

AWARD/CONTRACT

1. THIS CONTRACT IS RATED ORDER UNDER DPAS (15 CFR 700)

RATING
N/A

PAGE OF PAGES
1

2. CONTRACT NO. (Proc. Inst. Ident.)
NRC-04-08-155

3. EFFECTIVE DATE
September 26, 2008

4. REQUISITION/PURCHASE REQUEST/PROJECT NO.
RFFA: RES-08-155 FFS: RES-C08-425

5. ISSUED BY
CODE 3100
U.S. Nuclear Regulatory Commission
Div. of Contracts
Attn: Sheila Bumpass
Mail Stop TWB-01-A31M
Rockville, MD 20852-2746

6. ADMINISTERED BY (If other than Item 5)
CODE 3100

7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, State and ZIP Code)

PENNSYLVANIA STATE UNIVERSITY, THE
PENN STATE

408 OLD MAIN

UNIVERSITY PARK PA 168021505

8. DELIVERY
 FOB ORIGIN OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT
Net 30

10. SUBMIT INVOICES
See Section I

11. SHIP TO/MARK FOR
CODE
Mr. Kirk Tien
MS T10K8
US Nuclear Regulatory Commission
Rockville, MD 20852-2746

12. PAYMENT WILL BE MADE BY
CODE 3100
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:
 10 U.S.C. 2304(c) 41 U.S.C. 253(c)(1)

14. ACCOUNTING AND APPROPRIATION DATA
B&R: 8-60-15-111-205; JOB: N6712; BOC: 252A Appr: 31X0200.860
FFS: RES-C08-425; Amount: \$25,000.00 DUNS: 003403953

15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	Trace Interfacial Area Transport Model Review and Evaluation				

15G. TOTAL AMOUNT OF CONTRACT \$25,000.00

16. TABLE OF CONTENTS See Attached Table of Contents

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
X	A	SOLICITATION/CONTRACT FORM	1	X	I	CONTRACT CLAUSES	8
X	B	SUPPLIES OR SERVICES AND PRICES/COSTS	1	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
X	C	DESCRIPTION/SPECS./WORK STATEMENT	5	X	J	LIST OF ATTACHMENTS	6
X	D	PACKAGING AND MARKING	1	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
X	E	INSPECTION AND ACCEPTANCE	1	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS		
X	F	DELIVERIES OR PERFORMANCE	3				
X	G	CONTRACT ADMINISTRATION DATA	3	L	INSTRS., CONDS., AND NOTICES TO OFFER		
X	H	SPECIAL CONTRACT REQUIREMENTS	9	M	EVALUATION FACTORS FOR AWARD		

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 2 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.)

18: 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 SIGNER (Type or print)
David W. Richardson
Assistant Vice President for Research

20A. NAME OF CONTRACTING OFFICER
Stephen M. Pool

19B. NAME OF CONTRACTOR
BY David W. Richardson
(Signature of person authorized to sign)

19C. DATE SIGNED
SEP 26 2008

20B. UNITED STATES OF AMERICA
BY
(Signature of Contracting Officer)

20C. DATE SIGNED
9/24/08

STANDARD FORM 26 (REV. 4/2008)

SUNSI REVIEW COMPLETE

OCT 27 2008

STANDARD FORM 26 (REV. 4/2008) Prescribed by GSA FPMR (41 CFR) 101-11.6 53.214(a)

