

5. AWARD FORM 26, JULY 1976 FEDERAL SERVICES ADMINISTRATION FPMR (41 CFR) 101-11.6		AWARD/CONTRACT		PAGE 1 OF 13	
1. CONTRACT (Proc. Inst. Ident.) NO. NRC-04-81-186		2. EFFECTIVE DATE 12/14/80		3. REQUISITION/PURCHASE REQUEST/PROJECT NO. RES-81-186	
4. CERTIFIED FOR NATIONAL DEFENSE UNDER BDSA REG. 2 AND/OR DMS REG. 1. RATING		5. ISSUED BY U. S. Nuclear Regulatory Commission Division of Contracts Washington, DC 20555		6. ADMINISTERED BY (If other than block 5)	
7. DELIVERY FOR CESTI. NATION <input checked="" type="checkbox"/> OTHER (See below)		8. CONTRACTOR NAME AND ADDRESS Human Factors Society, Inc. 1124 Montana Avenue Suite B Santa Monica, CA 90406		9. DISCOUNT FOR PROMPT PAYMENT	
10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK		11. SHIP TO/MARK FOR U. S. Nuclear Regulatory Commission ATTN: Mr. Jim Jenkins Office of Nuclear Regulatory Research Washington, DC 20555		12. PAYMENT WILL BE MADE BY SEE ARTICLE III B	
13. THIS PROCUREMENT WAS <input type="checkbox"/> ADVERTISED, <input checked="" type="checkbox"/> NEGOTIATED, PURSUANT TO: <input type="checkbox"/> 10 U.S.C. 2304 (a)(1) <input checked="" type="checkbox"/> 41 U.S.C. 252 (c)(10)					
14. ACCOUNTING AND APPROPRIATION DATA B&R NO. 60-19-01-30 FIN NO. B7239 \$350,000.00					
15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	DEVELOP A COMPREHENSIVE HUMAN FACTORS PLAN FOR NUCLEAR REACTOR REGULATION. LETTER CONTRACT NO. NRC-04-81-186 DATED DECEMBER 14, 1980 IS SUPERSEDED BY THIS DEFINITIVE CONTRACT NO. NRC-04-81-186.				
21. TOTAL AMOUNT OF CONTRACT \$ 528,859.00					
CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE					
22. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 3 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)			26. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.		
23. NAME OF CONTRACTOR BY Harry L. Snyder (Signature of person authorized to sign)			27. UNITED STATES OF AMERICA BY Kellogg V. Morton (Signature of Contracting Officer)		
24. NAME AND TITLE OF SIGNER (Type or print) Harry L. Snyder Project Manager		25. DATE SIGNED 2/13/81		28. NAME OF CONTRACTING OFFICER (Type or print) Kellogg V. Morton	
				29. DATE SIGNED 2/13/81	

TABLE OF CONTENTS

Contract No. NRC-04-81-186

This contract consists of:

1. Cover page (SF-26)
2. Table of Contents
3. Special Provisions (Contract Schedule)
 - ARTICLE I - STATEMENT OF WORK
 - ARTICLE II - PERIOD OF PERFORMANCE
 - ARTICLE III - CONSIDERATION AND PAYMENT
 - ARTICLE IV - PRIVATE USE AND PROTECTION OF UNCLASSIFIED
GOVERNMENT INFORMATION
 - ARTICLE V - KEY PERSONNEL
 - ARTICLE VI - TECHNICAL DIRECTION
 - ARTICLE VII - PROJECT OFFICER
 - ARTICLE VIII - CONFLICT OF INTEREST
 - ARTICLE IX - TRAVEL REIMBURSEMENT
 - ARTICLE X - COST ACCOUNTING STANDARD WITHDRAWAL
 - ARTICLE XI - GENERAL PROVISIONS/ALTERATIONS
4. Appendices
 - Appendix A - General Provisions - Cost Type R&D Contracts with
Commercial Organizations (2/6/80)
 - Appendix B - Letter of Credit Instructions for Recipient Organizations
5. Attachments
 - NRC Contractor Organizational Conflicts of Interest (41 CFR Part 20)
 - NRC Manual Chapter 3202

