

AWARD/CONTRACT		1. THIS CONTRACT IS RATED ORDER UNDER DPAS (15 CFR 700)		RATING N/A	PAGE OF PAGES 1 33
2. CONTRACT NO. (Proc. Inst. Ident.) NRC-HQ-11-C-04-0011		3. EFFECTIVE DATE MAR 8 2011		4. REQUISITION/PURCHASE REQUEST/PROJECT NO. RES-11-040	
5. ISSUED BY U.S. Nuclear Regulatory Commission Div. of Contracts Attn: 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		CODE 3100

7. NAME AND ADDRESS OF CONTRACTOR (No. street, city, county, State and ZIP Code) OREGON STATE UNIVERSITY KERR ADMINISTRATION B306 CORVALLIS OR 973318507		8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below) 9. DISCOUNT FOR PROMPT PAYMENT Net 30 10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN	
CODE 053599908	FACILITY CODE		

11. SHIP TO/MARK FOR U.S. Nuclear Regulatory Commission Attn: Mr. Mohammad Saba Office of Nuclear Research Mail Stop CSB-3A07M 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		CODE 3100
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13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c)() <input type="checkbox"/> 41 U.S.C. 253(c)()		14. ACCOUNTING AND APPROPRIATION DATA B&R No. 2011-60-11-6-110, Job Code: N6822, BOC: 252A APP No. 31X0200.160 Obligation: \$50,000.00 NAICS: 611310	
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15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	Refer to Section 3.2 for description of services. This is a cost reimbursement type contract.				\$557,604.00

15G. TOTAL AMOUNT OF CONTRACT	
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17. <input checked="" type="checkbox"/> 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. <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 SIGNER (Type or print) Lin Reilly, Sr. Grant & Contract officer		20A. NAME OF CONTRACTING OFFICER Sheila Bumpass Contracting Officer	
19B. NAME OF CONTRACTOR BY _____	19C. DATE SIGNED 3/2/11	20B. UNITED STATES OF AMERICA BY _____	20C. DATE SIGNED 3/3/2011

TEMPLATE - ADMDO

SUNSI REVIEW COMPLETE

MAR 8 2011

ADDO

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B.1 PROJECT TITLE

The title of this project is as follows:

Improvement of the Accuracy of the Beta Dose Calculations in VARSKIN 3.1 Computer Code

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

The primary objective of this project is to customize the computer code VARSKIN 3 and NUREG/CR-6918.

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 \$557,604.00.
- (b) The amount presently obligated by the Government with respect to this contract is \$50,000.00.
- (c) It is estimated that the amount currently allotted will cover performance through May 16, 2011.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

[Refer to Attachment J.1]

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
52.247-34	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1) 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 \$5,000 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 (2 copies)
- (b) Contracting Officer (1 copy)

F.6 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on March 09, 2011 and will expire March 08, 2013.

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. Mohammad Saba

Address: U.S. Nuclear Regulatory Commission
Mail Stop CSB-3A07M
21 Church Street
Rockville, MD 20852

Telephone Number: 301-251-7558 Mohammad.Saba@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 31.303.

(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 (JAN 1993)

(a) Pending the establishment of final indirect rates which must be negotiated based on audit of actual costs, the contractor shall be reimbursed for allowable indirect costs as follows:

INDIRECT COST POOL	RATE	BASE	PERIOD
Facilities &	45.00%	On-Campus	Effective date through 6/30/11.
Administrative (F&A)	46.00%	On-Campus	7/01/11 through contract expiration

(b) The contracting officer may adjust these rates as appropriate during the term of the contract upon acceptance of any revisions proposed by the contractor. It is the contractor's responsibility to notify the contracting officer in accordance with FAR 52.232-20, Limitation of Cost, or FAR 52.232-22, Limitation of Funds, as applicable, if these changes affect performance of work within the established cost or funding limitations.

SECTION H - SPECIAL CONTRACT REQUIREMENTS**H.1 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 therefor (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. END OF CLAUSE

Notwithstanding anything in this section, any information or data that is considered confidential or proprietary by NRC ("Confidential Information") and not to be disclosed by the Contractor without NRC's consent or prior to NRC's release, must be marked or otherwise designated in writing as confidential prior to disclosure. NRC acknowledges that Contractor's confidentiality obligations are subject to the Oregon Public Records Law, ORS 192.410-192.505."

H.2 2052.215-70 KEY PERSONNEL (JAN 1993)

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

Dr. David Hamby

Principal Investigator

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.

H.3 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.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 officer 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 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.8 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS (MAY 2002)

NRC contractors are responsible to ensure that their alien personnel are not in violation of United States immigration 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 Permanent Resident Card Form I-551, or must present other evidence from the U.S. Department of Homeland Security/U.S. Citizenship and Immigration Services that employment will not affect his/her immigration status. The U.S. Citizenship and Immigration Services provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on their website, www.uscis.gov.

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.9 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.