ADMOU2

Table of Contents

PART I - THE SCHEDULE	A-1
SECTION A - SOLICITATION/CONTRACT FORM	A-1
SF 26 AWARD/CONTRACT	A-1
PART I - THE SCHEDULE	B-1
SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS	B-1
B.1 PROJECT TITLE	B-1
B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)	B-1
B.3 CONSIDERATION AND OBLIGATION-COST REIMBURSEMENT (JUN 1988) ALTERNATE I (JUN 1988)	B-1
SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK	C-1
SECTION D - PACKAGING AND MARKING	D-1
D.1 PACKAGING AND MARKING (MAR 1987)	D-1
SECTION E - INSPECTION AND ACCEPTANCE	E-1
E.1 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)	E-1
SECTION F - DELIVERIES OR PERFORMANCE	F-1
F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE	F-1
F.2 2052.211-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)	F-1
F.3 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)	F-1
F.4 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)	F-1
F.5 PLACE OF DELIVERY-REPORTS (JUN 1988)	F-3
F.6 DURATION OF CONTRACT PERIOD (MAR 1987)	F-3
SECTION G - CONTRACT ADMINISTRATION DATA	G-1
G.1 2052.215-71 PROJECT OFFICER AUTHORITY (NOVEMBER 2006)	G-1
G.2 2052.215-77 TRAVEL APPROVALS AND REIMBURSEMENT (OCT 1999)	G-2
G.3 2052.216-71 INDIRECT COST RATES-ALTERNATE 1 (JAN 1993)	G-3
SECTION H - SPECIAL CONTRACT REQUIREMENTS	H-1
H.1 2052.242-70 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL OPINIONS (AUG 2007)	H-1
H.2 2052.242-71 PROCEDURES FOR RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL OPINIONS (OCT 1999)	H-1
H.3 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST (JAN 1993)	H-3
H.4 2052.215-70 KEY PERSONNEL (JAN 1993)	H-5
H.5 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)	H-6
H.6 2052.235-71 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)	H-6
H.7 CONTRACTOR ACQUIRED GOVERNMENT EQUIPMENT/PROPERTY (DEC 1995)	H-7
H.8 SEAT BELTS	H-7
H.9 Annual and Final Contractor Performance Evaluations	H-7
H.10 Compliance with U.S. Immigration Laws and Regulations	H-8
H.11 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS	H-8

H.12 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (JULY 2006)	H-9
---	-----

PART II - CONTRACT CLAUSES	I-1
---	------------

SECTION I - CONTRACT CLAUSES	I-1
---	------------

I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE	I-1
---	-----

I.2 52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER--CENTRAL CONTRACTOR REGISTRATION (OCT 2003)	I-1
---	-----

I.3 52.216-7 ALLOWABLE COST AND PAYMENT (DEC 2002)	I-4
--	-----

I.4 52.219-28 POST-AWARD SMALL BUSINESS PROGRAM REREPRESENTATION (JUNE 2007)	I-7
---	-----

I.5 52.249-14 EXCUSABLE DELAYS (APR 1984)	I-9
---	-----

SECTION J - LIST OF ATTACHMENTS	J-1
--	------------

J.1 BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTACTS (JUNE 2008)	I-1
--	-----

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

The title of this project is as follows:

"Trace Interfacial Area Transport Model"

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

To review and evaluate the recently obtained data from NRC sponsored tests involving "Interface area transport." The evaluation and reduction of the data must be such that the models and correlations can be incorporated into TRACE Version 5.0 or into a version with an increased number of fields representing the two-phase flow.

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 \$25,000.
- (b) The amount presently obligated by the Government with respect to this contract is \$25,000.
- (c) It is estimated that the amount currently allotted will cover performance through September 30, 2009.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK**STATEMENT OF WORK
FOR CONTRACTOR TO PROVIDE A
TRACE INTERFACIAL AREA TRANSPORT MODEL****I. BACKGROUND**

The U. S. Nuclear Regulatory Commission (USNRC) Office of Nuclear Regulatory Research (RES) is developing improved versions of the TRAC/RELAP Advanced Computational Engine (TRACE) Version 5.0 computer code. The advanced versions will be more general and mechanistic than the version currently in use. This will allow the USNRC to more accurately predict thermal-hydraulic conditions in a reactor core during a hypothetical accident.

One of the major development tasks associated with these advanced TRACE versions is the mechanistic modeling of two-phase flow patterns and transitions between these flow patterns. Flow pattern maps presently in use for TRACE and similar two-fluid codes were developed primarily for vertical and horizontal tubes and not for the geometries encountered in a reactor core or elsewhere in the reactor vessel. In addition, existing flow pattern maps are based on steady flow conditions and do not account for downstream changes in the flow structure or transient effects. To improve accuracy, the USNRC has sponsored experimental work at Universities to study what has been called interfacial area transport. These studies have generated information on flow structure and details on flow phenomena sufficient to develop an improved, more mechanistic treatment of two-phase flow. Rather than relying on static flow pattern maps, the data allow models to be developed that can determine the interfacial area between the gas and liquid phases. The next steps are to analyze and evaluate these recently obtained data and to develop dynamic flow regime models for interfacial area transport that are suitable for TRACE.

