


SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS				1. REQUISITION NUMBER RES-18-0338		PAGE OF 1 16							
2. CONTRACT NO. NRC-HQ-60-15-A-0001		3. AWARD/ EFFECTIVE DATE		4. ORDER NUMBER 31310018F0059		5. SOLICITATION NUMBER		6. SOLICITATION ISSUE DATE					
7. FOR SOLICITATION INFORMATION CALL		a. NAME JEFFREY MITCHELL			b. TELEPHONE NUMBER (No collect calls) 301-415-5074		8. OFFER DUE DATE/LOCAL TIME						
9. ISSUED BY U.S. NRC - HQ Acquisition Management Division Mail Stop: TWFN-07B20M Jeffrey R. Mitchell 301-415-5074 Washington DC 20555-0001				CODE NRCHQ		10. THIS ACQUISITION IS <input checked="" type="checkbox"/> UNRESTRICTED OR <input type="checkbox"/> SET ASIDE: % FOR: <input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> WOMEN-OWNED SMALL BUSINESS <input type="checkbox"/> HUBZONE SMALL BUSINESS <input type="checkbox"/> (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM NAICS: 541330 <input type="checkbox"/> SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS <input type="checkbox"/> EDWOSB <input type="checkbox"/> 8(A) SIZE STANDARD: \$14.0							
11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE		12. DISCOUNT TERMS 30		<input type="checkbox"/> 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)		13b. RATING			14. METHOD OF SOLICITATION <input type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP				
15. DELIVER TO U.S. Nuclear Regulatory Commission- Mail Processing Center 4930 Boiling Brook Parkway Rockville MD 20852				CODE NRCHQ		16. ADMINISTERED BY U.S. NRC - HQ Acquisition Management Division Mail Stop: TWFN-5E03 Washington DC 20555-0001							
17a. CONTRACTOR/ OFFEROR		CODE 621211259		FACILITY CODE		18a. PAYMENT WILL BE MADE BY U.S. Nuclear Regulatory Commission One White Flint North 11555 Rockville Pike Mailstop 03-E17A NRCPayments@nrc.gov Rockville MD 20852-2738							
ENERGY RESEARCH, INC. Attn: Tracey Mullinix 6189 EXECUTIVE BLVD ROCKVILLE MD 208523901				TELEPHONE NO.				<input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER					
18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM													
19. ITEM NO.		20. SCHEDULE OF SUPPLIES/SERVICES				21. QUANTITY		22. UNIT		23. UNIT PRICE		24. AMOUNT	
		GSA Contract #: GS23F0110M The U.S. Nuclear Regulatory Commission hereby issues Task Order 5 entitled, "Updating of MELCOR AP1000 Containment Model" This call is issued under BPA number GS23F0110M - NRC-HQ-60-15-A-0001. This order confirms the verbal authorization given on July 2, 2018 to commence work. Period of Performance: July 2, 2018 - January 15, 2019 (Use Reverse and/or Attach Additional Sheets as Necessary)											
25. ACCOUNTING AND APPROPRIATION DATA See schedule								26. TOTAL AWARD AMOUNT (For Govt. Use Only) \$66,855.40					
<input type="checkbox"/> 27a. SOLICITATION NCORPORATES BY REFERENCE FAR 52 212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.								<input type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER NCORPORATES BY REFERENCE FAR 52 212-4. FAR 52 212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.					
<input type="checkbox"/> 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED.								<input type="checkbox"/> 29. AWARD OF CONTRACT: REF. OFFER DATED . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:					
30a. SIGNATURE OF OFFEROR/CONTRACTOR						31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER) 							
30b. NAME AND TITLE OF SIGNER (Type or print)				30c. DATE SIGNED		31b. NAME OF CONTRACTING OFFICER (Type or print) JEFFREY R. MITCHELL				31c. DATE SIGNED 08/02/2018			

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	<p>Total Ceiling Amount: \$66,855.40</p> <p>Total Obligated Amount: \$66,855.40</p> <p>See attached pages for specific terms and conditions, as well as Statement of Work for this order.</p> <p>Delivery: 01/15/2019</p> <p>Accounting Info:</p> <p>2018-X0200-FEEBASED-60-60D003-60B301-1146-17-6-161-252A-17-6-161-1146</p> <p>Period of Performance: 07/02/2018 to 01/15/2019</p>				

