

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

BPA NO. 1. CONTRACT ID CODE PAGE 1 OF PAGE 2

2. AMENDMENT/MODIFICATION NO. 0001  
 3. EFFECTIVE DATE NOV 03 2008  
 4. REQUISITION/PURCHASE REQ. NO. 03-07-036T061M001  
 NRO-09-036  
 5. PROJECT NO. (If applicable)

6. ISSUED BY U.S. Nuclear Regulatory Commission  
 Div. of Contracts  
 Attn: Kala Shankar 301-415-6310  
 Mail Stop TWB 01-B10M  
 Washington, DC 20555  
 CODE 3100  
 7. ADMINISTERED BY (If other than Item 6) U.S. Nuclear Regulatory Commission  
 Div. of Contracts  
 Mail Stop TWB 01-B10M  
 Washington, DC 20555  
 CODE 3100

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 107928806 FACILITY CODE  
 9A. AMENDMENT OF SOLICITATION NO. (X)  
 9B. DATED (SEE ITEM 11)  
 10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-42-07-036 0061  
 10B. DATED (SEE ITEM 13) X 09-17-2008

**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) N/A

**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:  
 D. OTHER (Specify type of modification and authority) Mutual Agreement of Both Parties  
 X

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return <sup>2</sup> \_\_\_\_\_ 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 task order is to reflect changes to the reporting requirements under Section 5 of the SOW.  
 Task Order Ceiling Amount: \$158,485 (unchanged)  
 Total Obligated Amount: \$150,000 (unchanged)  
 Period of Performance: 09/17/2008 - 09/16/2009 (unchanged)

See continuation pages

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) Bruce B. Mrowca V.P.  
 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Kala Shankar Contracting Officer  
 15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)  
 15C. DATE SIGNED 11/3/08  
 16B. UNITED STATES OF AMERICA BY: Kala Shankar (Signature of Contracting Officer)  
 16C. DATE SIGNED 11/03/08

NSN 7540-01-152-8070  
**TEMPLATE - ADM001**

**SUNSI REVIEW COMPLETE**

NOV 18 2008

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

**ADM002**

The purpose of this modification is to incorporate the revised Statement of Work which reflects the changes to Section 5, Reporting Requirements. The revised SOW(attached) replaces all prior version(s) of the task order Statement of Work.

A summary of obligations for this contract, from award date through the date of this action, is given below:

Total FY08 Obligation Amount:	<u>\$150,000.00</u>
Cumulative Total of NRC Obligations:	\$150,000.00

\*\*\*\*ALL OTHER TERMS AND CONDITIONS OF THE SUBJECT TASK ORDER  
REMAIN UNCHANGED\*\*\*

Subtask Description	Due Date Or Days
<p>1.2 Detailed review of the Topical Report and two rounds of RAI responses to determine its adequacy. Determine if the methods and approach proposed by the applicant meet the appropriate review guidance. Identify issues and those aspects of the application that need additional or clarifying information.</p> <ul style="list-style-type: none"> <li>a. Prepare draft questions as input to a formal Request for Additional Information (RAI).</li> <li>b. Prepare a draft technical evaluation report (TER).</li> </ul>	<p>3 weeks after authorization of work</p>
<p>1.3 Review responses to the RAI questions and the NRC comments to determine if they adequately resolve the outstanding issues. Identify any other open items.</p>	<p>5 days after receipt of the responses.</p>
<p>1.4 Review the applicant's response to the open items identified as a result of the design audit (Tasks 4 and 5). Identify any unresolved issues. Prepare a technical evaluation report (TER) documenting the results of the review, including a summary of the review and evaluation of the applicant's responses to the RAIs. Determine their acceptability and identify limitations and conditions of the topical report.</p> <ul style="list-style-type: none"> <li>a. Draft.</li> <li>b. Incorporate NRC comments and prepare the final report.</li> </ul>	<p>2 weeks after receipt of final set of RAI responses</p> <p>1 week after receipt of NRC comments</p>
<p>1.5 Prepare a slide presentation for an ACRS subcommittee meeting at NRC Headquarters, travel and participate in the subcommittee meeting. Prepare a trip report. Specifically,</p> <ul style="list-style-type: none"> <li>a. Prepare slides summarizing the Topical Report and presenting the review conclusions. <ul style="list-style-type: none"> <li>(1) Draft presentation slides.</li> <li>(2) Incorporate NRC comments and prepare the final slides.</li> </ul> </li> <li>b. Travel to NRC HQ and participate in the ACRS meeting.</li> <li>c. Prepare a trip report.</li> </ul>	<p>6 weeks before ACRS meeting (TBD)</p> <p>1 week after receipt of NRC comments</p> <p>3 days (TBD)</p> <p>1 day after trip</p>

