

# ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 29

IMP. TANT. Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 08/27/2015		2. CONTRACT NO. (If any) NRC-HQ-50-14-E-0001		6. SHIP TO: a. NAME OF CONSIGNEE US NUCLEAR REGULATORY COMMISSION-	
3. ORDER NO. NRC-HQ-25-15-T-0001		4. REQUISITION/REFERENCE NO. NRO-15-0125		b. STREET ADDRESS MAIL PROCESSING CENTER 4930 BOILING BROOK PARKWAY	
5. ISSUING OFFICE (Address correspondence to) US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP 3WFN-05-C64MP ATTN HUGO O ALCANTARA 301-287-0844 WASHINGTON DC 20555-0001				c. CITY ROCKVILLE	e. ZIP CODE 20852
7. TO: a. NAME OF CONTRACTOR S W R I				f. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER <input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY	
c. STREET ADDRESS 6220 CULEBRA RD				REFERENCE YOUR:  Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
d. CITY SAN ANTONIO		e. STATE TX	f. ZIP CODE 782385166	Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE OFFICE OF NUCLEAR MATERIAL	
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB					12. F.O.B. POINT
13. PLACE OF a. INSPECTION Destination		14. GOVERNMENT B/L NO. b. ACCEPTANCE Destination		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) 09/30/2017	
				16. DISCOUNT TERMS 30	

## 17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	NRC-HQ-25-15-T-0001, Task Order 49  The contractor shall provide services in accordance with the task order statement of work entitled: Support to NRC Staff for Seismic Hazard Reviews at Three Western Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME US NUCLEAR REGULATORY COMMISSION		\$0.00				17(i) GRAND TOTAL
	b. STREET ADDRESS (or P.O. Box) ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE MAILSTOP 03-E17A						
c. CITY ROCKVILLE		d. STATE MD	e. ZIP CODE 20852-2738		\$495,497.00		

22. UNITED STATES OF AMERICA BY (Signature) 09/09/2015

23. NAME (Typed)  
SHARLENE M. MCCUBBIN  
TITLE: CONTRACTING/ORDERING OFFICER

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Prescribed by GSA/FAR 48 CFR 53.213(f)

SUNSI REVIEW COMPLETE

TEMPLATE - Admin

SEP 11 2015

ADM002

# SCHEDULE - CONTINUATION

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER	CONTRACT NO.	ORDER NO.
08/27/2015	NRC-HQ-50-14-E-0001	NRC-HQ-25-15-T-0001

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>U.S. Nuclear Power Plant Sites, Probabilistic Seismic Hazard Analysis Software Modification, and Stakeholder and Public Outreach Meetings.</p> <p>NRC Contracting Officer Representative: Gerry Stirewalt Gerry.stirewalt@nrc.gov Telephone Number: 301-415-3698</p> <p>NRC Alternate Contracting Officer Representative: Meralis Plaza-Toledo Meralis.plaza-toledo@nrc.gov Telephone Number: 301-415-4111</p> <p>Accounting Info: 2015-X0200-FEEBASED-25-25D005-11-4-212-1062- 251B</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

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OPTIONAL FORM 348 (Rev. 4/2006)  
Prescribed by GSA FAR (48 CFR) 53.213

## CONTRACTOR ACCEPTANCE OF TASK ORDER NRC-HQ-25-15-T-0001 (TO 49)

Acceptance of Task Order No: NRC-HQ-25-15-T-0001 should be made by having an official, authorized to bind your organization, execute two copies of this document in the space provided and return one copy to the Contracting Officer. You should retain the other copy for your records.

Accepted Task Order No. NRC-HQ-25-15-T-0001 (TO 49):



Name R. B. Kalmbach

Executive Director, Contracts

Title

September 8, 2015

Date

## SECTION B - Supplies or Services/Prices

### NRCB010 BRIEF PROJECT TITLE AND WORK DESCRIPTION

(a) Support to NRC Staff for Seismic Hazard Reviews at Three Western U.S. Nuclear Power Plant Sites, Probabilistic Seismic Hazard Analysis Software Modification, and Stakeholder and Public Outreach Meetings

(b) Summary work description: The objective of this task order is to acquire technical expertise from CNWRA for supporting NRC staff efforts in the following activities: (1) Completing reviews of Seismic Source Characterization (SSC) reports and Seismic Hazard and Screening Reports (SHSRs) submitted by three Western United States (WUS) licensees in response to the 10 CFR 50.54(f) information request; (2) Modifying Probabilistic Seismic Hazard Analysis (PSHA) software for use by NRC staff in assessing SHSRs from licensees; and (3) Planning and conducting stakeholder and public outreach meetings.

### PRICE/COST SCHEDULE

CLIN NO.	DESCRIPTION OF SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL OFF
00001	Support to NRC Staff for Seismic Hazard Reviews at Three Western U.S. Nuclear Power Plant Sites, Probabilistic Seismic Hazard Analysis Software Modification, and Stakeholder and Public Outreach Meetings			
Total				\$495,497.00

### NRCB040A CONSIDERATION AND OBLIGATION—COST-PLUS-FIXED-FEE ALTERNATE I

(a) The total estimated cost to the Government for full performance of this contract including optional tasks is \$495,497.00 of which the sum of represents the estimated reimbursable costs, and of which represents the fixed-fee.

(b) There shall be no adjustment in the amount of the Contractor's fixed fee.

