

AWARD/CONTRACT

DCD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350) RATING

2. CONTRACT NO. NRC-04-94-036 3. EFFECTIVE DATE 04/26/94 4. REQUISITION/PROJECT NO. RES-94-036

5. ISSUED BY Code: US Nuclear Regulatory Commission Division of Contracts & Property Mgt. Contract Negotiation Branch 2 Mail Stop P-1042 Washington, DC 20555 6. ADMINISTERED BY Code: (If other than Item 5) US Nuclear Regulatory Commission Div. of Contracts & Property Mgmt. Contract Administration Br. 3 Mail Stop P-902 Washington, DC 20555

7. NAME AND ADDRESS OF CONTRACTOR Board of Regents of the University of Wisconsin System Attn: Cheryl E. Gest, Adm. Officer 750 University Avenue Madison, Wisconsin 53706-1490 Principal Investigator/Technical Contact: Dr. M. L. Corradini Telephone No: (608) 262-4880 8. DELIVERY [] FOB ORIGIN [X] OTHER (See below) 9. DISCOUNT FOR PROMPT PAYMENT N/A

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN ITEM: 6

11. SHIP TO/MARK FOR CODE US Nuclear Regulatory Commission Attn: Tom Walker - NLS-344 Division of Systems Research, RES Washington, DC 20555 12. PAYMENT WILL BE MADE BY CODE US Nuclear Regulatory Commission Division of Accounting & Finance GOV/COM Acctg. Section; MNBB 11104 Washington, DC 20555

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION [] 10 U.S.C. 2304(c) [] [X] 41 U.S.C. 253(c) [1]

14. ACCOUNTING AND APPROPRIATION DATA B&R: 460-19-20-2300 Job: W6183 BOC: 252A RES-C94-086 31X0200.460 Amount Obligated: \$136,000.00

15A. ITEM NO. 15B. SUPPLIES/SERVICES 15C. QUANTITY 15D. UNIT 15E. UNIT PRICE 15F. AMOUNT The NRC hereby accepts the University of Wisconsin-Madison's technical proposal #59896 dated 12/22/93, as revised 2/9/94, both of which are incorporated by reference into this cost-reimbursement type contract to perform "Fuel Coolant Interaction Experiments and Analysis." 15G. TOTAL AMOUNT OF CONTRACT \$271,940.00

EXCEPTION TO STANDARD FORM SF26 (REV.4-85) Prescribed by GSA FAR(48 CFR) 53.214(a)

200017 9406240164 940426 PDR CONTR NRC-04-94-036 PDR

DF020/1

X SEC	DESCRIPTION	PAGE(S)
16. TABLE OF CONTENTS		
PART I - THE SCHEDULE		
A	SOLICITATION/CONTRACT FORM	
B	SUPPLIES OR SERVICES AND PRICES/COSTS	
C	DESCRIPTION/SPECIFICATIONS/WORK STATEMENT	
D	PACKAGING AND MARKING	
E	INSPECTION AND ACCEPTANCE	
F	DELIVERIES OR PERFORMANCE	
G	CONTRACT ADMINISTRATION DATA	
H	SPECIAL CONTRACT REQUIREMENTS	
PART II - CONTRACT CLAUSES		
I	CONTRACT CLAUSES	
PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS		
J	LIST OF ATTACHMENTS	
PART IV - REPRESENTATIONS AND INSTRUCTIONS		
K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
L	INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS	
M	EVALUATION FACTORS FOR AWARD	

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. 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.)

18. 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.

19A. NAME AND TITLE OF SIGNER
(Type or print)
Robert W. Erickson, Director
Research Administration-Financial

19B. NAME OF CONTRACTOR
by Robert W. Erickson
(Signature of person authorized to sign)

20A. NAME OF CONTRACTING OFFICER
Mary H. Mace

20B. UNITED STATES OF AMERICA
by Mary H. Mace
(Signature of Contracting Officer)

19C. DATE SIGNED
APR 18 1994

20C. DATE SIGNED
4-22-94

EXCEPTION TO STANDARD FORM 26 (REV. 4-85)

