

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 28

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

BPA NO.

1 DATE OF ORDER 2/26/13		2 CONTRACT NO. (if any) NRC-HQ-11-C-03-0058		3 SHIPTO	
3 ORDER NO. NRCT005		4 REQUISITION/REFERENCE NO. NRR-13-086 1/16/13		5 NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
6 ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Daniel App Mail Stop: TWS-01-B10M Washington, DC 20555		7 TO		8 STREET ADDRESS 11555 Rockville Pike Attn: Jerry Dozier Mail Stop: 010C15	
9 NAME OF CONTRACTOR SOUTHWEST RESEARCH INSTITUTE S W R I		DUNS: 007936842 DUNS-4		9 CITY Rockville	
10 COMPANY NAME				10 STATE MD	
11 STREET ADDRESS 6220 CULEBRA RD				11 ZIP CODE 20852	
12 CITY SAN ANTONIO		12 STATE TX		12 ZIP CODE 782385166	
13 ACCOUNTING AND APPROPRIATION DATA Obligate: 30,000.00 FAIMIS: 131037 B&R: 20-11-4-148, JC: J-4641, BOC: 252A Approp. No.: 31X0200.320, NAICS: 541690 PSC: R499		14 REQUESTIONING OFFICE NRR			

11 BUSINESS CLASSIFICATION (Check appropriate box(es))				12 F.O.B. POINT	
<input type="checkbox"/> a. SMALL	<input checked="" type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone	N/A
<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			
13. PLACE OF		14 GOVERNMENT BYL NO.		15 DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
a. INSPECTION		b. ACCEPTANCE		2/19/2014	
16 DISCOUNT TERMS				N/A	

17. SCHEDULE (See reverse for Rejection)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>The Contractor shall provide services in accordance with the attached Statement of Work, entitled: "Review of Severe Accident Mitigation Alternatives for Sequoyah Nuclear Power Plant License Renewal Application"</p> <p>Total CPFF Amount: \$86,448 Total Obligation Amount: \$30,000 Period of Performance: 3/1/2013 through 2/28/2014</p> <p>NRC COR: Jerry Dozier 301-415-3925</p> <p>DUNS: 007936842</p> <p>ACCEPTED: Signature: <i>Alf Kaye</i> 02/27/13 Print Name/Title: R. B. Kalmbach Executive Director, Contracts</p>					

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 Department of Interior / NBC NRC Payments_NBCDenver@nbc.gov						
	b. STREET ADDRESS (or P.O. Box) Attn: Fiscal Services Branch - D2770 7301 W. Mansfield Avenue						
c. CITY Denver		d. STATE CO	e. ZIP CODE 80235-2230		f. PHONE FAX		17(i) GRAND TOTAL
22 UNITED STATES OF AMERICA BY (Signature) <i>Daniel App</i>						23 NAME (Typed) Daniel App Contracting Officer, MSA TITLE CONTRACTING/ORDERING OFFICER	

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OPTIONAL FORM 347 (REV. 2/2012) PRESCRIBED BY GSA/FAR 48 CFR 53.213-10

MAR 08 2013

SUNSI REVIEW COMPLETE

TEMPLATE - ADM001

ADM002

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 28

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B.P.A.N.O.

1. DATE OF ORDER 2/26/13		2. CONTRACT NO. (If any) NRC-HQ-11-C-03-0058		6. SHIP TO:	
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5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Daniel App Mail Stop: TWB-01-B10M Washington, DC 20555		b. STREET ADDRESS 11555 Rockville Pike Attn: Jerry Dozier Mail Stop: 010C15		c. CITY Rockville	
7. TO:		d. STATE MD		e. ZIP CODE 20852	
a. NAME OF CONTRACTOR SOUTHWEST RESEARCH INSTITUTE S W R I		DUNS: 007936842 DUNS+4:		f. SHIP VIA	
b. COMPANY NAME		8. TYPE OF ORDER			
c. STREET ADDRESS 6220 CULEBRA RD		<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY 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.		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.	
d. CITY SAN ANTONIO		e. STATE TX		f. ZIP CODE 782385166	
9. ACCOUNTING AND APPROPRIATION DATA Obligate: 30,000.00 FAIMIS: 131037 B&R: 20-11-4-148, JC: J-4641, BOC: 252A Approp. No.: 31X0200.320, NAICS: 541690 PSC>R499		10. REQUISITIONING OFFICE NRR			
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13. PLACE OF a. INSPECTION b. ACCEPTANCE		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) 2/28/2014	
				16. DISCOUNT TERMS N/A	

