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Distribution:

Elzeftawy

(Return to WM, 623-SS)

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Dr. Atef Elzeftawy  
Repository Projects Branch  
Division of Waste Management  
U. S. Nuclear Regulatory Commission  
7915 Eastern Avenue  
Silver Spring, MD 20910

Dear Dr. Elzeftawy:

Enclosed is the revised program plan for FIN A-1165, Task 1, "Assisting in the Development of the Licensing Assessment Methodology." As we discussed by telephone, the dates of completion have been revised because of the work loads in Tasks 3 and 4.

Please feel free to call me or Bob Cranwell if you have any questions.

Sincerely,

*Regina Hunter*

Regina L. Hunter  
Waste Management Systems Division

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PDR WMRES EXISANL  
A-1165 PDR

Revised Program Plan for FIN A-1165, Task 1  
Assisting in the Development  
of the Licensing Assessment Methodology

Background

The NRC is working to develop tools and techniques, called a "licensing assessment methodology," (LAM) for use in assessing the licensing documents to be submitted by the DOE for mined geologic nuclear-waste repositories. In the past, the NRC has had a number of contractors working on various specific aspects of the LAM. In FY85, a separate task was begun to examine the LAM as a whole for completeness, compatibility of the parts, and redundancy and to evaluate the reasons for any such flaws. This task is named "Assisting in the Development of the Licensing Assessment Methodology," or simply, "Integration."

When Integration began, Aerospace, Inc., was developing a method for assessing the compliance of the waste package. Golder Associates worked on aspects of the problem dealing with engineered barriers. Sandia National Laboratories (SNLA) was developing tools and techniques for far-field performance assessment, called the performance assessment methodology. During FY85, two contractors, Aerospace and Golder, notified NRC that they would be withdrawing from NRC's waste-management programs. For this reason, revising the program plan for the Integration task is now necessary.

This program plan describes the revised FIN A-1165, Task 1, Integration. The program has been funded by the NRC at SNLA at a level of \$150K per year for three years. Only two years of the program are described in this program plan. A demonstration of the entire methodology, to be carried out in a third year, will be described in a later program plan.

Purpose

Integration is examining the various component methodologies thus far developed by NRC contractors for the purpose of assessing DOE licensing documents. Integration will determine whether the component methodologies are complete and compatible or to some extent incomplete, incompatible, or redundant. If such flaws are found in existing or developing component methodologies, recommendations for course corrections will be made. The entire task will be carried out by one or a few SNLA staff and on-site contractors, so that a true "integration" of the components will be possible; however, the SNLA staff will work closely with NRC staff. A primary purpose of this Task is to advise the NRC regarding any necessary changes in the LAM.

#### Subtask 1. Obtain and Read Published Documentation

At the present time, no one person is familiar with all aspects of the component methodologies. Under Task 1, one or at most two persons will obtain and read all methodology documentation published by NRC contractors. It will not be necessary under this task to become capable of using the tools, such as codes, that are available, but only to be familiar with the capabilities of the codes and their required input and projected output. This task was partially completed in FY85.

This subtask is expected to require a total of 6 man-months and to cost \$64K.

#### Subtask 2. Prepare a Status Report on the Existing Methodologies

Subtask 2 entails the preparation of a status report that briefly describes the existing component methodologies. The status report will include a brief overview description of each component methodology and an annotated bibliography of the published documentation. The results of this subtask will be used to reevaluate and possibly redirect the work done under the subsequent subtasks. Some of the bibliographic annotations were completed in FY85.

Subtask 2 is expected to require a total of 6 man-months and to cost \$64K.

#### Subtask 3. Obtain and Read Unpublished Documentation

Not all of the component methodologies have been documented. In order to make the integration as up-to-date as possible, it will also be necessary to read drafts of documents that are not yet final.

This subtask is expected to require 2 man-months in reading unpublished documentation, costing \$22K, and travel taking up to .75 man-month and costing \$20K.

#### Subtask 4. Present Interim Results to NRC Staff

To provide information and advice to the NRC in as timely a fashion as possible, SNLA staff will give presentations to the NRC as required, but at least semi-annually. Presentations will be given in the NRC offices and will include a summary of accomplishments to date, an evaluation of the portions of the methodology investigated to date, and any suggestions for redirection of the methodology-development program.

The cost of this subtask is included in the other subtasks.

**Subtask 5. Prepare a Report Documenting the Existing Methodology and Comparing It with an Idealized Methodology**

After all aspects of the component methodologies, both documented and undocumented, have been reviewed, a draft report will be prepared. The draft report will describe a complete licensing assessment methodology that resembles as closely as possible the sum of the existing component methodologies. In addition, the existing component methodologies will be described and compared with the idealized methodology. This draft report will be discussed with NRC staff and management to ensure that there is consensus on the idealized methodology and that the existing component methodologies have been accurately described. The idealized methodology will also be evaluated in the light of NRC policy and resource limitations. A final report, adding any recommendations for additions to or alterations of the existing methodology necessary to bring it into line with the idealized methodology, will be prepared and submitted to NRC for review. The final report will also discuss possible technical risks of not developing the complete idealized methodology because of NRC policy or resource limitations. This subtask will require some travel.

This subtask is expected to require 6 man-months for developing the idealized methodology, costing \$64K; 6 man-months for preparing the draft report, travel taking up to .75 man-month and costing \$20K; and 4.5 man-months for preparing the final report, costing \$46K.

**Work to be Performed**

The bar chart on the next page shows the scheduling for the various tasks described above. Each hyphen represents one man month.

	Fiscal Years and Quarters							
	1985		1986				1987	
	3	4	1	2	3	4	1	2
Subtask 1 Obtain and Read Documents	--	-	-		-	-		
Subtask 2 Prepare Status Report			-	-	-	--		
Subtask 3 Obtain and Read Documents					--			
Discuss Unpublished Results						-		
Subtask 4 Present Interim Results			-		-		-	
Subtask 5 Prepare Draft Report						-	--	---
Discuss Draft with NRC Staff					-		-	
Prepare Final Report								----

Personnel

Regina L. Hunter: (Principal Investigator) Areas of Expertise--Performance Assessment, Scenario Development, Geology

Margaret S. Y. Chu: Areas of Expertise--Performance Assessment, Computer Modeling, Chemistry

Robert V. Guzowski: Areas of Expertise--Data-base Management, Scenario Development, Geology