

# ARGONNE NATIONAL LABORATORY

ENVIRONMENTAL ASSESSMENT DIVISION  
9700 SOUTH CASS AVENUE, ARGONNE, ILLINOIS 60439  
WEB SITE: www.ead.anl.gov

TELEPHONE: 630/252-7695  
FAX NUMBER: 630/252-4611  
E-MAIL: SYCHEN@anl.gov

November 22, 1999

Dr. Tin Mo  
Office of Nuclear Regulatory Research  
Mail Stop T9C24  
Nuclear Regulatory Commission  
Washington, DC 20555

**SUBJECT: October Monthly Progress Report: Development of Risk-Based (Probabilistic) Default Parameters for RESRAD and RESRAD-BUILD Computer Codes; Job Code Y6112**

Dear Dr. Mo:

This letter presents the status report for the month of October 1999 for Argonne National Laboratory's work under your direction [FIN Title: Development of Risk-Based (Probabilistic) Default Parameters for RESRAD and RESRAD-BUILD Computer Codes; Job Code Y6112].

The status of effort, as well as projected activities and costs for October 1999, are discussed as follows:

## Task Summary

### Subtask 1.1: Develop Parameter List and Review Previous Work

The task was completed in September. The final letter report was forwarded to NRC on September 9, 1999.

### Subtask 1.2: Identify Parameters to Include in the Analysis

This task was completed during this month. A final letter report was issued to NRC on October 15, 1999.

### Subtask 1.3: Investigate and Define Input Parameter Distributions

Subtask 1.3 continued in October. This subtask is based on the findings of Subtask 1.2 regarding the priority of RESRAD/RESRAD-BUILD parameters. Parameters were identified in three categories: high priority, medium priority, and low priority. In response to NRC guidance of October 29 (e-mail message from Mo to Chen), ANL prepared a draft work plan for Subtask 1.3 (November 5, 1999) for inclusion of parameters (a total of 70 parameters for RESRAD and RESRAD-BUILD) identified as being in the high and medium priority categories. In this proposal, 44 parameters will

Y601

PPR ORG RESRAD

be analyzed by December 3, 1999; the remaining 26 parameters will be analyzed by January 14, 2000. The final letter report will be due to the NRC on February 4, 1999.

**Subtask 1.4: Perform Parameter Analysis Calculations**

Subtask 1.4 is scheduled to start in December 1999.

**Subtask 1.5: Develop Single Sets of Default**

This subtask has been deleted from the current scope of work according to NRC's direction.

**Subtask 1.6: Develop Interface Modules for RESRAD and RESRAD-BUILD**

Subtask 1.6 continued in October to incorporate preliminary input/output features.

**Subtask 1.7: Software Testing**

Subtask 1.7 continued in September with some low-level activities to test the existing probabilistic shell of the RESRAD code and compatibility with the NT software platform.

**Subtask 1.8: Documentation**

This subtask is an ongoing activity to incorporate Argonne internal comments and to address NRC comments leading to the final letter reports of Subtask 1.2.

**Subtask 1.9: Meetings, Teleconferences, and Video-Conferences**

ANL team meetings were conducted during October. No NRC/ANL Working Group teleconferences were held during October. An NRC/ANL preliminary technical exchange/training workshop for RESRAD Version 5.91 was conducted on October 26, 1999, at NRC. ANL staff participated in this workshop and obtained initial feedback from NRC participants. Further comments are expected from NRC at a later date.

**Subtask 2.1: Maintain and Implement Quality Assurance**

A draft Quality Assurance (QA) Plan for software development (probabilistic modules) for RESRAD code was forwarded to the NRC for review on August 30. ANL anticipates to implementing the QA plan in November.

**Subtask 2.2: Project Management**

This subtask is an ongoing activity to perform project management duties as well as to prepare regular progress reports for the NRC.

**Cost Summary**

The project cost summary is shown in the attached MLSR report.

**Project Summary and Issues**

As of October, all tasks have met schedule and budget requirements, as discussed above. Incremental funding of \$75K was received in November to address the project funding issue.

Effort in November will include: (1) continuing effort on Subtask 1.3 for parameter distribution and (2) incorporation of preliminary input/output features into the RESRAD codes.

Because of the Federal budget issue, continued concern exists regarding the funding level of the project. Full funding for the project is necessary to sustain the proposed efforts for December and beyond (current budget provisions expire on November 30, 1999).

Please feel free to call me at (630) 252-7695 if you have any questions.

