

**AWARD/CONTRACT**

1. THIS CONTRACT IS A RATIONED ITEM UNDER DPAS (15 CFR 750)

RATING

PAGE OF TOTAL

2. CONTRACT (If Fed. Acq. Admin.) NO.

NRC-04-90-095

3. EFFECTIVE DATE

SEP 18 1990

4. REQUISITION PURCHASE REQUEST PROJECT NO.

RES-89-058

5. ISSUED BY

US Nuclear Regulatory Commission  
Division of Contracts and Property Management  
Mail Stop P-1042  
Washington, DC 20555

6. ADMINISTERED BY (If other than item 5)

CODE

7. NAME AND ADDRESS OF CONTRACTOR (No. street, city, country, state and ZIP Code)

Science Applications International Corporation  
10260 Campus Point Drive, San Diego, CA 92121  
c/o Energy Systems Group  
1710 Goodridge Drive, M/S 2-5-1  
McLean, VA 22102

8. DELIVERY

FOB ORIGIN  OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT

NET

10. SUBMIT INVOICES (If copies unless otherwise specified) TO THE ADDRESS SHOWN IN

See I.7

CODE

FACILITY CODE

11. SHIP TO/MARK FOR

CODE

12. PAYMENT WILL BE MADE BY

CODE

See F.5 (herein)

See I.7 (herein)

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:

10 U.S.C. 2304(c)(1)

41 U.S.C. 253(c)(1)

14. ACCOUNTING AND APPROPRIATION DATA

B&R No.: 0601922030 FIN No.: L15300  
Appn. No: 31X0200.600 Obligated: \$75,000.00

15A. ITEM NO.

15B. SUPPLIES/SERVICES

15C. QUANTITY

15D. UNIT

15E. UNIT PRICE

15F. AMOUNT

The U.S. Nuclear Regulatory Commission and the Electric Power Resource Institute hereby accepts Science Applications International Corporation's technical proposal dated 7/21/89 as revised 10/20/89, 5/9/90, 7/3/90 and 7/20/90, to perform the work specified herein on a cost plus fixed fee basis for a two year period.

THIS IS A TRIPARTITE CONTRACT TO BE EQUALLY FUNDED BY NRC AND EPRI.  
THIS CONTRACT IS ALSO AN INCREMENTALLY FUNDED CONTRACT.

15G. TOTAL AMOUNT OF CONTRACT **\$555,227.00**

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CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17.  CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 5 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 in 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)

SEE SIGNATURE PAGE

20A. NAME OF CONTRACTING OFFICER

SEE SIGNATURE PAGE

19B. NAME OF CONTRACTOR

19C. DATE SIGNED

20B. UNITED STATES OF AMERICA

20C. DATE SIGNED

BY \_\_\_\_\_  
(Signature of person authorized to sign)

BY \_\_\_\_\_  
(Signature of Contracting Officer)

9010160145 900913  
PDR CONTR  
NRC-04-90-095 PNU

SIGNATURE PAGE

Contractor is required to sign this document and return five 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.)

SCIENCE APPLICATIONS INTERNATIONAL CORP.

7/27/90  
Date

Thomas J. Rodehan  
Name and Title

THOMAS J. RODEHAN  
SR. CONTRACT REPRESENTATIVE  
ELECTRIC POWER RESEARCH INSTITUTE, INC.

Sept. 11, 1990  
Date

Bruce Rytkonen  
Name and Title

BRUCE RYTKONEN  
CONTRACTS MANAGER

US NUCLEAR REGULATORY COMMISSION

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mary H. Mace  
Contracting Officer

## Administrative Changes

The following administrative changes are hereby made:

- (1) Subsection B.2, CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE is hereby completed as follows:

## B.2 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE

1. It is estimated that the total cost for full performance of this contract will be \$555,227.00, of which the sum of \$507,057.00 represents the estimated reimbursable costs and of which \$48,170.00 represents the fixed fee. The total estimated cost shall be jointly and equally funded by the U.S. Nuclear Regulatory Commission (NRC) and the Electric Power Research Institute (EPRI) as follows:

NRC - \$277,613.50 (50%)  
EPRI - 277,613.50 (50%)

2. Total funds currently available for payment and obligated to this contract are \$150,000.00, of which \$136,995.00, represents the estimated reimbursable costs and of which \$13,005.00 represents the fixed fee. The obligated funds are provided as follows:

NRC - \$75,000.00  
EPRI - \$75,000.00

3. The Contractor shall invoice the NRC for 50% of incurred costs and EPRI for 50% of incurred cost during this contract period.
4. There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of the cost for performance of work under this contract and the actual cost for performance of that work.
5. It is estimated that the amount currently allotted will cover performance through six months after the effective date of the contract.

(End of Clause)

- (2) Subsection F.1, NOTICE LISTING CONTRACT CLAUSES INCORPORATED is revised to change the date of FAR Clause 52.212-13 from APR 1984 to AUG 1989.
- (3) Subsection F.3, TECHNICAL PROGRESS REPORT (JUNE 1988) (OMB CLEARANCE NUMBER 3150-0112) is hereby revised to include the following:
- e. Describe all activities of maintaining a separation of the research hereunder from commercial activities of marketing, documenting, and developing guidelines for the verification and validation of expert systems within the nuclear utility industry.

(4) Subsection F.5, PLACE OF DELIVERY - REPORTS (JUNE 1988) is hereby completed by inserting the following:

a. NRC Project Officer (4 copies)

U.S. Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
Attn: Leo Beltracchi, Project Officer  
Mail Stop: NLN-316  
Washington, DC 20555

b. EPRI Project Manager (3 copies)

Electric Power Research Institute  
Attn: Dr. Joseph Nasser, Project Manager  
3412 Hillview Avenue  
Palo Alto, CA 94303

c. U.S. Nuclear Regulatory Commission (1 copy)  
Contract No.: NRC-04-90-095  
Division of Contracts and Property Management  
Washington, DC 20555

d. EPRI Contracting Officer (1 copy)  
Electric Power Research Institute  
Attn: Director  
Department of Contracts  
3412 Hillview Avenue  
Palo Alto, CA 94303

(5) Subsection G.1, INDIRECT COST RATES (JUNE 1988) is hereby completed as follows:

Rate	Base	Period
Fringe Benefits - 39.50%	Total direct labor	2/1/90 - 1/31/91
Overhead - 83.10%	Total direct labor	2/1/90 - 1/31/91
Material & Subcontract Overhead - 2%	Total material & subcontract costs	2/1/90 - 1/31/91
General & Administrative - 10.3%	Total direct costs	2/1/90 - 1/31/91

(6) Subsection G.2, PROJECT OFFICER AUTHORITY (JUNE 1988), is hereby completed by inserting the following:

(NRC) Name: Leo Beltracchi  
Address: U.S. Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
Mail Stop: NLN 316  
Washington, DC 20555  
Telephone: 301-492-3549

(EPRI) Name: Dr. Joseph Nasser  
Address: Electric Power Research Institute  
3412 Hillview Avenue  
Palo Alto, CA 94303  
Telephone: 415-855-2188 07

- (7) Subsection G.4, REMITTANCE ADDRESS (MAR 1987) is hereby completed by inserting the following:

Name: Science Applications International Corporation  
Address: P.O. Box 64115  
Baltimore, MD 21264

- (8) Subsection G.5, Project Officer is deleted entirely.  
(9) Subsection H.1, KEY PERSONNEL (JUNE 1988) is hereby completed by inserting the following:

Lance Miller  
Steven Mirsky  
Elizabeth Groundwater  
Nina Thomas

- (10) Section H., SPECIAL CONTRACT REQUIREMENTS is hereby revised to include the following:

H.16 NRC/EPRI Review and Approval

The Contractor shall submit for approval as specified herein, any drawings, reports, manuals, or other data to NRC/EPRI. Within thirty days after receipt of such documents, the NRC Project Officer/EPRI Project Manager will provide comments to the Contractor which shall be mutually agreed upon and included, if necessary, into any of the aforementioned documents.

