

2. AMENDMENT/MODIFICATION NO. M004 3. EFFECTIVE DATE JUL 23 2012 4. REQUISITION/PURCHASE REQ. NO. NRR-12-184 5/31/2012 5. PROJECT NO.(if applicable)

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

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)
 SOUTHWEST RESEARCH INSTITUTE
 S W R I
 6220 COLEBRA RD
 SAN ANTONIO TX 782385166
 CODE 007936842 FACILITY CODE

9A. AMENDMENT OF SOLICITATION NO.
 9B. DATED (SEE ITEM 11)
 10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-BQ-11-C-03-0047 NRCT002 M004
 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: \$50,000
 B&R: 20-11-4-149 JOB: J4640 BOC: 252A APPN: 31X0200.220
 FAHMS: 122468 NAICS: 541690 PSC: R421

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

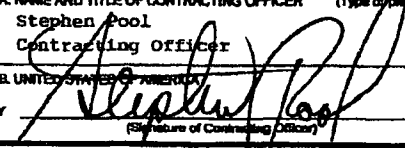
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
 B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.100(b).
 C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
 D. OTHER (Specify type of modification and authority) Mutual Agreement Between 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 \$66,743.00 from \$239,271.00 to \$306,014.00. The obligated amount is increased by \$50,000.00 from \$218,800.00 to \$268,800.00.
 See page next page(s) for further details and a modified Statement of Work, which reflects the changes.
 Total Obligated: \$268,800.00 (changed)
 Total Ceiling: \$306,014.00 (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, remain unchanged and in full force and effect.

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

TEMPLATE - ADM001 **SUNSI REVIEW COMPLETE** **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 \$306,014 of which the sum of \$283,506 represents the estimated reimbursable costs, and of which \$22,508 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 \$268,800 of which the sum of \$248,889 represents the estimated reimbursable costs, and of which \$19,911 represents the fixed fee.

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 Donald C. Cook Nuclear Power Plant, Units, 1 and 2 covering Fire Modeling and Fire Protection Programmatic Review.

Task Order #: 2

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

NRC Issuing Office: Office of Nuclear Reactor Regulation

NRC Technical Monitor (TM): Naeem Iqbal, 301-415-3346; Naeem.Iqbal@nrc.gov

Fee Recoverable: Yes

TAC Numbers: ME6629 and ME6630

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, AFBP reviews and evaluates issues related to post-fire safe shutdown, multiple spurious actuations, manual operator actions, and electrical raceway fire barrier systems. AFBP is currently implementing a new risk-informed, performance-based (R/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 R/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). <ul style="list-style-type: none"> a. Review initial LAR. b. Review any supplemental LAR material. c. Review any back-up calculations. d. Develop pre-audit questions (draft RAIs). 	Eight weeks after LAR is accepted for review and notified by TM to proceed with review.

e. Participate in conference calls.	
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. 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.
5. Based on the guidance found in SRP Section 9.5.1.2, perform fire modeling calculations for Fire Areas AA43, AA44, AA57A, AA40, and AA52 and determine whether the licensee' assumptions and conclusions are appropriate and reasonable in their use of detailed and complex fire models. Identify the need for additional and/or clarifying information. Prepare a technical letter report.	One week after authorization of the task
6. Review and evaluate any additional RAI responses and determine if the response(s) adequately addressed the open items. If the response(s) is not acceptable, discuss the RAI response(s) with the Technical Monitor who may determine that a conference call is needed to discuss the RAI response(s) with the licensee in which case the PI will be notified and expected to participate in the conference call. If the response is deemed inadequate, list the issue as an open item in the TER. If the response is deemed to be adequate, incorporate the results in the TER and prepare the updated TER. a. Draft b. Incorporate NRC comments and prepare the final TER	Two weeks after receipt of RAI responses. As mutually agreed upon between the TM and the PI all the input has been received. One week after receipt of 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.
- At the completion of Task 5, submit a technical letter report that contains a summary of the work performance and the results obtained from calculations. Include any RAIs along with the bases for the request.
- It is understood that the level of effort for Task 5 contains sufficient effort to conduct telephone conference calls with the NRC Project Officer.

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:

The CNWRA PI and Subject Matter Expert (SME) shall attend the site audit conducted at Plant 5 located in (TBD). (three staff, two days of travel, 5 days of audit).

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	680
Fire Protection Programmatic Review	580
Clerical	120
Total	1580