Sincerely,



S.Y. Chen

Environmental Assessment Division

SYC:bj  
Enclosure

cc: C. Yu (ANL)  
Project file  
Rateb (Boby) Abu-Eid, Division of Waste Management  
Director, Division of Risk Analysis and Applications  
Chief, Radiation Protection, Environmental Risk and Waste Management Branch  
Director, Division of Waste Management  
Chief, Decommissioning Branch, Division of Waste Management

**MLSR  
Financial Status Report  
October 1999**

Job Code Number\*: Y6112

Title: Default Parameters for RESRAD and RESRAD-BUILD Computer Codes  
Project/Task Order Agreement Period of Performance From: 05/99 to 11/99

Task Order Number\*\*: 60-99-264, 60-00-011

Task Order Title: Default Parameters for RESRAD and RESRAD-BUILD Computer Codes  
Task Order Period of Performance From: 05/99 to 11/99

Total Project Ceiling Amount	\$384K
Total Funds Obligate to Date	\$384K
Total Current Fiscal Year Ceiling Amount	\$ 75K
Total Funds Obligated Current Fiscal Year	\$ 75K

Direct Staff Effort (Cumulative):	Category 1: 2,413 (hours)
	Category 3: 392 (hours)
	Category 6: 2 (hours)

**Current Cost-Incurred Status to the Nearest Dollar**

	October Current Month	Fiscal Year To Date	Cumulative Project To Date
<b>Direct Labor, Labor Categories</b>			
Category 1	\$ <u>39,681</u>	\$ <u>39,681</u>	\$ <u>184,781</u>
Category 3	\$ <u>4,175</u>	\$ <u>4,175</u>	\$ <u>19,475</u>
Category 6	\$ <u>0</u>	\$ <u>0</u>	\$ <u>25</u>
<b>Overhead</b>			
Materials and Services***	\$ <u>2,901</u>	\$ <u>2,901</u>	\$ <u>13,901</u>
Travel Expenses	\$ <u>2,751</u>	\$ <u>2,751</u>	\$ <u>4,451</u>
Subcontracts/Consultants+	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
Other	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
General and Administrative	\$ <u>14,754</u>	\$ <u>14,754</u>	\$ <u>65,454</u>
<b>Subtotal</b>	\$ <u>64,262</u>	\$ <u>64,262</u>	\$ <u>28,8062</u>
DOE Added Factor	\$ <u>1,928</u>	\$ <u>1,928</u>	\$ <u>6,828</u>
<b>Total Costs</b>	\$ <u>66,190</u>	\$ <u>66,190</u>	\$ <u>296,790</u>
Foreign Funds++	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
<b>Total Uncosted Amount</b>		\$ <u>87,200</u>	\$ <u>87,200</u>
Percentage of available cumulative funds costed			% <u>77.3</u>
Percentage of available current fiscal year funds costed			% <u>43.2</u>

\*Specialized internal account numbers may be added.

\*\*Individual financial status reports are required for each individual task order that has an estimated cost of \$100,000 or more and has a period of performance of 6 months or more. For task orders under these thresholds, only the total estimated cost is required.

\*\*\*Also include a breakout of sensitive property and property with an acquisition cost of \$5000 or greater.

+Include contract and purchase order dollar amounts. Provide cost breakdown by element of cost for subcontracts that exceed 25 percent of project costs.

++Portion of total costs charged to foreign funds.

**MLSR  
Financial Status Report (continued)**

**Cost Totals by Project Task**

**Task: Default Parameters for RESRAD and RESRAD-BUILD Computer Codes**

**Direct Labor:                 \$ 43,856**

**Total Estimated Cost:       \$ 66,190**

**Monthly Spending Plan Update**

	<b>1<sup>st</sup> Month</b>	<b>2<sup>nd</sup> Month</b>	<b>3<sup>rd</sup> Month</b>	<b>4<sup>th</sup> Month</b>	<b>5<sup>th</sup> Month</b>	<b>6<sup>th</sup> Month</b>
<b>Direct Costs</b>	<b>\$ 8,300</b>	<b>\$ 37,800</b>	<b>\$ 46,400</b>	<b>\$ 30,263</b>	<b>\$ 32,500</b>	<b>\$ 49,508</b>
<b>Indirect Costs</b>	<b>\$ 28,000</b>	<b>\$ 11,200</b>	<b>\$ 14,600</b>	<b>\$ 10,452</b>	<b>\$ 11,000</b>	<b>\$ 16,682</b>
<b>Total Estimated Cost</b>	<b>\$ <u>36,000</u></b>	<b>\$ <u>49,000</u></b>	<b>\$ <u>61,000</u></b>	<b>\$ <u>40,715</u></b>	<b>\$ <u>43,500</u></b>	<b>\$ <u>66,190</u></b>
<b>Project Completion</b>	<b>% 12</b>	<b>% 28</b>	<b>% 47</b>	<b>% 60</b>	<b>% 75</b>	<b>% 78</b>

(Continue for entire period of performance.)

**Cumulative Costs to Date \$ 296,790**

**Overall Funding Status**

In thousands of dollars provide the totals for the following:

<b>Prior FY Carryover</b>	<b>\$ <u>78,400</u></b>
<b>FY 99 Project Funding Level</b>	<b>\$ <u>515,000</u></b>
<b>FY 99 Funds Received to Date</b>	<b>\$ <u>75,000</u></b>
<b>FY 99 Funding Balance Needed</b>	<b>\$ <u>440,000</u></b>
<b>Projected Carryover to Next FY</b>	<b>\$ <u>60,000</u></b>

<b>Total Estimated Project Amount</b>	<b>\$ <u>824,000</u></b>
<b>Total Project Cumulative Amount Obligated</b>	<b>\$ <u>384,000</u></b>
<b>Total Project Balance Needed</b>	<b>\$ <u>440,000</u></b>
<b>Total Project Cumulative Amount Costed</b>	<b>\$ <u>296,790</u></b>