

2. AMENDMENT/MODIFICATION NO. **M001** 3. EFFECTIVE DATE 06-22-2007 4. REQUISITION/PURCHASE REQ. NO. RES-04-062-T007M001 dtd 5/22/07 5. PROJECT NO.(If applicable)

6. ISSUED BY CODE 3100 7. ADMINISTERED BY (If other than Item 6) CODE 3100
 U.S. Nuclear Regulatory Commission
 Div. of Contracts
 Attn: H. (Eddie) Colón, Jr.
 Mail Stop T-7-I-2
 Washington, DC 20555

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)
 INFORMATION SYSTEMS LABORATORIES, INC
 ISL
 ATTN: DR. JAMES F. MEYER
 11140 ROCKVILLE PIKE, SUITE 500
 ROCKVILLE MD 20852
 CODE DUNS#: 150135445 FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO.
 9B. DATED (SEE ITEM 11)
 10A. MODIFICATION OF CONTRACT/ORDER NO.
 NRC-04-04-062 **TASK ORDER 007**
 10B. DATED (SEE ITEM 13)
 02-12-2007

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) 76060171852 N6421 252A 31X0200.760
OBLIGATE: \$50,000.00 (FES #: BES-C07-203)

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: 52.243-2 CHANGES--COST REIMBURSEMENT (AUG 1987) ALTERNATE I (APR 1984)
 D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return two (2) copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
 See Pages 2-3 for a description of this modification

Period of Performance: February 12, 2007 - September 30, 2007 (Changed)
 Ceiling Amount: \$96,846.00 (Changed)
 Obligated Amount: \$90,000.00 (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) *James F. Meyer Senior V.P.* 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Heriberto Colón, Jr. Contracting Officer
 15B. CONTRACTOR/OFFEROR *[Signature]* 15C. DATE SIGNED 8/13/07 16B. UNITED STATES OF AMERICA BY *[Signature]* 16C. DATE SIGNED 8-13-2007
 (Signature of person authorized to sign) (Signature of Contracting Officer)

The purpose of this modification is to:

- (1) increase the estimated level of effort of Task Order No. 007 by **334** hours, from 240 to **574**, to allow ISL, Inc. to provide: Assistance to the NRC staff in examining the applicability of a fully risk-informed approach to licensing an NGNP prototype; Assistance to the NRC licensing approach working group in the writing assignment of various chapters and sections of the licensing strategy draft document, and shall attend meetings of the working group; and to submit a letter report to the NRC by August 31, 2007 containing an analysis of if and how the current regulatory structure (e.g., technical requirements) should be modified when using a fully risk-informed approach and the supporting basis for staff identification of potential policy issues. As a result, the total estimated amount (ceiling) of Task Order No. 007 is increased by **\$54,944.00**, from \$41,902.00 to **\$96,846.00**.

This modification confirms the authorization provided to ISL, Inc. via email dated 6/21/2007 to commence work under this effort, effective June 22, 2007, with a temporary cost ceiling not-to-exceed \$26,032.00.

Reference is made to ISL, Inc.'s proposal dated 6/21/2007, as revised 7/12/2007, in response to this effort.

- (2) provide funding in the amount of **\$50,000.00**, thereby increasing the obligated amount from \$40,000.00 to **\$90,000.00**.
- (3) extend the period of performance of Task Order No. 007 through **September 30, 2007**.

Accordingly, the Task Order No. 007 is modified as follows:

1. The last paragraph of OPTION FORM 347 - Order for Supplies of Services starting with "Task Order No. 007 shall be effective..." is DELETED entirely REPLACED with the following:

"Task Order No. 007 shall be effective February 12, 2007 through **September 30, 2007**, with a total cost ceiling of **\$96,846.00**. The amount of **\$89,674.00** represents the reimbursable costs, and the amount of **\$7,172.00** represents the fixed fee."

2. Section A.1 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988) ALTERNATE 1 (JUN 1991) is DELETED entirely and REPLACED with the following:

"A.1 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988) ALTERNATE I (JUN 1991)

(a) The total estimated cost to the Government for full performance of **TASK ORDER 007** is \$96,846.00 of which the sum of \$89,674.00 represents the estimated reimbursable costs, and of which \$7,172.00 represents the fixed fee.