(c) The amount currently obligated by the Government with respect to this contract is , of which the sum of represents the estimated reimbursable costs, and of which represents the fixed-fee.

(d) This is an incrementally-funded contract and FAR 52.232-22 - "Limitation of Funds" applies.

(e) In accordance with FAR 52.216-8 - Fixed Fee, it is the policy of the NRC to withhold payment of fee after payment of percent of the fee has been paid in order to protect the Government's interest. The amount of fixed-fee withheld from the contractor will not exceed percent of the total fee or whichever is less. Accordingly, the maximum amount of fixed-fee that may be held in reserve is

## **SECTION C - Description/Specifications**

### **Statement of Work**

#### **1. PROJECT TITLE**

**"Support to NRC Staff for Seismic Hazard Reviews at Three Western U.S. Nuclear Power Plant Sites, Probabilistic Seismic Hazard Analysis Software Modification, and Stakeholder and Public Outreach Meetings"**

#### **2. BACKGROUND**

To address lessons learned from the accident at the Fukushima Dai-ichi Nuclear Power Plant caused by the March 2011 Tohoku earthquake and subsequent tsunami, the Commission established a Near-Term Task Force (NTTF) to conduct a systematic review of U.S. Nuclear Regulatory Commission (NRC) processes and regulations and to determine if the NRC should make additional improvements to its regulatory framework. The NTTF developed a set of recommendations intended to clarify and strengthen the regulatory framework for protection against natural hazards. NTTF Recommendation 2.1, as amended by staff requirements memoranda associated with SECY-11-0124 and SECY-11-0137, instructs NRC staff to issue a request for information to licensees pursuant to Sections 161.c, 103.b, and 182.2 of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). This information request is for licensees and holders of construction permits under 10 CFR Part 50 to reevaluate seismic hazards at their sites against current NRC requirements and guidance. Based on the information provided by the licensees, NRC staff will determine whether additional regulatory actions are necessary (e.g., updating of the design basis and structures, systems, and components important to safety) to protect against the reevaluated hazards.

In accordance with the 10 CFR 50.54(f) information request, licensees of plants located in the WUS should develop an updated, site-specific probabilistic seismic hazard assessment (PSHA) to characterize seismic hazard for their sites. Consistent with Regulatory Guide (RG) 1.208, "A Performance-Based Approach to Define the Site Specific Earthquake Ground Motion," licensees should use a Senior Seismic Hazard Analysis Committee (SSHAC) study as described in NUREG/CR-6372, "Recommendations for Probabilistic Seismic Hazard Analysis: Guidance on Uncertainty and Use of Experts." Consistent with current practice as described in NUREG-2117, "Practical Implementation Guidelines for SSHAC Level 3 and 4 Hazard Studies," a SSHAC Level 3 study should be performed.

To implement NTTF Recommendation 2.1, the staff has defined a process that asks each licensee to provide information about the current hazard and potential risk posed by seismic events. Depending on results of the comparison between the reevaluated seismic hazard and the current design basis, licensees will perform a further seismic risk evaluation, if necessary. Risk evaluation approaches acceptable to the staff include a seismic probabilistic risk assessment (SPRA) or a seismic margin assessment (SMA).

In addition, the NRC performs confirmatory calculations as part of the safety assessment for existing and proposed nuclear facilities. Current regulatory requirements and guidance specify that the seismic safety of these facilities should be evaluated using PSHA as input for development of seismic loads. Seismic source characterization models are to be used with the latest ground motion prediction models to produce robust and consistent estimates

of seismic hazards and loads at nuclear facilities. The NRC, the U.S. Department of Energy (DOE), and the Electric Power Research Institute (EPRI) have co-sponsored a project to develop a state-of-the-art SSC model for the central and eastern United States (CEUS), which is referred to as the CEUS-SSC model. This model is to be used with the latest ground motion prediction models to produce robust estimates of seismic hazards and loads at nuclear facilities in the CEUS.

The CEUS-SSC model, as well as models being developed for WUS nuclear power plants, follows the guidance on incorporating uncertainty contained in NUREG/CR-6372. This document, referred to as the SSHAC guidelines, provides a framework for incorporating expert elicitations and considering uncertainty in the conduct of large PSHA studies. The explicit incorporation of scientific or epistemic uncertainty into the SSC model results in a final logic model with a high degree of complexity, which will require very specific software to produce robust results.

Recognizing the importance of PSHA in the seismic design of critical facilities, the Pacific Earthquake Engineering Research Centre (PEER) Lifelines Program sponsored a working group, comprised of code developers from Government agencies and engineering firms, to verify both the numerical approaches and the computer software codes used in PSHA. This effort, the first and only of its kind to date, provided for a comprehensive structured verification of PSHA software and included all available major software codes. The focus of the effort was the numerical verification of the PSHA codes and analysis and comparison of the various features of the codes. The working group was able to produce consistent results within acceptable tolerance limits for the simple test cases run in this verification exercise. It is imperative to produce consistent results for individual cases since the final hazard estimate for a given site will be a summation of results from many thousands of individual cases. Any PSHA software used by the NRC in regulatory decision-making must have been validated by the PEER Lifelines Program.

