

AWARD CONTRACT

1. CONTRACT (From Invitation) NO. **NRC-03-80-128 (TASK 5)**

2. EFFECTIVE DATE **7/9/80**

3. REQUISITION, PURCHASE REQUEST PROJECT NO.

4. CERTIFIED FOR NATIONAL DEFENSE UNDER BOA REG. 2 AND/OR DMS REG. 1. RATING:

5. ISSUED BY **US Nuclear Regulatory Commission  
Division of Contracts  
Washington, DC 20555**

6. ADMINISTERED BY (if other than block 5)

7. DELIVERY FOR DEST:  NAT ON  OTHER (See below)

8. CONTRACTOR NAME AND ADDRESS **Nuclear Associates International  
A Division of Control Data Corporation  
6003 Executive Boulevard  
Rockville, MD 20852**

9. DISCOUNT FOR PROMIT PAYMENT

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK **See Article XIV of BOA**

11. SHIP TO/MARK FOR **U.S. Nuclear Regulatory Commission  
Division of Systems Safety  
Attn: Les Rubenstein  
Washington, DC 20555**

12. PAYMENT WILL BE MADE BY

13. THIS PROCUREMENT WAS  ADVERTISED,  NEGOTIATED, PURSUANT TO:  10 U.S.C. 2304 (a)(1)  41 U.S.C. 252 (c)(1)(3)

14. ACCOUNTING AND APPROPRIATION DATA **B-6880 20-19-07-11 31X0200-200 Obligate: \$35,237.00**

15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	<p>This Cost-Plus-Fixed-Fee Contract is issued pursuant to the terms and conditions of Basic Ordering Agreement Number NRC-03-78-129-02 for core thermal-hydraulic analysis for light water reactors.</p> <p>Task 5: Review of WCAP-9500</p>				

21. TOTAL AMOUNT OF CONTRACT \$ **35,237.00**

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 **CONTROL DATA CORPORATION**

BY *William H. Kinney*  
(Signature of person authorized to sign)

27. UNITED STATES OF AMERICA

BY *D. J. Dougherty*  
(Signature of Contracting Officer)

24. NAME AND TITLE OF SIGNER (Type or print) **William H. Kinney  
Regional Contracts Manager**

25. DATE SIGNED **07/01/80**

28. NAME OF CONTRACTING OFFICER (Type or print) **D. J. Dougherty**

29. DATE SIGNED **7/8/80**

## TABLE OF CONTENTS

This Contract Consists Of:

1. Cover Page
2. Table of Contents
3. Schedule
  - Article I STATEMENT OF WORK
  - Article II PERIOD OF PERFORMANCE
  - Article III CONSIDERATION AND PAYMENT
  - Article IV OVERHEAD/GENERAL AND ADMINISTRATIVE RATES
  - Article V PROTECTION OF PROPRIETARY AND COMPANY CONFIDENTIAL INFORMATION
  - Article VI PRIVATE USE AND PROTECTION OF UNCLASSIFIED GOVERNMENT INFORMATION AND CONTRACT INFORMATION AND DATA
  - Article VII PROVISIONS APPLICABLE TO DIRECT COSTS
  - Article VIII PROJECT OFFICER RESPONSIBILITIES
  - Article IX TECHNICAL DIRECTION
  - Article X KEY PERSONNEL
  - Article XI UTILIZATION OF SMALL BUSINESS CONCERNS
  - Article XII ORDER OF PRECEDENCE
  - Article XIII CONFLICT OF INTEREST
  - Article XIV GENERAL PROVISIONS AND MODIFICATIONS

A. Background

Westinghouse has submitted a topical report (WCAP-9500) describing a revised design for their 17x17 fuel assemblies. The NRC staff must evaluate the design and prepare a Safety Evaluation Report which addresses the acceptability of the new design for use in reactor licensing applications.

