AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

BPA NO.	1. CONTRACT ID CODE	PAGE	OF
		1	9

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
M004	JUL 23 2012	RFPA: NRR-12-179 5/22/2012	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
U.S. Nuclear Regulatory Commission Division of Contracts Attn:Daniel App Mail Stop TWB-01B10M Washington, DC 20555	3100	U.S. Nuclear Regulatory Commission Division of Contracts Attn:Daniel App Mail Stop: TWB-01B10M Washington, DC 20555	3100

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	9A. AMENDMENT OF SOLICITATION NO.
SOUTHWEST RESEARCH INSTITUTE S W R I 6220 CULEBRA RD SAN ANTONIO TX 782385166		9B. DATED (SEE ITEM 11) 10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-HQ-11-C-03-0047 NRCT003 M004
CODE 007936842 FACILITY CODE	X	10B. DATED (SEE ITEM 13) 09-23-2011

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
Obligate:$34,000
B&R:20-11-4-149 JOB:J4640 BOC:252A APPN:31X0200.220
FAIMIS:122372 NAICS:541690 PSC:R499

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement Betweeen Parties

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this modification is to add additional work to the Statement of Work which is within the scope of this task order, therefore increasing the ceiling and obligated amount. The ceiling amount is increased by $12,671.00 from $239,890.00 to $252,561.00. The obligated amount is increased by $34,000.00 from $191,200.00 to $225,200.00. The travel amount not to exceed has also been increased by $3,604, from $11,787 to $15,391.
See page next page(s) for further details and a modified Statement of Work, which reflects the changes.
Total Obligated: $225,200 (changed)
Total Ceiling: $252,561 (changed)
Period of Performance: 9/23/2011 - 6/30/2013 (unchanged)

All other terms and conditions under this contract remains unchanged.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
R.B. Kalmbach Executive Director, Contracts	Stephen Pool Contracting Officer
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 7/23/12
16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 7/18/12

NSN 7540-01-152-8070
PREVIOUS EDITION NOT USABLE

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA - FAR (48 CFR) 53.243

SUNSI REVIEW COMPLETE

TEMPLATE - ADM001

JUL 25 2012

ADM002

The following changes are hereby made:

1. **CONSIDERATION AND OBLIGATION – COST PLUS FIXED FEE (JUN 1988) ALTERNATE I (JUN 1991)**, paragraph (a) (b) and (c) are deleted in its entirety and replaced with the following:

(a) The total estimated cost to the Government for full performance of this contract is $252,561 of which the sum of $233,983 represents the estimated reimbursable costs, and of which $18,578 represents the fixed fee. In the event that the Government exercised optional tasks, the task order shall increase as follows:

(b) There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of cost for performance of the work under this contract and the actual cost for performance of that work.

(c) The amount currently obligated by the Government with respect to this contract is $225,200 of which the sum of $210,075 represents the estimated reimbursable costs, and of which $15,125 represents the fixed fee.

3. **2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT- ALTERNATE 1 (OCT 1999)** paragraph (a) are deleted in its entirety and replaced with the following:

(a) Total expenditure for travel may not exceed **$15,391.00** without the prior approval of the contracting officer.

Revised STATEMENT OF WORK

Project Title: Review of License Amendment Requests for Nuclear Power Plants Transitioning to the National Fire Protection Association (NFPA) Standard, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants" (NFPA 805).

Job Code Number (JCN): J-4640

Task Area: Technical Review and Safety Evaluation of NFPA 805 License Amendment Request for Duane Arnold Energy Center, covering Fire Modeling and Fire Protection Programmatic Review.

Task Order #: 3

Budget & Reporting No: 20-11-4-151

NRC Issuing Office: Office of Nuclear Reactor Regulation

NRC Contracting Officer Representative: Naeem Iqbal, 301-415-3346; Naeem.Iqbal@nrc.gov

Fee Recoverable: Yes

TAC Numbers: ME6818

Performing Organization: Center for Nuclear Waste Regulatory Analyses (CNWRA, hereafter Center)

1.0 Background

The Office of Nuclear Reactor Regulation (NRR) is a major program office of the NRC that is responsible for the licensing and regulatory oversight of civilian nuclear power reactors and non-power research reactors in the United States. NRR implements regulations and develops and implements policies, programs, and procedures pertaining to all aspects of licensing and inspection of these facilities. A wide range of NRR activities include the review of operating license amendments and the development of programs to guide Region-based inspections from the outset of plant construction throughout the facility's operating lifetime. NRR identifies and takes actions regarding conditions and licensee performance that may adversely affect public health and safety, the environment, or the safeguarding of nuclear reactor facilities, and assesses and recommends or takes actions regarding incidents or accidents. NRR functions through a matrix organization which includes an Associate Directorate for Engineering and Safety Systems, which is made up of four Divisions which provide technical expertise and positions on licensing actions, resolution of technical issues and development of inspection guidance.

