

## AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE PAGE OF PAGES

2. AMENDMENT/MODIFICATION NO.

1

3. EFFECTIVE DATE

MAR 22 1989

4. REQUISITION/PURCHASE REQ. NO.

AED-89-293 3-9-89

5. PROJECT NO. (If applicable)

6. ISSUED BY

CODE

U. S. Nuclear Regulatory Commission  
Division of Contracts & Property Management  
Contract Administration Branch, P-902  
Washington, D.C. 20555

7. ADMINISTERED BY (If other than Item 6)

CODE

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

EG&G Intertech, Inc.  
Attention: Dorian Conger, Director, Risk Analysis  
Atlanta Office  
1529 Highway 92 W., Box 13  
Woodstock, Georgia 30188

(V) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.

NRC-26-89-293

10B. DATED (SEE ITEM 13)

2-13-89

CODE

FACILITY CODE

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 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)

982-19-01-04-0 021919 31X0200.829 Obligate \$30,000.00 (increase)

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

(V) 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 SUPPLEMENTARY AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: Contract Subsection H.7,  
X Option to Extended Services, Option 2; mutual agreement of the parties.

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 3 copies to the issuing office.

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

This modification is issued to exercise Option 2 under Contract Section H, Special Contract Requirements, Subsection H.7, Option to Extend Services, for the presentation of the Incident Investigation Team Training Course at Region I, King of Prussia, Pennsylvania, for the dates of March 27-31, 1989. EG&G Intertech, Inc. shall perform the work in accordance with the attached Statement of Work and the contractor's proposal dated March 20, 1989, hereby incorporated by this reference. In addition, execution of this modification by EG&G Intertech, Inc. constitutes waiver by EG&G Intertech of the Government's requirement to provide the contractor a 60-day preliminary notice of the Government's intention to exercise Option 2 under Subsection H.7 of this contract.

As a result of this action, the contract is hereby modified as follows:

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)

Dorian Conger, Director

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Sharon Bell, Contracting Officer

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

4/2/89

16B. UNITED STATES OF AMERICA

BY Sharon Bell  
(Signature of Contracting Officer)

16C. DATE SIGNED

3/22/89

1. Section B.2, Consideration and Obligation - Delivery Orders, is revised to obligate additional funding in the amount of \$30,000.00. Therefore, Section B.2, Consideration and Obligation - Delivery Orders, paragraph b, the first sentence is revised to read as follows:

"The amount presently obligated with respect to this contract is \$80,000.00."

The contract ceiling amount of \$176,197.00 remains unchanged.

2. Section H, Special Contract Requirements, Subsection H.7, Option to Extend Services, Option 2, is hereby exercised. EG&G Intertech, Inc. shall present a 5-day course, "Incident Investigation Team Training," at NRC Region I, King of Prussia, on March 27 - March 31, 1989. Performance of this effort shall be as described in the attached Statement of Work (previously included with NRC's request for proposal dated March 15, 1989). NRC accepts EG&G Intertech, Inc.'s cost proposal dated March 20, 1989 and the parties hereby agree to the following terms and conditions:

- (1) EG&G Intertech, Inc. shall be reimbursed at the fixed rate provided under the contract (page 4) for presentation of the above course under Option 2 as follows:

<u>Date</u>	<u>Firm-Fixed Price</u>
FY 1989	\$199.00 per person, per day with a minimum of 10 people and a maximum of 25 people.

- (2) EG&G Intertech, Inc. shall be reimbursed for course development costs exceeding 16 hours at the hourly rate provided under Section C.1.3.1, Course Development, as follows:

<u>Date</u>	<u>Firm-Fixed Price</u>
FY 1989	\$ 78.00 per hour for hours exceeding 16 per course

Total estimated costs for course development for the above course are \$780.00 for 10 hours. Costs shall not exceed this ceiling without prior approval of the Contracting Officer.

- (3) EG&G Intertech, Inc. shall be reimbursed for actual travel costs incurred in performance of the Option 2 effort. However, total expenditure for domestic travel required for performance of this effort shall not exceed \$2,683.00 without the prior approval of the Contracting Officer. Travel shall be conducted in accordance with the provisions contained in contract Section G, Contract Administration Data, Subsection G.5, Travel Reimbursement.

- (4) EG&G Intertech, Inc. shall be reimbursed for general and administrative expenses at a fixed rate of [REDACTED] of travel costs.