II. OBJECTIVE

The main objective of this work is to review and evaluate the recently obtained data from NRC sponsored tests involving "interfacial area transport." The evaluation and reduction of the data must be such that the models and correlations can be incorporated into TRACE Version 5.0 or into a version with an increased number of fields representing the two-phase flow. Thus, a second objective is to define the changes that must be made to the conservation equations and numerical solution in TRACE in order to implement the interfacial area transport models.

III. SCOPE OF WORK

The contractor shall review TRACE 5.0 and develop a framework for interfacial area transport within TRACE. The contractor shall also perform a summary of Interfacial Area Transport Databases. Finally the contractor shall Modify versions of TRACE and Demonstrate the Feasibility of Interfacial Area Transport.

IV. REQUIREMENTS**Task 1: Review TRACE 5.0 and Develop Framework**

The contractor shall review the TRACE Version 5.0 documentation and develop a framework for interfacial area transport within TRACE. Revisions to the conservation equations and any additional modifications to track interfacial area are to be defined, and documented in a brief report. The report is to include all other

major code modifications, such as revisions or restrictions on the numerical solution techniques, for implementation of interfacial area transport.

Task 2: Summary of Interfacial Area Transport Databases

The contractor shall review the interfacial area transport databases acquired from NRC sponsored testing through the Thermal Hydraulic Institute and identify all University internal reports, NUREGs, and graduate student theses that are available as supporting documentation. Covering each traditional flow pattern; bubbly, slug, churn, etc. The contractor is to develop a set of source/sink terms and closure relations suitable for characterization and calculation of interfacial area and dynamic flow pattern maps for TRACE. As part of this work, the contractor shall define the supporting database for each of these source/sink terms and closure relations so that gaps in the knowledge base are clearly identified. The deliverable for this part of the project is a report documenting a summary of the database, the set of proposed closure relations and terms for tracking interfacial area.

Task 3: Modify versions of TRACE and Demonstrate the Feasibility of Interfacial Area Transport

A version of TRACE is to be modified and a demonstration of the feasibility of interfacial area transport performed for a simple test case. A suggested test case would a horizontal pipe with a bend in which there exists interfacial area data. A report is to be written documenting the test case, modified TRACE version calculations, and a description of the changes that were made to the code. The executable for the modified code and input decks are also be made available to the staff. Finally, the contractor shall present one-two day seminar to interested NRC staff on interfacial area transport and dynamic flow regime modeling near the conclusion of this effort.

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 work shall be performed by an expert in two-phase flow, and one who has an in depth knowledge of the experimental techniques used to develop the interfacial area database. The person should also be familiar with two-fluid codes such as TRACE so that they understand limitations that may be placed on the models.

VII. LEVEL OF EFFORT

The estimated level of effort is 500 staff-hours.

VIII. PERIOD OF PERFORMANCE

The period of performance for the contract is twelve months; September 26, 2008 – September 30, 2009.

IX. 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, approval of the proposed article or presentation should be obtained from the NRC Project Manager. The RES Project Manager shall either approve the material as submitted, approve it subject to NRC suggested revisions, or disapprove it. In any event, the RES Project Manager may disapprove or delay presentation or publication of papers on information that is subject to Commission approval that has not been ruled upon or which has been disapproved. Additional information regarding the publication of NRC sponsored research is contained in NRC Management Directives 3.7, "NUREG Series Publications," and 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects."

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.

X. 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.

XI. DELIVERABLE SCHEDULE

Related task	Deliverable	Due Date
Task 1	Report on TRACE framework needs for interfacial area transport. As described in task 1.	1 month after purchase order initiation
Task 2	Report on interfacial closure relations, dynamic flow pattern map for TRACE and supporting database.	3 months after purchase order initiation
Task 3	Modified code version for interfacial transport and test problem.	Exact date to be determined but within 12 months after purchase order initiation.
	Seminar on interfacial area transport and dynamic flow pattern maps.	Exact date to be determined but within 12 months after purchase order initiation.

