AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

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

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0004	NOV 05 2008	42-07-481(010)M004 NRO 08 299	

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

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	9A. AMENDMENT OF SOLICITATION NO.
N J NUMARK ASSOCIATES INC NUMARK ASSOCIATES, INC. 1220 19TH ST NW STE 500 WASHINGTON DC 200362444		9B. DATED (SEE ITEM 11)
		10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-42-07-481 0010
CODE 788247377 FACILITY CODE	X	10B. DATED (SEE ITEM 13) 03-11-2008

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

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.)

The purpose of this modification is to incorporate the attached revised statement of work.

Task Order Ceiling Amount: $894,843 (unchanged)
Total Obligated Amount: $865,000 (unchanged)
Period of Performance: 03/11/2008 - 09/10/2010 (unchanged)

See continuation page

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)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
Neil J Numark President	Kala Shankar Contracting Officer
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 11/5/08
16B. UNITED STATES OF AMERICA BY Kala Shankar (Signature of Contracting Officer)	16C. DATE SIGNED 11/05/08

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

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

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE DEC 11 2008

ADM002

The purpose of this modification is to incorporate the revised statement of work to this task order. The attached SOW hereby replaces all previous versions of the SOW.

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

Total FY08 Obligation Amount:	$865,000.00
Cumulative Total of NRC Obligations:	$865,000.00

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

TASK ORDER STATEMENT OF WORK

JCN/Contract No.	Contractor	Task Order No.
Q-4159	Numark	**NRC-42-07-481 REVISION 2**
Applicant	Design/Site	Docket No.
Areva	EPR/Design Certification	05200020
Title/Description		
Technical Assistance in Support of Design Certification (DC) and Combined License (COL) Reviews of Balance of Plant (BOP) SRP Systems for Evolutionary Power Reactor (EPR) licensing applications		
TAC No.	B&R Number	SRP Section(s)
RX0144	825-15-171-103	BOP SRP Sections(see Section 2)
NRC Task Order Project Manager (PO)		
David D'Abate	(301) 415-0667	David.DAbate@nrc.gov
NRC Technical Monitor (TM)		
James Tatum	(301) 415-2805	James.Tatum@nrc.gov

1.0 BACKGROUND

The purpose of this Task Order is to obtain the necessary technical assistance to support the NRC staff in determining whether or not the subject COL application meets appropriate regulatory requirements.

Standard design certification (DC) and combined license (COL) applications are submitted pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants." The U.S. Nuclear Regulatory Commission (NRC) reviews these requests based on information furnished by, DC and COL applicants pursuant to 10 CFR 52.79, "Contents of Applications Technical Information." The staff publishes the results of these reviews in a Safety Evaluation Report (SER).

The balance of plant (BOP) branch is responsible for performing systems-related safety evaluations of DC and COL applications for proposed new reactors. The branch reviews and evaluates the design and functional performance requirements of essential auxiliary support and balance of plant systems. This includes the review of various BOP fluid systems, protection against internal hazards (such as flooding, pipe breaks, and internally generated missiles), the design of new and spent fuel storage (including load handling systems), the turbine generator and the support systems for the emergency diesel generator. The branch also performs reviews of reactor coolant pressure boundary leakage detection, and is specified as a secondary review branch for radioactive waste systems (system design review only).

This task order is for assistance in support of the design certification review of the Evolutionary Power Reactor (EPR) and the review of the subsequent combined license application expected to reference this design. Each application will be considered a separate work item, and will be provided upon receipt of the application. Additional background information may be found in the Numark base contract award document.

2.0 OBJECTIVE

The objective of this task order is to obtain technical expertise from Numark to assist the NRC staff in determining if the specific COL/DC application meets appropriate regulatory requirements. The review will be conducted in accordance with 10CFR Part 52, and will be guided primarily by NUREG-0800 "Standard Review Plans for the review of Safety Analysis Reports for Nuclear Power Plants LWR edition." Numark will provide assistance to the staff by developing letter reports that identify needed request for additional information (RAIs) and technical evaluation reports (TER) that provide technical input to the staff in the staffs development of the preliminary safety evaluation report (SER), SER with open items, and SER with no open items.

The primary deliverable, or output of this regulatory review, shall be the TER. The TER will serve as input to the NRC staff's SER which will document the NRC's technical, safety, and legal basis for approving the 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 to be provided by NRC.

Numark shall utilize NUREG-0800 as necessary to conduct the safety reviews of the COL/DC applications for the Balance-of-Plant Branch (SBPA/SBPB) for some or all of the following SRP sections as specified for a particular application:

3.4.1	Internal Flood Protection for Onside Equipment Failures
3.6.1	Plant Design for Protection against Postulated Piping Failures in Fluid Systems Outside Containment
9.3.1	Compressed Air System
9.3.3	Equipment and Floor Drainage System
3.5.1.1	Internally Generated Missiles (Outside Containment)
3.5.1.2	Internally Generated Missiles (Inside Containment)
3.5.1.4	Missiles Generated by Tornadoes and Extreme Winds
3.5.2	Structures, Systems, and Components to be Protected from Externally-Generated Missiles
5.2.5	Reactor Coolant Pressure Boundary Leakage Detection
9.1.2	New and Spent Fuel Storage
9.1.3	Spent Fuel Cooling and Cleanup System
9.1.4	Light Load Handing System (Related to Refueling)
9.1.5	Overhead Heavy Load Handling systems
9.2.1	Station Service Water System
9.2.2	Reactor Auxiliary Cooling Water System
9.2.5	Ultimate Heat Sink
9.2.4	Potable and Sanitary Water Systems
9.2.6	Condensate Storage Facilities
10.4.7	Condensate and Feedwater System
10.4.9	Auxiliary Feedwater System (PWR)
10.2	Turbine generator
10.3	Main Steam Supply System
10.4.1	Main Condensers
10.4.2	Main condenser Evacuation System
10.4.3	Turbine Gland Sealing System
10.4.4	Turbine Bypass System
10.4.5	Circulating Water System
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System
9.5.5	Emergency Diesel Engine Cooling Water System
9.5.6	Emergency Diesel Engine Starting System
9.5.7	Emergency Diesel Engine Lubrication System
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System
14.3.7	Applicable Groups of Plant systems – Inspections, Tests, Analyses, and Acceptance Criteria (Tier 1)

Numark will also review the applications for following SRP sections as the secondary review branch specified in the SRPs:

11.2	Liquid Waste Management System (only system design and performance)
11.3	Gaseous Waste Management System (only system design and performance)

11.4 Solid Waste Management System (only system design and performance)
14.2 Initial Plant Test Program for applicable balance-of-plant systems
16 Technical Specifications for applicable balance-of-plant systems

In addition, Numark will review BOP related generic issues including NRC Bulletins and Generic Letters, TMI action Items, Task Action Plan and New Generic Issues.

Using the guidance provided in SRP Sections 9.1.2 and 9.1.3 (as applicable), Numark will evaluate Section 6 of Topical Report No. UN-TR-08-001(P), "Spent and New Fuel Storage Analyses for U.S. EPR Topical Report (Proprietary Version)."

3.0 WORK REQUIREMENTS, SCHEDULE, AND DELIVERABLES

Task/Standards	Scheduled Completion	Deliverables
1. REQUIREMENT: Become familiar with applicable SRP Sections (see Section 2) and applicable references (e.g., RG 1.206 and others). STANDARD: Confirmation in the task order's first monthly letter status report that familiarization with the applicable SRP sections and associated references is complete. The level of effort for Task 1 is based on the volume of materials to be reviewed; this task is for familiarity and not for evaluation.	10 days after authorization of work	N/A confirmation of completion of this task will be provided in the monthly letter status report
2. REQUIREMENT: Participate in an orientation/ kick-off meeting with the NRC staff to discuss the scope of the work, expectations and task order management for each application. STANDARD: Attendance by individuals designated by NRC.	10 days after authorization of work	N/A
3. REQUIREMENT: Support staff's acceptance review to determine the completeness and technical sufficiency of a combined license application. This includes identifying major deficiencies in the application that might impact the review process or affect the planned resources and schedule STANDARD: The review results will be provided to the staff through email/conference calls	* 15 days from the receipt of the application	Email/Conference Call
4. REQUIREMENT: Review the COL application applicable sections (see Section 2) to determine the adequacy of the application. 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. Prepare a Technical Evaluation Report (TER) providing a. the draft Request for Additional Information (RAIs),	* 90 calendar days from the receipt of the application	Technical Evaluation Report providing staff with RAIs and PSER

Task/Standards	Scheduled Completion	Deliverables
and b. the draft preliminary safety evaluation report (PSER). STANDARD: Completed TER that follows the NRC provided template. No deviation from the guidance defined in Section III, RAI Guidance of Attachment 1 to the basic contract SOW.		
5. REQUIREMENT: Review responses to the RAI questions to determine if they adequately resolve the outstanding issues. Prepare a TER providing the input to the SER with open items (SER/OI). STANDARD: Complete TER with open items	* 20 days after receipt of the RAI responses	Technical Evaluation Report providing the input to the SER with open items (SER/OI).
6. REQUIREMENT: Review the applicant's response to the open items identified in the SER/OI. Identify any unresolved issues. Prepare a technical evaluation report (TER) providing the input to the final SER describing the resolution to the open items.. STANDARD: Complete TER that follows the NRC provided template without deviation.	* 20 days after receipt the responses to the open items	Technical Evaluation Report (TER) providing the input to the final SER describing the resolution to the open items
7. REQUIREMENT As *needed and* requested by the staff, provide technical support to the staff during related ACRS meetings and hearing proceedings.	TBD	TBD

* Work schedules are subject to change by the NRC project manager (NRC PM) to support the needs of the NRC Licensing Project Plan Integrated Schedule. However, the deliverables shall be in accordance with the original contract criteria. Following completion of Subtask 3, changes of the above table and the level of effort may be needed.

The contractor shall submit a cost estimate, staffing plan, and project plan with a schedule for deliverables within 10 days of receipt of this task order, unless otherwise directed by the NRC Task Order Project Manager (PO). The NRC technical monitor (TM) will review the plan based on the forecast of the NRC LPP Integrated Schedule.