H.10 PROHIBITION OF FUNDING TO ACORN (NOV 2009)

In accordance with section 163 of the Continuing Appropriations Resolution, 2010, Division B of Public Law No. 111-68 (CR), until further notice, no federal funds may be provided to the Association of Community Organizations for Reform Now (ACORN), or any of its affiliates, subsidiaries, or allied organizations. Additional information can be found at: http://www.whitehouse.gov/omb/assets/memoranda_2010/m10-02.pdf

H.11 REDUCING TEXT MESSAGING WHILE DRIVING (OCT 2009)

(a) In accordance with Section 4 of Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving," (October 1, 2009), the Contractor or Recipient is encouraged to:

(1) Adopt and enforce policies that ban text messaging while driving company-owned or rented vehicles or Government-owned vehicles, or while driving privately-owned vehicles when on official Government business or when performing any work for or on behalf of the Government; and

(2) Consider new rules and programs to further the policies described in (a)(1), reevaluate existing programs to prohibit text messaging while driving, and conduct education, awareness, and other outreach programs for employees about the safety risks associated with text messaging while driving. These initiatives should encourage voluntary compliance with the text messaging policy while off duty.

(b) For purposes of complying with the Executive Order:

(1) "Texting" or "Text Messaging" means reading from or entering data into any handheld or other electronic device, including for the purpose of SMS texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication.

(2) "Driving" means operating a motor vehicle on an active roadway with the motor running, including while temporarily stationary because of traffic, a traffic light or stop sign, or otherwise. It does not include operating a motor

vehicle with or without the motor running when one has pulled over to the side of, or off, an active roadway and has halted in a location where one can safely remain stationary.

(c) The Contractor or Recipient shall encourage its subcontractor(s) or sub-recipient(s) to adopt and enforce the policies and initiatives described in this clause.

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)	
52.202-1	DEFINITIONS	JUL 2004
52.203-3	GRATUITIES	APR 1984
52.203-5	COVENANT AGAINST CONTINGENT FEES	APR 1984
52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	SEP 2006
52.203-7	ANTI-KICKBACK PROCEDURES	OCT 2010
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	OCT 2010
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	AUG 2000
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	DEC 2010
52.215-2	AUDIT AND RECORDS--NEGOTIATION ALTERNATE II (APR 1998)	OCT 2010
52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT 1997
52.216-11	COST CONTRACT--NO FEE ALTERNATE I (APR 1984)	APR 1984
52.216-15	PREDETERMINED INDIRECT COST RATES	APR 1998
52.219-4	NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS	JAN 2011
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	JAN 2011
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB 1999
52.222-26	EQUAL OPPORTUNITY	MAR 2007
52.222-35	EQUAL OPPORTUNITY FOR VETERANS	SEP 2010
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH	OCT 2010

	DISABILITIES	
52.222-37	EMPLOYMENT REPORTS ON VETERANS	SEP 2010
52.222-50	COMBATING TRAFFICKING IN PERSONS	FEB 2009
52.223-6	DRUG-FREE WORKPLACE	MAY 2001
52.223-18	CONTRACTOR POLICY TO BAN TEXT MESSAGING WHILE DRIVING	SEP 2010
52.225-5	TRADE AGREEMENTS	AUG 2009
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	JUN 2008
52.227-1A	AUTHORIZATION AND CONSENT ALTERNATE I (APR 1984)	DEC 2007
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	DEC 2007
52.227-14	RIGHTS IN DATA--GENERAL ALTERNATE IV (DEC 2007)	DEC 2007
52.227-11	PATENT RIGHTS--OWNERSHIP BY THE CONTRACTOR	DEC 2007
52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR 1996
52.232-17	INTEREST	OCT 2010
52.232-18	AVAILABILITY OF FUNDS	APR 1984
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-25	PROMPT PAYMENT	OCT 2008
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
52.242-13	BANKRUPTCY	JUL 1995
52.243-2	CHANGES--COST REIMBURSEMENT ALTERNATE V (APR 1984)	AUG 1987
52.244-2A	SUBCONTRACTS ALTERNATE I (JUNE 2007)	OCT 2010
52.244-5	COMPETITION IN SUBCONTRACTING	DEC 1996
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS	DEC 2010
52.245-1B	GOVERNMENT PROPERTY ALTERNATE II (JUNE 2007)	AUG 2010
52.245-9	USE AND CHARGES	AUG 2010
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 GOVERNMENT (EDUCATIONAL AND OTHER NONPROFIT INSTITUTIONS)	SEP 1996
52.253-1	COMPUTER GENERATED FORMS	JAN 1991

I.2 52.204-10 REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS (JUL 2010)

(a) Definitions. As used in this clause:

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

"First-tier subcontract" means a subcontract awarded directly by a Contractor to furnish supplies or services (including construction) for performance of a prime contract, but excludes supplier agreements with vendors, such as long-term arrangements for materials or supplies that would normally be applied to a Contractor's general and administrative expenses or indirect cost.

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

(1) Salary and bonus.

(2) Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.

(3) Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.

(4) Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.

(5) Above-market earnings on deferred compensation which is not tax-qualified.

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

(b) Section 2(d)(2) of the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. 109-282), as amended by section 6202 of the Government Funding Transparency Act of 2008 (Pub. L. 110-252), requires the Contractor to report information on subcontract awards. The law requires all reported information be made public, therefore, the Contractor is responsible for notifying its subcontractors that the required information will be made public.