CONTRACT SCHEDULE

ARTICLE I - STATEMENT OF WORK

- A. The Contractor shall furnish all personnel, materials, equipment, facilities, and services necessary to perform and shall therewith perform the work as set forth in its proposal entitled, "Development of a Comprehensive Human Factors Plan for Nuclear Reactor Regulation" dated December 9, 1980 which by this reference is incorporated in and made a part of this contract. The work to be performed consists of the following three (3) tasks:

1. Task A - Survey of NRC Program Offices

Determine the aspects of nuclear power plant safety that are impacted by or have an impact upon human factors issues and describe the nature of these impacts. This is to be accomplished through a detailed survey of the NRC Program Offices, current reports resulting from investigations of the Three Mile Island accident, and other documents and reports relevant to regulation of human factors in the design and operation of nuclear reactors. The survey will also include the organization and staffing of the Offices. At the completion of Task A, a briefing will be made to the NRC by the Study Group nucleus and an informal report will be submitted summarizing the findings and recommendations.

2. Task B - Selective Check with Nuclear Industry

The findings of Task A will be expanded as necessary and refined to insure completeness and accuracy as the Contractor checks selectively with representative elements of the nuclear industry. Sectors of the industry involved in this Task include at least utilities, architect-engineers, nuclear steam system suppliers, the Electric Power Research Institute, and the Institute of Nuclear Power Operations. The Contractor shall interact with representatives or other professional organizations, such as the American Nuclear Society and the IEEE, who have functional working groups concerned with human factors and the nuclear industry. Task B will culminate in the preparation of a Tasks A and B report reflecting modifications and refinements resulting from the checking of the findings of Task A against relevant factors determined by the Contractor's interaction with the various elements of the nuclear industry. The Contractor shall also present a briefing to NRC at the completion of this Task.

3. Task C - Evaluate Current Activities and Recommend Courses of Action

The Contractor shall evaluate current activities and programs for each of the regulatory functions identified as having human factors involvement. It is anticipated that at least some of the regulatory responsibilities of each of the NRC Program Offices will include requirements for attention to human factors. In light of its evaluation of what is being done and its previous determination of what needs to be done, the Contractor shall

recommend courses of action that need to be taken to insure nuclear power plant safety. If additional study or research is needed, the Contractor shall make recommendations regarding the problems to be addressed and suggested approaches. The Contractor's recommendations for courses of action will take the form of a plan to cover the next ten years. The plan will provide estimates of priorities, schedules, and resources required. In addition to the final report, which is a comprehensive plan for human factors, the Contractor shall present a briefing to the NRC staff at the conclusion of its work.

B. REPORTS, DOCUMENTATION, AND OTHER DELIVERABLE END ITEMS

To assure that formal NRC Contractor documents will carry the registered NRC designation "NUREG" as the prime identification, the technical reports listed below are to be documented, produced, and disseminated in accordance with NRC Manual Chapter 3202, which is incorporated herein by reference and made a part of this contract (NRC Manual Chapter is applicable only to the Final Report).

1. Task Reports - Separate reports shall be submitted to the Project Officer following completion of the work in Tasks A and B, and again following Task C. Task reports shall be submitted in five (5) copies to the Project Officer within 30 days of completion of Tasks A and B, and within 30 days of completion of Task C.
2. Quarterly Reports - Quarterly reports shall be submitted in five (5) copies to the Project Officer within 15 days of completion of each three (3) month period of the contract, and shall detail the work performed during that period and shall enable the reviewers and other readers to grasp the main ideas and findings.
3. Briefings - Briefings shall be given to the NRC staff at a Bethesda location within 30 days of completion of Tasks A and B, respectively. A third briefing shall be given within 30 days of completion of Task C, and shall cover all work performed under the contract. The specific dates for the briefings will be decided through mutual agreement of the parties to this contract.
4. Final Report - The contractor shall furnish five (5) copies of the final report to the Project Officer along with one (1) reproducible copy to the Project Officer, within ninety (90) days of project completion. The report shall detail the Contractor's findings, recommendations, and all available data showing how they were arrived at including recommendations which were considered and rejected and the reasons for rejection. This report shall eliminate the need for a quarterly report in the last month of the contract.

