

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE		PAGE OF PAGES	
				1 9	
2. AMENDMENT/MODIFICATION NO. P00002		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. ZEROREQ-NRR-20-0051	
6. ISSUED BY US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-07B20M WASHINGTON DC 20555-0001		CODE NRCHQ		5. PROJECT NO. (If applicable)	
		7. ADMINISTERED BY (If other than Item 6)		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) ENERGY RESEARCH INC 6189 EXECUTIVE BLVD ROCKVILLE MD 208523901		(x)		9A. AMENDMENT OF SOLICITATION NO.	
				9B. DATED (SEE ITEM 11)	
		x		10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-HQ-25-14-E-0005 31310018F0164	
CODE 621211259		FACILITY CODE		10B. DATED (SEE ITEM 13) 09/27/2018	

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) Net Decrease: -\$48,442.24  
2018-X0200-FEEBASED-20-20D006-20B605-1061-11-4-178-252A-11-4-178-1061

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

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) 52.243-2 CHANGES - COST-REIMBURSEMENT. (AUG 1987)

**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.)

\*\*SEE PAGE TWO (2) FOR DESCRIPTION OF TASK ORDER MODIFICATION TO REVISE THE STATEMENT OF WORK TO REMOVE TASKS 4 - 6, DECREASE THE TASK ORDER CEILING AND OBLIGATION AMOUNT, AND CONCLUDE THE PERIOD OF PERFORMANCE.\*\*

Total Task Order Ceiling: \$26,557.76 (changed)  
Total Task Order Obligations: \$26,557.76 (changed)  
Obligation Amount (this action): -\$48,442.24  
Period of Performance: 09/28/2018 to 03/16/2020

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) JENNIFER A. DUDEK TEL: 301-415-2257 EMAIL: Jennifer.Dudek@nrc.gov	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 03/24/2020

The purpose of this task order modification is to: 1) revise the Statement of Work to remove task 4 through 6; 2) decrease the task order ceiling by \$132,184.89, from \$158,742.65 to \$26,557.76; 3) decrease the obligation amount by \$48,442.24, from \$75,000.00 to \$26,557.76; and 4) conclude the period of performance. Accordingly, the task order is hereby modified as follows:

1) Section **B.3 CONSIDERATION AND OBLIGATION-LABOR-HOUR CONTRACT ALTERNATE I** is deleted in its entirety and replaced with the following:

“(a) The ceiling of this order for services is **\$26,557.76**.

(b) This order is subject to the minimum and maximum ordering requirements set forth in the contract.

(c) The amount presently obligated with respect to this order is **\$26,557.76** ( [REDACTED] in Cost, [REDACTED] in fixed fee). The obligated amount shall, at no time, exceed the order ceiling as specified in paragraph (a) above. When and if the amount(s) paid and payable to the Contractor hereunder shall equal the obligated amount, the Contractor shall not be obligated to continue performance of the work unless and until the Contracting Officer shall increase the amount obligated with respect to this order, in accordance with FAR Part 43 - Modifications. Any work undertaken by the Contractor in excess of the obligated amount specified above is done so at the Contractor's sole risk and may not be reimbursed by the Government.

(d) The Contractor shall comply with the provisions of FAR 52.232-22 - Limitation of Funds, for incrementally-funded delivery orders or task orders.

(e) Fixed Fee Holdback Amount: **N/A**.

(End of clause)”

2) Section **B.3 PRICE/COST SCHEDULE** is deleted in its entirety and replaced with the following:

Period of Performance: September 28, 2018 – March 16, 2020

CLIN	DESCRIPTION	ESTIMATED COST
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
<b>TOTAL</b>		<b>\$26,557.76</b>

3) **SECTION C – DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK** is deleted in its entirety and replaced with Attachment 1.

4) Section **NRCF030A PERIOD OF PERFORMANCE ALTERNATE I** is deleted in its entirety and replaced with the following:

“This order shall commence on **September 28, 2018** and will expire on **March 16, 2020**.  
(See FAR 52.216-18 - Ordering).”

All other terms and conditions of the task order remain unchanged.

