



UNITED STATES
NUCLEAR REGULATORY COMMISSION
 WASHINGTON, D.C. 20555-0001

007077

JAN 14 2002

Purdue Research Foundation
 ATTN: Mr. Thomas B. Wright
 1063 Hovde Hall
 West Lafayette, IN 47907-1063

SUBJECT: MODIFICATION NO. 4 TO TASK ORDER NO. 10
 UNDER CONTRACT NO. NRC-04-97-046

Dear Mr. Wright:

This letter definitizes Modification No. 4 to Task Order No. 10. Accordingly, this task order modification shall be performed in accordance with the attached Statement of Work and in accordance with the contractor's technical proposal dated January 8, 2002, which increases the ceiling and obligated amounts by \$80,000 from \$100,000 to \$180,000. The task order is hereby modified as follows:

The total estimated cost for full performance of Task Order #10 is \$180,000 with a period of performance of May 15, 2000 through November 30, 2002. Funds in the amount of \$80,000 are being obligated for performance of this modification which hereby increases the obligated amount. The Contractor shall not incur costs for this task order which exceed the cumulative obligated amount of \$180,000.

Accounting Data for Task Order No. 10, Modification No. 4, are as follows:

B&R No.: 26015110205
 APPN No.: 31X0200.260
 Job Code: W6749
 BOC: 252A
 RES ID: RES-C02-347
 Obligated Amount of this Action: \$80,000

A summary of obligation under this task order, from the date of award through this modification are provided below:

Total FY 00 NRC Obligations: \$ 25,000
 Total FY 01 NRC Obligations: \$ 75,000
 Total FY 02 NRC Obligations: \$ 80,000
 Cumulative Obligations: \$180,000

This modification obligates FY 02 funds in the amount of \$80,000

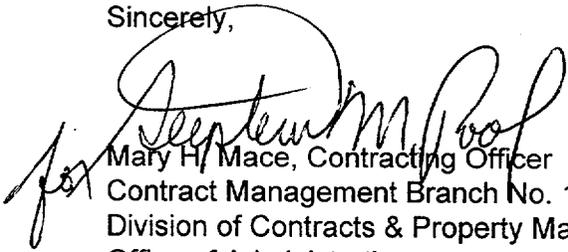
All other terms and conditions remain unchanged.

Please indicate your acceptance of this task order modification by having an official, authorized to bind your organization, execute three(3) copies of this document in the space provided and return two(2) copies to Deborah Neff, Contract Specialist, at the address listed below. You should retain the third copy for your records.

U.S. Nuclear Regulatory Commission
Division of Contracts & Property Management
Mail Stop T-7-I-2
Washington, DC 20555

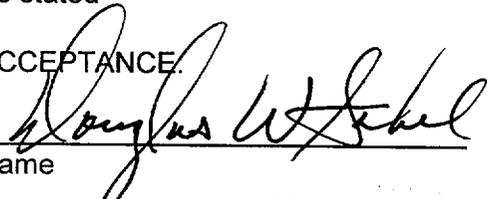
If you have any questions concerning this action, please contact Ms. Neff at 301-415-8160.

Sincerely,


for Mary H. Mace, Contracting Officer
Contract Management Branch No. 1
Division of Contracts & Property Management
Office of Administration

Enclosure:
As stated

ACCEPTANCE


Name

Douglas W. Sabel, Director
University Contracting Group
Title

JAN 24 2002
Date

Modification (No. 4) to the Statement of Work for Task Order #10, "OECD/NRC Benchmark for a BWR Turbine Trip Transient," under Contract #NRC-04-97-046 and Job Code W6749, "Thermal-Hydraulic Research"

Additional Work Requirements (1/16/02 - 11/30/02)

Continue and complete the work in Tasks 5 through 10. Add a new Task 11 to the SOW.

Task 5. Compile Results for the Third Exercise

This task collects from the participants the analytical results for the third exercise and publish the results in a standard graphical form with a descriptive narrative summarizing the comparison among the participants' results, the PSU-performed reference calculation, and test data.

Estimated Level of Effort: 2 staff-months
Estimated Completion Date: April 30, 2002

Task 6. Conduct a Final Workshop

This task conducts a third workshop on benchmark to resolve issues related to the third exercise, to address any outstanding issues, and to reach an agreement on the technical basis for the final report (to be prepared under Task 7).

Estimated Level of Effort: 1 staff-month
Estimated Completion Date: May 31, 2002

Task 7. Prepare a Final Report

Prepare a final benchmark report in the same format as used in the PWR MSLB Benchmark. The final report will be published as an OECD/NEA and NUREG/CR report.

Estimated Level of Effort: 2 staff-months
Estimated Completion Date: August 31, 2002

Task 8. Develop TRAC-M Input Decks for Ringhals-1 BWR

A TRAC-BF1 input deck (at Penn State) for the Ringhals-1 BWR plant model will be run with TRAC-M. Modifications to the input deck may be needed to achieve steady-state at the initial conditions of the two selected cases (a case for in-phase or core-wide oscillations, and a case for out-of-phase or regional oscillations) by making changes to the control systems and channel mapping if necessary. Provide to the NRC in electronic format both TRAC-M input decks (one for each of the two selected cases) and documentation as specified by the NRC SQA procedures.

Estimated Level of Effort: 1 staff-month
Estimated Completion Date: March 31, 2002 (new date)

Task 9. Develop TRAC-M/PARCS Core-Wide and Regional Stability Methodology

TRAC-M/PARCS will be run with both models, and non-linear analysis tools will be applied to the results to evaluate stability parameters such as frequency and decay ratios. Input decks will be modified as needed to simulate the transients. For the regional (out-of-phase) stability analysis a regional mapping method will be developed. Sensitivity studies on important modeling parameters will be performed to determine what factors dominate the code results. Provide the NRC in electronic format the tools including instructions on their use. Note that in order to carry out this task, PARCS input decks and an upgraded PARCS code will be needed from Task Order #8 of the same NRC contract.

Estimated Level of Effort: 3 staff-months
Estimated Completion Date: May 31, 2002 (new date)

Task 10. Assess TRAC-M/PARCS Against Ringhals-1 Plant Data and Compare the Results with TRAC-BF1/ENTREE Calculations

The final input models will be run with TRAC-M/PARCS and assessed against the selected Ringhals-1 plant data. The tools developed under Task 9 will be utilized to analyze the results of the simulation. Additionally, the TRAC-M/PARCS results will be compared with those generated by TRAC-BF1/ENTREE (as reported in the OECD/NEA Ringhals-1 Benchmark documents) as a means of further benchmarking the code results. A letter report shall be delivered to NRC that documents the input models and the results of the study and explains the regional mapping methodology.

Estimated Level of Effort: 1 staff-month
Estimated Completion Date: August 31, 2002 (new date)

Task 11. Provide Technical Support

This task provides technical support in terms of performing additional analysis, making presentations, reviewing technical reports, and attending meetings as requested by the NRC Technical Monitor.

Estimate Level of Effort: 1 staff-month
Estimated Completion Date: November 30, 2002

Meetings and Travel:

Two trips to Purdue University are planned to consult and communicate with Prof. Tom Downar. Each trip will involve two persons for up to two days. The contractor may propose additional domestic travel that is deemed necessary for the successful completion of this contract. However, each travel needs to be approved in advance by the NRC Technical Monitor.