

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

BPA NO.

1. CONTRACT ID CODE

PAGE 1

OF PAGE: 2

2. AMENDMENT/MODIFICATION NO. 0002

3. EFFECTIVE DATE NOV 24 2008

4. REQUISITION/PURCHASE REQ. NO. 42-07-481 NRO 08 300

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)

N J NUMARK ASSOCIATES INC NUMARK ASSOCIATES

1220 19TH ST NW STE 500 WASHINGTON DC 200362444

CODE 788247377

FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO. NRC-42-07-481 0023

X 10B. DATED (SEE ITEM 13) 06-02-2008

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.

12. ACCOUNTING AND APPROPRIATION DATA (If required) 825-15-171-103; Q-4159; 252A; 31X0200 DEOBLIGATE: (\$271,732)

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, X 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 1) incorporate the revised scope of work to reflect the reduced level of effort; 2) change the performance period; 3) reduce the task order ceiling and 4) deobligate funds in the amount of \$271,732.

Task Order Ceiling Amount: \$136,268 (changed) Total Obligated Amount: \$136,268 (changed) Period of Performance: 06/02/2008 - 10/01/2008 (changed)

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)

Neil J Numark President

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 11/24/08

16B. UNITED STATES OF AMERICA

BY Kala Shankar (Signature of Contracting Officer)

16C. DATE SIGNED 11/17/2008

The purpose of this modification is to 1) incorporate the revised statement of work to reflect the reduced level of effort; 2) reduce the task order ceiling; and 3) change the task order period of performance, and 4) deobligate funds in the amount of \$271,732.

Accordingly, the subject task order is hereby modified as follows:

Paragraphs 2 and 3, page 2 of 2 under the base task order 23, are hereby deleted in their entirety and replaced with the following:

Task Order No. 23 shall be in effect from date of award through October 1, 2008, with a cost ceiling of \$136,268. The amount of \$129,408 represents the estimated reimbursable costs, and the amount of \$6,860 represents the fixed fee.

The amount obligated by the Government with respect to this task order is \$136,268, of which approximately \$129,408 represents the estimated reimbursable costs, and the amount of \$6,860 represents the fixed fee.

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

Total FY08 Obligation Amount:	\$408,000.00
Deobligation:	<u>(\$271,732.00)</u>
Cumulative Total of NRC Obligations:	\$136,268.00

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

## TASK ORDER STATEMENT OF WORK

JCN/Contract No. Q-4159	Contractor Numark Associates, Inc.	Task Order No. NRC-42-07-481 (023 Mod . )
Applicant AREVA NP Inc. (AREVA NP)	Design/Site U.S. Evolutionary Pressurized Water Reactor (EPR)	Docket No. 052000020
Title/Description Review of EPR Standard Design Certification Application FSAR Sections 3.8.1, 3.8.2, 3.8.3, 3.8.4, and 3.8.5 for the Design of Seismic Category I Structures		
TAC No. RX0139	B&R Number 825-15-171-103	SRP Section 3.8
NRC Technical Assistance Project Manager (TAPM)		
David D'Abate	(301) 415-0667	David.DAbate@nrc.gov
NRC Technical Monitor (TM)		
Samir Chakrabarti	(301) 415-1106	Samir.Chakrabarti@nrc.gov

### 1.0 BACKGROUND

The Office of New Reactors (NRO) is responsible for accomplishing key components of the Nuclear Regulatory Commission's nuclear reactor safety mission for new reactor facilities licensed in accordance with 10 CFR Part 52. As such, NRO is responsible for regulatory activities in the primary program areas of new reactor licensing including application reviews for reactor design certification (DC), early site permits (ESPs), combined operating license (COL) applications, and new reactor pre-application activities. Applications are submitted pursuant to Part 52 of Title 10 of the Code of Federal Regulations (10 CFR 52), "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants." The NRC reviews DC applications based on information furnished by nuclear steam supply system vendors pursuant to 10 CFR 52.47, "Contents of Applications."

