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| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | | 1. CONTRACT ID CODE | PAGE OF PAGES 1 2 |
| 2. AMENDMENT/MODIFICATION NO. <div style="text-align: center;">6</div> | | 3. EFFECTIVE DATE <div style="text-align: center;">7/9/85</div> | | 4. REQUISITION/PURCHASE REQ. NO. <div style="text-align: center;">NRR-84-068</div> | |
| 5. ISSUED BY <div style="text-align: center;">U. S. Nuclear Regulatory Commission Division of Contracts Washington, DC 20555</div> | | 6. ADMINISTERED BY (If other than Item 5) <div style="text-align: center;">U. S. Department of Interior U. S. Geological Survey Attn: Betty Medley Reston, VA 22092</div> | | 7. PROJECT NO. (If applicable) | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) | | 9A. AMENDMENT OF SOLICITATION NO. | | 9B. DATED (SEE ITEM 11) | |
| | | X | | 10A. MODIFICATION OF CONTRACT/ORDER NO. <div style="text-align: center;">NRC-03-84-068</div> | |
| | | | | 10B. DATED (SEE ITEM 13) <div style="text-align: center;">1/13/84</div> | |
| | | | | | |
| CODE | | FACILITY CODE | | | |
| 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS | | | | | |
| <input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> 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) APPN No. 31X0200.205 Obligate: \$27,000.00 | | | | | |
| 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14. | | | | | |
| VI 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 mutual agreement of the parties | | | | | |
| D. OTHER (Specify type of modification and authority) <div style="text-align: right;"> 8507180460 850709 PDR CONTR NRC-03-84-068 PDR </div> | | | | | |
| E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return <u>3</u> copies to the issuing office. | | | | | |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The purpose of this modification is to add FY85 funds, revise amounts previously certified and amend Work Assignment 7-(attached). Accordingly, the following changes are hereby made. | | | | | |
| 1. Work Assignment 7 issued under Modification No. 2, effective August 21, 1984, is revised as follows: | | | | | |
| a. <u>Work Requirements</u> , add item "f through i," which are described in the attachment. | | | | | |
| b. <u>Level of Effort and Period of Performance</u> , is deleted in its entirety and the following is substituted in lieu thereof: | | | | | |
| 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) John R. Filson, Chief, Office of Earthquakes, Volcanoes, and Engineering | | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Paul J. Edgeworth | | |
| 15B. CONTRACTOR/OFFEROR <i>John R. Filson</i> | | 15C. DATE SIGNED <i>7/3/85</i> | | 16B. UNITED STATES OF AMERICA BY <i>Paul J. Edgeworth</i> | |
| | | | | 16C. DATE SIGNED <i>7/9/85</i> | |

"Level of Effort and Period of Performance"

The level of effort is estimated at 1.8 staff years over a 3 year period (FY1984, 0.40 staff years; FY1985, 0.40 staff years; and FY1986, 1.0 staff years) with the period of performance ending August 31, 1986. This estimate includes travel expenses.

- c. Reporting Requirements, add items "c and d," which are described in the attachment.

2. Article IV - Obligation of Funds - delete in its entirety and substitute the following:

"The amount presently obligated hereunder for the effort described is chargeable to:

| <u>FIN No.</u> | <u>B&R No.</u> | <u>FY1984 Certified Amount</u> | <u>Revised FY1985 Certified Amount</u> | <u>Total</u> |
|----------------|--------------------|------------------------------------|--|--------------|
| B8643 | 20-19-40-42-2 | 95,000 | 40,500 | \$135,500 |
| B8650 | 20-19-10-12-2 | 80,000 | 119,885 | \$199,885 |
| B8663 | 20-19-10-11-2 | 3,000 | 127,000 | \$130,000 |
| B8633 | 20-19-40-41-2 | 74,000 | -0- | \$ 74,000 |
| B8662 | 20-19-40-42-2 | 65,000 | -0- | \$ 65,000 |
| | | \$317,000 | \$287,385 | \$604,385 |

The total amount of funds presently obligated is increased by \$27,000 from \$577,385 to \$604,385.

WORK ASSIGNMENT 7
MODIFICATION

PARTICIPATION IN EPRI PROGRAM

FIN No.: B8650

B&R No.: 20-19-10-12-2

Technical Monitor: G. Giese-Koch (FTS 492-4644)

Add:

WORK REQUIREMENTS

- f. Two representatives from the USGS shall attend at least two meetings with EPRI technical personnel. Following each meeting the USGS will submit a letter report on the topics discussed and the conclusions reached.
- g. USGS will review the materials generated for the EPRI Seismic Hazard Program and determine which elements of the program play a critical role in the program results.
- h. USGS will review the ground motion estimates for the nine sites developed by EPRI and compare these to results obtained by others, including those obtained by Lawrence Livermore National Laboratory (LLNL) under the NRC sponsored program titled Seismic Hazard Characterization for the Eastern United States (EUS), and those derived from recent USGS research concerned with the role of source zone size, historical seismicity and randomly located source zone boundaries, mechanism dependent attenuation, and source-zone boundary uncertainties.

Inclusive in this subtask should be a review of the ground motion models considered in the EPRI program, noting the merits of each model, any inherent biases and sensitivity studies as necessary to demonstrate the impact of each model upon the final results.

Alternate viewpoints regarding methodology (for example, statistical techniques, differences in philosophy of zoning, methods of treating seismicity data, effects of earthquake source characteristics on ground motion and methods used to define seismic source zone boundaries) should also be reviewed.

- i. USGS will calculate probabilistic ground motion values using limited generalization of historical seismicity locations and magnitudes. Results from this subtask will be compared to results obtained from the very restricted generalization of historical seismicity and the generalized results obtained from source zone models.

Add:

REPORTING REQUIREMENTS

- c. Provide an interim report on the EPRI project discussing the status of the review and the preliminary findings by October 1985.
- d. Provide a final report consisting of a multi-author text assessing techniques, approaches and implications of the EPRI project by June 1986.