(b) There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of cost for performance of the work under this contract and the actual cost for performance of that work.

(c) The amount currently obligated by the Government with respect to **TASK ORDER 007** is \$90,000.00, of which the sum of \$83,334.99 represents the estimated reimbursable costs, and of which \$6,665.01 represents the fixed fee.

(d) It is estimated that the amount currently allotted will cover performance through September 14, 2007."

3. The **SOW** is DELETED entirely and REPLACED with ATTACHMENT #1 (*changes to the SOW are highlighted.*)

A summary of NRC obligations for Task Order No. 007, from date of the award through this modification, is provided below:

Total FY 07 obligations.....	\$ 90,000.00
Cumulative Total of NRC Obligations:	\$ 90,000.00

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

This modification **obligates** FY2007 funds in the amount of \$50,000.00.

STATEMENT OF WORK
TASK ORDER NO. 7 UNDER CONTRACT NO. NRC-04-04-062 (MODIFICATION NO. 1)
JOB CODE N6421
(Task placed under Parent Task Order Job Code Y6912)

TITLE: " Assistance in Developing the Next Generation Nuclear Plant (NGNP) Licensing Strategy"

1. BACKGROUND

Section 644 of the Energy Policy Act of 2005 (Act) provides that the U.S. Nuclear Regulatory Commission (NRC) has the licensing and regulatory authority for any reactor that is authorized under Subtitle C of the Act. Section 644 also provides that the Secretary of the Department of Energy (DOE) and NRC Chairman shall jointly submit to Congress a licensing strategy for the Next Generation Nuclear Plant (NGNP) within 3 years of the date on which the Act was enacted (August 8, 2005). Both the NRC and the DOE have the responsibility under the licensing strategy to develop information for evaluation of the ways in which current NRC light water reactor (LWR) licensing requirements need to be adapted for the NGNP, the analytical tools that the NRC will need to develop to independently verify the NGNP design and its safety performance, and other research and development activities that the NRC will need to conduct to review an NGNP license application.

2. OBJECTIVE

The objective of the proposed work is to conduct an analysis of licensing approaches used by NRC to license commercial power reactors and an evaluation of the ways in which current NRC LWR licensing requirements need to be adapted for the NGNP, including identification of new technical and regulatory requirements or modification of existing requirements.

3. SCOPE OF WORK

The contractor shall analyze licensing options for NGNP, including Part 50 with appropriate modifications and exemptions, Part 52 with similar treatment, a blended approach which is partly risk-informed and partly prescriptive as in Part 50, or a fully risk-informed approach. In particular, the contractor shall analyze pros and cons of various options, and for each option considered, the contractor shall identify new technical and regulatory requirements that need to be developed and existing requirements that need to be modified. Further, the contractor shall identify any policy issues associated with the selection of a particular licensing option. The contractor shall work closely with the NRC staff in accomplishing the task objectives. To the maximum extent feasible, earlier work done by the contractor in relation to the risk-informed framework development shall be factored into the proposed analysis.

In addition to the above, the contractor may be called upon to provide support to the NRC technical staff during meetings and briefings on the subject.

The contractor shall provide assistance to the NRC staff in examining the applicability of a fully risk-informed approach to licensing an NGNP prototype. Specifically, the contractor shall assist the staff in analyzing the technical and process requirements, and the need for associated

regulatory guides, standard review plans, analytical tools, and methods development in licensing an NGNP using the risk-informed approach. The results of this analysis shall be compared with those using the traditional light water reactor (LWR) licensing approach to license the NGNP. The contractor shall also assist the staff in identifying potential policy issues in the context of NGNP licensing using a fully risk-informed approach.

Additionally, the contractor shall provide assistance to the NRC licensing approach working group in the writing assignment of various chapters and sections of the licensing strategy draft document, and shall attend meetings of the working group.