A safety Standard Review Plan (SRP) (NUREG-0800) was prepared for the guidance of staff reviewers in the Office of New Reactors in performing safety reviews of applications to construct or operate nuclear power plants and the review of applications to approve standard designs and sites for nuclear power plants. The principal purpose of the SRP is to assure the quality and uniformity of the NRC staff safety reviews. 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 NRC staff in determining whether or not the subject design certification application meets appropriate regulatory requirements relating to Sections 3.8.1, 3.8.2, 3.8.3, 3.8.4, 3.8.5 and the associated Tier 1 information of the FSAR submitted with the EPR DC application.

Specifically, a review of SRP subsections 3.8.1, 3.8.2, 3.8.3, 3.8.4, and 3.8.5 is required to insure that analysis, design, construction, and in-service inspection of seismic Category I structures meet the applicable requirements of 10 CFR 50.55a, 10 CFR 50, Appendix A, General Design Criterion (GDC) 1, 2, 4, 5, 16, 50, 51, and 53 and other applicable regulations. The review shall focus on the (1) materials, (2) geometry, (3) codes, standards, and specifications, (4) loadings and load combinations, (5) design and analysis procedures, (6)

structural acceptance criteria, and (7) testing and in-service surveillance requirements, as appropriate. The level of effort for this task order is based on the expectation that the contractor is familiar with the review procedures of the SRP sections in the work scope and the technical reviewer has the required knowledge and experience in the subject matter as outlined in Section 5 of this document.

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's SER which will document the NRC's technical, safety, and legal basis for approving the design certification. The TER documents the contractor's technical evaluation of a proposed design against relevant regulatory criteria. The technical evaluation should include a description of the proposed design and an analysis of the proposal in terms of regulatory requirements, established NRC positions (e.g., SRP or regulatory guides), industry standards, or other relevant criteria. The contractor should explain the methods used in its review of the design (e.g., a comparison of applicant's proposal against regulatory criteria, a review of input assumptions combined with use of approved methodology, or an independent calculation to confirm results presented by an applicant). The technical evaluation should be specific as to what information is relied on to form the basis for approving or denying the proposed design. The technical evaluation should also contain the contractor's specific conclusion that the proposed design is technically acceptable and meets regulatory guidance or other industry standards or reasons why the proposed design is unacceptable. 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 (SOW).

The specific work scope and schedule required for this task order are provided in Section 3 and the requirements for communicating work progress and status are provided in Section 5.

### 3.0 WORK REQUIREMENTS AND SCHEDULE

Tasks/Standards	Scheduled Completion	Deliverables
<p>1. REQUIREMENT: Become familiar with the EPR FSAR Sections 3.8.1 through 3.8.5, the related sections of the FSAR Tier 1 information, and applicable regulatory guides. Review the basis upon which the staff granted the design certification by reviewing the corresponding sections of the AP1000 DCD and the final SER issued for the AP1000 design. Attend NRC offered training on regulations and TER development. <b>(Phase 1 task)</b></p> <p>STANDARD: Provide written confirmation that familiarization 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.</p>	<p>Two weeks after authorization of work</p>	<p>Documentation that assigned personnel has reviewed references</p>

Tasks/Standards	Scheduled Completion	Deliverables
<p>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. Establish an agreed upon schedule that is consistent and aligned with the NRC's EPM program. <b>(Phase 1 task)</b></p> <p>STANDARD: Participation by designated individuals</p>	<p>Four weeks after authorization of work (6/20/2008)</p>	<p>A jointly agreed upon schedule</p>
<p>3. REQUIREMENT: Using applicable SRP acceptance criteria and regulatory guides as guidelines, review the EPR FSAR Sections 3.8.1 through 3.8.5, associated Tier 1 information, and related documents/appendices to determine the adequacy of these parts of the DC application. Determine if the analysis methods, modeling approaches, design criteria, and design codes for Category I structures proposed by the applicant meet the appropriate acceptance criteria. Review identified COL action items and interface parameters for sufficiency and adequacy. Identify a preliminary set of Tier 2 information to be characterized as Tier 2*. Identify issues and those aspects of the application that need additional or clarifying information. <b>(Phase 1 task)</b></p> <p>a. Prepare draft questions as input to formal Requests for Additional Information (RAIs).</p> <p>b. Prepare a draft TER for each of the 3.8 sections including a discussion of the RAI contents and their bases.</p> <p>c. Participate in conference calls with the applicant (if required by TM) to discuss the information to be provided or clarified to bring closure to the open issues.</p> <p>d. Prepare an RAI tracking table summarizing RAI text, applicant response, and status.</p> <p>STANDARD: Provide: (1) Preliminary TER that follows the NRC provided template without deviation; (2) RAIs that follow NRC guidance in Section III, RAI Guidance, of Attachment 1 to the Contract Statement of Work without deviation; and (3) RAI tracking table in accordance with the provided template in Attachment 2 of this Task Order Statement of Work.</p>	<p>Eight weeks after the end of task 2 (9/19/2008)</p>	<p>a. Preliminary TER with RAIs if applicable</p> <p>b. An RAI tracking table</p> <p><b>NOTE:</b> Contractor to provide <u>all</u> in-process and completed deliverables at end of revised period of performance.</p>

