ii) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, except--

(A) Specified claims stated in exact amounts, or in estimated amounts when the exact amounts are not known;

(B) Claims (including reasonable incidental expenses) based upon liabilities of the Contractor to third parties arising out of the performance of this contract; provided, that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and

(C) Claims for reimbursement of costs, including reasonable incidental expenses, incurred by the Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

I.3 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

I.4 SECTION 508 REQUIREMENTS

The solution shall be accessible to users with disabilities as required in Section 508 and subsequent amendments of the Rehabilitation Act of 1973. All contracts that contain a requirement for services which will result in the delivery of a new or updated electronic and information technology (EIT) item/product must conform to the appropriate technical standards in 36 CFR 1194, Subpart B; the appropriate functional performance criteria in 36 CFR 1194, Subpart C; and the appropriate information, documentation and support requirements in 36 CFR 1194, Subpart D, unless an agency exception to this requirement has been granted by the Contracting Officer. The contractor shall demonstrate an understanding of each of the applicable technical standards and articulate how each of these standards will be met in the delivery of the EIT product or product related service in performance of this contract.

The contractor shall identify the technical standards and provisions they anticipate are applicable to this contract and provide justification for those that are deemed to be non-applicable. The standards do not require the installation of specific accessibility-related software or the attachment of an assistive technology device, but merely require that the EIT be compatible with such software and devices so that it can be made accessible, without significant alteration, if so required by the NRC in the future.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS**SECTION J - LIST OF ATTACHMENTS**

ATTACHMENT NUMBER	TITLE	NO.
1	BILLING INSTRUCTIONS FOR COST REIMBURSEMENT CONTRACTS	

BILLING INSTRUCTIONS FOR
COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)

General: During performance and through final payment of this contract, the contractor is responsible for the accuracy and completeness of data within the Central Contractor Registration (CCR) database and for any liability resulting from the Government's reliance on inaccurate or incomplete CCR data.

The contractor shall prepare vouchers/invoices for reimbursement of costs in the manner and format described herein. FAILURE TO SUBMIT VOUCHERS/INVOICES IN ACCORDANCE WITH THESE INSTRUCTIONS WILL RESULT IN REJECTION OF THE VOUCHER/INVOICE AS IMPROPER.

Number of Copies: A signed original and supporting documentation shall be submitted. If the voucher/invoice includes the purchase of any property with an initial acquisition cost of \$50,000 or more, a copy of the signed original is also required.

Designated Agency Billing Office: The preferred method of submitting vouchers/invoices is electronically to the Department of the Interior at NRCPayments@nbc.gov

If the voucher/invoice includes the purchase of capital property with an initial acquisition cost of \$50,000 or more, a copy of the signed original shall be electronically sent to: Property@nrc.gov

However, if you submit a hard-copy of the voucher/invoice, it shall be submitted to the following address:

Department of the Interior
National Business Center
Attn: Fiscal Services Branch - D2770
7301 West Mansfield Avenue
Denver, CO 80235-2230

If you submit a hard-copy of the voucher/invoice and it includes the purchase of capital property with an initial acquisition cost of \$50,000 or more, a copy of the signed original shall be mailed to the following address:

U.S. Nuclear Regulatory Commission
NRC Property Management Officer
Mail Stop: O-4D15
Washington, DC 20555-0001

HAND-CARRIED SUBMISSIONS WILL NOT BE ACCEPTED

Agency Payment Office: Payment will continue to be made by the office designated in the contract in Block 12 of the Standard Form 26, or Block 25 of the Standard Form 33, whichever is applicable.

BILLING INSTRUCTIONS FOR
COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)

Frequency: The contractor shall submit claims for reimbursement once each month, unless otherwise authorized by the Contracting Officer.

Format: Claims shall be submitted in the format depicted on the attached sample form entitled "Voucher/Invoice for Purchases and Services Other than Personal" (see Attachment 1). The sample format is provided for guidance only. The format is not required for submission of a voucher/invoice. Alternate formats are permissible provided all requirements of the billing instructions are addressed. The instructions for preparation and itemization of the voucher/invoice are included with the sample form.

Task Ordering Contracts: If the contractor bills for more than one task order under a voucher/invoice, detailed cost information for each individual task order shall be submitted, together with a cumulative summary of all charges billed on the voucher/invoice. This includes all applicable cost elements discussed in paragraphs (a) through (n) of the attached instructions.

Fee Recovery Billings: Pursuant to the provisions of 10 CFR Part 170 and 171 on license fees, the NRC must recover the cost of work performed. Accordingly, the contractor must provide the total amount of funds billed during the period, fiscal year to date and the cumulative total for each task or task assignment by facility or report. The fee recovery billing reports shall be on a separate page, and shall be in the format provided (see Attachment 1). The billing period for fee recovery costs should be from the first day of each calendar month to the last day of the same month. Each separate fee billing report must be attached to the monthly invoice and cover the same period as the invoice.

