ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 2 PAGES

IMPORTANT: Mark all packages and papers with contract and/or order numbers. BPA NO.

1. DATE OF ORDER: SEP 17 2008
2. CONTRACT NO. (If any): NRC-42-07-036
3. ORDER NO.: 0061 MODIFICATION NO.:
4. REQUISITION/REFERENCE NO.: 03-07-036TO61 FFS: NRO 08 276

5. ISSUING OFFICE (Address correspondence to):
U.S. Nuclear Regulatory Commission
Div. of Contracts
Attn: Kala Shankar 301-415-6310
Mail Stop T-7-I-2
Washington, DC 20555

6. SHIP TO:
a. NAME OF CONSIGNEE: U.S. Nuclear Regulatory Commission
b. STREET ADDRESS: Attn: Richard Daniel
Mail Stop: T6-C34
c. CITY: Washington d. STATE: DC e. ZIP CODE: 20555

7. TO:
a. NAME OF CONTRACTOR: INFORMATION SYSTEMS LABORATORIES, INC
ISL
b. COMPANY NAME: ATTN: DR. JAMES F. MEYER
c. STREET ADDRESS: 11140 ROCKVILLE PIKE, SUITE 500
d. CITY: ROCKVILLE e. STATE: MD f. ZIP CODE: 20852

f. SHIP VIA:

8. TYPE OF ORDER
[ ] a. PURCHASE
REFERENCE YOUR _____
Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.
[X] b. DELIVERY
Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA
B&R:825-15-171-103; JC:Q4160; BOC 252A; 31X0200.825
Obligate: $150,000
Contractor DUNS: 107928806

10. REQUISITIONING OFFICE: NRO

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
[ ] a. SMALL [X] b. OTHER THAN SMALL [ ] c. DISADVANTAGED [ ] g. SERVICE-DISABLED VETERAN-OWNED
[ ] d. WOMEN-OWNED [ ] e. HUBZone [ ] f. EMERGING SMALLBUSINESS

12. F.O.B. POINT: Destination

13. PLACE OF: a. INSPECTION b. ACCEPTANCE

14. GOVERNMENT B/L NO.

15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)

16. DISCOUNT TERMS

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Issuance of Task Order No.61 under Contract No. NRC-42-07-036 Title:"AREVA EPR Realisitc Large Break Topical Report Review Support Activity" Period of Performance: 09/17/2008 -09/16/2009 Estimated Reimbursable Cost: $147,726 Fixed Fee:$10,759 Total Cost Plus Fixed Fee:$158,485 Funds in the amount of $150,000 is provided. See Continuation Pages					

18. SHIPPING POINT
19. GROSS SHIPPING WEIGHT
20. INVOICE NO.

17(h) TOTAL (Cont. pages)

21. MAIL INVOICE TO:
SEE BILLING INSTRUCTIONS ON REVERSE
a. NAME: U.S. Nuclear Regulatory Commission
Payment Team, Mail Stop T-7-I-2
b. STREET ADDRESS (or P.O. Box): Attn: (NRC-42-07-036 Task Order No.61)
c. CITY: Washington d. STATE: DC e. ZIP CODE: 20555

17(i). GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature): Kala Shankar

23. NAME (Typed): Kala Shankar
Contracting Officer
TITLE: CONTRACTING/ORDERING OFFICER

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (REV. 4/2006)
PRESCRIBED BY GSA/FAR 48 CFR 53.213(f)

ADM002

SUNSI REVIEW COMPLETE

OCT 22 2008

In accordance with Section G.4, Task Order Procedures, of Contract No. NRC-42-07-036, this definitizes Task Order No. 61. The effort shall be performed in accordance with the attached Statement of Work.

Task Order No. 61 shall be in effect from date of award through twelve months, with a cost ceiling of $158,485. The amount of $147,726 represents the estimated reimbursable costs, and the amount of $10,759 represents the fixed fee.

The amount obligated by the Government with respect to this task order is $150,000, of which $142,857 represents the estimated reimbursable costs, and the amount of $7,143 represents the fixed fee.

The issuance of this task order does not amend any terms or conditions of the subject contract.

Your contacts during the course of this task order are:

Technical Matter:	Richard Daniel Project Officer 301-415-6319
Contractual Matters:	Kala Shankar Contract Specialist 301-492-3638

Acceptance of Task Order No. 61 should be made by having an official, authorized to bind your organization, execute three copies of this document in the space provided and return two copies to the Contract Specialist at the address identified in Block No. 5 of the OF 347. You should retain the third copy for your records.