The Division of Risk Assessment (DRA) is responsible for performing Probabilistic Risk Assessment (PRA) safety evaluations of licensee implementation of NRR requirements, changes to existing licenses, and provides technical expertise for special inspections, projects, programs and policy activities. These reviews are performed under the cognizance of four branches: Fire Protection Branch (AFPB), PRA Licensing Branch (APLA), PRA Operational Support and Maintenance Branch (APOB), and Accident Dose Branch (AADB).

AFPB is responsible for the review and evaluation of functional performance requirements, design, and performance of essential fire protection, detection, and suppression systems. Specifically, AFPB reviews and evaluates issues related to post-fire safe shutdown, multiple spurious actuations, manual operator actions, and electrical raceway fire barrier systems. AFPB is currently implementing a new risk-informed, performance-based (RI/PB) rule under Section 50.48(c) of Title 10 of the Code of Federal Regulations (10 CFR 50.48(c)). This rule endorses the National Fire Protection Association (NFPA) standard, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, (NFPA 805)."

This project-level description of work outlines the requirements for technical assistance to be provided by the Center for Nuclear Waste Regulatory Analyses (CNWRA) to the Fire Protection and PRA Licensing Branches, Division of Risk Assessment, NRR, in completing the technical review and developing the safety evaluation for 1 NRC licensee that submits a license amendment request to adopt 10 CFR 50.48(c), (NFPA 805).

Fifty-one of the 104 Nuclear power plants (NPPs) have notified the NRC of their intent to transition their fire protection licensing basis to NFPA 805. Most of these NPPs are required to submit their License Amendment Requests (LARs) in FY 2011. However, a pending Commission decision may allow staggered submittals of the applications over a 4 year period beginning in July of 2011. If approved submittals will be received as follows: 7 in FY 2011, 10 in FY2012, 10 in FY 2013, and 3 in FY 2014.

2.0 Objective

The objective of this task order is to obtain technical expertise from the Center for Nuclear Waste Regulatory Analyses (CNWRA), to provide the technical review and safety evaluation for one 10 CFR 50.48 (c) (NFPA 805) license amendment request. This activity will specifically include conducting the review of a LAR, consistent with the Standard Review Plan for RI/PB fire protection licensing basis (9.5.1.2) and in accordance with the rule language in Section 50.48(c)(3)(I). This project will require coordination between CNWRA and the PNNL (Pacific Northwest National Laboratory). For each LAR received, PNNL (under a separate contract) will be providing technical expertise in fire modeling and programmatic areas. The areas that CNWRA will be providing the technical review and safety evaluation are as follows:

- Fire Modeling
- Fire Protection Programmatic Issues

3.0 Technical and Other Special Qualifications Required

This contract will require up to two specialists on a part-time, interim basis with expertise and experience in fire modeling, and fire protection programmatic issues. This specialist should also possess knowledge of and/or experience with: a) PWR and BWR nuclear power plant system designs, b) NRC regulations, technical specifications, and inspection procedures related to nuclear power plant operations at full-power conditions and shutdown modes, and c) familiarity with the development of NRC safety evaluations (SEs).

The proposal should identify key personnel and the role each will play in performing the work.

It is the responsibility of the contractor to assign technical staff, employees, subcontractors, or specialists who have the required educational background, experience, or combination thereof to meet both the technical and regulatory objectives of the work specified in this SOW. The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this task order including assurance that all information contained in the technical and cost proposal, including resumes, is accurate and truthful.

The use of key personnel and any proposed change to key personnel on this contract is subject to the NRC Project Manager's approval. This includes proposed use of principal persons (i.e., key contributors) during the life of the contract.

If any work would be subcontracted or performed by consultants, the CNWRA shall obtain the NRC Project Manager's written approval of the subcontractor or consultant prior to initiation of the subcontract effort. Conflict of interest considerations shall apply to any subcontracted effort.

4.0 Work Requirements and Schedule

The contractor shall provide the services of staff personnel to perform a thorough review and development of a safety evaluation for one 10 CFR 50.48 (c) (NFPA 805) license amendment request covering the review areas of fire modeling and fire protection programmatic review. Below is the review effort expected to complete this activity. The review follows the applicable sections of NUREG-0800, "Standard Review Plan."

