

**ORDER FOR SUPPLIES OR SERVICES**

PAGE OF PAGES  
1 22

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

1. DATE OF ORDER 05/09/2016		2. CONTRACT NO. (If any) NRC-HQ-25-14-E-0005		6. SHIP TO:	
3. ORDER NO. NRC-HQ-20-16-T-0001		4. REQUISITION/REFERENCE NO. NRR-16-0078		a. NAME OF CONSIGNEE US NUCLEAR REGULATORY COMMISSION-	
5. ISSUING OFFICE (Address correspondence to) US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-5E03 WASHINGTON DC 20555-0001				b. STREET ADDRESS MAIL PROCESSING CENTER 4930 BOILING BROOK PARKWAY	
d. CITY ROCKVILLE		e. STATE MD	e. ZIP CODE 20852		

7. TO:		f. SHIP VIA			
a. NAME OF CONTRACTOR ENERGY RESEARCH INC		8. TYPE OF ORDER			
b. COMPANY NAME		<input type="checkbox"/> a. PURCHASE		<input checked="" type="checkbox"/> b. DELIVERY	
c. STREET ADDRESS 6189 EXECUTIVE BLVD		REFERENCE YOUR:		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 ROCKVILLE		e. STATE MD			
9. ACCOUNTING AND APPROPRIATION DATA See Schedule		10. REQUISITIONING OFFICE OFFICE OF NEW REACTORS			

11. BUSINESS CLASSIFICATION (Check appropriate box(es))					12. F.O.B. POINT
<input type="checkbox"/> a. SMALL	<input type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone	
<input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED	<input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM	<input type="checkbox"/> h. EDWOSB			

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

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)
	Task Order 11 Entitled "Technical Review of the License Renewal Application for the University of Massachusetts at Lowell Research Reactor," under Enterprise Wide Contract Number NRC-HQ-25-14-E-0005.  Continued ...					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
21. MAIL INVOICE TO:						\$0.00
a. NAME US NUCLEAR REGULATORY COMMISSION						
b. STREET ADDRESS (or P.O. Box) ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE MAILSTOP O3-E17A						
c. CITY ROCKVILLE		d. STATE MD	e. ZIP CODE 20852-2738			\$193,433.51

22. UNITED STATES OF AMERICA BY (Signature) 		05/09/2016	23. NAME (Typed) MONIQUE B. WILLIAMS TITLE: CONTRACTING/ORDERING OFFICER	
---	--	------------	--	--

AUTHORIZED FOR LOCAL REPRODUCTION  
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (Rev. 2/2012)  
Prescribed by GSA/FAR 48 CFR 53.213(f)

**SUNSI REVIEW COMPLETE**

**MAY 19 2016 ADM002**

**TEMPLATE - ADM001**

**ORDER FOR SUPPLIES OR SERVICES  
SCHEDULE - CONTINUATION**

PAGE NO

2

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

DATE OF ORDER	CONTRACT NO. NRC-HQ-25-14-E-0005	ORDER NO. NRC-HQ-20-16-T-0001
---------------	-------------------------------------	----------------------------------

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>Total Obligated Amount: \$60,000.00                      Base and Exercised Options: \$193,433.51                      Base and All Options: \$193,433.51                      Period of Performance: May 11, 2016 - May 10, 2019</p> <p>Contracting Officer's Representative (COR):                      Eben Allen                      Email: Eben.Allen@nrc.gov                      Phone: (301)415-4246</p> <p>Contractor POC (Business):                      Tracey Mullinix, Contract Administrator                      Email: tlm@eri-world.com                      Phone: (301)881-0866</p> <p>Contractor POC (Technical):                      Dr. Mohsen Kahtib-Rahbar, President                      Email: mkrl@eri-world.com                      Phone: (301)881-0866</p> <p><i>Mohsen Kahtib-Rahbar</i> 5/9/16                      _____                      ERI Authorized Official                      Date</p> <p>Accounting Info:                      2016-X0200-FEEBASED-20-20D006-11-4-178-1082-253A</p>					
TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))					\$0.00	

**TASK ORDER 11 – Unrestricted EWC IDIQ for ERI**

**SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS**

**B.1 PRICE/COST SCHEDULE**

CLIN	DESCRIPTION OF SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL COST PLUS FIXED FEE
0001	Contractor to provide Technical Assistance in accordance with section C: DESCRIPTION/ SPECIFICATIONS/ STATEMENT OF WORK	[REDACTED]	[REDACTED]	[REDACTED]
	<b>Total</b>	[REDACTED]	[REDACTED]	<b>\$193,433.51</b>

**NRCB044 CONSIDERATION AND OBLIGATION—INDEFINITE-QUANTITY CONTRACT**

(a) The estimated total quantity of this contract for the products/services under this contract is **\$193,433.51** of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which \$ [REDACTED] represents fixed-fee.