ACCEPTANCE:

_____
NAME

V.P.
_____
TITLE

9/17/08
_____
DATE

TASK ORDER STATEMENT OF WORK

JCN	Contractor	Task Order No.
Q4160	ISL	NRC-42-07-481 (61)
Applicant	Design/Site	Docket No.
AREVA	EPR	05200020
Title/Description		
AREVA EPR Realistic Large Break Topical Report Review Support Activity		
TAC No.	B&R Number	SRP Section(s) or ESRP
RX0503	825-15-171-103	Chapter 15
NRC Task Order Project Officer (PO)		
Rick Daniel	301-415-6319	Richard.Daniel@nrc.gov
NRC Technical Monitor (TM)		
Fred Forsaty/Shanlai Lu	301-415-8523	Fred.Forsaty@nrc.gov

1.0 BACKGROUND

AREVA NP submitted topical report (TR); "U. S. EPR Realistic Large Break Loss of Coolant Accident Topical Report", Doc. Number: ANP-10278 (P) R0 for review by the nuclear regulatory commission (NRC). As indicated in the TR, this TR contains information that AREVA considers proprietary, and therefore should be withheld from disclosure pursuant to 10 CFR 2.390 (a)(4) and 10CFR 9.17 (a)(4).

A Standard Review Plan (SRP) (NUREG-0800) is prepared for the guidance of staff reviewers in the Office of New Reactors in performing safety reviews of new reactor design certification applications. The principal purpose of the SRP is to assure the quality and uniformity of staff safety reviews. As part of the TR review, NRC staffs will conduct review of important parts of the TR corresponding to SRP Chapter 15 and other reactor system related design features in SRP chapter 4, 5, 6, 9 and 14 and Reg 1.206 Chapter 15.

The staff publishes the results of these reviews in a Safety Evaluation Report (SER).

2.0 OBJECTIVE

The objective of this task order is to obtain technical expertise from the contractor to assist the staff in the following areas:

Task 1 - determine the adequacy of AREVA EPR RLBLOCA topical report (TR), the relevant application of this TR to EPR FSAR Chapter 15.

Task 2 - perform additional confirmatory analysis to support staff review of FSAR Chapter 15 and Chapter 6.

3.0 WORK REQUIREMENTS, SCHEDULE AND DELIVERABLES

Task 1- Realistic LBLOCA related work

Subtask Description	Due Date Or Days
1.1 Become familiar with Topical Report and associated references	2 weeks after authorization of work

Subtask Description	Due Date Or Days
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. a. Prepare draft questions as input to a formal Request for Additional Information (RAI). b. Prepare a draft technical evaluation report (TER).	3 weeks after authorization of work
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.	5 days after receipt of the responses.
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. a. Draft. b. Incorporate NRC comments and prepare the final report.	2 weeks after receipt of final set of RAI responses 1 week after receipt of NRC comments
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, a. Prepare slides summarizing the Topical Report and presenting the review conclusions. (1) Draft presentation slides. (2) Incorporate NRC comments and prepare the final slides. b. Travel to NRC HQ and participate in the ACRS meeting. c. Prepare a trip report.	6 weeks before ACRS meeting (TBD) 1 week after receipt of NRC comments 3 days (TBD) 1 day after trip

Task 2- Confirmatory Analyses

Subtask Description	Due Date Or Days
2.1 Hot leg 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. Model break valves/cont. cells ii. Control system for M&E release iii. Set Pcont to 14.7 psia iv. Add control system for Vapor generation v. Make 2 runs and do the plots	1 weeks after authorization of work or directed by the technical monitor

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 No.: Q4160; Technical Assignment Control No. (TAC): RX0503; Task Order 61; the applicant: AREVA; and, the site: EPR.

1. At the completion of Task 3, 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** in the base contract SOW for the guidelines for developing RAIs.
2. At the completion of Task 4, submit a TER (**see Attachment 1**) that contains a summary of the review results and the updated report completed under Task 3 incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determination.
3. At the completion of Task 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. Incorporate the findings in the report developed under Task 3.
4. At the completion of Task 6, submit a TER (**see Attachment 1**) that contains a safety evaluation report with open items resulting from the work performed in Task 4 & 5, and update of the Technical Evaluation Report developed under Task 5.

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 FY-08 (hours)	Level of Effort 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
Total		**282**	**188**

Task 2- Confirmatory Analyses

Task(s)	Labor Category	Level of Effort FY-08 (hours)	Level of Effort 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
Total		**247**	**214**

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