REVIEW ACTIVIES	COMPLETION SCHEDULE
1. Conduct detailed evaluation of the LAR, develop Request for Additional Information (RAI) and prepare Technical Letter Report (TLR). a. Review initial LAR. b. Review any supplemental LAR material. c. Review any back-up calculations. d. Develop pre-audit questions (draft RAIs). e. Participate in conference calls.	Eight weeks after LAR is accepted for review and notified by TM to proceed with review.
2. Participate in the site audit and develop audit report input and trip report.	Two weeks after trip completion.
3. Re-evaluate draft RAIs (Task 1.d) and prepare TLR. a. Utilizing site audit findings. b. Participate in conference calls.	Two weeks after trip completion.
4. Prepare for and travel to the Duane Arnold site to participate in an audit of the licensee fire modeling analysis or calculations used in the Generic Fire Modeling Treatment approach used in high risk fire areas. Specifically, review the Generic Fire Modeling Treatment approach calculations work sheets and walk down with the licensee staff/contractor to observe actual fire scenario development and the application of Generic Fire Modeling Treatment approach to obtain Zone of Influence. This audit will be performed in accordance with LIC-111, "Regulatory Audits." Identify any non-conformance with 10 CFR 50.48(c), NFPA 805, 2001 Edition and (SRP) Section 9.5.1.2. Prepare a technical trip report. a. Draft. b. Incorporate NRC comments and submit the final report.	 One week after trip. One week after receipt of NRC Comments.
5. Evaluate RAI responses and prepare TLR. a. Develop draft safety evaluation sections. b. Develop additional RAIs, as needed. c. Participate in conference calls.	Four weeks after receiving RAI responses.
6. Evaluate and incorporate RAI responses & prepare final draft SER.	Two weeks after receipt of RAI responses.
7. Incorporate NRC comments into the Final SER.	One week after receiving NRC comments.

5.0 Monthly letter status report

The CNWRA shall submit monthly letter status reports (MLSR) as specified in the basic task ordering agreement. The CNWRA shall issue each MLSR no later than the 20th of the month, and a total of the month ending (or billing cycle) costs shall be provided by e-mail to the NRC TAPM no later than the 15th of the month. For purposes of billing, assume an even split between dockets for a multiple, same site application. On an exception basis, the technical monitor will determine if a separate task order should be issued to capture significant docket specific expenditures.

The technical status section of the report shall contain a summary of the work performed during the reporting period on this Task Order, and milestones reached, or, if missed, an explanation; any problems or delays encountered or anticipated with recommendations for resolution; and plans for the next reporting period. The status shall include information on travel during the period to include trip start and end dates, destination, and travelers.

Electronic Spending Plan

Along with the MLSR, the CNWRA shall submit monthly an updated version of the Electronic Spending Plan (ESP). The timetable and submission format are equal to the MLSR. There shall be one ESP for all TOs within a JCN. If changes and updates are needed at the interim period, the CNWRA shall note that in the Log sheet and then make the changes in the ESP sheet.

E-mail progress report

The CNWRA shall provide an interim progress report bi-weekly to include staff hours expended and percent completed for each subtask under this task order and the forecast for the remainder of the work effort. The report shall be sent electronically by e-mail to the NRC TAPM and TM.

Technical reporting requirements

Typically, reports will involve:

- Trip reports with meeting summaries, observations and recommendations;
- Technical letter reports;
- Draft and final Technical Evaluation Reports (TERs) that summarize the work performed, orientation activities, results attained, findings, conclusions, and recommendations.

Unless otherwise specified above, the CNWRA shall provide all deliverables as draft products. The NRC TM will review all draft deliverables (and coordinate any internal NRC staff review, if needed) and provide comments back to the CNWRA. The CNWRA shall revise the draft deliverable based on the comments provided by the NRC TM, and then deliver the final version of the deliverable. When mutually agreed upon between the CNWRA and the NRC TM, the CNWRA may submit preliminary or partial drafts to help gauge its understanding of the particular work requirement.

The CNWRA shall provide the deliverables in hard copy and electronic formats. The electronic format shall be Microsoft® WORD or other word processing software approved by the NRC TM. For each deliverable, the CNWRA shall provide one hard copy and electronic copy to both the

NRC TAPM and TM. The schedule for deliverables shall be contained in the approved project plan for the task order effort.

The transmittal letter and cover page of each report, or other deliverable, as appropriate, shall contain the Job Control Number (JCN), Project Title, NRC Technical Assignment Control (TAC) Number(s), as appropriate. At the direction of the NRC TM, certain deliverables may need to be prepared in NUREG or NUREG/CR format.

6.0 Performance Standards

The CNWRA performance will be evaluated based on meeting the performance standards provided in the basic task ordering agreement. As provided in the basic task ordering agreement a feedback form shall be completed documenting this evaluation. It should be noted that award of subsequent task orders will be based on the laboratory's success in meeting the schedule, milestones and deliverable requirements of the preceding task orders.

