

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

18

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

1. DATE OF ORDER		2. CONTRACT NO. (If any) NRC-HQ-25-14-E-0004		6. SHIP TO:	
3. ORDER NO. 31310018F0159		4. REQUISITION/REFERENCE NO. RES-18-0386		a. NAME OF CONSIGNEE US NUCLEAR REGULATORY COMMISSION-	
5. ISSUING OFFICE (Address correspondence to) US NRC - HQ ACQUISITION MANAGEMENT DIVISION MAIL STOP TWFN-07B20M WASHINGTON DC 20555-0001				b. STREET ADDRESS MAIL PROCESSING CENTER 4930 BOILING BROOK PARKWAY	
				c. CITY ROCKVILLE	e. ZIP CODE 20852
7. TO: PAUL EDELSTEIN				f. SHIP VIA	
a. NAME OF CONTRACTOR NUMARK ASSOCIATES INC				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE	
c. STREET ADDRESS 1220 19TH ST NW STE 500				REFERENCE YOUR: _____	
d. CITY WASHINGTON				e. STATE DC	
				f. ZIP CODE 200362444	
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE OFF OF NUCLEAR REG RESEARCH	

11. BUSINESS CLASSIFICATION (Check appropriate box(es))				12. F.O.B. POINT	
<input type="checkbox"/> a. SMALL	<input checked="" 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) 01/31/2021
a. INSPECTION Destination	b. ACCEPTANCE Destination				16. DISCOUNT TERMS 30

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)
	Numark Unrestricted Task Order titled Technical Assistance for Evaluation of Graphite and ASME-related code support for High Temperature Reactors (HTRs) under Enterprise Wide Contract No. NRC-HQ-25-14-E-0004. Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)	
	21. MAIL INVOICE TO:							
	a. NAME		US NUCLEAR REGULATORY COMMISSION				\$0.00	
	b. STREET ADDRESS (or P.O. Box)		ONE WHITE FLINT NORTH 11555 ROCKVILLE PIKE MAILSTOP O3-E17A				\$1,197,977.76	
c. CITY ROCKVILLE			d. STATE MD	e. ZIP CODE 20852-2738		17(i) GRAND TOTAL		

22. UNITED STATES OF AMERICA BY (Signature)			09/26/2018	23. NAME (Typed) MARK THOMPSON TITLE: CONTRACTING/ORDERING OFFICER	
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**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

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

DATE OF ORDER	CONTRACT NO. NRC-HQ-25-14-E-0004	ORDER NO. 31310018F0159
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	<p>Contracting Officer's Representative: Matthew Gordon Email: Matthew.Gordon@NRC.Gov Phone: 301-415-2152</p> <p>Contractor POCs: Technical: Richard Turk Email: rturk@numarkassoc.com Phone: (860) 819-0392</p> <p>Business: Paul Edelstein Email: pedelstein@numarkassoc.com Phone: (202) 466-2700.</p> <p>_____ Numark Authorized Official Date Accounting Info: 2018-X0200-ADVRX-60-60D001-60B101-1061-1A-6- 220-251A-1A-6-220-1061 Period of Performance: 10/01/2018 to 01/31/2021</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

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/SPECIFICATION S/STATEMENT OF WORK (Tasks 1 and 2)	[REDACTED]	[REDACTED]	
0002	Fixed-Fee CLIN	[REDACTED]	[REDACTED]	[REDACTED]
1001	Contractor to provide Technical Assistance in accordance with Section C: DESCRIPTION/SPECIFICATION S/STATEMENT OF WORK (Task 3)	[REDACTED]	[REDACTED]	
1002	Fixed-Fee CLIN (Option)	[REDACTED]	[REDACTED]	[REDACTED]
	TOTAL (BASIC AND OPTION CLINS)			\$1,197,977.76

NRCB044 CONSIDERATION AND OBLIGATION—INDEFINITE-QUANTITY CONTRACT

(a) The estimated total quantity of this contract for the products/services under this contract is [REDACTED] 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 **\$325,000.00**, of which the sum of [REDACTED] represents the estimated reimbursable costs, and of which [REDACTED] represents the fixed-fee (fixed-fee CLIN 00002 is now fully-funded).

