

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

BPA NO.

1. CONTRACT ID CODE

PAGE

OF PAGE

1

2

2. AMENDMENT/MODIFICATION NO.  
0004

3. EFFECTIVE DATE

4. REQUISITION/PURCHASE REQ. NO.  
42-07-481T003M004  
09748103159

5. PROJECT NO.(If applicable)

6. ISSUED BY CODE 3100  
U.S. Nuclear Regulatory Commission  
Div. of Contracts  
Attn:Kala Shankar 301-492-3638  
Mail Stop T-7-I-2  
Washington, DC 20555

7. ADMINISTERED BY (If other than Item 6) CODE 3100  
U.S. Nuclear Regulatory Commission  
Div. of Contracts  
Mail Stop TWB 01-B10M  
Washington, DC 20555

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 0003

10B. DATED (SEE ITEM 13)

01-02-2008

X

**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) B&R 925-15-171-103; JC: Q-4159; BOC 252A; APPN: 31X0200  
Obligate: \$125,000

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(X) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).  
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  
D. OTHER (Specify type of modification and authority) MUTUAL AGREEMENT OF BOTH PARTIES  
X

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return <sup>2</sup> copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The purpose of this modification is to incorporate the revised SOW reflecting the increased level of effort; increase the task order ceiling; and add funds in the amount of \$125,000.

Task Order Ceiling Amount: \$831,086 (changed)  
Total Obligated Amount: \$713,587 (changed)  
Period of Performance: 01/02/2008 - 07/01/2010 (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)

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

3/24/09

16B. UNITED STATES OF AMERICA

BY Kala Shankar (Signature of Contracting Officer)

16C. DATE SIGNED

3/24/09

NSN 7540-01-152-8070

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

APR 21 2009

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

ADM002

The purpose of this modification is to (1) incorporate the revised SOW reflecting the additional level of effort; (2) increase the task order ceiling in the amount of \$160,915; and (3) add incremental funding in the amount of \$125,000. Accordingly, the subject task order is hereby modified as follows:

Paragraphs 2 and 3, page 2 of 2 under the base task order 03, are hereby deleted in its entirety and replaced with the following:

Task Order No. 03 shall be in effect from 01/02/2008 through 07/01/2010, with a cost ceiling of \$831,086. The amount of \$794,810 represents the estimated reimbursable costs, and the amount of \$36,276 represents the fixed fee.

“The amount obligated by the Government with respect to this task order is \$713,587, of which \$682,858 represents the estimated reimbursable costs, and the amount of \$30,729 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:	\$588,587.00
Total FY09 Obligation Amount:	<u>\$ 125,000.00</u>
Cumulative Total of NRC Obligations:	\$713,587.00

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

## TASK ORDER STATEMENT OF WORK

JCN/Contract No. Q-4159	Contractor Numark	Task Order No. 003 (Modification #4)
Applicant AREVA	Design/Site EPR	Docket No. 05200020
Title/Description Review of Containment and Ventilation (SPCV) Systems (CTH) for the EPR DCD Application		
TAC No. RX0142	B&R Number 925-15-171-103	SRP Section(s) Containment and Ventilation Sections (see Section 2)
NRC Task Order Project Officer (PO) David D'Abate (301) 415-0667 David.DAbate@nrc.gov		
NRC Technical Monitor (TM) Michelle Hayes (301) 415-8375 Michelle.Hayes2@nrc.gov		

### 1.0 BACKGROUND

Combined Operating License (COL) Applications are submitted pursuant to Section 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 U.S. Nuclear Regulatory Commission (NRC) reviews COL Applications based on information furnished by electric utility companies pursuant to 10 CFR 52.79, "Contents of Applications Technical Information."

Standard Design Certification (DCD) Applications are submitted pursuant to Section 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 U.S. Nuclear Regulatory Commission (NRC) reviews DCD Applications based on information furnished by applicants pursuant to 10 CFR 52.47, "Contents of Applications, Technical Information."

In particular, the application shall include: a final safety analysis report (FSAR) describing the facility; compliance with the principal design criteria for the facility, as described in 10 CFR 50, Appendix A, general design criteria (GDC); and an evaluation of the standard plant design against the Standard Review Plan (SRP).

A Standard Review Plan (NUREG-0800) is 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 staff safety reviews.

An Environmental Safety Review Plan (NUREG-1555) is prepared for the guidance of staff reviewers in performing environmental reviews of applications related to nuclear power plants. The ESRPs are companions to regulatory guides that address siting and environmental issues. As with NUREG-0800 the purpose of the ESRP is to assure the quality and uniformity of environmental reviews.