Each report will contain a docket number or other unique identifier. The NRC will provide a unique identifier for all work performed. Costs should be reported as whole number to the nearest cent. For work that involves more than one facility at the same site, each facility should be listed separately and the costs should be split appropriately between the facilities. Common costs, as defined below, shall be identified as a separate line item in the fee recovery billing report each month.

Common costs are those costs that are not licensee unique and associated with the performance of an overall program that benefit all similar licensees covered under that program or that are required to satisfactorily carry out the program. Common costs include costs associated with the following: preparatory or start-up efforts to interpret and reach agreement on methodology, approach, acceptance criteria, regulatory position, or technical reporting requirements; efforts associated with the "lead plant" concept that might be involved during the first one or two plant reviews; meetings and discussions involving the above efforts to provide orientation, background knowledge or guidance during the course of a program; any technical effort applied to a docket or other unique identifier; and project management. Common costs must be reporting monthly for each docket or unique identifier. Common costs must be computed based on the proportion of direct costs incurred against each docket or unique identifier for the billing period.

BILLING INSTRUCTIONS FOR
COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)

Billing of Cost after Expiration of Contract: If costs are incurred during the contract period and claimed after the contract has expired, you must cite the period during which these costs were incurred. To be considered a proper expiration voucher/invoice, the contractor shall clearly mark it "EXPIRATION VOUCHER" or "EXPIRATION INVOICE".

Final vouchers/invoices shall be marked "FINAL VOUCHER" or "FINAL INVOICE".

Currency: Billings may be expressed in the currency normally used by the contractor in maintaining his accounting records and payments will be made in that currency. However, the U.S. dollar equivalent for all vouchers/invoices paid under the contract may not exceed the total U.S. dollars authorized in the contract.

Supersession: These instructions supersede any previous billing instructions.

R:\txtselden\billing instructions CR revised 2008

(SAMPLE FORMAT)

COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)
INVOICE/ VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

1. Official Agency Billing Office

Department of the Interior
National Business Center
Attn: Fiscal Services Branch - D2770
7301 West Mansfield Avenue
Denver, CO 80235-2230

2. Voucher Information

- a. Payee's DUNS Number or DUNS+4. The Payee shall include the Payee's Data Universal Number (DUNS) or DUNS+4 number that identifies the Payee's name and address. The DUNS+4 number is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the Payee to identify alternative Electronic Funds Transfer (EFT) accounts for the same parent concern.
- b. Payee's Name and Address. Show the name of the Payee as it appears in the contract and its correct address. If the Payee assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Payee shall require as a condition of any such assignment, that the assignee shall register separately in the Central Contractor Registration (CCR) database at <http://www.ccr.gov> and shall be paid by EFT in accordance with the terms of this contract. See Federal Acquisition Regulation 52.232-33(g) Payment by Electronic Funds Transfer - Central Contractor Registration (October 2003).
- c. Contract Number. Insert the NRC contract number.
Task Order No. Insert the task order number (If Applicable).
- d. Voucher/Invoice. The appropriate sequential number of the voucher/invoice, beginning with 001 should be designated. Contractors may also include an individual internal accounting number, if desired, in addition to the 3-digit sequential number.
- e. Date of Voucher/Invoice. Insert the date the voucher/invoice is prepared.
- f. Billing period. Insert the beginning and ending dates (day, month, year) of the period during which costs were incurred and for which reimbursement is claimed.

(SAMPLE FORMAT)

COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)
INVOICE/ VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

g. Direct Costs - Insert the amount billed for the following cost elements, adjustments, suspensions, and total amounts, for both the current billing period and for the cumulative period (from contract inception to end date of this billing period).

- (1) Direct Labor. This consists of salaries and wages paid (or accrued) for direct performance of the contract itemized as follows:

<u>Labor</u> <u>Category</u>	<u>Hrs.</u> <u>Billed</u>	<u>Rate</u>	<u>Total</u>	<u>Cumulative</u> <u>Hrs.Billed</u>
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- (2) Fringe Benefits. This represents fringe benefits applicable to direct labor and billed as a direct cost. Where a rate is used indicate the rate. Fringe benefits included in direct labor or in other indirect cost pools should not be identified here.

- (3) Capitalized Non Expendable Equipment. List each item costing \$50,000 or more and having a life expectancy of more than one year. List only those items of equipment for which reimbursement is requested. For each such item, list the following (as applicable): (a) the item number for the specific piece of equipment listed in the property schedule of the contract; or (b) the Contracting Officer's approval letter if the equipment is not covered by the property schedule.