- (11) The changes set forth below are hereby made to SECTION I - CONTRACT CLAUSES:

- (a) The following FAR Clauses incorporated by reference are deleted:

52.217-1	APR 1984	LIMITATION OF PRICE AND CONTRACTOR OBLIGATIONS
52.217-2	APR 1984	CANCELLATION OF ITEMS ALTERNATE I (APR 1984)
52.220-4	APR 1984	LABOR SURPLUS AREA SUBCONTRACTING PROGRAM
52.229-10	OCT 1988	STATE OF NEW MEXICO GROSS RECEIPTS AND COMPENSATING TAX
52.233-3	JUN 1985	PROTEST AFTER AWARD ALTERNATE I (JUN 1985)

(b) The following FAR Clauses are hereby added and are incorporated herein by reference:

52.232-22 APR 1984 LIMITATION OF FUNDS

52.232-9 APR 1984 LIMITATION ON WITHHOLDING OF PAYMENT

52.233-3 AUG 1989 PROTEST AFTER AWARD ALTERNATE I

- (12) Subsection I.5, PROMPT PAYMENT (FAR 52.232-25)(FEB 1988) ALTERNATE II (FEB 1988) is hereby deleted in its entirety and substituted with I.5, PROMPT PAYMENT (FAR 52.232-25) (APR 1989) which is incorporated herein in full text as set forth on succeeding pages.
- (13) Subsection I.9, ELECTRONIC FUNDS TRANSFER PAYMENT METHODS (FAR 52.232-28) (APR 1989) is hereby added and is incorporated here in full text as set forth on succeeding pages.
- (13) Subsection I.10, LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS--(FAR 52.203-12)(JAN 1990) is hereby added and is incorporated herein in full text as set forth on succeeding pages.
- (14) Subsection I.11, PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS, DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (52.209-6) (MAY 1989) is hereby added and is incorporated herein in full text as set forth on succeeding pages.
- (15) Subsection I.12, RESTRICTIONS ON CONTRACTING WITH SANCTIONED PERSONS (52.225-13)(MAY 1989) is hereby added and is incorporated herein in full text as set forth on succeeding pages.
- (16) Subsection I.13, DRUG-FREE WORKPLACE (FAR 52.223-6)(MAR 1989) is hereby added and is incorporated herein in full text as set forth on succeeding pages.
- (17) Subsection G.3, TRAVEL REIMBURSEMENT (JUNE 1988) ALTERNATE I (JUNE 1988) is hereby revised by deleting paragraphs b. and c. and substituting the following:

"The contractor shall be reimbursed for travel related expenses in accordance with FAR 31.205-46--TRAVEL COSTS and the Defense Contract Audit Agency (DCAA) approved Contractor's Employee Business Expense Policy. Refer to Attachment 6 of this contract.

- (18) Subsection J.1, ATTACHMENTS (MAR 1987) is hereby revised as follows:

<u>Attachment Number</u>	<u>Title</u>
1	Billing Instructions
2	NRC Contractor Organizational Conflicts of Interest (41 CFR Part 20)
3	NRC Manual Chapter 3202
4	NRC Manual Chapter 3206
5	NUREG-0650 Technical Writing Style Guide
6	Contractor's Employee Business Expense Policy

All other terms and conditions remain unchanged.

## 1.5 PROMPT PAYMENT (FAR 52.232-25) (APR 1989)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or an electronic funds transfer is made. Definitions of pertinent terms are set forth in 32.902. All days referred to in this clause are calendar days, unless otherwise specified. The term "foreign vendor" means an incorporated concern not incorporated in the United States, or unincorporated concern having its principal place of business outside the United States.

### (a) Invoice Payments.

(1) For purposes of this clause, "invoice payment" means a Government disbursement of monies to a Contractor under a contract or other authorization for supplies or services accepted by the Government. This includes payments for partial deliveries that have been accepted by the Government and final cost or fee payments where amounts owed have been settled between the Government and the Contractor.

(2) Except as indicated in subparagraph (a)(3) and paragraph (c) of this clause, the due date for making invoice payments by the designated payment office shall be the later of the following two events:

(i) The 30th day after the designated billing office has received a proper invoice from the Contractor.

(ii) The 30th day after Government acceptance of supplies delivered or services performed by the Contractor. On a final invoice where the payment amount is subject to contract settlement actions, acceptance shall be deemed to have occurred on the effective date of the contract settlement. However, if the designated billing office fails to annotate the invoice with the actual date of receipt, the invoice payment due date shall be deemed to be the 30th day after the date the Contractor's invoice is dated, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(3) The due date on contracts for meat and meat food products, contracts for perishable agricultural commodities, contracts for dairy products, edible fats or oils, and food products prepared from edible fats or oils, and contracts not requiring submission of an invoice shall be as follows:

(i) The due date for meat and meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)) and further defined in Pub. L. 98-181 to include any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, will be as close as possible to, but not later than, the 7th day after product delivery.

(ii) The due date for perishable agricultural commodities, as defined in Section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(44)), will be as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(iii) The due date for dairy products, as defined in Section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, will be as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received.

(4) An invoice is the Contractor's bill or written request for payment under the contract for supplies delivered or services performed. An invoice shall be prepared and submitted to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(4)(i) through (a)(4)(viii) of the clause. If the invoice does not comply with these requirements, then the contractor will be notified of the defect within 7 days after receipt of the invoice at the designated billing office (3 days for meat and meat food products and 5 days for perishable agricultural commodities, edible fats or oils, and food products prepared from edible fats or oils). Untimely notification will be taken into account in the computation of any interest penalty owed the Contractor in the manner described in subparagraph (a)(6) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice date.

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, prompt payment discount terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number and mailing address of person to be notified in event of a defective invoice.

(viii) Any other information or documentation required by other requirements of the contract (such as evidence of shipment).

\*(5) An interest penalty shall be paid automatically by the Government, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(5)(i) through (a)(5)(iii) of this clause are met, if applicable. An interest penalty shall not be paid on contracts awarded to foreign vendors outside the United States for work performed outside the United States.

\* INTEREST PENALTIES APPLY TO THE GOVERNMENT ONLY.



(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, or contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(6) The interest penalty shall be at the rate established by the Secretary of the Treasury under Section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority. This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the contractor of a defective invoice within the periods prescribed in subparagraph (a)(4) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the contractor, Government acceptance shall be deemed to have occurred constructively on the 30 day after the contractor delivered the supplies or performed the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or contractor compliance with a contract provision. In the event that actual acceptance occurs within the constructive acceptance period, the determination of an interest penalty shall be based on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the contractor of defects in invoices submitted to the Government, but this may not exceed 7

days (3 days for meat and meat food products and 5 days for perishable agricultural commodities, dairy products, edible fat or oils, and food products prepared from edible fats or oils).

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(7) An interest penalty shall also be paid automatically by the designated payment office, without request from the contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated as described in subparagraph (a)(6) of this clause on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(8) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the contractor:

(i) Is owed an interest penalty;

(ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(b) Contract Financing Payments.

(1) For purposes of this clause, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government. Contract financing payments include advance payments, progress payments based on cost under the clause at 52.232-16, Progress Payments, progress payments based on a percentage or stage of completion (32.102(e)(1)) other than those made under the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, or the clause at 52.232-10, Payments Under Fixed-Price Architect-Engineer Contracts, and interim payments on cost type contracts.

(2) For contracts that provide for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the 30th day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(3) For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(4) Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

(End of Clause)

1.9 ELECTRONIC FUNDS TRANSFER PAYMENT METHODS (FAR 52.232-28)  
(APR 1989)

Payments under this contract will be made by the Government either by check or electronic funds transfer (through the Treasury Fedline Payment System (FEDLINE) or the Automated Clearing House (ACH), at the option of the Government. After award, but no later than 14 days before an invoice or contract financing request is submitted, the Contractor shall designate a financial institution for receipt of electronic funds transfer payment, and shall submit this designation to the Contracting Officer or other Government Official, as directed.

(a) For payment through FEDLINE, the Contractor shall provide the following information:

(1) Name, address, and telegraphic abbreviation of the financial institution receiving payment.

(2) The American Bankers Association 9-digit identifying number for wire transfers of the financing institution receiving payment if the institution has access to the Federal Reserve Communications System.

(3) Payee's account number at the financial institution where funds are to be transferred.

(4) If the financial institution does not have access to the Federal Reserve Communications System, name, address, and telegraphic abbreviation of the correspondent financial institution through which the financial institution receiving payment obtains wire transfer activity. Provide the telegraphic abbreviation and the American Bankers Association identifying number for the correspondent institution.

(b) For payment through ACH, the Contractor shall provide the following information:

(1) Routing transit number of the financial institution receiving payment (same as American Bankers Association identifying number used for FEDLINE).

(2) Number of account to which funds are to be deposited.