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)
	The Contractor shall provide services in accordance with the attached Statement of Work, entitled: "Review of Severe Accident Mitigation Alternatives for Sequoyah Nuclear Power Plant License Renewal Application" Total CPFF Amount: \$86,448 Total Obligation Amount: \$30,000 Period of Performance: 3/1/2013 through 2/28/2014 NRC COR: Jerry Dozer 301-415-3925 DUNS: 007936842 ACCEPTED: Signature: Print Name/Title:					
18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
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SEE BILLING INSTRUCTIONS ON REVERSE				\$86,448		17(i). GRAND TOTAL

22. UNITED STATES OF AMERICA
BY (Signature)

Daniel App

23. NAME (Typed)
Daniel App
Contracting Officer, MSA
TITLE: CONTRACTING/ORDERING OFFICER

1

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DELIVERY ORDER TERMS AND CONDITIONS NOT SPECIFIED IN THE CONTRACT

A.1 BRIEF PROJECT TITLE AND WORK DESCRIPTION (AUG 2011)

(a) The title of this project is:

Review of Severe Accident Mitigation Alternatives for Sequoyah Nuclear Power Plant License Renewal Application

(b) Summary work description:

The objective of this task order is to obtain expert technical assistance from CNWRA to assist the staff in determining the adequacy of the SAMA analysis for Sequoyah Nuclear Plant.

A.2 CONSIDERATION AND OBLIGATION--COST-PLUS-FIXED-FEE (AUG 2011) ALTERNATE I (AUG 2011)

(a) The total estimated cost to the Government for full performance of this contract is \$86,448, of which the sum of 0 represents the estimated reimbursable costs, and of which 0 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 \$30,000.00, of which the sum of 00 represents the estimated reimbursable costs, and of which 0 represents the fixed-fee.

(d) It is estimated that the amount currently obligated will cover performance through 06-14-2013.

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

(f) 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

A.3 PACKAGING AND MARKING (AUG 2011)

(a) 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 Surface Transportation Board, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation.

(b) On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

(c) Additional packaging and/or marking requirements are as follows: None.

A.4 BRANDING (AUG 2012)

The Contractor is required to include 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-11-C-03-0058 NRCT005.

A.5 PLACE OF DELIVERY--REPORTS (AUG 2011)

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

- a. Name: Jerry Dozier (electronic copy)
- b. Contracting Officer's Representative (COR)
- c. U.S. Nuclear Regulatory Commission
- d. Address:
 U.S. Nuclear Regulatory Commission
 11555 Rockville Pike
 Attn: Jerry Dozier
 Mail Stop: O10C15
 Rockville
 MD
 20852

e. Electronic copies to:

f. Jerry.Dozier@nrc.gov
Daniel.App@nrc.gov

g. Name: Daniel App (electronic copy)
 h. Contracting Officer (CO)
 i. U.S. Nuclear Regulatory Commission
 j. Address:

U.S. Nuclear Regulatory Commission
 Div. of Contracts

Mail Stop: TWB-01-B10M
 Washington,
 DC
 20555

A.6 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (AUG 2011)

This order shall commence on 03-01-2013 and will expire on 02-28-2014.

A.7 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. Roland Benke
 Robert Fosdick
 Robert Schmidt

Principal Investigator
 Nuclear Engineer
 Consultant

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 con-currence 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.

A.8 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: Jerry Dozer

Address: Mail Stop OWFN 10D10
Washington, DC 20555

Telephone Number: 301-415-3925

(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.

A.9 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

(a) Total expenditure for travel may not exceed \$3,351 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 those travel costs incurred that are directly related to this contract and which 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, 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.

A.10 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORT(S) OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS (AUG 2011)

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.

A.11 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (AUG 2011)

(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.