The Center for Nuclear Waste Regulatory Analyses (CNWRA) has access to technical specialists with the appropriate expertise for supporting NRC staff in review of PSHA reports submitted by WUS licensees in response to the 10 CFR 50.54(f) information request related to seismic hazard and associated risk evaluations; modification of PSHA software for use by NRC staff in assessment of PSHA reports; and development and conduct of public outreach meetings.

### **3. SCOPE OF WORK**

The scope of work comprises the following three primary tasks:

Task 1 – The contractor shall support NRC staff in completing reviews of SSC reports and SHSRs submitted by WUS licensees for Diablo Canyon (CA), the Columbia Generating Station (WA), and Palo Verde (AZ) in response to the 10 CFR 50.54(f) information request.

Task 2 – The contractor shall modify PSHA software for use by NRC staff in assessing SHSRs from licensees and shall develop control point ("soil") hazard curves consistent with "Method 3" as described in NUREG/CR-6728.

Task 3 – The contractor shall support NRC staff in developing and conducting stakeholder and public outreach meetings.

#### **4. DETAILED TASK DESCRIPTIONS**

Detailed descriptions of the work to be performed under Tasks 1, 2, and 3 are as follows:

**Task 1 – Support NRC staff in completing reviews of SSC reports and SHSRs submitted by WUS licensees for Diablo Canyon (CA), the Columbia Generating Station (WA), and Palo Verde (AZ) in response to the 10 CFR 50.54(f) information request.**

**This task comprises the following activities:**

**Task 1a: Assist with review of SSC reports and SHSRs for the Diablo Canyon nuclear power plant.**

**Task 1a(i):** Complete the technical assessment of the Pacific Gas and Electric Co. (PG&E) onshore and offshore seismic imaging data, earthquake data, potential field data (magnetic and gravity), and geologic mapping information. The assessments will be used to evaluate the data within the range of technical interpretations provided by PG&E in their updated PSHA SSC report and to test the sensitivity of alternative interpretations of these data on the PSHA results. The contractor will work closely with the NRC COR and Technical Monitor to ensure that the evaluations focus on those interpretations of geologic and geophysical data deemed most significant to seismic hazard. Evaluation of the range of plausible interpretations for fault slip-rate on seismic sources closest to the plant site will be of critical importance.

**Task 1a(ii):** Using the Petrel E&P software platform, develop a three dimensional digital model of seismic velocity data (P-wave and S-wave data) collected by PG&E at the plant site. The model will be used to derive random profiles of  $V_s$  and  $V_p$  to support confirmatory analysis of the PG&E site response information to be performed by NRC staff.

**Task 1a(iii):** Complete review of the SSC reports and SHSRs for Diablo Canyon after the activities defined above are finished, including sensitivity studies, if deemed necessary.

**Task 1a(iv):** Assist with preparation of requests for additional information (RAIs) for Diablo Canyon.

**Task 1a(v):** Assist with review of RAI responses for Diablo Canyon.

**Task 1a(vi):** Prepare input for final staff assessments and provide continued technical support as needed for Diablo Canyon.

**Task 1b: Assist with review of SSC reports and SHSRs for the Columbia Generating Station (CGS) nuclear power plant.**

**Task 1b(i):** Complete review of the SSC reports and SHSRs for CGS, including sensitivity studies, if deemed necessary.

**Task 1b(ii):** Assist with preparation of requests for additional information (RAIs) for CGS.

**Task 1b(iii):** Assist with review of RAI responses for CGS.

**Task 1b(iv):** Prepare input for final staff assessments and provide

continued technical support as needed for CGS.

**Task 1c: Assist with review of SSC reports and SHSRs for the Palo Verde nuclear power plant.**

**Task 1c(i): Complete review of the SSC reports and SHSRs for Palo Verde, including any sensitivity studies and analysis of the earthquake catalog, if deemed necessary.**

**Task 1c(ii): Assist with preparation of requests for additional information (RAIs) for Palo Verde.**

**Task 1c(iii): Assist with review of RAI responses for Palo Verde.**

**Task 1c(iv): Prepare input for final staff assessments and provide continued technical support as needed for Palo Verde.**

**Task 2 – The contractor shall modify PSHA software for use by NRC staff in assessing SHSRs from licensees and provide all resources necessary to develop software and analysis tools as defined in this SOW, except for those items specified as Government-furnished property and services. The contractor shall work closely with the NRC COR and Technical Monitor during testing and confirmation of the PSHA software to ensure that it meets the technical and functional specifications necessary for NRC staff to conduct confirmatory analyses. The software shall be capable of producing probabilistic seismic hazard estimate at arbitrary locations in the U.S. For sites in the CEUS, the software shall use the CEUS-SSC model and the most recent CEUS ground motion prediction models endorsed by the NRC (EPRI Report No. 3002000717, 2013). For sites in the WUS, the software shall use site-specific seismic source models and the latest ground motion prediction equations (i.e., NGA-West 2, Southwestern U.S., or Hanford/Columbia).**

**This task comprises the following activities:**

**Task 2a: Modify the PSHA codes currently used by NRC staff (i.e., probhaz\_NRC, fault\_haz\_NRC, and probhaz\_CEUSSSC) such that the codes use the latest ground motion prediction models stated above.**

**Task 2b: Support the continuing use of the PSHA codes listed under Task 2a in the PEER PSHA code validation project.**

**Task 2c: Develop batch scripts such that the PSHA codes listed above can produce uncertainty estimates ("fractile curves") for ground motion hazard.**

**Task 2d: Modify the codes to produce soil hazard curves consistent with "Method 3" as described in NUREG/CR-6728.**

**Task 2e: Develop documentation for the codes and associated batch scripts and provide training on the codes for NRC staff.**

**Task 3 – Support NRC staff in developing and conducting stakeholder and public outreach meetings, if and as needed.**

**This task comprises the following activities:**

**Task 3a: Assist with developing plain language summaries and fact sheets.**



Task 3b: Assist with Q & A development.