TABLE OF CONTENTS

PAGE

AWARD/CONTRACT

PART I - THE SCHEDULE.	3
SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS.	3
B.1 PROJECT TITLE.	3
B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)	3
B.3 CONSIDERATION AND OBLIGATION--COST REIMBURSEMENT	3
(JUN 1988) ALTERNATE I (JUN 1988)	
SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT.	4
C.1 BACKGROUND	4
C.2 OBJECTIVES	5
C.3 SCOPE OF WORK.	5
C.4 MEETINGS AND TRAVEL.	7
C.5 NRCAR 2052.215-83 TRAVEL APPROVALS (JAN 1993)	7
SECTION D - PACKAGING AND MARKING.	8
D.1 PACKAGING AND MARKING (MAR 1987)	8
SECTION E - INSPECTION AND ACCEPTANCE.	9
E.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	9
E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)	9
SECTION F - DELIVERIES OR PERFORMANCE.	10
F.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	10
F.2 NRCAR 2052.212-70 PREPARATION OF TECHNICAL	10
REPORTS (JAN 1993)	
F.3 NRCAR 2052.212-71 TECHNICAL PROGRESS REPORT.	10
F.4 NRCAR 2052.212-72 FINANCIAL STATUS REPORT.	11
F.5 PLACE OF DELIVERY--REPORTS (JUN 1988)	12
F.6 DURATION OF CONTRACT PERIOD (MAR 1987)	12
SECTION G - CONTRACT ADMINISTRATION DATA	13
G.1 NRCAR 2052.215-71 PROJECT OFFICER AUTHORITY.	13
(JAN 1993)	
G.2 NRCAR 2052.215-82 TRAVEL REIMBURSEMENT	15
- ALTERNATE 1 (JAN 1993)	
G.3 NRCAR 2052.216-72 INDIRECT COST RATES.	16
- ALTERNATE 1 (JAN 1993)	
SECTION H - SPECIAL CONTRACT REQUIREMENTS.	17
H.1 NRCAR 2052.209-73 CONTRACTOR ORGANIZATIONAL.	17
CONFLICTS OF INTEREST (JAN 1993)	
H.2 NRCAR 2052.215-70 KEY PERSONNEL (JAN 1993)	21
H.3 PUBLICATION OF RESEARCH RESULTS - UNIVERSITIES (MAR 1994)	22
H.4 NRCAR 2052.235-72 SAFETY, HEALTH, AND FIRE	23
PROTECTION (JAN 1993)	

TABLE OF CONTENTS

	PAGE
H.5 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY (JUNE 1988)	23
H.6	23
H.7 GOVERNMENT PROVIDED MATERIAL	23
H.8 ARTICLE - PROPERTY MANAGEMENT.	24
 PART II - CONTRACT CLAUSES	 25
SECTION I - CONTRACT CLAUSES	25
I.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	25
I.2 52.203-9 REQUIREMENT FOR CERTIFICATE OF PROCUREMENT.	27
INTEGRITY--MODIFICATION (NOV 1990)	
I.3 52.216-7 ALLOWABLE COST AND PAYMENT (JUL 1991)	29
 PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS	 34
SECTION J - LIST OF ATTACHMENTS.	34
J.1 ATTACHMENTS (MAR 1987)	34

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 PROJECT TITLE

The title of this project is as follows:

"Fuel-Coolant Interaction Experiments and Analyses"

[End of Clause]

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

The contractor shall perform research to provide an extension to the experimental data to define the region in which Fuel Coolant Interactions (FCI) do not occur or are mitigated; provide support to the NRC on the FARO and KROTOS programs; provide the NRC with the expertise required to obtain effective utilization of FCI data; provide a scaling rationale for FCIs; and provide assessments of interaction codes.

[End of Clause]

B.3 CONSIDERATION AND OBLIGATION--COST REIMBURSEMENT
(JUN 1988) ALTERNATE I (JUN 1988)

- (a) The total estimated cost to the Government for full performance under this contract is \$271,940.00.
- (b) The amount presently obligated by the Government with respect to this contract is \$136,000.00.
- (c) It is estimated that the amount currently allotted will cover performance through 03/31/95.

[End of Clause]

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 BACKGROUND

The University of Wisconsin (UW) is completing a three year NRC contract on fuel-coolant interaction research to perform fundamental experiments in energetic vapor explosions. The main objectives of this work were to obtain well-characterized data for fuel-coolant mixing and explosion phases and to investigate the effect of initial conditions (e.g., triggering, fuel mass, temperature, coolant conditions and expansion resistance) on the explosion energetics. This contract extends the previous experimental program to define the region where FCI's will not occur or are mitigated after triggering; provides additional data to assist NRC in validating the IFCI code; supports the KROTOS analysis efforts for NRC; extends the one dimensional experimental work to two dimensions; and provides technical assistance support to NRC in the area of FCIs.