Task 2- Confirmatory Analyses

Subtask Description	Due Date Or Days
<p>2.1 Hot leg breaks for M&amp;E release (Pcont=14.7 psia, ECCS Trains 1 &amp; 4 available)</p> <ul style="list-style-type: none"> <li>a. Run 1 has 4 AFW; Run 2 has 2 AFW available</li> <li>b. TO DO: <ul style="list-style-type: none"> <li>i. Model break valves/cont. cells</li> <li>ii. Control system for M&amp;E release</li> <li>iii. Set Pcont to 14.7 psia</li> <li>iv. Add control system for Vapor generation</li> <li>v. Make 2 runs and do the plots</li> </ul> </li> </ul>	<p>1 weeks after authorization of work or directed by the technical monitor</p>

Subtask Description	Due Date Or Days
2.2 Pump Suction breaks for M&E release (Pcont=14.7 psia, ECCS trains 1 & 4 available) a. Run 1 has 4 AFW; Run 2 has 2 AFW available b. TO DO: i. Set Pcont to 14.7 psia ii. Add control system for Vapor generation iii. Make 2 runs and do the plots	2 weeks after authorization of work or directed by the technical monitor
2.3 Pump Suction break with high Kr at core inlet (effect on M&E) a. Restart of Existing run.	3 weeks after authorization or directed by the technical monitor
2.4 SNAP Animation a. Create SNAP animation for RELAP5 LBLOCA runs	4 weeks after authorization of work
2.5 QA of RELAP5 deck used in Items 1 – 3 a. Compare RELAP5 to SRELAP5 input b. QA changes made to model to do LBLOCA runs vi. Core renoding vii. Break modeling viii. Additional control systems c. QA of database items at AREVA Rockville office	5 weeks after authorization of work
2.6 Examine 6.5" SBLOCA with various RCP trip times. a. Modify LBLOCA deck for SBLOCA i. MSRT operation ii. Break model b. Run base SBLOCA deck. c. Reruns: 2-3 SBLOCAs with differing RCP trip times	6 weeks after authorization of work
2.7 Rerun Cold Leg LBLOCA with high Kr at core inlet (effect on PCT) a. Restart at time LP is refilled and use large Kr at core inlet	7 weeks after authorization of work
2.8 Documentation a. Development of model from SRELAP5 & subsequent modifications b. Documentation of LBLOCA PCT runs c. Documentation of LBLOCA M&E runs	12 weeks after authorization of work

\* These Work Schedules are subject to change by the NRC Contracting Officer (CO) to support the needs of the NRC Licensing Program Plan.

The Technical Monitor may issue technical instruction from time to time throughout the duration of this task order. Technical instructions must be within the general statement of work delineated in the task order and shall not constitute new assignments of work or changes of such a nature as to justify an adjustment in cost or period of performance. The contractor shall refer to Section G.1 of the base contract for further information and guidance on any technical directions issued under this task order.

Any modifications to the scope of work cost or period of performance of this task order must be issued by the CO and will be coordinated with the NRO Project Officer.

#### **4.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED**

As specified in the base contract, the contractor shall provide individuals who have the required educational background and work experience to meet the objectives of the work specified in this task order. Specific qualifications for this effort include:

1. All key technical staff including the project manager must have the following technical qualifications:
  - Extensive expertise of using RELAP-5 and TRACE code to perform PWR steady state, LOCA and AOO analyses.
  - Extensive knowledge of RELAP-5 and TRACE code internal numerical schemes and physical models.
  - Extensive regulatory analysis and review experience with SRP Chapter 15 and associated PWR safety systems.
  - Experience and working knowledge of EPR Chapter 15 review activities.
2. The project manager shall be on a part time basis (%30 of his/her full time work load).

The contractor shall provide a contractor project manager (PM) to oversee the effort and ensure the timely submittal of quality deliverables so that all information is accurate and complete as defined in the base contract.

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 proposals, including resumes, is accurate and truthful. The resume for each professional proposed to work under this task order (contractor, subcontractor, or consultant) shall describe the individual's experience in applying his or her area of engineering specialization to work in the proposed area. The use of particular personnel on this contract is subject to the NRC technical monitor's (TM's) approval. This includes any proposed changes to key personnel during the life of the task order.