(c)(1) Unless otherwise directed by the contracting officer, by the end of the month following the month of award of a first-tier subcontract with a value of \$25,000 or more, (and any modifications to these subcontracts that change previously reported data), the Contractor shall report the following information at <http://www.fsrs.gov> for each first-tier subcontract. (The Contractor shall follow the instructions at <http://www.fsrs.gov> to report the data.)

(i) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has a parent company.

(ii) Name of the subcontractor.

(iii) Amount of the subcontract award.

(iv) Date of the subcontract award.

(v) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.

(vi) Subcontract number (the subcontract number assigned by the Contractor).

(vii) Subcontractor's physical address including street address, city, state, and country. Also include the nine-digit zip code and congressional district.

(viii) Subcontractor's primary performance location including street address, city, state, and country. Also include the nine-digit zip code and congressional district.

(ix) The prime contract number, and order number if applicable.

(x) Awarding agency name and code.

(xi) Funding agency name and code.

(xii) Government contracting office code.

(xiii) Treasury account symbol (TAS) as reported in FPDS.

(xiv) The applicable North American Industry Classification System code (NAICS).

(2) By the end of the month following the month of a contract award, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for the Contractor's preceding completed fiscal year at <http://www.ccr.gov>, if--

(i) In the Contractor's preceding fiscal year, the Contractor received--

(A) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(B) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

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

(3) Unless otherwise directed by the contracting officer, by the end of the month following the month of a first-tier subcontract with a value of \$25,000 or more, and annually thereafter, the Contractor shall report the names and total compensation of each of the five most highly compensated executives for each first-tier subcontractor for the subcontractor's preceding completed fiscal year at <http://www.fsr.gov>, if--

(i) In the subcontractor's preceding fiscal year, the subcontractor received--

(A) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

(B) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and subgrants) and cooperative agreements; and

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

(d)(1) If the Contractor in the previous tax year had gross income, from all sources, under \$300,000, the Contractor is exempt from the requirement to report subcontractor awards.

(2) If a subcontractor in the previous tax year had gross income from all sources under \$300,000, the Contractor does not need to report awards to that subcontractor.

(e) Phase-in of reporting of subcontracts of \$25,000 or more.

(1) Until September 30, 2010, any newly awarded subcontract must be reported if the prime contract award amount was \$20,000,000 or more.

(2) From October 1, 2010, until February 28, 2011, any newly awarded subcontract must be reported if the prime contract award amount was \$550,000 or more.

(3) Starting March 1, 2011, any newly awarded subcontract must be reported if the prime contract award amount was \$25,000 or more.

I.3 52.215-23 LIMITATIONS ON PASS-THROUGH CHARGES (OCT 2009)

(a) Definitions. As used in this clause--

"Added value" means that the Contractor performs subcontract management functions that the Contracting Officer determines are a benefit to the Government (e.g., processing orders of parts or services, maintaining inventory, reducing delivery lead times, managing multiple sources for contract requirements, coordinating deliveries, performing quality assurance functions).

"Excessive pass-through charge," with respect to a Contractor or subcontractor that adds no or negligible value to a contract or subcontract, means a charge to the Government by the Contractor or subcontractor that is for indirect costs or profit/fee on work performed by a subcontractor (other than charges for the costs of managing subcontracts and any applicable indirect costs and associated profit/fee based on such costs).

"No or negligible value means" the Contractor or subcontractor cannot demonstrate to the Contracting Officer that its effort added value to the contract or subcontract in accomplishing the work performed under the contract (including task or delivery orders).

"Subcontract" means any contract, as defined in FAR 2.101, entered into by a subcontractor to furnish supplies or services for performance of the contract or a subcontract. It includes but is not limited to purchase orders, and changes and modifications to purchase orders.

"Subcontractor," as defined in FAR 44.101, means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a prime Contractor or another subcontractor.

(b) General. The Government will not pay excessive pass-through charges. The Contracting Officer shall determine if excessive pass-through charges exist.

(c) Reporting. Required reporting of performance of work by the Contractor or a subcontractor. The Contractor shall notify the Contracting Officer in writing if--

(1) The Contractor changes the amount of subcontract effort after award such that it exceeds 70 percent of the total cost of work to be performed under the contract, task order, or delivery order. The notification shall identify the revised cost of the subcontract effort and shall include verification that the Contractor will provide added value; or

(2) Any subcontractor changes the amount of lower-tier subcontractor effort after award such that it exceeds 70 percent of the total cost of the work to be performed under its subcontract. The notification shall identify the revised cost of the subcontract effort and shall include verification that the subcontractor will provide added value as related to the work to be performed by the lower-tier subcontractor(s).

(d) Recovery of excessive pass-through charges. If the Contracting Officer determines that excessive pass-through charges exist;

(1) For other than fixed-price contracts, the excessive pass-through charges are unallowable in accordance with the provisions in FAR subpart 31.2; and

(2) For applicable DoD fixed-price contracts, as identified in 15.408(n)(2)(i)(B), the Government shall be entitled to a price reduction for the amount of excessive pass-through charges included in the contract price.

(e) Access to records.

(1) The Contracting Officer, or authorized representative, shall have the right to examine and audit all the Contractor's records (as defined at FAR 52.215-2(a)) necessary to determine whether the Contractor proposed, billed, or claimed excessive pass-through charges.