(b) The Contracting Officer will obligate funds on each task order issued.

(c) 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.

(d) This is an incrementally-funded contract and FAR 52.232-22 – “Limitation of Funds” applies.

(e) The Contractor shall comply with the provisions of FAR 52.232-20 - Limitation of Cost for fully-funded task orders and FAR 52.232-22 - Limitation of Funds for incrementally-funded task orders, issued hereunder.

(End of Clause)

## **SECTION C – DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK FOR ERI UNRESTRICTED EWC TASK ORDER 11**

NRC Requisition Office: Office of Nuclear Reactor Regulation

Fee Recoverable: No

TAC Numbers: MF7199

### **1. PROJECT DESCRIPTION**

This project is titled: “Development of the Safety Evaluation Report for the License Renewal Review of the University of Massachusetts at Lowell Research Reactor.”

The purpose of this task order is to provide a final safety evaluation (SE) input document for the license renewal application (LRA) of the University of Massachusetts at Lowell Research Reactor. This review is to be done in accordance with the guidance provided in U.S. Nuclear Regulatory Commission (NRC) NUREG-1537, “Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors.” The final SE input document will form the basis for the NRC staff to use to complete the Safety Evaluation Report (SER) for the University of Massachusetts at Lowell Research Reactor LRA review.

The Statement of Work (SOW) for this Task Order falls within the unrestricted part of NRC indefinite delivery/indefinite quantity (IDIQ) Enterprise-Wide Contract entitled Technical Assistance in Support of Agency Environmental and Reactor Programs, paragraph 3.2, Licensing Support.

### **2. BACKGROUND**

The Nuclear Regulatory Commission (NRC) has the authority and responsibility to review and evaluate requests for licensing actions made by its licensees. The University of Massachusetts at Lowell (the “licensee”) submitted an application dated October 20, 2015, for renewal of its Facility Operating License No. R-125 for the University of Massachusetts at Lowell Research Reactor (UMLRR). As part of the LRA, the licensee provided an updated safety analysis report (SAR), including proposed Technical Specifications (TSs). The NRC staff submits this SOW in order to obtain additional technical support necessary in order to complete the UMLRR LRA review in a timely fashion. Specifically, the contractor shall review the UMLRR LRA and provide the final SE input document which will be used by the NRC staff to complete the MURR LR SER. The scope of the technical support needed is detailed below.

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

The objective of this task order is to obtain the SE input document to be used by the NRC staff to complete the SER for the UMLRR facility operating license review. The contractor shall provide all resources necessary to accomplish the tasks and deliverables described in this SOW. Specifically, the contractor shall review the information listed below (provided by the NRC staff):

- UMLRR Updated SAR;
- UMLRR proposed technical specifications; and

- Other related information, as necessary.

The NRC Contracting Officer's Representative (COR) will conduct a post award kickoff meeting in-person or via telephone conference call to discuss the status of the LR review, provide the referenced information needed to complete the review, and discuss any questions that may arise. Routine telephone conversations between the NRC COR and the contractor will occur as necessary throughout the contract period.

Following the kickoff meeting, the contractor shall provide a license renewal review plan (Task 1) which will outline the activities and timeline needed to complete the final SE input document. The contractor shall develop the SE input document in accordance with the guidance provided in NRC NUREG-1537, and in consideration of the NRC Interim Staff Guidance (ISG) for the streamlined review process for RTR license renewals (ADAMS Accession No. ML092240244). The contractor shall perform independent confirmatory calculations to validate information provided by the LRA SAR for core neutronics and thermal-hydraulics, as well as supporting radiological dose calculations for routine operation and potential accident scenarios. The contractor shall use codes/software and methodologies approved by the NRC.