Task 3c: Assist with organizing and preparing for stakeholder and public outreach meetings.

Task 3d: Attend and assist with facilitation of public outreach meetings.

Task 3e: Assist with developing responses to public letters and comments.

The NRC COR may issue technical direction during the duration of the task order, but it must be within the scope of the SOW and shall not constitute new assignments of work or changes to the work that result in an adjustment in cost or period of performance under the contract. Any modifications to the scope of work, cost, or period of performance of the task order must be issued by the Contracting Officer and coordinated with the Project Officer.

## 5. DELIVERABLES AND DELIVERY SCHEDULE

The contractor shall provide deliverables in Microsoft® Word format, unless other software is approved in writing by the NRC COR. Deliverables shall be provided to the NRC COR in electronic format. Unless the contract is otherwise bilaterally modified by both the contractor and the NRC, the contractor shall submit deliverables by the due dates shown in the deliverables schedule table below. When mutually agreed upon by the contractor and NRC COR, the contractor may submit preliminary or partial drafts to ensure full understanding of the work requirements.

Deliverables Schedule for Tasks 1			
Deliverable Number	Description	Quantity/Media	Completion Date
19941.01.001.100 (AI*)	Task 1a(i): Diablo Canyon – Complete technical assessment of PG&E† onshore and offshore seismic imaging data, earthquake data, gravity and magnetic potential field data, and geologic mapping data; and evaluate these data in regard to the range of technical interpretations provided by PG&E in the SSC‡ reports and SHSRs.§	Draft electronic reports in Microsoft® Word summarizing results of the data assessments and evaluations.	Dates will need adjusted, based on discussions with the COR
19941.01.001.101 (AI)	Task 1a(ii): Diablo Canyon – Develop 3D model of seismic velocity data	3D model and all necessary documentation	Task 1a(i) deliverable + 15 days

19941.01.001.102 (AI)	Task 1a(iii) and 1a(iv): Diablo Canyon – Complete review of the SSC reports and SHSRs and assist with preparation of RAIs.¶	Letter summarizing the support provided to NRC# in developing RAIs and the overall review of the Diablo canyon SSC reports and SHSRs.	9/18/2015
19941.01.001.103 (AI)	Tasks 1a(v) and 1a(vi): Diablo Canyon – Review of RAI responses and draft input for Staff Assessment	Draft SA** inputs	Receipt of last RAI response + 30 days
19941.01.001.104 (AI)	Task 1b(i) and 1b(ii): Columbia – Complete review of the SSC reports and SHSRs and assist with preparation of RAIs.	Letter summarizing the support provided to NRC in developing RAIs and the overall review of the Columbia SSC reports and SHSRs.	9/18/2015
19941.01.001.105 (AI)	Tasks 1b(iii) and 1b(iv): Columbia – Review of RAI responses and draft input for Staff Assessment	Draft SA inputs	Receipt of last RAI response + 30 days
19941.01.001.106 (AI)	Task 1c(i) and 1c(ii): Palo Verde – Complete review of the SSC reports and SHSRs for Palo Verde and assist with preparation of RAIs.	Letter summarizing the support provided to NRC in developing RAIs and the overall review of the Palo Verde SSC reports and SHSRs.	9/18/2015
19941.01.001.107 (AI)	Tasks 1c(iii) and 1c(iv): Palo Verde – Review of RAI responses and draft input for Staff Assessment	Draft SA inputs	Receipt of last RAI response + 30 days

Deliverables Schedule for Tasks 2			
Deliverable Number	Description	Quantity/Media	Completion Date
19941.01.001.200 (AI)	Task 2a: Complete modifications of PSHA++ code input and output scripts used by NRC staff (i.e., probhaz_NRC, fault haz_NRC, probhaz_CEUSSSC)++	Modified scripts and associated documentation	12/31/2015 (or as specified by COR)
19941.01.001.201 (AI)	Task 2b: Supporting the continuing use of the PSHA codes listed under Task 2a in the PEER§§ PSHA code validation project.	N/A	12/31/2015 (or as specified by COR)
19941.01.001.202 (AI)	Task 2c: Complete development of batch scripts such that the PSHA codes listed above can produce uncertainty estimates ("fractile curves") for ground motion hazard.	Scripts and report or demonstration of use of scripts	3/31/2016 (or as specified by COR)
19941.01.001.203 (AI)	Task 2d: Complete modification of code input and output scripts to produce soil hazard curves consistent with "Method 3" as described in NUREG/CR-6728.	Modified scripts and associated documentation	6/30/2016 (or as specified by COR)
19941.01.001.204 (AI)	Task 2e: Complete development of documentation for the codes and associated batch scripts and provide training on the codes for NRC staff.	Training session with finalized documentation	10/31/2016 (or as specified by COR)