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 of structural engineers for this effort include:

Senior structural engineers with knowledge and experience in the following: (1) design and analysis of nuclear steel and concrete containment and other Category I structures, systems, and mat foundations for various load combinations, (2) modeling of complicated structures, (3) linear/non-linear seismic/dynamic structural analysis, (4) finite element structural analysis methods, (5) use of sophisticated structural analysis computer codes, and (6) the use of nuclear power plant industry codes and standards.

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 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, 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.: Q-4159; Technical Assignment Control No. (TAC), RX0139; Task Order No.: 023; the licensee: AREVA; and, the site: N/A.

Provide the following deliverables:

1. At the completion of Task 1, submit a TLR indicating that assigned personnel has reviewed the required references.
2. At the completion of Task 2, submit a project schedule.
3. At the completion of Task 3, submit a TER that contains, for each sub-section of the SER: the regulatory acceptance criteria, 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 RAIs. Submit a tracking table for the RAIs. See Attachment 1 to this SOW for the outline, format and content of the TER report. See Attachment 1 in the base contract SOW for the guidelines for developing RAIs. See Attachment 2 to this SOW for the format of the RAI tracking table.

## **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 PM. Travel in excess of the total number of person-trips must be approved by the NRC TAPM; travel within the work scope limits will be approved by the NRC TM.

- One, two-person, one-day working meeting to kick off project and for contractor orientation (Task 2)

At the discretion of the NRC TM, quarterly progress meetings may be conducted at the contractor's offices or via telephone or video conference.

## **7.0 NRC FURNISHED MATERIAL**

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

- (a) CD-ROM containing the EPR FSAR including Sections 3.8.1 through 3.8.5 and the associated appendices.
- (b) CD-ROM containing the Final Safety Evaluation Report (FSER) and the Design Control Documents (DCD) for AP1000.

The contractor staff will identify any additional NRC documentations that are needed to perform the work, and the TM will determine whether it will be provided by the NRC or obtained directly

by the contractor from NUDOCS, ADAMS, NRC public document room on the NRC website at [www.nrc.gov](http://www.nrc.gov).

## 8.0 LEVEL OF EFFORT

The estimated level of effort is 680 man-hours. The efforts in man-hours apportioned among the subtasks and by labor category as follows:

Task(s)	Labor Category	Level of Effort FY 2008 (hours)
1	Senior Structural Engineer	160
2	Senior Structural Engineer	60
3	Senior Structural Engineer	400
All	Project Manager	40
All	Administration	20
<b>Total</b>		<b>680</b>

## 10. PERIOD OF PERFORMANCE

The projected period of performance is **4 months** from authorization of work.

## 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 Task 1 is based on the volume of materials to be reviewed; this task is for familiarity and not for evaluation.

The level of effort for Task 3 is based on the assumption that the contractor is familiar with the review procedures of SRP Section 3.8.

It is assumed that the contractor has 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.

During the course of the review, the Technical Monitor, and possibly other NRC personnel, may travel to the contractor offices 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 meetings.

Attachments:\*\*\*refer RFP for attachments\*\*\*

1. Outline, Format, and Sample for the TER (draft SER input)
2. Sample Request for Information (RAI) Tracking Table