The contractor shall ensure that the SE input document is supported by references to the SAR and licensee responses to NRC requests for additional information (RAIs), as necessary. As discussed above, the contractor shall ensure that the SE input document is also supported by independent confirmatory calculations which validate the accuracy of the licensee's submitted information and is consistent with the guidance in NUREG-1537. The contractor shall perform a comprehensive review of the licensee's proposed TSs, and provide a basis of acceptability for each proposed TS which is based on the results of the SAR, or consistent with guidance in NUREG-1537.

The NRC staff anticipates that RAIs will be required during the course of the review. The contractor shall communicate the need for additional information to the NRC COR, who will obtain the necessary information from the licensee through the NRC RAI process. When requested by the COR, the contractor shall provide input to allow the NRC staff to develop accurate RAIs, consistent with the guidance in NUREG-1537, which include a basis indicating why the additional information is needed to support the SEI or independent confirmatory calculations. Note that all communication to the licensee by the contractor must be done through the NRC COR.

The NRC staff anticipates the possibility that up to two (2) site visits by the contractor's staff may be necessary to complete the technical review. The first visit will provide the opportunity for the contractor's staff to become familiar with the facility, its layout and operation, as well as site-specific characteristics and any unique hazards present to the licensee's staff or members of the public. The initial visit will also allow the contractor to discuss any information needs based on the contractor's initial review of the LRA, and may be useful to reduce the number of potential RAIs needed. An additional visit may be necessary to allow for detailed technical discussions of additional RAIs or the results of the licensee's RAI responses. Otherwise, the contractor's review shall be done in-office using documents provided by the NRC staff. As deemed necessary by the NRC COR, telephone conference calls shall be conducted between the contractor and the NRC COR. The contractor shall not contact the licensee directly.

#### 4. SPECIFIC TASKS

The contractor shall perform the tasks below in accordance with the completion schedule. The specific dates for these deliverables shall be agreed upon between the NRC COR and the contractor prior to start of work. The NRC COR will arrange to conduct a kick-off meeting within ten (10) working days of the contract award.

**Task 1: License Renewal Review Plan**

**Requirement**

The contractor shall provide the NRC COR with a license renewal review plan. The plan shall illustrate the most efficient method of providing a SEI supported by independent confirmatory calculations. At a minimum, the scope of the review shall include milestones to be completed, expected completion dates, proposed staffing, site visits, and resources. The plan shall identify how the safety conclusions in NUREG-1537 and the license renewal ISG will be met, and which of these safety conclusions will require confirmatory calculations or a review of the methodology. The plan shall also identify which confirmatory calculations are dependent on one another and show an efficient approach to complete them.

Level of Effort (LOE) Estimate: 40 hours

**Standard**

The renewal review plan shall align deliverables in Tasks 2 and 3 of this SOW. The contractor shall become familiar with the UMLRR LRA application, proposed TSs, previously issued SER, or other related information. The deliverable shall document agreed upon milestone dates. All planned independent confirmatory calculations identified by the contractor shall support the SEI. The contractor shall follow the guidance in NUREG-1379, "NRC Editorial Style Guide," Rev. 2.

**Deliverable**

The license renewal review plan shall be delivered to the NRC COR five (5) working days after the kick off meeting. The plan shall be in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format.

**Task 2: Develop, Draft Safety Evaluation Input and Draft Independent Confirmatory Calculations**

**Task 2a: Develop Draft SEI and Draft RAIs**

**Requirement**

Based on the requirements of 10 CFR Parts 20, 30, 40, 50, and 70, as appropriate, and the guidance contained in NUREG-1537, the contractor shall review the license renewal

information provided by the NRC COR and develop the draft SEI. The draft SEI shall state the applicable regulations or standards and provide an analysis using the licensee's SAR and TS references for satisfying them. The draft SEI shall clearly indicate where additional information or clarification is needed to complete the final SEI. This additional information or clarification shall be provided as a draft request for additional information (RAI). The contractor shall accompany the NRC COR on a site visit to the UMLRR facility.

LOE Estimate: 300 hours

### **Standard**

The draft SEI shall describe the contractor's evaluation of the licensee's conformance to regulatory requirements, and shall clearly identify the basis of acceptability for each of the proposed technical specifications. The draft SEI shall be written in accordance with the review guidance specified in the streamlined renewal ISG and NUREG-1537. The draft SEI is to be done concurrently with development of the confirmatory calculations in 2b.