(2) For those subcontracts to which paragraph (f) of this clause applies, the Contracting Officer, or authorized representative, shall have the right to examine and audit all the subcontractor's records (as defined at FAR 52.215-2(a)) necessary to determine whether the subcontractor proposed, billed, or claimed excessive pass-through charges.

(f) Flowdown. The Contractor shall insert the substance of this clause, including this paragraph (f), in all cost-reimbursement subcontracts under this contract that exceed the simplified acquisition threshold, except if the contract is with DoD, then insert in all cost-reimbursement subcontracts and fixed-price subcontracts, except those identified in 15.408(n)(2)(i)(B)(2), that exceed the threshold for obtaining cost or pricing data in accordance with FAR 15.403-4.

I.4 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.5 52.222-40 NOTIFICATION OF EMPLOYEE RIGHTS UNDER THE NATIONAL LABOR RELATIONS ACT (DEC 2010)

(a) During the term of this contract, the Contractor shall post an employee notice, of such size and in such form, and containing such content as prescribed by the Secretary of Labor, in conspicuous places in and about its plants and offices where employees covered by the National Labor Relations Act engage in activities relating to the performance of the contract, including all places where notices to employees are customarily posted both physically and electronically, in the languages employees speak, in accordance with 29 CFR 471.2(d) and (f).

(1) Physical posting of the employee notice shall be in conspicuous places in and about the Contractor's plants and offices so that the notice is prominent and readily seen by employees who are covered by the National Labor Relations Act and engage in activities related to the performance of the contract.

(2) If the Contractor customarily posts notices to employees electronically, then the Contractor shall also post the required notice electronically by displaying prominently, on any Web site that is maintained by the Contractor and is customarily used for notices to employees about terms and conditions of employment, a link to the Department of Labor's Web site that contains the full text of the poster. The link to the Department's Web site, as referenced in (b)(3) of this section, must read, "Important Notice about Employee Rights to Organize and Bargain Collectively with Their Employers."

(b) This required employee notice, printed by the Department of Labor, may be-

(1) Obtained from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-5609, Washington, DC 20210, (202) 693-0123, or from any field office of the Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Provided by the Federal contracting agency if requested;

(3) Downloaded from the Office of Labor-Management Standards Web site at <http://www.dol.gov/olms/regs/compliance/EO13496.htm>; or

(4) Reproduced and used as exact duplicate copies of the Department of Labor's official poster.

(c) The required text of the employee notice referred to in this clause is located at Appendix A, Subpart A, 29 CFR Part 471.

(d) The Contractor shall comply with all provisions of the employee notice and related rules, regulations, and orders of the Secretary of Labor.

(e) In the event that the Contractor does not comply with the requirements set forth in paragraphs (a) through (d) of this clause, this contract may be terminated or suspended in whole or in part, and the Contractor may be suspended or debarred in accordance with 29 CFR 471.14 and subpart 9.4. Such other sanctions or remedies may be imposed as are provided by 29 CFR part 471, which implements Executive Order 13496 or as otherwise provided by law.

(f) Subcontracts.

(1) The Contractor shall include the substance of this clause, including this paragraph (f), in every subcontract that exceeds \$10,000 and will be performed wholly or partially in the United States, unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 3 of Executive Order 13496 of January 30, 2009, so that such provisions will be binding upon each subcontractor.

(2) The Contractor shall not procure supplies or services in a way designed to avoid the applicability of Executive Order 13496 or this clause.

(3) The Contractor shall take such action with respect to any such subcontract as may be directed by the Secretary of Labor as a means of enforcing such provisions, including the imposition of sanctions for noncompliance.

(4) However, if the Contractor becomes involved in litigation with a subcontractor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

I.6 52.222-54 EMPLOYMENT ELIGIBILITY VERIFICATION (JAN 2009)

(a) Definitions. As used in this clause--

"Commercially available off-the-shelf (COTS) item"--

(1) Means any item of supply that is--

(i) A commercial item (as defined in paragraph (1) of the definition at 2.101);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in section 3 of the Shipping Act of 1984 (46 U.S.C. App. 1702), such as agricultural products and petroleum products. Per 46 CFR 525.1(c)(2), "bulk cargo" means cargo that is loaded and carried in bulk onboard ship without mark or count, in a loose unpackaged form, having homogenous characteristics. Bulk cargo loaded into intermodal equipment, except LASH or Seabee barges, is subject to mark and count and, therefore, ceases to be bulk cargo.

"Employee assigned to the contract" means an employee who was hired after November 6, 1986, who is directly performing work, in the United States, under a contract that is required to include the clause prescribed at 22.1803. An employee is not considered to be directly performing work under a contract if the employee--

(1) Normally performs support work, such as indirect or overhead functions; and

(2) Does not perform any substantial duties applicable to the contract.

"Subcontract" means any contract, as defined in 2.101, entered into by a subcontractor to furnish supplies or services for performance of a prime contract or a subcontract. It includes but is not limited to purchase orders, and changes and modifications to purchase orders.

"Subcontractor" means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a prime Contractor or another subcontractor.

"United States", as defined in 8 U.S.C. 1101(a)(38), means the 50 States, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands.

(b) Enrollment and verification requirements.