B. Objective

The contractor shall review section 4.4 of topical report WCAP-9500 and provide a written evaluation. The scope and detail of the review should be based on guidelines found in the Standard Review Plan section 4.4 (Enclosure). The NRC staff evaluation of section 4.4 of the RESAR 414 Reference Safety Analysis Report is also enclosed to provide additional guidance on the review scope and to indicate those areas which have already received significant staff review. As indicated in the Standard Review Plan, areas which have been previously reviewed and accepted do not need to be reviewed again in detail. However, the contractor should assure that each area in the Standard Review Plan is addressed in a reasonable manner.

C. Work Requirements

The contractor shall perform a detailed review of those areas which are changed as a result of the new fuel geometry or as a result of new design methods.

In particular, the following items are required:

- (1) A detailed evaluation of section 4.4.2.2.1 including an evaluation of the validity of the conclusion that "the CHF characteristics of the 17x17 optimized fuel assembly design are not significantly different from those of the current 17x17 standard design, and can be adequately described by the "R" grid data base without changing the DNBR design criteria of 1.17."

- (2) A detailed evaluation of the design DNBR at the conditions presented in Table 4.4-1 (the contractor shall provide an independent calculation to verify the stated value of DNBR).
- (3) A detailed evaluation of the difference in DNBR and/or effective power capability associated with the proposed statistical treatment of uncertainties rather than the former method of treating uncertainties.
- (4) Comments on the approach used to address Hydronamic and Flow Power Coupled Instability (Section 4.4.4.6).

D. Milestone Requirements

- (1) Perform a preliminary review and prepare questions requesting any clarifications or additional information or data required for the complete review. July 11, 1980
- (2) Westinghouse response September 12, 1980
- (3) Provide draft report for NRC comments November 1, 1980
- (4) Submit report documenting the results of the review. November 14, 1980

E. Reporting Requirements

- (1) If questions or the need for additional information arise, provide a letter to Larry Phillips (3 copies) with questions in a format suitable for NRC to transmit to the applicant.
- (2) The contractor shall prepare a final report which addresses the safety of the Westinghouse 17x17 optimized fuel assembly design based on the review of Section 4.4 of WCAP-9500 and the results of independent calculations to evaluate the thermal-hydraulic design with respect to NRC

\*The contractor should identify any questions or data requests which require earlier response to facilitate calculations on a schedule consistent with Milestone 3.

criteria and requirements. The report shall be prepared in accordance with NRC Manual Chapter 3202. The Summary and Conclusions section should be of a content and format to facilitate incorporation into the Safety Evaluation Report by the NRC staff. The report shall be submitted to:

Les Rubenstein (3 copies)  
Larry Phillips (2 copies)  
D.J. Dougherty, Contracting Officer (1copy)

F. NRC Furnished Materials

Westinghouse WCAP-9500 will be provided under separate cover within 2 weeks of contract award.

If the above material, suitable for its intended use, is not so delivered to the contractor, the Contracting Officer shall, upon timely written request made by the contractor, and if the facts warrant such action, equitably adjust any affected provision of the contract pursuant to the procedures of the "Changes" clause of the contract.

G. Travel & Meetings

Travel will be local for meetings with the NRC staff as required for technical direction of the work.

ARTICLE II - PERIOD OF PERFORMANCE

The period of performance shall be from the effective date of the contract through 6 months thereafter at which time all work shall have been completed and all reports shall have been delivered to the NRC as required by the Statement of Work.



ARTICLE III - CONSIDERATION AND PAYMENT

A. Estimated Cost, Fixed Fee and Obligation

B. Payment

The Government shall render payment to the contractor in approximately thirty (30) days after submission of proper and correct invoices or vouchers.

Additional provisions relating to payment are contained in clause of the General Provisions hereto.

ARTICLE V - Protection of Proprietary and Company Confidential Information

If proprietary or company confidential data is provided to the contractor by the Government in connection with this contract, the contractor agrees to safeguard such information and agrees not to release such information to any person not directly involved in the performance of work under this contract unless such release is authorized in writing by the Contracting Officer. Upon completion or termination of this contract, all copies of any such proprietary or company confidential data shall be returned to the Commission.

ARTICLE VI - Private Use and Protection of Unclassified Government Information and Contract Information and Data

- (a) Except as specifically authorized by this contract, or as otherwise approved by the Contracting Officer, records, data, information, documents and material developed or acquired by or furnished to the contractor in the performance of this contract shall be used only in connection with the work performed under this contract. The contractor shall, upon completion or termination of this contract, transmit to the Commission all records or other information, documents and material, and any copies thereof, furnished by the Commission to the contractor in the performance of this contract.
- (b) The contractor shall be responsible for safeguarding from unauthorized disclosure any information or other documents and material exempt from public disclosure by the Commission's regulations and made available to the contractor in connection with the performance of the work under this contract. The contractor agrees to conform to all regulations, requirements, and direction of the Commission with respect to such material.
- (c) The contractor's duties under this clause shall not be construed to limit or affect in any way the contractor's obligation to conform to all security regulations and requirements, of the Commission pertaining to classified information and material.

ARTICLE VII  
PROVISIONS APPLICABLE TO DIRECT COSTS

Items Unallowable Unless Otherwise Provided

Notwithstanding Clause No. 5 -- ALLOWABLE COST FEE AND PAYMENT, and Clause No. 10 -- SUBCONTRACT, of the General Provisions of this contract, unless authorized in writing by the Contracting Officer, the costs of the following items or activities shall be unallowable as direct costs:

1. Acquisition, by purchase or lease, of any interest in real property.
2. Special rearrangement or alteration of facilities.
2. Purchase or lease of any item of general purpose office furniture or office equipment.

## ARTICLE VIII- PROJECT OFFICER RESPONSIBILITIES

The following individual will represent the Government as the Project Officer for this contract: Mr. Les Rubenstein

- (a) 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 requirements; (2) interpreting the statement of work; (3) performing technical evaluation as required; (4) performing 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 representative 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.
- (b) 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 to 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; (4) not constitute a basis for any increase in the contract price.
- (c) 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 two are not able to resolve the question within five days, the contractor shall notify the Contracting Officer.

ARTICLE IX-Technical Direction

- (a) The NRC Project Officer named in this contract is responsible for guiding the technical aspects of the project and for general surveillance of the work performed. The Project Officer is not authorized to make any commitments or any changes which constitute work not within the general scope of this contract, or constitute a basis for any increase in contract price or extension of the contract period of performance.



- (b) Technical direction must be within the general scope 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 additional work outside the general scope of the contract.
  - (2) Constitutes a change as defined in the clause of the General Provisions, entitled "Changes."
  - (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 to any of the expressed terms, conditions or specifications of the contract.
- (c) ALL TECHNICAL DIRECTIONS SHALL BE ISSUED IN WRITING BY THE PROJECT OFFICER OR SHALL BE CONFIRMED BY HIM/HER IN WRITING WITHIN TEN (10) WORKING DAYS AFTER VERBAL ISSUANCE. A copy of said written direction shall be provided to the Contracting Officer.
- (d) In the event the Project Officer desires a change to the contract within one or more of the categories as defined in (1) through (4) of paragraph B above, he/she must direct such requests to the Contracting Officer. The Contracting Officer will handle the request in accordance with applicable laws and regulations.
- (e) 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 its own funds for unallowable costs under the contract.

ARTICLE X  
KEY PERSONNEL

Pursuant to Clause No. 40 -- KEY PERSONNEL, the following individual(s) are considered to be essential to the work being performed hereunder:

R.C. Kern, Senior Associate A  
A.H. Hsia, Senior Project Engineer  
L.W. Cress, Senior Engineer  
M.A. Richmond, Engineer A

## ARTICLE XI -

UTILIZATION OF SMALL BUSINESS CONCERNS AND  
SMALL BUSINESS CONCERNS OWNED AND  
CONTROLLED BY SOCIALLY AND ECONOMICALLY  
DISADVANTAGED INDIVIDUALS

(a) It is the policy of the United States that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in the performance of contracts let by any Federal agency.

(b) The contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this contract. The contractor further agrees to cooperate in any studies or surveys that may be conducted by the Small Business Administration or the contracting agency which may be necessary to determine the extent of the contractor's compliance with this clause.

(c) (1) The term "small business concern" shall mean a small business as defined pursuant to Section 3 of the Small Business Act and in relevant regulations promulgated pursuant thereto.

(2) The term "small business concern" owned and controlled by socially and economically disadvantaged individuals" shall mean a small business concern--

(i) which is at least 51 per centum owned by one or more socially and economically disadvantaged individuals; or in the case of any publicly owned business, at least 51 per centum of the stock of which is owned by one or more socially and economically disadvantaged individuals; and

(ii) whose management and daily business operations are controlled by one or more of such individuals.

The contractor shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, and other minorities, or any other individual found to be disadvantaged by the Small Business Administration pursuant to section 5(a) of the Small Business Act.

(d) Contractors acting in good faith may rely on written representations by their subcontractors as either a small business concern or a small business concern owned and controlled by socially and economically disadvantaged individuals.

ARTICLE XII  
ORDER OF PRECEDENCE

In the event of an inconsistency between the terms and conditions of the contract, the inconsistency shall be resolved by giving precedence in the following order:

1. The SCHEDULE: (Note: - Nothing contained in the Contractor's proposal, whether or not incorporated by reference, shall constitute a waiver of any terms or conditions provided in the SCHEDULE.)
2. The General Provisions
3. Other terms and conditions of the contract, whether incorporated by reference or otherwise.

ARTICLE XIII - CONFLICT OF INTEREST

(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 interest (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 herein shall apply to performance or participation by the contractor as defined in 41 CFR § 20-1.5402(f) in the activities covered by this clause.

(c) Work for others. 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 who are employed full time under this contract and employees designated as key personnel, if any, under this contract abide by the provision of this clause. If the contractor believes with respect to itself or any such 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 prior to execution of such contractual arrangement.

(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, it does not have any organizational conflicts of interest, as defined in 41 CFR §20-1.5402(a).

(2) The contractor agrees that if after award it discovers organizational conflicts of interest with respect to this contract, it shall make immediate and full disclosure in writing to the contracting officer. This statement shall 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 for convenience if it deems such termination to be in the best interests of the government.

(e) Access to and use of information. (1) If the contractor in the performance of this contract obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (Pub. L. 93-579), or data which has not been released to the public, the contractor agrees not to: (i) Use such information for any private purpose until the information has been released to the public; (ii) compete for work for the Commission based

7590-01

on such information for a period of six (6) months after either the completion of this contract or the release of such information to the public, whichever is first, (iii) submit an unsolicited proposal to the government based on such information until one year after the release of such information to the public, or (iv) release the information without prior written approval by the contracting officer unless such 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 (Pub. L. 93-579), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat such information in accordance with restrictions placed on use of the information.

(3) The contractor shall have, subject to patent and security provisions of this contract, 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 41 CFR §20-1.5402(h), the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms "contract," "contractor," and "contracting officer," shall be appropriately modified to preserve the government's rights.

(g) Remedies. For breach of any of the above proscriptions or for intentional nondisclosure or misrepresentation of any relevant interest required to be disclosed concerning this contract or for such erroneous representations as necessarily imply bad faith, the government may terminate the contract for default, disqualify the contractor from subsequent contractual efforts, and pursue other remedies as may be permitted by law or this contract.

(h) Waiver. A request for waiver under this clause shall be directed in writing through the contracting officer to the Executive Director for Operations (EDO) in accordance with the procedures outlined in §20-1.5411.

§ 20-1.5405-2 Special contract provisions.

ARTICLE XIV - GENERAL PROVISIONS AND MODIFICATIONS

The following General Provisions attached to Basic Ordering Agreement No. NRC-03-78-129-02 and referenced below form a part of this contract:  
Appendix A, General Provisions for Cost Type Contracts With Concerns Other Than Educational Institutions(2/15/78 as modified below:

1. Clause 54 entitled, "Drawings, Designs, Specifications" lines 11 and 12 are modified by deleting the words beginning with "Subject to the. . ." and ending with ". . . its own uses," in their entirety.
2. Clause 23 entitled, "Nuclear Hazards Indemnity Product Liability is deleted in its entirety.