

2. AMENDMENT/MODIFICATION NO. M0008	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. ZEROREQ-NMSS-18-0022	5. PROJECT NO. (If applicable)
6. ISSUED BY US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-5E03 WASHINGTON DC 20555-0001	CODE NRCHQ	7. ADMINISTERED BY (If other than Item 6) US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP 3WFN-05-C64MP WASHINGTON DC 20555-0001	CODE NRCHQ

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) ATTN LAURA KLUS 6220 CULEBRA RD SAN ANTONIO TX 782385166	(x)	9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
	x	10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-HQ-12-C-02-0089 NRC-HQ-50-15-T-0001
CODE    007936842	FACILITY CODE	10B. DATED (SEE ITEM 13) 09/08/2015

**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. **FA LURE OF YOUR ACKNOWLEDGEMENT 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. ACCOUNT NG AND APPROPRIATION DATA (If required)  
See Schedule

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

CHECK ONE	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 date, 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) 52.243-2 "Changes - Cost Reimbursement"

**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 A) modify the statement of work for within scope work; and B) extend the period of performance end date from 3/28/2018 to 9/28/2018. Accordingly, Section NRCF032 "Task/Delivery Order Period of Performance (SEPT 2013)" is deleted in its entirety and replaced with the following:

"NRCF032 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (SEP 2013)  
This order shall commence on September 8, 2015 and will expire on September 28, 2018."  
Period of Performance: 9/8/2015 - 9/28/2018 (changed)  
Total Estimated Ceiling Amount: \$916,251.00 (unchanged)  
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A 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) RICHARD W. ROBINSON
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED
	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)
	16C. DATE SIGNED 03/20/2018

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
NRC-HQ-12-C-02-0089/NRC-HQ-50-15-T-0001/M0008

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NAME OF OFFEROR OR CONTRACTOR  
ATTN LAURA KLUS

ITEM NO. (A)	SUPPL ES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Total Obligated Amount: \$916,251.00 (unchanged)</p> <p>See attached pages for specific changes regarding this modification.</p> <p>All other terms and conditions remain unchanged Period of Performance: 09/08/2015 to 09/28/2018</p>				

***Specific Changes are as Follows:***

1. Delete Section NRCF032 in its entirety and replace with the following:

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

This order shall commence on September 8, 2015 and will expire on September 28, 2018.”

2. Replace the Section C – Statement of Work with the following:

**SECTION C – Description/Specifications**

**Statement of Work**

**1. PROJECT TITLE**

Support for the Development of the Managing Aging Processes in Storage Report

**2. BACKGROUND**

The U.S. Nuclear Regulatory Commission (NRC) licenses dry storage of spent nuclear fuel under the provisions of Title 10 of the Code of Federal Regulations (10 CFR), Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste.” According to 10 CFR 72.42, the initial licensing term may be up to 40 years, after which the license may be renewed for periods up to 40 years. The requirements for license renewal include submitting to the NRC time-limited aging analyses (TLAAs) to demonstrate that structures, systems, and components (SSCs) important to safety will continue to perform their intended function during the period of extended operation and a description of aging management programs (AMPs) to address material degradation issues that could affect the SSCs. Staff guidance for the review of TLAAs and AMPs is found in NUREG-1927, “Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance.”

Staff in the NRC Office of Nuclear Materials Safety and Safeguards (NMSS) is currently reviewing a number of dry cask storage system (DCSS) license renewal applications, with several more expected over the next few years. The NMSS staff has recognized the need for additional staff guidance to enhance the effectiveness and efficiency of the review process. Specifically, multiple rounds of requests for additional information and a significant amount of staff time have been needed to identify relevant aging-related degradation issues and to determine the appropriate TLAAs and AMPs to address those issues.

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

The objective of this task order is to obtain technical and editorial support for the development of the Managing Aging Processes in Storage (MAPS) Report. The MAPS Report will provide additional guidance to the NRC staff in reviewing license renewal applications for dry storage of spent nuclear fuel and will serve as the dry storage equivalent to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report." The GALL Report has been a well-established part of the regulatory framework for reactor license renewal for over 10 years. Similar to the GALL Report, the MAPS Report will provide a generic evaluation of licensee's dry cask storage systems to identify aging effects requiring management and acceptable AMPs and TLAAs to address those aging effects.

### **4. SPECIFIC TASKS**

#### **Task 1 Attend Kick-off Meeting**

The Contractor shall participate in a kick-off meeting with the Task Order (TO) Contracting Officer's Representative (COR) and other NRC technical staff to discuss the scope of work, expectations, project management, deliverables, and performance requirements of the task order. The kick-off meeting shall be held within five (5) working days of task order award.

