

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		BPA NO.	1. CONTRACT ID CODE	PAGE 1	OF PAGE 4
2. AMENDMENT/MODIFICATION NO. MOD 1		3. EFFECTIVE DATE See Block 15c.	4. REQUISITION/PURCHASE REQ. NO. RES-04-083	5. PROJECT NO. (If applicable)	
6. ISSUED BY U.S. Nuclear Regulatory Commission Div. of Contracts Attn: Jeffrey R. Mitchell, 301-415-6465 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)		(X)	9A. AMENDMENT OF SOLICITATION NO.
UNIVERSITY OF WISCONSIN SYSTEM Attn: Stephanie Gray, UW #29110			
750 UNIVERSITY AVE			9B. DATED (SEE ITEM 11)
MADISON WI 537061411			
CODE 161202122		FACILITY CODE	10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-04-04-083
			10B. DATED (SEE ITEM 13) 09-30-2004

### 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	N6022	252A	31X0200.660
	RES-C06-606	OBLIGATE \$100,000.00		

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

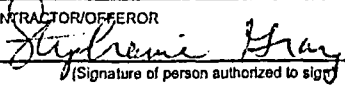

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: Bilateral "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 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 ATTACHED PAGE TWO FOR A DESCRIPTION OF MODIFICATION NO. ONE.....

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) Stephanie Gray, Admin. Officer Research & Sponsored Programs		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Donald A. King Contracting Officer	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED 07/05/2006	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED 04-27-2006

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

STANDARD FORM 30 (REV. 10-83)

ADM002

The purpose of this modification is to make several changes to the Statement of Work. The changes that are taken place within this modification are done at a no-cost change as certain tasks are being deleted/revised and replaced with an equal mix of effort for the revised tasks. Accordingly the contract is modified as follows:

- (1) Delete Task 3 in its entirety.
- (2) Delete Task 4 in its entirety and replace with the following:

**"Task 4. FCI Calculations for ESBWR and EPR Designs**

The contractor shall perform reactor FCI calculations for the EPR design using the University of Wisconsin developed TEXAS code, and using initial and boundary conditions that are obtained from design documents and MELCOR plant calculations. Minor code modifications, as necessary, to address EPR design and geometry specific features shall be considered as part of this effort. The contractor shall also perform sensitivity calculations using parametric variations, and estimate a spectrum of steam explosion loads from the results of sensitivity analysis. The contractor shall document the results in a report.

For the ESBWR design, the contractor shall peer review plant calculations using the TEXAS code.

Deliverable: Letter report on EPR FCI calculations  
Estimated Completion Date: 12/31/2008  
Estimated level of Effort: 10 person-months"

- (3) Delete Task 5 in its entirety and replace with the following:

**"Task 5. Analysis of Other EPR Severe Accident Issues**

The EPR design has a few unique severe accident mitigation features, such as core catcher and segmented spreading chamber, to enhance core debris coolability. A proposed Organization for Economic Cooperation and Development (OECD) sponsored Melt Coolability and Concrete Interaction (MCCI) follow-on program is designed to investigate potential coolability enhancement by new design features such as the ones mentioned above. This follow-on program is experimental in nature and will generate a significant amount of data on debris coolability and two-dimensional core-concrete interaction. The contractor shall provide support to the OECD-MCCI experimental team in designing appropriate experiments, analyze the experimental data, and provide technical expertise to the OECD-MCCI project team in developing analytical models for incorporation into NRC's severe accident codes.

Deliverable: Letter reports documenting data analysis and model development effort  
Estimated Completion Date: 06/30/2008  
Estimated Level of Effort: 6 person-months"

- (4) Delete Task 6 in its entirety and replace with the following:

**"Task 6. Expert Technical Support**

Provide expert technical support, on an as-needed basis, to the NRC staff in the review of technical documents related to new reactor designs, including ESBWR and EPR presentations to ACRS (full committee and cognizant subcommittees), and preparation of safety analysis reports by the NRC staff.

Deliverable: As required

Estimated Completion Date: 12/31/2008

Estimated Level of Effort: 4 person-months"

- (5) Delete Section VI "Technical and Other Qualifications Required" in its entirety and replace with the following:

**"TECHNICAL AND OTHER QUALIFICATIONS REQUIRED**

For successful performance of this work, the contractor and its principal personnel should have considerable experience in fuel-coolant interactions (FCI) and related severe accident research areas pertaining to their applications to new reactor designs. Thus, the contractor's personnel should also have high degree of familiarity with new reactor design features, in particular, those relevant to addressing the FCI and related severe accident issues."

- (6) Delete Section VII "Meetings and Travel" in its entirety and replace with the following:

**"MEETINGS AND TRAVEL**

The contractor may be required to travel to licensee design office sites as identified by the NRC Project Officer. The overseas travel will be coordinated with and authorized by the NRC Project Officer, subject to NRC travel requirements and limitations. The contractor will also be required to attend progress review meetings at the NRC headquarters during the performance period of the contract, and may be required to attend other technical meetings."

- (7) Delete Section VIII "NRC Furnished Material" in its entirety and replace with the following:

**"NRC FURNISHED MATERIAL**

NRC will provide the contractor relevant design documents for new reactor designs including, but not limited to, ESBWR and EPR designs. These documents, in most part, will be proprietary and should be treated as such by the contractor. These documents shall not be re-distributed to personnel other than the contractor's staff involved in the project, and the information shall not be disclosed without prior approval from the NRC."

A summary of obligations from the date of award through the date of this modification is provided below:

FY05 Obligations "Award"	\$100,000.00
FY06 Obligations "Mod 1"	\$100,000.00
Cumulative Total of NRC Obligations	\$200,000.00

This modification obligates FY06 funds in the amount of \$100,000.00.

All other terms and conditions remain the same including the contract ceiling of \$404,450.00