All other terms and conditions of this contract remain unchanged.

Attachment:  
Statement of Work

## STATEMENT OF WORK

### 1.0 BACKGROUND

The Incident Investigation Program (IIP) is intended to upgrade the NRC investigation of significant events and to assure that the investigation is timely, thorough, coordinated, and formally administered. The primary objective of the IIP is to ensure that operational events are investigated in a systematic and technically sound manner to gather information pertaining to the root causes of the events, including any NRC contributions or lapses, and to provide appropriate feedback regarding the lessons of the experience to the NRC, industry, and to the public.

### 2.0 OBJECTIVE

The objective of this contract modification is to exercise Option 2 of section H.7 of the contract to provide one (1) presentation of the Incident Investigation Team Training Course in a modified form to meet the needs of Region I personnel. The course will provide NRC staff members with state-of-the-art training in accident investigation.

### 3.0 COURSE PRESENTATION

The contractor shall furnish qualified personnel, manuals, and services to support and conduct the Accident/Incident Investigation Workshop in accordance with the attached course outline (ATTACHMENT 1).

Instructors furnished by the contractor must have experience providing instruction to adult learners and be thoroughly familiar with accident investigation techniques including use of the Management Oversight and Risk Tree (MORT).

The course date will be from March 27 - 31, 1989. The course location will be in the Region I office, King of Prussia, Pa.

MORT-based:  
Accident/Incident Investigation Workshop

EG&G InterTech, Inc.  
1529 Highway 92, W.  
Box 13  
Woodstock, GA 30188

DAY ONE

Introductions. Introduction of the participants and instructor(s). Introduction to the workshop: concepts, methods, exercises, outcomes, expectations.

Work Process. Discussion of how work gets done, with emphasis on the "upstream" considerations.

Failure Recognition and Analysis. Discussion of how to increase ability to detect typical hardware failure signs, gather and preserve evidence of hardware failure, and trace hardware failures to causal factors in the accident sequence.

Change Analysis. Exploration of the role of change in accidents and a model for identifying elements of change.

Analytic Trees. Description of analytic trees: uses, principles of construction, parts, examples, symbols.

LABORATORY

Read Tuberup Case. For this case, perform

- 1) Change Analysis
- 2) Preliminary Fault Tree Analysis

DAY TWO

Presentation of Change Analysis and Preliminary Fault Tree Analysis. Participants present, discuss; instructor(s) critiques.

Events and Causal Factors Analysis. Guidelines, symbols and directions for sequencing an accident on events and causal factors chart.

Human Errors. Examination of human performance and its impact on other system components, emphasis on types of and underlying reasons for personnel errors.

## LABORATORY

- 1) Update Change Analysis and Fault Tree
- 2) Create Events and Causal Factors Chart

## DAY THREE

### Presentation of Events and Causal Factors Chart.

Participants present, discuss events and causal factors chart; instructor(s) critiques.

Risk Projection. An extended example of extreme value risk projection, including participant exercise.

MORT Analysis. Discussion and illustration of the Management Oversight and Risk Tree chart.

Interviewing Witnesses. How to conduct an information gathering interview. Including the opening of the interview, question types and sequences, and closing the interview. Also a discussion of handling different types of interviewees, e.g. hostile, talkative, quiet, etc.

## LABORATORY

- 1) Determine witness list
- 2) Prepare interview schedules
- 3) Preliminary MORT Analysis

## DAY FOUR

Presentation of Preliminary MORT Analysis. Participants present and discuss the preliminary MORT chart; instructor(s) critiques.

Assembling Facts and Conclusions. Discussion of how to integrate various types of information into the investigation report, e.g. physical evidence, expert testimony, interviews, etc. also discussion of handling conflicting information.

Building a Defendable Argument. A discussion of how to organize, develop, and structure an argument using the facts and conclusions.

## LABORATORY

- 1) Interview witnesses
- 2) Complete analysis: a) Change b) Fault tree  
c) E & CF d) MORT
- 3) Begin report

## DAY FIVE

### LABORATORY

- 1) Assemble all materials in final form.  
These include:
  - a) Report outline (including summary events and causal factors chart and a listing of facts and conclusions.)
  - b) Analytical Techniques
  - c) Working notes and papers.
- 2) Present investigation report.

Critique of Interviews and Presentations. Instructors will provide the groups with feedback regarding their performance.