ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES: 1 | 11

IMPORTANT: Mark all packages and papers with contract and/or order numbers. BPA NO.

1. DATE OF ORDER: 3/1/2007
2. CONTRACT NO. (If any): GS10F0145T
3. ORDER NO.: DR-04-07-076 MODIFICATION NO.:
4. REQUISITION/REFERENCE NO.:

5. ISSUING OFFICE (Address correspondence to):
U.S. Nuclear Regulatory Commission
Div. of Contracts
Attn: Neha Dhir
Mail Stop T-7-I-2
Washington, DC 20555

6. SHIP TO:
a. NAME OF CONSIGNEE: U.S. Nuclear Regulatory Commission
b. STREET ADDRESS: ATTN: AL CSONTOS
MAIL STOP T-7-F-27
c. CITY: Washington | d. STATE: DC | e. ZIP CODE: 20555

7. TO:
a. NAME OF CONTRACTOR: ENGINEERING MECHANICS CORPORATION OF COLUMBUS EMC2
b. COMPANY NAME:
c. STREET ADDRESS: 3518 RIVERSIDE DR STE 202
d. CITY: COLUMBUS | e. STATE: OH | f. ZIP CODE: 432211735

f. SHIP VIA:

8. TYPE OF ORDER
[ ] a. PURCHASE — REFERENCE YOUR _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.
[X] b. DELIVERY — Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA: See CONTINUATION Page
B&R 76015111127; JC 252A; BOC N6434
APPN 31X0200.760; FFS RES-C07-127; DUNS 014083161
OBLIGATION $100,000

10. REQUISITIONING OFFICE: RES

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
[X] a. SMALL [ ] b. OTHER THAN SMALL [ ] c. DISADVANTAGED [ ] g. SERVICE-DISABLED VETERAN-OWNED
[ ] d. WOMEN-OWNED [ ] e. HUBZone [ ] f. EMERGING SMALLBUSINESS

12. F.O.B. POINT: N/A

13. PLACE OF: a. INSPECTION | b. ACCEPTANCE
14. GOVERNMENT B/L NO.:
15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date):
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 U.S. NUCLEAR REGULATORY COMMISSION HEREBY ACCEPTS THE OFFER SUBMITTED BY ENGINEERING MECHANICS CORPORATION OF COLUMBUS (EMC2) DATED FEBRUARY 26, 2007 TO PROVIDE SERVICES DESCRIBED IN THE STATEMENT OF WORK ENTITLED "IMPLICATION OF WOLF CREEK INDICATIONS". DELIVERY ORDER TYPE: LABOR HOUR PERIOD OF PERFORMANCE: 3/1/2007 - 6/30/2008 DELIVERY ORDER CEILING: $399,208.22 THE AMOUNT OF $100,000 IS OBLIGATED AT TIME OF AWARD.				See CONTINUATION Page	

SEE BILLING INSTRUCTIONS ON REVERSE

18. SHIPPING POINT:
19. GROSS SHIPPING WEIGHT:
20. INVOICE NO.:

21. MAIL INVOICE TO:
a. NAME: U.S. Nuclear Regulatory Commission
Payment Team, Mail Stop T-7-I-2
b. STREET ADDRESS (or P.O. Box): Attn: DR-04-07-076
c. CITY: Washington | d. STATE: DC | e. ZIP CODE: 20555

17(h) TOTAL (Cont. pages):
17(i). GRAND TOTAL: $399,208.22 (ceiling)

22. UNITED STATES OF AMERICA
BY (Signature): Neha S. Dhir

23. NAME (Typed)
Neha S. Dhir
Contracting Officer
TITLE: CONTRACTING/ORDERING OFFICER

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION NOT USABLE

TEMPLATE - ADM001

SUNSI REVIEW COMPLETE

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

ADM002

Please indicate your acceptance of this order by having an official who is authorized to bind your organization execute this document in the space provided below.

Signature

3/5/07
Date

PRABHAT KRISHNASWAMY
Name (please print)

VICE PRESIDENT
Title

A.1 SCHEDULE OF SERVICES AND PRICE

a. PROJECT TITLE

The title of this project is "Implication of Wolf Creek Indications".

b. BRIEF DESCRIPTION OF WORK

The U.S. Nuclear Regulatory Commission (NRC) requires contractor services to provide time-sensitive analytical support to review the industry's advanced non-linear finite element model that will be used to provide reasonable assurance that rupture of reactor pressure boundary components will not occur without evidence of prior leakage and that such leakage is readily detectable under stable crack conditions.

c. SCHEDULE

The contractor shall provide services to NRC in accordance with the Statement of Work (attached) for the period of performance of this delivery order at the rates set forth below.

CLIN	GSA Labor Category	Hours	Labor Rate	Total
001	President	[redacted]	[redacted]	$56,263.20
	Vice-President			$5,384.00
	Research Leader			$165,841.92
	Principal Engineer			$23,576.40
	Research Engineer			$119,384.72
	Sr. Regulatory Advisor			$11,606.40
	Administrative Assistant			$1,773.20
	Subtotal, Labor			$383,829.84
002	Travel, inclusive of G&A (Cost Reimbursable) The government will pay up to the rates specified in the Government Federal Travel Regulation (FTR) for travel destination. Hotel reservations will be made by the contractor and will be reimbursed for actual costs only, with back up documentation/receipts attached to the invoice. NO PAYMENT WILL BE MADE WITHOUT BACK UP DOCUMENTATION /RECEIPTS.			$15,378.38
TOTAL PRICE				**$399,208.22**

A.2 CONSIDERATION AND OBLIGATION – DELIVERY ORDER (JUN 1988)

a. The total estimated amount of this delivery order (ceiling) for the services ordered, delivered, and accepted under this delivery order is $399,208.22. The Contracting Officer may unilaterally increase this amount as necessary for orders to be placed with the contractor during the contract period provided such orders are within any maximum ordering limitation prescribed under this delivery order.

b. The amount presently obligated with respect to this contract is $100,000. This obligated amount may be unilaterally increased from time to time by the Contracting Officer by written modification to this contract. The obligated amount shall, at not time, exceed the contract ceiling as specified in paragraph a above. When and if the amounts 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 increases the amount obligated with respect to this contract. Any work undertaken by the Contractor in excess of the obligated amount specified above is done so at the Contractor's sole risk.

A.3 52.232-7 PAYMENT UNDER TIME AND MATERIALS AND LABOR HOUR CONTRACTS (AUG 2005)

The Government will pay the Contractor as follows upon the submission of invoices or vouchers approved by the Contracting Officer:

(a) Hourly rate.

(1) The amounts shall be computed by multiplying the appropriate hourly rates prescribed in the Schedule by the number of direct labor hours performed. The rates shall include wages, indirect costs, general and administrative expense, and profit. Fractional parts of an hour shall be payable on a prorated basis. Vouchers may be submitted once each month (or at more frequent intervals, if approved by the Contracting Officer), to the Contracting Officer or designee. The Contractor shall substantiate vouchers by evidence of actual payment and by individual daily job timecards, or other substantiation approved by the Contracting Officer. Promptly after receipt of each substantiated voucher, the Government shall, except as otherwise provided in this contract, and subject to the terms of (e) below, pay the voucher as approved by the Contracting Officer.

(2) Unless otherwise prescribed in the Schedule, the Contracting Officer may unilaterally issue a contract modification requiring the Contractor to withhold amounts from its billings until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interests. The contracting Officer may require a withhold of 5 percent of the amounts due under paragraph (a), but the total amount withheld for the contract shall not exceed $50,000. The amounts withheld shall be retained until the Contractor executes and delivers the release required by paragraph (f) of this clause.

(3) Unless the Schedule prescribes otherwise, the hourly rates in the Schedule shall not be varied by virtue of the Contractor having performed work on an overtime basis. If no overtime rates are provided in the Schedule and overtime work is approved in advance by the Contracting Officer, overtime rates shall be negotiated. Failure to agree upon these overtime rates shall be treated as a dispute under the Disputes clause of this contract. If the Schedule provides rates for overtime, the premium portion of those rates will be reimbursable only to the extent the overtime is approved by the Contracting Officer.

(b) Materials and subcontracts.

(1) The Contracting Officer will determine allowable costs of direct materials in accordance with

Subpart 31.2 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract. Direct materials, as used in this clause, are those materials that enter directly into the end product, or that are used or consumed directly in connection with the furnishing of the end product.

(2) The Contractor may include reasonable and allocable material handling costs in the charge for material to the extent they are clearly excluded from the hourly rate. Material handling costs are comprised of indirect costs, including, when appropriate, general and administrative expense allocated to direct materials in accordance with the Contractor's usual accounting practices consistent with Subpart 31.2 of the FAR.

(3) The Government will reimburse the Contractor for supplies and services purchased directly for the contract when the Contractor--

(i) Has made payments of cash, checks, or other forms of payment for these purchased supplies or services; or

(ii) Will make these payments determined due—

(A) In accordance with the terms and conditions of a subcontract or invoice; and
(B) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(4)(i) The Government will reimburse the Contractor for costs of subcontracts that are authorized under the subcontracts clause of this contract, provided that the costs are consistent with paragraph (b)(5) of this clause.

(ii) The Government will limit reimbursable costs in connection with subcontracts to the amounts paid for supplies and services purchased directly for the contract when the Contractor has made or will make payments determined due of cash, checks, or other forms of payment to the subcontractor--

(A) In accordance with the terms and conditions of a subcontract or invoice; and
(B) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(iii) The Government will not reimburse the Contractor for any costs arising from the letting, administration, or supervision of performance of the subcontract, if the costs are included in the hourly rates payable under paragraph (a)(1) of this clause.

(5) To the extent able, the Contractor shall-

(i) Obtain materials at the most advantageous prices available with due regard to securing prompt delivery of satisfactory materials; and

(ii) Take all cash and trade discounts, rebates, allowances, credits, salvage, commissions, and other benefits. When unable to take advantage of the benefits, the Contractor shall promptly notify the Contracting Officer and give the reasons. The Contractor shall give credit to the Government for cash and trade discounts, rebates, scrap, commissions, and other amounts that have accrued to the benefit of the Contractor, or would have accrued except for the fault or neglect of the Contractor. The Contractor shall not deduct from gross costs the benefits lost without fault or neglect on the part of the Contractor, or lost through fault of the Government.

(c) Total cost. It is estimated that the total cost to the Government for the performance of this contract shall not exceed the ceiling price set forth in the Schedule and the Contractor agrees to use its best efforts to perform the work specified in the Schedule and all obligations under this contract within such ceiling price.

If at any time the Contractor has reason to believe that the hourly rate payments and material costs that will accrue in performing this contract in the next succeeding 30 days, if added to all other payments and costs previously accrued, will exceed 85 percent of the ceiling price in the Schedule, the Contractor shall notify the Contracting Officer giving a revised estimate of the total price to the Government for performing this contract with supporting reasons and documentation. If at any time during performing this contract, the Contractor has reason to believe that the total price to the Government for performing this contract will be substantially greater or less than the then stated ceiling price, the Contractor shall so notify the Contracting Officer, giving a revised estimate of the total price for performing this contract, with supporting reasons and documentation. If at any time during performing this contract, the Government has reason to believe that the work to be required in performing this contract will be substantially greater or less than the stated ceiling price, the Contracting Officer will so advise the Contractor, giving the then revised estimate of the total amount of effort to be required under the contract.

(d) Ceiling price. The Government shall not be obligated to pay the Contractor any amount in excess of the ceiling price in the Schedule, and the Contractor shall not be obligated to continue performance if to do so would exceed the ceiling price set forth in the Schedule, unless and until the Contracting Officer shall have notified the Contractor in writing that the ceiling price has been increased and shall have specified in the notice a revised ceiling that shall constitute the ceiling price for performance under this contract. When and to the extent that the ceiling price set forth in the Schedule has been increased, any hours expended and material costs incurred by the Contractor in excess of the ceiling price before the increase shall be allowable to the same extent as if the hours expended and material costs had been incurred after the increase in the ceiling price.

(e) Audit. At any time before final payment under this contract the Contracting Officer may request audit of the invoices or vouchers and substantiating material. Each payment previously made shall be subject to reduction to the extent of amounts, on preceding invoices or vouchers, that are found by the Contracting Officer not to have been properly payable and shall also be subject to reduction for overpayments or to increase for underpayments. Upon receipt and approval of the voucher or invoice designated by the Contractor as the "completion voucher" or "completion invoice" and substantiating material, and upon compliance by the Contractor with all terms of this contract (including, without limitation, terms relating to patents and the terms of (f) and (g) below, the Government shall promptly pay any balance due the Contractor. The completion invoice or voucher, and substantiating material, shall be submitted by the Contractor as promptly as practicable following completion of the work under this contract, but in no event later than 1 year (or such longer period as the Contracting Officer may approve in writing) from the date of completion.

(f) Assignment. The Contractor, and each assignee under an assignment entered into under this contract and in effect at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, a release discharging the Government, its officers, agents, and employees of and from all liabilities, obligations, and claims arising out of or under this contract, subject only to the following exceptions:

(1) Specified claims in stated amounts, or in estimated amounts if the amounts are not susceptible of exact statement by the Contractor.

(2) Claims, together with reasonable incidental expenses, based upon the liabilities of the Contractor to third parties arising out of performing this contract, that are not known to the Contractor on the date of the execution of the release, and of which the Contractor gives notice in writing to the Contracting Officer not more than 6 years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier.

(3) Claims for reimbursement of costs (other than expenses of the Contractor by reason of its indemnification of the Government against patent liability), including reasonable incidental expenses,

incurred by the Contractor under the terms of this contract relating to patents.

(g) Refunds. The Contractor agrees that any refunds, rebates, or credits (including any related interest) accruing to or received by the Contractor or any assignee, that arise under the materials portion of this contract and for which the Contractor has received reimbursement, shall be paid by the Contractor to the Government. The Contractor and each assignee, under an assignment entered into under this contract and in effect at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, an assignment to the Government of such refunds, rebates, or credits (including any interest) in form and substance satisfactory to the Contracting Officer.

(h) Interim payments.

(1) Interim payments made prior to the final payment under the contract are contract financing payments. Contract financing payments are not subject to the interest penalty provisions of the Prompt Payment Act.

(2) The designated payment office will make interim payments for contract financing on the (I$INTERIM-PAYMENT) day after the designated billing office receives a proper payment request. In the event that the Government requires an audit or other review of a specific payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date.

A.4 52.232-19 -- AVAILABILITY OF FUNDS FOR THE NEXT FISCAL YEAR (APR 1984)

Funds are not presently available for performance under this contract beyond June 30, 2007. The Government's obligation for performance of this contract beyond that date is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise for performance under this contract beyond June 30, 2007, until funds are made available to the Contracting Officer for performance and until the Contractor receives notice of availability, to be confirmed in writing by the Contracting Officer.

A.5 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.6 2052.215-71 PROJECT OFFICER AUTHORITY (OCT 1999)

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

Name: Aladar Csontos

Address: U.S. Nuclear Regulatory Commission

Office of Nuclear Regulatory Research

M/S T-7-F-27

Washington, DC 20555

Telephone Number: 301-415-6352

(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.

A.7 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] President

[redacted] Research Leader

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.8 SEAT BELTS

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

ATTACHMENTS:

1. Statement of Work
2. Billing Instructions for Labor Hour Type Contracts

OFFICE OF NUCLEAR REGULATORY RESEARCH
DIVISION OF FUEL, ENGINEERING AND RADIOLOGICAL RESEARCH

STATEMENT OF WORK

PROJECT TITLE:	Implication of Wolf Creek Indications
JOB CODE:	N6434
NRC PROJECT MANAGER:	Name: Aladar A. Csontos Phone: (301) 415-6352
PERIOD OF PERFORMANCE:	March 1, 2007 to June 30, 2008

I. BACKGROUND

Full penetration dissimilar metal (DM) butt welds of Alloy 82 and 182 join various pressurized water reactor coolant pressure boundary (RCPB) components to reactor coolant system (RCS) piping. Typical DM welds connect the stainless steel RCS piping to ferritic vessels, Alloy 600 safe ends to ferritic vessels, Alloy 600 safe ends to stainless steel RCS piping, or the clad ferritic reactor coolant loop piping to stainless steel branch piping, such as emergency core cooling system piping. In recent years, operational experience indicates that Alloy 82/182/600 butt welds are susceptible to primary water stress corrosion cracking (PWSCC) in pressurized water reactors (PWR) environments:

- In 1989, PWSCC first appeared in Alloy 600 pressurizer heater and instrument nozzles. Information Notice No. 90-01, "Primary Water Stress Corrosion Cracking (PWSCC) of Inconel 600," identified instances of PWSCC at San Onofre Nuclear Generating Station in February 1986 and at Calvert Cliffs Unit 2 in spring 1989.

- In 1993, Palisades discovered a leak through a circumferential crack in the Alloy 600 safe end on the pressurizer nozzle for the power-operated relief valve. The circumferential extent of the crack was about 3 inches in the 4-inch diameter pipe. Metallurgical analysis of a sample characterized the cracking as PWSCC of the Alloy 600 safe end material in the heat-affected zone of the Alloy 82 and 182 weld. This was the first instance of PWSCC associated with butt welds at a U.S. reactor licensed by the NRC.

- In 2000, ultrasonic examination of a reactor pressure vessel (RPV) hot leg nozzle-to-safe end DM weld at Ringhals 4 in Sweden revealed four axial part-through-wall flaws. Metallurgical analysis attributed the cracking to PWSCC. Two small axial indications were identified in a Ringhals 3 RPV hot leg nozzle-to-safe end DM weld. These indications were left in service until a follow up inspection in 2001, at which time, the indications were sampled and analyzed to be PWSCC.

- In 2000, a large accumulation of boric acid deposits was observed during a refueling outage at V.C. Summer which led to the discovery of cracking in the "A" hot leg pipe-to-RPV nozzle DM weld. The weld contained a through-wall axial flaw and small part-through-wall axial flaws, as well as a circumferential flaw. Metallurgical

analysis attributed the cracking to PWSCC. Small axial and circumferential cracks were identified in the "B" hot leg pipe-to-RPV nozzle DM welds; a small circumferential crack was identified in the "C" hot leg pipe-to-RPV nozzle DM weld; and a small circumferential crack was found in both the "A" and "C" cold leg pipe-to-RPV nozzle DM welds.

- In 2003, ultrasonic examination of the pressurizer surge line hot leg nozzle-to-safe end weld at Three Mile Island Unit 1 revealed an axial part-through-wall indication in a DM weld. The licensee attributed the indication to PWSCC.

- In 2003, Tsuruga 2 in Japan observed boron deposits on the surface of a pressurizer relief valve nozzle that led to the discovery of three axially oriented flaws in the nozzle-to-safe end DM weld. Subsequent nondestructive examination (NDE) of the safety valve nozzle revealed two additional axial flaws in the nozzle-to-safe end DM weld. Metallurgical analysis of the flaws identified PWSCC as the mechanism for flaw initiation and growth.

- In 2003, ultrasonic examination revealed a shallow axial indication in the pressurizer-to-surge line weld at Tihange 2 in Belgium. This indication was attributed to PWSCC.

- In 2005, ultrasonic examination identified two axial part-through-wall indications approximately 180 degrees apart in a 2 inch hot leg drain nozzle-to-safe end DM weld at Calvert Cliffs Unit 2. The Licensee attributed the indications to PWSCC.

- In 2005, ultrasonic examination identified an axial part-through-wall indication in a pressurizer nozzle-to-safe end DM weld for the pressurizer safety valve at D. C. Cook Unit 1. The Licensee attributed the indication to PWSCC.

- In 2006, ultrasonic examinations at Calvert Cliffs Unit 1 identified an axial indication in the pressurizer relief nozzle-to-safe end DM weld and a circumferential indication in the hot leg surge line nozzle-to-safe end DM weld and a hot leg drain nozzle-to-safe end DM weld. The circumferential indication in the hot leg to surge line nozzle-to-safe end was 2.4 inches in length and approximately 25 percent through-wall in depth. The circumferential indication in the hot leg drain nozzle was 0.45 inches in length and approximately 18 percent through-wall in depth.

- Most recently in October 2006, Wolf Creek reported five circumferential indications in three pressurizer DM welds. Three indications were in the pressurizer surge line nozzle-to-safe end weld, and one indication each were in the safety and relief nozzle-to-safe end welds. The relief nozzle-to-safe end flaw was measured as 11.5 inches long as projected on the outside diameter of the weld.

The V.C. Summer experience spurred the NRC to hold several public meetings with the Nuclear Energy Institute (NEI) and industry-sponsored Materials Reliability Program (MRP) on the safety significance of the event. The MRP developed the "PWR Materials Reliability Project Interim Alloy 600 Safety Assessments for US PWR Plants (MRP-44) Part 1: Alloy 82/182 Pipe Butt Welds," issued in April 2001. After a review of MRP 44 Part 1, the NRC staff agreed in a June 2001 letter to the MRP that a low probability of near-term failure of welds exists and that PWRs may continue to operate safely while the industry performs additional analyses and inspections.

In response to the V.C. Summer and Tsuruga 2 events, the NRC issued NRC Information Notice 2004-11, "Cracking in Pressurizer Safety and Relief Nozzles and in Surge Line Nozzle," on May 6, 2004, to alert addressees that cracking and leakage were observed on pressurizer safety and relief nozzle-to-safe end welds at a foreign plant and an indication was found in a hot leg surge line nozzle-to-safe end weld at a domestic plant. Moreover, NRC issued NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors," dated May 28, 2004, to address the potential for PWSCC of pressurizer penetrations and steam space piping connections.

In April 2004, MRP issued a letter recommending that Licensees take steps in addition to those required by the American Society of Mechanical Engineers (ASME) Code to perform visual examinations, including removal of insulation from DM welds . In addition, while performing these examinations, licensees were asked to obtain plant-specific information on weld joint configurations and access for future volumetric examinations. The MRP recommended that licensees review the Performance Demonstration Initiative (PDI) library of mockups to determine if their configurations were supported by qualified volumetric examination procedures. Since some as-built configurations were not supported in the PDI DM qualifications set, the MRP recommended construction of site-specific mockups to qualify NDE procedures as required by ASME Code, Section XI, Appendix VIII, so that meaningful ultrasonic examinations could be performed on the as-found configurations. The MRP did not describe long-term inspection plans and the examination recommendation was treated as a one-time examination.

The MRP further evaluated the issue of PWSCC in DM welds by developing several technical reports:

- MRP-113: "Alloy 82/182 Pipe Butt Weld Safety Assessment for U.S. PWR Plant Designs," July 2004.
- MRP-140: "LBB Evaluation for PWR Alloy 82/182 Welds," April 2005.
- MRP-139: "Primary System Piping Butt Weld Inspection and Evaluation Guidelines," July 2005.

The guidelines in MRP-139 were issued with "mandatory" implementation under the NEI 03-08 initiative, "Guidelines for the Management of Materials Initiatives," and provided a strategy to manage degradation of DM butt welds in primary system piping. Several MRP reports pertaining to Alloy 82/182 butt welds were issued during 2004 and 2005 supporting the safety assessment for butt welds and the required inspection intervals established in MRP-139. Based on the magnitude of analyses and development of this inspection and evaluation guide, the NRC deferred any regulatory actions pertaining to Alloy 82/182 butt welds at that time.

Also in July 2005, ASME concluded that more rigorous inspections than those currently provided by the Code should be performed in the areas most susceptible to PWSCC. The ASME developed and published ASME Code Case N-722, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Pressure Boundary Components Fabricated with Alloy 600/82/182 Materials, Section XI, Division 1," approved July 5, 2005, to enhance the current code requirements for detection of leakage and corrosion in the components considered to be susceptible to PWSCC. The Code Case specifies that bare metal visual examinations be performed for all pressure retaining components fabricated from Alloy 600, 82, and 182 materials regardless of the component operating temperature. This resulted from the August 2002 NRC letter issued to the ASME Subcommittee on Nuclear Inservice Inspection, requesting that it re-evaluate the inspection and

corrective action requirements for all systems that are potentially subject to stress corrosion cracking and boric acid corrosion. While the Code Case inspection requirements are an improvement over current requirements, use of Code Cases is not mandatory. Also, volumetric examinations are needed to prevent leaks from occurring in the RCPB. Visual examinations only identify the condition once a crack has propagated through-wall. In December 2005, NRC requested ASME Section XI take actions necessary to develop the needed improvements to the existing Code requirements. The ASME Code committees are currently drafting an additional Code Case, which includes volumetric examinations of DM welds to further enhance code inspection requirements. However, completion of this activity is not expected in the near term, and once complete, the Code Case will not be mandatory.

The October 2006 discovery of the Wolf Creek indications are of particular concern as this is the first time that multiple circumferential indications have been identified in a weld. This condition calls into question the degree of safety margin present in past structural integrity evaluations for flawed DM welds, as multiple SCC flaws may grow independently and ultimately grow together, significantly reducing the time from flaw initiation to leakage or rupture. The size of the relief nozzle-to-safe end flaw is of concern, as this flaw is larger than those assumed in the estimates used to establish the basis for completing the baseline inspections established under the industry-sponsored MRP. The relief nozzle-to-safe end flaw was measured as 11.5 inches long as projected on the outside diameter of the weld. Projecting this to the inner diameter, represents a flaw of 7.7 inches on the inner diameter. The flaw, being 26 percent through wall at the maximum depth, represents an aspect ratio of 21:1. This aspect ratio is much larger than those used in developing the basis for current industry-administered inspection programs as outlined in MRP-139. Larger aspect ratios lead to shorter time periods from flaw initiation to leakage, and, while not expected to, may result in achieving a critical flaw size that could lead to rupture without the onset of detectable leakage prior to rupture.

The NRC through its contractors for the Office of Nuclear Regulatory Research conducted a flaw evaluation study to estimate the time for the flaws to initiate and grow to the size discovered at Wolf Creek, the time for the Wolf Creek flaws to grow through-wall and leak, the time for the flaws to reach a critical flaw size at which time rapidly propagating fracture could occur. The analyses modeled the Wolf Creek nozzles and loads, and assumed a number of different residual weld stress profiles. The largest uncertainty is in the time for the flaw to grow from initiation to that of the size measured at Wolf Creek. Estimates for this ranged from 4 months to 2.9 years. For the relief nozzle, the estimated time for the Wolf Creek flaws to leak were from 1.9 years to 2.6 years. However, in eight of the twelve cases analyzed, there was no time between onset of a leak and rupture of the weld. For the surge nozzle weld, all cases calculated that leakage would occur prior to rupture. For the safety nozzle, 4 cases indicated that there was no time between leakage and rupture.

Based on the Wolf Creek operating experience and flaw evaluation study, the NRC is concerned that the current inspection requirements of the ASME Code, NRC regulations, and industry-administered programs may not provide adequate assurance that RCS pressure boundary integrity will be maintained for butt welds comprised of Alloy 82 and 182 operating at pressurizer temperatures. The NEI and MRP, however, consider the NRC Wolf Creek flaw evaluation study to be very conservative and concludes through MRP 2007-003 that the industry's MRP-139 inspection program remains valid. Through a letter dated January 26, 2007, the NEI is planning to develop an advanced non-linear finite element analyses to buttress the technical basis for industry's conclusions that the industry inspection schedules for pressurizer nozzle welds do not need to be accelerated. The NEI letter indicates that the analyses will calculate the time between the onset of a leak and achieving critical flaw size, using a variety of potential crack shapes and

loading conditions. Due to the shortness of time, the NRC Office of Nuclear Regulatory Research needs to remain informed and ensure the validity of the industry's advanced non-linear finite element analyses to provide reasonable assurance that rupture will not occur without evidence of prior leakage and that such leakage from PWSCC is readily detectable under stable crack conditions.

II. OBJECTIVE

The objective of this project is to provide technical analytical support in the field of fracture mechanics and flaw evaluation to the NRC Office of Nuclear Regulatory Research to:

a. Review the industry's advanced non-linear finite element analysis model assumptions, methodologies, and results;

b. Compare the industry's advanced non-linear finite element analyses model results to previous NRC Wolf Creek flaw evaluation study results;

c. Identify and assess the conservatism and non-conservatism associated with the industry's advanced non-linear finite element analyses and the NRC's initial Wolf Creek flaw evaluation study;

d. Conduct a sensitivity analysis for other PWRs to predict the time between leakage and rupture due to PWSCC;

e. Conduct a benchmarking and validation study with the industry's advanced non-linear finite element analyses to quantify the susceptibility of primary pressure boundary butt welds to leakage and/or rupture due to PWSCC;

f. Aid NRC in identifying the regulatory requirements to address PWSCC of susceptible DM butt welds.

III. SCOPE OF WORK

The NEI letter dated January 26, 2007, indicates that the industry is developing an advanced non-linear finite element analysis to reinforce the technical basis for industry conclusions that the inspection schedules for pressurizer nozzle welds do not need to be accelerated. The NEI letter indicates that the analyses will calculate the time between the onset of a leak and achieving critical flaw size, using a variety of potential crack shapes and loading conditions. The NRC staff remains concerned that the industry's advanced model may not address other areas of uncertainty and potential non-conservatism that may propagate through the analyses to effectively inform a regulatory decision. This statement of work proposes to examine, review, evaluate, benchmark, validate, and report on the industry's advanced non-linear finite element model to inform the NRC staff in its deliberations on possible future regulatory actions.

The contractor shall begin work on all tasks immediately and concurrently upon award of contract with the final deliverable schedule for each task as stipulated below. The contractor shall have two months between each major deliverable for Tasks 1-4 so that the documentation effort for each task does not impede the progress of the overall project. The contractor shall also provide timely project updates to the NRC project manager on a weekly basis by either telephone or electronic mail. The remaining 6 month period of performance after the Task 4 deliverable is to ensure prompt support

of future potential emergent issues and interactions with the public, stakeholders, and the Advisory Committee for Reactor Safeguards (ACRS) that may develop as a result of this analysis. To adequately address these future interactions in a timely manner, the contractor must have an intimate knowledge of this analysis and information gained from Tasks 1-4.

Task 1: Review and Evaluate Industry's Advanced Non-Linear Finite Element Model

In close coordination with the NRC program manager, the contractor shall review the industry's advanced non-linear finite element model assumptions, methodologies, and results, identify potential areas of conservatism and non-conservatism in the model, and compare the model results to the previous NRC Wolf Creek flaw evaluation study results.

Deliverable Schedule: Provide a technical letter report to the NRC program manager within 4 months of the project initiation.

Task 2: Benchmarking and Validation of the Industry's Advanced Non-Linear Finite Element Model

In close coordination with the NRC program manager, the contractor shall conduct a benchmarking and validation study of the industry's advanced non-linear finite element model and identify and assess areas of conservatism and non-conservatism embedded in the model. This 3-D advanced non-linear finite element model is a first of the kind analysis and bechmarking and validation will be key to determining its validity for use in regulatory decision making. Wherever possible, the validation exercise should compare actual physical test results or real data with the analytical results.

Deliverable Schedule: Provide a technical letter report to the NRC program manager within 6 months of the project initiation.

Task 3: Parametric Sensitivity Study of the Industry's Advanced Non-Linear Finite Element Model

In close coordination with the NRC program manager, the contractor shall conduct a parametric sensitivity study of the assumptions and model parameters for the industry's advanced non-linear finite element analyses and identify and assess areas of conservatism and non-conservatism embedded in the model. The parametric sensitivity study should identify the model parameters that most affects the analytical results.

Deliverable Schedule: Provide a technical letter report to the NRC program manager within 8 months of the project initiation.

Task 4: Leak-Rate Study

In close coordination with the NRC program manager, the contractor shall conduct a leak-rate study using the Seepage Quantification of Upsets in Reactor Tubes (SQUIRT) leak rate code to determine the amount of water and steam (if appropriate) leaking through the various through-wall flaws identified in the industry's advanced non-linear finite element model. The contractor shall

compare results from the SQUIRT code to the AREVA leak rate code named KRAKFLO for PWSCC cracks through DM welds.

Deliverable Schedule: Provide a technical letter report to the NRC program manager within 10 months after project initiation.

Task 5: Analytical and Technical Support

Provide technical assistance to the NRC staff as required that involve several relatively small levels of effort. For example:

- Industry coordination efforts, proposals, meetings, and conference calls;
- ACRS/NRC meetings - provide technical expertise to the NRC as necessary;
- Reviewing pertinent industry reports and submittals related to PWSCC in DM butt welds;
- Aid NRC in identifying the regulatory requirements to address PWSCC in DM butt welds.

Deliverable Schedule: Support the March 6, 2007 ACRS subcommittee and March 8, 2007 ACRS full committee meetings on the Wolf Creek flaw evaluation scoping analysis and provide technical support at future dates to-be-determined.

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 REQUIRED

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 finite element analyses;

b. Expertise in developing fracture mechanics codes;

c. Expertise in leakage detection technologies and leak-rate predictive codes;

d. Detailed knowledge of DM weld fabrication methods;

e. Detailed knowledge of industry and NRC staff analyses regarding reported occurrences of DM weld cracking and NRC actions (e.g., notices, bulletins);

f. Knowledge of NRC regulatory process as it relates to DM weld cracking.

VI. DELIVERABLES AND DELIVERY SCHEDULE

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

Task 1:	Provide a technical letter report to the NRC program manager within 4 months of the project initiation.
Task 2:	Provide a technical letter report to the NRC program manager within 6 months of the project initiation.
Task 3:	Provide a technical letter report to the NRC program manager within 8 months of the project initiation.
Task 4:	Provide a technical letter report to the NRC program manager within 10 months of the project initiation.
Task 5:	Provide technical support at future dates to-be-determined.
Monthly Reports:	Technical Progress Report and Monthly Financial Status Report per established contract procedures.

VII. 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.

Up to ten three-day trips for up to three people to Rockville, MD or NRC-designated location to provide expertise related to this program.

VIII. GOVERNMENT FURNISHED MATERIALS

There will be no government furnished materials for this program.

Attachment 2

BILLING INSTRUCTIONS FOR LABOR HOUR TYPE CONTRACTS

General: The contractor shall prepare vouchers/invoices for reimbursement of costs in the manner and format described herein or a similar format. **FAILURE TO SUBMIT VOUCHERS/INVOICES IN ACCORDANCE WITH THESE INSTRUCTIONS WILL RESULT IN REJECTION OF THE VOUCHER/INVOICE AS IMPROPER.**

Number of Copies: An original and three copies, including supporting documentation shall be submitted. A copy of all supporting documents must be attached to each copy of your voucher/invoice. Failure to submit all the required copies will result in rejection of the voucher/invoice as improper.

Designated Agency Billing Office: Vouchers/invoices shall be submitted to the following address:

U.S. Nuclear Regulatory Commission
Division of Contracts
Mail Stop T-7-I-2
Washington, D.C. 20555

HAND DELIVERY OF VOUCHERS/INVOICES IS DISCOURAGED AND WILL NOT EXPEDITE PROCESSING BY NRC. However, should you choose to deliver vouchers/invoices by hand, including delivery by any express mail services or special delivery services which use a courier or other person to deliver the voucher/invoice in person to the NRC, such vouchers/invoices must be addressed to the above Designated Agency Billing Office and will only be accepted at the following location:

U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike - Mail Room
Rockville, MD 20852

HAND-CARRIED SUBMISSIONS WILL NOT BE ACCEPTED AT OTHER THAN THE ABOVE ADDRESS.

Note that the official receipt date for hand-delivered vouchers/invoices will be the date it is received by the official agency billing office in the Division of Contracts and Property Management.

Agency Payment Office: Payment will be made by the following office:

U.S. Nuclear Regulatory Commission
Division of Accounting and Finance GOV/COMM
Mail Stop T-7-I-2
Washington, DC 20555

Frequency: The contractor shall submit claims for reimbursement once each month, unless otherwise authorized by the Contracting Officer.

Format: Claims should be submitted in the format depicted on the attached sample form entitled A Voucher/Invoice for Purchases and Services Other Than Personal@ (see Attachment) or a similar format. **THE SAMPLE FORMAT IS PROVIDED FOR GUIDANCE ONLY AND IS NOT REQUIRED FOR SUBMISSION OF A VOUCHER/INVOICE. ALTERNATE FORMATS ARE PERMISSIBLE PROVIDED ALL REQUIREMENTS OF THE BILLING INSTRUCTIONS ARE ADDRESSED.**

Billing of Costs After Expiration of Contract/Purchase Order: If the costs are incurred during the purchase/delivery order period and claimed after the purchase/delivery order has expired, the period during which these costs were incurred must be cited. To be considered a proper voucher/invoice, the contractor shall clearly mark it >EXPIRATION VOUCHER OR A EXPIRATION INVOICE.

Currency: Billings may be expressed in the currency normally used by the contractor in maintaining his accounting records; payments will be made in that currency. However, the U.S. dollar equivalent for all vouchers/invoices paid under the purchase/delivery order may not exceed the total U.S. dollars authorized in the purchase/delivery order.

Attachment 2

ATTACHMENT

INVOICE/VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

(SAMPLE FORMAT - COVER SHEET)

Official Agency Billing Office
U.S. Nuclear Regulatory Commission
Division of Contracts and Property Management MS: T-7-I2
Washington, DC 20555-0001

(a) Purchase/Delivery Order No:

(b) Voucher/Invoice No:

(c) Date of Voucher/Invoice:

Payee's Name and Address

(d) Individual to Contact Regarding Voucher/Invoice
Name:
Telephone No:

(e) This voucher/invoice represents reimbursable costs for the billing period _____ to _____.

		Amount Billed	
		Current Period	Cumulative
(f)	Direct Costs:		
	(1) Direct Labor*	$_____	$_____
	(2) Travel*	$_____	$_____
	Total Direct Costs:	$_____	$_____

* The contractor shall submit as an attachment to its invoice/voucher cover sheet a listing of labor categories, hours billed, fixed hourly rates, total dollars, and cumulative hours billed to date under each labor category, by task and plant. In addition, the contractor shall include travel costs incurred with the required supporting documentation (invoices for lodging, airfare, and any costs in excess of $75), as well as, the cumulative total of travel costs billed to date by task and plant.