## **SECTION C – DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK**

### **TASK ORDER STATEMENT OF WORK (SOW)**

“Safety Evaluation of the University of Missouri at Columbia Research Reactor Facility  
Preliminary Safety Analysis Report for the Conversion to Low Enriched Uranium Fuel”

#### **1. BACKGROUND**

The NRC has the authority and responsibility to review, evaluate and process requests for licensing actions from research and test reactor (RTR) licensees. RTR licensees authorized to possess and use Highly-Enriched Uranium (HEU) fuel are required by Title 10 of the Code of Federal Regulations (10 CFR) 50.64, “Limitations on the Use of Highly Enriched Uranium (HEU) in Domestic Non-Power Reactors,” to convert to low enriched uranium (LEU) fuel if Federal Government funding is available for the conversion and if LEU fuel acceptable to the NRC has been developed for their reactors. The University of Missouri-Columbia (the licensee) operates the University of Missouri research reactor (MURR) at its campus facility in Columbia, Missouri, which currently operates with HEU fuel.

By letter dated August 18, 2017, the licensee submitted to the NRC staff for review, its “Low Enriched Uranium Conversion Preliminary Safety Analysis Report for the University of Missouri Research Reactor,” application. The licensee’s application request along with its Conversion PSAR can be found in the NRC Agency-wide Documents (Agency wide Documents Access and Management System (ADAMS) Accession Nos. ML17234A405 and ML17234A404, respectively). A redacted (publicly-available) version of the Conversion PSAR is also available in ADAMS (Accession No. ML17312A370) for review.

The licensee’s application requested that the NRC staff review the Conversion PSAR, but requested that no licensing actions were to be performed at this time. This is because the LEU fuel development work is not complete, and so the review and evaluation of the licensee’s Conversion PSAR constitutes a preliminary review of the licensee’s overall LEU Conversion effort. The final technical and licensing review of the licensee’s LEU Conversion project will not be performed for several years until the LEU fuel is approved for use by the NRC, the licensee updates the Conversion PSAR, and submits a Final SAR (FSAR) to the NRC for review and approval. Although, the scope of this review is limited to the Conversion PSAR, the contract deliverable, which is the Safety Evaluation (SE) input document, will be developed in such a manner that it can be used as the starting point for the NRC staff review of the FSAR, or the final LEU conversion the review

#### **3. OBJECTIVE(S)**

The purpose of this task order is to acquire the technical assistance to perform a technical review of the MURR Conversion PSAR. Specifically, the contractor shall review the Conversion PSAR and develop a “draft” SE input document. The draft SE input document must include the contractor’s technical review and evaluation of the licensee’s Conversion PSAR using the guidance provided in NUREG 1537, Part 2, Chapter 18. The contractor may be requested to perform confirmatory radiological dose calculations, which will be used to substantiate the licensee’s analyses of the radiological dose consequences for both routine facility operation and for any existing or new accident scenarios provided in the Conversion PSAR. The contractor shall provide the draft SE input document to the NRC Contracting Officer’s Representative (COR) for review.

The contractor is required to prepare the draft SE input document based on its review and evaluation of the Conversion PSAR (Task 1). The draft SE input document shall state the applicable Title 10 Code of Federal Regulations (10 CFR), standards, or NUREG-1537 guidance, and discuss the applicant's method for satisfying the regulations, standards, or guidance. The contractor shall provide its analysis explaining how the licensee's method satisfies the applicable regulations, standards, or guidance, and state its conclusions of the acceptability of the applicant's proposed changes.

As stated above, the contractor may be requested to perform confirmatory calculations of the licensee's radiological dose consequences for both normal operation and postulated accident conditions provided in the Conversion PSAR. If the contractor is unable to validate some of the assumptions provided by the licensee, for use in the confirmatory calculations, the COR will provide the contractor guidance as to when to use engineering judgement or conservative assumptions in lieu of the applicant's information if the applicant's information is found to be incorrect.

All communication directed to the licensee by the contractor must be conducted through the NRC COR. If communication is conducted through a site visit (in-person) or telephone conference, the contractor shall conduct the communication in a professional manner. The contractor shall not indicate preferences for the analytical methods used by the licensee. The contractor may reference accepted guidance found in NRC Regulatory Guides, NUREGs or NRC staff-endorsed ANSI/ANS documents, as applicable.

The NRC does not anticipate that a site visit will be necessary for the contractor to complete this work. However, if during the review, the COR and contractor mutually agree that a site visit would be advantageous to more expeditiously review the technical information; a site visit will be arranged by the COR.