(1) If the Contractor is not enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall--

(i) Enroll. Enroll as a Federal Contractor in the E-Verify program within 30 calendar days of contract award;

(ii) Verify all new employees. Within 90 calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment eligibility of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); and

(iii) Verify employees assigned to the contract. For each employee assigned to the contract, initiate verification within 90 calendar days after date of enrollment or within 30 calendar days of the employee's assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section).

(2) If the Contractor is enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall use E-Verify to initiate verification of employment eligibility of--

(i) All new employees.

(A) Enrolled 90 calendar days or more. The Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); or

(B) Enrolled less than 90 calendar days. Within 90 calendar days after enrollment as a Federal Contractor in E-Verify, the Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); or

(ii) Employees assigned to the contract. For each employee assigned to the contract, the Contractor shall initiate verification within 90 calendar days after date of contract award or within 30 days after assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section).

(3) If the Contractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State or local government or the government of a Federally recognized Indian tribe; or a surety performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond, the Contractor may choose to verify only employees assigned to the contract, whether existing employees or new hires. The Contractor shall follow the applicable verification requirements at (b)(1) or (b)(2), respectively, except that any requirement for verification of new employees applies only to new employees assigned to the contract.

(4) Option to verify employment eligibility of all employees. The Contractor may elect to verify all existing employees hired after November 6, 1986, rather than just those employees assigned to the contract. The Contractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986, within 180 calendar days of--

(i) Enrollment in the E-Verify program; or

(ii) Notification to E-Verify Operations of the Contractor's decision to exercise this option, using the contact information provided in the E-Verify program Memorandum of Understanding (MOU).

(5) The Contractor shall comply, for the period of performance of this contract, with the requirements of the E-Verify program MOU.

(i) The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Contractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Contractor will be referred to a suspension or debarment official.

(ii) During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the Contractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Contractor, then the Contractor must reenroll in E-Verify.

(c) Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: <http://www.dhs.gov/E-Verify>.

(d) Individuals previously verified. The Contractor is not required by this clause to perform additional employment verification using E-Verify for any employee--

(1) Whose employment eligibility was previously verified by the Contractor through the E-Verify program;

(2) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Security Program Operating Manual; or

(3) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12, Policy for a Common Identification Standard for Federal Employees and Contractors.

(e) Subcontracts. The Contractor shall include the requirements of this clause, including this paragraph (e) (appropriately modified for identification of the parties), in each subcontract that--

(1) Is for--

(i) Commercial or noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or

(ii) Construction;

(2) Has a value of more than \$3,000; and

(3) Includes work performed in the United States.

I.7 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.

I.8 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>

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

ATTACHMENT NUMBER	TITLE	DATE	NO. PAGES
J.1	STATEMENT OF WORK		
J.2	BILLING INSTRUCTIONS COST REIMBURSEMENT		
J.3	MANAGEMENT DIRECTIVE 3.7 "NUREG-SERIES PUBLICATIONS		
J.4	MANAGEMENT DIRECTIVE 3.9 NRC STAFF AND CONTRACTOR SPEECHES		

STATEMENT OF WORK (Attachment J.1)

TITLE: IMPROVEMENT OF THE ACCURACY OF THE BETA DOSE CALCULATIONS IN VARSKIN 3.1 COMPUTER CODE

C.1 BACKGROUND

This Statement of Work (SOW) describes the U.S. Nuclear Regulatory Commission (NRC) need to enhance modification to the beta dose model algorithm in the computer code VARSKIN 3.0: A Computer Code for Assessing Skin Dose from Skin Contamination.

The original VARSKIN computer code was initially developed to facilitate skin-dose calculations. This development was done under an NRC contract in 1987 and operated under the DOS operating system. The source geometries available to the user were preset in the code and were limited to a point and an infinitely thin disk located directly on the skin. Self-absorption in the source was not considered because the sources had zero volume and the depth of skin at which dose was calculated was programmed into the code at 7 mg cm^{-2} .

These restrictions limited the use of the code. Therefore, NRC released an upgraded version of the code, VARSKIN Mod 2 in 1992. The new version expanded the available source geometries to include cylinders, spheres, and slabs, included calculation of self-absorption in the source, and permitted placement of absorber material between the source and the skin to simulate protective clothing. The user interface was improved, although the code still operated under DOS. The revised version also allowed the dose to be averaged over a volume of skin, permitted calculation of dose from multiple rectangular sources, and permitted composite sources that contained several different beta-emitting radionuclides. The most recent version of the code, VARSKIN 3, added syringe geometry, improved the beta geometry model, and was written to operate in a Windows environment using a graphical interface. In this version, the calculated skin dose can be averaged over any area that is specified by the user at a user specific depth below the skin surface. Provision is made to entering the density of a volume source and for specifying multiple layers of protective clothing between the source and the surface of the skin.

The computer code VARSKIN 3 is currently utilized by NRC staff to model and calculate skin dose from hot particle skin contamination for regulatory requirements under 10 CFR Part 20. The code calculates the dose due to beta and photon radiations separately using two independent models. VARSKIN 3 calculates beta doses using essentially the same method used in VARSKIN Mod 2 by performing a five-dimensional integration of the source volume and target area using the Berger Point-Kernel method.

