

1. CONTRACT (Proc. Inst. Ident.) NO. **NRC-03-80-147** 2. EFFECTIVE DATE **8/18/80** 3. REQUISITION/PURCHASE REQUEST/PROJECT NO. **RFFA-NRR-80-147** 4. CERTIFIED FOR NATIONAL DEFENSE UNDER BOSA REG. 2 AND/OR DMS REG. 1. RATING:

5. ISSUED BY **U. S. Nuclear Regulatory Commission**  
Division of Contracts, Small Purchases  
ATTN: E. Miles, 301/427-4490  
Washington, D. C. 20555  
6. ADMINISTERED BY (If other than block 5) \_\_\_\_\_  
7. DELIVERY POINT DESTINATION:  **NA-001**  
 **Other (See below)**

8. CONTRACTOR NAME AND ADDRESS: **BioTechnology, Inc.**  
ATTN: Mr. William Paul Shanahan  
3027 Rosemary Lane  
Falls Church, VA 22042  
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**  
Division of Human Factors Safety  
ATTN: Mr. L. Crocker  
Washington, D. C. 20555  
12. PAYMENT WILL BE MADE BY: **U. S. Nuclear Regulatory Commission**  
Office of the Controller  
L-318  
Washington, D. C. 20555

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

14. ACCOUNTING AND APPROPRIATION DATA  
**20-19-05-17 B7502** Amount obligated by this action **\$9,957.00**

15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	Review of Staffing Requirements for Near Term Operating License Facilities				
					Firm Fixed Price

21. TOTAL AMOUNT OF CONTRACT **\$ 9,957.00**

CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE

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

23. NAME OF CONTRACTOR: **BioTechnology, Inc.**  
BY: *William Paul Shanahan*  
(Signature of person authorized to sign)  
27. UNITED STATES OF AMERICA  
BY: *Joyce Perlman*  
(Signature of Contracting Officer)

24. NAME AND TITLE OF SIGNER (Type or print): **WILLIAM PAUL SHANAHAN**  
**SECRETARY-TREASURER**  
25. DATE SIGNED: **8/20/80**  
28. NAME OF CONTRACTING OFFICER (Type or print): **Joyce Perlman, Acting Chief**  
29. DATE SIGNED: **8/20/80**

8009120037

ARTICLE I - STATEMENT OF WORK

The contractor shall provide personnel, facilities and materials to evaluate available information, including basic research results and existing literature to determine whether trade-offs, among factors such as reduced staff manning, reduced qualifications and/or abnormal shift and overtime work can provide a basis for establishing adequately safe plant staffing requirements without significantly decreased operator performance.

The requirement is to be accomplished in three (3) tasks:

Task 1

The contractor shall provide preliminary results of efforts associated with data acquisition and reduction from the readily accessible literature to establish a basis for assessing alternative shift manning options.

The contractor shall meet with the COAR on three occasions, at times agreed upon by COAR and contractor, in Bethesda, Maryland to discuss problems and progression of subject task. The required completion date for Task 1 is August 27, 1980. Upon completion of this task the contractor shall provide a letter report to the NRC.

Task 2

The contractor shall provide preliminary bibliographical results of efforts based on a comprehensive literature survey of applicable basic research and closely allied occupational data.

The contractor shall meet with the COAR on three occasions, at times agreed upon by COAR and contractor, in Bethesda, Maryland to discuss problems and progress under subject task. The required completion date is September 12, 1980. Upon completion of this task the contractor shall provide a letter report to the NRC.

Task 3

The contractor shall synthesize and interpret all data generated and provide recommendations regarding shift manning.

The contractor shall meet with the COAR on three occasions, at times agreed upon by COAR and contractor, in Bethesda, Maryland to discuss problems and progress under subject task. The required completion date is September 26, 1980. Upon completion of this task the Contractor shall provide a final technical report to the NRC.

ARTICLE II - PERIOD OF PERFORMANCE

The period of performance with respect to this contract shall commence on August 13, 1980 and all work shall be completed no later than September 26, 1980.

ARTICLE III - CONSIDERATION

In full consideration of the Contractor's Performance hereunder, NRC shall pay the contractor a fixed fee of \$9,957.00.

ARTICLE IV - PAYMENT

Payment shall be made in accordance with Clause 2 of the General Provisions entitled "Payment" as soon as practicable after completion and acceptance of all work, upon submission by the Contractor of voucher(s) in a form satisfactory to the Contracting Officer; provided, however, that said payment(s) shall not be deemed to prejudice any rights which the Government may have by law or under other provisions of this contract.

ARTICLE V - SPECIAL PROVISIONS

V.1 CONTRACTING OFFICER'S AUTHORIZED REPRESENTATIVE (COAR)

Performance of the work hereunder shall be subject to the technical instructions issued by the U. S. Nuclear Regulatory Commission. The technical instructions shall be signed by the COAR.

The COAR is responsible for:

1. monitoring the Contractor's technical progress, including the surveillance and assessment of performance and recommending to the Contracting Officer changes in requirement;
2. interpreting the statement of work;
3. performing technical evaluation as required;
4. performing 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 COAR is authorized to approve payment vouchers for supplies/services required under the contract. The Contracting Officer is responsible for directing or negotiating any changes in terms, conditions, or amounts cited in the contract.

For guidance from the COAR 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 of the expressed terms, conditions, or specifications incorporated into this contract;
3. not constitute a basis for an extension to the period of performance or contract delivery schedule; and
4. not constitute a basis for any increase in the contract price.

V.2 KEY PERSONNEL

For the purpose of Clause 26 of the General Provisions Mr. Harold Price, Dr. Patricia Wallace, Dr. M. Gregory Smith, and Ms Marjorie B. Ballman are identified as being essential to the work being performed hereunder.

V.3 INSPECTION AND ACCEPTANCE

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

V.4 GOVERNMENT FURNISHED PROPERTY

The following government furnished property will be supplied the Contractor to assist in the accomplishment of subject contract:

1. - Control room layout for a dual unit plant.
2. - Videotapes of control rooms.
3. - Applicable regulations and standards which relate to this effort:
  - a. - Staffing Guidelines for Nuclear Power Plants
  - b. - Operator Licensing Criteria, 10 CFR Part 50.55
  - c. - Standard Review Plan, Chapter 14
  - d. - Salem Final Safety Analysis Report (Applicable Articles)
  - e. - Farley Final Safety Analysis Report (Applicable Articles)

Upon completion of the contract, the Contractor shall return the Control Room layout and videotapes to the COAR, the above listed regulations and standards may be discarded.

V.5 DISSEMINATION OF CONTRACT INFORMATION

The Contractor shall not publish, permit to be published or distribute for public consumption any information, oral or written concerning the results or conclusions made pursuant to the performance of this contract without the prior written consent of the Contracting Officer. (two copies of any material proposed to be published or distributed shall be submitted to the Contracting Officer.

ARTICLE IV - GENERAL PROVISIONS

This contract is subject to the Fixed Price Research and Development Contracts under \$10,000.00 General Provisions dated November 14, 1977 which incorporated the FPR changes and Additions and NRC additions, attached hereto and made a part hereof.

Clause 14 -"Patent Rights" is deleted in its entirety.