XII. MEETINGS AND TRAVEL

The contractor shall plan to attend three working meetings of two-day duration at the USNRC offices in Rockville, Maryland. The following table provides the meeting schedule.

Schedule	Date
Kick-off meeting	Within 5 days after order award
Meeting to discuss draft reports and findings	3 months after purchase order initiation
Two day seminar presentation and discussion of results	The contractor shall prepare a seminar for up to 25 NRC staff members

XIII. NRC-FURNISHED MATERIAL

The contractor will have access to the TRACE Theory Manual, the Assessment Manual, and the User's Guide. The TRACE Theory Manual describes the underlying theory, empirical models, and special features within TRACE. The Theory Manual Supplement provides greater detail of each physical model and certain mathematical derivations. The Assessment Manual documents the results of a number of TRACE simulations of experimental tests ranging from fundamental tests complex integral effects tests such as LOFT. The contractor will have access to the Version 5.0 executable and source code, as well as sample input and output files.

USNRC-Furnished Material

- (1) TRACE 5.0 documentation
 - (a) TRACE Theory Manual
 - (b) TRACE Assessment Report
 - (c) TRACE User's Manual
- (2) TRACE 5.0 executable and source code
- (3) TRACE sample input and output files

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 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
52.242-15	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1) STOP-WORK ORDER ALTERNATE I (APR 1984)	AUG 1989
52.247-34	F.O.B. DESTINATION	NOV 1991
52.247-48	F.O.B. DESTINATION—EVIDENCE OF SHIPMENT	FEB 1999

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.

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:**
Mr. Kirk Tien (2 copies):
MS T10K8
US Nuclear Regulatory Commission
Rockville, MD 20852-2746
- (b) **Contracting Officer (1 copy):**
Mr. Stephen M. Pool
MS TWB-01-B26M
US Nuclear Regulatory Commission
Rockville, MD 20852-2746

F.6 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on the September 26, 2008 and will expire September 30, 2009.

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: Mr. Kirk Tien
Address: MS T10K8
US Nuclear Regulatory Commission
Rockville, MD 20852-2746

Telephone Number: 301-415-0736

(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 1 (JAN 1993)

The contractor is reimbursed for allowable indirect costs in accordance with the following predetermined rates, per NICRA dated June 9, 2008:

FRINGE BENEFIT RATES

Type	From	To	Rate	Base	Applicable
Fixed	7/1/08	6/30/09	[REDACTED]	(a)	Salaries/ All
Fixed	7/1/08	6/30/09	[REDACTED]	(b)	Wages/ All
Fixed	7/1/08	6/30/09	[REDACTED]	(c)	Graduate Assistants/All
Fixed	7/1/08	6/30/09	[REDACTED]	(d)	Students/ All

DISTRIBUTION BASES

- (a) Salaries, excluding graduate assistants, fixed term II and visiting faculty appointments not receiving full benefits.
- (b) Wages and those salaries not receiving full benefits, exclusive of graduate assistants and student wages.
- (c) Graduate assistant salaries.
- (d) Student wages.

FACILITIES AND ADMINISTRATIVE (F&A) COST RATES FOR UNIVERSITY PARK

Type	From	To	Rate On Campus	Rate Off Campus	Base	Applicable
Pred	7/1/08	6/30/09	[REDACTED]	[REDACTED]	(a)	Organized Research (I), All Locations Except ARL I, HCM2, EOC3
Pred	7/1/09	6/30/10	[REDACTED]	[REDACTED]	(a)	Organized Research (I), All Locations Except ARL I, HCM2, EOC3

SECTION H - SPECIAL CONTRACT REQUIREMENTS**H.1 2052.242-70 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL OPINIONS (AUG 2007)**

(a) The Nuclear Regulatory Commission's (NRC) policy is to support the contractor's expression of professional health and safety related concerns associated with the contractor's work for NRC that may differ from a prevailing NRC staff view, disagree with an NRC decision or policy position, or take issue with proposed or established agency practices. An occasion may arise when an NRC contractor, contractor's personnel, or subcontractor personnel believes that a conscientious expression of a competent judgement is required to document such concerns on matters directly associated with its performance of the contract. The NRC's policy is to support these instances as Differing Professional Opinions (DPOs).