Numark shall provide the following information prior to initiation of a task order:

- A staffing plan that specifically reflects services to be provided
- A quality control plan which outlines the procedures and system that Numark will use for document version and configuration control, technical input tracking, change management, and technical and editorial reviews. Numark shall organize, track, and manage changes in a structured, systematic, and transparent manner, throughout the production of each task order deliverable.
- Numark shall also provide a statement of professional qualifications for staff proposed to work under this task order.

4.0 TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

As specified in the base contract award document, Numark shall provide individuals who have the required educational background and work experience to meet the objectives of the work specified in this task order. The personnel specified to perform the reviews (engineers/scientists) shall possess experience in technical areas related to U.S. nuclear reactor design, construction, operation, maintenance, and inspection of nuclear power plants. Emphasis is placed on experience that is related to nuclear safety where judgments are made as to whether applicable codes and federal regulations are being, or have been, properly satisfied and/or implemented. Specific qualifications for these efforts include:

- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews addressing the adequacy of plant protection from internal hazards including floods, pipe failures and missiles.
- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews of balance of plant fluid systems including service water, component cooling water, compressed air, circulating water, ultimate heat sink and condensate storage.
- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews of balance of plant steam and power conversion systems including main steam, main condensers, turbine bypass, condensate and feedwater, and auxiliary feedwater systems.
- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews of spent fuel storage, cooling, and cleanup, and review of light and heavy load handing systems.
- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews of emergency diesel support systems including diesel fuel oil storage & transfer, diesel cooling water, diesel starting, diesel lubrication, diesel combustion air intake & exhaust systems.
- Engineers/Scientists who are cognizant of nuclear plant designs and are capable of performing detailed design and safety reviews of radioactive waste management systems and reactor coolant boundary leakage detection.

Numark shall provide 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 (principal investigators, technical staff, employees, consultants, specialists or subcontractors) 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 task order 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, 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 Project Officer 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.: Q-4159; Task Order No:10; Technical Assignment Control No. (TAC): RX0144; the applicant: Areva and, the project site: Design Certification.

A. At the completion of Task 4, submit a TER that contains, for each Sub-section of the SER (SER templates to be provided): 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 award document SOW for the guidelines for developing RAIs.

B. At the completion of Task 5, submit a TER (SER templates to be provided) that contains a summary of the review results and the updated report completed under Task 4 incorporating the findings from the resolution of the RAIs. Include a separate list of the remaining open items and the basis for such determination.

C. At the completion of Task 6, submit a TER (SER templates to be provided) that contains a safety evaluation report with open items resolved and update of the TER developed under Task 5.

6.0 MEETINGS AND TRAVEL

The following travel assumptions should be considered in planning the work effort. It is likely that a smaller group than the entire review team will be necessary to accomplish some activities; the actual travel contingent will be determined by the NRC TM after discussion with the contractor. Travel in excess of the total number of person-trips must be approved by the NRC **PO**; travel within the work scope limits will be approved by the NRC TM.

- One-person, two-day working meeting to kickoff project
- One- person, two-day meetings, if needed, for hearing or ACRS meeting.

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

8.0 NRC FURNISHED MATERIAL

The NRC TM will provide those NRC documents related to the applicable portions of the application that are readily available. The NRC TM will provide access to the applicant's safety analysis report, pertinent sections of the COL, DC, or other NRC safety documents and docketed correspondence

on related issues. Numark staff will identify any additional NRC documentation that is needed and the TM will determine whether is will be provided by the NRC or obtained directly by the Numark from NUDOCS, ADAMS, NRC public document room or the NRC website at www.nrc.gov.

9.0 LEVEL OF EFFORT

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

Task(s)	Labor Category	DC
1	Technical Reviewer, Lead Mechanical/Nuclear Systems Engineer, Admin Support	160
2	Project Manager	40
3	Technical Reviewer, Lead Mechanical/Nuclear Systems Engineer, Admin Support	160
4	Technical Reviewer, Lead Mechanical/Nuclear Systems Engineer, Admin Support	2,000
5	Technical Reviewer, Lead Mechanical/Nuclear Systems Engineer, Admin Support	1,700
6	Technical Reviewer, Lead Mechanical/Nuclear Systems Engineer, Admin Support	1,318
7	Technical Reviewer, Lead Mechanical/Nuclear Engineer, Admin Support	200
All	Project Manager	420
Total		5,998

10. PERIOD OF PERFORMANCE

The projected period of performance is 30 months for each application from the application date.

11. OTHER APPLICABLE INFORMATION

License Fee Recovery

- All work under this task order is fee-recoverable under 10 CFR Part 170 and shall be charged to the appropriate TAC number(s).

Expected Classification or Sensitivity

- All work under this project is expected to be unclassified and not sensitive.

Assumptions and Understandings:

- The level of effort for Tasks 4 and 5 is based on the assumption that the contractor is familiar with the review procedures of SRP Sections.
- The level of effort in Task 7 is based on requiring one trip to NRC headquarters.
- It is assumed that the Numark will have access to the NRC furnished material available on the Internet.
- 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.