The gamma dose model in the current version of VARSKIN uses gamma-ray exposure constants to estimate the dose at the desired depth in tissue, and it will not calculate doses for sources that are larger than 1 mm in size. It attempts to account for a lack of charged particle equilibrium using a method developed by Lantz and Lambert. The correction is based on the average energy of the photons emitted by the radionuclide. This adjustment has not been found to provide an adequate correction, and limitations on the size of the source to 1 mm imposes a fairly serious restriction on the utility of the code to calculate skin doses resulting from photon emissions. Although photon doses usually contribute a small fraction to the skin dose resulting from skin contamination (especially in the absence of protective clothing), in some situations the

contaminating radionuclide may emit relatively low-energy beta radiation and relatively high-energy gamma radiation. This, coupled with the presence of protective clothing between the contamination and the skin, could lead to a situation in which the gamma dose makes the dominant, if not the only contribution to the skin dose.

The resulting doses calculated by the code at various photon energies and at various skin depths have been compared with doses calculated by NRC staff using Monte Carlo transport methods, and were found to overestimate the dose with increasing photon energy (up to a factor of five at 1.5 MeV). The main cause for this lack of accuracy is the inability of the model to adequately allow for lack of charged particle equilibrium at shallow depths at which doses are calculated, normally 7 mg/cm^2 .

The photon model algorithm currently used in VARSKIN 3 also suffers from serious limitations in its applicability to accurately predict dose from sources other than hot particles. This includes being restricted to calculating doses from sources that are not larger than 1 mm using the gamma-ray exposure constant as a basis for the dose estimates. The NRC awarded a contract to Oregon State University in May of 2008 to develop a new sophisticated photon dose algorithm to replace the existing one to address the weaknesses noted above as well to enable the user to reasonably model photon dose for all other source geometries made available in VARSKIN 3. The algorithm should permit the user to select the depth in the skin at which the dose is to be calculated as well as the area of skin over which the dose is to be averaged. Incorporation of the new algorithm must be performed in a manner that it does not in any way result in changes in beta dose model algorithm of the code.

In 2008, NRC staff compared the beta and electron doses with the doses for similar geometries calculated using the general purpose radiation transport code MCNP version 5 that was developed and is maintained at Los Alamos National Laboratory. Agreement between MCNP and the VARSKIN 3 computer code at a skin depth of 7 mg cm^{-2} was found to be within 20%; however, for iron slab and iron sphere doses from ^{60}Co , the results differed by 45% and 35% respectively. Therefore, there is a need to improve the accuracy of the beta dose calculations of the VARSKIN computer code, and verify and validate the code library.

The USNRC Office of Nuclear Regulatory Research has been asked to ensure that all new code development projects use a standard user interface based on the Symbolic Nuclear Analysis Package (SNAP). SNAP, itself, is written in Java, but that does not mean that the user interface for the code in question must be in Java. Typically, to support an existing FORTRAN code, for example, a SNAP Java-based "plug-in" will be written to interface the code to the SNAP application. The SNAP Application Programming Interface is published in NUREG/CR 6974 "Symbolic Nuclear Analysis Package (SNAP) Common Application Framework for Engineering Analysis (CAFEAN) Preprocessor Plug-in Application Programming Interface." The API documentation includes a how-to procedure for building a SNAP plug-in as well as an extensive JavaDoc based API documentation. The API documentation may also be viewed on the web at URL: <http://www.nrcsnap.com/snap/docs/programmersmanual.jsp>

The new version of the code, VARSKIN 4, that will be available after April 2010 is written in FORTRAN and Python and works under WINDOWS operating system. However, the contractor should develop the code so that it works under both Windows and MAC operating systems.

C.2 OBJECTIVE

The primary objective of this project is to customize the computer code VARSKIN 3 and NUREG/CR-6918 for the U.S. Nuclear Regulatory Commission. The current version of VARSKIN 3 does not accurately predict beta dose from some radionuclides for iron slab and iron sphere. The accuracy of the code is decreasing with skin depth. In order to address the above issues, NRC seeks to replace the current beta model in VARSKIN 3 to give the code the ability to accurately model beta dosimetry resulting from contamination on the skin or on protective clothing covering the skin. The secondary objective is to further develop and expand the code's functionality and usefulness to address foreseeable user needs after the contract has been completed.

C.3 SCOPE OF WORK

The goal for this project is to improve the accuracy of the beta dose calculations for VARSKIN 3, update NUREG/CR-6918, and possibly add further enhancements to the code's functionality. The final product will be a code that is capable of performing both beta and photon radiation dose assessments in one comprehensive software package. Therefore, it is important for the completion of the project that the contractor deliver to NRC an updated version of the VARSKIN code that can be used to correctly perform the required calculations. It is envisioned that improving upon the existing VARSKIN 3 code will greatly facilitate NRC ability to perform radiation dose assessments. The following are the tasks to be performed:

C.3.1 Task 1: Identifying the Issues with the Dose Calculations for Iron Slab and Iron Sphere Doses from ^{60}Co

The contractor shall conduct a detailed investigation before developing the code to gain a full understanding of the methodology and accuracy of the current VARSKIN 3 beta dose model and shall also identify the reasons for the following issues: One issue is that comparison of the beta doses, by NRC staff, calculated for iron slab and iron sphere from ^{60}Co with those of MCNP 5 computer code indicated deviation by 45% and 35% respectively. Another issue is that the syringe results also differed by 75% for ^{131}I . These differences between the MCNP and VARSKIN increases with the skin depth.