A.12 GREEN PURCHASING (JUN 2011)

(a) In furtherance of the sustainable acquisition goals of Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" products and services provided 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, contain recycled content, or are non-toxic or less toxic alternatives, where such products and services meet agency performance requirements.
<http://www.fedcenter.gov/programs/eo13514/>

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

A.13 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC PAYMENT/REMITTANCE ADDRESS (AUG 2011)

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.

A.14 STATEMENT OF WORK

Title: Review of Severe Accident Mitigation Alternatives for Sequoyah Nuclear Plant License Renewal Application

Project Officer: Jerry Dozier, 301/415-3925; E-mail: Jerry.Dozier@nrc.gov

TAC NUMBER: ME9771 and ME9772

BACKGROUND

NRC's Office of Nuclear Reactor Regulation (NRR) is responsible for ensuring the public health and safety through licensing and inspection activities at all commercial nuclear power reactor facilities in the United States. Numerous divisions within NRR perform evaluation of license renewal applications (LRAs). The Division of Risk Assessment (DRA) performs its work in accordance with the requirements of Title 10 of the *Code of Federal Regulations*, Part 51 (10 CFR Part 51), "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." Specifically, 10CFR 51.53(c)(3)(ii)(L) requires consideration of Severe Accident Mitigation Alternatives (SAMAs) in the environmental impact review performed as part of license renewal if it has not been previously considered for the applicant's plant. The staff must systematically assess the applicant's SAMA to determine the adequacy of the submittal. Guidance for this review is in NUREG-1555, Supplement 1, "Environmental Standard Review Plan," Section 5.2 Severe Accident Mitigation Alternatives. Several plant-specific SAMA reviews have been completed by the staff and are illustrative of the type of evaluation that is needed. Examples of these prior SAMA reviews for numerous plants are in the Supplemental Environmental Impact Statements on the NRC public website at:

<http://www.nrc.gov/reactors/operating/licensing/renewal/applications.html>

By application dated January 2013, Tennessee Valley Authority provided an evaluation of SAMAs for Sequoyah Nuclear Plant (SNP) in support of their application for license renewal. The SNP application is on the NRC website at:

<http://www.nrc.gov/reactors/operating/licensing/renewal/applications/SNP.html>

In order to support the planned schedule for issuance of Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding Sequoyah Nuclear Station, Units 1 and 2 (NUREG-1437, Supplement XX) [SEIS or Draft (SEIS) {DSEIS}], the NRC staff will

require the assistance of a contractor for review of the SAMA analysis. This support will consist of the following type of work: developing requests for additional information (RAIs), audit reports, input for the Supplemental Environmental Impact Statement, technical evaluation reports and other reports which will contain recommendations to the staff as to the acceptability of the applicant's SAMA evaluation. The information submitted by the contractor will be used by the staff to develop the SAMA portion of the supplemental environmental impact statement.

OBJECTIVE

The objective of this task order is to obtain expert technical assistance from CNWRA to assist the staff in determining the adequacy of the SAMA analysis for Sequoyah Nuclear Plant.

TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

A Senior Engineer on an intermittent, part-time basis to serve as the Principal Investigator (PI) who possesses knowledge of risk and reliability assessment and plant systems and operational considerations important to risk, such as emergency power generating and distribution systems, technical specifications and emergency operating procedures;

A Senior Risk/Reliability Analyst on an intermittent, part-time basis who possesses in-depth knowledge of risk and reliability, severe accidents, offsite consequence analysis and regulatory (cost/benefit) analysis.

The proposal should clearly identify which person has which expertise and it should demonstrate that all technical areas are adequately covered.

WORK REQUIREMENTS

Tasks

Scheduled Completion

1. Using the criteria and guidelines found in Section 5.2 of NUREG-1555, Supplement 1, "Environmental Standard Review Plan" (ESRP) and using information provided in: (i) the applicant's IPE and IPEEE submittals for Sequoyah Nuclear Plant and the NRC's review of these Submittals; (ii) insights from the NRC's review of industry IPE and IPEEE submittals, as documented in NUREG-1560 and NUREG-1742; (iii) previous SAMA reviews documented in NUREG-1437 and its supplements; (iv) technical reports developed as part of the Containment Performance Improvement program; (v) the accident management strategies identified in NUREG/CR-5474; and, (vi) mitigation strategies to further enhance the plant's capabilities in maintaining core cooling and containment integrity identified through licensee and NRC security assessments, conduct a detailed review of the applicant's SAMA analysis (Appendix E, Section 4.21 and attachment E). Specifically:
 - Evaluate the rigor of the process used by the applicant to identify potential SAMAs (e.g., importance analyses or cutset examination) and consider the results of the process relative to the leading plant-specific risk

contributors as well as the plant improvements/risk reduction strategies.

