



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SEP 10 2002

Information Systems Laboratories, Inc.  
ATTN: James Meyer  
11140 Rockville Pike, Suite 500  
Rockville, MD 20852

SUBJECT: TASK ORDER NO. 6 ENTITLED, "TRAC-M CODE CONSOLIDATION  
DEVELOPMENTAL ASSESSMENT" UNDER CONTRACT NO. NRC-04-02-054

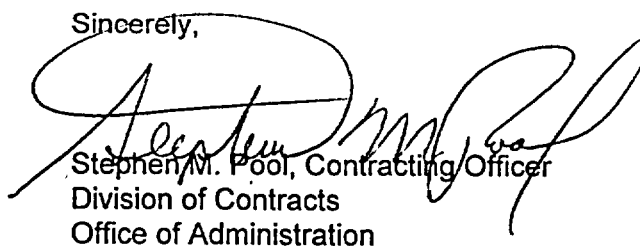
Dear Mr. Meyer:

This letter definitizes Task Order No. 6 in accordance with the enclosed statement of work. The period of performance for Task Order No. 6 is September 10, 2002 through January 31, 2003. The task order estimated cost and fixed fee is set forth as follows: Estimated Costs \$223,729 Fixed Fee \$17,300 CPFF Total \$241,028. \$110,000 in funds is hereby allotted to this task order of which \$102,105 represents funds for the estimated cost and \$7,895 represents funds for the fixed fee which is estimated to cover performance through November 15, 2002. The accounting data for this task order is set forth as follows: RES ID: RES-C02-470 APPN: 31X0200 B&R:26015110205 JCN:Y6673 BOC: 252A Amount Obligated This Action: \$110,000

Please indicate your acceptance of Task Order No. 6 by having an official authorized to bind your organization execute three copies of this document, by signing in the space provided, and return two copies to me. You should retain the third copy for your records. All other terms and conditions of this task order remain unchanged.

Should you have any questions, regarding this task order, please contact me on (301) 415-8168.

Sincerely,

  
Stephen M. Pool, Contracting Officer  
Division of Contracts  
Office of Administration

ACCEPTED: 

NAME

V. J.

TITLE

9/11/02

DATE

STATEMENT OF WORK  
TASK ORDER NO. 6  
TRAC-M Code Consolidation Developmental Assessment

BACKGROUND

The primary goal of the TRAC-M code consolidation effort is to develop a unified code, that retains the capability of the constituent codes TRAC-P, TRAC-B, and RELAP5. The consolidated version of TRAC-M must be able to reproduce transients previously produced by these predecessor codes with little or no loss in accuracy. Currently, most coding revisions are complete and TRAC-M is ready for developmental assessment. This assessment will necessarily include a large number of simulations, since the TRAC-M code must be demonstrated accurate for both large and small break processes.

OBJECTIVE

The objective of this task order is to simulate various experimental tests that have been used for developmental assessment for TRAC-P, TRAC-B and/or RELAP5. Comparisons of these transients and applicable experimental data will be made with results from TRAC-M. These code to code, and code to data comparisons will either demonstrate success of the consolidation, or will help the staff to identify which of the constituent models in TRAC-M need additional work. In code to data comparisons emphasis is to be placed on comparisons of TRAC-M to data. Since future validation is anticipated for TRAC-M, input decks and "scripts" that enable rapid and efficient comparisons to data are to be archived on the NRC Data Bank.

WORK REQUIREMENTS

Task 1:      Simulations of LOFT Large Break Tests

Convert existing TRAC-P input decks for use with TRAC-M. Simulate large break tests L2-5, L2-6, and LB-1 using both TRAC-P and TRAC-M. For each test, compare the results from each code to each other and also to applicable data.

Deliverables are a report documenting the results. The report will also document all input decks, modifications made to them, and provide a description of the transients performed as part of this investigation. All TRAC-M input and output files are to be retained for archival in the NRC data bank.

Estimated Level of Effort:      3 staff-months to modify input decks, perform steady-state calculation, run transients and make comparisons.

Estimated Completion Date: 11/30/02

Task 2: Simulations of LOFT Small and Intermediate Break Tests

Convert existing RELAP5 input decks for use with TRAC-M. Simulate small break and intermediate break tests L3-7 and L6-1 using both RELAP5 and TRAC-M. The SNAP (Symbolic Nuclear Analysis Package) code can be used to convert RELAP5 decks to TRAC-M decks. For each test, compare the results from each code to each other and also to applicable data.

Deliverables are a report documenting the results. The report will also document all input decks, modifications made to them, and provide a description of the transients performed as part of this investigation. All TRAC-M input and output files are to be retained for archival in the NRC data bank.

Estimated Level of Effort: 2 staff-months to modify input decks, perform steady-state calculation, run transients and make comparisons.

Estimated Completion Date: 2/28/03

Task 3: Simulations of PWR Component Tests

Convert existing RELAP5 input decks for use with TRAC-M. Simulate MIT Pressurizer Test ST4, and the MIT Pressurizer Insurge-Outsurge Test using both RELAP5 and TRAC-M. The SNAP (Symbolic Nuclear Analysis Package) code can be used to convert RELAP5 decks to TRAC-M decks. For each test, compare the results from each code to each other and also to applicable data.

Deliverables are a report documenting the results. The report will also document all input decks, modifications made to them, and provide a description of the transients performed as part of this investigation. All TRAC-M input and output files are to be retained for archival in the NRC data bank.

Estimated Level of Effort: 1 staff-month to modify input decks, run transients and make comparisons.

Estimated Completion Date: 2/28/03

Task 4: Simulations of BWR Thermal-Hydraulic Tests

Convert existing TRAC-B input decks for use with TRAC-M. Simulate the following tests with both TRAC-B and TRAC-M:

- A. FIST Test 6SB1
- B. GOTA Reflood Test 42
- C. TLTA Test 6423

- D. SSTF Run 111
- E. FIX-II Test 3025
- F. ROSA-III Run 912

For each test, compare the results from each code to each other and also to applicable data.

Deliverables are a report documenting the results. The report will also document all input decks, modifications made to them, and provide a description of the transients performed as part of this investigation. All TRAC-M input and output files are to be retained for archival in the NRC data bank.

Estimated Level of Effort: 5 staff-months to modify input decks, perform any necessary steady-state calculations, run transients and make comparisons.

Estimated Completion Date: 1/30/03