Deliverables Schedule for Tasks 3			
Deliverable Number	Description	Quantity/Media	Completion Date
19941.01.001.300 (AI)	Task 3a: Complete development of plain language summaries and fact sheets.	Draft Summaries and Fact Sheets	TBD¶¶
19941.01.001.301 (AI)	Task 3b: Complete Q&A## developments.	Draft Q&A document(s)	TBD
19941.01.001.302 (AI)	Task 3c: Complete organization of and preparation for stakeholder and public outreach meetings.	Draft report outlining agenda, attendees, logistics, handouts and documents	TBD
19941.01.001.303 (AI)	Task 3d: Attend and assist with facilitation of public outreach meetings.	N/A	TBD
19941.01.001.304 (AI)	Task 3e: Complete development of responses to public letters and	Draft responses	TBD
*AI = administrative item †PG&E = Pacific Gas and Electric ‡SSC = Seismic Source Characterization §SHSR = Seismic Hazard and Screening Reports ¶ICOR = Contracting Officer's Representative ¶¶RAI = request for additional information #NRC = U.S. Nuclear Regulatory Commission **SA = staff assessment ††PSHA = Probabilistic Seismic Hazard Assessment ‡‡CEUSSC = Central and Eastern United States Seismic Source Characterization §§PEER = Pacific Earthquake Engineering Research Center ¶¶N/A = not applicable ¶¶TBD = to be determined ##Q&A = question and answer			

## 8. PLACE OF PERFORMANCE

The work under this contract will be primarily performed at the contractor's normal work location.

## 9. SPECIAL CONSIDERATIONS

### TRAVEL

CNWRA shall coordinate all travel in advance with the COR. The following assumptions about travel should be considered for planning the work activities:

Fiscal Year	No. of Trips	No. of Travelers	Trip Duration, Days*	Purpose
2016	1	1	4	Task 1 meeting in Rockville, Maryland
2016	1	2	4	Attend meeting in California under Task 1a(vii)†
2016	1	1	4	Task 2 meeting in Rockville, Maryland
2016	1	1	4	Task 3 meeting in Rockville, Maryland
2017	1	1	4	Task 2 meeting in Rockville, Maryland

\*Includes meeting days and days of travel  
†With prior approval of NRC Contract Officer's Representative

### SECURITY

The work performed under this contract will be UNCLASSIFIED.

### TECHNICAL REPORTING REQUIREMENTS

The contractor must follow technical reporting requirements as stated in the base contract. Technical reports will typically include the following:

- Trip reports with meeting summaries, observations and recommendations.
- Technical letter reports.
- Draft and final technical evaluation reports (TER's) that summarize the work performed, results attained, findings, conclusions, and recommendations.

In all correspondence, the following identifying information must be included:

- JCN Number.
- Name of licensee
- Plant name
- Site name

Communications with the NRC and among contractor staff may be subject to hearing file requirements under 10 CFR Part 2. In this circumstance, the NRC COR or Alternate COR will identify the type of records that must be provided to the NRC for inclusion in the hearing file.

## **SECTION D - Packaging and Marking**

### **NRCD020 BRANDING**

The Contractor is required to use the statement below in any publications, presentations, articles, products, or materials funded under this contract/order, to the extent practical, in order to provide NRC with recognition for its involvement in and contribution to the project. If the work performed is funded entirely with NRC funds, then the contractor must acknowledge that information in its documentation/presentation.

Work Supported by the U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Reactor Regulation, under Contract/order number NRC-HQ-50-14-E-0001/ NRC-HQ-25-15-T-0001 (49).

(End of Clause)

## **SECTION E - Inspection and Acceptance**

### **2052.215-71 PROJECT OFFICER AUTHORITY (OCT 1999)**

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

Name: Gerry Stirewalt  
NRO/DSE/ARGS2  
Mail Stop: T-7F17  
Washington, DC 20555  
Gerry.stirewalt@nrc.gov  
Telephone Number: 301-415-3698

Alternate COR:

Name: Meralis Plaza-Toledo  
Address: Mail Stop T-7F3  
Washington, DC 20555  
Meralis.plaza-toledo@nrc.gov  
Telephone Number: 301-415-4111

(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 or changes to specific travel identified in the Statement of Work), fills in details, or otherwise serves to accomplish the contractual statement of work.

(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, approve 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 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 that 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 to the instruction or direction 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.

(End of Clause)



## **SECTION F - Deliveries or Performance**

### **NRCF032 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (SEP 2013)**

This order shall commence on September 1 2015 and will expire on September 30, 2017.

The estimated completion of Tasks are as follows:

Task 1 – Start Date to June 30, 2016

Task 2 – Start Date to September 30, 2017

Task 3 – Start Date to June 30, 2016

(End of Clause)

### **NRCF010 PLACE OF DELIVERY-REPORTS**

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

- a) Name: Gerry Stirewalt (1 Electronic Copy)  
Contracting Officer's Representative (COR)  
Address: Gerry.stirewalt@nrc.gov
- b) Name: Sharlene McCubbin (1 Electronic Copy)  
Contract Specialist (CS)  
Address: Sharlene.McCubbin@nrc.gov

(End of Clause)

## **SECTION G - Contract Administration Data**

### **NRCG030 ELECTRONIC PAYMENT (SEP 2014)**

The Debt Collection Improvement Act of 1996 requires that all payments except IRS tax refunds be made by Electronic Funds Transfer. Payment shall be made in accordance with FAR 52.232-33, entitled "Payment by Electronic Funds-Central Contractor Registration".

