

1. CONTRACT (Proc. Inst. Ident.) NO. **NRC-03-81-092**  
 2. EFFECTIVE DATE  
 3. REQUISITION PURCHASE REQUEST/PROJECT NO. **NRR-81-092**  
 4. CERTIFIED FOR NATIONAL DEFENSE UNDER RDSA REG. 2 AND OR DMS REG. 1. RATING  
 5. ISSUED BY **U.S. Nuclear Regulatory Commission  
Division of Contracts  
Washington, DC 20555**  
 6. ADMINISTERED BY (If other than block 5)  
 7. DELIVERY FOR DESTINATION  
 NATION  
 OTHER (See below)

8. CONTRACTOR NAME AND ADDRESS  
**Dr. M. T. Davisson  
14 Lake Park Road  
Champaign, Illinois 61820**  
 (Street, city, county, State, and ZIP code)  
 9. DISCOUNT FOR PROMPT PAYMENT  
 10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK \_\_\_\_\_

11. SHIP TO/MARK FOR  
 12. PAYMENT WILL BE MADE BY  
**U.S. Nuclear Regulatory Commission  
Office of the Controller  
Washington, DC 20555**

13. THIS PROCUREMENT WAS  ADVERTISED,  NEGOTIATED, PURSUANT TO:  
 10 U.S.C. 2304 (a)(1)  
 41 U.S.C. 252 (c)(1)

14. ACCOUNTING AND APPROPRIATION DATA  
 B&R No.: 20-19-04-12      FIN No.: B7505      OBLIGATE: \$7,000.00

15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	Division of Engineering Review Support on Bailly Nuclear Plant I.  Incrementally Funded Labor Hour Contract				

21. TOTAL AMOUNT OF CONTRACT \$ 28,555.00

CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE

22.  CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 3 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)  
 26.  AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number \_\_\_\_\_, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.

23. NAME OF CONTRACTOR BY **M. T. Davisson**  
 (Signature of person authorized to sign)  
 27. UNITED STATES OF AMERICA BY **Mary Jo Mattia**  
 (Signature of Contracting Officer)

24. NAME AND TITLE OF SIGNER (Type or print) **M. T. DAVISSON - OWNER**  
**8105260529**  
 25. DATE SIGNED **5/5/81**  
 28. NAME OF CONTRACTING OFFICER (Type or print) **Mary Jo Mattia**  
 29. DATE SIGNED **MAY 7 1981**

## Article I - Statement of Work

### A. Background and Objective

A construction permit (CP) for Bailly Nuclear Plant 1 was issued in 1974. A CP extension is now required because construction is only about 1% complete and the 1974 CP has expired.

The plant was required to be supported on high-capacity, non-displacement piles. The applicant started driving 140 ft. long steel H-piles and experienced difficulties. Supplemental installation methods of pre-drilling and jetting were tried but these methods resulted in conditions unacceptable to the staff. Subsequently, the applicant has proposed to drive shorter piles. This proposal is being subjected to intensive review effort by the NRC staff and its consultants, partly on account of technical problems associated with the review of pile foundations, but also on account of strong intervention.

The short pile review effort was undertaken by the staff with assistance from expert consultants (including Dr. M. T. Davisson). When the magnitude of the review became too large for the geotechnical engineering staff to handle, the Corps of Engineers (Detroit District) was contracted to provide primary review effort with the continuing assistance from the expert consultants. The review is proceeding in this format and Office of the Executive Legal Director (OELD) staff has advised the reviewers to prepare for Atomic Safety and Licensing Board (ASLB) hearings and Federal Appeal Court hearings on the acceptability of the short pile proposal and on the applicant's application for a CP extension.

The objective of this contract is to obtain the assistance of Dr. Davisson in the completion of the Bailly pile foundation review through the ASLB hearings, the Federal Appeal Court proceedings, and the actual pile installation work.

### B. Work Requirements

#### Task 1

The contractor shall prepare a report identifying the significant issues reviewed by the contractor on the Bailly pile foundation from March 25, 1978 to October 31, 1980. The report shall summarize the contractor's evaluations, conclusions and recommendations made regarding these items, including the bases for these evaluations, conclusions and recommendations. The report shall summarize the calculations performed and shall identify the literature references and any other bases used in the evaluations. The report shall also contain a status of the items requiring further review. Task 1 shall be completed before Task 2 is started.

Task 2

The contractor shall evaluate the behavior of pile groups, the long term performance of the proposed foundation and its behavior under extreme environmental conditions, the Quality Assurance/Quality Check (QA/QC) for the pile installation, and other items requiring further review. This assistance shall include attendance at meetings with the staff, other consultants, and the applicant, as directed by the project officer. Also, as necessary, perform analyses, and make visits to the site to observe the pile driving operations. As requested by the project officer, the contractor shall provide additional reports and updates of the report submitted under Task 1.

It is estimated that four (4) reports will be required. The content of these reports shall be as specified in Task 1.

Task 3

The contractor shall prepare written testimony and provide expert witnessing at the Advisory Committee on Reactor Safeguards (ACRS) meetings, ASLB hearings and Federal Appeal Court proceedings, as required to fulfill licensing objectives.

Article II - Level of Effort and Period of Performance

The level of effort is estimated at 40 man-days over a two year period of performance. The period of performance with respect to this contract shall commence on the effective date of this contract through two (2) years thereafter.

Article III - Reporting Requirements

1. The report requested under Task 1 shall be provided to the project officer with copies to J. P. Knight, L. Heller and O. Thompson of the Division of Engineering, NRR, and M. J. Mattia, Division of Contracts, ADM.
2. The updated reports requested under Task 2 shall be provided to the project officer with copies to J. P. Knight, L. Heller and O. Thompson of the Division of Engineering, NRR, and M. J. Mattia, Division of Contracts, ADM.
3. The written testimony prepared under Task 3 shall be submitted to the project officer with copies to L. Heller and O. Thompson of the Division of Engineering, NRR, and M. J. Mattia, Division of Contracts, ADM.

Note: All data, calculations, graphs, plots, computer runs, etc., developed exclusively under this contract become the property of the NRC and will be delivered to the NRC by the contractor.

4. A business letter report shall be provided when a billing voucher is submitted in accordance with Billing Instructions under Article XIV to the project officer with copies to J. P. Knight, DE, and B. L. Grenier, NRR, and the Contracting Officer, DC. These reports will contain:

- A summary of the efforts completed during the period;
- The amount of funds expended for manpower, telephone, printing, postage, and travel during the period and cumulative to date;
- Any problems or delays encountered or anticipated.

Article IV - Meetings and Travel

The contractor shall attend meetings and visit the locations to perform the work in Article I. It is estimated that travel and meetings shall consist of the following:

- 2 one-day meetings in Bethesda, Maryland
- 12 one-day visits to the Baily Nuclear Plant Site in Porter County, Indiana
- 3 one-day ACRS meetings or ASLB hearings in Porter County, Indiana
- Three days at Federal Court proceedings in Washington, DC

Article V - NRC Furnished Materials

As deemed necessary by the project officer for performance of task, licensee submittals for review of the proposed pile foundation will be furnished under separate cover by the project officer.

Article Vi - Consideration

A. In full consideration of the satisfactory performance of work called for hereunder, the Nuclear Regulatory Commission (NRC) shall pay the contractor the fixed rate of \$560.00 per man-day. The level of effort is estimated to be forty (40) man-days, therefore, total direct labor cost shall not exceed \$22,400.00. The labor category, hourly rate and ceiling hours are as follows:

<u>Individual</u>	<u>Fixed Hourly Billing Rate</u>	<u>Ceiling Hours</u>
Dr. M. T. Davisson Consulting Engineer	\$70.00	320

B. Reimbursement to the contractor for performance of the work specified in Article I herein shall not exceed \$28,555.00.

C. Under the terms of this labor-hour type contract, the contractor agrees that the work to be performed under Article I shall be accomplished within the total ceiling hours (320) unless otherwise modified by the Contracting Officer.

Any costs incurred in excess of \$22,400.00 for labor hours shall be borne by the Contractor.

D. For periods of travel as directed by the Contracting Officer or his/her authorized representative, travel costs shall not exceed \$5,155.00 without the prior approval of the Contracting Officer.

In accordance with Federal Travel Regulations, the contractor shall be reimbursed for the following reasonable domestic travel costs incurred directly and specifically in the performance of this contract and accepted by the Contracting Officer:

1. Per diem shall be reimbursed at a daily rate not to exceed \$75.00 for travel to Bethesda, Maryland and Washington, DC, and not to exceed \$62.00 for travel to areas in Indiana. The per diem amount is comprised of lodging expenses, plus \$23.00 for meals and miscellaneous expenses.
2. The cost of travel by privately owned automobile and/or airplane shall be reimbursed at the rate of 22.5¢ per mile.
3. The cost of travel by rented automobile shall be reimbursed on a reasonable actual expense basis.
4. All common carrier travel reimbursable hereunder shall be via economy class rates when available. If not available, reimbursement vouchers will be annotated that economy class accommodations were not available. First-class air travel is not authorized.
5. Receipts are required for common carrier transportation, lodging and miscellaneous items in excess of \$15.00.

E. The expenses for long distance telephone charges, printing and postage expenses not reflected in the hourly rate above, and incurred in the performance of the work hereunder, will be reimbursed at actual cost. The estimated amount for these costs incurred is established at \$1,000.00.

- F. While the contractor shall be paid for each man-hour of performance, travel and telephone costs as provided for in paragraphs A, D, and E above, it is understood and agreed that the total amount to be paid to the contractor shall not exceed the ceiling amount of \$28,555.00.

#### Article VII - Overtime

No overtime or double time will be used on the work without prior written approval of the Contracting Officer.

#### Article VIII - Incremental Funding

1. Sufficient funds are not presently available to cover the totality of work over the entire period of performance under this contract. Additional funds will be allotted from time to time by contract modification up to the full estimated amount of the contract. While it is the Government's intention to progressively fund this contract up to the full estimated amount over the entire period of performance, the Government will not be obligated to reimburse the Contractor for costs in excess of periodic allotments, nor will the contractor be obligated to continue performance in excess of amounts allotted.
2. The amount presently obligated for the performance of this work is \$7,000.00.

#### Article IX - Payments

Payment shall be made in accordance with Clause 7 of the General Provisions entitled, "Payments" and as follows upon the submission of properly certified invoices or vouchers approved by the Contracting Officer:

##### A. Time Rate

1. The amounts shall be computed by applying the appropriate time rate or rates set forth herein to the number of direct labor hours of work performed. Fractional parts of an hour shall be payable on a prorated basis.
2. Invoices shall be prepared in sufficient detail to show the number of hours of work performed for each requirement set forth in Article I.

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- B. Payments by the Commission based on the foregoing provisions of this contract will be made as promptly as is reasonably practicable after submission to the Contracting Officer of vouchers and such other supporting documents or evidence as the Contracting Officer may require. Said payments shall be tentative and subject to subsequent audit and adjustment to assure that payment is properly effected in accordance with the provisions of this contract and the cost principles in FPR 1-15. The contractor shall substantiate vouchers by evidence of actual payment or such other substantiation approved by the Contracting Officer. At any time or time prior to final payment under this contract, the Contracting Officer may call for an audit of the invoices or vouchers and substantiating material as shall be deemed necessary. Each payment therefore made shall be subject to reduction to the extent of amounts which 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, on preceding invoices or vouchers.

The contractor shall be paid in accordance with the amounts computed by applying the appropriate time rate or rates set forth in Article VI - Consideration to the number of direct labor hours of work performed. Fractional parts of an hour shall be payable on a prorated basis. Payments will normally be made monthly, but may be varied by the Contracting Officer if conditions so warrant.

Invoices shall be prepared in sufficient detail to show the number of hours of work performed for each requirement.

- C. Financial Settlement. Prior to final payment under this contract, the contractor and each assignee under this contract whose assignment is in effect at the time of final payment under this contract shall execute and deliver:
- (a) An assignment to the Government in form and substance satisfactory to the Contracting Officer of refunds, rebates, credits, or other amounts (including any interest thereon) properly allocable to costs for which the contractor has been reimbursed by the Government under this contract; and
  - (b) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims, arising out of or under this contract, subject to the following exceptions:
    1. Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the contractor;

2. Claims, together with reasonable expenses incidental hereto, based upon liabilities of the contractor to third parties arising out of performance of this contract: Provided, that such claims are not known to the contractor on the date of the execution of the release: And provided further, that the contractor gives notice of such claims in writing to the Contracting Officer not more than six (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, which ever is earlier; and
3. Claims for reimbursement of costs (other than expenses of the contractor by reason of any indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the contractor under the provisions of this contract relating to patents.

The contractor agrees that any refunds, rebates or credits (including interest thereon) accruing to or received by the contractor, which arise under this contract and for which the contractor has received reimbursement, shall be paid by the contractor to the Commission. The contractor shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, an assignment to the Commission of any such refunds, rebates or credits (including any interest thereon) in form and substance satisfactory to the Commission.

4. Cost Information. The contractor shall maintain current cost information adequate to reflect the cost of performing work under this contract at all times while the work is in progress, and shall prepare and furnish to the Government such written estimates of cost and information in support thereof as the Contracting Officer may request.
5. Records. The contractor shall keep and maintain records and books of account which show accurately, and in an adequate manner, the basis for receiving compensation under this contract. The contractor shall preserve said records and books of account for a period of three (3) years after the date of final payment under this contract. The Commission shall at all reasonable times, prior to and after the date of final payment under this contract, have the right to examine and make copies of such records and books.

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### Article X - Key Personnel

The personnel specified below is considered to be essential to the work being performed hereunder. Prior to diverting the said individual to other programs, the contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. No diversion shall be made by the contractor without the written consent of the Contracting Officer: Provided, that the Contracting Officer may ratify in writing such diversion and such ratification shall constitute the consent of the Contracting Officer required by this clause.

Dr. M. T. Davisson - Consulting Engineer

### Article XI - Technical Direction

The following authorized representatives will represent the Government for the purpose of this contract:

Technical Monitor: Dr. Owen Thompson (301) 492-8186  
Project Officer: Mr. George Lear (301) 492-8085

The Project Officer is responsible for:

1. monitoring the Contractor's technical progress, including the surveillance and assessment of performance and recommending to the Contracting Officer changes in requirement;
2. interpreting the statement of work;
3. performing technical evaluation as required;
4. performing the technical inspections and acceptances required by this contract; and
5. assisting the Contractor in the resolution of technical problems encountered during performance.

Within the purview of this authority, the Project Officer is authorized to approve payment vouchers for supplies/services required under the contract. The Contracting Officer is responsible for directing or negotiating any changes in terms, conditions, or amounts cited in the contract.

For guidance from the Project Officer to the Contractor to be valid, it must:

1. be consistent with the description of work set forth in this contract;

2. not constitute new assignment of work or change of the expressed terms, conditions, or specifications incorporated into this contract;
3. not constitute a basis for an extension to the period of performance or contract delivery schedule; and
4. not constitute a basis for any increase in the contract price.

If the Contractor receives guidance from the Project Officer which the Contractor feels is not valid under the criteria cited above, the Contractor shall immediately notify the Project Officer. If the Project Officer and the Contractor are not able to resolve the questions within five days, the Contractor shall notify the Contracting Officer.

#### Article XII - Inspection and Acceptance

Acceptance of the services and reports to be delivered herein will be made by the Project Officer.

#### Article XIII- Billing Instructions

- A. Form. Invoices shall be submitted in an original and four (4) copies on the Contractor's letterhead, invoice, or on the Government's Standard Form 1034, "Public Voucher for Purchases and Services Other Than Personal" and Continuation Form 1035. These forms are available from the U.S. Government Printing Office, 710 North Capitol Street, N.W., Washington, DC 20501.
- B. Destination. Invoices shall be submitted in the form and number prescribed above in Paragraph A to the following address:

U.S. Nuclear Regulatory Commission  
Division of Accounting; Office of the Controller  
Attn: GOV/COM Accounts Section  
Washington, DC 20555

C. Frequency. The contractor shall submit an invoice once each month unless expenditures are less than \$2,000.00 during the interim of prior billing period.

D. Content

1. Name and address to which payment is to be sent
2. Voucher #
3. Date of Voucher
4. Contract number and date
5. Description of articles or services, labor categories, applicable hourly rates, other costs incurred. Detail hours worked by labor category, total amount for each labor category, and total amount of voucher.
6. Indicate period covered by invoice.

Article XIV- General Provisions for Fixed Price Supply Contracts  
(Revised 7/30/80)

A. The contract shall be subject to the Fixed Price Supply Contract General Provisions, dated June 30, 1980, attached hereto, which incorporates the Standard Form 32 (Rev. 4-75 General Provisions, June 1976).

FPR changes and HRC additions to Standard Form 32 General Provisions is further modified as follows:

1. Clause No. 33 entitled, "Preference for U.S. Flag Air Carriers" is deleted in its entirety.
2. Clause No. 41 entitled, "Publication and Publicity" is deleted in its entirety.
3. The clause entitled, "Audit," attached hereto and forming a part hereof, is added as Clause No. 47.
4. The clause entitled, "Privacy Act," attached hereto and forming a part hereof, is added as Clause No. 48.