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

#### Design Certification Process

The NRC may approve and certify a standard nuclear plant design through a rulemaking, independent of a specific site. An application for a standard design certification must contain proposed inspections, tests, analyses, and acceptance criteria (ITAAC) for the standard design. Additionally, the application must demonstrate how the applicant complies with the Commission's relevant regulations.

An application must contain a level of design information sufficient to enable the Commission to reach a final conclusion on all safety questions associated with the design. In general terms, a design certification application should provide an essentially complete nuclear plant design, with the exception of site-specific design features such as intake structures and the ultimate heat sink.

Tasks/Standards	Scheduled Completion	Deliverables
<p>5. REQUIREMENT: Review responses to the RAI questions <b>including Topical Reports</b> to determine if they adequately resolve the outstanding issues. Identify any other open items. Prepare a TER providing the input to the SER with open items (SER/OI).</p> <p>STANDARD: Complete TER with open items</p>	* 30 days after receipt of the responses.	Revised TER with open items
<p>6. REQUIREMENT: Review the applicant's response to the open items identified in the SER/OI. Identify any unresolved issues. Prepare a TER providing the input to the final SER describing the resolution to the open items.</p> <p>STANDARD: Complete TER that follows the NRC provided template without deviation.</p>	*45 days after receipt of responses to OIs	SER input with open items resolved
<p>7. REQUIREMENT: Prepare final supplement with no open items.</p> <p>STANDARD: Supplement reviewed and approved by NRC staff.</p>	10 days following ACRS review of supplement	Final supplement.
<p>8a. REQUIREMENT: <i>(If applicable)</i> Prepare for and travel to the applicant's office and participate in an NRC review team to:</p> <p>a) Audit the <u>TBD</u> as described in the DCD for EPR Standard design.</p> <p>b) Evaluate and discuss the applicant's responses to the unresolved issues identified in Task 4 to determine if the outstanding issues are adequately resolved.</p> <p>c) Prepare a trip report (as an input to NRC Audit Report) to summarize the information reviewed, results of the audit, and meeting discussions.</p> <p>STANDARD: Complete evaluation as defined in task. Submit Trip Report within 2 weeks of site review.</p>	*2 weeks after the trip	Trip Report
<p>8b. REQUIREMENT: As needed and requested by the staff, provide technical support to the staff during related ACRS meetings and hearing proceedings.</p> <p>STANDARD: Ensure presentation materials are reviewed and approved by NRC staff.</p>	TBD	Prepare presentation materials. Attend meetings, if requested.
<p>8c. REQUIREMENT: <b>As needed and requested by the staff, provide technical support to the staff during related MDEP meetings</b></p>	TBD	None

Tasks/Standards	Scheduled Completion	Deliverables
<p>9. REQUIREMENT: Evaluate existing multi-node analyses of containment test facilities (for example, OECD/NEA International Standard Problem ISP-47) and use insights gained from this research to develop at least 2 nodding schemes for the US-EPR. Identify a list of specific information (to be supplied by AREVA) required to generate complete APROS models of proposed nodalizations.</p> <p>STANDARD: Submit report containing proposed nodalizations and list of modeling information needed from AREVA.</p>	<p>* 2 weeks after authorization to begin Task 9</p>	<p>Analysis Report</p>
<p>10. REQUIREMENT: Generate APROS models of nodding schemes developed in Task 9 with modeling information provided by AREVA. Perform nodal sensitivity analysis using mass and energy release data supplied by 1. AREVA and 2. the NRC staff. Extend the analyses for 24 hours or until the containment pressure is clearly on a lasting downward trend. Evaluate the effect of heat transfer options for the vertical internal heat structures and for the horizontal heat structures. <b>Perform additional sensitivity analysis as directed by NRC staff. Update model as additional information is provided by AREVA.</b></p> <p>STANDARD: Submit report describing sensitivity analyses which includes model descriptions and APROS results.</p>	<p>* 7 weeks after receipt of modeling information</p>	<p>Analysis Report</p>
<p>11. REQUIREMENT: Following discussions with the NRC staff, provide recommendations as to the best conservative nodalization for US-EPR safety analysis. Provide tables from the recommended APROS analysis model giving node volume and initial conditions, flow path area, length and flow loss factor. List heat structures by node including thickness, material and heat transfer model used. <b>Update model as additional information is provided by AREVA.</b></p> <p>STANDARD: Submit report containing detailed information on recommended model including input tables.</p>	<p>* 2 weeks after NRC discussions</p>	<p>Analysis Report</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.