- Confirm that low cost alternatives are appropriately considered.

WORK REQUIREMENTS (CONTINUED)

Tasks

Scheduled Completion

- Assess the applicant's cost/benefit methodology for consistency with the regulatory analysis guidance provided in NUREG/BR-0058, Rev. 4, and NUREG/BR-0184.
- Review the treatment of externally-initiated events and uncertainty in core damage frequency and risk estimates within the applicant's analysis and address these factors in their assessment of the adequacy of the SAMA identification and evaluation process.
- Include the findings from the industry peer-review of the plant-specific PRA and determine the potential impact of these findings on the SAMA evaluation.
- Verify that the applicants' preparation of the SAMA is in accordance with NEI 05-01, "Severe Accident Mitigation Alternatives (SAMA) Analysis."

Identify areas where any additional information (RAIs) is needed to complete the SAMA review. Prepare a technical letter report.

a. Draft.

Three weeks after
Audit

b. comments and prepare the final RAIs.

Incorporate NRC
One week after receipt
NRC comments.

c. Based on the detailed review performed and the results obtained from the audit, prepare Appendix E in accordance with Section 5.2 of NUREG-1555,

Supplement 1, "Environmental Standard Review Plan" (ESRP). An example for writing this appendix may be found on the NRC website at:

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/supplement45/sr1437v45-apps.pdf>

Note: At this point, all of the RAI responses from the applicant have not been received and the report will be written "with holes," or open items. The PI should clearly highlight these areas in the report in order to identify the report portions that are needed to be completed in Task 4.

- | | | |
|-----|--|---|
| (1) | Draft. | Six weeks after Audit |
| (2) | comments and prepare the final report. | Incorporate NRC
One week after receipt
of NRC comments. |

WORK REQUIREMENTS (CONTINUED)

Tasks

Scheduled Completion

- | | |
|--|--|
| 2. Prepare an audit plan for an audit of the SAMAs to be conducted at the SNP facility in accordance with LIC-111, "Regulatory Audits." Select a sample of six to eight potential SAMAs and trace the development of these potential SAMAs from the source through the final determination of the SAMA. Based on the detail review performed in Task 1, assimilate the potential RAI questions as part of the audit plan to be used in discussions with the applicant; these RAIs will serve as a "needs list." Prepare a technical letter report. | |
| a. Draft. | Four weeks prior to Audit;
The Audit is scheduled
from 4/8-13/2013 |
| b. Incorporate NRC comments and prepare the final audit plan. | One week after
receipt of NRC
comments. |
| 3. Prepare for and travel to the SNP site participate in the conduct of an audit of the SAMA program in accordance with LIC-111, "Regulatory Audits. Using the selected SAMAs from Task 2, review appropriate licensee documentation to verify development of the Licensee's SAMA in accordance with industry SAMA | |

guidance (NEI 05-01, "SAMA Guidance Document"). Review the SAMA process and identify any need for additional or missing information/open items.¹ Prepare a trip/audit report to include RAIs.

- | | | |
|----|--|--|
| a. | Draft RAIs. | One week after the audit. |
| b. | Draft audit report. | One week after the audit. |
| c. | comments and prepare the final report. | Incorporate NRC
One week after receipt of NRC comments. |
| 4. | <p>response(s) adequately addressed the open item. If not acceptable, discuss the RAI response with the NRC Contract Officer Representative (COR). The COR may determine that a conference call is needed to discuss the RAI response with the applicant in which case the PI will be notified and expected to participate in the conference call. If the issue is not resolved, prepare a RAI. If the RAI response is acceptable, update Appendix E with the acceptable response.</p> | <p>Determine if the RAI As mutually agreed upon; each request will be documented in an E-mail by the COR.</p> <p>Update the TER within one week after response acceptance.</p> |