The Contractor shall prepare a written summary of the meeting that includes, at a minimum, the following information: (1) identification of meeting participants from the NRC and Contractor, (2) minutes of the meeting that clearly describe the substance of the meeting, and (3) any action items and decisions from the meeting.

#### **Task 2 Develop Draft Report on Managing Aging Processes in Storage**

The Contractor shall develop a draft report in NUREG format that will identify the aging effects requiring management for dry cask storage systems and appropriate AMPs and TLAAs to address those aging effects. In developing the information to be included in the report, the Contractor shall review design basis documentation on storage systems publicly available in ADAMS, review the technical literature on material degradation mechanisms, and perform other technical analyses, as needed, to identify the aging effects that could challenge the function of storage system SSCs in the period of the renewed license.

The Contractor shall incorporate into the draft report AMPs, TLAAs, and aging management tables (AMTs) that are provided by the TO COR. The TO COR will also provide to the Contractor the Argonne National Laboratory (ANL) Report, "Managing Aging Effects on Dry Cask Storage Systems for Extended Long-Term Storage and Transportation of Used Fuel" in Microsoft Word format. To avoid duplication of effort, the contractor shall extract and incorporate into the draft report all applicable factual information from the ANL Report. Table 1 at the end of this task description identifies the minimum information the Contractor shall include in the draft report.

The Contractor shall attribute work to the NRC, CNWRA, and ANL, as applicable, in the draft report. The Contractor shall ensure that the information in the draft report, including all cited references, are publically available.

The Contractor shall submit a draft MAPS Report no later than the end of calendar year 2015. The scope of the draft report shall be based upon the system-specific AMTs, TLAAs, and AMPs that the TO COR will provide to the Contractor no later than 60 calendar days prior to the deliverable due date, or as otherwise agreed upon by the COR and the contractor (e.g., the report shall include descriptions of only those storage systems for which the NRC provides corresponding AMTs). The contractor shall incorporate all comments provided by the TO COR into the subsequent revision of the draft report. Additional aging management tables and accompanying text should be provided to the NRC in MS Word format for incorporation by NRC staff into the draft MAPS report. The contractor shall assist the NRC in addressing public comments on the draft MAPS report as needed and develop an appendix for the MAPS report documenting the comments and responses. The NRC may also request CNWRA assistance in harmonizing comments received on the NUREG-2224, Dry Storage and Transportation of High Burnup Spent Nuclear Fuel, Draft for Comment, with the MAPS report.

<b>Table 1 – Draft Report Minimum Information</b>	
<b>Report Sections</b>	<b>Description</b>
Introduction	An introduction on the purpose of the report and how it is to be used
Definitions	Descriptions of terms used in the report narrative and aging management tables
Technical Basis	Technical basis for the aging effects identified in the aging management tables
System Descriptions	Narrative description and system drawings for each dry cask storage system within the scope of the report (as defined by the systems for which the TO COR has provided aging management tables to the Contractor)
AMTs	System-specific tables that identify subcomponents, materials of construction, environments, applicable aging effects, and the aging management approach (i.e., AMPs and TLAAs)
AMPs	A description of aging management programs that provide an acceptable approach to managing the aging effects described in the aging management tables
TLAAs	A description of time-limited aging analyses that demonstrate the capability of components to maintain their intended function throughout the period of the renewed license

### **Task 3 Meeting Support**

As required by the TO COR, the Contractor shall support meetings with the NRC at which the products described in Task 2 will be discussed, including the project status, any technical issues that may be identified by the NRC or Contractor, and clarification of NRC expectations. Support requested by the TO COR may include preparation of materials for distribution at the meetings and/or participating in the meeting via teleconference or in person. Anticipated travel is described in Section 11.1. This support will include attendance at any public meetings which will be held regarding the MAPS report, either in person or via teleconference, as well as addressing comments received from those meetings. The contractor shall assist in authoring and presenting papers at professional conferences that the NRC identifies as opportunities to bring awareness of the report to the technical community. **APPLICABLE DOCUMENTS AND STANDARDS**

The Contractor shall prepare reports under this TO in accordance with the most recent guidelines for NUREG-formatting. As these guidelines are subject to change, the TO COR may provide updated information and/or guidance to the Contractor throughout the period of performance of the TO.

The following documents are suggested as informational references:

(a) NUREG-1379, Revision 2, "NRC Editorial Style Guide"

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1379/r2/>

(b) NUREG-0650, Revision 2, "Preparing NUREG-Series Publications"

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0650/>

(c) NUREG-0544, Revision 5, "NRC Collection of Abbreviations"

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0544/r4/>

(d) Management Directive 3.7, "NUREG-Series Publications"

<http://www.nrc.gov/reading-rm/doc-collections/management-directives/volumes/vol-3.html>

e) The latest edition of the U.S. Government Printing Office Style Manual: An official guide to the form and style of Federal Government printing (available to purchase from the U.S. Government Printing Office online bookstore at <http://bookstore.gpo.gov> or to view online at <http://www.gpoaccess.gov/stylemanual/index.html>)

(f) Nuclear standards such as ANSI Z39.18-1987, "American National Standard, Scientific and Technical Reports," and the "Glossary of Terms in Nuclear Science and Technology," by the American Nuclear Society (available from the standards organizations or public libraries)

(g) The latest edition of The Chicago Manual of Style: The Essential Guide for Writers, Editors, and Publishers published by the University of Chicago Press (available online or from book stores or public libraries)

(h) The NRC’s plain language guidelines

<http://www.nrc.gov/public-involve/open/plain-writing/nrc-philosophy.html>

## 5. DELIVERABLES AND DELIVERY SCHEDULE

Deliverable Number	Deliverable and Acceptance Criteria (AC)	Deliverable Due Date
1	Task 1: Kick-off Meeting Minutes  AC: Meeting minutes are complete and contain required content	Completed
2	Task 2: Draft MAPS Report  AC: Report contains the required content and follows the NUREG format	Completed
3	Task 3: Submit additional Aging Management Tables and accompanying background text in MS Word format	NLT 2-28-2017
4	Task 4: Develop appendix for MAPS report, which addresses public comments	NLT 06-30-2018
5	Task 5: Make edits to the MAPS report to be consistent with NUREG-2224 (draft for comment)	NLT 09-28-2018
6	Monthly Letter Status Report per Sections F.3 and F.4 of the base contract  AC: MLSR is complete and contains all required information.	NLT 20 <sup>th</sup> day of the Month

All deliverables shall include the following identifying information:

Contract No.

Task Order No.

The TO COR will review all draft deliverables (and coordinate any internal NRC staff review and external stakeholder input, if needed) and provide comments back to the Contractor. When mutually agreed upon between the Contractor and the TO COR, the Contractor may submit preliminary or partial drafts to help gauge the Contractor's understanding of the particular work requirement.

The deliverables shall include only publicly available information.

The deliverables shall be provided electronically in Microsoft Word (with no restrictions on document editing) and in hard copy (upon request) to the TO COR.

The TO COR will acknowledge receipt of deliverables by e-mail.

## **6. REQUIRED LABOR CATEGORIES (Except for Information Technology Services)**

Professional staff proposed for the task order shall be familiar with DCSS designs and knowledgeable about the technical aspects of aging management of SSCs important to safety. Specific technical expertise is required for the following areas: materials engineering, mechanical engineering, structural engineering, and nuclear engineering. Staff shall also be familiar with NRC regulatory processes for licensing of dry storage (10 CFR, Part 72) and, preferably, requirements for reactor license renewal under 10 CFR, Part 54.

The Contractor shall assign a project manager who is experienced with overseeing multidisciplinary teams and has strong organizational and communication skills. The project manager shall oversee the effort and ensure the timely submittal of accurate and complete deliverables.

## **7. GOVERNMENT-FURNISHED PROPERTY**

The TO COR will provide copies of the following reports to the Contractor after TO award:

- ANL Report, "Managing Aging Effects on Dry Cask Storage Systems for Extended Long-Term Storage and Transportation of Used Fuel"
- Staff reviewed AMTs, AMPs, and TLAAs
- Other information/reports as need by the Contractor to undertake the tasks described in Section 4.0.

## **8. PERIOD OF PERFORMANCE**

The period of performance is task order award through September 28, 2018.

## **9. PLACE OF PERFORMANCE**

The work to be performed under this TO shall be primarily performed at the Contractor's site. The contractor may be required to attend meetings at NRC Headquarters in Rockville, Maryland.

## **10. SPECIAL CONSIDERATIONS**

### **10.1 TRAVEL**

Travel related to this effort requires the prior written approval by the TO COR.

The following travel is anticipated and included for cost estimating purposes:

Six, two-person, three-day trips to NRC Headquarters in Rockville, Maryland, to attend meetings per Task 3 (2 meetings per FY 16-18)

Two, two-person, five-day trips to professional conferences in the US in order to present contents and technical information found in the MAPS report.

At the discretion of the TO COR, meetings may be conducted at the Contractor's facility or via telephone or video conference.

### **10.2 SECURITY**

Work performed under this task order will be unclassified.