C.3.2 Task 2: Addressing Any Coding Errors or Inaccuracies That Are Leading to Deviations Identified in Task 1

The contractor shall propose the methods that he or she uses to correct any errors or inaccuracies that lead to the deviations identified in Task 1. A comprehensive written summary that discusses the advantages and disadvantages of the methods and feasibility of incorporating the changes into the code shall be completed and submitted to the NRC Project Manager.

C.3.3 Task 3: Comparing the Skin Dose Calculations from MCNP with those of Electron Gamma Shower (EGS) computer code.

The contractor shall conduct a detailed comparison of the electron and beta particle doses calculated using the MCNP with the doses for similar geometries calculated using Electron Gamma Shower computer code. A comprehensive written summary that states whether there are significant differences shall be completed and submitted to the NRC Project Manager. This

summary also shall recommend if MCNP is a suitable computer code for a reference in testing the VARSKIN.

C.3.4 Task 4: Develop a Proper Beta Radiation Dosimetry Method and Perform Verification and Validation and Quality Assurance of the Computer Code

C.3.4.1 Subtask 4.1 Develop Testing Plan for Verification and Validation Revised VARSKIN 3 Code

Upon completion of Tasks 1, 2 and 3, and their incorporation into the code, an extensive series of calculations to validate the computer code shall be performed. The doses calculated by the revised VARSKIN shall be completed for all built-in source geometries at various skin depths and dose averaging areas and then compared with the doses calculated using the preferred Monte Carlo method, which is recommended in Task 3 and the results obtained from other well-established methods or codes.

C.3.4.2 Subtask 4.2 Quality Assurance of Project

The contractor shall conduct a review of their own established configuration management and change control specification to be used in all tasks in this project to comply with documented Quality Assurance (QA) requirements established by NRC for software development. The appropriate contract's QA Officer for this project shall conduct training and oversight to ensure that QA is implemented and maintained on the project.

The procedural steps to be followed by the contractor to comply with the NRC software testing and quality assurance requirements correspond to generally accepted phases of a software development cycle. Each segment of the development cycle (including the review cycles) naturally has a requirement which, if compiled within a serial manner, would produce high quality software in the end. NRC Quality Assurance for software is stated in NUREG/BR-0167, of which the contractor is responsible for being familiar with to ensure compliance.

The contractor shall conduct testing throughout the development of the revised versions of the code. The contractor shall prepare the final updated version of the test plan for the revised code and document the test plan in a letter report.

C.3.5 Task 5: Further Enhancements to VARSKIN 3

In conjunction with Task 1 through Task 3, additional improvements and modifications to the code could be necessary to meet the future needs of its users. These improvements/modifications shall be presented to the NRC for discussion to be incorporated into the code. These discussions between the NRC Project Manager and contractor would foster an open dialogue to discuss the cost/benefit of additional improvements and modifications to the code. NRC expectations are that enhancements and modifications to be incorporated into VARSKIN would include added functionality, user friendliness, additional input/output requirements, hardware and software requirements, and capacity for expansion. The NRC will decide whether or not to incorporate any enhancements to the code.

The NRC staff is open to suggestion as to what these enhancements may be, as long as these do not interfere with the accuracy of the beta and photon model algorithm.

C.3.6 Task 6: Training

C.3.6.1 Subtask 6.1 Develop a Training Module for using the Computer Code

The contractor shall develop online web-based training to teach the code users how to run the code in an effective and efficient way. The contractor also shall summarize the potential and initiations of the code. At the end, some examples of the input and output of the code shall be provided to the code users.

C.3.6.2 Subtask 6.2 Conduct a Workshop

The contractor and NRC Project Manager will decide on a date to conduct a workshop for NRC Office of Nuclear Regulatory Research (RES) staff on the use of the beta version of the VARSKIN code at the NRC Headquarters Office in Rockville, Maryland. The workshop by the contractor shall prepare NRC staff for the projects testing phase of the code in which they will participate.

C.3.7 Task 7: Modify the VARSKIN 3 Help file to increase the usefulness of the information

In some cases, it is hard for the user to obtain information from the current code Help file. The contractor should modify the current file to be more efficient and practical.

C.3.8 Task 8: Provide Dose Profiles as a Function of Depth and as a Function of Radial Distance off Center Be Included in Output Options in the Code.

Provide a text file (or allow direct import into a spreadsheet) of the results of the radial dose distribution (60 points) or the doses as a function of depth (volume averaged dose calculation).

C.3.9 Task 9: Update NUREG/CR-6918 to Include All Improvements Made to the Code

The contractor shall revise NUREG/CR-6918 to incorporate all changes made to the computer code. The contractor shall provide a complete description of the new approach and the theory on which it is based; include guidance that would be appropriate to users of the code; include a complete description of the methods used to verify the code and their results. Other improvements and modifications made to the code shall also be documented into the NUREG. A draft NUREG/CR-6918 shall be presented to and reviewed by NRC staff for commenting before the final report is published. The contractor shall address and resolve NRC comments to the revised NUREG/CR-6918 and submit to NRC the final camera-ready copy of the NUREG/CR on a date to be determined by the NRC Project Manager and contractor.