#### **5.0 REPORTING REQUIREMENTS**

##### **Task Order Progress Report**

The contractor shall provide a bi-weekly progress report summarizing accomplishments, expenditures, contractor staff hours expended, percent completed for each task under this task order, and any problems encountered by the contractor. The report shall be sent via e-mail to the NRC TM, Task Order Project Officer (PO) and CO.

Please refer to Section F of the basic contract award document for contract reporting requirements.

##### **Technical reporting requirements**

Unless otherwise specified above, the contractor shall provide all deliverables as draft products. The NRC TM will review all draft deliverables (and coordinate any internal NRC staff review, if needed) and provide comments back to the contractor. The contractor shall revise the draft deliverable based on the comments provided by the TM, and then deliver the final version of the deliverable. When mutually agreed upon between the contractor and the TM, the contractor may submit preliminary or partial drafts to help gauge the contractor's understanding of the particular work requirement.

The contractor shall provide the following deliverables in hard copy and electronic formats. The electronic format shall be provided in MS Word or other word processing software approved by the TM. For each deliverable, the contractor shall provide one hard copy and electronic copy to both the PM and the TM. The schedule for deliverables shall be contained in the approved project plan for the task order effort.

In all correspondence, include identifying information: JCN Q4160; Technical Assignment Control No. (TAC): RX0503; Task Order 61; the applicant: AREVA; and, the site: EPR.

1. At the completion of **Task 1.4**, submit a Technical Evaluation Report (TER) that contains, for each Sub-section of the SER (see Attachment 1 for the outline, format and content of the report): a description of the information proposed by the applicant including the assumptions for the analysis, design, and references to consensus standards: review findings (including the basis for the findings), as a result of comparison with the review guidelines: and a list of Requests for Additional Information (RAIs). See Attachment 1, Section J in the base contract SOW for guidelines for developing RAIs.
2. **At the completion of Task 2.8, submit a report; a) documenting the work under task 2.5; b) discussion of the analyses performed, their results, validity of the results and possible implications of the results; c) documenting on a DVD the RELAP5 executables used, the base deck and the input decks for all the computer runs, output files and graphics files.**
3. At the completion of **Task 1.5**, submit a trip report, as an input to NRC audit report, that contains a summary of documents audited, a summary of meeting discussion conducted with the applicant, list of outstanding issues, significance of these issues, and the basis for the conclusion. **Submit a TER (see Attachment 1) that contains a safety evaluation report implementing the ACRS comments with open items resulting from the work performed under JCN Q4160, Task Order No. 61.**

## **6.0 MEETINGS AND TRAVEL**

- One three-person, one-day working meeting to kickoff project and contractor orientation at NRC headquarters.
- One three-person, two-day meeting with ACRS.

At the discretion of the NRC TM, meetings may be conducted via telephone or video conference or changed.

## **7.0 NRC FURNISHED MATERIAL**

The following NRC furnished materials will be provided to the contractor together with SOW:

- a. CD-ROM containing AREVA EPR RLBLOCA Topical Report and the relevant supporting materials from the application.
- b. CD-ROM containing the Final Safety Evaluation Report of the DCD.

**8.0 LEVEL OF EFFORT**

The estimated level of effort in professional staff days apportioned among the tasks and by labor category is as follows:

Task 1- Realistic LBLOCA related work

Task(s)	Labor Category	Level of Effort	Level of Effort
		FY-08 (hours)	FY-09 (hours)
1.1	Technical Reviewers	40	
1.2.a	Technical Reviewers	30	
1.2.b	Technical Reviewers	40	
1.3	Technical Reviewers	140	
1.4.a	Technical Reviewers		60
1.4.b	Technical Reviewers		20
1.5.a	Technical Reviewers		40
1.5.b	Technical Reviewers		20
1.5.c	Safety Analysts		20
Task 1.1-1.5	Project Manager	20	20
Task 1.1-1.5	Administrative Support	12	8
<b>Total</b>		<b>282</b>	<b>188</b>

Task 2- Confirmatory Analyses

Task(s)	Labor Category	Level of Effort	Level of Effort
		FY-08 (hours)	FY-09 (hours)
2.1	Technical Reviewers	32	
2.2	Technical Reviewers	16	
2.3	Technical Reviewers	8	
2.4	Technical Reviewers	80	
2.5	Technical Reviewers	80	
2.6	Technical Reviewers		96
2.7	Technical Reviewers		8
2.8	Safety Analysts		80
Task 2.1-2.8	Project Manager	20	20
Task 2.1-2.8	Administrative Support	11	10
<b>Total</b>		<b>247</b>	<b>214</b>

**9.0 PERIOD OF PERFORMANCE**

The projected period of performance is twelve months from the date of task order award.