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

(e) A total estimated cost and fee, if any, will be negotiated for each task order and will be incorporated as a ceiling in the resultant task order. 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.

FEE HOLDBACK TABLE			
CLIN	TOTAL FEE	85% LIMIT	15% (HOLD BACK)
00002			

(End of Clause)

B.3 PRICE/COST SCHEDULE

CLIN	BASIC	
0001		
0001a	Direct Labor	
0001b	Subcontract Costs (Including SKt Overhead, ODCs & Travel)	
0001c	Consultant Costs	
0001d	Travel Costs	
0001e	ODCs	
0001f	Indirect Pool (G&A, Fringe, Overhead and Subcontractor Handling)	
	Total Estimated Costs	
0002	Fixed Fee	
	Total	

CLIN	OPTION	
1001		
1001a	Direct Labor	
1001b	Subcontract Costs including SKt Overhead	
1001d	Travel Costs	
1001e	ODCs	
1001f	Indirect Pool (Fringe, Overhead, G&A and Subcontractor Handling)	
	Total Estimated Costs	
1002	Fixed Fee	
	Total	

(End of Clause)

1. PROJECT TITLE

EVALUATION OF GRAPHITE AND ASME-RELATED CODE SUPPORT FOR HIGH TEMPERATURE REACTORS (HTRs)

The contractor shall provide the NRC with a technical report assessing various the aspects of graphite, e.g., source dependency on properties, relevant to HTRs. The contractor shall also evaluate selected portions of the ASME BPV Code Section III, Division 5, relevant Code Cases and supporting documentation. As an optional Task, the contractor shall assess the applicability of existing codes and standards to high temperature flow evaluations, and if necessary perform preliminary tests to evaluate high temperature flow criteria.

2. BACKGROUND

On November 10th 2016 the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) signed a memorandum of understanding (MOU) addressing the DOE and NRC roles, responsibilities, and processes related to the implementation of the DOE Gateway for Accelerated Innovation in Nuclear (GAIN) initiative. As part of the MOU the NRC pledged to “provide the nuclear energy community with increased access to the technical [and] regulatory ... support necessary to move new or advanced nuclear reactor designs toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet.”

The NRC staff recognize the absence of an NRC endorsed code of construction for nuclear reactors operating above 425°C (800°F) is a significant obstacle for new and advanced nuclear reactor designs. Review and approval of an elevated temperature code of construction during a licensing review of a new nuclear power plant would result in substantial costs and delays. Therefore, the NRC is initiating efforts to endorse the ASME Code Section III, Division 5 elevated temperature code of construction consistent with the NRC-DOE MOU on the GAIN initiative. The NRC requests contractor support to assess portions of the ASME Code Section III, Division 5. This assessment will be used to inform NRC licensing decisions and regulatory guidance for the construction of non-light water high temperature reactors (HTRs).

The NRC anticipates HTRs to use nuclear grade graphite in many core components. The properties of graphite and the resistance of graphite to HTR environments will be heavily influenced by the source of the graphite and fabrication methods.

There is strong interest from both the NRC and the nuclear industry for assessing the adequacy of ASME Code Section XI for performing high temperature flow evaluations, specific to the operating conditions of HTRs. While the methodologies in ASME Code Section XI are generally acceptable for traditional light water reactors, these methodologies may not be appropriate for HTR operating temperatures (> 425°C). The NRC requests contractor support to assess ASME Code Section XI methodologies for high temperature flow evaluations. This assessment will be used to inform NRC licensing decisions and regulatory guidance regarding HTRs.

3. PROJECT DESCRIPTION AND OBJECTIVE(S)

The objective of this task order is to 1) Obtain an independent technical evaluation to assist the endorsement of ASME Code Section III, Division 5. The technical evaluation will primarily focus on portions of Division 5 relevant to graphite. 2) Provide the technical basis for the expected properties of nuclear grade graphite, their source dependency, and operating limits. 3) Evaluate high temperature flaw evaluation methodologies that may be used for advanced non-light water reactors.

4. STATEMENT OF WORK TASKS

The contractor shall provide all resources necessary to accomplish the tasks and deliverables described in this statement of work (SOW).

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 will be coordinated with the task order Contracting Officer's Representative (COR). The COR may issue TDs for the purpose of making adjustments or clarifications to the timing and performance of the tasks and/or the delivery schedule of the documents within this task order.

