# AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

| 1. CONTRACT ID CODE | PAGE | OF PAGES |
|---|---|---|
| | 1 | |

| 2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
|---|---|---|---|
| 7 | AUG 11 2003 | | |

6. ISSUED BY CODE

U.S. Nuclear Regulatory Commission
Division of Contracts
Attn: T-7-I-2
Contract Management Center 2
Washington DC 20555

7. ADMINISTERED BY (If other than Item 6) CODE 3100

U.S. Nuclear Regulatory Commission
Div of Contracts
Two White Flint North - MS T-7-I-2

Washington, DC 20555

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

SC&A, Inc.
ATTN: Mr. Sanford Cohen
6858 Old Dominion
Suite 301
McLean VA 22101

CODE FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-04-01-065

X 10B. DATED (SEE ITEM 13) 07-16-2001

## 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 of 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 ACKNOWLEDGMENT 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)

31X0200.360 252A Y64Q7
36015304223 Amount Obligated: $97,883.00

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

| (X) | |
|---|---|
| | 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) Supplemental Agreement<br>Mutual agreement of the parties |

**E. IMPORTANT:** Contractor ☐ is not, ☒ is required to sign this document and return 2 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

(see page 2)

Except as provided herein, all terms and conditions of the document referenced in Item 9A 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) | |
|---|---|---|---|
| Laurie Loomis, VP | | Mary Mace, Contracting Officer | |
| 15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign) | 15C. DATE SIGNED 8/11/03 | 16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer) | 16C. DATE SIGNED 8-7-03 |

STANDARD FORM 30 (REV. 10-83)

TEMPLATE - ADM001

ADM002

The purpose of this modification is to: (1) provide for additional within-scope work in accordance with the contractor's letter dated June 23, 2003 (ATTACHMENT 1) and incorporated under the subject contract; (2) extend the expiration date of the contract through December 31, 2003; (3) increase the contract's ceiling amount by $97,883.00 from $812,169.81 to $910,052.81; and (4) increase the contract's obligated amount by $97,883.00 from $812,169.81 to $910,052.81. Accordingly, the contract is hereby modified as follows:

(1) Section B.3, CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988), Alternate I (JUN 1991), paragraphs (a) and (c) are DELETED in their entirety and SUBSTITUTED with the following paragraphs in lieu thereof:

"a. The total estimated cost to the Government for full performance under this contract is $910,052.81 of which the sum of $863,991.30 represents the reimbursable costs, and $46,061.51 represents the fixed fee."

"c. The amount obligated by the Government with respect to this contract is $910,052.81 of which the sum of $863,991.30 represents the reimbursable costs, and $46,061.51 represents the fixed fee."

(2) Section F.5, DURATION OF CONTRACT PERIOD (MAR 1987), is DELETED and SUBSTITUTED with the following paragraph:

"This contract shall commence on July 16, 2001 and will expire December 31, 2003."

A summary of obligations for this contract, from date of award through the date of this action, is given below:

| | |
|---|---|
| Total FY2001 Obligation Amount: | $200,870.00 |
| Total FY2002 Obligation Amount: | $382,728.81 |
| Total FY2003 Obligation Amount: | $326,454.00 |
| Cumulative Total of NRC Obligations: | $910,053.81 |

This modification obligates $97,883 in FY2003 funds.

All other terms and conditions remain the same.

SC&A S. COHEN & ASSOCIATES
AN EMPLOYEE-OWNED COMPANY

June 23, 2003

Mr. Robert Webber
Contracting Officer
Contract Management Branch No. 1
Division of Contracts and Property Management, ADM
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Contract No. NRC-04-01-065

Dear Mr. Webber:

This letter is being sent pursuant to the requirements of FAR Clause 52.232-20, entitled "Limitation of Cost." At the current level of effort, we anticipate expending all of the obligated funds on or before June 30, 2003.

A number of changes have taken place since my letter of January 24, 2003, which requested a modification of the subject contract. The NRC Project Officer, with his management's approval, required and directed the changes listed below and also required the delivery of Volume 1 (Main Report) of revised NUREG-1640 during the first half of June 2003. Because of the urgency of delivering the report on schedule, a substantial amount of this additional work has already been performed. As a result of the increased costs associated with this work, and the changes in deliverable dates, we are requesting an increase in funding and an extended period of performance. The additional or expanded tasks are described below.

1. A request from NRC led to a major restructuring of NUREG-1640. We were asked to remove all references to the reuse of cleared equipment, which was described in Chapter 3. This necessitated rewriting Chapters 1, 2, and the existing Chapter 4, all of which make reference to the deleted Chapter 3. It further required renumbering Chapters 4 - 9, which then became Chapters 3 - 8. This required changing all section headings, tables, figures, and internal cross-references within and between chapters. Finally, Table B.2 in Appendix B, which listed the parameters for the reuse scenario, needed to be deleted; therefore, all subsequent tables were renumbered and the references to these tables in Chapters 4 - 7 were revised. This extensive editing task constituted new work undertaken at the Agency's request; we are therefore requesting fee on this portion of the work.

2. NRC required an extensive reduction of information in Appendix A, which was adapted from the draft "Inventory Report" prepared by SC&A under Contract No. NRC-04-01-049. This appendix contained information regarding contamination levels and other data which have not yet been submitted for public comment. NRC directed that such material not appear in

NUREG-1640, which is a final revision of a previously issued "Draft Report for Comment." However, other material in this appendix, which is based on data published in other, final NUREG documents, is an integral part of the present analysis. Therefore, an extensive revision of Appendix A was required to restrict the information to that utilized in the present analysis. This likewise entailed revising the references to sections and tables in Appendix A, which appear in Chapters 4 - 7. This was another major editing task which also constituted new work undertaken at the Agency's request; we are therefore requesting fee on this portion of the work.