5. Cost Report - Contractor shall submit one (1) copy of NPC Form 266, "Monthly Cost Report for Contract Under Letter of Credit", by the eighth work day following the month being reported, to:

U. S. Nuclear Regulatory Commission
ATTN: Mr. Kellogg V. Morton, Chief
Research Contracts Branch
Division of Contracts
Washington, DC 20555

ARTICLE II - PERIOD OF PERFORMANCE

The performance of work described in ARTICLE I hereof shall commence as of the effective date of this contract and shall continue to completion thereof, estimated to occur on or before January 13, 1982.

ARTICLE III - CONSIDERATION AND PAYMENT

A. Estimated Cost and Obligation

1. It is estimated that the total cost to the Government for full performance of this contract will be \$528,859.00.
2. Total funds currently available for payment and allotted to this contract are \$350,000.00.

B. Payment

The letter of credit method of financing will be utilized under this contract. The "U. S. Nuclear Regulatory Commission Letter of Credit Instructions for Recipient Organizations," are set forth in Appendix B which is made a part of this contract. The following provision regarding advance payments (letter of credit) is applicable to this contract:

a. Amount of Advance

At the request of the Contractor, and subject to the conditions hereinafter set forth, the Government shall make an advance payment, or advance payments from time to time, to the Contractor. No advance payment shall be made (1) without the approval of the office administering advance payments (hereinafter called the "Administering Office" and designated in paragraph (c)(2) hereof) as to the financial necessity therefor; (2) in an amount which together with all advance payments theretofore made, shall exceed the amount stated in paragraph (c)(1) hereof; and (3) without a properly certified invoice or invoices. If the letter of credit financing method for advance payments is utilized, the Contractor will (1) initiate cash draw-downs only when

actually needed for its disbursements, (2) timely report cash disbursements and balances as required by the Administering Office, and (3) impose the same standards of timing and amount upon any secondary recipients including the furnishing of reports of cash disbursements and balances. Failure to adhere to these material provisions will be considered an event under the paragraph entitled Default Provisions of this clause.

b. Default Provisions

Upon the happening of any of the following events of default, (1) termination of this contract by reason of fault of the Contractor; (2) a finding by the Administering Office that the Contractor (i) has failed to observe any of the covenants, conditions, or warranties of these provisions or has failed to comply with any material provision of this contract, or (ii) has so failed to make progress, or is in such unsatisfactory financial condition, as to endanger performance of this contract, or (iii) has allocated inventory to this contract substantially exceeding reasonable requirements, or (iv) is delinquent in payment of taxes or of the costs of performance of this contract in the ordinary course of business; (3) appointment of a trustee, receiver or liquidator for all or a substantial part of the Contractor's property, or institution of bankruptcy, reorganization, arrangement or liquidation proceedings by or against the Contractor; (4) service of any writ of attachment, levy of execution, or commencement of garnishment proceedings with respect to the Special Bank Account; or (5) the commission of an act of bankruptcy; the Government, without limiting any rights which it may otherwise have, may, in its discretion and upon written notice to the Contractor, withhold further withdrawals from the Special Bank Account and withhold further payments on this contract. Upon the continuance of any such events of default for a period of thirty (30) days after such written notice to the Contractor, the Government may, in its discretion, and without limiting any other rights which the Government may have, take the following additional actions as it may deem appropriate in the circumstances:

- (1) Withdraw all or any part of the balance in the Special Bank Account by checks payable to the Treasurer of the United States signed solely by the Countersigning Agency and apply such amounts in reduction of advance payments then outstanding hereunder and in reduction of any other claims of the Government against the Contractor;
- (2) Charge interest on advance payments outstanding during the period of any such default at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 Stat. 97 for the Renegotiation Board;

- (3) Demand immediate repayment of the unliquidated balance of advance payments hereunder; or
- (4) Take possession of and, with or without advertisement, sell at public sale at which the Government may be the purchaser, or at a private sale, all or any part of the property on which the Government has a lien under this contract and, after deducting any expenses incident to such sale, apply the net proceeds of such sale in reduction of the unliquidated balance of advance payments hereunder and in reduction of any other claims of the Government against the Contractor.

c. Designations and Determinations

- (1) Amount. The amount of advance payments at any time outstanding hereunder shall not exceed \$350,000.00.
- (2) Administering Office. The office administering advance payments is designated as Office of the Controller - NRC.

ARTICLE IV - PRIVATE USE AND PROTECTION OF UNCLASSIFIED GOVERNMENT INFORMATION

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

ARTICLE V - KEY PERSONNEL

Pursuant to this ARTICLE V (Key Personnel), the following individuals are considered to be essential to the successful performance of the work hereunder and shall not be replaced without the prior approval of the Contracting Officer. In such event, the contractor agrees to substitute persons possessing substantially equal abilities and qualifications satisfactory to the Contracting Officer.

Dr. H. L. Snyder
Mr. H. E. Price
Dr. R. C. Sugarman
Dr. R. J. Smillie

Dr. C. O. Hopkins
Dr. R. J. Hornick
Dr. R. R. Mackie

ARTICLE VI - TECHNICAL DIRECTION

- A. Performance of the work under this contract shall be subject to the technical direction of the NRC Project Officer named in ARTICLE VII of this contract. 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, requires pursuit of certain lines of inquiry, fills in details or otherwise serves to accomplish the contractual scope of work.
 2. Providing assistance 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 information to be delivered by the contractor to the Government under the contract.
- B. Technical direction must be within the general scope of work stated in the contract. The Project Officer does not have the authority to and may not issue any technical direction which:
1. Constitutes an assignment of additional work outside the general scope of the contract.
 2. Constitutes a change as defined in the clause of the General Provisions, entitled "Changes."
 3. In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.
 4. Changes any of the expressed terms, conditions or specifications of the contract.

- C. ALL TECHNICAL DIRECTIONS SHALL BE ISSUED IN WRITING BY THE PROJECT OFFICER OR SHALL BE CONFIRMED BY SUCH PERSON IN WRITING WITHIN TEN (10) WORKING DAYS AFTER VERBAL ISSUANCE. A copy of said written direction shall be submitted to the Contracting Officer.

The contractor shall proceed promptly with the performance of technical directions duly issued by the Project Officer in the manner prescribed by this article and within such person's authority under the provisions of this article.

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 8(1) through (4) 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.

- D. 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.
- E. 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 the provisions of the contract clause entitled "Disputes."

ARTICLE VII - PROJECT OFFICER

Mr. James J. Jenkins is 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 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.

ARTICLE VIII - CONFLICT OF INTEREST

(a) Purpose. The primary purpose of this article is to aid in ensuring that the contractor:

- (1) is not placed in a conflicting role because of current or planned interest (financial, contractual, organizational, or otherwise) which relates to the work under this contract, and
- (2) does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described herein shall apply to performance or participation by the contractor as defined in 41 CFR §20-1.5402(f) in the activities covered by this article.

(c) Work for others. Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization, the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees who are employed full time under this contract and employees designated as key personnel, if any, under this contract abide by the provision of this article. If the contractor believes with respect to itself or any such employee that any proposed consultant or other contractual arrangement with any firm or organization may involve a potential conflict of interest, the contractor shall obtain the written approval of the Contracting Officer prior to execution of such contractual arrangement.

(d) Disclosure after award.

- (1) The contractor warrants that to the best of its knowledge and belief and except as otherwise set forth in this contract, it does not have any organizational conflicts of interest, as defined in 41 CFR 520-1.5402(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 shall include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract for convenience if it deems such termination to be in the best interests of the government.

(e) Access to and use of information.

- (1) If the Contractor in the performance of this contract obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (Pub. L. 93-579), or data which has not been released to the public, the contractor agrees not to: (i) use such information for any private purpose until the information has been released to the public; (ii) compete for work for the Commission based on such information for a period of six (6) months after either the completion of this contract or the release of such information to the public, whichever is first, (iii) submit an unsolicited proposal to the government based on such information until one year after the release of such information to the public, or (iv) release the information without prior written approval by the Contracting Officer unless such information has previously been released to the public by the NRC.
- (2) In addition, the contractor agrees that to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (Pub. L. 93-579), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat such information in accordance with restrictions placed on use of the information.
- (3) The contractor shall have, subject to patent and security provisions of this contract, the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.

(f) Subcontracts. Except as provided in 41 CFR §20-1.5402(h), the contractor shall include this article, including this paragraph, in subcontracts of any tier. The terms "contract," "contractor," and "Contracting Officer," shall be appropriately modified to preserve the government's rights.

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

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

ARTICLE IX - TRAVEL REIMBURSEMENT

1. The contractor will be reimbursed for reasonable domestic travel costs incurred directly and specifically in the performance of this contract and accepted by the Contracting Officer, in accordance with the contractor's approved travel policy on file with the NRC.
2. The cost of travel by privately owned automobile shall be reimbursed at the mileage rate prescribed by the contractor's established, generally applicable travel policy; provided, however, that such reimbursement shall not exceed the cost of less than first-class travel by common carrier.
3. The cost of travel by rented automobile shall be reimbursed on a reasonable actual expense basis that does not exceed the rates prescribed by the contractor's established, generally applicable travel policy.
4. All common carrier travel reimbursable hereunder shall be via economy class rates when available. If not available, reimbursement vouchers will be annotated that economy class accommodations were not available. First-class air travel is not authorized.
5. Reasonable actual costs of lodging and subsistence, or per diem in lieu of actual costs, shall be allowable to the extent that such actual costs or per diem amounts do not exceed the amounts or per diem rates prescribed by the contractor's established, generally applicable travel policy.
6. Receipts are required for common carrier transportation, lodging and miscellaneous items in excess of \$15.00.
7. Any revision to the contractor's established, generally applicable travel policy approved by the cognizant audit agency during the period of performance of this contract shall be effective, without formal modification to this contract, upon delivery to the Contracting Officer of a copy of such revised policy together with evidence of cognizant audit agency approval thereof.

ARTICLE X - COST ACCOUNTING STANDARD WITHDRAWAL

Cost Accounting Standard 414--Cost of money as an element of the cost of facilities capital shall not be reimbursed as an allowable cost under this contract.

ARTICLE XI - GENERAL PROVISIONS/ALTERATIONS

This contract is subject to the attached provisions of Appendix A, General Provisions, entitled "Cost Type Research and Development Contracts With Commercial Organizations," dated 2/6/80.

NOTE: AVAILABILITY OF TEXT OF CLAUSES - The complete text of clauses, incorporated by reference, is available, for a nominal fee, in the publication entitled "Code of Federal Regulations - 41 CFR 1-1.000, Chapter 1 to 2, Federal Procurement Regulations (Chapter 1)" which may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402. Copies of the complete text of specific clauses are available from the Nuclear Regulatory Commission, Division of Contracts, Washington, D.C. 20555 and will be furnished upon request.