WORK REQUIREMENTS (CONTINUED)

Tasks

Scheduled Completion

5. Incorporate the results of the work performed to date to include the results from the audit, acceptable responses to the RAIs including any "follow-up" RAIs issued from Task 4 into the technical evaluation report, i.e., input for Appendix E and a TER summary of Chapter 5 similar to the example found in Chapter 5 of the SEIS for Three Mile Island available at:

<http://pbadupws.nrc.gov/docs/ML0917/ML091751063.pdf>

- a. SAMA to include Chapter 5

Draft TER of the SNP
09/23/2013

¹ Any significant lessons learned from the audit should be documented in the trip report.

of the DSEIS.

- | | |
|---|--|
| <p>b. comments and submit the final report.</p> | <p>Incorporate NRC
One week after
receipt of NRC
comments.</p> |
| <p>6. Assist the staff in resolving comments received from NRC Management and the Office of the General Counsel. Prepare a technical letter report or prepare a brief summary of the request, the results attained and date provided in the Work Performed During the Period section of the Monthly Letter Status Report, as directed by the COR.</p> | <p>As mutually agreed upon; each request will be documented in an E-mail by the COR.</p> |
| <p>7. Assist the staff in resolving public or any other comments relating to SAMA once it is made public. Prepare a technical letter report or prepare a brief summary of the request, results attained and date provided in the "Work Performed During the Period" section of the Monthly Letter Status Report, as directed by the COR.</p> | <p>As mutually agreed upon; each request will be documented in an E-mail by the COR.</p> |
| <p>8. Upon completion or the resolution of comments in Tasks 6 and 7, incorporate the results of the resolution of the comments into the TER developed under Task 5 to update Appendix E and Chapter 5.</p> | |
| <p>a. Draft.</p> | <p>Two weeks after
receiving notification
by the COR.</p> |
| <p>b. Incorporate NRC comments and prepare the final report.</p> | <p>One week after
receipt of NRC
comments.</p> |

LEVEL OF EFFORT

The estimated level of effort is 375 hours.

PERIOD OF PERFORMANCE

The projected period of performance is twelve (12) months from authorization of work.

DELIVERABLES

Technical Reporting Requirements

NOTE: All reports are to be prepared in Microsoft Word 2007 or compatible format and submitted electronically to the COR. The transmittal letter and cover page shall contain the job code number (JCN), the task order number, and title.

1. At the completion of Subtasks 1. a. and b., submit a technical letter report that contains the list of preliminary RAIs which **clearly articulates** the bases for the need for further information or discussion. See Attachment 1 for guidance in the preparation of RAIs.
 2. At the completion of Subtask 1. c., submit a technical evaluation report that contains the results of the preliminary evaluation with possible open items in a draft TER containing the following: (i) an assessment of the adequacy of the applicant's evaluation of SAMAs, in terms of completeness, reasonableness of results, and potential for further risk reductions, (ii) identification of any additional SAMAs which should be considered further, and (iii) independent estimates of risk reduction and costs for selected SAMAs, as appropriate. Recent SAMA evaluations, documented in the latest available supplements to NUREG-1437, shall be used as a template for the TER. The TER should be in the format for the appropriate SAMA appendix (E) of the EIS.
 3. At the completion of Task 2, submit a technical letter report, draft and final as appropriate, that contains the audit plan and the "needs list" following the style and format of an NRC audit plan available on the NRC Public Web site for ADAMS at ML100540281.
 4. At the completion of the audit, submit a technical letter report that contains the RAIs resulting from the audit which **clearly articulates** the bases for the need for further information or discussion.
 5. At the completion of Task 3, submit a technical letter report, draft and final as appropriate, that contains a summary of the activities performed and a summary of significant highlights, observations, insights, and findings. Include a copy of any documents, slides, or other materials obtained on the trip, unless the staff indicates that they already have these materials. As appropriate, describe possible resolution of the findings/observations, noting disposition responsibility (if appropriate) of the items presented and reviewed. Also include the list of RAIs and any significant lessons learned experience during the audit.
 6. At the completion of Task 4, submit a technical letter report that contains any proposed "follow-up" RAIs. For acceptable RAI responses, update the technical evaluation report prepared under Item 2 above.
 7. At the completion of Task 5, submit the updated TER, draft and final as appropriate, that contains all of the work performed to date to include input to Chapter 5 of the DSEIS.
 8. At the completion of Task 6 and 7, submit a technical letter report that contains the results of the evaluation of the NRC management, OGC, and public comments needed to be addressed.
-

DELIVERABLES (CONTINUED)Technical Reporting Requirements

9. At the completion of Task 8, submit the updated TER, draft and final as appropriate, that contains the resolution of NRC management, OGC and public comments which may have changed the previous TER.