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED ☐ INSPECTED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE		32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	
32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE			32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE	
			32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE	
33. SHIP NUMBER	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT	37. CHECK NUMBER
<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL			<input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	
38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY		
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT			42a. RECEIVED BY (<i>Print</i>)	
41b. SIGNATURE AND TITLE OF CERTIFY NG OFFICER		41c. DATE	42b. RECEIVED AT (<i>Location</i>)	
			42c. DATE REC'D (YY/MM/DD)	42d. TOTAL CONTAINERS

SECTION A - Solicitation/Contract Form

A.1 BRIEF PROJECT TITLE AND WORK DESCRIPTION

(a) The title of this project is: UPDATING OF MELCOR AP1000 CONTAINMENT MODEL

(b) Summary work description: The containment portion of the MELCOR AP1000 model used in the original AP1000 design certification review is to be updated in accordance with the containment design changes documented in LAR-17-043.

(End of Clause)

A.2 CONSIDERATION AND OBLIGATION-TASK ORDERS

(a) The ceiling of this order for services is \$66,855.40.

(b) This order is subject to the minimum and maximum ordering requirements set forth in the contract.

(c) The amount presently obligated with respect to this order is \$66,855.40. The obligated amount shall, at no time, exceed the order ceiling as specified in paragraph (a) above. When and if the amount(s) paid and payable to the Contractor hereunder shall equal the obligated amount, the Contractor shall not be obligated to continue performance of the work unless and until the Contracting Officer shall increase the amount obligated with respect to this order, in accordance with FAR Part 43 - Modifications. Any work undertaken by the Contractor in excess of the obligated amount specified above is done so at the Contractor's sole risk and may not be reimbursed by the Government.

(d) The Contractor shall comply with the provisions of FAR 52.232-22 - Limitation of Funds, for incrementally-funded delivery orders or task orders.

(End of clause)

A.3 PRICE/COST SCHEDULE

CLIN	DESCRIPTION	EST. QTY	UNIT	SCHEDULE YEAR 17 RATES	TOTAL
0001	Executive	■	Hr.	■	■
0002	Senior Engineer / Scientist	■	Hr.	■	■
0003	Engineer / Scientist	■	Hr.	■	■

SUBTOTAL		■	Hr.		■
004	ODCS / LOCAL TRAVEL				■
ESTIMATED CEILING					\$66,855.00

A.4 TASK/DELIVERY ORDER PERIOD OF PERFORMANCE (SEP 2013)

This order shall commence on July 2, 2018 (Verbal Authorization) and will expire on January 15, 2019.

(End of Clause)

A.5 2052.215-70 KEY PERSONNEL (JAN 1993)

(a) The following individuals are considered to be essential to the successful performance of the work hereunder:

■

■

■

*The contractor agrees that personnel may not be removed from the contract work or replaced without compliance with paragraphs (b) and (c) of this section.

(b) If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 work days, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall immediately notify the contracting officer and shall, subject to the concurrence of the contracting officer, promptly replace the personnel with personnel of at least substantially equal ability and qualifications.

(c) Each request for approval of substitutions must be in writing and contain a detailed explanation of the circumstances necessitating the proposed substitutions. The request must also contain a complete resume for the proposed substitute and other information requested or needed by the contracting officer to evaluate the proposed substitution. The contracting officer and the project officer shall evaluate the contractor's request and the contracting officer shall promptly notify the contractor of his or her decision in writing.

(d) If the contracting officer determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work is not reasonably forthcoming, or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the contract or the service order, the contract may be terminated by the

contracting officer for default or for the convenience of the Government, as appropriate. If the contracting officer finds the contractor at fault for the condition, the contract price or fixed fee may be equitably adjusted downward to compensate the Government for any resultant delay, loss, or damage.

**A.6 2052.215-71 CONTRACTING OFFICER REPRESENTATIVE (COR) AUTHORITY.
(OCT 1999)**

(a) The contracting officer's authorized representative hereinafter referred to as the COR for this contract is:

Name: [REDACTED]

Address: [REDACTED]

Telephone Number: [REDACTED]

(b) Performance of the work under this contract is subject to the technical direction of the NRC project officer. The term technical direction is defined to include the following:

(1) Technical direction to the contractor which shifts work emphasis between areas of work or tasks, authorizes travel which was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work or changes to specific travel identified in the Statement of Work), fills in details, or otherwise serves to accomplish the contractual statement of work.

(2) Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.

(3) Review and, where required by the contract, approve technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

(c) Technical direction must be within the general statement of work stated in the contract. The project officer does not have the authority to and may not issue any technical direction which:

(1) Constitutes an assignment of work outside the general scope of the contract.

(2) Constitutes a change as defined in the "Changes" clause of this contract.

(3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.

(4) Changes any of the expressed terms, conditions, or specifications of the contract.

(5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

(d) All technical directions must be issued in writing by the project officer or must be confirmed by the project officer in writing within ten (10) working days after verbal issuance. A copy of the written direction must be furnished to the contracting officer. A

copy of NRC Form 445, Request for Approval of Official Foreign Travel, which has received final approval from the NRC must be furnished to the contracting officer.

(e) The contractor shall proceed promptly with the performance of technical directions duly issued by the project officer in the manner prescribed by this clause and within the project officer's authority under the provisions of this clause.

(f) If, in the opinion of the contractor, any instruction or direction issued by the project officer is within one of the categories defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request that contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.

(g) Any unauthorized commitment or direction issued by the project officer may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.

(h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect to the instruction or direction is subject to 52.233-1 - Disputes.

(i) In addition to providing technical direction as defined in paragraph (b) of the section, the project officer shall:

(1) Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the contracting officer changes in requirements.

(2) Assist the contractor in the resolution of technical problems encountered during performance.

(3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(End of Clause)

A.7 AWARD NOTIFICATION AND COMMITMENT OF PUBLIC FUNDS

(a) All offerors will receive preaward and postaward notices in accordance with FAR 15.503.

(b) It is also brought to your attention that the contracting officer is the only individual who can legally obligate funds or commit the NRC to the expenditure of public funds in connection with this procurement. This means that unless provided in a contract document or specifically authorized by the contracting officer, NRC technical personnel may not issue contract modifications, give formal contractual commitments, or otherwise bind, commit, or obligate the NRC contractually. Informal unauthorized commitments, which do not obligate the NRC and do not entitle the contractor to payment, may include:

- (1) Encouraging a potential contractor to incur costs prior to receiving a contract;
- (2) Requesting or requiring a contractor to make changes under a contract without formal contract modifications;
- (3) Encouraging a contractor to incur costs under a cost-reimbursable contract in excess of those costs contractually allowable; and
- (4) Committing the Government to a course of action with regard to a potential contract, contract change, claim, or dispute.

(End of Clause)

A.8 USE OF AUTOMATED CLEARING HOUSE (ACH) ELECTRONIC PAYMENT/REMITTANCE ADDRESS

The Debt Collection Improvement Act of 1996 requires that all Federal payments except IRS tax refunds be made by Electronic Funds Transfer. It is the policy of the Nuclear Regulatory Commission to pay government vendors by the Automated Clearing House (ACH) electronic funds transfer payment system. Item 15C of the Standard Form 33 may be disregarded.

(End of Clause)

A.9 GREEN PURCHASING (SEP 2015)

(a) In furtherance of the sustainable acquisition goals of Executive Order (EO) 13693, "Planning for Federal Sustainability in the Next Decade," products and services provided under this contract/order shall be energy efficient (EnergyStar® or Federal Energy Management Program - FEMP-designated products), water efficient, biobased, environmentally preferable (excluding EPEAT®-registered products), non-ozone depleting, contain recycled content, or are non- or low toxic alternatives or hazardous constituents (e.g., non-VOC paint), where such products and services meet agency performance requirements. See: Executive Order (EO) 13693, "Planning for Federal Sustainability in the Next Decade."

(b) The NRC and contractor may negotiate during the contract term to permit the substitution or addition of designated recycled content products (i.e., Comprehensive Procurement Guidelines - CPG), EPEAT®-registered products, EnergyStar®- and FEMP designated energy efficient products and appliances, USDA designated biobased products (Biopreferred® program), environmentally preferable products, WaterSense and other water efficient products, products containing non- or lower-ozone depleting substances (i.e., SNAP), and products containing non- or low-toxic or hazardous constituents (e.g., non-VOC paint), when such products and services are readily available at a competitive cost and satisfy the NRC's performance needs.

(c) The contractor shall flow down this clause into all subcontracts and other agreements that relate to performance of this contract/order.

(End of Clause)

A.10 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES

(a) The U.S. Nuclear Regulatory Commission (NRC) contractor and its subcontractor are subject to the Whistleblower Employee Protection public law provisions as codified at 42 U.S.C. 5851. NRC contractor(s) and subcontractor(s) shall comply with the requirements of this Whistleblower Employee Protection law, and the implementing regulations of the NRC and the Department of Labor (DOL). See, for example, DOL Procedures on Handling Complaints at 29 C.F.R. Part 24 concerning the employer obligations, prohibited acts, DOL procedures and the requirement for prominent posting of notice of Employee Rights at Appendix A to Part 24 entitled: "Your Rights Under the Energy Reorganization Act".

(b) Under this Whistleblower Employee Protection law, as implemented by regulations, NRC contractor and subcontractor employees are protected from discharge, reprisal, threats, intimidation, coercion, blacklisting or other employment discrimination practices with respect to compensation, terms, conditions or privileges of their employment because the contractor or subcontractor employee(s) has provided notice to the employer, refused to engage in unlawful practices, assisted in proceedings or testified on activities concerning alleged violations of the Atomic Energy Act of 1954 (as amended) and the Energy Reorganization Act of 1974 (as amended).

(c) The contractor shall insert this or the substance of this clause in any subcontracts involving work performed under this contract.

(End of Clause)

A.11 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST. (JAN 1993)

(a) Purpose. The primary purpose of this clause is to aid in ensuring that the contractor:

(1) Is not placed in a conflicting role because of current or planned interests (financial, contractual, organizational, or otherwise) which relate to the work under this contract; and

(2) Does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described apply to performance or participation by the contractor, as defined in 48 CFR 2009.570-2 in the activities covered by this clause.

(c) Work for others.

(1) Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees under this contract abide by the provision of this clause. If the contractor has reason to believe, with respect to itself or any employee, that any proposed consultant or other contractual arrangement with any firm or organization may

involve a potential conflict of interest, the contractor shall obtain the written approval of the contracting officer before the execution of such contractual arrangement.

(2) The contractor may not represent, assist, or otherwise support an NRC licensee or applicant undergoing an NRC audit, inspection, or review where the activities that are the subject of the audit, inspection, or review are the same as or substantially similar to the services within the scope of this contract (or task order as appropriate) except where the NRC licensee or applicant requires the contractor's support to explain or defend the contractor's prior work for the utility or other entity which NRC questions.

(3) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site, the contractor shall neither solicit nor perform work in the same or similar technical area for that licensee or applicant organization for a period commencing with the award of the task order or beginning of work on the site (if not a task order contract) and ending one year after completion of all work under the associated task order, or last time at the site (if not a task order contract).

(4) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site,

(i) The contractor may not solicit work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate.

(ii) The contractor may not perform work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate, and for one year thereafter.

(iii) Notwithstanding the foregoing, the contracting officer may authorize the contractor to solicit or perform this type of work (except work in the same or similar technical area) if the contracting officer determines that the situation will not pose a potential for technical bias or unfair competitive advantage.

(d) Disclosure after award.

(1) The contractor warrants that to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest as defined in 48 CFR 2009.570-2.

(2) The contractor agrees that if, after award, it discovers organizational conflicts of interest with respect to this contract, it shall make an immediate and full disclosure in writing to the contracting officer. This statement must include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract if termination is in the best interest of the Government.

(3) It is recognized that the scope of work of a task-order-type contract necessarily encompasses a broad spectrum of activities. Consequently, if this is a task-order-type contract, the contractor agrees that it will disclose all proposed new work involving NRC licensees or applicants which comes within the scope of work of the underlying contract. Further, if this contract involves work at a licensee or applicant site, the contractor agrees to exercise diligence to discover and disclose any new work at that licensee or applicant site. This disclosure must be made before the submission of a bid or proposal

to the utility or other regulated entity and must be received by the NRC at least 15 days before the proposed award date in any event, unless a written justification demonstrating urgency and due diligence to discover and disclose is provided by the contractor and approved by the contracting officer. The disclosure must include the statement of work, the dollar value of the proposed contract, and any other documents that are needed to fully describe the proposed work for the regulated utility or other regulated entity. NRC may deny approval of the disclosed work only when the NRC has issued a task order which includes the technical area and, if site-specific, the site, or has plans to issue a task order which includes the technical area and, if site-specific, the site, or when the work violates paragraphs (c)(2), (c)(3) or (c)(4) of this section.

(e) Access to and use of information.

(1) If, in the performance of this contract, the contractor obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), the contractor agrees not to:

(i) Use this information for any private purpose until the information has been released to the public;

(ii) Compete for work for the Commission based on the information for a period of six months after either the completion of this contract or the release of the information to the public, whichever is first;

(iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public; or

(iv) Release the information without prior written approval by the contracting officer unless the information has previously been released to the public by the NRC.

(2) In addition, the contractor agrees that, to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat the information in accordance with restrictions placed on use of the information.

(3) Subject to patent and security provisions of this contract, the contractor shall have the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.

(f) Subcontracts. Except as provided in 48 CFR 2009.570-2, the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms contract, contractor, and contracting officer, must be appropriately modified to preserve the Government's rights.

(g) Remedies. For breach of any of the above restrictions, or for intentional nondisclosure or misrepresentation of any relevant interest required to be disclosed concerning this contract or for such erroneous representations that necessarily imply bad faith, the Government may terminate the contract for default, disqualify the

contractor from subsequent contractual efforts, and pursue other remedies permitted by law or this contract.

(h) Waiver. A request for waiver under this clause must be directed in writing to the contracting officer in accordance with the procedures outlined in 48 CFR 2009.570-9.

(i) Follow-on effort. The contractor shall be ineligible to participate in NRC contracts, subcontracts, or proposals therefor (solicited or unsolicited) which stem directly from the contractor's performance of work under this contract. Furthermore, unless so directed in writing by the contracting officer, the contractor may not perform any technical consulting or management support services work or evaluation activities under this contract on any of its products or services or the products or services of another firm if the contractor has been substantially involved in the development or marketing of the products or services.

(1) If the contractor under this contract, prepares a complete or essentially complete statement of work or specifications, the contractor is not eligible to perform or participate in the initial contractual effort which is based on the statement of work or specifications. The contractor may not incorporate its products or services in the statement of work or specifications unless so directed in writing by the contracting officer, in which case the restrictions in this paragraph do not apply.

(2) Nothing in this paragraph precludes the contractor from offering or selling its standard commercial items to the Government.

(End of Clause)

A.12 SECURITY REQUIREMENTS RELATING TO THE PRODUCTION OF REPORTS OR THE PUBLICATION OF RESULTS UNDER CONTRACTS, AGREEMENTS, AND GRANTS (JUL 2016)

Review and Approval of Reports

(a) Reporting Requirements. The contractor/grantee shall comply with the terms and conditions of the contract/grant regarding the contents of the draft and final report, summaries, data, and related documents, to include correcting, deleting, editing, revising, modifying, formatting, and supplementing any of the information contained therein, at no additional cost to the NRC. Performance under the contract/grant will not be deemed accepted or completed until it complies with the NRC's directions, as applicable. The reports, summaries, data, and related documents will be considered draft until approved by the NRC. The contractor/grantee agrees that the direction, determinations, and decisions on approval or disapproval of reports, summaries, data, and related documents created under this contract/grant remain solely within the discretion of the NRC.

(b) Publication of Results. Prior to any dissemination, display, publication, or release of articles, reports, summaries, data, or related documents developed under the contract/grant, the contractor/grantee shall submit them to the NRC for review and approval. The contractor/grantee shall not release, disseminate, display or publish articles, reports, summaries, data, and related documents, or the contents therein, that have not been reviewed and approved by the NRC for release, display, dissemination or publication. The contractor/grantee agrees to conspicuously place any disclaimers, markings or notices, directed by the NRC, on any articles, reports, summaries, data, and

related documents that the contractor/grantee intends to release, display, disseminate or publish to other persons, the public, or any other entities. The contractor/grantee agrees, and grants, a royalty-free, nonexclusive, irrevocable worldwide license to the government, to use, reproduce, modify, distribute, prepare derivative works, release, display or disclose the articles, reports, summaries, data, and related documents developed under the contract/grant, for any governmental purpose and to have or authorize others to do so.

(c) Identification/Marking of Sensitive Unclassified Non-Safeguards Information (SUNSI) and Safeguards Information (SGI). The decision, determination, or direction by the NRC that information possessed, formulated or produced by the contractor/grantee constitutes SUNSI or SGI is solely within the authority and discretion of the NRC. In performing the contract/grant, the contractor/grantee shall clearly mark SUNSI and SGI, to include for example, OUO-Allegation Information or OUO-Security Related Information on any reports, documents, designs, data, materials, and written information, as directed by the NRC. In addition to marking the information as directed by the NRC, the contractor shall use the applicable NRC cover sheet (e.g., NRC Form 461 Safeguards Information) in maintaining these records and documents. The contractor/grantee shall ensure that SUNSI and SGI is handled, maintained and protected from unauthorized disclosure, consistent with NRC policies and directions. The contractor/grantee shall comply with the requirements to mark, maintain, and protect all information, including documents, summaries, reports, data, designs, and materials in accordance with the provisions of Section 147 of the Atomic Energy Act of 1954 as amended, its implementing regulations (10 CFR 73.21), Sensitive Unclassified Non-Safeguards and Safeguards Information policies, and NRC Management Directives and Handbooks 12.5, 12.6 and 12.7.

(d) Remedies. In addition to any civil, criminal, and contractual remedies available under the applicable laws and regulations, failure to comply with the above provisions, and/or NRC directions, may result in suspension, withholding, or offsetting of any payments invoiced or claimed by the contractor/grantee.

(e) Flowdown. If the contractor/grantee intends to enter into any subcontracts or other agreements to perform this contract/grant, the contractor/grantee shall include all of the above provisions in any subcontracts or agreements.

A.113 NRC INFORMATION TECHNOLOGY SECURITY

NRC INFORMATION TECHNOLOGY SECURITY TRAINING (MAY 2016)

NRC contractors shall ensure that their employees, consultants, and subcontractors with access to the agency's information technology (IT) equipment and/or IT services complete NRC's online initial and refresher IT security training requirements to ensure that their knowledge of IT threats, vulnerabilities, and associated countermeasures remains current. Both the initial and refresher IT security training courses generally last an hour or less and can be taken during the employee's regularly scheduled work day.

Contractor employees, consultants, and subcontractors shall complete the NRC's online annual, "Computer Security Awareness" course on the same day that they receive access to the agency's IT equipment and/or services, as their first action using the equipment/service. For those contractor employees, consultants, and subcontractors who are already working under this contract, the on-line training must be completed in

accordance with agency Network Announcements issued throughout the year, within three weeks of issuance of this modification.

Additional annual required online NRC training includes but is not limited to the following:

- (1) Information Security (INFOSEC) Awareness
- (2) Continuity of Operations (COOP) Awareness
- (3) Defensive Counterintelligence and Insider Threat Awareness
- (4) No FEAR Act
- (5) Personally Identifiable Information (PII) and Privacy Act Responsibilities Awareness

Contractor employees, consultants, and subcontractors who have been granted access to NRC information technology equipment and/or IT services must continue to take IT security refresher training offered online by the NRC throughout the term of the contract. Contractor employees will receive notice of NRC's online IT security refresher training requirements through agency-wide notices.

Contractor Monthly Letter Status Reports (MLSR) must include the following information for all completed training:

- (1) the name of the individual completing the course;
- (2) the course title; and
- (3) the course completion date.

The MLSR must also include the following information for those individuals who have not completed their required training:

- (1) the name of the individual who has not yet completed the training;
- (2) the title of the course(s) which must still be completed; and
- (3) the anticipated course completion date(s).

The NRC reserves the right to deny or withdraw Contractor use or access to NRC IT equipment and/or services, and/or take other appropriate contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor violate the Contractor's responsibility under this clause.

(End of Clause)

A.14 FOREIGN OWNERSHIP, CONTROL, OR INFLUENCE OVER CONTRACTOR

The National Industrial Security Program Operating Manual (NISPOM) implements the provisions of E.O. 12829, "National Industrial Security Program." A company is considered to be under FOCI whenever a foreign interest has the power, direct or indirect, whether or not exercised, and whether or not exercisable through the ownership of the U.S. company's securities, by contractual arrangements or otherwise, to direct or

decide matters affecting the management or operations of that company in a manner that may result in unauthorized access to classified information or may adversely affect the performance of classified information contracts. (See NRC Management Directive 12.2 – “NRC Classified Information Security Program”)

(a) For purposes of this clause, a foreign interest is defined as any of the following:

(1) A foreign government or foreign government agency;

(2) Any form of business enterprise organized under the laws of any country other than the United States or its possessions;

(3) Any form of business enterprise organized or incorporated under the laws of the U.S., or a State or other jurisdiction within the U.S., which is owned, controlled, or influenced by a foreign government, agency, firm, corporation or person; or

(4) Any person who is not a U.S. citizen.

(b) A U.S. company determined to be under FOCI is not eligible for facility clearance (FCL). If a company already has an FCL, the FCL shall be suspended or revoked unless security measures are taken to remove the possibility of unauthorized access to classified information.

(c) For purposes of this clause, subcontractor means any subcontractor at any tier and the term "contracting officer" shall mean NRC contracting officer. When this clause is included in a subcontract, the term "contractor" shall mean subcontractor and the term "contract" shall mean subcontract.

(d) The contractor shall complete and submit and SF-328, DD-441 and DD-441-1 forms, prior to contract award. The information contained in these forms may be used in making a determination as to whether a contractor is eligible to participate in the National Industrial Security Program and have a facility security clearance.

(e) The contractor shall immediately provide the contracting officer written notice of any changes in the extent and nature of FOCI over the contractor which would affect the answers to the questions presented in SF-328, "Certificate Pertaining to Foreign Interest". Further, notice of changes in ownership or control which are required to be reported to the Securities and Exchange Commission, the Federal Trade Commission, or the Department of Justice shall also be furnished concurrently to the contracting officer.

(f) In those cases where a contractor has changes involving FOCI, the NRC must determine whether the changes will pose an undue risk to the common defense and security. In making this determination, the contracting officer shall consider proposals made by the contractor to avoid or mitigate foreign influences.

(g) The contractor agrees to insert terms that conform substantially to the language of this clause including this paragraph (g) in all subcontracts under this contract that will require access to classified information and shall require such subcontractors to submit completed SF-328, DD-441 and DD-441-1 forms prior to award of a subcontract. Information to be provided by a subcontractor pursuant to this clause may be submitted directly to the contracting officer.

(h) Information submitted by the contractor or any affected subcontractor as required pursuant to this clause shall be treated by NRC to the extent permitted by law, as business or financial information submitted in confidence to be used solely for purposes of evaluating FOCI.

(i) The requirements of this clause are in addition to the requirement that a contractor obtain and retain the security clearances required by the contract. This clause shall not operate as a limitation on NRC's rights, including its rights to terminate this contract.

(j) The contracting officer may terminate this contract for default either if the contractor fails to meet obligations imposed by this clause, e.g., provide the information required by this clause, comply with the contracting officer's instructions about safeguarding classified information, or make this clause applicable to subcontractors, or if, in the contracting officer's judgment, the contractor creates a FOCI situation in order to avoid performance or a termination for default. The contracting officer may terminate this contract for convenience if the contractor becomes subject to FOCI and for reasons other than avoidance of performance of the contract, cannot, or chooses not to, avoid or mitigate the FOCI problem.

(End of Clause)

A.15 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS

NRC contractors are responsible to ensure that their alien personnel are not in violation of United States immigration laws and regulations, including employment authorization documents and visa requirements. Each alien employee of the Contractor must be lawfully admitted for permanent residence as evidenced by Permanent Resident Form I-551 (Green Card), or must present other evidence from the U.S. Department of Homeland Security/U.S. Citizenship and Immigration Services that employment will not affect his/her immigration status. The U.S. Citizenship and Immigration Services provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on their website, <http://www.uscis.gov/portal/site/uscis>.

The NRC reserves the right to deny or withdraw Contractor use or access to NRC facilities or its equipment/services, and/or take any number of contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor violate the Contractor's responsibility under this clause.

(End of Clause)

A.16 PLACE OF DELIVERY-REPORTS

The items to be furnished hereunder shall be delivered, with all charges paid by the Contractor, to:

Electronic copies to:

Shawn Marshall, Contracting Officer's Representative
Shawn.Marshall@nrc.gov

Jeffrey Mitchell, Contracting Officer

Jeffrey.Mitchell@nrc.gov

(End of Clause)

A.17 INSPECTION AND ACCEPTANCE BY THE NRC (SEP 2013)

Inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the NRC Contracting Officer's Representative (COR) at the destination, accordance with FAR 52.247-34 - F.o.b. Destination.

Contract Deliverables:

1. See Attachment 1 "Statement of Work" - Section 6 "Deliverables and Delivery Schedule"

(End of Clause)

A.18 BRANDING

The Contractor is required to use the statement below in any publications, presentations, articles, products, or materials funded under this contract/order, to the extent practical, in order to provide NRC with recognition for its involvement in and contribution to the project. If the work performed is funded entirely with NRC funds, then the contractor must acknowledge that information in its documentation/presentation.

Work Supported by the U.S. Nuclear Regulatory Commission (NRC), Office of Regulatory Research, under Contract/order number GS23F0110M - NRC-HQ-60-15-A-0001 - 31310018F0003.

(End of Clause)

A.19 PACKAGING AND MARKING

(a) The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Surface Transportation Board, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation.

(b) On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

(c) Additional packaging and/or marking requirements are as follows: N/A.

(End of Clause)

A.20 List of Documents, Exhibits, and Other Attachments

Attachment Number	Title	Date	Number of Pages
1	STATEMENT OF WORK	01/02/2018	3

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BPA Call # 31310018F0059

TASK ORDER STATEMENT OF WORK

1. PROJECT TITLE

UPDATING OF MELCOR AP1000 CONTAINMENT MODEL

2. BACKGROUND

A recent License Amendment Request from Westinghouse Electric Power Company (i.e. LAR-17-043) documents changes to the Westinghouse GOTHIC (WGOTHIC) computer model for simulation of Design Basis Accident (DBA) containment loads for the Vogtle-AP1000 Units 3 and 4. The documented modifications include, among others, accumulated changes to the design affecting various passive containment heat structures, control volumes, and interconnecting flow paths. The proposed WGOTHIC AP1000 model also includes various assumptions purported to result in a conservative estimation of peak containment pressure and temperature, as well as the long-term containment pressure and temperature response 24 hours following DBA loss of coolant accidents (LOCA) associated with the primary circuits and the main steam line breaks.

As part of the initial design certification review, a MELCOR AP1000 model was developed to provide simulation results comparable to those produced by the original WGOTHIC AP1000 model. Therefore, the documented changes to the WGOTHIC AP1000 model, as documented in LAR-17-043, makes it necessary that the MELCOR AP1000 model be similarly changed so as to produced comparable results.

3. SCOPE

The containment portion of the MELCOR AP1000 model used in the original AP1000 design certification review is to be updated in accordance with the containment design changes documented in LAR-17-043.

4. APPLICABLE DOCUMENTS AND STANDARDS

Applicable documents that shall be provided by the NRC include the following:

- License Amendment Request 17-043
- MELCOR V2.2 Code Manual

5. SPECIFIC TASKS

Task 1: Development and Documentation of an Update to the AP1000 Containment Model

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The contractor shall use the latest version of SNAP, the most recently released version of MELCOR (2.2 or later), and any available sources of AP1000-specific or relatable plant information, to include LAR-17-043 and the original AP1000 plant models developed for severe accidents, to assemble a comparable, containment-only MELCOR AP1000 model. The containment-only MELCOR model shall contain all of the systems, hydraulic components, heat structures, control systems, and boundary conditions necessary to replicate the revised WGOTHIC model and simulate the operation of the revised AP1000 containment at nominal and transient conditions.

While performing this work, the contractor, if warranted, shall identify and list any missing data or plant-specific information required for the update and submit to the COR the list in the form of a Request for Additional Information (RAI). This should be done within the first few weeks of this effort to ensure adequate time for receipt of the response. After a response to the RAI is received, the contractor shall then implement the newly-acquired information into the model.

Upon completion of the model, a steady-state simulation shall be performed to demonstrate model fidelity. The results of the steady-state simulation, along with the rationale and sources of all information used to assemble the model, shall be documented in a calculation notebook.

Deliverable: The contractor shall provide an updated MELCOR model of the AP1000 containment and a corresponding calculation notebook.

Task 2: Confirmatory Simulation of Accident Scenarios and Sensitivity Cases

The model developed under Task 1 shall be used to undertake a confirmatory simulation study. The study shall consist of a comparison of the results obtained using the updated MELCOR AP1000 containment model and the results from the MELCOR AP1000 containment model developed prior to the changes proposed in the License Amendment Request (LAR). Both models shall be used to simulate the containment peak-pressure scenario for Loss-of-Coolant Accident (LOCA) and Main Stream Line Break (MSLB), as described in LAR-17-043.

The results of the simulations, including comparisons to the results from the WGOTHIC peak-pressure LOCA and MSLB simulations provided in LAR-17-043, should be documented in a technical report.

Deliverable: The contractor shall provide a technical report documenting the results of the confirmatory simulation study.

6. DELIVERABLES AND DELIVERY SCHEDULE

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Tasks	Delivery Dates		Deliverables
	Preliminary Deliverables	Final Deliverables	
Task 1	2 months after receipt of requisite information from NRC COR	1 month after receipt of NRC comments on draft deliverables, but no later than the last day of the period of performance.	The contractor shall provide an updated MELCOR model of the AP1000 containment and a corresponding calculation notebook after the delivery of preliminary and final deliverables.
Task 2	1 month after completion of Task 1	2 weeks after receipt of NRC comments on draft deliverables, but no later than the last day of the period of performance.	The contractor shall provide a technical report documenting the results of the confirmatory simulation study after the delivery of preliminary and final deliverables.

7. GOVERNMENT-FURNISHED PROPERTY

- MELCOR Code Version 2.2 or later
- SNAP Version 2.6.1 or later
- MELCOR AP1000 Plant Model developed for Severe Accidents

8. PLACE OF PERFORMANCE

All work will be done at the contractor's site.

9. SECURITY

All work related to this task order shall be PROPRIETARY.