To receive payment, the contractor shall prepare invoices in accordance with NRC's Billing Instructions. Claims shall be submitted on the payee's letterhead, invoice, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other than Personal," and Standard Form 1035, "Public Voucher for Purchases Other than Personal – Continuation Sheet." The preferred method of submitting invoices is electronically to: NRCPayments@nrc.gov.

(End of Clause)

## **SECTION H - Special Contract Requirements**

### **2052.215-70 KEY PERSONNEL (JAN 1993)**

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

<u>Name</u>	<u>Title</u>
Ms. Miriam Juckett	Project Management, and SME Regulatory Analysis Outreach
Dr. John Stamatakis	Principal Investigator, SME Geology Structural geology, Seismology

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

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

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

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

(End of Clause)

**2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT (OCT 1999) - ALTERNATE I  
(OCT 1999)**

(a) Total expenditure for travel may not exceed \$10,500.00 without the prior approval of the contracting officer.

(b) 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 prior to the commencement of travel.

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

(d) It is the responsibility of the contractor to notify the contracting officer in accordance with the FAR Limitations of Cost clause of this contract when, at any time, the contractor learns that travel expenses will cause the contractor to exceed the travel ceiling amount identified in paragraph (a) of this clause.

(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, must 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.

(End of Clause)

**NRCH480 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC  
PAYMENT/REMITTANCE ADDRESS**

The Debt Collection Improvement Act of 1996 requires that all Federal payments except IRS tax refunds be made by Electronic Funds Transfer. It is the policy of the Nuclear Regulatory Commission to pay government vendors by the Automated Clearing House (ACH) electronic funds transfer payment system. Item 15C of the Standard Form 33 may be disregarded.

(End of Clause)

**NRCH470 GREEN PURCHASING (SEP 2013)**

(a) In furtherance of the sustainable acquisition goals included in Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," products and services acquired under this contract/order shall be energy-efficient (Energy Star or Federal Energy Management Program (FEMP) designated), water-efficient, biobased, environmentally preferable (e.g., Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, recycled content, and non-toxic or less toxic alternatives, to the maximum extent practicable in meeting NRC contractual requirements.

(b) See NRC's Green Purchasing Plan (GPP) at:  
<http://pbadupws.nrc.gov/docs/ML1219/ML1219A130.pdf> and the General Service

Administration's (GSA) Green Procurement Compilation at:  
<http://www.gsa.gov/portal/content/198257>.

(c) The contractor shall flow down this clause into all subcontracts and other agreements that relate to performance of this contract/order.

(End of Clause)

#### **NRCH410 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES**

(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 entitled: "Your Rights Under the Energy Reorganization Act".

(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.

(End of Clause)

#### **NRCH400 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS**

##### **Review and Approval of Reports**

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

related documents created under this contract/grant remain solely within the discretion of the NRC.

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

(c) **Identification/Marking of Sensitive Unclassified Non-Safeguards Information (SUNSI) and Safeguards Information (SGI).** The decision, determination, or direction by the NRC that information possessed, formulated or produced by the contractor/grantee constitutes SUNSI or SGI is solely within the authority and discretion of the NRC. In performing the contract/grant, the contractor/grantee shall clearly mark SUNSI and SGI, to include for example, OUO-Allegation Information or OUO-Security Related Information on any reports, documents, designs, data, materials, and written information, as directed by the NRC. In addition to marking the information as directed by the NRC, the contractor shall use the applicable NRC cover sheet (e.g., NRC Form 461 Safeguards Information) in maintaining these records and documents. The contractor/grantee shall ensure that SUNSI and SGI is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. The contractor/grantee shall comply with the requirements to mark, maintain, and protect all information, including documents, summaries, reports, data, designs, and materials in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954 as amended, its implementing regulations (10 CFR 73.21), Sensitive Unclassified Non-Safeguards and Safeguards Information policies, and NRC Management Directives and Handbooks 12.5, 12.6 and 12.7.

(d) **Remedies.** In addition to any civil, criminal, and contractual remedies available under the applicable laws and regulations, failure to comply with the above provisions, and/or NRC directions, may result in suspension, withholding, or offsetting of any payments invoiced or claimed by the contractor/grantee.

(e) **Flowdown.** If the contractor/grantee intends to enter into any subcontracts or other agreements to perform this contract/grant, the contractor/grantee shall include all of the above provisions in any subcontracts or agreements.

(End of Clause)

## SECTION J - List of Documents, Exhibits and Other Attachments

### BILLING INSTRUCTIONS FOR COST-REIMBURSEMENT TYPE CONTRACTS (MAY 2013)

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

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

**Standard Forms:** Reimbursement requests shall be submitted on the payee's letterhead, invoice/voucher, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other than Personal," and Standard Form 1035, "Public Voucher for Purchases Other than Personal—Continuation Sheet."

**Electronic Invoice/Voucher Submissions:** The preferred method of submitting invoices/vouchers is electronically to the U.S. Nuclear Regulatory Commission, via email to: [NRCPayments@nrc.gov](mailto:NRCPayments@nrc.gov).