7.0 Period of Performance

The period of performance is date of award through June 31, 2013, with an option to extend the period of performance if conditions so warrant.

8.0 Meetings and Travel

The following travel assumptions should be considered in planning the work effort. It is likely that the entire review team will be necessary to accomplish the activities. The actual travel contingent will be determined by the NRC TM after discussion with the CNWRA PM. Travel in excess of the total number of person-trips must be approved by the NRC TAPM; travel within the work scope limits will be approved by the NRC TM.

The following meetings are necessary to plan for:

One three-person, five-day audit trip to the DAEC site located in Palo, Iowa.
One three-person, two day second trip to the DAEX site located in Palo, Iowa.

The CNWRA shall plan on making key personnel assigned available for any project progress meeting or program review that may be held at the NRC Headquarters or CNWRA's location while the project is active. This may require one meeting at NRC Headquarters (three staff, two days of travel, one day of meeting).

Other travel will be confirmed with the NRC TM prior to commencement of the travel.

Routine status meetings (weekly to monthly) by the NRC TM and facilitator should be conducted using electronic means of Tele/Video-conferences or other means to minimize travel costs. Periodically, over the course of this contact, the CNWRA will interact (e.g., via e-mail or telephone) with the NRC TM to discuss (a) project progress, (b) questions, (c) NRC comments, and (d) the conduct and content of tasks associated with this contract. It is anticipated that most of the communication between the NRC and the CNWRA will be handled in this manner. Periodically, a program review meeting, which involves NRC and CNWRA management, may be held at the NRC or CNWRA's location to review overall program objectives and project performance; program reviews are typically held annually.

9.0 NRC Furnished Material

The NRC TM will provide those NRC documents related to licensing activities (for example, any Non-Publicly available SERs, audit reports, and related documents) that are readily available. The NRC TM will provide access to training material pertinent to the NFPA 805 LARs reviews or other NRC documents and docketed correspondence on related issues. The CNWRA staff shall identify any additional NRC documentation that is needed and the TM will determine whether these will be provided by the NRC or obtained directly by the CNWRA from ADAMS, NRC public document room or the NRC website at www.nrc.gov.

For this task order the NRC will provide to or provide access to CNWRA (not an all inclusive listing) the following materials:

1. One NFPA 805 LAR for technical review. NRC will inform CNWRA of the date that the submittal was placed in ADAMS for review schedule purposes.

2. Regulatory Guide 1.205, "Risk-Informed, Performance-Based Fire Protection For Existing Light-Water Nuclear Power Plants"

3. NUREG-0800, Standard Review Plan, Section 9.5.1.2, "Risk-Informed, Performance-Based Fire Protection Program"

4. Office of Nuclear Reactor Regulation, Office Instruction, Revision 3 of LIC-101, "License Amendment Review Procedures"

5. NEI 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c), Revision 2, Nuclear Energy Institute (NEI), Washington, DC, April 2008.

6. NFPA 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, National Fire Protection Association, Quincy MA.

7. NUREG/CR-6850, "EPRI/NRC-RES, Fire PRA Methodology for Nuclear Power Facilities," Volumes 1 and 2, USNRC, September 2005.

8. Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," ML070240001 (Clarification to RG 1.200, Revision 1, ML071940235) (Draft Revision 1 was issued as DG-1161, 09/2006, ML062480134) (Revision 0, 02/2004, ML040630078, was issued with SRP Chapter 19.1, ML040630300) (Draft Revision 0 was issued as DG-1122, 11/02, ML023360076)

9. NUREG-1824, "Verification and Validation of Selected Fire Models for Nuclear Power Plant Applications," U.S. Nuclear Regulatory Commission, Washington, DC, May 2007

10. Regulatory Guide 1.174, Revision 1, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," USNRC, November 2002.

11. NRC NUREG 0800, Standard Review Plan, Chapter 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," Revision 0, June 2007.

12. NEI 00-01, Guidance for Post Fire Safe Shutdown Analysis, Revisions 1 & 2, Nuclear Energy Institute (NEI), Washington, DC.

13. Templates for development of various technical review related documents including but not limited to Audit Reports, Requests for Additional Information, Safety Evaluations, Technical Specifications, etc.

14. Other NRC guidance such as Frequently Asked Questions (FAQs), historical documents related to previous 10 CFR 50.48(c) reviews, etc.

10.0 Level of Effort

The estimated level of effort in hours apportioned among the review areas is as follows:

Labor Category	Level of Effort (Hours)
Principle Investigator and Support	200
Fire Modeling	350
Fire Protection Programmatic Review	580
Second Audit Trip	64
Clerical	120
Total	1314