

# ORDER FOR SUPPLIES OR SERVICES

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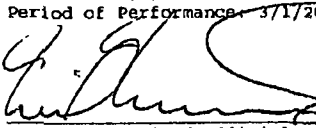
IMPORTANT: Mark all packages and papers with contract and/or order numbers.

GPA NO.

1. DATE OF ORDER		2. CONTRACT NO. (If any) NRC-HQ-12-C-42-0107		6. SHIP TO:	
3. ORDER NO. NRC-T014		4. REQUISITION/REFERENCE NO.		a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
5. ISSUING OFFICE (Address correspondence to) U.S. Nuclear Regulatory Commission Div. of Contracts Attn: P. Merriweather Mail Stop: TWB-01-B10M Washington, DC 20555				b. STREET ADDRESS	
7. TO:		c. CITY Washington		d. STATE DC	e. ZIP CODE 20555
a. NAME OF CONTRACTOR NUMARK ASSOCIATES, INC		DUNS: 788247377 DUNS+4:		f. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER	
c. STREET ADDRESS 1220 19TH ST NW STE 500				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY	
d. CITY WASHINGTON		e. STATE DC	f. ZIP CODE 200362444	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.	
9. ACCOUNTING AND APPROPRIATION DATA 2013-25-17-4-118 Q4012 252A 31X0200 FFS:131164 DUNS 788247377		\$5,000.00		10. REQUISITIONING OFFICE NRO	

11. BUSINESS CLASSIFICATION (Check appropriate box(es))					12. F.O.B. POINT N/A	
<input checked="" type="checkbox"/> a. SMALL	<input type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone		
<input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED	<input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM	<input type="checkbox"/> h. EDWOSB				
13. PLACE OF			14. GOVERNMENT B/L NO. N/A	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) 09/30/2014	16. DISCOUNT TERMS NET 30 DAYS	
a. INSPECTION See Block 6		b. ACCEPTANCE See Block 6				

## 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)
	<p>The Contractor shall provide services in accordance with the attached SOW titled "Evaluation of the EPR Design Certification Section 3.9.2 Pertaining to the Dynamic Testing and Analysis of Systems, Structures, and Components"</p> <p>COR: Christine 301-415-2713 Christine.Briggs@nrc.gov PM: Marty Bowling 202.466.2700 mbowling@numarkassoc.com</p> <p>Total Order ceiling: \$30,547.00 Total Obligated Amount: \$5,000.00 Estimated Reimbursable Cost: \$28,950.00 Fixed Fee: \$1,597.00 Period of Performance: 3/1/2013-9/30/2014</p> <p> Numark Authorized Official</p> <p>2/27/13 Date</p>			See CONTINUATION Page		

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)	
21. MAIL INVOICE TO:							
a. NAME Department of Interior / NBC NRCPayments@nbc.gov b. STREET ADDRESS (or P.O. Box) Attn: Fiscal Services Branch - D2770 7301 W. Mansfield Avenue c. CITY Denver d. STATE CO e. ZIP CODE 80235-2230 f. PHONE FAX:							
22. UNITED STATES OF AMERICA BY (Signature)						23. NAME (Typed) Pearlette Merriweather Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER	17(i) GRAND TOTAL \$30,547.00

AUTHORIZED FOR LOCAL REPRODUCTION  
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (REV. 2/2012)  
PRESCRIBED BY GSA/FAR 48 CFR 53.213(f)

SUNSI REVIEW COMPLETE

MAR 08 2013

TEMPLATE - ADM001

ADM002

In accordance with SECTION G.4, Task Order Procedures, of Contract NRC-HQ-12-C-42-0107, this definitizes Task Order No.14. The effort shall be performed in accordance with the attached statement of work.

Task Order No. 07 shall be in effect eighteen months from date of award, with a cost ceiling of \$30,547.00. The amount of \$28,950.00 represents the estimated reimbursable costs, and the amount of \$1,597.00 represents the fixed fee.

The amount obligated by the Government with respect to this order is \$5,000.00, of which approximately \$4,650.00 represents the estimated reimbursable costs, and the amount of \$350.00, represents the fixed fee.