(b) The procedure that will be used provides for the expression and resolution of differing professional opinions (DPOs) of health and safety-related concerns associated with the mission of the agency by NRC contractors, contractor personnel or subcontractor personnel on matters directly associated with its performance of the contract. This procedure is found in Clause 2052.242 71 of this document. The contractor shall provide a copy of the NRC DPO procedure to all of its employees performing under this contract and to all subcontractors who shall, in turn, provide a copy of the procedure to its employees. The prime contractor or subcontractor shall submit all DPOs received but need not endorse them.

H.2 2052.242-71 PROCEDURES FOR RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL OPINIONS (OCT 1999)

(a) The following procedure provides for the expression and resolution of differing professional opinions (DPOs) of health and safety-related concerns of NRC contractors and contractor personnel on matters connected to the subject of the contract. Subcontractor DPOs must be submitted through the prime contractor. The prime contractor or subcontractor shall submit all DPOs received but need not endorse them.

(b) The NRC may authorize up to ten reimbursable hours for the contractor to document, in writing, and discuss, with the DPO panel, a DPO by the contractor, the contractor's personnel, or subcontractor personnel. The contractor shall not be entitled to any compensation for effort on a DPO which exceeds the specified ten hour limit.

(c) The contractor shall notify the contracting officer before incurring costs to document a DPO. The contractor shall not begin any work on the DPO before receiving a modification to the contract from the NRC contracting officer.

The contractor shall first determine whether there are sufficient funds obligated under the contract which are available to cover the costs of writing a DPO. If there are insufficient obligated funds under the contract, the contractor shall request additional funding from the NRC contracting officer to cover the costs of preparing the DPO. If there are sufficient obligated funds under the contract, the contractor shall notify the contracting officer so that a modification can be issued that specifies the amount of funding required for the DPO.

(d) Contract funds shall not be authorized to document a differing perspective in the following examples where the use of this NRC contractor DPO process is inappropriate:

(1) Issues involving allegations of wrongdoing that should be appropriately addressed directly to the NRC Office of the Inspector General (OIG);

(2) Issues submitted anonymously. However, safety significant issues that are submitted anonymously should be addressed under NRC's Allegation Program which can be found at: http://www.nrc.gov/about/nrc/regulatory/allegations_resp.html

(3) Issues that are deemed to be frivolous or otherwise not in accordance with the guidance included in NRC Management Directive (MD) 10.159, "The NRC Differing Professional Opinions Program," which can be found at: http://www.nrc.gov/reading_rm/doc_collections/management_directives/volumes/vol_10.html

(4) Issues that have already been considered, addressed, or rejected by the NRC under these procedures, absent significant new information;

(5) Issues that are considered premature because they are still under staff review by the NRC.

(e) This procedure does not provide anonymity, nor does it provide for confidential submittal (as addressed in MD 10.159). Individuals desiring anonymity or confidentiality should contact the NRC OIG or submit the information under NRC's Allegation Program, as appropriate.

(f) Prior to submitting a DPO, the contractor or the contractor's employees are encouraged to engage in informal discussions with appropriate NRC personnel (which may include NRC staff directly involved with the issues that are the subject of concerns and the NRC Project Officer.) The contractor hereby agrees that the contractor authorizes its employees to engage in informal discussions with the appropriate NRC personnel for purposes of this clause. If the informal discussions do not resolve the contractor or the contractor's employees' concerns, the contractor shall notify the contracting officer so that a modification to the contract can be issued that authorizes the expenditure of funds for the DPO.

The contractor may initiate the DPO process by submitting a written statement directly to the NRC Differing Professional Opinions Program Manager (DPOPM), Office of Enforcement, with a copy to the Contracting Officer, Division of Contracts, Office of Administration. Each DPO submitted will be evaluated on its own merits. (Refer to (c) above before incurring any costs to initiate the DPO process.)

