

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 4

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

BPA NO.

1. DATE OF ORDER 9/10/2011		2. CONTRACT NO. (If any) NRC-HQ-11-03-C-0058		6. SHIP TO:		
3. ORDER NO. T001		MODIFICATION NO.		a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission		
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Valerie Whipple Washington, DC 20555 Mail Stop: TWB-01-B10M		4. REQUISITION/REFERENCE NO. NRR-11-228 FAIMIS 113421		b. STREET ADDRESS Richard Daniel Mail Stop OWFN 13F15M		
				c. CITY Washington	d. STATE DC	e. ZIP CODE 20555

7. TO:		f. SHIP VIA				
a. NAME OF CONTRACTOR SOUTHWEST RESEARCH INSTITUTE		8. TYPE OF ORDER				
b. COMPANY NAME		<input type="checkbox"/> a. PURCHASE			<input checked="" type="checkbox"/> b. DELIVERY	
c. STREET ADDRESS 6220 CULEBRA RD		REFERENCE YOUR _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.			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 B&R: 20-11-4-148 JC: J4641 BOC: 253A APPN: 31X0200.020 FAIMIS: NRR-11-228 \$80,000 transferred from the basic contract DUNS: 007936842 <i>NAJES: 541690 PSC: R421</i>		10. REQUISITIONING OFFICE NRR				
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11. BUSINESS CLASSIFICATION (Check appropriate box(es))						12. F.O.B. POINT Destination
<input type="checkbox"/> a. SMALL	<input checked="" type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED			
<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone	<input type="checkbox"/> f. EMERGING SMALLBUSINESS				

13. PLACE OF		14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) October 31, 2011		16. DISCOUNT TERMS Net 30
a. INSPECTION	b. ACCEPTANCE				

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)
	<p>The Contractor shall provide services in accordance with the attached Statement of Work Entitled "Review of the Adequacy and Operability of Fire Protection Systems and Equipment to be used by the United States Commercial Nuclear Power Plant Licensees in Response to the Fukushima Daiichi Nuclear Station Fuel Damage Event"</p> <p>Total obligated amount: \$80,000 (transferred from the basic contract)</p> <p>Period of Performance: Date of Award through October 31, 2011</p> <p>Technical Monitor: Naeem Iqbal 301-415-3421 NRC Project Officer: April Bucher 301-415-5142</p> <p>List of Attachments: Statement of Work</p> <p align="right">TOTAL TASK ORDER CEILING.....\$104,229</p> <p>DUNS: 007936842</p>					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)	
21. MAIL INVOICE TO:							17(i) GRAND TOTAL
a. NAME Department of Interior / NBC NRCPayments@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				

22. UNITED STATES OF AMERICA BY (Signature)		23. NAME (Typed) Valerie Whipple Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER				
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Please indicate your acceptance of this order by having an official who is authorized to bind your organization, execute this document in the space provided below.

ACCEPTED:

Signature:  _____

Name: R.B. Kalmbach

Title: Executive Director, Contracts

Date: 8/31/2011

TASK ORDER TERMS AND CONDITIONS

1. CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988) ALTERNATE I (JUN 1991)

- (a) The total estimated cost to the Government for full performance of this contract is **\$104,229** of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which [REDACTED] 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 **\$80,000**, of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which \$[REDACTED] represents the fixed fee.

2. PERIOD OF PERFORMANCE

The period of performance of this order shall be **Date of Award through October 31, 2011.**

3. 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

- (a) Total expenditure for travel may not exceed **\$0** 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.

4. 2052.215-70 KEY PERSONNEL (JAN 1993)

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

<u>Name</u>	<u>Title</u>
[REDACTED]	Project Manager
[REDACTED]	Principal Investigator

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

- (b) If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 work days, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall immediately notify the contracting officer and shall, subject to the concurrence of the contracting officer, promptly replace the personnel with personnel of at least substantially equal ability and qualifications.
- (c) Each request for approval of substitutions must be in writing and contain a detailed explanation of the circumstances necessitating the proposed substitutions. The request must also contain a complete resume for the proposed substitute and other information requested or needed by the contracting officer to evaluate the proposed substitution. The contracting officer and the project officer shall evaluate the contractor's request and the contracting officer shall promptly notify the contractor of his or her decision in writing.
- (d) If the contracting officer determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work is not reasonably forthcoming, or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the contract or the service order, the contract may be terminated by the contracting officer for default or for the convenience of the Government, as appropriate. 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.

5. SEAT BELTS

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

6. WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (JULY 2006)

(a) The U.S. Nuclear Regulatory Commission (NRC) contractor and its subcontractor are subject to the Whistleblower Employee Protection public law provisions as codified at 42 U.S.C. 5851. NRC contractor(s) and subcontractor(s) shall comply with the requirements of this Whistleblower Employee Protection law, and the implementing regulations of the NRC and the Department of Labor (DOL). See, for example, DOL Procedures on Handling Complaints at 29 C.F.R. Part 24 concerning the employer obligations, prohibited acts, DOL procedures and the requirement for prominent posting of notice of Employee Rights at Appendix A to Part 24.