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

#### **TASK ORDER STATEMENT OF WORK**

JCN/Contract No. Q-4159	Laboratory/Contractor Numark Associates, Inc	Task Order No. 14
Applicant AREVA	Design/Site EPR Design Certification	Docket No. 52-020
Title/Description Evaluation of the EPR Design Certification Section 3.9.2 Pertaining to the Dynamic Testing and Analysis of Systems, Structures, and Components		
TAC No. RX0134	B&R Number 2013-25-17-4-107	SRP Section(s) or ESRP 3.9.2
NRC Technical Assistance Project (TAPM)		
Christine Briggs	(301) 415-2713	Christine.Briggs@nrc.gov
NRC Technical Monitor (TM)		
Yuken Wong	(301) 415-0500	Yuken.Wong@nrc.gov

### **1.0 BACKGROUND**

By letters dated December 11, 2007, AREVA NP Inc., submitted an application for a standard design certification (DC) for the evolutionary pressurized (EPR) water reactor referred to as the U.S. EPR design. The Division of Engineering, Engineering Mechanic Branch (EMB) is responsible for reviewing NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" Section 3.9.2, "Dynamic Testing and Analysis of Systems, Structures, and Components." The review addresses the technical adequacy of the criteria, testing procedures, and dynamic analyses employed to ensure the structural and functional integrity of piping systems, mechanical equipment, reactor internals, and their supports under vibratory loadings, including those due to fluid flow and postulated seismic events. EMB requires the assistance of a contractor having expertise in the area of fluid-structure interaction with special emphasis on the effects of hydrodynamic flow and flow-induced structural vibrations and acoustic resonance. This specialized expertise is required to assist the staff in the review of the reactor internals comprehensive vibration assessment program.

As part of Task Order 20 under JCN Q4159, Numark provided technical assistance related to the review of the dynamic testing and analysis of systems and components portion of the EPR design certification application. Numark reviewed the application and the associated technical reports, issued requests for additional information (RAIs), and prepared a technical evaluation report (TER) with open items. In the transition task order, Numark will resolve the remaining open items and review the revision of the reactor internals comprehensive vibration assessment program report. As a result of emerging issues, additional RAIs may be issued. Numark will continue the technical

assistance under this new contract, resolve any remaining issues, finalize the TER, and support an Advisory Committee on Reactor Safety meeting as required.

## **2.0 OBJECTIVE**

The objective of this task order is to obtain technical expertise from the contractor to assist the staff in determining the adequacy of the EPR design certification application relating to Section 3.9.2.

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 COL application. 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 supplements 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 method 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.

## **3.0 WORK REQUIREMENTS AND SCHEDULE \***

<b>Subtask Description</b>	<b>Due Date or Days</b>
5. Resolve remaining open items on the TER and review the revision of the reactor internals comprehensive vibration assessment program report.	3 months after receipt of report
6. Review San Onofre steam generator tube failure root cause report for applicability to the EPR design.	2 month after receiving root cause report
7. Issue final TER	TBD
8. REQUIREMENT: As needed and requested by the staff, provide technical support to the staff during related second Advisory Committee on Reactor Safeguards (ACRS) meetings.	TBD

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

The COR 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 Contracting Officer (CO) and will be coordinated with the NRC COR.

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

As specified in the basic task ordering agreement, 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:

Key staff: knowledge in flow-induced vibration and finite element stress analysis

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 COR (Technical) 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 monthly 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 CORs and CO.

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

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

Unless otherwise specified above, the contractor shall provide all deliverables as draft products. The NRC COR 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 COR, and then deliver the final version of the deliverable. When mutually agreed upon between the contractor and the COR, 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 (upon request) and electronic formats. The electronic format shall be provided in MS Word or other word processing software approved by the COR. For each deliverable, the contractor shall provide one hard copy (upon request) and electronic copy to both the CORs and the CO. 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), if applicable, RX0134 Task Order No.: 14; the licensee: AREVA; and, the site: n/a.

Communications with the NRC and among contractor staff may be subject to hearing file requirements under 10 CFR Part 2. In this circumstance, the NRC TM will identify the type of records that must be provided to the NRC for inclusion in the hearing file.

#### **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 COR (Technical) after discussion with the contractor PM (and PTL). Travel in excess of the total number of person-trips must be approved by the COR (Administrative); travel within the work scope limits will be approved by the COR (Technical).

- One, two-person, one-day trip to NRC Headquarters for ACRS meeting.

## **7.0 NRC FURNISHED MATERIAL**

The COR (Technical) will provide those NRC documents related to the applicable portions of the application (for example, the Environmental Report) that are readily available. The COR (Technical) 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. The contractor staff will identify any additional NRC documentation that is needed and the COR (Technical) will determine whether it will be provided by the NRC or obtained directly by the contractor from NUDOCS, ADAMS, NRC public document room or the NRC website at [www.nrc.gov](http://www.nrc.gov).