## **10.0. OTHER APPLICABLE INFORMATION**

### **a. License Fee Recovery**

All work under this task order is fee recoverable and must be charged to the appropriate TAC number(s).

### **b. Assumptions and Understandings:**

The level of effort is based on the volume of materials to be reviewed; Task 1. is for familiarity and not for evaluation.

The level of effort for Task 4 is based on the assumption that the contractor is familiar with the review procedures of SRP 15.0-15.4 .

All meetings and travels are estimated based on the current project plan which may subject to change.

It is assumed that the contractor has access to the NRC furnished material.

It is understood that the scope of the review consists of conference calls with the NRC staff, and with the NRC staff and the applicant, to discuss open items in an attempt to obtain additional information or reach resolution.

During the course of the review, the Technical Monitor, and possibly other NRC personnel, may travel to the contractor site to discuss the status of the review and participate in the resolution of open items. It is assumed that the level of effort covers such a meeting.

The primary deliverable, or output of this regulatory review, shall be the Technical Evaluation Report (TER). The TER will serve as input to the NRC staff's Safety Evaluation Report (SER) which will document the NRC's technical, safety, and legal basis for approving the [ESP] [DC] [COL] application. The TER must provide sufficient information to adequately explain the NRC staff's rationale for why there is *reasonable assurance* that public health and safety is protected. The TER, and ultimately the SER, should be written in a manner whereby a person with a technical (non-nuclear) background and unfamiliar with the applicant's request could understand the basis for the staff's conclusions. The TER format is described in Attachment 1 to this Task Order Statement of Work.

### **Attachments:**

1. Outline, Format, and Content for the TER Input

**Attachment 1**  
**Outline, format, and sample for the TER (draft SER input)**

**X.Y.Z Title of Section**

X.Y.Z.1 Regulatory Criteria

Develop an outline that follows the format and topics presented in the AREAS OF REVIEW section of the appropriate SRP section. This information will correspond to the SRP sections that are the subject of this Task Order. For each unique SRP review area contained in the TER, the contractor should specify the acceptance criteria that were used for its review. Summarize the applicable regulations and other regulatory references, including regulatory guides, generic letters, or NRC staff positions, that are relevant to this topic.

Technical reviewers are encouraged to use the descriptions of acceptance criteria from previously issued Safety Evaluation Reports for completed design certifications (e.g., NUREG-1793 for the AP1000 Final Safety Evaluation Report) when applicable.

X.Y.Z.2 Summary of Technical Information

Describe the key technical points that were made in the application. It is not necessary to restate the application verbatim or to address all the details in the application.

X.Y.Z.3 Technical Evaluation

Document the contractor's evaluation of the application against the relevant regulatory criteria. The evaluation should support the contractor's conclusions as to whether the regulations are met. State what the contractor did to evaluate the applicant's submittal. The contractor's evaluation may include verification that the applicant followed applicable regulatory guidance, performance of independent calculations, and validation that the appropriate assumptions were made. The contractor may state that certain information provided by the applicant was not considered essential to the contractor's review and was not reviewed by the contractor. While the contractor may summarize the information offered by the applicant in support of its application, the contractor should clearly articulate the bases for its conclusions.

Contractor should provide a clear and concise description of any request for additional information (RAIs). The description should include a justification of the requested information that the requested information is not provided in the application and is absolutely needed to determine or confirm whether the relevant regulatory requirements (articulate specific requirements) have been met. The contractor should discuss its technical evaluation of the licensee's response to the RAIs and determine whether it is acceptable. The contractor should clearly articulate the bases for its acceptance or rejection. If the RAI response is not acceptable, it will be classified as an 'open item'. All open items will be resolved in Phase 3.

X.Y.Z.4 Conclusions

Summarize the contractor's conclusions regarding the application, including words such as the following. As set forth above in Sections X.Y.Z.2 and X.Y.Z.3 of this report, [provide specific bases for conclusions that follow]. Accordingly, the staff concludes that the application meets [or, if applicable, does not meet] the relevant requirements of 10 CFR Part XX and is [or, if applicable, is not] acceptable.

X.Y.Z.5 References