MEETINGS AND TRAVEL

One two-person, four-day trip to the Sequoyah Nuclear Station (located 18 miles north of Chattanooga)

NRC-FURNISHED MATERIALS

Two identical CDs of the Sequoyah Nuclear Plant License Renewal dated January 2013 and two identical CDs of the Sequoyah Nuclear Plant UFSAR, along with the listing of repeat RAIs previously identified during the review of other applications needed for Task 1, will be provided to the CNWRA Principal Investigator upon award of the contract.

Any additional relevant plant specific documentation, including the IPE and IPEEE submittals and staff evaluation reports, will be provided to CNWRA within two weeks of the of the time-frame needed to perform the work.

NOTE: Some of these documents contain proprietary information and must be safeguarded against unauthorized disclosure. After completion of work, the documents should either be destroyed or returned to NRC. If they are destroyed, please confirm this in an E-mail to the Project Officer and include the date and manner in which the documents were destroyed.

OTHER APPLICABLE INFORMATIONLicense Fee Recovery

All work specified in this SOW is license fee recoverable and must be charged to the TAC number indicated above.

Assumptions and Understandings

It is understood that the level of effort for each Task, as appropriate, contains sufficient effort to conduct telephone conference calls with the NRC Project Officer. Such phone calls, for example, might be arranged by the NRC SNP PM with the NRC Project Officer to discuss the RAIs and to reach an understanding with the applicant. Comments might be provided to CNWRA such that the RAI may have to be resubmitted by CNWRA. (Note: In some cases, based on the additional information obtained from the applicant on the conference call, the RAI may not need to be issued.)

OTHER APPLICABLE INFORMATION (CONTINUED)Assumptions and Understandings

It is understood that the Principal Investigator will perform a quality assurance check on all products before submittal to the Project Officer.

It is understood that CNWRA will ensure that the RAIs are within the scope of NUREG-1555 and the guidance provided in Attachment 1 of this SOW.

It is understood that any independent calculations needed to be performed in Task 1 to address the impact of key issues raised in the review will be selective and limited.

As for the audit, it is assumed that it will reduce the number of RAIs and follow-up RAIs typically written on prior applications.

The level of effort assumption for Task 3 is based on two people traveling and will consist of 12 hours for preparation and travel to the site, 60 hours to participate in the audit and return travel and 28 hours for documentation.

As for Task 4, review of RAI responses, it is understood that the responses will not be received all at once but intermittently. The level of effort for Task 5 assumes there will be about 60 RAI responses to be addressed and it will take, on the average, a half hour to address an RAI response including updating documentation.

The level of effort for Task 6 assumes that there are no more than eight comments to be addressed from NRC management and staff from the Office of General Council and it will take three hours, on the average, to address each including documentation.

The level of effort for Task 7 assumes that there are no more than eight public comments to be addressed and it will take three and a half hours, on the average, to address each including documentation.

It is assumed that CNWRA will provide lap tops to the analyst for use at the audits. It is also assumed that CNWRA will not need to purchase any equipment or supplies for this work.

Guidance for Preparing Requests for Additional Information (RAIs)

Additional information necessary to resolve open or unresolved items identified during the review of the information associated with the SAMA needs to be requested in a manner that is unambiguous, has an adequate basis, and is necessary for the safety review. The technical letter report should provide a list of RAIs using the following guidance:

1. An RAI should include the appropriate basis for requesting the information. The basis should explain why the information is needed, including how it will be used to help make a reasonable assurance finding.
2. Judgmental language should be avoided.
 - a. Questions should not make adequacy determinations.
 - b. Words like "unacceptable" or "deficient" and "deviation" should be avoided. Likewise, avoid using phrases like "*the staff will require*" since it is premature to require anything when asking questions.
3. Questions should be focused, not open-ended.
 - a. The RAI should be in the form of a question or an imperative to provide what is needed to complete the review. When the reviewer needs specific information or the underlying issue may not be apparent, the RAI should clearly identify the information requested and/or the underlying issue.
 - b. "If ... then" questions (questions that could lead to follow-on questions) should provide both parts of the question.