- (4) Non-capitalized Equipment, Materials, and Supplies. These are equipment other than that described in (3) above, plus consumable materials, supplies. List by category. List items valued at \$1,000 or more separately. Provide the item number for each piece of equipment valued at \$1,000 or more.

- (5) Premium Pay. This enumeration in excess of the basic hourly rate. (Requires written approval of the Contracting Officer.)

- (6) Consultants. The supporting information must include the name, hourly or daily rate of the consultant, and reference the NRC approval (if not specifically approved in the original contract).

- (7) Travel. Total costs associated with each trip must be shown in the following format:

<u>Start Date</u>		<u>Destination</u>		<u>Costs</u>
<u>From</u>	<u>To</u>	<u>From</u>	<u>To</u>	<u>\$</u>

- (8) Subcontracts. Include separate detailed breakdown of all costs paid to approved subcontractors during the billing period.

- (9) Other Costs. List all other direct costs by cost element and dollar amount separately.

(SAMPLE FORMAT)

COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)
INVOICE/ VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

- h. Indirect Costs (Overhead and General and Administrative Expense). Cite the formula (rate and base) in effect in accordance with the terms of the contract, during the time the costs were incurred and for which reimbursement is claimed.
- i. Fixed Fee. If the contract provides for a fixed fee, it must be claimed as provided for by the contract. Cite the formula or method of computation. Include this information as it applies to individual task orders as well.
The contractor may bill for fixed fee only up to 85% of total fee.
- j. Total Amount Billed. Insert the total amounts claimed for the current and cumulative periods.
- k. Adjustments. For cumulative amount, include outstanding suspensions.
- l. Grand Totals.

Further itemization of vouchers/invoices shall only be required for items having specific limitations set forth in the contract.

3. Sample Voucher Information

This voucher represents reimbursable costs for the billing period
from ____ through ____.

	<u>Amount Billed</u>
	<u>Current Period</u> <u>Cumulative</u>

(a) Direct Costs

- | | |
|-----|--|
| (1) | Direct labor* |
| (2) | Fringe benefits (%, if computed as percentage)..... |
| (3) | Capitalized non-expendable equipment (\$50,000 or more - see I
instructions)* |
| (4) | Non-capitalized equipment, materials, and supplies..... |
| (5) | Premium pay (NRC approved overtime)..... |
| (6) | Consultants* |
| (7) | Travel* |
| (8) | Subcontracts* |
| (9) | Other costs* |

Total Direct Costs

(SAMPLE FORMAT)

COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)
INVOICE/ VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

(b) Indirect Costs

(A) Overhead ____ % of
_____ (Indicate Base).....

(c) Fixed-Fee (Cite Formula):

(d) Total Amount Billed.....

(e) Adjustments.....

(f) Grand Totals.....

* (Requires Supporting Information -- See Sample below)

SAMPLE SUPPORTING INFORMATION

1) Direct Labor - \$2400

<u>Labor Category</u>	<u>Hours Billed</u>	<u>Rate</u>	<u>Cumulative Total</u>	<u>Hrs. Billed</u>
Senior Engineer I	100	\$14.00	\$1400	975
Engineer	50	\$10.00	\$ 500	465
Computer Analyst	100	\$ 5.00	<u>\$ 500</u>	320
			\$2400	

3) Capitalized Non-Expendable Equipment

Prototype Spectrometer - item number 1000-01 \$60,000

4) Non-capitalized Equipment, Materials, and Supplies

10 Radon tubes @ \$110.00 = \$1100.00

6 Pairs Electrostatic gloves @ \$150.00 = \$900.00
\$2000.00

5) Premium Pay

Walter Murphy - 10 hours @ \$10.00 Per Hour = \$100
(This was approved by NRC in letter dated 6/1/08)

6) Consultants' Fee

Dr. Carney - 1 hour @ \$100 = \$100

7) Travel

<u>Start Date</u>	<u>Destination</u>	<u>Costs</u>
6/1/08	Wash., DC	\$200

(SAMPLE FORMAT)

COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)
INVOICE/ VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

4. FEE RECOVERY BILLING REPORT

FIN:

Facility Name or Report Title:

TAC or Inspection Report Number:

(or other unique identifier)

Docket Number (if applicable):

Cost Categories	Period Amt.	Period Cost Incurred	Fiscal Year To Date Costs	Total Cumulative Costs
Labor				
Materials				
Subcontractor/ Consultant				
Travel				
Other (specify)				
Common Costs				
Total				
Remarks:				