(b) Under this Whistleblower Employee Protection law, as implemented by regulations, NRC contractor and subcontractor employees are protected from discharge, reprisal, threats, intimidation, coercion, blacklisting or other employment discrimination practices with respect to compensation, terms, conditions or privileges of their employment because the contractor or subcontractor employee(s) has provided notice to the employer, refused to engage in unlawful practices, assisted in proceedings or testified on activities concerning alleged violations of the Atomic Energy Act of 1954 (as amended) and the Energy Reorganization Act of 1974 (as amended).

(c) The contractor shall insert this or the substance of this clause in any subcontracts involving work performed under this contract.

STATEMENT OF WORK

Contract Title: Center for Nuclear Waste Regulatory Analyses Technical Assistance in Support of Probabilistic Risk Assessment, Fire Protection, and Accident Dose Assessments Licensing Activities Related to Nuclear Reactor Regulation.

Task Order Title: Review of the Adequacy and Operability of the Fire Protection Systems and Equipment to be Used by the United States Commercial Nuclear Power Plant Licensees in Response to the Fukushima Daiichi Nuclear Station Fuel Damage Event.

Job Code Number (JCN): J-4641

Task Areas: Review of the United States Commercial Nuclear Power Plant Licensees Submittals in Response to the NRC Bulletin 2011-01, "Mitigating Strategies," ADAMS Accession No. ML111250360, (Only Fire Protection Portion)

Task Order #: 1

Budget & Reporting No: XXX-XX-XXX-XXX

NRC Issuing Office: Office of Nuclear Reactor Regulation

Technical Assistance Project Manager (TAPM): April M. Bucher, (301) 415-5142, April.Bucher@nrc.gov

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

Fee Recoverable: No

TAC Number: TBD

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

1.0 Background

On March 11, 2011, the Tohoku-Taiheiyu-Okai earthquake occurred near the east coast of Honshu, Japan. This magnitude 9.0 earthquake and the subsequent tsunami caused significant damage to at least four of the six units of the Fukushima Daiichi nuclear power station as the result of a sustained loss of both the offsite and onsite power systems. Efforts to restore power to emergency equipment were hampered and impeded by damage to the surrounding areas due to the tsunami and earthquake.

The events at Fukushima Daiichi remind us that highly unlikely events caused by severe natural phenomena hazards can initiate accidents of concern under 10 CFR Part 50 and other regulations and can present multiple challenges, such as recovery from loss of power and other services caused by the event. In addition, these severe events may lead to additional events,

such as fires, explosions, or chemical releases that could lead to accidents of concern under 10 CFR Part 50 or other parts of the regulations. Compliance with the regulatory requirements to prevent or mitigate regulated hazards may require that facilities be prepared, or possess equipment, to provide these safety functions despite multiple challenges and degraded or disabled resources. The degradations could include long term loss of such functions as offsite power, onsite emergency power, transportation by road or rail to access offsite resources, loss of offsite water supply, and loss of other offsite services.

Following the events of September 11, 2001, the readiness of NRC-regulated facilities to manage challenges to core cooling, containment and spent fuel pool cooling (SFP) following large explosions or fires was enhanced through a series of orders and imposition of license conditions. These requirements were formalized in the rulemaking of March 27, 2009, resulting in 10 CFR 50.54(hh)(2). The NRC conducted a comprehensive inspection of the implementation of the mitigating strategies developed by licensees in 2008. Subsequently the NRC incorporated this inspectable area into the baseline reactor oversight process on a sample basis as part of the triennial fire protection inspection.

In addition, the existing guidance on the implementation of the strategies, which was adopted by all licensees to meet the regulatory requirements for mitigating strategies, does not describe in detail the practices necessary for maintenance and testing of the equipment, training requirements, and validation of feasibility of the strategies. Based upon the information submitted by licensees in response to this bulletin, the NRC will determine if additional efforts are needed to ensure compliance with existing regulatory requirements and/or whether enhancement to the existing regulations and guidance are necessary.

NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff has issued Bulletin 2011-01, "Mitigating Strategies," (ADAMS Accession No. ML111250360) requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a comprehensive regulatory assessment of beyond design basis phenomena that the licensees are maintaining equipment and strategies to satisfy 10 CFR 50.54(hh)(2).

2.0 Objective

The objective of this task order is to provide the staff comprehensive technical and regulatory evaluation of the nuclear power plant licensees response to Bulletin 2011-01 related to fire protection systems and equipment to be used to meet the regulatory requirements to satisfy 10 CFR 50.54(hh)(2). This evaluation should also include review of the licensees practices necessary for maintenance for testing of the fire protection equipment, training requirements, and validation of feasibility of the mitigating strategies related to fire protection. This evaluation will support the technical basis to determine if additional efforts are needed to ensure compliance with the existing regulatory requirements and/or whether enhancement to existing regulations and guidance are necessary.

