RFP No. NRR-80-138
FRC Proposal No. 21267-G (Rev.

SUPPLEMENT TO TECHNICAL PROPOSAL

TECHNICAL ASSISTANCE IN SUPPORT OF NRC OPERATING REACTOR LICENSING ACTION PROGRAM

DECEMBER 5, 1980

USE AND DISCLOSURE OF DATA REQUESTED ON BASIS OF FREEDOM OF INFORMATION ACT.

The data contained in this Cost Proposal shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than to evaluate the proposal: provided that if a contract is awarded to this offer as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the contract. This restriction does not limit the Government's right to use information contained in the data, if it is obtainable from another source without restriction.

prepared for

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

in response to

RFP RS-NRR-80-138

yed by: W.B. Ligett
W.B. Ligett
President, FRC

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CONTENTS

1. INTRODUCTION

This supplement to the original technical proposal submitted by Franklin Research Center (FRC) includes answers to technical questions raised by the NRC review panel and new material further documenting FRC's qualifications for undertaking the proposed licensing actions (LA) contract. To facilitate NRC's final review, this document is essentially limited to new material; minor exceptions occur in Section 2, where the new material is identified in the margins but unaltered portions of the original material are retained so that an integrated revision is available to the reviewers.

FRC's best and final offer consists of the original technical proposal (as previously submitted to NRC), this supplement thereto, and a complete Revised Cost Proposal (submitted as a separate document).

2. TECHNICAL DISCUSSION

2.1 INTRODUCTION

This section includes the two generic topics (Reactor Systems Engineering and Human Factors Engineering) about which the NRC review panel had questions. The standard format of the discussion of each topic includes a brief Background statement and review of the Prospective Evaluation Criteria followed by a discussion of the Technical Evaluation Approach.

2.2 DISCUSSION OF LICENSING ACTION TOPICS

Please note that all portions of text which are additions to or modifications of FRC's original Technical Discussion are identified by markings in the margins.

2.3.2.2 Relevant Information from Original Proposal

Relevant portions of Section 3, Program Management, of FRC's original proposal are included here for reference. Pages 3-1 through 3-10 of the original proposal are included; an "X" has been drawn through portions that do not relate to the NRC's question relating to Project Management.

2.3.3 Group Leader Participation in Project Management

Group Leaders devote all of their time to the technical effort, including obtaining information, conducting engineering evaluations, and documenting the effort in Technical Evaluation Reports. Group Leaders do not participate in Project Management.

3. PROGRAM MANAGEMENT

3.1 PROJECT ORGANIZATION

The principal elements of the project organization are illustrated in Figure 3-1. This organization is the same as the one that has functioned successfully at FRC on another NRC licensing action (LA) project, except for the addition of the Assistant Project Manager position. Because of the proven effectiveness of this organization, it is proposed that the function and responsibilities of each position, both at FRC and the NRC, remain essentially the same, while remaining alert for ways of improving the system and increasing its effectiveness.

Assuming that FRC is the successful bidder for the new 300-LA contract, the FRC project organization will undergo a transition from the form shown in Figure 3-1 to the form shown in Figure 3-2. Upon award of the new contract, an Assistant Project Manager will be appointed to work closely with the Project Manager. The Assistant Project Manager will initially be responsible for some of the assignments on the existing contract; and the Project Manager will be responsible for the remainder of the existing assignments, while undertaking to get the new contract started. As soon as the work load on the new contract indicates the need for additional management effort, a second Assistant Project Manager will be appointed to be responsible for the new contract, while the first Assistant Project Manager will become responsible for the existing contract. Particularly during the transition period, the Project Manager may remain responsible for some of the assignments in either contract. If the NRC provides an adequate number of assignments at the start of the new contract, the transition period may be very brief. The timing of the steps in the transition will be determined by the rate of growth of management requirements and cost effectiveness.

The Project Manager and Assistant Project Managers will work together closely; however, the Project Manager will have the responsibility for meeting contract commitments and will be the principal contact for communications with the NRC Project Officer.

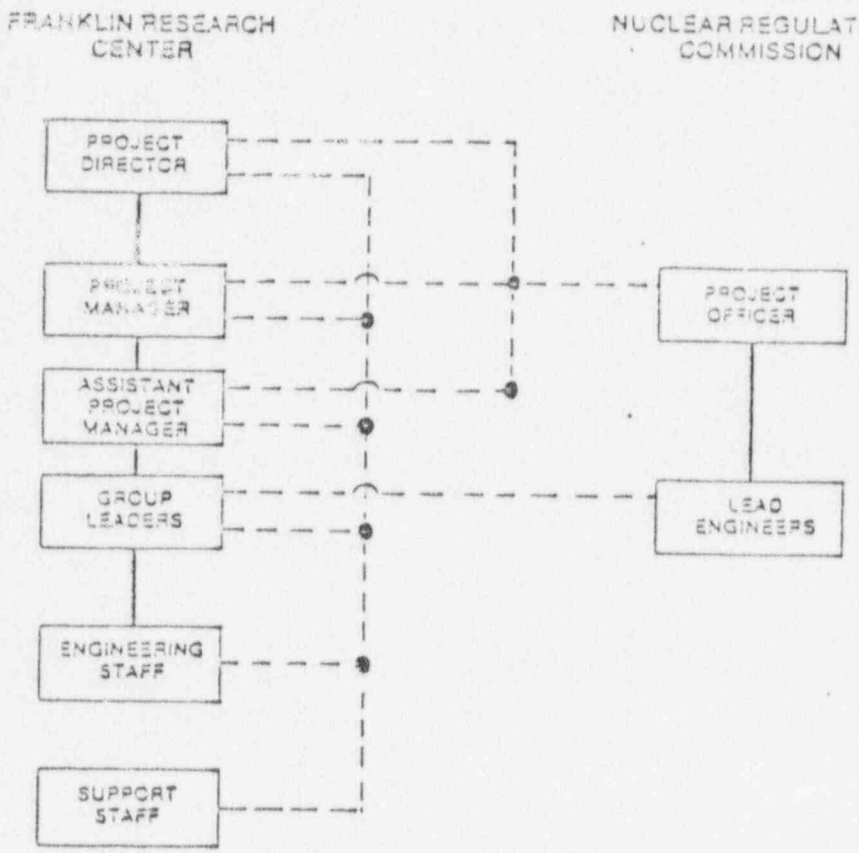

Figure 2-1. Principal Lines of Direction —— and Communication – – – of Initial Project Organization.

2-2

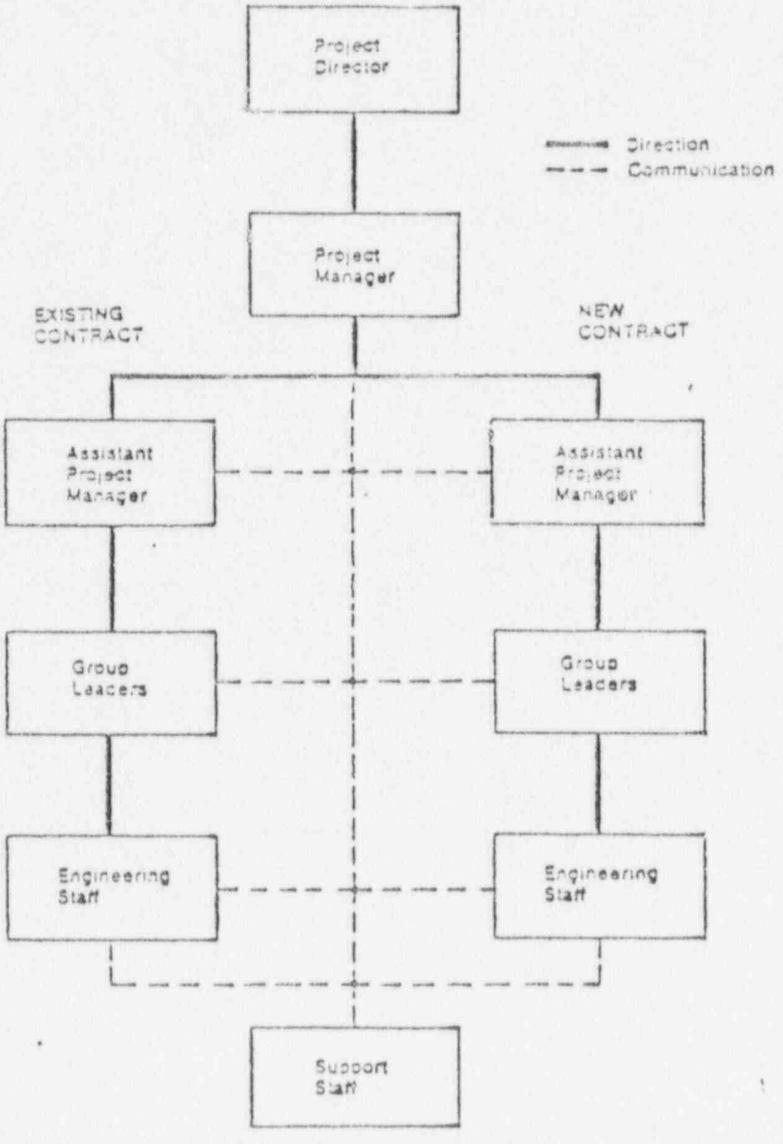

Figure 3-1. Final Project Organization

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The function and responsibilities of the FRC Project Director, Project Manager, and Group Leaders are described in Section 3.2; the role of the NRC Project Officer and Lead Engineer positions are described in accordance with FRC's experience on its existing LA project.

3.2 PRINCIPAL FUNCTIONS AND RESPONSIBILITIES OF KEY PROJECT POSITIONS

NRC Project Officer

- Identifies tentative assignments.
- Coordinates evaluation of contractor's response to tentative assignment.
- Selects NRC Lead Engineers and Performance Mo[illegible]
- Monitors the technical, scheduler, and fiscal [illegible] of the contractor.
- Takes actions necessary to maintain timely flo[illegible]k and completion of licensing actions.

NRC Lead Engineer

- Monitors contractor's technical performance on assignment for which he (the Lead Engineer) is responsible.
- Ensures that NRC criteria for licensee compliance with safety requirements are met.
- Reviews contractor's Requests for Information (RFIs) and Technical Evaluation Reports (TERs) for adherence to NRC safety criteria.
- Prepares Safety Evaluation Reports.
- Takes action necessary to meet scheduler requirements.

(The remainder of the positions discussed in this section are contractor positions.)

Project Director

- Provides overall guidance on technical matters.
- Approves Group Leader assignments.
- Monitors interdepartmental FRC contributions to the project.
- Ensures effective technical, scheduler, and fiscal management of the project.

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- Participates in technical review meetings among FRC staff and between key FRC and NRC personnel.
- Helps resolve technical issues that may arise, particularly if they involve differences between FRC and NRC positions.

Project Manager

- Is directly responsible for fulfillment of contract requirements.
- Recommends Group Leaders for Project Director's approval.
- Coordinates response to Tentative NRC Assignments.
- Establishes format of documents produced by FRC.
- Is responsible for format of Monthly Progress Reports and quarterly Self-Assessment Reports, and coordinates their production.
- Is responsible for support needed to produce FRC documents, including editing, typing, proofreading, and reproduction.
- Keeps NRC Project Officer informed of all aspects of the project through presentations at Monthly Technical Review Meetings and through other forms of communication as appropriate (i.e., telephone calls, letters, and topical meetings).
- Is responsible for establishing procedures for documenting the status of each task.
- Is responsible for providing the engineering staff necessary to support the Group Leaders.
- Is responsible for the provision of a filing system for project records and reference documents.
- Is responsible for providing space, furniture, office equipment, and other facilities needed by the staff.
- Monitors and controls subcontractor and consultant performance.

Assistant Project Manager

- Monitors technical, scheduler, and fiscal performance of Group Leaders.
- Helps Group Leaders obtain necessary engineering assistance.
- Suggests Group Leaders for [illegible]signments to the Project Manager.
- [illegible]s responsible for the prepar[illegible]on of responses to Tentative NRC Assignments.
- Is responsible for production of Monthly Progress Reports and quarterly Self-Assessment Reports.

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- Reports on assignments supervised by him to the NRC Project Officer at Monthly Technical Review Meetings.
- Is responsible for adherence of the project staff to procedures established for documenting the status of each task.

Group Leader

- Prepares work plan, schedule, and manpower budget for the NRC assignment assigned to him.
- Updates plans and schedules as required.
- Is responsible for the technical, scheduler, and fiscal performance on his assignment.
- Is responsible for preparation of RFIs and TERs that ensure fulfillment of NRC criteria.
- Contributes to Monthly Progress Reports and quarterly Self-Assessment Reports.
- Directs the effort of the engineers assigned to assist him.
- Obtains technical assistance as necessary from consultants and other members of the project staff, consulting the Project Manager as needed.
- Is responsible for maintaining project records in good order in accordance with the procedures and facilities provided by the Project Manager.

3.3 GENERAL DISCUSSION OF PROJECT MANAGEMENT

Having defined the functions and responsibilities of key project personnel, we now proceed to describe how the system functions and the rationale for the principal features of the system.

One of the key features of FRC's project management is that the Group Leaders have complete responsibility for technical, scheduler, and fiscal performance of their assignments. The principal documents produced by the Group Leaders, i.e., the RFIs and TERs, are initially submitted informally (as drafts) to the NRC. This allows the NRC reviews to proceed in parallel with refinement and polishing of the drafts by FRC. It is intended that the drafts be complete in technical content and that the polishing that takes place subsequent to their submittal to the NRC will not affect the parallel

technical review by the NRC. Consequently, it is possible to incorporate modifications in response to the NRC and internal FRC reviews at the same time.

The superior quality of FRC's technical performance is assured by several procedures. First and foremost is selecting competent Group Leaders, familiar with the issues involved in the NRC assignments, and providing them with an engineering staff well qualified to assist with the technical evaluations. Whenever a Group Leader needs assistance in a particular discipline, he is free to consult other Group Leaders or any member of the engineering staff expert in that discipline, or to seek the assistance of the Project Manager in identifying a qualified engineer. This policy is very successful at FRC because of the emphasis on, and long tradition of, team effort. The Project Manager and Project Director help ensure the superiority of FRC's technical performance by various methods, including the spot checking of technical documents, review of key documents (such as the first in a series of similar reports), arranging for the use of consultants in the exceptional cases where a particular discipline is not represented among FRC's staff, and by remaining constantly sensitive to any indications that FRC's technical performance can be improved. Most technical issues are resolved at the Group Leader level; however, the Project Manager and Project Director assist in the resolution of technical matters whenever necessary.

The support staff consists of nontechnical personnel who provide the miscellaneous services needed to perform the technical tasks without burdening the engineering staff with nontechnical effort. This staff includes secretaries, word-processing specialists, typists, editors, proofreaders, draftsmen, keypunchers, file clerks, and printing press operators. Some of these services are obtained within an engineer's own unit (e.g., from typists and secretaries of the laboratory or section to which he is assigned); others are provided by the project staff (e.g., the file clerk); and others are provided by service departments (e.g., FRC's Publications Department). The choice of support personnel is dictated by considerations of availability, efficiency, and cost effectiveness.

3.4 COMMUNICATIONS AMONG PROJECT STAFF AND WITH NRC

FRC proposes to continue using the lines of communication, the principal ones which are illustrated in Figures 3-1 and 3-2, which have functioned very successfully on FRC's existing LA contract. The flexibility of the system assures that all necessary communication among the project staff and between FRC and NRC takes place effectively without there being any efforts acting at cross purposes.

Within the FRC staff, the following types of oral communication by telephone or in person take place:

- The Project Director and Project Manager confer on matters of policy, contractual problems, and on any other matters that govern the quality of the project effort.
- The Project Director and Project Manager confer with the Vice Presidents and President of FRC as necessary.
- The Project Director, Project Manager, Assistant Project Managers, and the Group Leaders confer at internal technical review meetings.
- The Group Leaders confer daily with the engineers assisting them.
- The Project Manager and/or Assistant Project Manager confer with individual Group Leaders as necessary.
- The Project Manager and Assistant Project Managers confer as needed.
- The entire engineering and management staff communicate with the support staff as needed.

In addition to oral communications, written communication is used when a record is desired or when it is more efficient than oral communication. For example, copies of reports on meetings and telephone conversations between FRC and NRC personnel are distributed to the staff affected by them; copies of letters exchanged between FRC and NRC are similarly made for the affected staff; and memoranda are distributed whenever it is more convenient or efficient to do so in place of oral communications.

The principal lines of communications (both oral and written) between FRC and the NRC exist at two levels: between the NRC Project Officer and the FRC Project Managers, and between the corresponding NRC Lead Engineer and FRC Group Leaders. Informal correspondence may be exchanged directly between the

Lead Engineers and Group Leaders, but formal technical correspondence is exchanged only between the NRC Project Officer and the FRC Project Manager.

Table 3-1 lists the distribution of correspondence from FRC to the NRC on the existing FRC LA contract. This distribution has proved effective and will be continued on the proposed program. As has been done on the existing contract, the distribution may be modified from time to time in order to accommodate changing conditions.

Communications between FRC and the licensees follow the NRC guidelines. Telephone communications are made with NRC participation. Documents supplied by FRC are submitted to the licensees by the NRC; and documents supplied by the licensees are submitted to FRC by the NRC. Exceptions that have NRC approval may be made on a case-by-case basis to expedite the exchange of documents.

3.5 DOCUMENT CONTROL

FRC proposes to continue the system of effective document control that it developed for the existing LA contract. A controlled filing system was developed for maintaining records on each task and for other pertinent project information. This filing system is illustrated by the listing in Table 3-2. Copies of the documents represented in this table are maintained in the Project Office files. Copies of all correspondence between FRC and the NRC are also maintained in the Central File of the FRC Engineering Department. Access to the file is controlled to prevent misplacement or misuse of the documents.

Any confidential documents acquired by FRC are distinctly marked with a cover sheet, and their use is limited to the engineers who need them to perform an NRC assignment. No copies are made of confidential documents.

At the conclusion of an assignment, the files on individual tasks are kept available for a period to facilitate potential followup activity. All NRC and licensee documents are ultimately disposed of as directed by the NRC.

Table 3-1. Distribution of Communications to NRC

			Address
MONTHLY REPORTS			
	Master:	E. J. Butcher, Jr. Project Officer (MS 416) -- Include cover letter	2
	Copies:	A. F. Glagola (MS 286-SS) - 2 copies	1
		E. J. Butcher, Jr.	1
		NRC Award Fee Board Members	1
		NRC Performance Monitors	1
		NRC Lead Engineers -- Include one cover letter for all	1
SCHEDULE LETTERS			
	Original:	E. J. Butcher, Jr.	2
	cc:	NRC Performance Monitor	1
		NRC Lead Engineer	1
		A. F. Glagola (MS 286-SS)	1
SELF ASSESSMENT			
	10 Copies:	A. F. Glagola (MS 286-SS)	1
TECHNICAL COMMUNICATIONS			
Formal			
	Original:	E. J. Butcher, Jr.	2
	cc:	NRC Performance Monitor	1
		NRC Lead Engineer	1
Informal			
		USE STANDARD COVER FORM	
	Original:	Addressee	1
	cc:	E. J. Butcher, Jr. (cover form only)	1
		NRC Performance Monitor (cover form only)	1
MINUTES OF TECHNICAL REVIEW MEETINGS			
	cc:	E. J. Butcher, Jr.	1
DOCUMENT REQUESTS			
	Original:	Addressee (Include duplicate of each request form to be returned with document requested.)	1
	cc:	E. J. Butcher, Jr. (cover letter only)	1

ADDRESSES

1 Addressee's Name
United States Nuclear Regulatory Commission
Washington, D.C. 20555
TO BE OPENED BY ADDRESSEE ONLY

2 United States Nuclear Regulatory Commission
Washington, D.C. 20555
Attention: Addressee's Name and Mail Stop

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The only exception to the general rule will apply to the Assistant Manager during the transition period, from startup to the attainment of a full work load, during which full-time management effort is not required of him. During this transition, the Assistant Manager (Mr. C. J. Crane) will continue to act as Group Leader of the Equipment Environmental Qualification assignment (and follow-on assignments in this general area) in the existing LA contract, meanwhile grooming his replacement as Group Leader in that area as soon as the work load in the new contract demands that he limit his effort to management.

2.3.5 Adjustment of Project Organization to Changes in Level of Effort

The NRC stated that the level of effort is expected to increase at the rate of approximately 12 LAs per month for the first 8 months of the contract; also, there may be periods when the level of effort will decline. The question was concerned with how the project organization will evolve and adjust to the level of effort.

The evolution of Project Management is discussed in Section 2.3.2.

The adjustment of the technical and support staffs to the level of effort will be made in accordance with long-standing FRC procedures and policies. As illustrated by its staff buildup on the existing LA contract, FRC makes staff assignments in accordance with the demands of the work load; assignments are never made in accordance with a level of effort identified in a contract independently of the flow of work assignments from the sponsor to FRC. Whenever the work load decreases, FRC can divert an appropriate portion of the project staff to other activities. Although the proposed contract involves a substantial level of effort, it constitutes a small fraction of the total level of effort at FRC.

As discussed in Section 3.3, FRC has demonstrated its ability to increase the project staff in accordance with the work load on the existing LA contract. Further evidence of this is provided by the fact that The Franklin Institute staff was increased by approximately 100 persons during the last 12 months to a current level in excess of 900 employees.

Section 3.3 also shows that a large portion of the staff required to meet the requirements of the proposed new contract in addition to the existing LA contract is already on hand. Therefore, not only is FRC prepared to accommodate the planned, relatively slow growth rate in level of effort, it is in a position to accommodate a much faster growth rate if this should be in the NRC's best interests.

2.3.6 Identification of Lead Engineers and Support Staff

The prospective Group Leaders and the support engineering staff are identified in Table 2-2 for each technical area listed in the request for proposal.

2.3.7 Familiarity of Staff with NRC Practices.

It is FRC's plan to build on the staff for the existing LA contract to meet the requirements of the proposed new contract. This is shown by the prospective Group Leaders and support staff given in Table 2-2, Section 2.3.6, and the identification of engineers and their availability in Section 3. Furthermore, it is proposed that direction and management be provided by the present management team (see Section 2.3.2). Therefore, the NRC is assured that the staff of the proposed new contract will be thoroughly familiar with NRC practices and procedures.

2.3.10 Participation in ACRs Hearings

FRC, its subcontractors, and consultants are willing to participate in hearings of the Advisory Committee for Reactor Safeguards that are concerned with work done on the proposed contract.

2.3.11 NRC Technical Questions

A copy of the letter communicating NRC's technical questions which are discussed in the preceding subsections, is included in the following pages.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 26 1980

Franklin Research Center
A Division of the Franklin Institute
ATTN: Ms. Alice Ashton
The Benjamin Franklin Parkway
Philadelphia, PA 19103

Dear Ms. Ashton:

SUBJECT: RFP NO. RS-NRR-80-138 ENTITLED, TECHNICAL ASSISTANCE IN SUPPORT OF NRC REACTOR LICENSING ACTIONS (PROGRAM II)

This is to advise that the Nuclear Regulatory Commission (NRC) has completed its evaluation of the proposals received under the subject solicitation and your proposal has been determined to be within the competitive range. The NRC has established October 15, 1980, as the date preliminary negotiations will be conducted with your firm. Negotiations will take place in Bethesda, Maryland. You will be contacted at a later date as to the time and exact location for these negotiations.

In order to assist you in preparing for these negotiations, delineated below are some of the more significant questions which we plan to discuss with you and which require FRC's input:

1. You have provided for subcontractors in your cost proposal but have not discussed subcontractors in your technical proposal. Discuss this discrepancy, how subcontractors would fit into the project management structure (including key personnel), and in what technical areas subcontractors would assist FRC.

2. Discuss the duties of the project manager, explaining how he can reasonably carry these out while managing another similar contract in addition to this contract. Discuss his responsibility to keep the NRC project officer informed of all aspects of both contracts and his monitoring and controlling subcontractor and consultant performance.

3. What fraction of the lead engineers (discipline group leaders) time will be devoted to management and what fraction will be devoted to actually performing technical evaluations and preparing TERs?

Distribution: Z. Zudans; M. Reddi; S. Carfagno; D. V. Paulson
Lois David; 52 C.F.; Proposal File #21267-G; AMA

4. Provide a detailed discussion of your capabilities in the field of Human Factors Safety. Identify key individuals or subcontractors that will conduct human factors licensing actions evaluations or be involved in the development of human factors evaluation guidelines and criteria. To what extent are you capable to assist NRC to generate guidelines and acceptance criteria in the human factors tasks.

5. It is expected that the NRC will not provide all of the backlog licensing action packages at the beginning of the contract term. Instead the specific areas the contractor will work in will be identified and assigned throughout the contract term. The NRC anticipates assigning about twelve licensing actions per month for the first eight months. How will the proposed project organization evolve and adjust to this steady increase in the level of effort? There may also be periods when the level of effort will decline: how will the project adjust during these periods?

6. Clearly identify the lead engineers vs. support staff for each work scope area.

7. The individuals responsible for preparing the FRC technical proposal were obviously very familiar with NRC practices and procedures. Are these individuals being assigned to this program and to what extent are the people identified to work on this program aware of NRC procedures?

8. In the area of management, FRC tied this contractural effort very closely to their existing contract with the Nuclear Regulatory Commission. Running the two programs so closely together may not allow for proper utilization of personnel. Accordingly, discuss the impact of the existing NRC contract on this contract including manpower needs of this contract, demands on the project manager to manage two contracts, etc.

9. Discuss in more detail than your technical proposal your technical capability in the reactor system engineering area. You appear to be weak in this area.

10. Discuss the use of project personnel, including subcontractors and consultants, at hearings or ACRS involved with work done through this contract.

If you have any questions regarding the contents of this letter please call Mr. Glagola at 427-4480.

Sincerely,

D. J. Dougherty, Chief
Technical Assistance Contracts Branch
Division of Contracts

3. PROGRAM MANAGEMENT

3.1 DISTRIBUTION OF EFFORT AMONG DIFFERENT CLASSES

The proposed distribution of effort among management, the three classes of engineering, and support is based on FRC's experience with its existing licensing actions contract. This has shown that the equivalent of approximately one full-time manager is sufficient to manage the engineering, subcontracting, and support effort of a project of the proposed magnitude, (see Section 2.3.2). The technical complexity of the assignments and the need for superior engineering evaluation dictate that most of the technical effort be made by Senior Engineers and Engineers, in approximately equal numbers, assisted by a smaller number of Junior Engineers.

3.2 PERSONNEL ASSIGNMENTS

The assignment of Group Leaders and engineering support staff will be based on the technical requirements of each assignment to assure technical adequacy and cost effectiveness. Because of the complexity of most assignments and the crucial need for superior engineering judgment, the bulk of the work must be done by Senior Engineers and Engineers. FRC's experience on its existing licensing actions contract has shown that there are relatively few tasks that can be delegated to Junior Engineers, with exceptions. Although most Group Leaders will be chosen among the Senior Engineers, FRC has found that certain assignments can be executed effectively by relatively Junior Engineers if the necessary technical support is made available. This is true for the type of assignment that may require sophisticated analysis to establish review criteria but relatively routine analysis to apply the criteria; in this case, a Senior Engineer can assume responsibility for the more technically challenging portion of the assignment without being burdened with the legwork that may typify the bulk of the assignment.

3.3 ABILITY TO MEET STAFFING REQUIREMENTS

FRC is prepared to meet the staffing requirements of the proposed contract in addition to those of its existing licensing actions contract. Table 3-1 shows the breakdown of engineers among the three grades and the percent of time they are available to work on both contracts. FRC has the equivalent of 18.6 engineers available, and its subcontractors an additional 6.6 engineers, for a total of 25 engineers already available. Table 3-2 shows that this number is 7 short of the total number of engineers needed to meet the technical staffing requirements of both projects.

FRC proposes to hire 7 new engineers, 3 on the existing contract and 4 on the proposed new contract.

Figure 3-1 illustrates FRC's ability to add engineers to its staff as required to meet contract requirements.

3.4 MANAGEMENT TOOLS

As additional evidence of FRC's ability to develop management tools and effectively manage the contract, Figures 3-2 through 3-5 are included here. Figure 3-2 presents the projected level of effort in term of dollars. On the date the projection is made, past costs are recorded automatically from computer files in accordance with actual charges and future costs are calculated by the computer program on the basis of manpower projections made by the Group Leaders) and past cost experience (done by the computer). In Figure 3-3, the cost projections are translated into costs per licensing action for each assignement and for the contract as a whole. All management, support and non-labor cost of each assignment. Figure 3-4 give the projected manpower level of effort for existing assignments; and Figure 3-5 shows the accumulated cost compared to a linear projection of accumulated cost. All of these charts facilitate the monitoring of costs, anticipating manpower needs, and communicating the project status to the NRC.

CONTINUED FROM PREVIOUS PAGE

SUBCONTRACTORS	SENIOR ENGINEER	ENGINEER	JUNIOR ENGINEER	PERCENT AVAILABLE
WESTEC SERVICES, INC.				
Delgaizo	X			80
Kaucher		X		60
Overbeck	X			100
Sargent	X			60
Scherrer			X	50
BIO-TECHNOLOGY, INC.				
Hatterick		X		40
Price	X			10
Post	X			20
Wallace		X		30
AMERICAN INSTITUTE FOR RESEARCH in the BEHAVIORAL SCIENCES				
Hickey	X			10
Winter		X		20
Pacine	X			20
CONSULTANTS				
Gutwein	X			5
Pense	X			5
EXISTING CONTRACT				
SYNERGIC RESOURCES, INC.				
Steigelmann	X			50
ENERGY CONSULTANTS, INC.				
Archer	X			100
				660 → 6.6 Persons

4. PERSONNEL QUALIFICATIONS

Resumes of personnel available for the proposed program that were not included in FRC's original proposal are included in Appendix A of this supplement. Most of these are resumes of subcontractor personnel who were largely omitted from the original proposal; in addition, a few new FRC resumes are included.

Table 4-9 of the original proposal has been replaced by Table 2-2 of Section 3.2 in this supplement.

5. EXPERIENCE

5.1 INTRODUCTION

Franklin Research Center experience relevant to the proposed work was detailed in Section 5 of FRC's original submission to the USNRC.

The background and qualifications of FRC's subcontractors - WESTEC Services, Inc., BioTechnology, Inc., American Institutes for Research, and Superior Keypunch - are presented in the following subsections.

APPENDIX

Proposal No. 27267-G

A

RESUMES OF ADDITIONAL PERSONNEL

Franklin Research Center
A Division of The Franklin Institute
The Benjamin Franklin Parkway, Phila., Pa. 19103 (215) 448-1000