4. DELIVERABLES AND SCHEDULE

The contractor shall submit a letter report to the NRC by May 31, 2007, containing the following information:

- a. Summary of pros and cons of various licensing options.
- b. For each licensing option considered (e.g., Part 50 straight), identification of sections of the regulation which are directly applicable to NGNP without change, sections which are partially applicable and changes required to make them fully applicable, sections which are not applicable, and new sections that need to be developed.
- c. For each licensing option considered, applicability or partial applicability of existing general design criteria (GDC), standard review plans (SRP), and regulatory guides (RG), as well as identification of new requirements.
- d. For each licensing option considered, policy issues that need to be addressed.

The contractor shall submit a letter report to the NRC by **August 31, 2007**, containing the following information:

- e. An analysis of if and how the current regulatory structure (e.g., technical requirements) should be modified when using a fully risk-informed approach.
- f. Supporting basis for staff identification of potential policy issues.

5. TECHNICAL AND OTHER QUALIFICATIONS REQUIRED

The proposed personnel must be thoroughly familiar with NRC's licensing framework for commercial nuclear power reactors. The personnel must also have familiarity with the high temperature gas reactor (HTGR) technology including past and ongoing international research and development work on HTGR technology with particular focus on safety and licensing approaches. The contractor shall identify key personnel and provide their résumés, indicating relevant experience and qualifications.

The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this Task Order, including assurance that all information contained in the technical and cost proposal, including resumes, is accurate and truthful. In addition, the contractor and personnel assigned to this work must be approved for handling and working with proprietary information.

The use of key personnel and any proposed change to key personnel on this contract are subject to approval by the NRC Project Manager and Technical Monitor. This includes proposed use of principal persons (i.e., key contributors) during the life of the contract. Conflict of interest considerations shall apply to any proposed personnel.

For any work to be subcontracted or performed by consultants, the contractor shall obtain written approval from the NRC Project Manager and Technical Monitor, prior to the initiation of the subcontract effort. Conflict of interest considerations shall apply to any subcontracted effort.

6. REPORTING REQUIREMENTS

A Monthly Letter Status Report (MLSR) is to be submitted to the NRC Project Manager by the 20th of each month with copies provided to the following:

- (1) Division of Systems Analysis and Regulatory Effectiveness (Sharon Haggerty, Management Analyst, Mail Stop T-10E59)
- (2) Division of Contracts, Office of Administration (Mail Stop T-7 12).

The MLSR will identify the title of the project, the job code, the Principal Investigator, the period of performance, the reporting period, summarize each month's technical progress, list monthly spending, total spending to date, and the remaining funds. Any administrative or technical difficulties which may affect the schedule or costs of the project shall be immediately brought to the attention of the NRC Project Manager.

The NRC has implemented a new document management system, Agencywide Documents Access and Management System (ADAMS). For the present, contractors' mail will not be placed in ADAMS. All documents mailed to the NRC (e.g., letters, technical reports, monthly letter reports, and other mail) will be entered into ADAMS unless the envelopes containing the documents are clearly marked "Addressee Only." Send mail for the addressee and cc's as separate mailings.

PUBLICATIONS NOTE

RES encourages the publication of the scientific results from RES sponsored programs in refereed scientific and engineering journals as appropriate. The contractor shall follow provisions of Management Directive 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects," with regard to all publications. If the contractor proposes to publish in the open literature or present the information at meeting, approval of the proposed article or presentation should be obtained from the NRC Project Manager. The RES Project Manager may disapprove or delay presentation or publication of papers on information that is subject to Commission approval that has not been ruled upon or which has been disapproved.

If the presentation or paper is in addition to the required technical reports and the RES Project Manager determines that it will benefit the RES project, the Project Manager may authorize payment of travel and publishing costs, if any, from the project funds. If the Project Manager

determines that the article or presentation would not benefit the RES project, the costs associated with the preparation, presentation, or publication will be borne by the contractor. For any publication or presentations falling into this category, the NRC reserves the right to require that such presentation or publication will not identify the NRC's sponsorship of the work.

NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS

The NRC began to capture its official records electronically. The NRC will capture each final NUREG-series publication in its native application. Therefore, the contractor is required to submit the final manuscript that has been approved by the NRC Project Manager in both electronic and camera-ready copy.

All format guidance, as specified in NUREG-0650, Revision 2, remains the same with one exception. The contractor no longer is required to include the NUREG-series designator on the bottom of each page of the manuscript. The NRC will assign this designator when the camera-ready copy is sent to the printer and will place the designator on the cover, title page, and spine. The designator for each report will no longer be assigned when the decision to prepare a publication is made. The NRC's Publishing Services Branch will inform the NRC Project Manager for the publication of the assigned designator when the final manuscript is sent to the printer.

For the electronic manuscript, the text shall be prepared in Microsoft® Word®, using any of the following file types for charts, spreadsheets, and the like.

File Types to be Used for NUREG-Series Publications	
File Type	File Extension
Microsoft® Word®	.doc
Microsoft® PowerPoint®	.ppt
Microsoft® Excel®	.xls
Microsoft® Access®	.mdb
Portable Document Format	.pdf

This list is subject to change if new software packages come into common use at NRC or by our licensees or other stakeholders that participate in the electronic submission process. If a portion of the manuscript is from another source and the contractor cannot obtain an acceptable electronic file type for this portion (e.g., an appendix from an old publication), the NRC can, if necessary, create a tagged image file format (file extension .tif) for that portion of the report. The contractor should continue to submit original photographs, which will be scanned, since digitized photographs do not print well.

For a compact disk (CD) version of the manuscript, the contractor should use (1) a portable

document format (PDF), (2) a Microsoft® Word® file format, or alternatively, (3) an Adobe Acrobat Reader with print instructions for obtaining a free copy of Adobe Acrobat Reader on the back cover insert of the jewel box.

7. MEETINGS AND TRAVEL REQUIREMENTS

The contractor shall attend the licensing approach working group meetings and other meetings at NRC's request. It is anticipated that most, if not all, meetings will be held local to the NRC headquarters. In the event a meeting takes place elsewhere that requires travel, the contractor shall seek prior approval of NRC.

8. PERIOD OF PERFORMANCE

The period of performance is February 12, 2007 through September 30, 2007.

9. NRC-FURNISHED MATERIAL

None.

10. RELATIONSHIP TO OTHER PROJECTS

In the course of this project, it is expected that the contractor will maintain full cognizance of all relevant research sponsored by the NRC, DOE, other U.S. government organizations and private institutions, and other international organizations involved in HTGR and/or NGNP technology.

11. CONFLICT OF INTEREST

The contractor shall list any work in the proposal that is similar to that previously performed, or is to be performed, by the contractor on behalf of another sponsor that might give rise to a perceived or actual organizational conflict of interest, including duplication of effort.

12. SUBCONTRACTING/CONSULTANT INFORMATION

The contractor shall identify the level of effort, by task, of any proposed subcontractor or consultant, if any, and provide an explanation of the need to subcontract the identified portion of the effort.

13. QUALITY OF NRC RESEARCH PROJECTS

The quality of NRC research programs are assessed each year by the Advisory Committee on Reactor Safeguards. Within the context of their reviews of RES programs, the definition of quality research is based upon several major characteristics:

- Results meet the objectives (75% of overall score)
 - Justification of major assumptions (12%)
 - Soundness of technical approach and results (52%)
 - Uncertainties and sensitivities addressed (11%)

- Documentation of research results and methods is adequate (25% of overall score)
 - Clarity of presentation (16%)
 - Identification of major assumptions (9%)

It is the responsibility of the contractor to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC project manager and technical monitor will review all research products with these criteria in mind.

14. TECHNICAL DIRECTION

Technical direction under this task order will be provided by the following NRC staff:

Sudhamay Basu
U.S. Nuclear Regulatory Commission
Two White Flint North
11555 Rockville Pike, Mail Stop T-10K8
North Bethesda, MD 20852-2738

Telephone: 301-415-6774
Fax: 301-415-5160
Email: [SXB2@nrc.gov](mailto: SXB2@nrc.gov)