3.0 Technical and Other Special Qualifications, and Key Personnel

Successful performance of the task described in this Statement of Work (SOW) requires exceptional expertise in the field of fire protection engineering and use of experienced personnel

for the key positions on this task is considered essential to the success of the overall project. The Contractor Project Manager (PM) will propose key personnel (Task Leader/Principal Investigator) for this task subject to the approval of the NRC Technical Monitor (TM) and NRC TAPM. Changes to key personnel by the Contractor require the prior approval of the NRC TM and NRC TAPM.

Key personnel will have in-depth expertise of commercial nuclear power plant fire protection programs and expertise in fire protection systems inspection, test and maintenance established by National Fire Protection Association (NFPA) Standards along with a strong background in fire hazard analysis at U.S. nuclear power plants.

It is the responsibility of the Contractor to assign technical staff, employees, consultants, subcontractors, or specialists who have the required educational background, experience, or combination thereof to meet both 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 project including assurance that all information contained in the technical and cost proposals, including resumes, is accurate and truthful.

4.0 Scope of Work

Review and evaluate the licensee submittals in response to NRC Bulletin 2011-01 related to fire protection equipment systems and prepare Technical Evaluation Report (TER). The evaluation covered in the report shall include but is not limited to those in the following bulleted list:

- The licensee description and details of the maintenance of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed.
- Details of the testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it will function when needed.
- Detail of the controls for assuring that the equipment is available when needed.
- Detail on how the configuration and guidance management is assured so that strategies remain feasible.
- Details on assurance on the availability of off-site support.

5.0 Schedules and/or Milestones

The following tasks shall be performed by Contractor under this SOW.

<u>Task</u>	<u>Description</u>	<u>Completion Schedule</u>
1	Perform a comprehensive review of the licensees response to the Bulletin 2011-01, (only fire protection portion of the response) against the guidelines and requirements specified by the NRC TM.	Four (4) man-weeks to perform the review of the licensees response to the Bulletin 2011-01 (fire protection portion only)
2	Prepare a request for additional information (RAI) as appropriate to resolve information deficiencies and technical concerns and provide to NRC TM.	Two (2) weeks after completing the review of the submittal and provide to the NRC TM (one (1) man-week to perform task)
3	Review the licenses response to the RAI and evaluate this information against the applicable guidance and requirements.	One (1) man-week to review and evaluate the RAI.
4	Prepare a comprehensive TER that addresses the specific issues reviewed. Included areas of non-compliance with staff guidance, including their acceptability of deficiencies. All technical bases, conclusions, and recommendations shall be clearly and explicitly stated in the TER. The TER shall be in format specified by the NRC TM and the reporting requirements in Deliverables below.	Two (2) man-weeks to prepare a draft TER and provide the draft to the NRC TM for review. One (1) man-week to resolve the NRC TM's comments and issue the final TER.

6.0 Deliverables

1. The RAI specified in Task 2 above shall be completed by (Completion Date to be Determined)
2. The TER specified in Task 4 above shall be provided to the staff for review by (Completion Date to be Determined). Staff acceptance to the TER will constitute completion of the review assignment. The TER will contain an evaluation in the format provided by the NRC TM and shall include the following sections:
 - a. Identification of Issue – Identify the issue being addressed relative to staff guidelines or requirements and/or previous commitments.

- b. Discussion – Provide a discussion of all relevant information for each issue.
- c. Evaluation – provide a technical evaluation of the acceptability to meet the guidance and regulatory requirements for mitigating strategies, including an assessment of whether the measures being proposed provide an adequate level of protection and will assure that plants to satisfy 10 CFR 50.54(hh)(2). The technical bases for all conclusions shall be included in the TER.
- d. Conclusion – State the finding reached in the evaluation section.

7.0 Meetings and Travel

No travel is anticipated in this task.

8.0 Estimated level of Effort

The estimated level of effort is 548 hours.

9.0 Period of Performance

The period of performance is Date of Award through October 31, 2011. Extensions to this SOW may be required depending on the licensees response to RAIs and other activities.

10.0 NRC Furnished Materials

The NRC TM will furnish materials and documents required to support the review to the Contractor principle investigator

11.0 Monthly Letter Status Report

The Contractor shall submit monthly letter status reports (MLSR) as specified in the Attachment within the basic contract. The Contractor 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.

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 Contractor 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 Contractor shall note that in the Log sheet and then make the changes in the ESP sheet.

E-mail progress Report

The Contractor 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 TERs that summarize the work performed, orientation activities, results attained, findings, conclusions, and recommendations.

Unless otherwise specified above, the Contractor 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 Contractor. The Contractor 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 Contractor and the NRC TM, the Contractor may submit preliminary or partial drafts to help gauge its understanding of the particular work requirement.

The Contractor shall provide the following 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 Contractor 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 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.

12.0 Performance Standards

The contractor 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 Contractor's success in meeting the schedule, milestones and deliverable requirements of the preceding task orders.