After the RAIs have been forwarded to the applicable NRC Project Manager, teleconferences and/or public meetings may be held before issuing the RAIs:

- a. These discussions prevent misunderstandings of the intent of the questions.
- b. If a draft RAI is clarified or resolved before issuance, the NRC staff will prepare a documented record of the resolution (i.e., minutes of a public meeting or a teleconference summary).

After the RAIs have been issued, the topical report author may request a telephone conference and/or a public meeting:

- a. The teleconferences and/or meetings provide additional clarification of the intent of the RAIs and will help the topical report author prepare satisfactory responses.
- b. To ensure that the response appropriately addresses the RAI, the topical report author may submit a draft response (which the NRC docket in the Agency-Wide Documents Access and Management System (ADAMS)) and may request a follow-up teleconference and/or meeting.

After receiving RAI response from the topical report author, the NRC may hold a teleconference and/or a public meeting:

- a. The purpose of discussing a response with the topical report author is to better understand the response and/or clarify areas of disagreement. If the resolution of a response relies on information not submitted to the NRC, the topical report author should submit the information on the docket. The submission is not intended to be another RAI or a means to minimize the number of SE open items, but frequently reduces the number of SE open items.
- b. If the areas of disagreement remain, the unresolved RAI becomes an SE open item.

Attachment 2

References:

The following provides the guidance documents and related information for the preparation and review of the SAMA.

- NUREG-1555, Supplement 1, "Environmental Standard Review Plan" Section 5.2 Severe Accident Mitigation Alternatives
- NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook"
- NUREG/BR-0058, "Regulatory Analysis Guidelines of the USNRC"
- NUREG 1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants"
- NEI 05-01, SAMA Guidance Document
- Regulatory Guide 1.174, "An Approach for Using PRA in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis"
- Palla, Robert, "Perspectives on Severe Accident Mitigation Alternatives for US Plant License Renewal"
- NUREG-1560, "Individual Plant Examination Program: Perspectives on Reactor Safety and Plant Performance," Executive Summary
- NUREG-1742, "Perspectives Gained from the Individual Plant Examination of External Events (IPEEE) Program," Summary
- SECY-89-017, "Mark I Containment Performance Improvement Program"
- NEI 91-04, Revision 1, "Severe Accident Issue Closure Guidelines," Section 5 (Severe Accident Management Closure)

A.15 BILLING INSTRUCTIONS – COST PLUS FIXED FEE

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 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. Department of the Interior's National Business Center, via email to: NRCPayments@NBCDenver@NBC.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:

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

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 (June 2008).

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

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. 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. **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 (including Enterprise-wide Contract (EWC)), GSA Federal Supply Schedule (FSS), Governmentwide Agency Contract (GWAC) number, or Multiple Agency Contract (MAC) number, as applicable.
- d. **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.**
- e. **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.
- f. **Date of Invoice/Voucher.** Insert the date the invoice/voucher is prepared.
- g. **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.
- h. **Description of Deliverables.** Provide a brief description of supplies or services, quantity, unit cost, and total cost.

i. 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).

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

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

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

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

n. 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>
<u>From</u>	<u>To</u>	<u>From</u>	<u>To</u>	<u>\$</u>

(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.

o. **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.

p. **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 (JUN 2011).

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

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

s. **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 _____.

		<u>Amount Billed</u>	
		<u>Current Period</u>	<u>Cumulative</u>
(a)	<u>Direct Costs</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	\$ 500	320
			\$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	\$ 500	\$100
	<u>\$2,400</u>	<u>\$480</u>

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	= \$ 900
	<u>\$2,000</u>

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	= <u>\$20,000</u>
	<u>\$30,000</u>

(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