The work required to meet the expectations of this task is shown in the following subtasks:

C.3.9.1 Subtask 9.1 Incorporate Changes Made to VARSKIN into Draft NUREG/CR-6918

The contractor shall incorporate the complete description of the new beta dose calculation methodology and other additions and changes made to the VARSKIN computer code into NUREG/CR-6918. The contractor shall also incorporate additional step-by-step example

problems to demonstrate the code's capabilities that represent scenarios in which beta doses are of primary concern.

C.3.9.2 Subtask 9.2 Present to the NRC Project Manager the Final Camera-Ready Copy of the NUREG

Once all comments have been addressed and incorporated into NUREG/CR-6918 and software finalized, the contractor shall present a final camera ready copy of NUREG/CR-6918 in the preferred agency format.

RESEARCH QUALITY

The quality of NRC research programs is 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.

C.4 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

The personnel assigned to this effort shall be knowledgeable and experienced in the disciplines of radiation health physics, expertise in beta dosimetry, software development, dose/risk modeling, engineering, and quality control assurance important to the design and development of this particular software.

C.5. REPORTING REQUIREMENTS

C.5.1 Monthly Letter Status Report

Refer to sections F.2, F.3, and F.4 in the contract. Monthly reports shall be forwarded to RESDSAMLSR.Resource@nrc.gov with a copy to the Contracting Officer.

C.5.2 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.

C.6 DELIVERABLES/SCHEDULES AND/OR MILESTONES

The contractor shall submit topical reports according to the schedule given in Table 1 of this section. Due dates are listed for drafts and final versions of the reports. The contractor shall prepare and submit a detailed milestone schedule (GANNT Chart) for work to be performed and the preparation and submission of the required documentation. The contractor shall also submit the contract deliverables and reports to the NRC Project Manager; the NRC Project Manager will review the deliverables and reports for statements contradictory to NRC policy and any major technical flaws. The NRC Project Manager will transmit review comments, which the contractor shall address by either changing the report or incorporating the comments, or by providing an official rebuttal to the comments.

Table 1 TASK COMPLETION SCHEDULE AND LIST OF DELIVERABLES FOR NRC PROJECT ON DEVELOPMENT OF VARSKIN CODE

Task or Subtask	Report Topic	Type of Deliverable	Due Date
Kickoff Meeting	Overview of Project	Meeting	3 weeks after contract initiation
Task 1	Identify Issues	Report in MLSR	3 months after kickoff meeting
Task 2	Address Code Errors	Report in MLSR	3 months after kickoff meeting
Task 3	Compare Monte Carlo Codes	Report in MLSR	3 months after kickoff meeting
Task 4	Develop Code, V&V	Meeting and letter report	TBD collaboratively with NRC and Contractor
Task 5	Optional	n/a	TBD collaboratively after Project Kickoff Meeting
Task 6	Develop Training	Presentation and Workshop	TBD collaboratively after Project Kickoff Meeting
Task 7	Update NUREG	Draft and Final NUREG	TBD collaboratively with NRC and Contractor

The contractor shall prepare a detailed milestone schedule (GANNT Chart) for work to be performed under this contract, including the preparation of the documentation needed to comply with the NRC Software QA requirements. Using the draft deliverables schedule proposed in above Table 1 by NRC, the contractor may submit a counter proposal for a milestone schedule which the contractor considers to be more realistic and workable.

For each technical meeting (with personnel not associated with this project) and each field trip attended by the contractor staff assigned to this project, the contractor shall prepare a report on the meeting or field trip, and submit the report to the NRC Project Manager electronically within a two-week period following the meeting date and as an attachment to the monthly report describing the activities for the month in which the meeting or trip took place. These reports shall identify the purpose, participants, itinerary, and significant findings of the meeting or field trip.

C.7 MEETINGS AND TRAVEL

The contractor will obtain NRC Project Manager approval prior to any travel. The Principal Investigator and/or 1 to 2 other staff members may be asked to participate in 2 to 3 work-related meetings over 1-3 days to present the progress of the work. Other travel may be considered if needed, but must be approved by the NRC Project Manager.

A Project Kick-off meeting with NRC Project Manager and staff to discuss work requirements and to clarify and establish schedules for completion of project tasks. The Project Kick-off meeting will be held at the NRC Headquarters in Rockville, Maryland. This meeting will be **three (3)** weeks after the contract initiation.

Foreign travel must be addressed separately and approval must be obtained by processing NRC Form 445. Foreign travel may be taken from the contract funds.

C.8 NRC-FURNISHED MATERIAL

None.

ATTACHMENT J.2

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

**BILLING INSTRUCTIONS FOR
COST REIMBURSEMENT TYPE CONTRACTS (JUNE 2008)**

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.

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>Effort</u>			<u>Cumulative</u>
<u>Category</u>	<u>Billed</u>	<u>Rate</u>	<u>Total</u>	<u>Amount Billed</u>

- (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.

**ATTACHMENT 1
TO BILLING INSTRUCTIONS**

(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

**ATTACHMENT 1
TO BILLING INSTRUCTIONS**

(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

Labor Category	Hours Billed	Rate	Cumulative Total	Hrs. Billed
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

ATTACHMENT 1
TO BILLING INSTRUCTIONS

(SAMPLE FORMAT)

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

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: