

2. AMENDMENT/MODIFICATION NO. P00001	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. RES-23-0336	5. PROJECT NO. (If applicable) EWC
6. ISSUED BY US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-07B20M WASHINGTON DC 20555-0001	CODE NRCHQ	7. ADMINISTERED BY (If other than Item 6)	CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) SOUTHWEST RESEARCH INSTITUTE ATTN PAUL MALDONADO 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. 31310023D0004 31310023F0034
CODE    PB11V1KH3KV4	FACILITY CODE	10B. DATED (SEE ITEM 13) 03/30/2023

**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 electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE 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 letter or electronic communication, provided each letter or electronic communication 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)      Net Increase: [REDACTED]  
 2023-X0200-ADVRX-60-60D001-60B107-1061-1A-6-220-255B-1A-6-220-1061-25.5

**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 data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: 52.243-2 CHANGES - COST-REIMBURSEMENT. (AUG 1987) - ALTERNATE I (APR 1984)
	D. OTHER (Specify type of modification and authority)

**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.)  
 This action definitizes this task order issued on 03/30/2023 as a placeholder to hold the minimum guarantee under IDIQ No. 31310023D0004, for the project titled, "Technical Assessment of Waste Management Options and Guidance Development for Advanced Reactor Fuel Cycles," for which a Statement of Work and applicable clauses are incorporated. Therefore, the total amount obligated for this task order is [REDACTED] minimum guarantee plus an additional [REDACTED] for this requirement). The period of performance start date will remain 03/30/2023, however the effective date for this requirement is 09/22/2023.  
 Task Order Ceiling (Base and All Options): \$874,523  
 Task Order Exercised Ceiling: [REDACTED]  
 Task Order Obligated Amount: [REDACTED]  
 Period of Performance: 03/30/2023 to 03/29/2025

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	16B. UNITED STATES OF AMERICA
_____ (Signature of person authorized to sign)	[REDACTED] (Signature of Contracting Officer)
15C. DATE SIGNED	16C. DATE SIGNED 09/20/2023

Section B - Supplies or Services/Prices was added and reads as follows.

**B - Supplies or Services/Prices**

**B.1 BRIEF PROJECT TITLE AND WORK DESCRIPTION (AUG 2023)**

(a) The title of this project is: Technical Assessment of Waste Management Options and Guidance Development for Advanced Reactor Fuel Cycles

(b) Summary work description: The overall objective of this task order is to obtain technical assistance from the contractor to support the NRC staff with (1) conducting a technical assessment of continued storage options for MSR salt waste; (2) understanding technical information and guidance needs for salt waste processing; (3) obtaining further insights into Advanced Non-Light Water Reactor (ANLWR) waste management through a workshop; and (4) developing guidance for ANLWR fuel types.

**B.2 CONSIDERATION AND OBLIGATION—COST-PLUS-FIXED-FEE ALTERNATE I (AUG 2023)**

(a) The base and all option(s) value (total contract value) is: \$874,523 of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which [REDACTED] represents the fixed- fee.

(b) The base and exercised option(s) value is [REDACTED] of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which [REDACTED] represents the fixed- fee.

(c) There shall be no adjustment in the amount of the Contractor's fixed fee.

(d) The amount currently obligated by the Government with respect to this contract is [REDACTED] of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which [REDACTED] represents the fixed- fee.

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

(f) In accordance with FAR 52.216-8 - Fixed Fee, it is the policy of the NRC to withhold payment of fee after payment of 85 percent of the fee has been paid in order to protect the Government's interest. The amount of fixed-fee withheld from the contractor will not exceed 15 percent of the total fee or \$100,000, whichever is less. Accordingly, the maximum amount of fixed-fee that may be held in reserve is [REDACTED]

(g) There shall be no adjustment in the amount of the Contractor's fixed fee.

**B.3 PRICE/COST SCHEDULE**

CLIN	Description	Est Cost	Fixed Fee	Total Cost Plus Fixed Fee
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
			TOTAL	[REDACTED]

TOTAL	\$874,523

DESCRIPTION	Base Task	Option Task 4	Option Task 5	Option Task 6	Total
					\$ 874,523

Section C - Description/Specifications was added and reads as follows.

**C - Description/Specifications**

**C.1 STATEMENT OF WORK**

**1. Project Title**

Technical Assessment of Waste Management Options and Guidance Development for Advanced Reactor Fuel Cycles

**2. Background**

With the increased activities in the development of commercial reactors using non-light water reactors (LWR) fuel, the NRC staff needs to have an understanding of the potential challenges associated with the storage and transportation of advanced reactor fuel types and their wastes, to be prepared to undertake appropriate regulatory actions (e.g., revisions to guidance documents and regulations). A potential challenge is the technology for providing canisters and casks to be used for long-term storage and transportation of the waste from these new fuel types such as metal fuel, TRISO pebbles, and molten salt.

Salt waste management from fluid-fueled molten salt reactors in particular represents a fundamental challenge to the established infrastructure regarding managing radioactive waste, including spent fuel. Salts are highly hygroscopic, therefore will require active management after

exiting the reactor, or immobilization for long term storage. Additionally, some proposed salts for use in these reactors contain beryllium (Be), which is a known toxic element and will need to be carefully managed. Additionally, salts may need to be processed to separate out the various constituents depending on the waste management strategy; for example, the salt may undergo a dehalogenation process to allow better encapsulation of the radioisotopes in a vitrified waste form (S. Tan, R. J. Hand, Incorporation and Phase Separation of Cl in Alkaline Earth Aluminosilicate Glasses, J. Nucl. Mat. 507 (2018) 135).

With regard to molten salt reactors, there is no direct experience with converting the used salt into waste forms. In the case of the molten salt reactor experiment (MSRE), at shutdown, the fuel salt (LiF-BeF<sub>2</sub>-ZrF<sub>4</sub>-UF<sub>4</sub>) was drained into three metal drain tanks in the late 1960's and has been actively managed since then.

MSR waste management potentially represents a fundamental challenge to the established infrastructure. When considering the suitable waste form that needs to be used, several characteristics of the waste need to be considered:

- decay heat;
- concentrations of total halogen, alkali, alkaline earths, rare earths, transition metals, U, Pu, and other actinides;
- ratios of different halogens (e.g., Cl:F:I) and alkalis (e.g., Li:Na:K:Cs) and, to a lesser extent, alkaline earths, rare earths, and transition metals;
- concentration of long-lived isotopes (e.g., I-129, Cl-36, Se-79, Tc-99, Pu-242, Np-237); and
- fissile content (e.g., U-233, U-235, Pu-239, Pu-241).

Waste management will likely be unique to a particular reactor design, depending on the composition of the salt(s), the length of time in the reactor, and the fission products generated and their concentrations. The actual waste that will require subsequent treatment following MSR operation could vary significantly. However, with regard to waste forms, there are some high-level characteristics that the waste forms should consist of PNNL-30739 (S.T. Arm, D. E Holcomb, R. L. Howard and B. Riley, Status of Fast Spectrum Molten Salt Reactor Waste Management Practice, PNNL-30739, 2020) lists a number of considerations for specific waste forms. These should be addressed in the assessment:

- *Containment* - refers to the retention of radioactive material in such a way that it is effectively prevented from becoming dispersed into the environment.
- *Criticality control* - development of waste forms with integral criticality control should be considered, including consideration of moderator exclusion functions.
- *Chemical and physical durability* - Consideration should be given to the waste form's ability to withstand the effects of chemically induced processes such as corrosion, dissolution, phase transformations, as well as to maintain its configuration under expected mechanical loads during long term storage.
- *Thermal considerations* - The thermal power output of the packaged waste forms should be limited so that associated detrimental changes to physical, chemical and mechanical properties of the waste form, storage and transportation system components, waste package components, other engineered barriers and repository components can be addressed and mitigated.

### 3. Objective

The overall objective of this task order is to obtain technical assistance from the contractor to support the NRC staff with the following:

1. Conducting a technical assessment of continued storage options for MSR salt waste;
2. Understanding technical information and guidance needs for salt waste processing;
3. Obtaining further insights into Advanced non-LWR (ANLWR) waste management through a workshop; and
4. Developing guidance for ANLWR fuel types.

This work will provide NRC staff insights into characteristics of various waste forms and loading with a view to informing future safety and licensing reviews related to storage and transportation of ANLWR waste and waste forms. In addition, the work will result in regulatory guidance to support licensing and certification of spent fuel storage and transportation options.

#### **4. Scope of Work**

Technical assistance required under this task order is identified below and driven by NRC's activities and priorities.

The scope of work under this task order will focus on technical considerations associated with waste processing and waste forms that could be utilized to manage salt wastes from molten salt reactors (both fluoride-fueled thermal and chloride-fueled fast reactors). This work will build on insights identified in previous analyses regarding molten salt reactor waste and electrochemical reprocessing. These documents will be identified and, to the extent practicable, provided to the contractor by the COR electronically. There are optional tasks that may be exercised that extend the analysis to other ANLWR fuel types including TRISO and metal fuels with the aim of developing guidance in these areas. Any electronic content created by the contractor for sharing with the public shall be Section 508 Conformant.

The contractor shall perform the following tasks:

##### **Task 1. Identification of Information Needs and Guidance Regarding Salt Processing Operations**

The contractor shall identify potential scenarios for molten salt reactor back-end processing techniques and an assessment of these in the context of the current NRC regulatory structure (i.e., Part 70 and NUREG-1520), with the aim of highlighting to stakeholders potential licensing considerations for different salt processing options. The contractor should also identify methodologies to address any information needs. This would build on a previous report developed by ORNL for the NRC, "Review of Hazards Associated with Molten Salt Reactor Fuel Processing Operations," and other reports as directed by the COR. The contractor shall prepare a technical letter report (TLR) that documents the analyses and results from this task.

##### **Task 2. Technical Assessment of Continued Storage Options**

Molten salt reactor vendors may choose to actively manage salt waste (similar to how the MSRE salt waste was stored) or convert the salt to an interim chemical form. Based on the types of salt waste that needs to be managed (both fluoride and chloride salts), The contractor shall identify methods that could be used for continued storage of salt waste. The contractor

should provide a thorough rationale for the choices, including considerations such as waste loading and composition of the stored salt, and, in the case of fluoride and chloride salts, the potential for radiolysis. The contractor should highlight any potential safety considerations and technical gaps pertaining to safe interim storage of salt wastes.

The rationale should address the benefits of using these storage methods and as appropriate, typical composition, physical, chemical, and mechanical properties; alteration in characteristics as a result of fabrication processes and interim storage. Any known information regarding radiation effects and decay heat should also be documented, as well as maximum loading of halogens, fissile material and fission products. Waste forms are not load bearing or structural materials; they must simply reside in a waste canister for a very long time.

The contractor shall perform a technical assessment of the interim waste forms. This assessment should document and/or answer the following:

- (i) Factors that could affect the long-term performance of the interim waste form, including composition, fission products and environmental factors such as water ingress and/or temperature fluctuations
- (ii) The potential for phase separation. Can the waste form separate out into layers, or some sort of stratified solid?
- (iii) Is there a need for dehalogenation for the waste form to be suitable?
- (iv) What is the effect of fluctuations in temperature and is it possible to get thermal fracturing?
- (v) What is known about the thermal stress effects that are caused by decaying self-heating rates and local temperature gradients if there are waste form inhomogeneities?
- (vi) Compatibility between some of the proposed waste forms and the canister/container in which they will be stored.
- (vii) Any cracking of waste form due to radiation amorphization?

The contractor shall prepare a TLR that documents the analyses and results from this task.

### **Task 3. Support to Workshop on ANLWR Waste Management**

CNWRA shall assist the NRC staff in conducting a public workshop involving stakeholders such as researchers, vendors, regulators, and other Federal agencies regarding the waste management of ANLWR spent fuels. Support shall include but is not limited to as directed by the COR identifying and contacting potential participants, identifying recommended topics for the workshop, presenting topics, and preparing workshop materials. It is the goal of the NRC to hold a virtual workshop in May/June 2024. The focus will include potential salt processing technologies, waste forms, canisters, potential non-destructive examination and monitoring technologies and cover salt, TRISO and metal fuel waste. The outcomes of the workshop should inform Tasks 1 and 2 (and Tasks 4 through 6 if executed). Additionally, other action items relating to waste management of advanced fuel cycles in terms of NRC's mission should also be identified by the contractor in discussion with the COR. The contractor shall prepare a meeting summary from the workshop that will help inform the decision making related to the action items.

**The below option tasks maybe exercised via a modification to the task order provided there is sufficient exercised ceiling under the IDIQ.**

**Task 4. Implementing Recommendations Generated on Molten Salt under 31310018D0001/ 31310022F0082 (OPTION)**

The contractor shall provide subject matter expertise to assist NRC with implementing any recommendations identified under Task Order 31310022F0082 to update guidance pertaining to molten salt reactor waste management; for example, amending guidance such as NUREG-2215 and NUREG-2216. This task shall also support new guidance development, as needed.

**Task 5. Implementing Recommendations on Metal Fuel Generated under 31310018D0001/31310018F0113 (OPTION)**

The contractor shall provide subject matter expertise to support the NRC in using recommendations from previous reports generated on spent fuel storage and transportation to identify needed updates to regulatory guidance, particularly NUREG-1520, NUREG-2215 and NUREG-2216, and any technical basis development. This task shall also support new guidance development, as needed. This task also includes a review of information developed by NRC/RES for metal fuels as part of the SCALE and MELCOR codes for fuel cycle facilities and storage and transportation.

**Task 6. Implementing Recommendations on TRISO Fuel Generated under 31310018D0001/ / 31310018F0113 (OPTION)**

The contractor shall provide subject matter expertise to support the NRC in using recommendations identified in previous reports generated on spent fuel storage and transportation to identify needed updates to regulatory guidance, particularly NUREG-1520, NUREG-2215 and NUREG-2216, including technical basis development. This task shall also support new guidance development, as needed. This task also includes a review of information developed by NRC/RES for TRISO fuels as part of the SCALE and MELCOR codes for fuel cycle facilities and storage and transportation. This task also includes a review of recent licensing actions for TRISO fuel, particularly the TRISO-X fuel manufacturing facility.

**5. Reporting Requirements**

Monthly Letter Status Report (MLSR)

The contractor shall provide a Monthly Letter Status Report (MLSR) per Section C.4 of the Base Contract. If no work was performed during the prior month, the contractor shall not prepare and submit an MLSR. The MLSR shall be provided electronically to the COR and the Contracting Officer (CO) by the 20th calendar day of the following month.

**6. Deliverables and Delivery Schedule**

The contractor shall submit the following deliverables under this task order electronically:

TASK	DELIVERABLE	DUE DATE
1	Draft Technical Letter Report (TLR) documenting salt processing technologies and information needs	NLT than 4 months after start of Task 1

	Draft Final TLR documenting salt processing technologies and information needs that incorporates NRC comments and insights from workshop.	NLT than 2 months after workshop (Task 3)
	Final TLR on salt processing technologies and information needs incorporating final comments from NRC	2 weeks after receiving final comments from NRC
2	Draft TLR documenting technical assessment of continued storage options	NLT than 6 months after start of Task 2
	Draft Final TLR documenting technical assessment of continued storage options that incorporates NRC comments and insights from workshop.	NLT than 2 months after workshop (Task 3)
	Final TLR on technical assessment of continued storage options incorporating final comments from NRC	2 weeks after receiving final comments from NRC
3	Draft Workshop Summary	3 months after workshop
	Final Draft Workshop Summary incorporating final comments from NRC	2 weeks after receiving final comments from NRC
4 OPTION	Updated and/or New Guidance pertaining to recommendations in 31310018D0001/1310022F0082 regarding molten salt	TBD upon exercise of option
5 OPTION	Updated and/or New Guidance Input pertaining to recommendations in CNWRA 31310018D0001/ 31310018F0113 regarding metal fuel	TBD upon exercise of option
6 OPTION	Updated and/or New Guidance Input pertaining to recommendations in 31310018D0001/31310018F0113 regarding TRISO fuel	TBD upon exercise of option
All	MLSR per Section 5	20th Calendar day of the following month. NOTE: If now work was performed during the prior calendar month, the Contractor shall not prepare and submit a MLSR

**7. Section 508 – Information and Communication Technology Accessibility**



## 7.1. Introduction

In December 2000, the Architectural and Transportation Barriers Compliance Board (Access Board) pursuant to Section 508(2)(A) of the Rehabilitation Act Amendments of 1998, established electronic and information technology (EIT) accessibility standards for the federal government.

The Standards for Section 508 of the Rehabilitation Act (codified at 36 CFR § 1194) were revised by the Access Board, published on January 18, 2017 and minor corrections were made on January 22, 2018, effective March 23, 2018.

The revised 508 standards have replaced the term EIT with ICT (Information and Communication Technology). ICT is information technology (as defined in [40 U.S.C. 11101\(6\)](#)) and other equipment, systems, technologies, or processes, for which the principal function is the creation, manipulation, storage, display, receipt, or transmission of electronic data and information, as well as any associated content. Examples of ICT include, but are not limited to: Computers and peripheral equipment; information kiosks and transaction machines; telecommunications equipment; customer premises equipment; multifunction office machines; software; applications; Web sites; videos; and electronic content.

**Note:** Applicable electronic content includes:

1. *Public Facing* content
2. *Agency Official Communication*. Electronic content that is not public facing, when such content constitutes official business and is communicated through one or more of the following:
  - a. An emergency notification;
  - b. An initial or final decision adjudicating an administrative claim or proceeding;
  - c. An internal or external program or policy announcement;
  - d. A notice of benefits, program eligibility, employment opportunity, or personnel action;
  - e. A formal acknowledgement of receipt;
  - f. A survey questionnaire;
  - g. A template or form;
  - h. Educational or training materials; or
  - i. Intranet content designed as a Web page.

The text of the Standards for Section 508 of the Rehabilitation Act can be found in 36 CFR § 1194.1 and in Appendices A, C and D to Part 1194 (<https://www.ecfr.gov/current/title-36/chapter-XI/part-1194?toc=1>).

## 7.2. General Requirements

To help the NRC comply with Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794d) (Section 508), the Contractor shall ensure that its deliverables (both products and services) within the scope of this contract/order are

1. in conformance with, and
2. support the requirements of the Standards for Section 508 of the Rehabilitation Act, as set forth in 36 CFR § 1194.1 and in Appendices A, C and D to Part 1194.

3. Applicable Provisions of the Standards for Section 508 of the Rehabilitation Act

The following is an outline of the standards that identifies what provisions are always applicable and which ones may be applicable.

Applicable to the Contract/Order?	Provision of 36 CFR Part 1194
Yes	1) Revised 508 Standards
Yes	a) <a href="#">Appendix A to Part 1194 – Section 508 of the Rehabilitation Act: Application and Scoping Requirements</a>
Yes	i) 508 Chapter 1: Application and Administration-sets forth general application and administration provisions
Yes	ii) 508 Chapter 2: Scoping Requirements - containing scoping requirements (which, in turn, prescribe which ICT – and, in some cases, how many – must comply with the technical specifications)
Yes (see the Exceptions section below)	(1) E202 General Exceptions
No (see the Other section below)	(2) E203.2 User Needs
Yes (see the Accessibility of Electronic Content section below)	(3) E205 Electronic Content
See below	b) <a href="#">Appendix C to Part 1194 – Functional Performance Criteria and Technical Requirements</a>
No	i) Chapter 3: Functional Performance Criteria– applies to ICT where required by 508 Chapter 2 (Scoping Requirements) and where otherwise referenced in any other chapter of the Revised 508 Standards
No	ii) Chapter 4: Hardware
No	iii) Chapter 5: Software
Yes	iv) Chapter 6: Support Documentation and Services (applicable to, but not limited to, help desks, call centers, training services, and automated self-service technical support)
Yes	v) Chapter 7: Referenced Standards - the standards referenced here apply to ICT where required by Section 508 Chapter 2 (Scoping Requirements) and where referenced in any other chapter of the Revised 508 Standards
No (see the Legacy ICT section below)	2) <a href="#">Appendix D to Part 1194 – Electronic and Information Technology Accessibility Standards as Originally Published on December 21, 2000</a>

Refer to 508 Chapter 2 (Scoping Requirements) first to confirm what provisions in Appendix C apply in a particular case.

#### 7.4. Exceptions to the Standards

##### 7.4.1. Legacy ICT

Unless a deliverable of this contract/order is identified in this contract/order as Legacy ICT, use by the Contractor of the *Legacy ICT* general exception (section E202.2 of 36 CFR § 1194) shall only be permitted on a case-by-case basis for applicable legacy ICT and with advance written approval from the COR.

#### **7.4.2. National Security Systems**

Based on the definition at [40 U.S.C. 11103\(a\)](#), the *National Security Systems* general exception (section E202.3 of 36 CFR § 1194) is not applicable to this contract/order.

#### **7.4.3. Incidental ICT**

ICT acquired by the Contractor incidental to this contract/order shall not be required to conform to the revised 508 standards.

Note: This only applies when the Contractor is procuring the ICT, only the Contractor personnel will access or use the ICT, and ownership of the ICT will remain with the Contractor upon completion of the contract/order.

#### **7.4.4. ICT Functions Located in Maintenance or Monitoring Spaces**

The Contractor shall confirm with the COR that an ICT deliverable of this contract/order will be located in maintenance or monitoring spaces before assuming that the *ICT Functions Located in Maintenance or Monitoring Spaces* general exception (section E202.5 of 36 CFR § 1194) applies.

Note that this exception does not apply to features of the ICT (such as Web interfaces) that can be accessed remotely, outside the maintenance or monitoring space where the ICT is located.

#### **7.4.5. Undue Burden**

The *Undue Burden* general exception (section E202.6 of 36 CFR § 1194) is not expected to be applicable to work performed by the Contractor. If there are questions about potential application of this exception, please discuss with the CO.

#### **7.4.6. Fundamental Alteration or Best Meets**

If the Contractor wishes to use the *Fundamental Alteration* (section E202.6 of 36 CFR § 1194) or *Best Meets* (section E202.7 of 36 CFR § 1194) general exceptions the Contractor shall do the following:

1. provide the COR with information necessary to support the agency's documentation requirements, as identified in sections E202.6.2 and E202.7.1 of 36 CFR § 1194, respectively
2. request and obtain written approval from the COR for development and/or use, as applicable to the scope of the contract/order, of an alternative means for providing individuals with disabilities access to and use of the information and data, as specified in sections E202.6.3 and E202.7.2 of 36 CFR § 1194, respectively.

### **7.5. Additional Accessibility Requirements**

#### **7.5.1. Notification Due to Impact from NRC Policies, Procedures, Tools and/or ICT Infrastructure**

If and when 1) the Contractor is dependent upon NRC policies, procedures, tools and/or ICT infrastructure for standards-conformant delivery of any of the products or services under this acquisition, and 2) the Contractor is aware that conformance of products or services will be negatively impacted by capability gaps in NRC policies, procedures, tools and/or ICT infrastructure, the Contractor shall inform the COR so that the NRC can both be aware and take corrective action.

### **7.5.2. Accessibility of Electronic Content**

For electronic content (as defined in section E103 of 36 CFR § 1194) deliverables of this contract/order:

1. If a deliverable is either *Public Facing* or *Agency Official Communication* (as defined in sections E103 and E205.3 of 36 CFR § 1194, respectively) and therefore required to be conformant with section E205.4 of 36 CFR § 1194 then
  - a. The NRC may choose, for its own reasons, to take responsibility for the final conformance of the deliverable or its class of deliverables by explicitly identifying the deliverable or class of deliverables through one of the following means:
    - i. Identified in this contract/order, or
    - ii. Identified in writing to the Contractor by the COR, with a copy to the CO.
2. Otherwise, the NRC may still have a requirement that the deliverable be conformant with section E205.4 of 36 CFR § 1194, but only if the deliverable is explicitly identified in this contract/order as having that requirement.

### **7.5.3. Other**

It is desirable that the Contractor address the applicable provisions of the Revised 508 Standards throughout product and service lifecycles rather than only performing a conformance check toward the end of a process.

If and when the Contractor provides custom ICT development services pursuant to this acquisition, the Contractor shall ensure the ICT products and services fully support the applicable provisions of the Revised 508 Standards prior to delivery and before final acceptance.

If and when the Contractor provides installation, configuration or integration services for ICT products (equipment and/or software) pursuant to this acquisition, the Contractor shall not install, configure or integrate the ICT equipment and software in a way that reduces the level of conformance with the applicable provisions of the Revised 508 Standards.

If and when the scope of this contract/order includes work by the Contractor to collect, directly from NRC employees or the Public, requirements for the procurement, development, maintenance or use of ICT the Contractor shall identify the needs of users with disabilities in conformance to section E203.2.

## **7.6. ICT Accessibility Deliverables**

The Contractor shall provide the following ICT accessibility deliverables, when within the scope of this contract/order.

### **7.6.1. Accessibility Conformance Report (ACR)**

This report shall be submitted for ICT products, systems or application deliverables. A written ACR shall be based on the Voluntary Product Accessibility Template (VPAT®), as specified at <https://www.itic.org/policy/accessibility/vpat> or provide equivalent information. This report has the purpose to document the state of conformance to the Revised 508 Standards for the subject product, system, or application.

### **7.6.2. Supplemental Accessibility Report (SAR)**

This report shall be submitted for ICT products, systems or application deliverables that have been custom developed or integrated by the Contractor to meet contract/order requirements. A written SAR shall contain:

- a) Description of evaluation methods used to produce the ACR, to demonstrate due diligence in supporting conformance claims;
- b) Information on core functions that can't be used by persons with disabilities; and,
- c) Information on how to configure and install the ICT item to support accessibility

### **7.6.3. ICT Support Documentation**

Where the contractor provides support documentation or services for ICT, the contractor shall include the following deliverables:

- a) Documentation of features that help achieve accessibility and compatibility with assistive technology for persons with disabilities (as required by section 602 of 36 CFR § 1194);
- b) For authoring tools that generate content (documents, reports, videos, multimedia, web content, etc.): Information on how the tool enables the creation of accessible electronic content that conforms to the Revised 508 Standards (see section 504 of 36 CFR § 1194), including the range of accessible user interface elements the tool can create;
- c) For platform software (as defined in section E103.4 of 36 CFR § 1194) and software tools that are provided by a platform developer: Documentation on the set of accessibility services that support applications running on the platform to interoperate with assistive technology, as required by section 502.3 of 36 CFR § 1194.

### **7.6.4. ICT Support Documentation (Alternate Formats)**

Where the contractor provides support documentation or services for ICT, the contractor shall (upon request) provide (as required by section 602.4 of 36 CFR § 1194) alternate formats for non-electronic support documentation.

### **7.6.5. Electronic Content Accessibility Checklist**

If the requirement is specified elsewhere in this acquisition that testing of electronic content be performed, the Contractor shall submit a completed accessibility checklist to document the conformance of the tested content. The checklist shall summarise the subject deliverable's state of conformance to the applicable WCAG 2.0 Level A and AA Success Criteria (as referenced in section E205.4 and 702.10 of 36 CFR § 1194).

### **7.6.6. Communication to ICT Users**

When the Contractor is providing ICT support services (including, but not limited to help desks, call centers, training services, and automated self-service technical support), any communication to ICT users shall accommodate the communication needs of individuals with disabilities (see section 603.3 of 36 CFR § 1194) and include information on accessibility and compatibility features (see 603.2 of 36 CFR § 1194).

## **8. Personnel Qualifications**

Key Personnel will be limited to the Project Manager, if they contribute substantively to the task order, and the Principal Investigator(s). No more than one-third of the Key Personnel designated

on a given task order (i.e., Project Manager and/or Principal Investigators) may be external employees of the CNWRA (i.e., an SwRI employee not assigned to CNWRA, subcontractor, or a consultant).

The key personnel working on this project should collectively have advanced knowledge in the areas of material science, corrosion science, chemistry, radionuclide transport, health physics, and criticality.

The key personnel should have experience on conducting analyses and performance assessment of waste form(s) and supporting development of regulatory approaches and guidance documents.

The key personnel should also be familiar with the requirements for licensing and certification of transportation packages and dry storage systems, per 10 CFR Part 71 and 10 CFR Part 72 requirements, and the fuel cycle regulations at 10 CFR Part 70. Additionally, key personnel should be familiar with the Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel (NUREG-2157).

## **9. Place of Performance**

The work will take place at the contractor's site. Teleconferences and videoconferences shall be conducted with the NRC staff, as needed.

## **10. Travel**

No travel is expected to occur during the task order period of performance.

## **11. Applicable Publications (Current Editions)**

The contractor shall comply with the following applicable regulations, publications, manuals, and local policies and procedures:

NRC Editorial Style Guide (NUREG-1379, Revision 3)

## **12. Security Requirements**

Work under this task order will be UNCLASSIFIED. This task order does not involve the contractor to access, possess, store, or generate Sensitive Unclassified Information (SUNSI).

Section D - Packaging and Marking was added and reads as follows.

### **D - Packaging and Marking**

#### **D.1 PACKAGING AND MARKING (AUG 2023)**

(a) The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Surface Transportation Board, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation.

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

(c) Additional packaging and/or marking requirements are as follows: N/A.

## **D.2 BRANDING (AUG 2023)**

As directed by the COR, the Contractor shall use the statement below in any publications, presentations, articles, products, or materials provided under this contract/order if the work performed is funded entirely with NRC contract funds.

Work procured by the U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Regulatory Research , under Contract/order number 31310023D0004/31310023F0034.

Section E - Inspection and Acceptance was added and reads as follows.

### **E - Inspection and Acceptance**

#### **E.1 INSPECTION AND ACCEPTANCE BY THE NRC (AUG 2023)**

Unless otherwise specified, inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the NRC Contracting Officer's Representative (COR) at the destination, accordance with FAR 52.247-34 - F.o.b. Destination.

Section F - Deliveries or Performance was added and reads as follows.

### **F - Deliveries or Performance**

#### **F.1 PLACE OF DELIVERY (AUG 2023)**

Unless otherwise specified, deliverables to be provided under this contract, with all charges paid by the Contractor, shall be delivered to:

a. Contracting Officer's Representative (COR)  
Refer to Section H.3 2052.215-71 CONTRACTING OFFICER REPRESENTATIVE AUTHORITY.  
(OCT 1999)

b. Contracting Officer (CO) (1 electronic copy)

#### **F.2 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (AUG 2023)**

This order shall commence on September 22, 2023 and will expire on March 29, 2025.

Section H - Special Contract Requirements was added and reads as follows.

### **H - Special Contract Requirements**

#### **H.1 ANNUAL AND FINAL CONTRACTOR PERFORMANCE EVALUATIONS (AUG 2023)**

Annual and final evaluations of contractor performance under this contract will be prepared in accordance with FAR Subpart 42.15, "Contractor Performance Information," normally at or near the time the contractor is notified of the NRC's intent to exercise the contract option. If the multi-

year contract does not have option years, then an annual evaluation will be prepared annually. Final evaluations of contractor performance will be prepared at the expiration of the contract during the contract closeout process.

The Contracting Officer will transmit the NRC Contracting Officer's Representative's (COR) annual and final contractor performance evaluations to the contractor's Project Manager, unless otherwise instructed by the contractor. The contractor will be permitted thirty (30) calendar days to review the document and submit comments, rebutting statements, or additional information.

Where a contractor concurs with, or takes no exception to an annual performance evaluation, the Contracting Officer will consider such evaluation final and releasable for source selection purposes. Disagreements between the parties regarding a performance evaluation will be referred to an individual one level above the Contracting Officer, whose decision will be final.

The Contracting Officer will send a copy of the completed evaluation report, marked "Source Selection Information", to the contractor's Project Manager for their records as soon as practicable after it has been finalized. The completed evaluation report also will be used as a tool to improve communications between the NRC and the contractor and to improve contract performance.

The completed annual performance evaluation will be used to support future award decisions in accordance with FAR 42.1502 and 42.1503. During the period the information is being used to provide source selection information, the completed annual performance evaluation will be released to only two parties - the Federal government personnel performing the source selection evaluation and the contractor under evaluation if the contractor does not have a copy of the report already.

## **H.2 2052.215-70 KEY PERSONNEL. (JAN 1993)**

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



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.

(End of Clause)

### **H.3 2052.215-71 CONTRACTING OFFICER REPRESENTATIVE AUTHORITY. (OCT 1999)**

(a) The contracting officer's authorized representative (hereinafter referred to as the COR) for this contract is:

**Name: Wendy Reed**  
**Address: U.S. Nuclear Regulatory Commission**  
**Office of Nuclear Regulatory Research**  
**Washington, DC 20555**  
**Phone: 301-415-7213**  
**E-mail: wendy.reed@nrc.gov**

(b) Performance of the work under this contract is subject to the technical direction of the NRC COR. The term "technical direction" is defined to include the following:

- (1) Technical direction to the contractor which shifts work emphasis between areas of work or tasks, authorizes travel which was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work (SOW) or changes to specific travel identified in the SOW), fills in details, or otherwise serves to accomplish the contractual SOW.
- (2) Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.
- (3) Review and, where required by the contract, approval of technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

(c) Technical direction must be within the general statement of work stated in the contract. The COR does not have the authority to and may not issue any technical direction which:

- (1) Constitutes an assignment of work outside the general scope of the contract.

- (2) Constitutes a change as defined in the "Changes" clause of this contract.
  - (3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.
  - (4) Changes any of the expressed terms, conditions, or specifications of the contract.
  - (5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.
- (d) All technical directions must be issued in writing by the COR or must be confirmed by the COR in writing within ten (10) working days after verbal issuance. A copy of the written direction must be furnished to the contracting officer. A copy of NRC Form 445, Request for Approval of Official Foreign Travel, which has received final approval from the NRC must be furnished to the contracting officer.
- (e) The contractor shall proceed promptly with the performance of technical directions duly issued by the COR in the manner prescribed by this clause and within the COR's authority under the provisions of this clause.
- (f) If, in the opinion of the contractor, any instruction or direction issued by the COR is within one of the categories as defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request the contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.
- (g) Any unauthorized commitment or direction issued by the COR may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.
- (h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect thereto is subject to 52.233-1 - Disputes.
- (i) In addition to providing technical direction as defined in paragraph (b) of the section, the COR shall:
- (1) Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the contracting officer changes in requirements.
  - (2) Assist the contractor in the resolution of technical problems encountered during performance.
  - (3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(4) Assist the contractor in obtaining the badges for the contractor personnel.

(5) Immediately notify the Security Branch, Division of Facilities and Security (SB/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return of any NRC issued badge to SB/DFS within three days after their termination.

(6) Ensure that all contractor employees that require access to classified Restricted Data or National Security Information or matter, access to sensitive unclassified information (Safeguards, Official Use Only, and Proprietary information) access to sensitive IT systems or data, unescorted access to NRC controlled buildings/space, or unescorted access to protected and vital areas of nuclear power plants receive approval of SB/DFS prior to access in accordance with Management Directive and Handbook 12.3.

(7) For contracts for the design, development, maintenance or operation of Privacy Act Systems of Records, obtain from the contractor as part of closeout procedures, written certification that the contractor has returned to NRC, transferred to the successor contractor, or destroyed at the end of the contract in accordance with instructions provided by the NRC Systems Manager for Privacy Act Systems of Records, all records (electronic or paper) which were created, compiled, obtained or maintained under the contract.

(End of Clause)

Section I - Contract Clauses was added and reads as follows.

