INDEPENDENT ASSESSMENT AND ANALYSIS

Monthly Progress Report P-C6177-5
For the Period Ending January 31, 1988
(U.S. NRC Contract NRC-05-86-168)

Prepared for

U.S. Nuclear Regulatory Commission
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1. INTRODUCTION

Table 1 lists the active tasks and the key personnel. Table 2 summarizes the funding and cost status for all tasks. Contract NRC-05-86-186 requires that the cost be calculated on a "total-input" basis, whereas FRC proposes use of the "value-added" basis. Accordingly, Table 2 shows the budget approved on the "total-input" basis and the costs incurred on the "value-added" basis.

A summary of progress on the active tasks during January 1988 is given in Section 2.

Table 1. Key Personnel for Project and Open Tasks

S. West, NRC Project Officer (301/492-1220)
S. P. Carfagno, FRC Project Manager (215/666-3070)
T. A. Shook, FRC Assistant Project Manager (215/666-3127)

NRC Task No.	FRC Task No.	Title	NRC Contact	FRC Task Leader
EL-303	003	EQ Inspection, Browns Ferry	G. T. Hubbard, Jr. (301) 492-4825	S. P. Carfagno (215) 666-3070
EL-305	005	McGuire RTB Failure Evaluation	D. Hood (301) 492-8961	H. Fishman (215) 666-3225
EL-307	007	Bulletin Preparation	A. S. Gill (301) 492-9474	S. P. Carfagno (215) 666-3070

Table 2. Summary Status of All Tasks as of January 31, 1988[1]

FRC Task No.	NRC Task No.	Title	Budget[1]	Amount Authorized	Cost[3] Incurred During Jan. 1988	Cost[3] Incurred 10/1/87 Through 1/31/88	Total Cost[3] Incurred Through 1/31/88	Status
001	M-301	Bolt Analyses	$20,735	$20,735	$ 388	$ 1,165	$19,609	Complete
002	EL-302	EQ Inspection Sequoyah NPS	8,913	8,913	-	-	7,627	Complete
003	EL-303	EQ Inspection Browns Fe/ y	17,558	17,558	-	7	7	On Hold
004	EL-304	McGuire RTB AIT Inspection	5,048	5,048	-	-	4,329	Complete
005	EL-305	McGuire RTB Failure Evaluation	32,955[4][5]	29,380	1,231	15,137	33,323	In Progress
006	EL-306	Sequoyah Cable Evaluation	94,452	96,334[6]	31	18,369	19,802	Complete
007	EL-307	Bulletin Preparation	25,459	25,559	10,886	19,001	19,001	In Progress

(1) Some recent non-labor charges (e.g., consultant's fees) may not be included in the amounts shown as cost incurred, as such costs are not recorded until invoices are received.
(2) Total-input cost basis including fee.
(3) Value-added cost basis including fee.
(4) Amount requested by FRC on August 21, 1987.
(5) Additional funding of $7,836 has been requested.
(6) Negotiations are under way to reduce the amount authorized to the cost incurred.

2. TASK SUMMARIES

2.1 NRC TASK EL-303 (FRC TASK 003), SUPPORT OF AN EQUIPMENT QUALIFICATION INSPECTION AT BROWNS FERRY NUCLEAR POWER PLANT

Description and Progress

FRC has been requested to provide two engineers for two weeks to support an equipment qualification inspection of Browns Ferry Nuclear Power Plant. The Licensee was not ready when the inspection was scheduled.

Plan

The inspection will be rescheduled when the Licensee is ready.

Problems

None.

2.2 NRC TASK EL-305 (FRC TASK 005), SUPPORT OF EVALUATION OF McGUIRE REACTOR TRIP BREAKER FAILURE

Description

Mechanical jamming of a Westinghouse DS-type reactor trip circuit breaker occurred at McGuire Unit 2. A weld between the center-pole lever and the pole shaft was found to have failed. A subsequent inspection of a breaker at the Catawba Nuclear Plant identified lack of fusion and cracking in welds joining the center pole and anti-bounce levers to the pole shaft. FRC is assisting the NRC in determining the cause of the failure and defining the extent of weld defects in the Catawba shaft. FRC is also providing recommendations for further actions with regard to the DS-type breakers.

Progress

FRC submitted a draft report on its metallurgical study of the pole shaft from the Catawba Nuclear Power Plant, which included optical, scanning electron microscope (SEM), and metallographic analyses. The extent of cracking in the center pole lever-to-shaft and anti-bounce, lever-to-shaft fillet welds and, hence, the extent of remaining intact welds was defined. The draft report on FRC's metallurgical study was approved by NRC. FRC is preparing a final report incorporating the recommendations of the interim report, I-6177-5-1, dated September 30, 1987 and the metallurgical studies.

Plan

The final report will be completed during this period. Ten (10) copies of the micrographs have been ordered for inclusion in the report.

Problem

Additional funding to complete the project was requested in a letter to the Contract Administrator on January 28,1988. In that letter FRC requested an increase in the authorized funding to $37,216.

2.3 NRC TASK EL-306 (FRC TASK 006), REVIEW OF CABLES IN CONDUITS FOR SEQUOYAH

Description

The objective of this task is to review the TVA cable program for Sequoyah to assure that cables are adequately designed and meet NRC criteria. Specific efforts will include:

1. review of additional information received from TVA on September 11, 1987, and determination of any impacts on previous conclusions reached,

2. evaluation of the adequacy of the TVA plan for resolving the open cable issues, preparation of requests for additional information (RAI) as appropriate to resolve information deficiencies, and observation of tests, and

3. preparation of material for use in a Technical Evaluation Report (TER) that addresses the evaluation of open cable concerns and the adequacy of TVA actions to correct the deficiencies. All technical bases, conclusions, and recommendations are to be clearly and explicitly stated in the TER.

Progress

FRC has been informed that this task is considered complete.

Plan

Negotiations are under way to reduce the authorized funding to the cost plus fee incurred. There will be no further technical effort.

2.4 NRC TASK EL-307 (FRC TASK 007), PREPARATION OF BULLETIN ON INSULATION INTEGRITY OF SILICONE RUBBER INSULATED CABLES

Description

As a result of the issuance of a 10CFR Part 21 notification on silicone rubber-insulated cables at Sequoyah by TVA, the NRC plans to issue a Bulletin to determine where such cables are in use and to assess the damage to such cables as installed. The scope of the task is to provide technical assistance in defining test methods and procedures for detecting damage to silicone rubber-insulated cables, assessing the potential impact of any cable damage on safety, and the development of criteria for the selection, testing, installation, inspection, and acceptance of cables.

Progress

On January 19, 1988, a revised draft of a bulletin, along with working documents prepared by consultants W. A Thue and J. B. Gardner, was mailed to NRC. Mr. Gardner's review of a Wyle report on a silicone rubber cable qualification test was also submitted to the NRC.

Plan

Provide technical assistance as requested.