The site visit will allow for familiarization of the UMLRR facility and to discuss any clarification or information needs based on the contractor's review of the license renewal information.

The draft SEI shall clearly indicate where additional information is needed for safety conclusions. RAIs provided by the contractor shall include the related technical and/or regulatory bases (e.g., Title 10 CFR, NUREG-1537, ANSI/ANS, etc.), why the licensee's information does not meet the bases, and what information is needed. The RAIs shall be organized by the topics identified in applicable sections of the license review material.

The contractor shall follow the guidance in NUREG-1379, "NRC Editorial Style Guide," Rev. 2. The draft SEI shall be submitted on time, and shall be technically acceptable, contain no spelling or grammatical errors, and be in the specified format.

### **Deliverable**

The following shall be delivered to NRC COR six (6) months after task order award:

1. Draft SEI provided in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format.
2. Draft RAIs provided in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format.

### **Task 2b: Perform Draft Independent Confirmatory Calculations of UMLRR's Analysis and Provide Draft RAIs**

#### **Requirement**

The contractor shall perform independent confirmatory calculations or a review of the licensee's analytical results and methodology as directed by the NRC COR. The

independent confirmatory calculations are used to validate the licensee's methodologies. The confirmatory calculations and/or code runs may include numeric values related to the facility's: 1) nuclear design data; 2) thermal-hydraulic parameters; 3) accidents associated with the rapid insertion of reactivity, ramp insertion of reactivity, loss of coolant flow, loss of coolant leading to direct core radiation; and, 4) radiological doses associated with the Maximum Hypothetical Accident (MHA), routine operational production and release of Argon-41, and any experiment failures. Results of the confirmatory calculations shall be provided to the NRC COR and documented in a report. Prior to performing any independent confirmatory calculations the NRC COR and contractor shall agree which of the licensee's analysis require review of the methodology or independent confirmatory calculation. The draft confirmatory calculations shall clearly indicate where additional information or clarification is needed to complete the final confirmatory calculations.

LOE Estimate: 600 hours

### **Standard**

The contractor shall validate the licensee's analytical results and methodology. The independent confirmatory calculations shall use codes, correlations, and methods currently acceptable to the NRC staff (e.g., MCNP, TRACE, RELAP, RESRAD, HOTSPOT, etc.) and approved by the NRC COR. Approach and methodologies of the independent confirmatory calculations shall be consistent with the review guidance specified in the streamlined renewal ISG and NUREG-1537. The confirmatory calculations are to be done concurrently with development of the draft SEI in 2a.

The report shall clearly indicate the results of the independent confirmatory calculations, and where additional information is needed. Additional information needed to complete the independent confirmatory calculations shall be provide in the form of draft RAIs. The draft RAIs provided by the contractor shall include the related technical and/or regulatory bases (e.g., Title 10 CFR, NUREG-1537, ANS/ANS, etc.) why the licensee's information does not meet the bases, and what information is needed.

The report and draft RAIs shall be consistent with guidance in NUREG-1379, "NRC Editorial Style Guide," Rev. 2. The draft independent confirmatory calculations shall be submitted on time, and shall be technically acceptable, contain no spelling or grammatical errors, and be in the specified format.

### **Deliverable**

The following shall be delivered to NRC COR six (6) months after task order award:

1. Draft confirmatory calculations report provided in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format
2. Draft confirmatory calculations RAIs provided in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format

### **Task 3: Provide Final SEI Supported by Independent Confirmatory Calculations**

### **Requirement**

The NRC COR will review the draft SEI and draft independent confirmatory calculations. The contractor shall review and evaluate the NRC COR's comments and RAI responses and provide a final SEI with final independent confirmatory calculations report. The final SEI shall incorporate, as appropriate, NRC COR comments, independent confirmatory calculations, and all licensee RAI responses.

LOE Estimate: 200 hours

### **Standard**

The contractor shall provide the final SEI supported by independent confirmatory calculations to the NRC COR. The final SEI shall incorporate comments and the licensee's RAI responses provide by the NRC COR. The final SEI shall be written in accordance with the review guidance specified in the streamlined renewal ISG and NUREG-1537. The contractor shall follow the guidance in NUREG-1379, "NRC Editorial Style Guide," Rev. 2. The final SEI shall be submitted on time, and shall be technically acceptable, contain no spelling or grammatical errors, and be in the specified format.