(3) Type of depositor account ("C" for checking, "S" for savings).

(4) If the Contractor is a new enrollee to the ACH system, a "Payment Information Form," SF 3881, must be completed before payment can be processed.

(c) In the event the Contractor, during the performance of this contract, elects to designate a different financial institution for the receipt of any payment made using electronic funds transfer procedures, notification of such change and the required information specified above must be received by the appropriate Government official 30 days prior to the date such change is to become effective.

(d) The documents furnishing the information required in this clause must be dated and contain the signature, title, and telephone number of the Contractor official authorized to provide it, as well as the Contractor's name and contract number.

(e) Contractor failure to properly designate a financial institution or to provide appropriate payee bank account information may delay payment of amounts otherwise properly due.

(End of Clause)

I.10 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL  
TRANSACTIONS--(FAR 52.203-12) (JAN 1990)

(a) Definitions.

"Agency", as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (a) The awarding of any Federal contract.
- (b) The making of any Federal grant.
- (c) The making of any Federal loan.
- (d) The entering into of any cooperative agreement.
- (e) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (a) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.
- (b) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.
- (c) A special Government employee, as defined in section 202, title 18, United States Code.

(d) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(1) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in paragraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(1)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.



(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those activities expressly authorized by subdivision (b)(3)(1)(A) of this clause are permitted under this clause.

(11) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements

imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable.

Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(iii) Disclosure.

(A) The Contractor who requests or receives from an agency a Federal Contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or received any subcontract exceeding \$100,000 under the Federal contract.

(D) All subcontractor disclosure forms (but not certification) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(iv) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(v) Penalties.

(A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

1.11 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING  
WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR  
DEBARMENT (52.209-6) (MAY 1989)

(a) The Government suspends or debar Contractors to protect the Government's interests. Contractors shall not enter into any subcontract equal to or in excess of \$25,000 with a Contractor that has been debarred, suspended, or proposed for debarment unless there is a compelling reason to do so. If a Contractor intends to subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the list of Parties Excluded from Procurement Programs), a corporate officer or designee of the Contractor shall notify the Contracting Officer, in writing, before entering into such subcontract. The notice must include the following:

- (1) The name of the subcontractor;
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the list of Parties Excluded from Procurement Programs;
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the list of Parties Excluded from Procurement Programs; and
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(b) The Contractor's compliance with the requirements of 52.209-6 will be reviewed during Contractor Purchasing System Reviews (see FAR Subpart 44.3).

(End of clause)

1.12 RESTRICTIONS ON CONTRACTING WITH SANCTIONED PERSONS  
(52.225-13) (MAY 1989)

(a) Definitions. (1) "Component part," means any article which is not usable for its intended functions without being imbedded or integrated into any other product and which, if used in production of a finished product, would be substantially transformed in that process.

(2) "Finished product," means any article which is usable for its intended function without being imbedded in, or integrated into, any other product. It does not include an article produced by a person, other than a sanctioned person, that contains parts or components of the sanctioned person if the parts or components have been substantially transformed during production of the finished product.

(3) "Sanctioned person," means a company or other foreign person upon whom prohibitions have been imposed.

(4) "Substantially transformed," when referring to a component part or finished product, means that the part or product has been subjected to a substantial manufacturing or processing operation by which the part or product is converted or combined into a new and different article of commerce having a new name, character, and use.

(b) General. Section 2443 of the Multilateral Export Control Enhancement Amendments Act (Pub. L. 100-418) and Executive Order 12661, effective December 28, 1988, impose, for a period of 3 years, with certain exceptions, a prohibition on contracting with, or procuring (including rental and lease/purchase) directly or indirectly the products or services of (1) Toshiba Machine Company, (2) Kongsberg Trading Company, (3) Toshiba Corporation, or (4) Kongsberg Vaapenfabrikk. The Act and Executive Order also prohibit, for the same 3-year period, the importation into the United States of all products produced by Toshiba Machine Company and Kongsberg Trading Company. These prohibitions also apply to subsidiaries, successor entities or joint ventures of Toshiba Machine Company or Kongsberg Trading Company.

(c) Restriction. Unless listed by the Contractor in its offer, in the solicitation provision at FAR 52.225-12, Notice of Restrictions on Contracting with Sanctioned Persons, or unless one of the exceptions in paragraph (d) of this clause applies, the Contractor agrees that no products or services delivered to the Government under this contract will be products or services of a sanctioned person.

(d) Exceptions. The restrictions apply --

(1) To finished products of nonsanctioned persons containing components of a sanctioned person if these components have been substantially transformed during the manufacture of the finished product.

(2) To products or services of a sanctioned person provided --

(i) The products are designed to the specifications of a nonsanctioned person marketed under the trademark, brand or name of the nonsanctioned person;

(ii) The business relationship between the nonsanctioned person and the sanctioned person clearly existed prior to June 30, 1987; and

(iii) The nonsanctioned person is not directly or indirectly owned by a sanctioned person.

(3) If a determination has been made in accordance with FAR 25.1003 (a) or (b).

(e) Award. Award of any contract resulting from this solicitation will not affect the Contractor's obligation to comply with importation regulations of the Secretary of the Treasury.

(End of clause)

I.13 DRUG-FREE WORKPLACE (FAR 52.223-6)  
(MAR 1989)

(a) Definitions. As used in this clause, "Controlled Substances" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11-1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means a site for the performance of work done in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish a drug-free awareness program to inform such employees about-

(i) The dangers of drug abuse in the workplace;

(ii) The contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in the statement required by subparagraph (b)(1) of this clause, that as a condition of continued employment on this contract, the employee will-

(1) Abide by the terms of the statement; and

(ii) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(5) Notify the contracting officer within ten (10) days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction;

(6) Within 30 days after receiving notice under subparagraph (b)(4)(ii) of this clause of a conviction, impose the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (b) and (c) of this clause may, pursuant to FAR 23.506, render the contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of Clause)



SOLICITATION, OFFER AND AWARD

1. This contract is a rated order under DPAS(15 CFR 350) RATING:

2. CONTRACT NO.	3. SOLICITATION NO. RS-RES-89-058	4. TYPE OF SOLICITATION ( ) SEALED BID (IFB) (X) NEGOTIATED (RFP)
5. DATE ISSUED 5/30/89	6. REQUISITION/PURCHASE REQ. NO. RES-89-058	
7. ISSUED BY CODE  U.S. Nuclear Regulatory Commission Div. of Contracts & Property Mgmt. CNB No. 2, P-1042 Washington, DC 20555	8. ADDRESS OFFER TO (If other than Item 7) Offer must be addressed as shown in Item 7. Handcarried offers (including Express Mail) must be delivered to the address in Item 9	

NOTE: In sealed bid solicitations, "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 7 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in P-1011, 7920 Norfolk Avenue, Bethesda, MD 20814, until 11:00 AM EDST local time on 07/14/89. CAUTION-LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME: Joyce Bazin	B. TELEPHONE NO. (Include Area Code) (NO COLLECT CALLS) 301-492-7182
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C	DESCRIPTION/SPECIFICATIONS/WORK STATEMENT	
D	PACKAGING AND MARKING	
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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provision at 52.214-16, Minimum Bid Acceptance Period.

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OFFERORS/BIDDERS PLEASE NOTE:

An (\*) means the information is to be incorporated into any resultant contract.

PART I - THE SCHEDULESECTION B - SUPPLIES OR SERVICE AND PRICE/COSTS

## B.1 BRIEF DESCRIPTION OF WORK (MAR 1987)

The contactor shall develop and document Guidelines for Verifying and Validating Expert Systems. These guidelines will be in the form of an easy-to-read manual for use by designers, users, and regulators of expert systems.