**Hard-Copy Invoice/Voucher Submissions:** If you submit a hard-copy of the invoice/voucher, a signed original and supporting documentation shall be submitted to the following address:

NRC Payments  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Mailstop O3-E17A  
Rockville, MD 20852-2738

**Purchase of Capital Property:** (\$50,000 or more with life of one year or longer)

Contractors must report to the Contracting Officer, electronically, any capital property acquired with contract funds having an initial cost of \$50,000 or more, in accordance with procedures set forth in NRC Management Directive (MD) 13.1, IV, C – "Reporting Requirements" (revised 2/16/2011).

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

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

**Format:** Invoices/Vouchers shall be submitted in the format depicted on the attached sample form entitled "Invoice/Voucher for Purchases and Services Other Than Personal". Alternate formats are permissible only if they address all requirements of the Billing Instructions. The

instructions for preparation and itemization of the invoice/voucher are included with the sample form.

**Task Order Contracts:** The contractor must submit a separate invoice/voucher for each individual task order with detailed cost information. This includes all applicable cost elements and other items discussed in paragraphs (a) through (s) of the attached instructions. In addition, the invoice/voucher must specify the contract number, and the NRC-assigned task/delivery order number.

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

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

**Currency:** Invoices/Vouchers must be expressed in U.S. Dollars.

**Supersession:** These instructions supersede previous Billing Instructions for Cost-Reimbursement Type Contracts (July 2011).

**INVOICE/VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL  
(SAMPLE FORMAT - COVER SHEET)**

**1. Official Agency Billing Office**

NRC Payments  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Mailstop O3-E17A  
Rockville, MD 20852-2738

**2. Invoice/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. Taxpayer Identification Number. The Payee shall include the Payee's taxpayer identification number (TIN) used by the Internal Revenue Service (IRS) in the administration of tax laws.

(See IRS Web site:

[http://www.irs.gov/Businesses/Small-Businesses-&Self-Employed/Employer-ID-Numbers-\(EINs\)\)](http://www.irs.gov/Businesses/Small-Businesses-&Self-Employed/Employer-ID-Numbers-(EINs))).

c. 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 System for Award Management (SAM) database at <http://sam.gov> and shall be paid by EFT in accordance with the terms of this contract. See Federal Acquisition Regulation (FAR) 52.232-33(g) Payment by Electronic Funds Transfer - Central Contractor Registration (October 2003).

d. Contract Number. Insert the NRC contract number (including Enterprise-wide Contract (EWC)), GSA Federal Supply Schedule (FSS), Governmentwide Agency Contract (GWAC) number, or Multiple Agency Contract (MAC) number, as applicable.

e. Task Order Number. Insert the task/delivery order number (If Applicable). **Do not include more than one task order per invoice or the invoice may be rejected as improper.**

f. Invoice/Voucher. The appropriate sequential number of the invoice/voucher, 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.

g. Date of Invoice/Voucher. Insert the date the invoice/voucher is prepared.

h. Billing Period. Insert the beginning and ending dates (day, month, year) of the period during which costs were incurred and for which reimbursement is requested.

i. Description of Deliverables. Provide a brief description of supplies or services, quantity, unit cost, and total cost.



j. Work Completed. Provide a general summary description of the services performed or products submitted for the invoice period and specify the section or Contract Line Item Number (CLIN) or SubCLIN in the contract pertaining to the required deliverable(s).

k. Shipping. Insert weight and zone of shipment, if shipped by parcel post.

l. Charges for freight or express shipments. Attach prepaid bill if shipped by freight or express.

m. Instructions. Include instructions to consignee to notify the Contracting Officer of receipt of shipment.

n. For Indefinite Delivery contracts, the final invoice/voucher shall be marked "FINAL INVOICE" or "FINAL VOUCHER".

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

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

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

(3) Contractor-acquired property (\$50,000 or more). 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) an item description, (b) manufacturer, (c) model number, (d) serial number, (e) acquisition cost, (f) date of purchase, and (g) a copy of the purchasing document.

(4) Contractor-acquired property (under \$50,000), Materials, and Supplies. These are equipment other than that described in (3) above, plus consumable materials and 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) Consultant Fee. The supporting information must include the name, hourly or daily rate of the consultant, and reference the NRC approval (if not specifically approved in the original contract).

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

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

*(Must include separate detailed costs for airfare, per diem, and other transportation expenses. All costs must be adequately supported by copies of receipts or other documentation.)*

(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.

p. 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 requested.

q. Fixed-Fee. If the contract provides for a fixed-fee, it must be reimbursed as indicated in the contract. Cite the formula or method of computation. Include this information as it applies to individual task orders as well.

(1) The NRC will withhold payment of 15% of the negotiated contract fixed-fee amount, not to exceed \$100,000.

(2) If the fee withholding amount has reached \$100,000, the contractor may resume billing the NRC for the balance of its fee under subsequent invoices for work completed.

(3) Any fee amounts withheld by the NRC will be paid to the contractor during contract closeout in increments, following the submission/settlement of indirect rate proposals in accordance with FAR 52.216-8, "Fixed Fee" (JUN 2011).

r. Total Amount Billed. Insert columns for total amounts for the current and cumulative periods.

s. Adjustments. Insert columns for any adjustments, including outstanding suspensions for deficient or defective products or nonconforming services, for the current and cumulative periods.

t. Grand Totals.

### 3. Sample Invoice/Voucher Information

#### Sample Invoice/Voucher Information (Supporting Documentation must be attached)

This invoice/voucher represents reimbursable costs for the billing period from \_\_\_ through \_\_\_.