### **Deliverable**

The contractor shall provide the following deliverables to the NRC COR, no later than the later of one (1) month following receipt of the NRC COR comments, or two (2) months following delivery of final licensee RAI responses:

1. Final SEI<sup>1</sup>
2. Final independent confirmatory calculations report<sup>1</sup>
3. Input decks and all data associated with performing the independent confirmatory calculations. All data and code runs must be provided to, and are the property of, the NRC.

### **Task 4: Related Support**

#### **Requirement**

If requested by the NRC COR, the contractor shall provide up to 100 hours of related technical support to the NRC staff following delivery of the final SEI. This related support may, for example, consist of tasks such as responding to questions on the final deliverable.

The scope of the related support activity and amount of hours to be used shall be agreed upon between the contractor's PM and the NRC COR before starting the activity. The NRC

---

<sup>1</sup>Contractor shall provide in both Microsoft Word (.doc) and Adobe Acrobat (.pdf) format

COR will confirm the request, assistance due date, and estimated LOE for the specific activity by e-mail to the contractor with a carbon copy to the NRC Contracting Officer (CO).

LOE Estimate: 100 hours

### **Standard**

The contractor shall participate in related support requested by the NRC COR. The contractor shall ensure that all information/support provided pursuant to this SOW is technically correct.

### **Deliverable**

The contractor shall provide related support as requested by the NRC COR. All deliverable due dates will be specified by the NRC COR.

## **5. APPLICABLE DOCUMENTS AND STANDARDS**

The NRC COR will provide the specific documents related to the University of Massachusetts at Lowell license renewal review at the kick off meeting. Other documents needed are publicly available on the NRC Website. Applicable ANSI/ANS standards include the ANSI/ANS-15 series for research and test reactors, which the contractor must procure independently. The NRC cannot provide these due to copyright restrictions.

The NRC COR will provide documents in an electronic format. If the contractor requests, documents related to the license renewal including RAIs can also be provided in paper form.

## **6. DELIVERABLES AND DELIVERY SCHEDULE/REPORTING REQUIREMENTS**

The contractor shall submit all deliverables to the NRC COR electronically with a copy provided to the NRC CO. These deliverables shall be provided as both Microsoft Word (.doc) and Adobe Acrobat (.pdf) files. The transmittal letter, at a minimum, shall contain the contract number (to include both IDIQ and task order number), the LRA being reviewed, as well as the task order project title. Below is an example of an estimated delivery schedule. The specific dates for these deliverables shall be agreed upon between the NRC COR and the contractor after task order award.

<b>Tasks</b>	<b>Deliverables</b>	<b>Nominal Schedule</b>
License Renewal Plan	Renewal Plan	Three weeks after task order award, or five working days following the kick off meeting.
Develop SEI document and RAIs	Draft SEI Draft RAIs	Six months after task order award
Perform Independent confirmatory calculations and provide RAIs	Draft report Draft RAIs	Six months after task order award.
Final SEI document	Final SEI document incorporating the NRC COR's comments, RAI responses, and independent confirmatory calculations; and Final independent confirmatory calculations report summary with input and output decks	One month after receipt of the final NRC comments on Task 2a and 2b or two months following receipt of final licensee RAI responses.
Related Support	As requested	As requested
Status Report	Monthly Letter Status Report	15 <sup>th</sup> of each month

The above deliverables shall be submitted electronically to the task order COR. The MLSR and ESP must also be submitted to the task order Contracting Officer (CO) as well as to the Office of Administration/Acquisition Management Division to [ContractsPOT.Resource@nrc.gov](mailto:ContractsPOT.Resource@nrc.gov)

### **Monthly Letter Status Report**

The contractor shall provide an electronic version of the Monthly Letter Status Report (MLSR) to the CO, NRC COR, NRR Funds Certifying Official and Office of the Chief Financial Officer (OCFO) by the 15th of each month, in a format similar to the sample contained in Attachment 1. The report shall provide the technical and financial status of the effort.

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

The financial status section of the MLSR shall include the following information: the total task order ceiling amount; funds obligated to-date; total costs incurred in the reporting period, broken down by direct and other direct costs; and total cumulative costs incurred-to-date. The MLSR shall also contain the balance of obligated funding remaining at the end of

the reporting period, and the balance of funds required to complete the contract. Additionally, if applicable, the MLSR shall address the status of the Contractor Spending Plan (CSP), showing the percentage of project completion and any significant changes in either projected expenditures or percentage of completion. The MLSR should also identify the acquisition cost, description (model number, manufacturer) and acquisition date of any property/equipment acquired for the project during the month with an acquisition cost greater than \$500.

In the event that the data in the MLSR indicates a need for additional funding beyond that already obligated to the task order for that reporting period, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

### Performance Requirements

The deliverables required under this effort must conform to the standards contained or referenced in this SOW. The table of performance requirements, below, summarizes the performance requirements, deliverables, standards and method of review for this effort.

<b>Performance Requirement and Deliverables</b>	<b>Standard</b>	<b>Method of Review</b>	<b>Corrections (if needed)</b>
License Renewal Plan	A plan outlining milestones and identified independent conformity calculations.	NRC COR will review the plan for acceptability.	Dates or methods determined to be unacceptable to the NRC COR shall be altered.
Draft SEI and draft RAIs	Draft SEI is in accordance with the review guidance specified in NUREG-1537 and 1379, and includes all information requested in the SOW. Technical conclusions in the draft SEI are properly supported. No significant spelling or grammatical errors.	NRC COR will review the draft SEI.	Items determined to be missing or incorrect shall be corrected by contractor. If not incorporated after initial identification by NRC COR, contractor shall add/correct at its own expense.
Independent confirmatory calculations report, and draft RAIs	Draft independent confirmatory calculations are in accordance with the review guidance specified in NUREG-1537 and 1379. All information requested in the SOW is included in the draft report. No	NRC COR will review the draft independent confirmatory calculations	Items determined by the NRC COR to be missing or incorrect shall be corrected by contractor. If not incorporated after initial identification by NRC COR, contractor shall add/correct at its own expense.

	significant spelling or grammatical errors.		
Final SEI and input/output decks	Final SEI supported by independent confirmatory calculations is in accordance with the review guidance specified in NUREG-1537 and 1379, and includes all information requested in the SOW. RAI responses and NRC COR comments are incorporated, as applicable. Technical conclusions in the final SEI are properly supported. No significant spelling or grammatical errors.	NRC COR will review the final SEI.	Items determined to be missing or incorrect shall be corrected by contractor. If not incorporated after initial identification by NRC COR, contractor shall add/correct at its own expense.

## 7. REQUIRED LABOR CATEGORIES/ ESTIMATED LEVEL OF EFFORT

The LOE for the UMLRR license renewal review is estimated to be 1240 hours, apportioned among labor categories as shown below. The estimate of effort for this task order takes into consideration the contractor's knowledge gained through, and familiarity with, the NRC's RTR license renewal review process, as described in Section 3, "Technical and Other Special Qualifications Required."

Labor Category	Minimum Qualification Requirement	Estimated Labor Hours
Project Manager	1) B.S. in Engineering, Physics or similar technical field, or 2) Minimum 10 years research and test reactor operating experience.	200
Subject Matter Expert	1) B.S. in Engineering, Physics or similar technical field, and 2) Minimum 5 years Technical Expertise in dose calculations.	450
Subject Matter Expert	1) B.S. in Engineering, Physics or similar technical field, and 2) Minimum 5 years Technical Expertise in research reactor core design and thermal-hydraulics analyses.	450
Senior Technical Reviewer	1) B.S. in Engineering, Physics or similar technical field, or 2) Minimum 10 year Technical Expertise in research and test reactor operation, licensing and analysis.	100
Clerical/Administrative	1) Minimum 5 years clerical or Administrative experience	40

TOTAL		1240
-------	--	------

**8. GOVERNMENT-FURNISHED PROPERTY**

N/A

**9. PERIOD OF PERFORMANCE**

The period of performance for this task order is as stated below, in SECTION F - Deliveries or Performance NRCF030A PERIOD OF PERFORMANCE ALTERNATE I.

**10. PLACE OF PERFORMANCE**

Work will be performed at the contractor's site.

**11. SPECIAL CONSIDERATIONS**

**11.1 TRAVEL/MEETINGS**

**Travel/Meetings**

The contractor may need to make up to two (2) site visits to the licensee's facility for site familiarization and to discuss draft RAIs.

- **Trip purpose and associated task:** Travel would be to allow for the contractor's staff to become familiarized with the licensee's facility, and to allow for discussion of draft RAIs.
- **Frequency:** Two trips
- **Destination:** UMLRR, Lowell, Massachusetts
- **Number of Staff:** Up to two (2) contractor's staff
- **Number of Days:** Up to three (3) days

All travel requires prior written approval from the NRC COR.

\$10,000 is estimated to be the maximum for travel to UMLRR, Lowell, Massachusetts.

Total amount for travel will not exceed \$10,000.

**11.2 SECURITY**

No classified information is needed in the performance of this contract. Some materials provided may be sensitive and the contractor shall have the necessary provisions to secure the information consistent with the NRC guidance for storage and use of Official Use Only (OUO), proprietary, or pre-decisional information.

Documents containing OUO, proprietary or pre-decisional information must be safeguarded against unauthorized disclosure. After completion of work, the documents shall either be destroyed or returned to NRC. If they are destroyed, this must be confirmed in an e-mail to the

NRC COR, with a copy to the CO. The e-mail must include the date and the manner in which the documents were destroyed.

### 11.3 LICENSE FEE RECOVERY

All work under this task order is not license fee recoverable.

### SECTION F - Deliveries or Performance

#### NRCF030A PERIOD OF PERFORMANCE ALTERNATE I

This order shall commence on date of award and will expire on May 10, 2019. (See FAR 52.216-18 - Ordering).

(End of Clause)

### SECTION H - Special Contract Requirements

#### 2052.215-70 KEY PERSONNEL. (JAN 1993)

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

Project Manager	Dr. M. Khatib-Rahbar
Subject Matter Expert	M. Libby

\*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)

#### **2052.215-71 CONTRACTING OFFICER'S REPRESENTATIVE**

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

Name: Eben Allen  
Address: US NRC  
NRR/DPR/PRLB  
OWFN/ 12 D3  
Washington DC 20555  
Telephone Number: 301-415-4246  
Email: [Eben.Allen@nrc.gov](mailto:Eben.Allen@nrc.gov)

The alternate contracting officer's representative is:

Name: Spyros Traiforos  
Address: US NRC  
NRR/DPR/PRLB  
OWFN/ 12 D13  
Washington DC 20555  
Telephone Number: 301-415-3965  
Email: [Spyros.Traiforos@nrc.gov](mailto:Spyros.Traiforos@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 or changes to specific travel identified in the Statement of Work), fills in details, or otherwise serves to accomplish the contractual statement of work.

(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, approve 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 project officer 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 project officer 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 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 that 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 to the instruction or direction 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.

(End of Clause)

**SECTION J - List of Documents, Exhibits and Other Attachments**

Attachments:

1. Monthly Letter Status Report Template

**Attachment 1**

**Sample Monthly Status Report**

**Sample**  
**Monthly Status Report for Month XX**  
**Under XXX-xxx**

**A. Task Order Identification and Financial Summary Information**

Contract/Agreement Number      JCN Number      Task Order Number

J-

Project Title:

Principal Investigator

NRC Technical Monitor

NRC Project Manager                      XXXXXX                      (301) 415-xxxx

Total Award Amount:

Funds Obligated to Date:

Total Costs Incurred This Reporting Period Direct:

Total Costs Incurred This Reporting Period

Indirect:

Cumulative Costs to Date:

Percent Expended (Cum Cost/Obligated):

Balance of Obligated Funds Remaining:

Balance of Fund Required for Completion:

Period of Performance:

**Spending Plan**

- FY 20XX

Month														Total
Planned														
Revised Plan														

Actual														
--------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**B. Efforts Completed/Schedule Milestone Information**

Subtask	Description	Planned Completion Date	Revised Completion Date	Actual Completion Date

**C. Work Performed**

Work under this task order is XX percent complete.

**D. Problem/Resolution**

**E. Travel for This Period**

Name	Start Date	End Date	Destination

**F. Plans for Next Period**

**G. Staff Hour Summary**

<b>Subtask</b>	<b>Staff Assigned</b>	<b>Hours Budgeted</b>	<b>Hours Expended</b>	<b>Task Status</b>
				XX% Complete