The remainder of the changed work requirements are treated as cost overruns: fee is not requested for the items listed below. This work was required by the NRC to reduce unnecessarily conservative assumptions and increase realism consistent with the design objectives of the report. These changes are described in Items 3 - 6.

3. Responding to NRC's technical direction to modify the internal dose conversion factors required a greater effort than originally anticipated. The following noteworthy comment appears in the CNWRA report on Draft NUREG-1640:

> It appears that the dose conversion factors for the oxide form of the radionuclides were used in the calculation of dose. Because the oxide form of the radionuclide does not always yield the limiting dose for the radionuclide and can be as much as a factor of 100 lower than the limiting chemical form, justification needs to be provided for this assumption.

It was therefore necessary to study the chemical behavior of each affected element. This involved a review of the 41 elements represented in our study for which more than one Lung Clearance Type or $f_1$ value for ingestion are listed in FGR 11 and ICRP 68. The most likely chemical forms in each of 14 different media were assigned to these elements; these chemical forms were then used as the basis for selecting the appropriate Lung Clearance Type and $f_1$ value. Furthermore, it also required a study to determine the appropriate particle size (1μ or 5μ) for each material to determine the correct inhalation dose coefficient from ICRP 68.

Once the proper chemical forms were decided on, the changes were implemented into the Excel spreadsheets. The master file, "DCF Library.xls," was restructured, not merely edited. This required verifying and, in many cases, correcting the cell references in well over 100 separate work sheets. Most of the 87 scenario spreadsheets were rerun and the results checked.

Finally, a separate section (to be designated as Appendix L), explaining and documenting the selection of chemical forms and particle sizes, needs to be added to NUREG-1640.

4. The ship model required a far greater effort than was anticipated. Instead of the simple series of identical boxes that had been anticipated, the wealth of information obtained from

Carderock and other U.S. Navy sources enables the construction of a highly realistic but complex model. Critical to the model were the contents of each compartment (empty compartments, as originally contemplated, would lead to far higher potential doses), and realistic occupancy times, based on detailed information on shipboard life. Simplifying the model would have necessitated making conservative assumptions and would have led to an overstatement of the potential doses from these scenarios, which is contrary to the design objectives of these analyses.

5. A number of other changes were required to provide a more realistic (and less conservative) analysis. These included:

   a. Revising the complex slag pile leach model to incorporate the changes made to the landfill-groundwater model in the concrete analysis.

   b. A more realistic treatment of the dilution of buried wastes in landfills, and of the mixing of cleared steel scrap in the scrap yard. These scenarios describe the critical groups in a number of cases and therefore will have a direct impact on the implementation of clearance.

   c. A more realistic modeling of the road construction worker scenarios. This scenario describes the critical group for a majority of the radionuclides in the concrete analysis, and therefore will have a direct impact on the implementation of clearance.

6. Further discussion with a steel industry commenter and peer reviewer indicated a need to expand the scoping analyses that are to be included in Appendix N. These include discharge of water from thickener removing particulates from scrubber at BOF, as well as expanding the analysis of mill scale, which was performed as part of Contract No. NRC-04-01-049 but is limited to a single radionuclide. The use of EAF dust as fertilizer, the subject of an earlier comment, also needs to be presented in this appendix.

In addition to preparing the revised NUREG-1640, there are four later tasks that are required under the present contract: (1) the preparation of a final report responding to roughly 100 comments on Draft NUREG-1640 and on the intermediate revisions; (2) editing the text in the Excel spreadsheets to render them more comprehensible to a new user; (3) preparing a spreadsheet user's manual; and (4) assembling the engineering design files (EDFs) and preparing them for delivery to NRC.

These tasks are closely linked to the preparation of the NUREG-1640 Supplement that is to be performed by SC&A under Contract No. NRC-04-01-049. It is our understanding that in a separate modification of Contract No. NRC-04-01-049, the NUREG-1640 Supplement will now include the assessments of individual doses from the reuse of equipment and an analysis of exposures from multiple sources. Therefore, the four later tasks under Contract NRC-04-01-065 need to be postponed until after the NUREG-1640 Supplement has been completed, for the following reasons:

- The same EDFs involved in the preparation of NUREG-1640 would be utilized and updated during the preparation of the Supplement. It would be preferable for SC&A to retain the EDFs and deliver them as a single package.

- Additional spreadsheets, with a comparable design but differing in significant details, would be prepared as part of the analyses for the Supplement. It would be desirable to deliver these spreadsheets as a single package.

- The user's manual should include a description and documentation of these additional spreadsheets.

- The final report needs to encompass comments that are addressed in the Supplement.

We propose to deliver all outstanding sections of NUREG-1640, in camera-ready form, on or before July 31, 2003. We propose to deliver the products of the four later tasks—the final report, the edited Excel spreadsheets, the spreadsheet user's manual, and the engineering design files—on or before December 31, 2003.

Altogether, these additional and expanded tasks for Contract NRC-04-01-065 entail an expenditure of 898 work hours on the part of our technical staff and 196 hours of clerical work. The additional costs are $95,228. Items 1 and 2, above, comprising one-third of this additional effort, constitute new work and are therefore entitled to bear fee. This fee is $2,655, bringing the total amount to $97,883. The details of this estimate are contained in the attachment to this letter. Please do not hesitate to contact me at 703-893-6600, x213 if you have any questions regarding this matter.

Sincerely,

Laurie Loomis, CPCM
Contracts Manager, VP

Attachment

cc: R. Meck
S. Cohen
J. Mauro
R. Anigstein