(g) The DPO, while being brief, must contain the following as it relates to the subject matter of the contract:

(1) A summary of the prevailing NRC view, existing NRC decision or stated position, or the proposed or established NRC practice.

(2) A description of the submitter's views and how they differ from any of the above items.

(3) The rationale for the submitter's views, including an assessment of the consequences should the submitter's position not be adopted by NRC.

(4) References to, or copies of, relevant documents.

(h) The DPOPM will screen the DPO and notify the submitter and the contractor if the DPO is accepted. Returned DPOs will identify the reason for return.

(i) The DPOPM will forward the DPO to the Office Director or Regional Administrator responsible for the contract for disposition.

(j) The Office Director or Regional Administrator will establish an ad hoc panel of NRC employees to review the DPO.

(k) The panel will interview the submitter to ensure that the panel understands the issues and to define the scope of the review. The panel will gather information, review documents, and conduct interviews to support a

thorough review. The panel will provide a written report of its findings to the Office Director or Regional Administrator and to the Contracting Officer, which includes a recommended course of action.

(l) The Office Director or Regional Administrator will consider the DPO panel's report, make a decision on the DPO and provide a written decision to the contractor and the Contracting Officer. The DPO is considered final and closed when the DPO Decision is issued.

(m) A summary of the issue and its disposition will be included in the NRC Weekly Information Report.

(n) DPOs will be dispositioned in accordance with the time frames identified in MD 10.159.

(o) The DPOPM will track follow up actions and notify the contractor of any schedule revisions.

(p) The availability of DPO records will reflect the submitter's wishes (e.g., whether the records should or should not be made public and whether the submitter's identity is redacted) and be consistent with NRC practices for making records available to the public.

(q) For purposes of the contract, the DPO shall be considered a deliverable under the contract.

H.3 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.4 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.5 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)

(a) The principal investigator(s)/contractor shall comply with the provisions of NRC Management Directive 3.8 (Vol. 3, Part 1) and NRC Handbook 3.8 (Parts I-IV) 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. Failure to comply with this clause shall be grounds for termination of this contract.

(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. However, such publication and papers shall focus on advances in science and technology and minimize conclusions and/or recommendations which may have regulatory implications.

(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 is (1) subject to Commission approval, (2) has not been ruled upon, or (3) disapproved by the Commission, the NRC reserves the right to disapprove or delay the publication. Further, if the NRC disagrees with the proposed publication for any reason, it reserves the right to require that any publication not identify the NRC's sponsorship of the work and that any associated publication costs shall be borne by the contractor.

H.6 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.7 CONTRACTOR ACQUIRED GOVERNMENT EQUIPMENT/PROPERTY (DEC 1995)

The Contractor is authorized to acquire and/or fabricate the equipment/property listed below for use in the performance of this contract: N/A

(a) The Rod Bundle Test Facility at the Contractor site is jointly owned by NRC and the Contractor. The facility will be used exclusively for the work described in the attached SOW.

(b) In the event that, during contract performance, the contractor determines that the acquisition cost for the above item(s) is expected to exceed the amount(s) contained in the contractor's proposal, the contractor shall refer to the Limitation of Cost or Funds Clause when either is included in the contract.

(c) Only the equipment/property listed above, in the quantities shown, will be acquired by the contractor. Additional equipment/property valued at \$500 or more may be acquired only after contracting officer approval is authorized by an amendment to this clause. The above listed equipment/property is subject to the provisions of the "Government Property" clause.

H.8 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.9 Annual and Final Contractor Performance Evaluations

Annual and final evaluations of contractor performance under this contract will be prepared in accordance with FAR 42.15, "Contractor Performance Information," normally at the time the contractor is notified of the NRC's intent to exercise the contract option. If the multi-year contract does not have option years, then an annual evaluation will be prepared (state time for annual evaluation). Final evaluations of contractor performance will be prepared at the expiration of the contract during the contract closeout process.

