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| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | | BPA NO. | 1. CONTRACT ID CODE | PAGE 1 | OF PAG 2 |
| 2. AMENDMENT/MODIFICATION NO. M001 | | 3. EFFECTIVE DATE MAY 04 2006 | | 4. REQUISITION/PURCHASE REQ. NO. RES-C06-604 | | 5. PROJECT NO. (If applicable) | |
| 6. ISSUED BY U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Mr. Michael Mills Mail Stop T-7-I-2 Washington, DC 20555 | | CODE 3100 | | 7. ADMINISTERED BY (If other than Item 6) U.S. Nuclear Regulatory Commission Div. of Contracts Mail Stop T-7-I-2 Washington, DC 20555 | | CODE 3100 | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) ENERGY RESEARCH, INC. 6167 EXECUTIVE BLVD. ROCKVILLE MD 208523901 | | | | (X) | | 9A. AMENDMENT OF SOLICITATION NO. | |
| | | | | | | 9B. DATED (SEE ITEM 11) | |
| | | | | | | 10A. MODIFICATION OF CONTRACT/ORDER NO. GS23F011OM DR-04-05-081 | |
| | | | | X | | 10B. DATED (SEE ITEM 13) 12-29-2005 | |
| CODE 62121159 | | 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) 660-15-113-277, N6236, 252A, 31X0200.660
 FFS No. RES-C06-604, Obligate \$131,090.50

**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) 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.)
 Refer to 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.

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|---|--|---|--|
| 15A. NAME AND TITLE OF SIGNER (Type or print) MOHSEN KHATIB-RAHBAR, PRESIDENT | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Donald A. King | |
| 15B. CONTRACTOR/OFFEROR <i>[Signature]</i> (Signature of person authorized to sign) | | 16B. UNITED STATES OF AMERICA <i>[Signature]</i> (Signature of Contracting Officer) | |
| 15C. DATE SIGNED 5/4/06 | | 16C. DATE SIGNED 5/3/06 | |

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

STANDARD FORM 30 (REV. 10-83)

ADM002

The purpose of this bilateral modification is to (1) incorporate modification no. 1 to the Statement of Work, (2) extend the period of performance through 10/31/2006, (3) provide incremental funding in the amount of \$131,090.50, hereby increasing the obligated amount from \$150,000.00 to \$281,090.50 and (4) increase the ceiling amount by \$39,951.06, from \$241,139.44 to \$281,090.50. Accordingly, the delivery order is hereby modified as follows:

1. Incorporate the attached modification (Attachment 1) to the Statement of Work.
2. Extend the period of performance through 10/31/2006.
3. Obligate \$131,090.50 in incremental funding to fully fund this delivery order.
3. The total ceiling of the order is \$281,090.50

All other terms and conditions remain unchanged.

A summary of obligations from the award date, though the date of this modification are provided below:

| | |
|-------------------------|--------------|
| FY 05 Obligations: | \$150,000.00 |
| FY 06 Obligations: | \$131,090.50 |
| Cumulative Obligations: | \$281,090.50 |

Attachment 1

**STATEMENT OF WORK
TRACE CODE ASSESSMENT AGAINST INTEGRAL THERMAL-HYDRAULIC TESTS
DR-04-05-081
Modification 1**

Modify the **Scope of Work** as follows:

SCOPE OF WORK

Task 1 ESBWR Assessment Using PANDA Integral Tests

Revise the estimated completion date as follows:

Estimated Completion Date: Revised draft report on PANDA M - 9 (4/30/2006)
Final report (5/31/2006)

Task 2 ESBWR Assessment Against ISP-42 Data

Revise the estimated completion date as follows:

Estimated Completion Date: Draft report on ISP-42 (6/15/2006)
Final report (7/15/2006)

Task 3 Technical Assistance

Revise the estimated completion date as follows:

Estimated Completion Date: 10/31/2006

Add a new task as follows:

Task 4 ESBWR Assessment Against GIRAFFE Tests

Develop input decks for the TRACE code to simulate GIRAFFE GS2 and GS3 integral tests. The input should include all essential features of the facility and all essential test parameters, and should be comparable to the ESBWR containment model. Run the TRACE code for GIRAFFE test assessment. Prepare an assessment report highlighting how well the code calculations compare with the test data. Based on the assessment, provide recommendations on the applicability of TRACE for ESBWR plant calculations.

Estimated Level of Effort: 3.0 person-months
Estimated Completion Date: Draft report on GS-2 and GS-2 (8/15/2006)
Final report (9/15/2006)

Modify **Meetings and Travel Requirements** as follows:

The contractor shall attend up to 12 1-day meetings for up to three persons at the NRC Headquarters. In addition, an ERI staff member will attend the ICONE conference in Miami, Florida to present a paper on the TRACE experimental assessment using PANDA ISP-42 data.

Modify the **Period of Performance** as follows:

The delivery order shall be effective from the date of award through **October 31, 2006**.

Modify **NRC-Furnished Materials** as follows:

Add to the list of NRC-furnished materials the following:

GIRAFFE GS2 and GS3 data and facility reports (to be treated as proprietary material)
Existing MELCOR or other decks for GIRAFFE GS2 and GS3.