A facility was designed and constructed in one-dimensional geometry to obtain an easily controlled set of boundary conditions and to provide measurement capability of the mixing and explosion energetics. Many less well defined experiments that were run previously resulted in ambiguous conclusions because results had to be interpreted from records of pressure pulses of sensors distributed in the transient pressure field. The Wisconsin Fuel Coolant Interaction facility (WFCI) can deliver 20 kg of reactor simulant fuel (metals) with temperatures up to 1400K and with a reliable and variable trigger to initiate the explosion. Studies have been completed on the reproducibility of these experiments, the minimum trigger required for propagation, and the effects variations of fuel mass and temperature including changes in the water slug mass that provides resistive constraint. The work program designated below utilizes the existing test facility as well as the expertise developed in this completed study.

Additional background information pertinent to this program is the participation of NRC in the Technical Exchange Agreement with the Commission of European Communities Safety Technology Institute - Joint Research Center (STI-JRC). The STI-JRC has constructed and now operates the FARO and KROTOS facilities for FCI studies. Both the NRC and EPRI have contributed to the STI-JRC program to modify the FARO facility to obtain data more prototypical of US plants. In addition, an addendum was signed in September 1992 to adapt the KROTOS facility for oxide fuel simulate-water testing. The KROTOS facility was designed to use aluminum oxide (Al_2O_3) as a fuel simulant with temperatures up to 2700K. The addendum provides crucible qualification and upgrading for mixed uranium

C.1 (Continued)

oxide/zirconium oxide testing. The NRC contributes to the test analyses, and provides NRC computer codes for fuel-coolant interaction calculations. The principal investigation will provide technical assistance to STI-JRC when requested to do so by NRC.

In addition to the FARO/KROTOS support, the following work program will provide an extension to the data base of the previous UW program and will provide NRC with the technical expertise required to obtain the most effective utilization of the data resulting from the international program outlined above.

C.2 OBJECTIVES

The objectives of this work will be: to provide an extension to the experimental data and developed under a former contract, to define the region in which FCI's do not occur; to provide support to NRC on the FARO and KROTOS programs; to provide the NRC with the expertise required to obtain effective utilization of the data; to provide a scaling rationale for FCIs; and to provide assessments of fuel-coolant interaction codes.

C.3 SCOPE OF WORK**Task 1 Definition of the Non-Propagating Region**

The data developed on triggered explosions are to be extended on the safe or non propagating side of explosion conditions or criteria. Some researchers have used the void fraction as a limiting criteria for explosion triggering and/or propagation. With the highly reproducible triggering method provided in the Wisconsin fuel-coolant apparatus, triggered explosions that clearly mitigate during propagation should provide a firm basis for determining a safe region. Temperatures, pressure, etc., will be treated parametrically. Results are to be reported in the monthly progress reports and in a final technical report.

Task 2 IFCI Validation Tests

The Integrated Fuel-Coolant Interaction (IFCI) code has been formulated in a stand-alone version for work station applications by Sandia National Laboratories (SNL). The code has been demonstrated as operational by evaluating it against four experimental results. A validation of the code is to be made against available experimental data and a series of tests is to be performed in the WIFCI facility to aid in benchmarking the code in areas not covered by existing test results. In particular the unique capability of the 2-D explosion model in the code should be compared to 2-D results from WIFCI. These tests will involve simulat fuel melts in film boiling and will primarily focus on

C.3 (Continued)

the mixing and explosion phases of fuel-coolant interactions over a wide range of conditions. The initial conditions of each test series will be determined after joint consultation with SNL and NRC.

UW will provide the experimental tests and results while SNL will conduct the validation studies. UW will run some code cases to identify the requirements for the next test series or to study some particular unexpected result.

Results will be reported in the monthly progress report and a final letter report.

Task 3 NRC Support for KROTOS and FARO

UW will provide NRC support in assessing and guiding future tests in the KROTOS and FARO facilities. The KROTOS uranium/zirconia vapor explosion tests, and the FARO fuel quenching tests are expected to require both TEXAS-III model and IFCI model applications. In addition, assessments of instrumentation being applied to KROTOS will be required. For example, a level swell meter is being used in the KROTOS tests and analyses of the relationship of level swell to void fraction will be required. Thus, this task will consist of this and/or similar assignments and may require a rapid response for the results. Results will be reported in the monthly progress report and a final technical report.

Task 4 FCI Scaling

The experiments in WFCI, KROTOS and FARO should provide some scaling information on explosive interactions. This task will assess the information developed and provide a rationale for scaling the test FCI results to full scale in-vessel or ex-vessel FCI incidents. The proposed rationale will be tested as data become available. This important aspect of FCI research is designated as a separate task for emphasis. An interim report will be provided at the end of the first year of the program and a final report at the end of the second year.

Task 5 Technical Assistance

This task provides technical assistance to NRC for code applications or expert consultation on the various aspects of fuel-coolant interaction concerns for all aspects of severe accident evaluations. Upon request from the NRC Project Officer, the contractor shall represent and make presentations at meetings, conduct analyses and/or calculations of specific fuel-coolant interaction events, and perform reviews and evaluation of experiments or codes other than those designated above, totalling one-staff month per year. While conducting the Severe Accident

C.3 (Continued)

Research Program (SARP), the NRC research staff is sometimes confronted with unique assignments, information requests, or issues by other NRC offices within the research program. Under this task, the contractor may be requested to provide support to address these assignments, requests or issues.

C.4 MEETINGS AND TRAVEL

Each assigned trip will contain a specific work scope, cost and approved provisions for meetings and travel. Travel should be estimated for two trips to Europe, three to Rockville, MD, and one to the west coast.

[End of Clause]

C.5 NRCAR 2052.215-83 TRAVEL APPROVALS (JAN 1993)

- (a) All domestic travel requires the prior approval of the project officer.
- (b) All foreign travel must be approved in advance by the NRC on NRC Form 445 and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. Foreign travel approval must be communicated in writing through the contracting officer.

[End of Clause]

SECTION D - PACKAGING AND MARKING

D.1 PACKAGING AND MARKING (MAR 1987)

The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Interstate Commerce Commission Regulations, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation. On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

[End of Clause]

SECTION E - INSPECTION AND ACCEPTANCE

E.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.246-8	INSPECTION OF RESEARCH AND DEVELOPMENT - COST-REIMBURSEMENT Alternate I (APR 1984)	APR 1984

[End of Clause]

E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)

Inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the Project Officer at the destination.

[End of Clause]

SECTION F - DELIVERIES OR PERFORMANCE

F.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.212-13	STOP-WORK ORDER Alternate I (APR 1984)	AUG 1989

[End of Clause]

F.2 NRCAR 2052.212-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)

All technical reports required by Section C and all Technical Progress Reports required by Section F are to be prepared in accordance with the attached Management Directive 3.8, "Unclassified Contractor and Grantee Publications in the NUREG Series." Management Directive 3.8 is not applicable to any Contractor Spending Plan (CSP) and any Financial Status Report that may be included in this contract. (See Section J for List of Attachments).

[End of Clause]

F.3 NRCAR 2052.212-71 TECHNICAL PROGRESS REPORT

The contractor shall provide a monthly Technical Progress Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, Financial Identification Number (FIN), project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task/task order:

- (a) A listing of the efforts completed during the period, and milestones reached or, if missed, an explanation provided;
- (b) Any problems or delays encountered or anticipated and recommendations for resolution. If the recommended resolution involves a contract modification, e.g., change in work

F.3 (Continued)

requirements, level of effort (cost) or schedule delay, the contractor shall submit a separate letter to the contracting officer identifying the required change and estimated cost impact.

- (c) A summary of progress to date; and
- (d) Plans for the next reporting period.

[End of Clause]

F.4 NRCAR 2052.212-72 FINANCIAL STATUS REPORT

The contractor shall provide a monthly Financial Status Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, Financial Identification Number (FIN), project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task:

- (a) Provide total estimated cost (value) of the project as reflected in the contract, the amount of funds available in the contract to date, and the balance of funds required to complete the work as follows:
 - (1) Total estimated contract amount.
 - (2) Total funds obligated to date.
 - (3) Total costs incurred this reporting period.
 - (4) Total costs incurred to date.
 - (5) Provide a detail of all direct and indirect costs incurred during the reporting period for the entire contract or each task, if it is a task ordering contract.
 - (6) Balance of obligations remaining.
 - (7) Balance of funds required to complete contract/task order.
 - (8) Contractor Spending Plan (CSP) status:
 - (i) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.
 - (ii) Indicate if there has been a significant change in

F.4 (Continued)

the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the change, whether there is any projected overrun, and when additional funds would be required. If there have been no changes to the original NRC-approved CSP projections, a written statement to that effect is sufficient in lieu of submitting a detailed response to item 8.

- (9) A revised CSP is required with the Financial Status Report whenever the contractor or the contracting officer has reason to believe that the total cost for performance of this contract will be either greater or substantially less than what had been previously estimated.
- (b) If the data in this report indicates a need for additional funding beyond that already obligated, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

[End of Clause]

F.5 PLACE OF DELIVERY--REPORTS (JUN 1988)

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

- (a) Project Officer (3 copies)

US Nuclear Regulatory Commission
Attn: Tom Walker - NLN-344
Division of Systems Research
Office of Nuclear Regulatory Research
Washington, DC 20555

- (b) Contracting Officer (1 copy)

[End of Clause]

F.6 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on 04/26/94 and will expire on 04/25/96.

[End of Clause]

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 NRCAR 2052.215-71 PROJECT OFFICER AUTHORITY
(JAN 1993)

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

Name: Tom Walker

Address: US Nuclear Regulatory Commission
Division of Systems Research - NLN-344
Office of Nuclear Regulatory Research
Washington, DC 20555

Telephone Number: (301) 492-3538

- (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, 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, approval of technical 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

G.1 (Continued)

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.
 - (e) The contractor shall proceed promptly with the performance of technical directions duly issued by the project officer in the manner prescribed by this clause and within the project officer's authority under the provisions of this clause.
 - (f) If, in the opinion of the contractor, any instruction or direction issued by the project officer is within one of the categories as defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request the contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.
 - (g) Any unauthorized commitment or direction issued by the project officer may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.
 - (h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect there to is subject to FAR 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.

G.1 (Continued)

- (2) Assist the contractor in the resolution of technical problems encountered during performance.
- (3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

[End of Clause]

G.2 NRCAR 2052.215-82 TRAVEL REIMBURSEMENT
- ALTERNATE 1 (JAN 1993)

- (a) The contractor is encouraged to use Government contract airlines, AMTRAK rail services, and discount hotel/motel properties in order to reduce the cost of travel under this contract. The contracting officer shall, upon request, provide each traveler with a letter of identification which is required in order to participate in this program. The Federal Travel Directory (FTD) identifies carriers, contract fares, schedules, payment conditions, and hotel/motel properties which offer their services and rates to Government contractor personnel traveling on official business under this contract. The FTD, which is issued monthly, may be purchased from the U.S. Government Printing Office, Washington, DC 20402.
- (b) The contractor will be reimbursed for reasonable travel costs incurred directly and specifically in the performance of this contract. The cost limitations for travel costs are determined in accordance with the specific travel regulations cited in FAR 31.205-46, as are in effect on the date of the trip. Travel costs for research and related activities performed at State and nonprofit institutions, in accordance with Section 12 of Pub. L. 100-679, shall be charged in accordance with the contractor's institutional policy to the degree that the limitations of Office of Management and Budget (OMB) guidance are not exceeded. Applicable guidance documents include OMB Circular A-87, Cost Principles for State and Local Governments; OMB Circular A-122, Cost Principles for Nonprofit Organizations; and OMB Circular A-21, Cost Principles for Educational Institutions.
- (c) When the Government changes the Federal Travel Regulations, or other applicable regulations, it is the responsibility of the contractor to notify the contracting officer in accordance with the Limitations of Cost clause of this contract if the contractor will be unable to make all of the approved trips and remain within the cost and fee limitations of this contract due to the changes.

G.2 (Continued)

(End of Clause)

G.3 NRCAR 2052.216-72 INDIRECT COST RATES
- ALTERNATE 1 (JAN 1993)

The contractor is reimbursed for allowable indirect costs in accordance with the following predetermined rates:

Overhead	44.0% of MTDC*	7/1/92 - 6/30/94
	43.0% of MTDC*	7/1/94 - 6/30/96

*MTDC: Modified Total Direct Costs include salaries and wages, fringe benefits, travel, supplies and materials, computer services, and publications. They do NOT include equipment and tuition remission.

[End of Clause]

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 NRCAR 2052.209-73 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.

H.1 (Continued)

- (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, 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

H.1 (Continued)

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

H.1 (Continued)

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

H.1 (Continued)

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

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

[End of Clause]

H.2 NRCAR 2052.215-70 KEY PERSONNEL (JAN 1993)

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

Michael L. Corradini

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 or his/her authorized representative shall evaluate the request and promptly notify the contractor of his or her approval or disapproval in writing.
- (d) If the contracting officer determines that suitable and timely

H.2 (Continued)

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.

[End of Clause]

H.3 PUBLICATION OF RESEARCH RESULTS - UNIVERSITIES (MAR 1994)

- (a) The principal investigator(s)/contractor shall comply with the provisions of NRC Handbook 3.8 (formerly MC 3202) and NRC Manual Chapter 3206 regarding publication in refereed scientific and engineering journals or dissemination to the public of any information, oral or written, concerning the work performed under this contract. Failure to comply with this clause shall be grounds for termination of this contract.
- (b) The principal investigator(s)/contractor may publish the results of this work in refereed scientific and engineering journals or in open literature and present papers at public or association meetings at interim stages of work, in addition to submitting to NRC the final reports and other deliverables required under this contract. However, such publication and papers shall focus on advances in science and technology and minimize conclusions and/or recommendations which may have regulatory implications.
- (c) The principal investigator(s) shall coordinate all such publications with, and transmit a copy of the proposed article or paper to, the NRC Contracting Officer or Project Officer, preferably thirty (30) days in advance, but no later than simultaneously with submission for publication. The NRC agrees to review and provide comments within thirty (30) days after receipt of a proposed publication. The contractor agrees to consider comments and suggestions submitted by the NRC, but retains the sole right to determine whether such changes or deletions will be made. In any event, the contractor agrees, when directed by the NRC, either to not include any reference to NRC support for the research giving rise to the publication, or to include a disclaimer that the results and conclusions of the paper are strictly those of the author and do not reflect, necessarily, the view or position of the NRC. Associated publication costs in such instances

H.3 (Continued)

shall be borne by the contractor. Technical progress reports shall not be published without prior approval of the NRC.

(End of Clause)

H.4 NRCAR 2052.235-72 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)

The contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of its employees and of members of the public, including NRC employees and contractor personnel, and to minimize danger from all hazards to life and property and shall comply with all applicable health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission and the Department of Labor. In the event that the contractor fails to comply with these regulations or requirements, the contracting officer may, without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work; thereafter, a start order for resumption of work may be issued at the discretion of the contracting officer. The contractor shall make no claim for an extension of time or for compensation or damages by reason of, or in connection with, this type of work stoppage.

[End of Clause]

H.5 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY (JUNE 1988)

- (a) The NRC will provide the contractor with the following items for use under this contract. This equipment is being transferred from contract no. NRC-04-91-061.

See Attached No. 7 for List of Equipment

H.6

- (b) Only the equipment/property listed above in the quantities shown will be provided by the Government. This property is subject to the provisions of the Government Property clause under this contract. All other equipment/property required in performance of the contract shall be furnished by the Contractor.

[End of Clause]

H.7 GOVERNMENT PROVIDED MATERIAL

H.7 (Continued)

The NRC will provide the following material to the contractor:

- o NUREG/CR reports as required.
- o NRC contractor data and reports as required.

(End of Clause)

H.8 ARTICLE - PROPERTY MANAGEMENT

Prior to the closeout of a project, a reconciled report will be developed by the UW to record available equipment and material purchases with NRC funds. The report shall contain the property description or nomenclature, manufacturer, model number, serial number, quantity, acquisition cost, receipt date, condition code, and contractor property identification number. The report shall also identify any ongoing or contemplated NRC projects on which the property could be used. If no NRC property is assigned to the project, the UW shall provide a negative report. This report should be submitted as soon as possible after a project completion or termination decision has been made, but not later than 60 days after the termination date.

The report shall be submitted to the Office of Nuclear Regulatory Research, ATTN: Financial Management, Procurement and Administration Staff.

(End of Clause)

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.202-1	DEFINITIONS	SEP 1991
52.203-1	OFFICIALS NOT TO BENEFIT	APR 1984
52.203-3	GRATUITIES	APR 1984
52.203-5	COVENANT AGAINST CONTINGENT FEES	APR 1984
52.203-7	ANTI-KICKBACK PROCEDURES	OCT 1988
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	SEP 1990
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	JAN 1990
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	NOV 1992
52.215-1	EXAMINATION OF RECORDS BY COMPTROLLER GENERAL	FEB 1993
52.215-2	AUDIT - NEGOTIATION Alternate II (FEB 1993)	FEB 1993
52.215-22	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA	JAN 1991
52.215-24	SUBCONTRACTOR COST OR PRICING DATA	DEC 1991
52.215-26	INTEGRITY OF UNIT PRICES Alternate I (APR 1991)	APR 1991
52.215-27	TERMINATION OF DEFINED BENEFIT PENSION PLANS	SEP 1989
52.215-33	ORDER OF PRECEDENCE	JAN 1986
52.215-39	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS OTHER THAN PENSIONS (PRB)	JUL 1991
52.216-11	COST CONTRACT - NO FEE	APR 1984
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL DISADVANTAGED BUSINESS CONCERNS	FEB 1990

I.1 (Continued)

NUMBER	TITLE	DATE
52.219-13	UTILIZATION OF WOMEN-OWNED SMALL BUSINESSES	AUG 1986
52.220-3	UTILIZATION OF LABOR SURPLUS AREA CONCERNS	APR 1984
52.222-3	CONVICT LABOR	APR 1984
52.222-26	EQUAL OPPORTUNITY	APR 1984
52.222-35	AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS	APR 1984
52.222-36	AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS	APR 1984
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA	JAN 1988
52.223-2	CLEAN AIR AND WATER	APR 1984
52.223-6	DRUG-FREE WORKPLACE	JUL 1990
52.225-11	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	MAY 1992
52.227-1	AUTHORIZATION AND CONSENT Alternate I (APR 1984)	APR 1984
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	APR 1984
52.227-11	PATENT RIGHTS - RETENTION BY THE CONTRACTOR (SHORT FORM)	JUN 1989
52.228-7	INSURANCE - LIABILITY TO THIRD PERSONS	APR 1984
52.232-17	INTEREST	JAN 1991
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-25	PROMPT PAYMENT	SEP 1992
52.232-28	ELECTRONIC FUNDS TRANSFER PAYMENT METHODS	APR 1989
52.233-1	DISPUTES	DEC 1991
52.233-3	PROTEST AFTER AWARD Alternate I (JUN 1985)	JUN 1985
52.242-1	NOTICE OF INTENT TO DISALLOW COSTS	APR 1984
52.242-13	BANKRUPTCY	APR 1991
52.243-2	CHANGES - COST-REIMBURSEMENT Alternate V (APR 1984)	AUG 1987
52.244-2	SUBCONTRACTS (COST-REIMBURSEMENT AND LETTER CONTRACTS)	JUL 1985
52.244-5	COMPETITION IN SUBCONTRACTING	APR 1984
52.245-5	GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS) Alternate I (JUL 1985)	JAN 1986

I.1 (Continued)

NUMBER	TITLE	DATE
52.249-5	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (EDUCATIONAL AND OTHER NONPROFIT INSTITUTIONS)	APR 1984
52.253-1	COMPUTER GENERATED FORMS	JAN 1991

[End of Clause]

I.2 52.203-9 REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY--MODIFICATION (NOV 1990)

- (a) Definitions. The definitions set forth in FAR 3.104-4 are hereby incorporated in this clause.
- (b) The Contractor agrees that it will execute the certification set forth in paragraph (c) of this clause when requested by the Contracting Officer in connection with the execution of any modification of this contract.
- (c) Certification. As required in paragraph (b) of this clause, the officer or employee responsible for the modification proposal shall execute the following certification:

CERTIFICATE OF PROCUREMENT INTEGRITY--
MODIFICATION (NOV 1990)

(1) I, [Name of certifier] ^{Robert W. Erickson, Director} ~~Research Administration-Financial~~, am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended* (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement (contract and modification number).

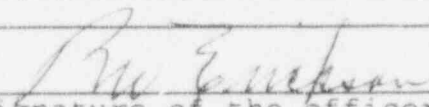
(2) As required by subsection 27(e)(1)(B) of the Act, I further certify that to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of [Name of Offeror] ^{Board of Regents of} ~~The University of Wisconsin System~~ who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a

I.2 (Continued)

violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity--Modification (Continuation Sheet), ENTER NONE IF NONE EXISTS)

NONE


[Signature of the officer or employee responsible for the modification proposal and date]

Robert W. Erickson, Director
Research Administration-Financial

APR 18 1994

[Typed name of the officer or employee responsible for the modification proposal]

* Subsections 27(a), (b), and (d) are effective on December 1, 1990. Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

- (d) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer or bid, may rely upon a one-time certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the contractor. If a contractor decides to rely on a certification executed prior to the suspension of section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that section 27 has been reinstated. These certifications shall be maintained by the Contractor for a period of 6 years from the date a certifying employee's employment with the company ends or, for an agency, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the contractor.

I.2 (Continued)

- (e) The certification required by paragraph (c) of this clause is a material representation of fact upon which reliance will be placed in executing this modification.

[End of Clause]

I.3 52.216-7 ALLOWABLE COST AND PAYMENT (JUL 1991)

- (a) Invoicing. The Government shall make payments to the Contractor when requested as work progresses, but (except for small business concerns) not more often than once every 2 weeks, in amounts determined to be allowable by the Contracting Officer in accordance with 31.3 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract and the terms of this contract. The Contractor may submit to an authorized representative of the Contracting Officer, in such form and reasonable detail as the representative may require, an invoice or voucher supported by a statement of the claimed allowable cost for performing this contract.
- (b) Reimbursing costs. (1) For the purpose of reimbursing allowable costs (except as provided in subparagraph (2) below, with respect to pension, deferred profit sharing, and employee stock ownership plan contributions), the term "costs" includes only--
- (i) Those recorded costs that, at the time of the request for reimbursement, the Contractor has paid by cash, check, or other form of actual payment for items or services purchased directly for the contract;
 - (ii) When the Contractor is not delinquent in paying costs of contract performance in the ordinary course of business, costs incurred, but not necessarily paid, for--
 - (A) Materials issued from the Contractor's inventory and placed in the production process for use on the contract;
 - (B) Direct labor;
 - (C) Direct travel;
 - (D) Other direct in-house costs; and
 - (E) Properly allocable and allowable indirect costs, as shown in the records maintained by

I.3 (Continued)

the Contractor for purposes of obtaining reimbursement under Government contracts; and

- (iii) The amount of progress payments that have been paid to the Contractor's subcontractors under similar cost standards.
- (2) Contractor contributions to any pension or other postretirement benefit, profit-sharing or employee stock ownership plan funds that are paid quarterly or more often may be included in indirect costs for payment purposes; Provided, that the Contractor pays the contribution to the fund within 30 days after the close of the period covered.
- (3) Notwithstanding the audit and adjustment of invoices or vouchers under paragraph (g) below, allowable indirect costs under this contract shall be obtained by applying indirect cost rates established in accordance with paragraph (d) below.
- (4) Any statements in specifications or other documents incorporated in this contract by reference designating performance of services or furnishing of materials at the Contractor's expense or at no cost to the Government shall be disregarded for purposes of cost-reimbursement under this clause.
- (c) Small business concerns. A small business concern may be paid more often than every 2 weeks and may invoice and be paid for recorded costs for items or services purchased directly for the contract, even though the concern has not yet paid for those items or services.
- (d) Final indirect cost rates. (1) Final annual indirect cost rates and the appropriate bases shall be established in accordance with Subpart 42.7 of the Federal Acquisition Regulation (FAR) in effect for the period covered by the indirect cost rate proposal.
- (2) The Contractor shall within 90 days after the expiration of each of its fiscal years, or by a later date approved by the Contracting Officer, submit to the cognizant Contracting Officer responsible for negotiating its final indirect cost rates and, if required by agency procedures, to the cognizant audit activity proposed final indirect cost rates for that period and supporting cost data specifying the contract and/or subcontract to which the rates apply. The proposed rates shall be based on the Contractor's actual cost experience for that period. The appropriate Government representative and

I.3 (Continued)

Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the Contractor's proposal.

- (3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.
 - (4) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.
- (e) Billing rates. Until final annual indirect cost rates are established for any period, the Government shall reimburse the Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates--
- (1) Shall be the anticipated final rates; and
 - (2) May be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.
- (f) Quick-closeout procedures. When the Contractor and Contracting Officer agree, the quick-closeout procedures of Subpart 42.7 of the FAR may be used.
- (g) Audit. At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be (1) reduced by amounts found by the Contracting Officer not to constitute allowable costs or (2) adjusted for prior overpayments or underpayments.
- (h) Final payment. (1) The Contractor shall submit a completion invoice or voucher, designated as such, promptly upon completion of the work, but no later than one year (or

I.3 (Continued)

longer, as the Contracting Officer may approve in writing) from the completion date. Upon approval of that invoice or voucher, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs and that part of the fee (if any) not previously paid.

- (2) The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract, to the extent that those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee whose assignment is in effect at the time of final payment shall execute and deliver--
- (i) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits, or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and
 - (ii) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, except--
 - (A) Specified claims stated in exact amounts, or in estimated amounts when the exact amounts are not known;
 - (B) Claims (including reasonable incidental expenses) based upon liabilities or the Contractor to third parties arising out of the performance of this contract; provided, that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and
 - (C) Claims for reimbursement of costs, including reasonable incidental expenses, incurred by the

I.3 (Continued)

Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

[End of Clause]

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

J.1 ATTACHMENTS (MAR 1987)

<u>Attachment Number</u>	<u>Title</u>
1	Billing Instructions
2	NRC Contractor Organizational Conflicts of Interest
3	NRC Handbook 3.8
4	Publishing Documents in the NUREG Series, NUREG-0650, Revision 1
5	List of Government Furnished Property

EDISON PROPERTY CONTROL
DETAIL OF SPLIT FUNDING GROUPS

09/21/97

COST

GROUP	CLASSIFICATION	DESCRIPTION	QTY	UNIT	ACCT	EXP	COST
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		1,021.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		343.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		1,771.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		411.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		10.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		3,511.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		48.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		10.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		30.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		44.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		2,511.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		2,011.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		908.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		321.00
52000004	COMPOSITE PART	52000004 2770510 MELT THERM 575.5000 3100 0000 2770510 MELT THERM 575.5000 21 1000 0000 2770510 MELT THERM 575.5000	1	EA	4800		411.00
					GROUP TOTAL		17,791.00

RECORDS PRINTED IN SPLIT FUNDING GROUP DETAIL 0000000015
TOTAL COST OF SPLIT FUNDING GROUPS
63 LINES PRINTED ON PAGE