The Contracting Officer will transmit the NRC Project Officer's annual and final contractor performance evaluations to the contractor's Project Manager, unless otherwise instructed by the contractor. The contractor will be permitted thirty days to review the document. The contractor may concur without comment, submit additional information, or request a meeting to discuss the performance evaluation. The Contracting Officer may request the contractor's Project Manager to attend a meeting to discuss the performance evaluation.

Where a contractor concurs with, or takes no exception to an annual performance evaluation, the Contracting Officer will consider such evaluation final and releasable for source selection purposes. Disagreements between the parties regarding a performance evaluation will be referred to an individual one level above the Contracting Officer, whose decision will be final.

The Contracting Officer will send a copy of the completed evaluation report, marked "For Official Use Only," to the contractor's Project Manager for their records as soon as practicable after it has been finalized. The

completed evaluation report also will be used as a tool to improve communications between the NRC and the contractor and to improve contract performance.

The completed annual performance evaluation will be used to support future award decisions in accordance with FAR 42.1502(a) and 42.1503(c). During the period the information is being used to provide source selection information, the completed annual performance evaluation will be released to only two parties - the Federal government personnel performing the source selection evaluation and the contractor under evaluation if the contractor does not have a copy of the report already.

H.10 Compliance with U.S. Immigration Laws and Regulations

NRC contractors are responsible to ensure that their alien personnel are not in violation of United States Immigration and Naturalization (INS) laws and regulations, including employment authorization documents and visa requirements. Each alien employee of the Contractor must be lawfully admitted for permanent residence as evidenced by Alien Registration Receipt Card Form 1-151 or must present other evidence from the Immigration and Naturalization Services that employment will not affect his/her immigration status. The INS Office of Business Liaison (OBL) provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on the INS website, <http://www.ins.usdoj.gov/graphics/services/employerinfo/index.htm#obl>.

The NRC reserves the right to deny or withdraw Contractor use or access to NRC facilities or its equipment/services, and/or take any number of contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor violate the Contractor's responsibility under this clause.

H.11 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS

Review and Approval of Reports

(a) Reporting Requirements. The contractor/grantee shall comply with the terms and conditions of the contract/grant regarding the contents of the draft and final report, summaries, data, and related documents, to include correcting, deleting, editing, revising, modifying, formatting, and supplementing any of the information contained therein, at no additional cost to the NRC. Performance under the contract/grant will not be deemed accepted or completed until it complies with the NRC's directions. The reports, summaries, data, and related documents will be considered draft until approved by the NRC. The contractor/grantee agrees that the direction, determinations, and decisions on approval or disapproval of reports, summaries, data, and related documents created under this contract/grant remain solely within the discretion of the NRC.

(b) Publication of Results. Prior to any dissemination, display, publication, or release of articles, reports, summaries, data, or related documents developed under the contract/grant, the contractor/grantee shall submit them to the NRC for review and approval. The contractor/grantee shall not release, disseminate, display or publish articles, reports, summaries, data, and related documents, or the contents therein, that have not been reviewed and approved by the NRC for release, display, dissemination or publication. The contractor/grantee agrees to conspicuously place any disclaimers, markings or notices, directed by the NRC, on any articles, reports, summaries, data, and related documents that the contractor/grantee intends to release, display, disseminate or publish to other persons, the public, or any other entities. The contractor/grantee agrees, and grants, a royalty-free, nonexclusive, irrevocable worldwide license to the government, to use, reproduce, modify, distribute, prepare derivative works, release, display or disclose the articles, reports, summaries, data, and related documents developed under the contract/grant, for any governmental purpose and to have or authorize others to do so.

(c) Identification/Marking of Sensitive Unclassified and Safeguards Information. The decision, determination, or direction by the NRC that information possessed, formulated or produced by the contractor/grantee constitutes sensitive unclassified or safeguards information is solely within the authority and discretion of the NRC. In performing the contract/grant, the contractor/ grantee shall clearly mark sensitive unclassified and safeguards information, to include for example, AOUI-Allegation Information@ or AOUI-Security Related Information@ on any reports, documents, designs, data, materials, and written information, as directed by the NRC. In addition to marking the information as directed by the NRC, the contractor shall use the applicable NRC cover sheet (e.g., NRC Form 461 ASafeguards Information@) in maintaining these records and documents. The contractor/grantee shall ensure that sensitive unclassified and safeguards information is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. The contractor/grantee shall comply with the requirements to mark, maintain, and protect all information, including documents, summaries, reports, data, designs, and materials in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954 as amended, its implementing regulations (10 CFR 73.21), Sensitive Unclassified and Non-Safeguards Information policies, and NRC Management Directive and Handbook 12.6.

