AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

	BPA NO.	1. CONTRACT ID CODE	PAGE 1	OF PAG 3

2. AMENDMENT/MODIFICATION NO. M002	3. EFFECTIVE DATE See block 16c.	4. REQUISITION/PURCHASE REQ. NO. RES-12-181		5. PROJECT NO.(if applicable)

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

6. ISSUED BY
U.S. Nuclear Regulatory Commission
Div. of Contracts
Attn: Adelis M Rodriguez 301-492-3623
Mail Stop: TWB-01-B10M
Washington, DC 20555

7. ADMINISTERED BY
U.S. Nuclear Regulatory Commission
Div. of Contracts
Mail Stop: TWB-01-B1DM

Washington, DC 20555

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	
INFORMATION SYSTEMS LABORATORIES, INC.		9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
11140 ROCKVILLE PIKE STE 650		10A. MODIFICATION OF CONTRACT/ORDER NO. GS23F0060L NRC-HQ-11-F-04-0003
ROCKVILLE MD 208523116		10B. DATED (SEE ITEM 13)
CODE 960756138 FACILITY CODE	X	09-27-2011

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)
B&R: 2012-60-17-6-100; JC:V6021; BOC:252A; APPN: 31X0200 Obligate: $35,000 DUNS: 960756138; NAICS:541330; FAIMIS:122098

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: FAR Part 43.103(a)
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [X] is required to sign this document and return _1_____ 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 an additional task, therefore increasing the ceiling by $35,060 from $198,06 to $233,120, extending the period of performance through July 31, 2012. This modification also increases the obligated amount by $35,000 from $198,060 to $233,060.

See following pages for details.

Total Obligated Amount: $233,060.00 (changed)
Total Order Ceiling: $233,120 (changed)
Period of Performance: 9/27/2011 - 7/31/2012 (changed)

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) DANIEL A. PRELEWICZ VICE-PRESIDENT & DEPUTY MANAGER, ISD	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Adelis M. Rodriguez Contracting Officer
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 5/22/2012	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 5/22/12

NSN 7540-01-152-8070
PREVIOUS EDITION NOT USABLE

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA - FAR (48 CFR) 53.243

SUNSI REVIEW COMPLETE   MAY 2 4 2012

TEMPLATE - ADM001

ADM002

The purpose of this modification is to add an additional task, therefore increasing the ceiling by $35,060 from $198,060 to $233,120, extending the period of performance through July 31, 2012. This modification also increases the obligated amount by $35,000 from $198,060 to $233,060. Accordingly, the task order statement of work is modified as follows:

1. Section 1.0 of the task order terms and conditions entitled: "Price Schedule" is modified to read as follows:

Labor Category	Fixed Labor Rate	Original Estimated Hours	Original Total	Additional Estimated Hours	Additional Estimated Amount	Revised Estimated Total
Engineer Fellow	$215.00	145	$31,175.00	156	$33,540.00	$64,715.00
Principal Engineer 2	$183.00	155	$28,365.00		$0.00	$28,365.00
Subject Matter Expert	$165.00	35	$5,775.00		$0.00	$5,775.00
Senior Research Engineer	$152.00	355	$53,960.00	10	$1,520.00	$55,480.00
Research Engineer	$115.00	659	$75,785.00		$0.00	$75,785.00
Total Labor		1349	$195,060.00	166	$35,060.00	$230,120.00
Travel			$3,000.00		$0.00	$3,000.00
Total		**1349**	**$198,060.00**	**166**	**$35,060.00**	**$233,120.00**

2. Section 2.0 of the task order terms and conditions entitled: "Consideration and Obligation – Labor Hour Contract" is revised to read as follows:

   (a) The total not to exceed cost to the Government for full performance of this contract is $233,120.

   (b) The amount currently obligated by the Government with respect to this contract is $233,060. The contractor shall not exceed this obligated amount at any time.

   (c) It is estimated that the amount currently allotted will cover performance through July 31, 2012.

3. Section VI of the statement of work entitled: Period of Performance is hereby modified to read as follows: "The period of Performance for this task order is September 27, 2011 through July 31, 2012

4. Section III, entitled "Scope of Work" is modified to add the following:

   5. Task 5: TRACE CONTAN Numerics Improvement

   This task will improve TRACE performance in simulating the thermal-hydraulics processes in a nuclear reactor containment during a postulated LOCA scenario. This is applicable for most operating Light Water Reactors (LWR) and may also apply to some proposed Integral Pressurized Water Reactors (iPWR) designs such as mPower by Babcock & Wilcox.

   During Task 1, several problems on CONTAN numerics have been identified: (1) The explicit numerics in the CONTAN component can easily become unstable as the pressure difference between two compartments approaches zero, (2) The equation of state (EOS) iterations in the CONTAN component, as the convergence criteria is reduced, can result in a significant increase in CPU time and (3) There is no flow inertia in the

passive junction flow rate calculations which is believed to cause noscillations.   In order to solve these issues, the contractor shall:
- Modify the numerics currently implemented in the CONTAN component
- Summarize the problem areas experienced in present testing with current numerics
- Document a proposal for possible improvements that are reasonably achievable and deemed effective with the best possible numerical scheme that could enhance the stability but not requiring substantial computational effort be selected
- Document the selection process
- Perform testing with the well established assessment test cases
- Implement the new numerics in the CONTAN component

The CONTAN component will be assessed against the four sets of experimental data, namely, the CVTR, HDR, Marviken and PSTF results. The contractor shall provide updated source files to be incorporated into the TRACE code following normal TRACE development procedures. In addition, revisions to the Theory Manual and Assessment Manual will be provided. As the work proceeds on the enhancements of the CONTAN input method, the User Guide will also need to be updated.

The TRACE manuals are written in Framemaker which is a publishing software. The NRC currently has Framemaker software version 10.   The contractor shall be required to provide the manuals to the NRC on a copy of the Framemaker software which is compatible with the version in use at the NRC. Copies of any related Framemaker support software, such as the math type font set, will be provided by the NRC to perform the work. All revisions to the Users Manual shall be coordinated with input from the US NRC project manager and technical monitor.

5. Section x, entitled "Deliverable Schedule and / or Milestones " is modified to add the following:

8. An updated CONTAN assessment report with the improved numerics implemented for all four test facilities, CVTR, HDR, the Marviken containment test, and PSTF tests.   Files for updating the assessment and theory manuals.

9. The contractor will submit TRACE code problems to bug tracking system and report detailing the results with CONTAN component.

All other terms and conditions remain the same.