(End of Clause)

## B.2 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE

1. It is estimated that the total cost for full performance of this contract will be \$ \* , of which the sum of \$ \* represents the estimated reimbursable costs and of which \$ \* represents the fixed fee. The total estimated cost shall be jointly and equally funded by the U.S. Nuclear Regulatory Commission (NRC) and the Electric Power Research Institute (EPRI) as follows:

NRC	-	\$ *	(50%)
EPRI	-	\$ *	(50%)

2. Total funds currently available for payment and obligated to this contract are \$ \* , of which \$ \* represents the estimated reimbursable costs and of which \$ \* represents the fixed fee. The obligated funds are provided as follows:

NRC	-	\$ *
EPRI	-	\$ *

3. The Contractor shall invoice the NRC for 50% of incurred costs and EPRI for 50% of incurred cost during this contract period.
4. There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of cost for performance of the work under this contract and the actual cost for performance of that work.
5. It is estimated that the amount currently allotted will cover performance through \*

(End of Clause)

SECTION C - DESCRIPTION/SPECIFICATION  
/WORK STATEMENT

---

C.1 STATEMENT OF WORK (MAR 1987) -- Background

C.1.1 Expert System Validation and Verification:

Expert systems are a major subset of the artificial intelligence (AI) technology. They are computer software and hardware systems that capture, emulate, and store the knowledge, reasoning, and judgment of humans. Both the Electric Power Industry via the Electric Power Research Institute and the U.S. Nuclear Regulatory Commission are initiating a broad-based exploration of potential applications of expert systems. This exploration effort intends to assess the use of expert systems to augment the diagnostic and decision-making capabilities of personnel with the goal of enhancing human productivity, reliability, and performance.

Verification and Validation (V&V) are formal methods used in confirming that computer programs will perform reliably in accordance with the design and user requirement. For applications to areas involving public safety, the acceptance of government regulators must be considered.

An obstacle to the acceptance of expert systems is the lack of a methodology for V&V of expert systems. Also, the design and development of expert systems is different from the design of conventional software. Some obstacles in the V&V of expert systems are (1) a lack of an extensive applicable experience and data base, and (2) lack of adequate methods to evaluate test results.

Development of accepted methodologies for performing V&V on expert systems would enhance the quality assurance, and hence reliability of the software. Enhanced reliability and quality assurance would further the acceptance of expert system technology by users and regulators.

C.1.2. Conventional Definition of Verification and Validation:

For the purpose of this research, the conventional definition of software V&V is described here as a point

of departure. However, this definition may be modified to reflect the unique aspect of expert systems in the course of this research.

#### C.1.2.1. Verification

Verification is the review of the system requirements to see that they reflect a complete decomposition of the problem. The next step then, is the review of the design to see that it meets the design requirements. Thus, verification is based on a communication of activities and results of project activities. The most frequent means of communication is through documentation. Documentation creates a traceable and systematic approach to the development of a product. The translation of information from one phase of development to the next must be complete and sufficient to be understood by knowledgeable persons other than the originator. Upon determining that an accurate translation has been performed, then that step has been verified. Verification activities do not replace industry practices, compliance with industry standards, design guidelines or other project management activities.

#### C.1.2.2 Validation

Validation is the test and evaluation of the integrated hardware and software system to determine compliance with the functional, performance, and interface requirements. Thus, the validation process provides an overall assurance that the capabilities specified in the system requirements are in the hardware and software. Another goal is to ensure that problems detected during development have been corrected.

#### C.2 Objective:

To develop and document Guidelines for Verifying and Validating Expert Systems. These guidelines will be in the form of an easy-to-use manual for use by designers, users, and regulators of expert systems.

#### C.3 Work Requirements -- The Contractor shall perform the following tasks:

##### C.3.1 Evaluate Applicability of Conventional Verification Methods

Study verification methods for conventional software systems such as the Safety Parameter Display Systems (SPDS) used in the nuclear industry. Also, study the quality assurance techniques identified in NUREG/CR-4640 and in NUREG-0653. Identify the differences between conventional software and expert systems computer programs and determine what parts of conventional

verification methods are applicable to expert systems. Document the results of the study as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers. Sources of technical information are:

- NSAC-39, "Verification and Validation for Safety Parameter Display System," December 1981.
- NUREG/CR-4640, "Handbook of Software Quality Assurance Techniques Applicable to the Nuclear Industry," August 1987.
- NUREG-0653, "Report on Nuclear Industry Quality Assurance Procedures for Safety Analyses Computer Code Development and Use," August 1980.
- Estimated completion time: Date of contract plus 2 months.
- Estimated level of effort: 2 person-months.

#### C.3.2 Survey and Document of Expert System V&V Methodologies

Propose five organizations to survey for V&V methodologies. Meet with the NRC/EPRI project managers to discuss the survey and provide a review of the project to date. With approval of the NRC/EPRI project managers, survey selected organizations who are doing expert system development to determine what types of methodologies they are using for expert system V&V.

The scope of the survey shall include:

- Government agencies, such as Department of Defense, National Aeronautical and Space Administration, etc.
- Contractors performing expert system development;
- Selected leading universities in the field of artificial intelligence;

In addition, the Contractor shall review the following documents:

- EPRI NP-5236, "Approaches to the Verification and Validation of Expert Systems for Nuclear Power Plants," July 1987, EPRI NP-5978 "Verification and Validation of Expert Systems for Nuclear Power Plant Applications"; and any EPRI follow-on reports on expert systems.

Various V&V methods shall be compared and documented as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers.



- Estimated completion time: Date of contract plus 7 months.
- Estimated level of effort: 5 person-months.

C.3.3 Test Applicability and Limitations of Conventional Verification Methods

Test the applicability of the conventional verification methods using existing expert systems, such as the Thermal performance Advisor and the Emergency Operating Procedures Tracking System with knowledge base from BWR Emergency Procedure Guidelines. Document the results and limitations of the verification activities as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 9 months.
- Estimated level of effort: 2 person-months.

C.3.4 Develop a Verification Methodology for Nuclear Plant Applications

From the survey as described in Task C.3.2, the various existing methods shall be analyzed and deficiencies and limitations identified in terms of their applicability to nuclear power plants. In the event that analyzed methods are unapplicable to nuclear power plants, then the contractor shall develop a verification methodology by (1) using the survey results and (2) innovative approaches, as necessary to resolve technical deficiencies. The method shall also address incremental modifications to expert systems that may be required after field applications. In the event that one or more analyzed methods are applicable, the contractor shall then develop guidelines for implementing each method. The contractor shall document the methods as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers.

- Estimated completion: Date of contract plus 11 months.
- Estimated level of effort: 7 person-months.

C.3.5 Testing of the Verification Method Developed

Upon approval by the NRC/EPRI project managers, exercise the verification method developed in Task C.3.4 on the government furnished expert systems consisting of the Emergency Operating Procedures Tracking System with knowledge base from BWR Emergency Procedure Guidelines, and the Thermal Performance Advisor. Document the results and limitations of the verification methodology

as a draft chapter in the final report. The contractor shall submit drafts of the chapter for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 13 months.
- Estimated level of effort: 4 person-months.

#### C.3.6 Development of a Knowledge Base Certification Method

Develop a certification and design review methodology to assure that the domain expertise satisfies the breadth and depth of design and performance requirements for the expert systems. Document and submit the review methodology to the NRC/EPRI project managers for review and approval. Meet with the NRC/EPRI project managers to discuss the review methodology. Using the NRC technical monitor's approved methodology, and using a group of no more than five experts to conduct a design review with emphasis on the content, completeness, adequacy and structure of the knowledge base of the selected expert systems. The design review shall include interviews with domain experts and survey of background material, such as manuals, procedures, design reports, etc., to certify that the inputs to the knowledge base are adequate. Each individual expert shall review the knowledge base and produce a documented evaluation. The experts will then have a common meeting to discuss their insights and knowledge acquired during the verification. The contractor shall document the final results of the design review as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 16 months.
- Estimated level of effort: 7 person-months.

#### C.3.7 Evaluation of Verification Methods

Evaluate and document the results, including strengths and limitations of the three verification methodologies as obtained from the preceding tasks (i.e. the best method from Tasks C.3.1. thru C.3.3., the method of Task C.3.4., and the method of Task C.3.6.). Document the results of the evaluation as a draft chapter in the final report. Submit drafts of the chapter for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 18 months.
- Estimated level of effort: 4 person-months.

#### C.3.8 Validation Scenarios

Develop a method to generate validation scenarios and generate a set of validation scenarios that will evaluate and challenge the functional requirements for the selected system(s). The method should cover various expert systems applications to nuclear plants, such as operations, maintenance, engineering, etc. Also, document the methodology that produces the set of validation scenarios and meet with the NRC/EPRI project managers to discuss the methodology and the validation scenarios. Upon approval by the NRC/EPRI project managers, execute each scenario on the selected expert system(s). Evaluate and document the capabilities and limitations of the validation methodology in terms of error detection and proof of correctness. Submit the document as a draft chapter of the final report for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 21 months.
- Estimated level of effort: 6 person-months.

#### C.3.9 Prepare a Journal Article

Determine with the NRC/EPRI project managers if results of this research are suitable for publication in a refereed scientific or engineering journal. If they are, the contractor shall prepare an article for publication jointly with the NRC/EPRI project managers. The journal article should focus on advances gained through this research in science and technology rather than on its conclusions and recommendations that may have regulatory implications. Submit drafts of any technical paper on this research for review and approval by the NRC/EPRI project managers.

- Estimated completion time: Date of contract plus 23 months.
- Estimated level of effort: 1 person-month

#### C.3.10 Documentation

##### C.3.10a User Manual

Document the verification and validation guidelines for an expert system. To the extent feasible, the guidelines should be applicable to a wider class of expert systems than tested. The document shall be in the form of an easy-to-use manual which can be used by expert system designers, users, and regulators as guidelines for testing, approval, and acceptance. Also, the document shall conform to technical writing guides, such as contained in NRC Manual Chapter 3206. Submit drafts of the document for review and approval by the NRC/EPRI project managers. Upon approval of the draft by the NRC/EPRI project managers, submit a camera ready copy of

the report to the NRC and EPRI project managers.

C.3.10b Technical Report

The contractor shall prepare a technical report on the results from tasks C.3.1 to C.3.8. This report shall contain responses to review comments provided by the NRC/EPRI project managers. The technical report shall conform to technical writing guides, such as contained in NRC Manual Chapter 3206. Submit a draft of the revised document for review and approval by the NRC/EPRI project managers. Upon approval of the draft by the NRC/EPRI project managers, submit a camera ready copy of the report to the NRC and EPRI project managers.

- Estimated completion time: Date of contract plus 24 months.
- Estimated level of effort: 4 person-months.

C.4 TRAVEL APPROVALS (MAR 1987)

a. All domestic travel requires the prior approval of the Project Officer.

b. All foreign travel must be approved in advance by the NRC/EPRI on NRC Form 445 and shall be in compliance with 52.247-63 Preference For U.S. Flag Air Carriers. Such approval will be communicated in writing through the Contracting Officer.

(End of Clause)

NOTE: Please refer to Section G.6 Meetings and Travel for anticipated travel necessary under this contract.

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 insure 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 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference:

## FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

NUMBER	DATE	TITLE
52.246-5	APR 1984	INSPECTION OF SERVICES-- COST-REIMBURSEMENT

SECTION F - DELIVERIES OR PERFORMANCE

## F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference:

## FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

NUMBER	DATE	TITLE
52.212-13	APR 1984	STOP-WORK ORDER ALTERNATE I (APR 1984)

## F.2 PREPARATION OF TECHNICAL REPORTS (JUNE 1988)

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 NRC Manual Chapter 3202. NRC Manual Chapter 3202 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 TECHNICAL PROGRESS REPORT (JUNE 1988)  
(OMB CLEARANCE NUMBER 3150-0112)

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 shall identify the title of the project, the contract number, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report shall include the following for each discrete task:

- a. A listing of the efforts completed during the period; milestones reached or, if missed, an explanation provided;
- b. Any problems or delays encountered or anticipated and recommendations for resolution; (if the recommended resolution involves a contract modification, e.g., change in work requirements, level of effort (cost) or schedule delay, the Contractor shall submit a separate letter to the Contracting Officer indentifying the required change and estimated cost impact).
- c. A summary of progress to date; and
- d. Plans for the next reporting period.

NOTE: The above monthly Technical Progress Report shall also be provided by the Contractor to the EPRI Project Manager.

F.3.1 Mid-Term Progress Report

Provide a mid-term progress report one year after the date of the contract. The report shall review technical progress to date and refine the plan, as needed, for completion of the research.

(Remainder of this page is intentionally blank)



(End of Clause)

F.4 FINANCIAL STATUS REPORT (JUNE 1988)  
(OMB CLEARANCE NUMBER 3150-0112)

The Contractor shall provide a monthly Financial Status Report to the NRC Project Officer, the EPRI Project Manager, and the Contracting Officer due within 15 calendar days after the end of the report period and shall identify the title of the project, the contract number, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report shall 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) Balance of Obligations Remaining.
- 6) Balance of Funds Required To Complete Contract.

b. Detail of all direct and indirect costs incurred during the reporting period for each task.

c. Update the approved Contractor Spending Plan (CSP) if required under this contract. If there have been no changes to the projections, a certification to that effect may be provided with the Financial Status Report in lieu of the CSP.

(End of Clause)

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

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

a. NRC Project Officer (4 copies)

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b. EPRI Project Manager (3 copies)

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c. Contracting Officer (1 copy)

U.S. Nuclear Regulatory Commission  
 Contract Number: \_\_\_\_\*\_\_\_\_  
 Division of Contracts and Property Management  
 Contract Administration Branch

Washington, D.C. 20555

(End of Clause)

F.6 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on the effective date of this contract and will expire 24 months thereafter.

(End of Clause)

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 INDIRECT COST RATES (JUNE 1988)

a. Pending the establishment of final indirect rates which shall be negotiated based on audit of actual costs, the Contractor shall be reimbursed for allowable indirect costs as follows:

\*\_\_\_\_\*

b. The Contracting Officer may adjust the above rates as appropriate during the term of the contract upon acceptance of any revisions proposed by the Contractor. It is the Contractor's responsibility to notify the Contracting Officer in accordance with 92.232-20 - Limitation of Cost or 92.232-22 - Limitation of Funds, as applicable, if such change(s) affect(s) performance of work within the established cost or funding limitations.

(End of Clause)

G.2 PROJECT OFFICER AUTHORITY (JUNE 1988)

a. The Contracting Officer's authorized representative hereinafter referred to as the Project Officer for this contract is:

(NRC) Name: \_\_\_\*\_\_\_

(EPRI) Name: \_\_\_\*\_\_\_

Address: \_\_\_\*\_\_\_

Address: \_\_\_\*\_\_\_

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Telephone Number: \_\_\_\*\_\_\_

Telephone Number: \_\_\_\*\_\_\_

b. Performance of the work under this contract shall be 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 reports, drawings, specifications and technical

NOTE: The EPRI Project Officer shall submit technical direction comments regarding work performed under this contract to the NRC Project Officer for coordination.

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 additional work outside the general scope of the contract.
- 2) Constitutes a change as defined in the "Changes" clause of this contract.
- 3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.
- 4) Changes any of the expressed terms, conditions or specifications of the contract.
- 5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

d. All technical directions shall be issued in writing by the Project Officer or shall be confirmed by such person in writing within ten (10) working days after verbal issuance. A copy of said written direction shall 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 such person'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 c above, the Contractor shall not proceed but shall notify the Contracting Officer in writing within five (5) working days after the receipt of any such instruction or direction and shall request the Contracting Officer to modify the contract accordingly. Upon receiving such notification from the Contractor, the Contracting Officer shall issue an appropriate contract modification or advise the Contractor in writing that, in the Contracting Officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the Changes Clause.

g. Any unauthorized commitment or direction issued by the Project Officer may result in an unnecessary delay in the Contractor's performance and may even result in the Contractor expending funds for unallowable costs under the contract.

h. A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect thereto shall be subject to 52.233-1 - Disputes.

i. In addition to providing technical direction as defined above, the Project Officer is responsible for:

1) Monitoring the Contractor's technical progress, including surveillance and assessment of performance, and recommending to the Contracting Officer changes in requirements.

2) Assisting the Contractor in the resolution of technical problems encountered during performance.

3) Reviewing all costs requested for reimbursement by the Contractor and submitting to the Contracting Officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(End of Clause)

### G.3 TRAVEL REIMBURSEMENT (JUNE 1988) ALTERNATE I (JUNE 1988)

a. The Contractor is encouraged to use Government contract airlines, AMTRAK rail service, and discount hotel/motel properties in order to reduce the cost of travel under this contract. The Contracting Officer will, upon request, provide each additional 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 domestic travel costs incurred directly and specifically in the performance of this contract. The cost limitations for travel costs are determined by the Federal Travel Regulations that are in effect on the date of the trip. These Regulations specify the daily maximum per diem rates for specific localities within the Conterminous United States (CONUS), the standard CONUS rate, the allowance for meals and incidental expenses (M&IE), the cost of travel by privately owned automobile, and the items which require receipts. A copy of the Regulations may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.

c. When the Government changes the Federal Travel Regulations, it is the responsibility of the Contractor to notify the Contracting Officer in accordance with the Limitation 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.

d. The rates for foreign travel are established by the U.S. Department of State and are listed in a publication entitled "Maximum Travel Per Diem Allowances For Foreign Areas". Copies of this publication may be obtained from the U.S. Government Printing

Office, Washington, D.C. 20402.

(End of Clause)

G.4 REMITTANCE ADDRESS (MAR 1987)

If item 15C. of the Standard Form 33 has been checked, enter the remittance address below.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(End of Clause)

G.5 Project Officer

- A. The individual(s) listed in "B" below is (are) hereby designated as the Contracting Officer's authorized representative (hereinafter called Project Officer) for technical aspects of this contract. The Project Officer is not authorized to approve or request any action which results in or could result in an increase in contract cost; or terminate, settle any claim or dispute arising under the contract, or issue any unilateral directive whatever.

The Project Officer is responsible for: (1) monitoring the Contractor's technical progress, including surveillance and assessment of performance, and recommending to the Contracting Officer changes in requirements; (2) interpreting the scope 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 Project Officer is authorized to review all costs requested for reimbursement by Contractors and submit recommendations for approval, disapproval, or suspension 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 any change or guidance from the Project Officer to the Contractor to be valid, it must: (1) be consistent with the description of work set forth in the 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; and, as stated above, (4) not constitute a basis for any increase in the contract cost.

- B. Name and Mail Code: \*
- Office Address: \*
- Telephone Number: \*

## G.6 MEETINGS AND TRAVEL

For the successful completion of the work required hereunder, it is anticipated that the following travel is necessary:

Task C.3.2

One trip to: Washington, D. C.  
Number of persons: 2  
One trip to: Boston, MA  
Number of persons: 2  
One trip to: Pittsburgh, PA  
Number of persons: 2  
One trip to: Palo Alto, CA  
Number of persons: 2  
One trip to: NASA Ames Research Center  
Number of persons: 2

Task C.3.6

One trip to: Washington, D.C.  
Number of persons: 2  
One trip to: Palo Alto, CA  
Number of persons: 5

Task C.3.8

One trip to: Washington, D.C.  
Number of persons: 2  
One trip to: San Diego, CA  
Number of persons: 2  
One trip to: Boston, MA  
Number of persons: 2

## G.7 GOVERNMENT FURNISHED MATERIAL

The Government shall provide the following documents to the contractor for use in performing this contract:

1. NRC Manual Chapter 3206 NRC Contractor Unclassified Papers, Journals Articles and Press or Other Media Release on Regulatory and Technical Subjects
2. NSAC-39, "Verification and Validation for Safety Parameter Display System," December 1981.
3. NUREG/CR-4640, "Handbook of Software Quality Assurance Techniques Applicable to the Nuclear Industry," August 1987.
4. NUREG-0653, "Report on Nuclear Industry Quality Assurance Procedures for Safety Analyses Computer Code Development and Use," August 1980.
5. EPRI, NP-5236, "Approaches to the Verification and Validation of Expert Systems for Nuclear Power Plants," July 1987.
6. EPRI NP-5978, "Verification and Validation of Expert Systems for Nuclear Power Plant Applications."
7. Emergency Operating Procedures Tracking System with knowledge base from BWR Emergency Procedure Guidelines.
8. Expert System, Thermal Performance Advisor.
9. NRC Manual Chapter 3202, Publication of Technical Reports Prepared by NRC Contractors, Including Reports Prepared Under or Pursuant to Interagency Agreements.

NOTE: NRC Manual Chapters 3202 and 3206 are furnished as Attachments to this solicitation. All other government furnished materials listed above will be furnished to the contractor upon contract award.



SECTION H - SPECIAL CONTRACT REQUIREMENTS

## H.1 KEY PERSONNEL (JUNE 1988)

a. The following individuals are considered to be essential to the successful performance of the work hereunder.

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The Contractor agrees that such personnel shall not be removed from the contract work or replaced without compliance with paragraphs b and c hereof.

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 such personnel with personnel of at least substantially equal ability and qualifications.

c. All requests for approval of substitutions hereunder must be in writing and provide a detailed explanation of the circumstances necessitating the proposed substitutions. They must contain a complete resume for the proposed substitute and other information requested by the Contracting Officer to approve or disapprove the proposed substitution. The Contracting Officer will evaluate such requests and promptly notify the Contractor of his/her approval or disapproval thereof in writing.

d. If the Contracting Officer determines that:

1) Suitable and timely replacement of key personnel who have been reassigned, terminated or have otherwise become unavailable for the contract work is not reasonably forthcoming; or

2) That the resultant reduction of effort would be so substantial as to impair the successful completion of the contract, 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.2 SAFETY, HEALTH, AND FIRE PROTECTION (MAR 1987)

The Contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of employees and of members of the public 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 such work stoppage.

(End of Clause)

#### H.3 DISSEMINATION OF CONTRACT INFORMATION (MAR 1987)

The Contractor shall comply with the requirements of the attached NRC Manual Chapters 3202 and 3206 (See Section J for List of Attachments) regarding publications 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.

(End of Clause)

#### H.4 PRIVATE USE OF CONTRACT INFORMATION AND DATA (JUNE 1988)

Except as specifically authorized by this contract, or as otherwise approved by the Contracting Officer, information and other data developed or acquired by or furnished to the Contractor in the performance of this contract shall be used only in connection with the work under this contract.

(End of Clause)

#### H.5 DRAWINGS, DESIGNS, AND SPECIFICATIONS

All drawings, sketches, designs, design data, specifications, notebooks, technical and scientific data, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing relating to the work or any part thereto, shall be subject to inspection by the Commission and EPRI at all reasonable times (for which inspection the proper facilities shall be afforded the Commission and EPRI by the Contractor and its subcontractors), shall be the property of the Government and EPRI and may be used by the Government and EPRI for any purpose whatsoever without any claim on the part of the Contractor and its subcontractors and vendors for additional compensation and shall, subject to the right of the Contractor to retain a copy of said material for its own use, be

delivered to the Government and EPRI, or otherwise disposed of by the Contractor either as the Contracting Officer and EPRI may from time to time direct during the progress of the work or in any event as the Contracting Officer and EPRI shall direct upon completion or termination of this contract. The Contractor's right of retention and use shall be subject to the security, patent, and use of information provisions, if any, of this contract.

(End of Clause)

H.6 ORGANIZATIONAL CONFLICTS OF INTEREST  
(OMB CLEARANCE NUMBER 3150-0112) (JUNE 1988)

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 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 forgo 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 believes 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 prior to execution of such contractual arrangement.

d. Disclosure after award.

1) The Contractor warrants to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest, as defined in 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 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.

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 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 (6) months after either the completion of this contract or the release of the information to the public, whichever is first;

(iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public, or

(iv) Release the information without prior written approval by the Contracting Officer unless the information has previously been released to the public by the NRC.

2) In addition, the Contractor agrees that to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (Pub. L. 93-579), 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) 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," 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 through the Contracting Officer to the Executive Director for Operations (EDO) in accordance with the procedures outlined in 41 CFR 20-1.5411.

(End of Clause)

H.7 EPRI Audit Rights

Contractor shall allow the NRC Contracting Officer to provide copies of any DCAA audit reports pertinent to this contract to the EPRI Contracting Officer.

H.8 EPRI Patent Rights

Contractor shall assign title to any inventions or discoveries that contractor acquires relating to the work being performed under this contract to EPRI. Once title is assigned, EPRI shall assume the obligations of FAR 52.227-11 to the NRC. At a minimum, EPRI and the NRC shall receive equal rights to inventions or discoveries made or conceived hereunder.

H.9 Coordination with the EPRI Contracting Officer

The NRC Contracting Officer shall coordinate any actions with the EPRI Contracting Officer that will affect costs, work to be performed or the schedule under this contract.

H.10 FAR Provisions Applying to EPRI

The provisions identified with an asterisk shall apply equally to EPRI, thus the term "Contracting Officer" shall include the EPRI Contracting Officer and the terms of "NRC, Commission or Government" shall also include EPRI.

H.11 Proprietary Data and Confidential Information

In connection with the performance of the work under this contract, the Contractor may be furnished, or may develop or acquire, proprietary data (trade secrets) or confidential or privileged technical, business, or financial information, including Commission plans, policies, reports, financial plans, internal data protected by the Privacy Act of 1974 (P.L. 93-579), or other information which has not been released to the public or has been determined by the Commission and EPRI to be otherwise exempt from disclosure to the public. Contractor agrees to hold such information in confidence and not to directly or indirectly duplicate, disseminate, or disclose such information in whole or in part to any other person or organization except as may be necessary to perform the work under this contract. Contractor agrees to return such information to the Commission and EPRI or otherwise dispose of it either as the Contracting Officers may from time to time direct during the progress of the work or in any event as the Contracting Officers shall direct upon completion or termination of this contract. Failure to comply with this clause shall be grounds for termination of this contract.

#### H.12 NRC/EPRI Program Management

It is the intention of the parties that all work will be carried out with mutual agreement. However, if a disagreement arises that cannot be resolved in a cooperative manner, the matter will be referred to progressively higher levels of management for resolution up to the Director, Office of Nuclear Regulatory Research of the the NRC and the Director, Nuclear Power Division of EPRI. If the disagreement cannot be resolved by these parties, the Director, Office of Nuclear Regulatory Research of the NRC will have final determination.

#### H.13 Information Type Technical Discussions

Technical matters that are informational in nature may be discussed by telephone, and through in-person visits without obtaining the concurrence of the other party. In those instances, however, an effort shall be made by the NRC and EPRI to include the other party in those discussions prior to their occurrence. As a minimum, the party initiating such discussions shall advise the other party of the discussions and their contents as soon as practicable after they occur and shall additionally furnish copies of pertinent documentation relating to the discussions.

#### H.14 NRC/EPRI Relationship

The NRC and EPRI shall share in the benefits and costs under this contract in accordance with the terms of the contract. Any change to be effective under the Changes clause (FAR 52.243-2) and any other term of the contract, that involves a change in the scope of the work and/or an adjustment in price or time for performance, including any final findings of fact and decision, shall be in writing and signed by both the Contracting Officer for the Government and the Contracting Officer of EPRI; provided, however, that in the event of a dispute by the Contractor, the Government shall represent the interest of the Government and EPRI in resolving claims submitted by the Contractor pursuant to the Changes and Disputes Clauses (FAR 52.233-1) respectively.

#### H.15 Termination

It is understood and agreed that EPRI may, giving thirty (30) days written notice to the NRC, terminate their participation in this contract. Pursuant to the FAR 52.249-6 Termination (Cost Reimbursement), the NRC may terminate its participation in this contract. Said notices shall be accompanied by a written statement of the reason(s) for such termination. The settlement costs shall be shared equally by the NRC and EPRI subject to the limitations of obligations set forth in Section G.1 of this contract and in no event shall the contractor be liable for payment of such settlement costs. The contractor may rely upon any notice of termination received from either the NRC or EPRI.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference:

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

NUMBER	DATE	TITLE
52.202-1	APR 1984	DEFINITIONS
*52.203-1	APR 1984	OFFICIALS NOT TO BENEFIT
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	JUL 1985	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT
52.203-7	OCT 1988	ANTI-KICKBACK PROCEDURES
*52.215-1	APR 1984	EXAMINATION OF RECORDS BY COMPTROLLER GENERAL
*52.215-2	APR 1988	AUDIT -- NEGOTIATION
*52.215-22	APR 1988	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA
*52.215-24	APR 1985	SUBCONTRACTOR COST OR PRICING DATA
*52.215-31	SEP 1987	WAIVER OF FACILITIES CAPITAL COST OF MONEY
*52.215-33	JAN 1986	ORDER OF PRECEDENCE
*52.216-7	APR 1984	ALLOWABLE COST AND PAYMENT
*52.216-8	APR 1984	FIXED FEE
52.217-1	APR 1984	LIMITATION OF PRICE AND CONTRACTOR OBLIGATIONS
52.217-2	APR 1984	CANCELLATION OF ITEMS ALTERNATE I (APR 1984)
52.219-8	JUN 1985	UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL DISADVANTAGED BUSINESS CONCERNS
52.219-9	APR 1984	SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN
52.219-13	AUG 1986	UTILIZATION OF WOMEN-OWNED SMALL BUSINESSES
52.220-3	APR 1984	UTILIZATION OF LABOR SURPLUS AREA CONCERNS
52.220-4	APR 1984	LABOR SURPLUS AREA

52.222-1	APR 1984	SUBCONTRACTING PROGRAM NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-3	APR 1984	CONVICT LABOR
52.222-26	APR 1984	EQUAL OPPORTUNITY
52.222-35	APR 1984	AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS
52.222-36	APR 1984	AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS
52.222-37	JAN 1988	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA
52.223-2	APR 1984	CLEAN AIR AND WATER
52.227-1	APR 1984	AUTHORIZATION AND CONSENT
*52.227-2	APR 1984	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
*52.227-3	APR 1984	PATENT INDEMNITY
*52.227-16	JUN 1987	ADDITIONAL DATA REQUIREMENTS
*52.227-17	JUN 1987	RIGHTS IN DATA--SPECIAL WORKS
*52.228-7	APR 1984	INSURANCE -- LIABILITY TO THIRD PERSONS
*52.229-10	OCT 1988	STATE OF NEW MEXICO GROSS RECEIPTS AND COMPENSATING TAX
*52.230-3	SEP 1987	COST ACCOUNTING STANDARDS
*52.230-4	SEP 1987	ADMINISTRATION OF COST ACCOUNTING STANDARDS
*52.230-5	SEP 1987	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES
52.230-6	SEP 1987	CONSISTENCY IN COST ACCOUNTING PRACTICES
*52.232-20	APR 1984	LIMITATION OF COST
52.232-17	APR 1984	INTEREST
52.232-18	APR 1984	AVAILABILITY OF FUNDS
*52.232-22	APR 1984	LIMITATION OF FUNDS
*52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.233-1	APR 1984	DISPUTES
52.233-3	JUN 1985	PROTEST AFTER AWARD ALTERNATE I (JUN 1985)
52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
*52.243-2	AUG 1987	CHANGES -- COST-REIMBURSEMENT ALTERNATE I (APR 1984)
*52.244-2	JUL 1985	SUBCONTRACTS (COST-REIMBURSEMENT AND LETTER CONTRACTS)
52.244-5	APR 1984	COMPETITION IN SUBCONTRACTING
*52.227-12	APR 1984	PATENT RIGHTS--RETENTION BY THE CONTRACTOR (LONG FORM)



52.249-6 MAY 1986 TERMINATION (COST-REIMBURSEMENT)  
\*52.249-14 APR 1984 EXCUSABLE DELAYS

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audit, or reproduction until three years after final payment under this contract.

(c) If any price, including profit or fee negotiated in connection with this contract, or any cost reimbursable under this contract has increased because the certification in paragraph (1) of the Certificate or the information provided as justification in paragraph (2) of the Certificate was inaccurate, incomplete, or misleading, the price or cost shall be reduced accordingly and the contract shall be reduced accordingly and the contract shall be modified to reflect the reduction.

(End of Clause)

### 1.3 PAYMENT FOR OVERTIME PREMIUMS (FAR 52.222-2) (APR 1984)

(a) The use of overtime is authorized under this contract if the overtime premium cost does not exceed \$0. In addition to this dollar ceiling, overtime is permitted only for work--

(1) Necessary to cope with emergencies such as those resulting from accidents, natural disasters, breakdowns of production equipment, or occasional production bottlenecks of a sporadic nature;

(2) By indirect-labor employees such as those performing duties in connection with administration, protection, transportation, maintenance, standby plant protection, operation of utilities, or accounting;

(3) To perform tests, industrial processes, laboratory procedures, loading or unloading of transportation conveyances, and operations in flight or afloat that are continuous in nature and cannot reasonably be interrupted or completed otherwise; or

(4) That will result in lower overall costs to the Government.

(b) Any request for estimated overtime premiums that exceeds the amount specified above shall include all estimated overtime for contract completion and shall--

(1) Identify the work unit; e.g., department or section in which the requested overtime will be used, together with present workload, staffing, and other data of the affected unit sufficient to permit the Contracting Officer to evaluate the necessity for the overtime;

(2) Demonstrate the effect that denial of the request will have on the contract delivery or performance schedule;

(3) Identify the extent to which approval of overtime would affect the performance or payments in connection with other Government contracts, together with identification of each affected

contract; and

(4) Provide reasons why the required work cannot be performed by using multishift operations or by employing additional personnel.

(End of Clause)

I.4 RIGHTS TO PROPOSAL DATA (TECHNICAL)  
(FAR 52.227-23) (JUN 1987)

Except for data contained on pages \_\_\_\_\_, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data--General" clause contained in this contract) in and to the technical data contained in the proposal dated \_\_\_\_\_ upon which this contract is based.

(End of Clause)

I.5 PROMPT PAYMENT (FAR 52.232-25) (FEB 1988)  
ALTERNATE II (FEB 1988)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or an electronic funds transfer is made. Definitions of pertinent terms are set forth in 32.902. All days referred to in this clause are calendar days, unless otherwise specified.

(a) Invoice Payments

(1) For purposes of this clause, "invoice payment" means a Government disbursement of monies to a Contractor under a contract or other authorization for supplies or services accepted by the Government. This includes payments for partial deliveries that have been accepted by the Government and final cost or fee payments where amounts owed have been settled between the Government and the Contractor.

(2) Except as indicated in subparagraph (a)(3) of this clause, the due date for making invoice payments by the designated payment office shall be the later of the following two events:

(i) The 30th day after the designated billing office has received a proper invoice from the Contractor.

(ii) The 30th day after Government acceptance of supplies delivered or services performed by the Contractor. On a final invoice where the payment amount is subject to contract settlement actions, acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(3) The due date on contracts for meat and meat food products,

contracts for perishable agricultural commodities, and contracts not requiring submission of an invoice shall be as follows:

(i) The due date for meat and meat food products, as defined in Section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)) and further defined in Pub. L. 98-181 to include poultry, poultry products, eggs, and egg products, will be as close as possible to, but not later than, the 7th day after product delivery.

(ii) The due date for perishable agricultural commodities, as defined in Section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), will be as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(iii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

(4) An invoice is the Contractor's bill or written request for payment under the contract for supplies delivered or services performed. An invoice shall be prepared and submitted to the designated billing officer specified in the contract. A proper invoice must include the items listed in subdivisions (a)(4)(i) through (a)(4)(viii) of this clause. If the invoice does not comply with these requirements, then the Contractor will be notified of the defect within 15 days after receipt of the invoice at the designated billing office (3 days for meat and meat food products and 5 days for perishable agricultural commodities). Untimely notification will be taken into account in the computation of any interest penalty owed the Contractor in the manner described in subparagraph (a)(6) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice date.

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed

(v) Shipping and payment terms (e.g., shipment number and date of shipment, prompt payment discount terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number and

NOTE: THE INVOICE SHALL SHOW TOTAL COSTS BILLED TO NRC AND TOTAL COSTS BILLED TO EPRI.

mailing address of person to be notified in event of a defective invoice.

(viii) Any other information or documentation required by other requirements of the contract (such as evidence of shipment).

\* (5) An interest penalty shall be paid automatically by the Government, without request from the Contractor, if payment is not made within 15 days after the due date (3 days for meat and meat food products and 5 days for perishable agricultural commodities) and the following conditions are met, if applicable:

(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed and there was not disagreement over quantity, quality, or contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(6) The interest penalty shall be the rate established by the Secretary of the Treasury under Section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the payment date, except where the interest penalty is prescribed by other governmental authority. This rate is referred to as the "Renegotiation Board Interest Rate", and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the contractor of a defective invoice within the periods prescribed in paragraph (a)(4) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance shall be deemed to have occurred constructively on the 5th working day after the Contractor delivered the supplies or performed the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or contractor compliance with a contract provision. In the event that actual acceptance occurs within the constructive acceptance period, the

\*INTEREST PENALTIES APPLY TO THE GOVERNMENT ONLY.

determination of an interest penalty shall be based on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 15 days (3 days for meat and meat food products and 5 days for perishable agricultural commodities).

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the Disputes clause or for more than 1 year. Interest penalties of less than \$1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes and any interest that may be payable, will be resolved in accordance with the Disputes clause.

(7) An interest penalty shall also be paid automatically by the designated payment office, without request from the contractor, if an improperly taken discount for prompt payment was not corrected within 15 days after the expiration of the discount period (3 days for meat and meat food products and 5 days for perishable agricultural commodities). The interest penalty will be calculated as described in paragraph (a)(6) of this clause on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the contractor is paid.

(b) Contract Financing Payments

(1) For purposes of this clause, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government. Contract financing payments include advance payments, progress payments based on cost under the clause at 52.232-16, Progress Payments, progress payments based on a percentage or stage of completion (32.102(e)(1) other than those made under the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, or the clause at 52.232-10, Payments Under Fixed-Price Architect-Engineer Contracts, and interim payments on cost type contracts.

(2) For contracts that provide for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the 30th day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(3) For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(4) Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Electronic Funds Transfer. Payments under this contract will be made by the Government either by check or electronic funds transfer (through the Treasury Financial Communications System (TFCS) or the Automated Clearing House (ACH), at the option of the Government. After award, but no later than 14 days before an invoice or contract financing request is submitted, the contractor shall designate a financial institution for receipt of electronic funds transfer payments. The Contractor shall submit this designation to the Contracting Officer or other Government official, as directed

(1) For payment through TFCS, the Contractor shall provide the following information:

(i) Name, address, and telegraphic abbreviation of the financial institution receiving payment.

(ii) The American Bankers Association 9-digit identifying number of the financing institution receiving payment if the institution has access to the Federal Reserve Communications System.

(iii) Payee's account number at the financial institution where funds are to be transferred.

(iv) If the financial institution does not have access to the Federal Reserve Communications System, name, address, and telegraphic abbreviation of the correspondent financial institution through which the financial institution receiving payment obtains electronic funds transfer messages. Provide the telegraphic abbreviation and American Bankers Association identifying number for the correspondent institution.

(2) For payment through ACH, the Contractor shall provide the following information:

(i) Routing transit numbers of the financial institution

receiving payment (same as American Bankers Association identifying numbers used for TFCS).

(ii) Number of account to which funds are to be deposited.

(iii) Type of depositor account ("C" for checking, "S" for savings).

(iv) If the Contractor is a new enrollee to the ACH system, a "Payment Information Form" TFS 3881, must be completed before payment can be processed.

(3) In the event the Contractor, during the performance of this contract, elects to designate a different financial institution for the receipt of any payment made using electronic funds transfer procedures, notification of such change and the required information specified above must be received by the appropriate Government official 30 days prior to the date such change is to become effective.

(4) The documents furnishing the information required in this paragraph (c) must be dated and contain the signature, title, and telephone number of the Contractor official authorized to provide it, as well as the Contractor's name and contract number.

(5) Contractor failure to properly designate a financial institution or to provide appropriate payee bank account information may delay payments of amounts otherwise properly due.

(End of Clause)

#### I.6 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (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.

(End of Clause)

#### I.7 PAYMENT ADDRESS

Invoices shall be submitted in an original and 4 copies to each of the following and payment will be made by same:

- (1) U.S. Nuclear Regulatory Commission  
Division of Accounting and Finance  
GOV/COM Accounting Section  
Washington, DC 20555
- (2) Electric Power Research Institute  
ATTN: Finance Office  
3412 Hillview Avenue  
P. O. Box 10412  
Palo Alto, CA 94303



## 1.8 52.223-6 Drug-Free Workplace.

(a) Definitions. As used in this clause,

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11-1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means a site for the performance of work done in connection with a specific contract at which employees of the contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a contractor directly engaged in the performance of work under a Government contract.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall --

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish a drug-free awareness program to inform such employees about --

(i) The dangers of drug abuse in the workplace;

(ii) The contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in the statement required by subparagraph (b)(1) of this clause, that as a condition of continued employment on this contract, the employee will --

(1) Abide by the terms of the statement; and

(ii) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(5) Notify the contracting officer within ten (10) days after receiving notice under subdivision (a)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction;

(6) Within 30 days after receiving notice under subparagraph (a)(4) of this clause of a conviction, impose the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace:

(1) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (b) and (c) of this clause may, pursuant to FAR 23.506, render the contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of Clause)

PART III - LIST OF DOCUMENTS, EXHIBITS  
AND OTHER ATTACHMENTS

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SECTION J - LIST OF ATTACHMENTS

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J.1 ATTACHMENTS (MAR 1987)

<u>Attachment Number</u>	<u>Title</u>
1	Billing Instructions
2	NRC Contractor Organizational Conflicts of Interest (41 CFR Part 20)
3	NRC Manual Chapter 3202
4	Standard Form 1411 with Instructions
5	Subcontracting Plan
6	NRC Manual Chapter 3206