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

#### **4. STATEMENT OF WORK TASKS**

The contractor shall perform the tasks below in accordance with the estimated completion schedule. The specific dates for these deliverables will be agreed-upon between the NRC COR and the contractor after task award and prior to start of work.

##### **Task 1: Post award kickoff meeting**

After task order award, the COR will arrange to conduct a kick-off meeting with the contractor. The kick-off meeting will be used to discuss the review of the licensee's application. In addition, the COR will provide the contractor with the licensee's application, discuss the review schedule, the SOW deliverables, the process for developing any RAIs, the need for a site visit, and any unique requirements associated with the review task.

##### **Task 2: Develop Draft SE Input Document—**

- A. Develop Draft SE input Document:** The contractor shall review the information provided by the NRC COR contained in the licensee's application Conversion PSAR. The contractor shall use the regulations in 10 CFR 20, 10 CFR 50, or other applicable

regulations, and, the guidance in NUREG-1537, Part 2, Chapter 18, as applicable, to evaluate the acceptability of the licensee's proposed amendment. The contractor may be requested to perform independent confirmatory calculations of the radiological doses provided in the Conversion SAR. If so, the contractor's independent confirmatory calculations will be used to substantiate the licensee's analyses of the radiological dose consequences for both routine facility operation and for any existing or new accident scenarios provided in the Conversion PSAR. The contractor shall provide the draft SE input document to the NRC Contracting Officer's Representative (COR) for review.

- I. The draft SE input document shall state the applicable regulations or standards, discuss the licensee's method for satisfying the regulations or standards, provide an analysis as to whether or not the licensee's method satisfies the applicable regulations or standards, and contain conclusions about the licensee's proposal.
- II. The contractor shall provide the draft SE input document to the COR as a Word file, and shall follow the guidance in NUREG-1379, "NRC Editorial Style Guide," Rev. 2. The Word file shall not contain any hidden text or linked fields, as these may not be compatible with the NRC Word version in use.
- III. The draft SER input document submitted to the COR shall be technically correct, with no spelling or grammatical errors. The NRC COR will review the Draft SE Input document and provide comments back to the contractor. The contractor shall review and evaluate the NRC staff's comments to the draft SE Input document and provide a resolution satisfactorily to the NRC COR, in the form of a revised Draft SE Input document.

### **Task 3: Develop Requests for Additional Information:**

If during its review, the contractor identifies any review areas where the licensee's Conversion PSAR information is insufficient for the contractor to complete the review analysis, the contractor shall provide placeholders in the draft SE input document indicating the specific information which is needed, and notify the NRC COR.

- I. For any placeholders in the draft SE input document, the contractor is required to identify the applicable regulatory basis for the needed information. The regulatory basis can include the acceptance criteria in NUREG-1537, the regulations in 10 CFR, or standards associated with the required information, in order to establish a basis to support a written request for additional information (RAI). If applicable, the COR may request the contractor to provide a draft of the RAI to the NRC COR, who will provide the RAI to the licensee.
- II. All information requested in the RAIs shall be necessary for the contractor to complete its review, and all RAI responses from the licensee shall be documented in the SE input document.

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

The NRC COR will provide the documents related to the Conversion PSAR application at the kick-off meeting or commencement of the task order. Some of the licensee's information is considered SUNSI and should be handled in accordance with the appropriate NRC guidance. Other documents needed are publicly available on the NRC Website. ANSI/ANS standards

include the ANSI/ANS-15 series applicable to research and test reactors, which the contractor will have to procure on their own. The NRC COR cannot provide those, due to copyright restrictions. The NRC COR will provide the necessary information in an electronic format, or if the contractor requests, it can be provided in paper form.

## 6. DELIVERABLES/MILESTONE SCHEDULE AND REPORTING REQUIREMENTS

The contractor shall provide to the NRC COR the deliverables stated in the table below, both in hard copy and electronic format unless directed by the COR. The electronic format shall be provided using a Microsoft-based product, (e.g., Outlook, Word, Excel, PowerPoint) unless the COR and the contractor specifically agree in writing on another format. All deliverables shall be in the format of draft version, revision version with redline/strikeout with a change-control appendix, and a revised version which can be the final version. The contractor shall maintain appropriate revision control in an electronic format.