(d) Remedies. In addition to any civil, criminal, and contractual remedies available under the applicable laws and regulations, failure to comply with the above provisions, and/or NRC directions, may result in suspension, withholding, or offsetting of any payments invoiced or claimed by the contractor/grantee. If the contractor/grantee intends to enter into any subcontracts or other agreements to perform this contract/grant, the contractor/grantee shall include all of the above provisions in any subcontracts or agreements.

H.12 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.

NRC-04-08-155

Long-term contract means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

Small business concern means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause.

(b) If the Contractor represented that it was a small business concern prior to award of this contract, the Contractor shall rerepresent its size status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon the occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts-

(i) Within 60 to 120 days prior to the end of the fifth year of the contract; and

(ii) Within 60 to 120 days prior to the exercise date specified in the contract for any option thereafter.

(c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code assigned to this contract. The small business size standard corresponding to this NAICS code can be found at <http://www.sba.gov/services/contractingopportunities/sizestandardstocics/>.

(d) The small business size standard for a Contractor providing a product which it does not manufacture itself, for a contract other than a construction or service contract, is 500 employees.

(e) Except as provided in paragraph (g) of this clause, the Contractor shall make the rerepresentation required by paragraph (b) of this clause by validating or updating all its representations in the Online Representations and Certifications Application and its data in the Central Contractor Registration, as necessary, to ensure they reflect current status. The Contractor shall notify the contracting office by e-mail, or otherwise in writing, that the data have been validated or updated, and provide the date of the validation or update.

(f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.

(g) If the Contractor does not have representations and certifications in ORCA, or does not have a representation in ORCA for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office, along with the contract number and the date on which the rerepresentation was completed:

The Contractor represents that it is, is not a small business concern under NAICS Code assigned to contract number NRC-04-08-155.

[Contractor to sign and date and insert authorized signer's name and title].

I.5 52.249-14 EXCUSABLE DELAYS (APR 1984)

(a) Except for defaults of subcontractors at any tier, the Contractor shall not be in default because of any failure to perform this contract under its terms if the failure arises from causes beyond the control and without the fault or negligence of the Contractor. Examples of these causes are (1) acts of God or of the public enemy, (2) acts of the Government in either its sovereign or contractual capacity, (3) fires, (4) floods, (5) epidemics, (6) quarantine restrictions, (7) strikes, (8) freight embargoes, and (9) unusually severe weather. In each instance, the failure to perform must be beyond the control and without the fault or negligence of the Contractor. "Default" includes failure to make progress in the work so as to endanger performance.

(b) If the failure to perform is caused by the failure of a subcontractor at any tier to perform or make progress, and if the cause of the failure was beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either, the Contractor shall not be deemed to be in default, unless--

(1) The subcontracted supplies or services were obtainable from other sources;

(2) The Contracting Officer ordered the Contractor in writing to purchase these supplies or services from the other source; and

(3) The Contractor failed to comply reasonably with this order.

(c) Upon request of the Contractor, the Contracting Officer shall ascertain the facts and extent of the failure. If the Contracting Officer determines that any failure to perform results from one or more of the causes above, the delivery schedule shall be revised, subject to the rights of the Government under the termination clause of this contract.

SECTION J - LIST OF ATTACHMENTS

J-1 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.

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 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.

SAMPLE FORMAT

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.

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:

Labor Category	Hrs. Billed	Rate	Total	Cumulative Hrs. Billed
----------------	-------------	------	-------	------------------------

(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

NRC-04-08-155

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>
From	To	From	To	\$

(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.

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 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

(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</u>		<u>Cumulative</u>	
	<u>Billed</u>	<u>Rate</u>	<u>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	\$ 500	320
			<u>\$2400</u>	

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

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: