

ORDER FOR SUPPLIES OR SERVICES

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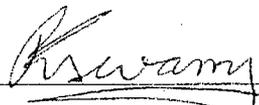
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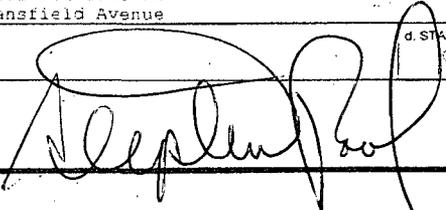
IMPORTANT: Mark all packages and papers with contract and/or order numbers.

BPA NO: NRC-DR-04-08-147

1. DATE OF ORDER AUG 20 2008		2. CONTRACT NO. (if any) GS10F0145T		6. SHIP TO:	
3. ORDER NO. NRC-DR-04-08-147		4. REQUISITION/REFERENCE NO. 04-08-147		a. NAME OF CONSIGNEE U.S. Nuclear Regulatory Commission	
5. ISSUING OFFICE (Address correspondence to) US NRC Attn: Adelis M Rodriguez, 301-492-3623 Mail Stop: TWB-01-B10M Washington Dc 20555				b. STREET ADDRESS Attn: Eric Focht Mail Stop: 218 L1	
7. TO:		c. CITY Washington	d. STATE DC	e. ZIP CODE 20555	
a. NAME OF CONTRACTOR ENGINEERING MECHANICS CORPORATION OF COLUMBUS EMC2				f. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER	
c. STREET ADDRESS 3518 RIVERSIDE DR STE 202				<input type="checkbox"/> a. PURCHASE <input type="checkbox"/> b. DELIVERY REFERENCE YOUR Except for billing instructions on the reverse, this Please furnish the following on the terms and delivery order is subject to instructions conditions specified on both sides of this order contained on this side only of this form and is and on the attached sheet, if any, including issued subject to the terms and conditions delivery as indicated. of the above-numbered contract.	
d. CITY COLUMBUS	e. STATE OH	f. ZIP CODE 432211735		10. REQUISITIONING OFFICE RES	
9. ACCOUNTING AND APPROPRIATION DATA THIS IS A BLANKET PURCHASE AGREEMENT (BPA) NO FUNDS ARE OBLIGATED DUNS: 014083161				11. BUSINESS CLASSIFICATION (Check appropriate box(es))	
<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. EMERGING SMALL BUSINESS <input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED				12. F.O.B. POINT	
13. PLACE OF		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	
a. INSPECTION DESTINATION	b. ACCEPTANCE DESTINATION			16. DISCOUNT TERMS	

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)
	The contractor shall provide "Pressure Boundary Integrity and Support" in accordance with the attached SOW (Enc. 1), the terms and the terms and conditions of the GSA contract GS-10F-0145T and this order at the price schedule on section A.1. Order Type: Labor Hour Total Contract Ceiling: \$792,077.00 Total Obligated Amount: \$0.00 - this is a BPA no funds are obligated Period of Performance: 36 months from date of award. Accepted:  Signature _____ Date <u>8/19/08</u>					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.	
21. MAIL INVOICE TO:					
a. NAME Department of Interior National Business Center					
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		
22. UNITED STATES OF AMERICA BY (Signature) 				23. NAME (Typed) Stephen Pool Contracting Officer TITLE: CONTRACTING/ORDERING OFFICER	

17(h) TOTAL (Cont. pages)

17(i) GRAND TOTAL

AUTHORIZED FOR LOCAL REPRODUCTION PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (REV. 4/2006) PRESCRIBED BY GSA/FAR 48 CFR 53.213(f)

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

OCT 27 2008

ADM002

ADDITIONAL TERMS AND CONDITIONS OF THE BPA

All orders placed against this BPA are subject to the terms and conditions of the GSA FSS Contract and all clauses and provisions in full text or incorporated by reference herein:

A.1 PRICE SCHEDULE

Labor Category	Labor Rate	Est. Hours	Total
President	\$ [REDACTED]	[REDACTED]	\$ 39,715
Vice-President	\$ [REDACTED]	[REDACTED]	\$ 201,900
Senior Program Manager	\$ [REDACTED]	[REDACTED]	\$ 52,893
Senior Regulatory Advisor	\$ [REDACTED]	[REDACTED]	\$ 32,643
Senior Research Leader	\$ [REDACTED]	[REDACTED]	\$ 40,300
Research Leader	\$ [REDACTED]	[REDACTED]	\$ 187,392
Principal Engineer	\$ [REDACTED]	[REDACTED]	\$ 52,392
Research Engineer	\$ [REDACTED]	[REDACTED]	\$ 45,136
Engineer	\$ [REDACTED]	[REDACTED]	\$ 36,272
Master Technician	\$ [REDACTED]	[REDACTED]	\$ 39,295
Electronics Specialist	\$ [REDACTED]	[REDACTED]	\$ 7,979
Administrative assist.	\$ [REDACTED]	[REDACTED]	\$ 2,660
ODC – Cost reimbursement. No G&A or Materials and handling charges are applicable.			\$ 3,500
Travel - Cost reimbursement. No G&A or Materials and handling charges are applicable.			\$ 50,000
Total			\$ 792,077

A.2 SEGREGATION OF COSTS

a. The "Payments under Time-and-Materials and Labor-Hour Contracts" clause provides for reimbursement to the contractor of costs incurred for certain items and services purchased directly for the contract, subject to certain limitations set forth in the clause. Such items may include the lease/purchase of equipment, travel expenses for Government- directed travel, consumable materials, tuition and registration fees for specialized training, and other services or items acquired for the Government's account under the Government Property clause. The items and services which the BPA holder is authorized to purchase on a cost- reimbursement basis shall be limited to only those specific items and services described in the order(s) issued to the BPA holder as authorized for purchase.

b. The BPA holder shall segregate costs associated with materials and other items authorized to be purchased on a cost-reimbursement basis (to be specified in each order) from other costs associated with the performance of this contract in such a manner that at any time the costs subject to reimbursement under each order shall be readily ascertainable.

c. The "Ceiling Price" referred to in the "Payments under Time and Materials and Labor-Hour Contracts" clause shall be the ceiling price as stated in each order.

A.3 2052.216-72 TASK ORDER PROCEDURES (OCT 1999)

(a) Task order request for proposal. When a requirement within the scope of work for this contract is identified, the contracting officer shall transmit to the contractor a Task Order Request for Proposal (TORFP) which may include the following, as appropriate:

- (1) Scope of work/meetings/travel and deliverables;
- (2) Reporting requirements;
- (3) Period of performance - place of performance;
- (4) Applicable special provisions;
- (5) Technical skills required; and
- (6) Estimated level of effort.

(b) Task order technical proposal. By the date specified in the TORFP, the contractor shall deliver to the contracting officer a written or verbal (as specified in the TORFP technical proposal submittal instructions) technical proposal that provides the technical information required by the TORFP.

(c) Cost proposal. The contractor's cost proposal for each task order must be fully supported by cost and pricing data adequate to establish the reasonableness of the proposed amounts. When the contractor's estimated cost for the proposed task order exceeds \$100,000 and the period of performance exceeds six months, the contractor may be required to submit a Contractor Spending Plan (CSP) as part of its cost proposal. The TORP indicates if a CSP is required.

(d) Task order award. The contractor shall perform all work described in definitized task orders issued by the contracting officer. Definitized task orders include the following:

- (1) Statement of work/meetings/travel and deliverables;
- (2) Reporting requirements;
- (3) Period of performance;
- (4) Key personnel;
- (5) Applicable special provisions; and
- (6) Total task order amount including any fixed fee.

A.4 2052.216-73 ACCELERATED TASK ORDER PROCEDURES (JAN 1993)

(a) The NRC may require the contractor to begin work before receiving a definitized task order from the contracting officer. Accordingly, when the contracting officer verbally authorizes the work, the contractor shall proceed with performance of the task order subject to the monetary limitation established for the task order by the contracting officer.

(b) When this accelerated procedure is employed by the NRC, the contractor agrees to begin promptly negotiating with the contracting officer the terms of the definitive task order and agrees to submit a cost proposal with supporting cost or pricing data. If agreement on a definitized task order is not reached by the

target date mutually agreed upon by the contractor and contracting officer, the contracting officer may determine a reasonable price and/or fee in accordance with Subpart 15.8 and Part 31 of the FAR, subject to contractor appeal as provided in 52.233-1, Disputes. In any event, the contractor shall proceed with completion of the task order, subject only to the monetary limitation established by the contracting officer and the terms and conditions of the basic contract.

A.5 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on award date and will expire 36 months after.

A.6 OBLIGATION OF FUNDS

This BPA does not obligate any funds. The Government is obligated only to the extent of authorized orders actually issued under the BPA by the Contracting Officer.

A.7 AUTHORIZED USERS

Government Contracting Officers representing US Nuclear Regulatory Commission are the only users authorized to place orders under this BPA. Any authorized user shall only be allowed to issue an order under this BPA if funds are certified and the BPA awarding office's Task Order number is assigned. BPA holders shall not accept or perform any purported order that does not contain a Task Order number.

A.8 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

- (a) Total expenditure for travel may not exceed \$50,000 without the prior approval of the contracting officer.
- (b) All foreign travel must be approved in advance by the NRC on NRC Form 445, Request for Approval of Official Foreign Travel, and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. The contractor shall submit NRC Form 445 to the NRC no later than 30 days prior to the commencement of travel.
- (c) The contractor will be reimbursed only for those travel costs incurred that are directly related to this contract and which are allowable subject to the limitations prescribed in FAR 31.205-46.
- (d) It is the responsibility of the contractor to notify the contracting officer in accordance with the FAR Limitations of Cost clause of this contract when, at any time, the contractor learns that travel expenses will cause the contractor to exceed the travel ceiling amount identified in paragraph (a) of this clause.
- (e) Reasonable travel costs for research and related activities performed at State and nonprofit institutions, in accordance with Section 12 of Pub. L. 100-679, shall be charged in accordance with the contractor's institutional policy to the degree that the limitations of Office of Management and Budget (OMB) guidance are not exceeded. Applicable guidance documents include OMB Circular A-87, Cost Principles for State and Local Governments; OMB Circular A-122, Cost Principles for Nonprofit Organizations; and OMB Circular A-21, Cost Principles for Educational Institutions.

A.9 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.

A.10 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)

The contractor shall provide a monthly Technical Progress Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, appropriate financial tracking code specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task/task order:

(a) A listing of the efforts completed during the period, and milestones reached or, if missed, an explanation provided;

(b) Any problems or delays encountered or anticipated and recommendations for resolution. If the recommended resolution involves a contract modification, e.g., change in work requirements, level of effort (cost) or schedule delay, the contractor shall submit a separate letter to the contracting officer identifying the required change and estimated cost impact.

(c) A summary of progress to date; and

(d) Plans for the next reporting period.

A.11 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)

The contractor shall provide a monthly Financial Status Report (FSR) to the project officer and the contracting officer. The FSR shall include the acquisition of, or changes in the status of, contractor-held property acquired with government funds valued at the time of purchase at \$50,000 or more. Whenever these types of property changes occur, the contractor shall send a copy of the report to the Chief, Property and Acquisition Oversight Branch, Office of Administration. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, the appropriate financial tracking code (e.g., Job Code Number or JCN) specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task:

(a) Total estimated contract amount.

- (b) Total funds obligated to date.
- (c) Total costs incurred this reporting period.
- (d) Total costs incurred to date.
- (e) Balance of obligations remaining.
- (f) Balance of funds required to complete contract/task order.

(h) Contractor Spending Plan (CSP) status: A revised CSP is required with the Financial Status Report whenever the contractor or the contracting officer has reason to believe that the total cost for performance of this contract will be either greater or substantially less than what had been previously estimated.

(1) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.

(2) Indicate significant changes in the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the change, whether there is any projected overrun, and when additional funds would be required. If there have been no changes to the original NRC-approved CSP projections, a written statement to that effect is sufficient in lieu of submitting a detailed response to item "h".

(i) Property status:

(1) List property acquired for the project during the month with an acquisition cost between \$500 and \$49,999. Give the item number for the specific piece of equipment.

(2) Provide a separate list of property acquired for the project during the month with an acquisition cost of \$50,000 or more. Provide the following information for each item of property: item description or nomenclature, manufacturer, model number, serial number, acquisition cost, and receipt date. If no property was acquired during the month, include a statement to that effect. The same information must be provided for any component or peripheral equipment which is part of a "system or system unit."

(3) For multi-year projects, in the September monthly financial status report provide a cumulative listing of property with an acquisition cost of \$50,000 or more showing the information specified in paragraph (i)(2) of this clause.

(4) In the final financial status report provide a closeout property report containing the same elements as described above for the monthly financial status reports, for all property purchased with NRC funds regardless of value unless title has been vested in the contractor. If no property was acquired under the contract, provide a statement to that effect. The report should note any property requiring special handling for security, health, safety, or other reasons as part of the report.

(j) Travel status: List the starting and ending dates for each trip, the starting point and destination, and the traveler(s) for each trip.

(k) If the data in this report indicates a need for additional funding beyond that already obligated, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

A.12 PLACE OF DELIVERY--REPORTS (JUN 1988)

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

(a) Project Officer (Eric Focht 1 electronic copy)
US NRC Mail Stop: T10-M5 11545 Rockville Pike, Rockville MD 20852

(b) Contracting Officer (1 electronic copy)

A.13 2052.215-70 KEY PERSONNEL (JAN 1993)

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

[REDACTED]

[REDACTED]

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.14 2052.215-71 PROJECT OFFICER AUTHORITY (NOVEMBER 2006)

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

Name: Eric Focht

Address: US NRC
Mail Stop: T10 M5
Washington DC 20555

Telephone Number: 301-415-5222

Email: eric.focht@nrc.gov

(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 (SOW) or changes to specific travel identified in the SOW), fills in details, or otherwise serves to accomplish the contractual SOW.

(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, approval of 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 as 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 the 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 thereto 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.

(4) Assist the contractor in obtaining the badges for the contractor personnel.

(5) Immediately notify the Security Branch, Division of Facilities and Security (SB/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return of any NRC issued badge to SB/DFS within three days after their termination.

(6) Ensure that all contractor employees that require access to classified Restricted Data or National Security Information or matter, access to sensitive unclassified information (Safeguards, Official Use Only, and Proprietary information) access to sensitive IT systems or data, unescorted access to NRC controlled buildings/space, or unescorted access to protected and vital areas of nuclear power plants receive approval of SB/DFS prior to access in accordance with Management Directive and Handbook 12.3.

(7) For contracts for the design, development, maintenance or operation of Privacy Act Systems of Records, obtain from the contractor as part of closeout procedures, written certification that the contractor has returned to NRC, transferred to the successor contractor, or destroyed at the end of the contract in accordance with instructions provided by the NRC Systems Manager for Privacy Act Systems of Records, all records (electronic or paper) which were created, compiled, obtained or maintained under the contract.

A.15 OPTION PERIODS - TASK ORDER/DELIVERY ORDER UNDER A GSA FEDERAL SUPPLY SCHEDULE CONTRACT (MARCH 2007)

The Period of Performance (PoP) for this requirement may extend beyond the Offeror's current PoP on their GSA Schedule. Offerors may submit proposals for the entire PoP as long as their current GSA Schedule covers the requested PoP, or their GSA Schedule contains GSA's "Evergreen Clause" (Option to Extend the Term of the Contract), which covers the requested PoP if/when the option(s) are exercised. Offerors are encouraged to submit accurate/realistic pricing for the requirement's entire PoP, even if the proposed GSA Schedule does not include pricing for the applicable option years, etc.

For proposal evaluation purposes, the NRC assumes that applicable Evergreen Clause Option(s) will be exercised and the NRC will apply price analysis, as applicable. It is in the best interest of the Offeror to explain major deviations in escalation, proposed in any Evergreen Clause option years. Resulting GSA task/delivery order option years subject to the Evergreen Clause will be initially priced utilizing the same rates proposed under the last GSA-priced year of the subject GSA Schedule. Upon GSA's exercise of the GSA Schedule option year(s) applicable to the Evergreen Clause, the NRC will modify the awarded task/delivery order to incorporate either the proposed pricing for the option years or the GSA-approved pricing (whichever is lower).

It is incumbent upon the Offeror to provide sufficient documentation (GSA-signed schedule, schedule modifications, etc.) that shows both the effective dates, pricing and terms/conditions of the current GSA Schedule, as well as Evergreen Clause terms/conditions (as applicable). Failure to provide this documentation may result in the Offeror's proposal being found unacceptable.

A.16 WHISTLEBLOWER PROTECTION FOR NRC CONTRACTOR AND SUBCONTRACTOR EMPLOYEES (JULY 2006)

(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.

(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.

A.17 INVOICES - INSTRUCTIONS

ATTENTION: Invoice Billing Address Change Effective May 1, 2008

The Nuclear Regulatory Commission (NRC) has contracted with the National Business Center (NBC) to perform their payment processing.

Effective May 1, 2008, please submit all invoices to the NBC. Any invoices submitted to NRC after the effective date may result in a delay in processing and receiving your funds. Please send all invoice vouchers to the DOI located in Denver, Colorado. The new mailing address is:

Department of Interior
National Business Center
Attn: Fiscal Services Branch – D2770
7301 W. Mansfield Avenue
Denver, CO 80235-2230

You are encouraged to send your invoice voucher electronically to DOI. The e-mail address is NRCPayments@nbc.gov.

This notice is for change of billing address only; please continue to prepare vouchers or invoices as prescribed in your contract billing instructions. A contract modification to incorporate the new billing instruction will follow at a later date.

If you have any questions, please contact Romena Moy on 301-492-3603 or at romena.moy@nrc.gov.

**STATEMENT OF WORK
FOR CONTRACTOR TO PROVIDE
BOUNDARY INTEGRITY ANALYSES AND SUPPORT**

I. BACKGROUND

Boundary integrity analyses are required to conduct safety assessments of nuclear reactor coolant pressure boundary (RCPB) components, including the reactor pressure vessel (RPV), and to develop technical bases for regulatory positions. Nickel-base alloys are used extensively in RCPB components, along with their corresponding weld metals, and have been the focus of leak-before-break analyses due to cracking associated with primary water stress corrosion cracking (PWSCC). The occurrences of cracking have been identified through various means, including the discovery of boric acid deposits resulting from through-wall cracking in the primary system pressure boundary. PWSCC in nickel-based alloy reactor coolant system (RCS) components is a safety concern due to the potential for reactor pressure boundary leaks and the associated potential of boric acid corrosion of low alloy steels and the development of flaws in piping or welds. Either condition, depending on the size and location of the flaws, could result in a loss of coolant accident.

PWSCC of nickel-base alloys in RCS components has been documented in both foreign and domestic plants and has been typically identified by the build-up of boric acid deposits in the vicinity of the cracked components. The industry response to addressing PSWCC is coordinated through the Materials Reliability Program (MRP) in a comprehensive, multifaceted effort. Although the industry program is addressing many of the issues raised by these cracking occurrences, the Office of Nuclear Reactor Regulation (NRR) has identified several issues requiring additional consideration regarding the generic implications of these events. In a memorandum dated June 5, 2001, NRR provided a user need request (NRR-2002-018) to the Office of Nuclear Regulatory Research (RES) to evaluate issues involving cracking in Alloy 82/182 welds and Alloy 600 base metal at several domestic and overseas plants. The user need request supersedes NRR-2002-018 and identifies NRR's current needs in the area of PWSCC of nickel-base alloy primary pressure boundary components. An effort is currently underway in RES to address the specific needs outlined in NRR-2002-018. During that effort, several ASME Code-related issues arose that were outside of the scope of the contract and need to be addressed under a separate contract.

In addition to boundary integrity analyses related to nickel-base alloy components, polyethylene (PE) piping is being considered as a replacement for carbon steel piping in safety-related nuclear applications. Analyses and confirmatory research are required to establish a regulatory position regarding the service life of PE piping, including joints.

In October 2006, Duke Power (Duke) submitted a relief request to use PE piping as a replacement for carbon steel piping for the emergency diesel generator jacket water coolers and other Class 3 safety-related buried piping. Carbon steel piping installed at Catawba experienced aqueous corrosion and microbiologically induced corrosion (MIC) that resulted in operational inefficiencies and replacement expenses. PE piping is immune to both forms of corrosion and has been used by Duke for raw service water applications (non-safety related) for about 10 years with no reported problems associated with corrosion or MIC. Also, in August 2007, Union Electric Company submitted a relief request to use PE as a replacement for carbon steel piping for the essential service water system at its Callaway plant. Both requests are in review by the NRC.

The industry efforts associated with PE piping have been coordinated through the ASME Special Working Group on Polyethylene Piping (SWG-PP) over the past few years. The SWGPP prepared Code Case N-755 to establish the design requirements for using PE piping in safety-related nuclear applications. Code Case N-755 covers several aspects critical to specifying the design requirements for PE piping, but the first draft put to a vote neglected to adequately address the flaw tolerance of PE and the volumetric inspection of joints. Based on these issues, the NRC voted negative on the first version of N-755. In response, the SWG-PP limited the service conditions to a maximum stress, service temperature and life of PE piping to 430 psi, 140 °F and 10 years, respectively. The original intention was to specify a 50-year service life at 140 °F. Flaws are limited to 10% of the wall thickness deep. The SWG-PP has recently identified circumferential flaws in butt joints to be a critical piping integrity issue since research has shown that butt joints may exhibit lower flaw tolerance than the parent material. However, data is needed on the more modern resins being evaluated to establish long-life service allowables. Specifically, slow crack growth (SCG) rate testing on the newest high density PE (HDPE) resins, piping and joints is required to calibrate and confirm SCG models that were developed for earlier HDPE resins. Among other properties, the molecular structure of PE has a significant effect on SCG resistance. It has been shown that the bimodal molecular weight distributions exhibited by more recently developed resins tends to help improve SCG resistance over resins with unimodal molecular weight distributions. The predictive capabilities of SCG models needs to be re-establish for the newer resins.

In a memorandum dated March 18, 2006, NRR provided a user need request (NRR-2006-007) to RES to assist NRR in the development of a technical basis to support the staff's review of the proposed use of polyethylene piping for low pressure safety-related piping systems at nuclear power plants.

Overall, the deliverables from this project will provide the NRC staff with information needed to enhance the evaluation of industry generic assessments and plant-specific activities and to support long term regulatory actions that provide reasonable assurance of public health and safety in the area of boundary integrity analysis.

II. OBJECTIVE

The objective of this project is to provide technical analytical support to RES, on an as needed basis, to develop the technical basis for future regulatory decisions related to enhanced boundary integrity analysis of reactor systems and components.

III. SCOPE OF WORK

The work under this task order BPA shall address the following task areas:

1. Support for ASME Code Case development, review and confirmation for subject areas related to nickel-base alloy fabrication and inspection, polyethylene piping structural integrity, flaw tolerance, joining and inspection and other ASME Code-related activities determined to be necessary to support NRC regulatory considerations,
2. Fracture mechanics based flaw tolerance evaluations of RCPB components including nickel base alloy weldments and polyethylene piping base materials and joints to support component integrity analyses
3. Confirmation of 50 year service life of high density polyethylene piping material, including fusion joints, considering the effects of flaws on slow crack growth rate at elevated service temperatures.

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Specific tasks are addressed in each individual task order after BPA award. The scope and schedule of each task will be described in the individual task order and negotiated with the contractor.

IV. RESEARCH QUALITY

The quality of NRC research programs are assessed each year by the Advisory Committee on Reactor Safeguards. Within the context of their reviews of RES programs, the definition of quality research is based upon several major characteristics:

- Results meet the objectives (75% of overall score)
 - Justification of major assumptions (12%)
 - Soundness of technical approach and results (52%)
 - Uncertainties and sensitivities addressed (11%)
- Documentation of research results and methods is adequate (25% of overall score)
 - Clarity of presentation (16%)
 - Identification of major assumptions (9%)

It is the responsibility of the contractor to ensure that these quality criteria are adequately addressed throughout the course of the research that is performed. The NRC project manager and technical monitor will review all research products with these criteria in mind.

V. TECHNICAL AND OTHER SPECIAL QUALIFICATIONS NEEDED

The program manager, key personnel, and any other senior technical staff performing work under this contract shall have expertise, experience, and/or education in the following key areas:

- a) Expertise in materials and structural mechanics
- b) Expertise in finite element analyses
- c) Expertise in developing probabilistic codes
- d) Expertise in polymer mechanical behavior, polymer piping design and fracture mechanics
- e) Expertise in mechanical properties testing and measurement techniques
- f) Expertise in leakage detection methodology and leak-rate calculations with existing leak-rate codes
- g) Expertise in polymeric materials and life prediction using rate process modeling techniques.
- h) Expertise in developing fracture mechanics codes
- i) Detailed knowledge of ASME Section III and Section XI Codes.
- j) Detailed knowledge of pressurized water reactor piping system design and manufacturing methods including material property information.
- k) Detailed knowledge of techniques used to evaluate residual stresses in pipe welds, e.g. weld sequencing and DM weld fabrication methods;
- l) Detailed knowledge of industry and NRC staff analyses regarding reported occurrences of primary water stress corrosion cracking, DM weld cracking and NRC actions, e.g., notices, bulletins, etc.
- m) Knowledge of NRC regulatory process as it relates to DM weld cracking.

VI. PUBLICATIONS NOTE

RES encourages the publication of the scientific results from RES sponsored programs in refereed scientific and engineering journals as appropriate. If the laboratory proposes to publish in the open literature or present the information at meeting in addition to submitting the required technical reports, approval of the proposed article or presentation should be obtained from the

Enclosure 1

NRC Project Manager. The RES Project Manager shall either approve the material as submitted, approve it subject to NRC suggested revisions, or disapprove it. In any event, the RES Project Manager may disapprove or delay presentation or publication of papers on information that is subject to Commission approval that has not been ruled upon or which has been disapproved. Additional information regarding the publication of NRC sponsored research is contained in NRC Management Directives 3.7, "NUREG Series Publications," and 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects."

If the presentation or paper is in addition to the required technical reports and the RES Project Manager determines that it will benefit the RES project, the Project Manager may authorize payment of travel and publishing costs, if any, from the project funds. If the Project Manager determines that the article or presentation would not benefit the RES project, the costs associated with the preparation, presentation, or publication will be borne by the contractor. For any publication or presentations falling into this category, the NRC reserves the right to require that such presentation or publication will not identify the NRC's sponsorship of the work.

VII. NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS

The U.S. Nuclear Regulatory Commission (NRC) began to capture most of its official records electronically on January 1, 2000. The NRC will capture each final NUREG-series publication in its native application. Therefore, please submit your final manuscript that has been approved by your NRC Project Manager in both electronic and camera-ready copy. All format guidance, as specified in NUREG-0650, Revision 2, will remain the same with one exception. You will no longer be required to include the NUREG-series designator on the bottom of each page of the manuscript. The NRC will assign this designator when we send the camera ready copy to the printer and will place the designator on the cover, title page, and spine. The designator for each report will no longer be assigned when the decision to prepare a publication is made. The NRC's Publishing Services Branch will inform the NRC Project Manager for the publication of the assigned designator when the final manuscript is sent to the printer. For the electronic manuscript, the Contractor shall prepare the text in Microsoft Word, and use any of the following file types for charts, spreadsheets, and the like.

File Types to be Used for NUREG-Series Publications	
File Type	File Extension
Microsoft®Word®	.doc
Microsoft® PowerPoint®	.ppt
Microsoft®Excel	.xls
Microsoft®Access	.mdb
Portable Document Format	.pdf

This list is subject to change if new software packages come into common use at NRC or by our licensees or other stakeholders that participate in the electronic submission process. If a portion of your manuscript is from another source and you cannot obtain an acceptable electronic file type for this portion (e.g., an appendix from an old publication), the NRC can, if necessary, create a tagged image file format (file extension.tif) for that portion of your report.

Note that you should continue to submit original photographs, which will be scanned, since digitized photographs do not print well.

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If you choose to publish a compact disk (CD) of your publication, place on the CD copies of the manuscript in both (1) a portable document format (PDF); (2) a Microsoft Word file format, and (3) an Adobe Acrobat Reader, or, alternatively, print instructions for obtaining a free copy of Adobe Acrobat Reader on the back cover insert of the jewel box.

VIII. DELIVERABLES/SCHEDULES AND/OR DELIVERY SCHEDULE

DELIVERABLE	RELATED TASK / SOW section	DUE DATE
Monthly status report		20 of each month
Phone reports/meetings	Section X. of the SOW	Biweekly
Technical report that includes a description of the material(s) tested, the experimental approach, the results, the analysis of the results and the conclusions due to the NRC program manager	Task 2	18 months from task order award

All reports shall be submitted electronically as a Microsoft Word, WordPerfect, or PDF file to the Project Officer and Contracting Officer.

IX. MEETING AND TRAVEL REQUIREMENTS

Biweekly phone progress reports shall be conducted with the NRC Project Officer for approximately one-hour in duration throughout the period of performance. The frequency and duration of the phone progress reports could be adjusted according to the needs of the program to ensure progress is maintained.

Four five-day trips to ASME meetings per year for up to three people during the period of performance and up to five three-day trips for up to three people to Rockville, MD or NRC designated location shall be budgeted to provide expertise related to this program.

X. NRC-FURNISHED MATERIAL

None.