For each "final" deliverable (e.g., draft, or final) that accomplishes a specific portion of a subtask activity, the contractor shall provide an electronic copy to the COR. The contractor shall explicitly state in its submittal that the product provided is the deliverable for Task/Subtask XX, as further described below.

The schedule for deliverables shall be contained in the approved Project Plan for the task order effort, which is included as a deliverable in the table below.

The contractor shall develop, maintain, and control data, files, information, and deliverables pursuant to this task order. The contractor shall provide copies of the independent confirmatory calculations or analysis to the COR, upon request.

### **Deliverable Schedule**

Deliverable	Description	Quantity	Completion Date
1.	Draft SE input	- 1 hard copy - 1 electronic Word file copy.	Six (6) months after commencement of the MURR Conversion PSAR review.
2.	Monthly Letter Status Report		15 <sup>th</sup> of each month

The contractor shall submit the above deliverables to the task order CO and task order COR. Unless otherwise directed by the COR or the CO, the contractor must provide all deliverables except the Monthly Letter Status Reports (MLSR) as draft products. The COR will review all draft deliverables (and coordinate any internal NRC staff review, if needed) and provide comments back to the contractor. The contractor shall revise the draft deliverable based on the comments provided by the COR and then deliver a revised version of the deliverable, which will then be considered the Final Version. When mutually-agreed upon between the contractor and the COR, the contractor may submit preliminary or partial drafts to help gauge the contractor's understanding of the particular work requirement. More than one round of drafts may be needed if the contractor does not successfully incorporate the COR's comments on the previous draft.

## Monthly Letter Status Report

The contractor shall provide an electronic version of the Monthly Letter Status Report (MLSR) to the CO, 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 2. 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, and milestones reached, or if 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 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 more than \$500.

### 7. Technical Directions

The COR may issue Technical Directions (TDs) from time to time throughout the duration of the task order. These TDs must be within scope of the task order SOW and shall not constitute new assignments of work or changes of such a nature as to constitute a change to the task order cost or period of performance. Any modifications to the scope of work, cost, or period of performance of this task order must be issued by the task order Contracting Officer (CO) and shall be coordinated with the task order COR. The COR may issue TDs for the purpose of making adjustments or clarifications to the timing and performance of the tasks/sub-tasks (if applicable) and/or the milestone schedule/delivery schedule of the documents within this task order.

In the event that the contractor believes that a TD issued against this task order has an impact in terms of changing the scope, cost, or period of performance of the task order, the contractor shall immediately inform the task order CO and request appropriate guidance prior to taking action on the TD in question.

### 8. **GOVERNMENT-FURNISHED PROPERTY**

None.

### 9. **PLACE OF PERFORMANCE**

The work to be performed under this task order shall be performed at the Contractor's facility.

### 10. **SPECIAL CONSIDERATIONS**

#### 10.1 TRAVEL



No travel is anticipated for this task order.

## **10.2 CONTRACTOR COMMUNICATIONS**

The NRC anticipates that the majority of the contractor's review will be performed in-office from documents provided by the NRC COR. As the NRC COR determines necessary, telephone conference calls may be conducted between the contractor, licensee, and the NRC COR. If the contractor believes conference calls or other communications with the licensee are necessary, the contractor shall notify the COR. The contractor shall not contact the licensee directly.

All communication directed to the licensee or other NRC staff regarding this project by the contractor shall be conducted through the NRC COR. If communication is conducted through a site visit (in-person) or telephone conference, the contractor shall conduct the communication in a professional manner. The contractor shall not mandate the analytical methods used by the licensee. The contractor may reference accepted guidance found in NRC Regulatory Guides, NUREGs or NRC staff-endorsed ANSI/ANS documents, as applicable, to the licensee.

## **10.3 SECURITY**

Work on this task order will involve the handling of documents that contain proprietary information. The contractor shall safeguard documents containing proprietary information against unauthorized disclosure. After completion of work, the contractor shall either destroy the documents or return them to the NRC. If the contractor elects to destroy these documents, the contractor shall confirm this in an e-mail to the NRC COR, with a copy to the NRC CO and include the date and manner in which the documents were destroyed.

## **10.4 LICENSE FEE RECOVERY**

The work specified under this statement of work is **not** fee recoverable.