(a)	<u>Direct Costs</u>	<u>Amount Billed</u>	
		<u>Current Period</u>	<u>Cumulative</u>
(1)	Direct labor	\$ _____	\$ _____
(2)	Fringe benefits (% of direct labor)	\$ _____	\$ _____
(3)	Government property (\$50,000 or more)	\$ _____	\$ _____
(4)	Government property, Materials, and Supplies (under \$50,000 per item)	\$ _____	\$ _____
(5)	Premium pay (NRC approved overtime)	\$ _____	\$ _____
(6)	Consultants Fee	\$ _____	\$ _____
(7)	Travel	\$ _____	\$ _____
(8)	Subcontracts	\$ _____	\$ _____
(9)	Other costs	\$ _____	\$ _____
	Total Direct Costs:	\$ _____	\$ _____

(b) Indirect Costs (provide the rate information applicable to your firm)

(10)	Overhead ___ % of _____ (Indicate Base)	\$ _____	\$ _____
(11)	General and Administrative (G&A) ___ % of _____ (Indicate Base)	\$ _____	\$ _____
	Total Indirect Costs:	\$ _____	\$ _____

(c) Fixed-Fee:

- (12) Fixed-Fee Calculations:
- Total negotiated contract fixed-fee percent \_\_\_ and amount \$ \_\_\_\_\_
  - 85% allowable fee amount \$ \_\_\_\_\_
  - Cumulative fee billed on prior invoices \$ \_\_\_\_\_
  - Fee due this invoice (not to exceed 85% of fee earned based upon negotiated contract fee percentage) \$ \_\_\_\_\_

Note: The fee balance withheld by NRC may not exceed \$100,000.

	Total Fixed-Fee:	\$ _____	\$ _____
(d)	Total Amount Billed	\$ _____	\$ _____
(e)	Adjustments (+/-)	\$ _____	\$ _____

(f) **Grand Total** \$ \_\_\_\_\_ \$ \_\_\_\_\_

(The invoice/voucher format provided above must include information similar to that included below in the following to ensure accuracy and completeness.)

**SAMPLE SUPPORTING INFORMATION**

The budget information provided below is for format purposes only and is illustrative.

**Cost Elements:**

1) **Direct Labor - \$2,400**

<u>Labor Category</u>	<u>Hours Billed</u>	<u>Rate</u>	<u>Total</u>	<u>Cumulative Hours Billed</u>
Senior Engineer I	100	\$14.00	\$1,400	975
Engineer	50	\$10.00	\$ 500	465
Computer Analyst	100	\$ 5.00	<u>\$ 500</u>	<u>320</u>
			\$2,400	1,760 hrs.

2) **Fringe Benefits - \$480**

Fringe @ 20% of Direct Salaries

<u>Labor Category</u>	<u>Salaries</u>	<u>Fringe Amount</u>
Senior Engineer I	\$1,400	\$280
Engineer	\$ 500	\$100
Computer Analyst	<u>\$ 500</u>	<u>\$100</u>
	\$2,400	\$480

3) **Government-furnished and contractor-acquired property (\$50,000 or more) - \$60,000**

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

4) **Government-furnished and contractor-acquired property (under \$50,000), Materials, and Supplies - \$2,000**

10 Radon tubes @ \$110.00	= \$1,100
6 Pairs Electrostatic gloves @ \$150.00	= <u>\$ 900</u>
	\$2,000

5) **Premium Pay - \$150**

Walter Murphy - 10 hours @ \$10.00 Per Hour (Reg. Pay) = \$100 x 1.5 OT rate = \$150  
(EX: Premium pay for this individual was approved and authorized under this contract by the NRC Contracting Officer by letter dated 6/1/2011.)

6) **Consultants' Fee - \$100**

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

7) Travel - \$2,640

(i) Airfare: (2 Roundtrip trips for 1 person @ \$300 per r/t ticket)

<u>Start Date</u>	<u>End Date</u>	<u>Days</u>	<u>From</u>	<u>To</u>	<u>Cost</u>
4/1/2011	4/7/2011	7	Philadelphia, PA	Wash, D.C.	\$300
7/1/2011	7/8/2011	8	Philadelphia, PA	Wash, D.C.	\$300

(ii) Per Diem: \$136/day x 15 days = \$2,040

8) Subcontracting - \$30,000

Company A = \$10,000  
 Company B = \$20,000  
 \$30,000

(EX: Subcontracts for Companies A & B were consented to by the Contracting Officer by letter dated 6/15/2011.)

9) Other Costs - \$5,100

Honorarium for speaker at American Nuclear Society conference = \$5,000  
*Nuclear Planet Journal* subscription fee = \$100

10) Overhead Expense - \$41,148

Overhead @ 40% of Total Direct Costs

11) General and Administrative (G&A) Expense - \$22,784

G&A @ 20% of Total Costs, excluding subcontracts and consultants

12) Fixed-Fee - \$8,218

Fixed-Fee applied to Total Costs @ 5%

Fixed-Fee Calculations:

- i. Total contract fixed-fee \$100,000
- ii. 85% allowable fee \$85,000
- iii. Cumulative fee billed on prior invoices \$85,000
- iv. Fee due this invoice (*not to exceed 85% of fee earned based upon negotiated contract fee percentage*) \$8,218

Total Amount Billed	\$175,020
Adjustments (+/-)	<u>- \$8,218</u>
Grand Total	\$166,802