In the event that the contractor believes that any of these TDs do have 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.

Coordination

This task involves coordination of activities with the NRC staff on a regular basis. The contractor may, to the degree practical in terms of willingness of parties to voluntarily cooperate, consult with subject matter experts from national laboratories in developing inputs for the deliverables and/or providing a cursory review of the inputs, assumptions, analyses, and results. Upon COR request, the contractor shall cooperate with subject matter experts from national laboratories to assist NRC-funded activities related to graphite.

The contractor must perform the following tasks:

Task 1 - Evaluate Select Portions of the ASME BPVC Section III, Division 5

Task 1a - The contractor shall review pertinent portions of the ASME BPV Code Section III, Division 5, relevant Code Cases and supporting documents provided by the COR., e.g.,

- i) Graphite Materials (Subpart B)
- ii) Class A Nonmetallic Core Support Structures: Graphite Materials (HHA)
- iii) Class A Metallic Core Support Structures: Elevated Temperature Service (HBB)

- iv) Class B Metallic Pressure Boundary Components: Elevated Temperature Service (HCB)
- v) Class A Metallic Core Support Structures: Elevated Temperature Service (HGB)

Task 1b - The contractor shall identify and review available experimental data and operating experience applicable to the portions of the ASME BPV Code, Code Cases and supporting documents reviewed in Task 1a.

Task 1c - The contractor shall consolidate available data, analyze available results, and identify areas where additional information would be needed to confirm the adequacy of each portion of the ASME BPV Code reviewed in Task 1a.

Task 1d - The contractor shall prepare a technical report on the results of Task 1. Include any data associated with Task 1 in a digital format, e.g., Microsoft Excel spreadsheet. The contractor shall include technical data associated with Task 1 in a digital format, e.g., Microsoft Excel spreadsheet.

Task 2 - Assess Graphite Properties and Degradation Including Source Dependency

Task 2a - The contractor shall obtain and review experimental data and operational experience which is relevant to the performance of graphite, including the following areas:

- i) The contractor shall consolidate available information on graphite properties, and primary drivers to variations.
- ii) The contractor shall assess source and processing dependency upon the initial graphite properties, e.g., thermal conductivity, thermal emissivity, density, chemical impurities, etc.
- iii) The contractor shall assess source and processing dependency upon graphite degradation mechanisms environments, e.g., irradiation effects, cracking, spalling, mechanical abrasion, resistance to moisture and oxygen ingress, etc. If necessary, and with COR approval, the contractor shall provide recommendations for impurity limits, e.g. moisture, oxygen, etc. in the primary loop of HTRs to prevent degradation of graphite.
- iv) The contractor may perform experimental work in support of this Subtask, following COR approval of the experimental test plan.

Task 2b - The contractor shall provide a gap analysis on standards, regulatory guidance, and test procedures for evaluating graphite properties and degradation for HTRs.

- i) The contractor shall obtain and review standards and acceptance criteria relevant to the topics discussed in the previous Subtask.
- ii) The contractor shall perform a gap analysis, evaluating available test procedures, standards, acceptance criteria for graphite, surveillance programs for graphite in HTRs, and regulatory guidance to ensure they are adequate. If needed, the contractor shall identify areas where additional guidance or standards would be beneficial. If necessary, and with COR approval, provide recommendations for surveillance programs of graphite in HTRs.

Task 2c - The contractor shall prepare a technical report on the results of Task 2. The contractor shall include technical data associated with Task 2 in a digital format, e.g., Microsoft Excel spreadsheet.

Task 3 - (Option CLIN) High Temperature Flaw Evaluation

Task 3a - The contractor shall evaluate the adequacy of existing regulatory guidance, acceptance criteria, and industry consensus standards (including ASME Code Section XI) for high temperature flaw evaluations and, if needed, identify areas where additional guidance or standards would be beneficial. The contractor shall obtain COR approval to perform as-needed testing and analysis to inform and justify the gap analysis.

Task 3b - The contractor shall prepare a technical report on the results of Task 3. The contractor shall include technical data associated with Task 3 in a digital format, e.g., Microsoft Excel spreadsheet.

5. APPLICABLE DOCUMENTS AND STANDARDS

Unless notified by the COR, the contractor shall refer to the 2017 version of the ASME BVC Code Section III, Division 5.

6. DELIVERABLES DELIVERY SCHEDULE/REPORTING REQUIREMENTS

The contractor shall provide the deliverables stated in Section 4.0 to the task order COR, in electronic format, unless directed otherwise 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 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.

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.

For each "final" deliverable (e.g., preliminary, draft, or final) that accomplishes a specific portion of a subtask activity, the contractor shall explicitly state in its submittal that the product provided is the deliverable for the Task/Subtask.

The contractor shall develop (as necessary), maintain, and control data, files, information, and deliverables pursuant to this task order

**Table of Deliverables for Task 1
Evaluate Select Portions of the ASME BPVC Section III, Division 5**

Deliverable Description	Quantity/Media	Completion Date
Draft technical report	One electronic copy in Microsoft Word (Windows version) format.	Seven months after written notification by the COR.
NRC review		No later than two months after the NRC receives the draft technical report.
Final technical report	<p>One electronic copy in Microsoft Word (Windows version) format.</p> <p>One electronic copy in Portable Document Format (Windows version) format.</p> <p>One electronic copy of data, models, etc. used to perform supporting analyses and generate figures and tables in the final technical report. Microsoft Excel (Windows version) format. Other formats are acceptable when Microsoft Excel is not a practical format for delivery.</p>	Two months after the NRC completes its review and provides comments to the contractor. Completion date may be truncated to ensure all final technical reports are completed by 8/30/2020.

**Table of Deliverables for Task 2
Assess Graphite Properties and Degradation Including Source Dependency**

Deliverable	Quantity/Media	Completion Date
Draft technical report	One electronic copy in Microsoft Word (Windows version) format.	9/30/2020
NRC review and comments		11/30/2020
Final technical report	<p>One electronic copy in Microsoft Word (Windows version) format.</p> <p>One electronic copy in Portable Document Format (Windows version) format.</p> <p>One electronic copy of data, models, etc. used to perform supporting analyses and generate figures and tables in the final technical report. Microsoft Excel (Windows version) format. Other formats are acceptable when Microsoft Excel is not a practical format for delivery.</p>	1/31/2021

**Table Deliverables for Task 3 (Optional Task)
High Temperature Flaw Evaluation**

Description	Quantity/Media	Completion Date
Draft technical report	One electronic copy in Microsoft Word (Windows version) format.	9/30/2020
NRC review and comments		11/30/2020
Final technical report	<p>One electronic copy in Microsoft Word (Windows version) format.</p> <p>One electronic copy in Portable Document Format (Windows version) format.</p> <p>One electronic copy of data, models, etc. used to perform supporting analyses and generate figures and tables in the final technical report. Microsoft Excel (Windows version) format. Other formats are acceptable when Microsoft Excel is not a practical format for delivery.</p>	1/31/2021

7. ESTIMATED LEVEL OF EFFORT

The estimated level of effort in professional staff hours apportioned among the tasks by labor category is as follows:

Labor Category	Minimum Qualification Requirement
Project Manager (PM)	Bachelor's degree AND minimum 5 years' experience of contract management
Subject Matter Expert (SME)	Masters Degree in Nuclear Engineering, Mechanical Engineering, Materials Engineering or Chemistry AND Minimum 5 years' experience with graphite AND Minimum 5 years' experience with ASME Code Development AND Minimum 5 years' experience in Fracture Mechanics
Sr. Tech Reviewer (STR)	Masters Degree in Nuclear Engineering, Mechanical Engineering, Materials Engineering or Chemistry AND Minimum 5 years' experience with graphite AND Minimum 5 years' experience with ASME Code development AND Minimum 5 years' Experience in Fracture Mechanics
Technical Reviewer (TR)	Bachelors Degree in Nuclear Engineering, Mechanical Engineering, Materials Engineering or Chemistry AND Minimum 5 years' experience in Engineering or Chemistry

Task 1 Estimated Level of Effort	
Total Estimated Level of Effort	1049

Task 2 Estimated Level of Effort	
Total Estimated Level of Effort	2358

Optional Task 3 Estimated Level of Effort	
Total Estimated Level of Effort	1921

8. GOVERNMENT-FURNISHED PROPERTY

No property will be furnished by the government.

9. PERIOD OF PERFORMANCE

See NRCF030A PERIOD OF PERFORMANCE ALTERNATE I

10. PLACE OF PERFORMANCE

Work shall be performed at the contractor's site.

11. SPECIAL CONSIDERATIONS

11.1 TRAVEL/MEETINGS

One three-day, two-person trip, per year to NRC HQ located in Rockville, Maryland to present progress and results of contracted work.

11.2 SECURITY

The work will be UNCLASSIFIED. Work on this task order may 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 must either destroy the documents or return them to the NRC. If they are destroyed, please confirm this in an email to the COR with a copy to the CO and include the date and manner in which the documents were destroyed.

11.3 LICENSE FEE RECOVERY

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

11.4 DATA RIGHTS

The NRC shall have unlimited rights to and ownership of all deliverables provided under this contract/order, including reports, recommendations, briefings, work plans and all other deliverables. All documents and materials, to include the source codes of any software, produced under this contract/order are the property of the Government with all rights and privileges of ownership/copyright belonging exclusively to the Government. These documents and materials may not be used or sold by the contractor without written authorization from the CO. All materials supplied to the Government shall be the sole property of the Government and may not be used for any other purpose. This right does not abrogate any other Government rights. The definition of "unlimited rights" is contained in Federal Acquisition Regulation (FAR) 27.401, "Definitions." FAR clause at FAR 52.227-14, "Rights in Data-General," is hereby incorporated by reference and made a part of this contract/order.

CONTRACTING OFFICER'S REPRESENTATIVE

The COR monitors all technical aspects of the agreement/task order and assists in its administration. The COR is authorized to perform the following functions: assure that the contract performs the technical requirements of the agreement/task order; perform inspections necessary in connection with agreement/task order performance; maintain written and oral communications with contract concerning technical aspects of the agreement/task order; issue written interpretations of technical requirements, including Government drawings, designs, specifications; monitor contract's performance and notify contract of any deficiencies; coordinate availability of NRC-furnished material and/or GFP; and provide site entry of contract personnel.

For the designated COR and alternate COR, see:
2052.215-71 PROJECT OFFICER AUTHORITY. (OCT 1999)

MATERIALS REQUIRED

The contractor shall provide the required equipment, materials, software, and certifications, in order to perform the research described in this SOW.

12.0 KEY PERSONNEL

Refer to section H.1 2052.215-70 Key Personnel.

SECTION F - Deliveries or Performance

NRCF030A PERIOD OF PERFORMANCE ALTERNATE I

The total period of performance for this task order is September 30, 2018 through January 31, 2021.

For CLINs 0001 and 0002, the period of performance is 10/1/2018-1/31/2021.

For Option CLINs 1001 and 1002, the period of performance is 10/1/2020-1/31/2021.

(See FAR 52.216-18 - Ordering)
(End of Clause)

Note: The NRC and contractor may opt to exercise Option CLINs 1001 and 1002 earlier than the time stated above, via an executed bilateral option exercise modification.

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:

NAME	COMPANY	LABOR CATEGORY/POSITION
[REDACTED]	NUMARK	Project Manager
[REDACTED]	NUMARK	Subject Matter Expert
[REDACTED]	EMC2	Subject Matter Expert
[REDACTED]	EMC2	Subject Matter Expert

*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 PROJECT OFFICER AUTHORITY. (OCT 1999)

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

Name: Matthew Gordon,
Address: US NRC
Office of Nuclear Regulatory Research
TWFN/ 10 B47
Washington DC 20555
Telephone Number: 301-415-2152
Email: Matthew.Gordon@nrc.gov

The alternate contracting officer's representative is:

Name: Sara Lyons,
Address: US NRC
Office of Nuclear Regulatory Research
TWFN/10 A30
Washington DC 20555
Telephone Number: 301-415-2861
Email: Sara.Lyons@nrc.gov

(b) Performance of the work under this contract is subject to the technical direction of the NRC project officer. 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 project officer or must be confirmed by the project officer 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 project officer's authority under the provisions of this clause.
- (f) If, in the opinion of the contractor, any instruction or direction issued by the project officer 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 project officer 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 project officer 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