### **I - Contract Clauses**

#### **I.1 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST. (JAN 1993)**

(a) Purpose. The primary purpose of this clause is to aid in ensuring that the contractor:

(1) Is not placed in a conflicting role because of current or planned interests (financial, contractual, organizational, or otherwise) which relate to the work under this contract; and

(2) Does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described apply to performance or participation by the contractor, as defined in 48 CFR 2009.570-2 in the activities covered by this clause.

(c) Work for others.

(1) Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees under this contract abide by the provision of this clause. If the contractor has reason to believe, with

respect to itself or any employee, that any proposed consultant or other contractual arrangement with any firm or organization may involve a potential conflict of interest, the contractor shall obtain the written approval of the contracting officer before the execution of such contractual arrangement.

(2) The contractor may not represent, assist, or otherwise support an NRC licensee or applicant undergoing an NRC audit, inspection, or review where the activities that are the subject of the audit, inspection, or review are the same as or substantially similar to the services within the scope of this contract (or task order as appropriate) except where the NRC licensee or applicant requires the contractor's support to explain or defend the contractor's prior work for the utility or other entity which NRC questions.

(3) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site, the contractor shall neither solicit nor perform work in the same or similar technical area for that licensee or applicant organization for a period commencing with the award of the task order or beginning of work on the site (if not a task order contract) and ending one year after completion of all work under the associated task order, or last time at the site (if not a task order contract).

(4) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site,

(i) The contractor may not solicit work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate.

(ii) The contractor may not perform work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate, and for one year thereafter.

(iii) Notwithstanding the foregoing, the contracting officer may authorize the contractor to solicit or perform this type of work (except work in the same or similar technical area) if the contracting officer determines that the situation will not pose a potential for technical bias or unfair competitive advantage.

(d) Disclosure after award.

(1) The contractor warrants that to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest as defined in 48 CFR 2009.570-2.

(2) The contractor agrees that if, after award, it discovers organizational conflicts of interest with respect to this contract, it shall make an immediate and full disclosure in writing to the contracting officer. This statement must include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract if termination is in the best interest of the Government.

(3) It is recognized that the scope of work of a task-order-type contract necessarily encompasses a broad spectrum of activities. Consequently, if this is a task-order-type contract, the contractor agrees that it will disclose all proposed new work involving NRC licensees or applicants which comes within the scope of work of the underlying contract. Further, if this contract involves work at a licensee or applicant site, the contractor agrees to exercise diligence to discover and disclose any new work at that licensee or applicant site. This disclosure must be made before the submission of a bid or proposal to the utility or other regulated entity and must be received by the NRC at least 15 days before the proposed award date in any event, unless a written justification demonstrating urgency and due diligence to discover and disclose is provided by the contractor and approved by the contracting officer. The disclosure must include the statement of work, the dollar value of the proposed contract, and any other documents that are needed to fully describe the proposed work for the regulated utility or other regulated entity. NRC may deny approval of the disclosed work only when the NRC has issued a task order which includes the technical area and, if site-specific, the site, or has plans to issue a task order which includes the technical area and, if site-specific, the site, or when the work violates paragraphs (c)(2), (c)(3) or (c)(4) of this section.

(e) Access to and use of information.

(1) If, in the performance of this contract, the contractor obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), the contractor agrees not to:

(i) Use this information for any private purpose until the information has been released to the public;

(ii) Compete for work for the Commission based on the information for a period of six months after either the completion of this contract or the release of the information to the public, whichever is first;

(iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public; or

(iv) Release the information without prior written approval by the contracting officer unless the information has previously been released to the public by the NRC.

(2) In addition, the contractor agrees that, to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat the information in accordance with restrictions placed on use of the information.

(3) Subject to patent and security provisions of this contract, the contractor shall have the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.

(f) Subcontracts. Except as provided in 48 CFR 2009.570-2, the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms contract, contractor, and contracting officer, must be appropriately modified to preserve the Government's rights.

(g) Remedies. For breach of any of the above restrictions, or for intentional nondisclosure or misrepresentation of any relevant interest required to be disclosed concerning this contract or for such erroneous representations that necessarily imply bad faith, the Government may terminate the contract for default, disqualify the contractor from subsequent contractual efforts, and pursue other remedies permitted by law or this contract.

(h) Waiver. A request for waiver under this clause must be directed in writing to the contracting officer in accordance with the procedures outlined in 48 CFR 2009.570-9.

(i) Follow-on effort. The contractor shall be ineligible to participate in NRC contracts, subcontracts, or proposals therefor (solicited or unsolicited) which stem directly from the contractor's performance of work under this contract. Furthermore, unless so directed in writing by the contracting officer, the contractor may not perform any technical consulting or management support services work or evaluation activities under this contract on any of its products or services or the products or services of another firm if the contractor has been substantially involved in the development or marketing of the products or services.

(1) If the contractor under this contract, prepares a complete or essentially complete statement of work or specifications, the contractor is not eligible to perform or participate in the initial contractual effort which is based on the statement of work or specifications. The contractor may not incorporate its products or services in the statement of work or specifications unless so directed in writing by the contracting officer, in which case the restrictions in this paragraph do not apply.

(2) Nothing in this paragraph precludes the contractor from offering or selling its standard commercial items to the Government.

(End of Clause)

**I.2 52.217-7 OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM.  
(MAR 1989)**

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within the period of performance. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(End of clause)