## **8.0 LEVEL OF EFFORT**

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

<u>Sub-Task(s)</u>	<u>Labor Category</u>	<u>Level of Effort</u> <u>FY-13 (hours)</u>	<u>Level of Effort</u> <u>FY-14 (hours)</u>
5	Subject Matter Expert	10	
6	Subject Matter Expert	10	
7	Subject Matter Expert	25	
8	Subject Matter Expert		115
Task 5 - 8	Project Manager	5	15
	Secretarial	5	15
<b>Total</b>		<b>55</b>	<b>145</b>

## **9.0 PERIOD OF PERFORMANCE**

The projected period of performance is from 3/1/2013 through 9/31/2014.

## **10.0 OTHER APPLICABLE INFORMATION**

### **License Fee Recovery**

- Pursuant to the provisions on fees of 10 CFR Parts 170 and 171, provide the total amount of funds costs during the period and cumulative to date for each task/task order by facility. The License Fee Recovery Status Report must be on a separate page, as part of the monthly status report, in the format provided on the following page.

### **Expected Classification or Sensitivity**

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

### **Assumptions and Understandings:**

- It is assumed that the contractor has access to the NRC furnished material available on the Internet.
- It is understood that the scope of review consists of conference calls with the NRC staff, and with the NRC 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 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's Safety Evaluation Report (SER) which will document the NRC's technical, safety and legal review of the COL application. 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 method 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.

#### LICENSE FEE RECOVERY COST STATUS

Contract No:

Job Code:

Title:

Period:

Task/Task Order	Facility Name and Unit	Docket Number	Identification (TAC) Number	Cost	
				Period	Cumulative

#### Common Costs

\_\_\_\_\_ No license fee recoverable costs were incurred during the reporting period.

### Outline and Format for Technical Evaluation Report

#### **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 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 COL applications (e.g., 1503 for the ABWR 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 not 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

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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.

#### **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.Z2 and X.Y.Z3 of this report, [provide specific bases for conclusions that follow]. Accordingly, the staff concludes that the applications meets [or, if applicable, does not meet] the relevant requirements of 10 CFR Part XX and is [or, if applicable, is not] acceptable.

#### **Guidelines for Requests for Additional Information (RAIs)**

Additional information necessary to resolve open or unresolved items identified during the review of the information associated with the steam dryer failure and modification need to be requested in a manner that is unambiguous, has an adequate basis, and is necessary for the safety review. The technical letter report should provide a list of RAIs using the following guidance:

1. An RAI should include the appropriate basis for requesting the information. The basis should explain why the information is needed, including how it will be used to help make a reasonable assurance finding.
2. Judgmental language should be avoided.
  - a. Questions should not make adequacy determinations.
  - b. Words like "unacceptable" or "deficient" and "deviation" should be avoided. Likewise, avoid using phrases like "*the staff will require*" since it is premature to require anything when asking questions.
3. Questions should be focused, not open-ended.
  - a. The RAI should be in the form of a question or an imperative to provide what is needed to complete the review. When the reviewer needs specific information or the underlying issue may not be apparent, the RAI should clearly identify the information requested and/or the underlying issue.
  - b. "If...then" questions (questions that could lead to follow-on questions) should provide both parts of the question.

After the RAIs have been forwarded to the applicable NRC Project Manager, teleconferences and/or public meetings may be held before issuing the RAIs:

- a. These discussions prevent misunderstandings of the intent of the questions.
- b. If a draft RAI is clarified or resolved before issuance, the NRC staff will prepare a documented record of the resolution (i.e., minutes of a public meeting or a teleconference summary).

After the RAIs have been issued, licensee may request a telephone conference and/or a public meeting:

- a. The teleconferences and/or meetings provide additional clarification of the intent of the RAIs and will help licensees prepare satisfactory responses.



- b. To ensure that the response appropriately addresses the RAI, the licensee may submit a draft response (which the NRC Project Manager docket in the Agency-Wide Documents Access and Management System (ADAMS)) and may request a follow-up teleconference and/or meeting.

After receiving licensee's response to the RAI, the NRC Project Manager may hold a teleconference and/or a public meeting:

- a. The purpose of discussing a response with licensee is to better understand the response and/or clarify areas of disagreement. If the resolution of a response relies on information not submitted to the NRC, the licensee should submit the information on the docket. The submission is not intended to be another RAI or a means to minimize the number of SE open items, but frequently reduces the number of SE open items.

***b. If the areas of disagreement remain, the unresolved RAI becomes an SE open item***