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

005511

NOV 30 2000

Purdue Research Foundation
ATTN: Thomas Wright
1063 Hovde Hall, Room 339 Purdue University
West Lafayette, IN 47909-1063

Dear Mr. Wright:

SUBJECT: TASK ORDER NO. 4 MODIFICATION NO. 5 UNDER CONTRACT NO. NRC-04-97-046 "PHASE SEPARATION IN TEES

In accordance with Section G.4. Task Order Procedures, of the subject contract, this letter definitizes Task Order No. 4 Mod 5. This effort shall be performed in accordance with the enclosed Statement of Work.

The period of performance for Task Order No. 4 is changed to run from September 30, 1997 through November 30, 2001. The total estimated cost for full performance of this task order is increased by $150,000 from $584,372 to $734,372. Funds in the amount of $150,000 are hereby obligated for performance of this task order as modified. This action increases the total cumulative obligated amount from $533,991.68 to $683,991.68. The Contractor shall not incur costs for this task order which exceed this cumulative obligated amount of $683,991.68. All other terms and conditions of task order #4 remain unchanged.

Accounting data for Task Order No. 4 Mod 5 is as follows:

B&R No.: 16015110135
Job Code: W-6749
BOC Code: 252A
RES ID: RES-C01-318: Obligated this action: $150,000
Appropriation No.: 31X0200
FY 97 Obligated Amount: $230,591.68
FY 98 Obligated Amount: $ 53,400.00
FY 99 Obligated Amount: $100,000.00
FY 00 Obligated Amount: $150,000.00
FY 01 Obligated Amount: $150,000.00

Please indicate your acceptance of this task order by having an official, authorized to bind your organization, execute three copies of this document in the space provided and return two copies to the Contract Specialist. You should retain the third copy for your records. The issuance of this task order does not amend any terms or conditions of the subject contract.

Sincerely,

Stephen M. Pool, Contracting Officer
Contract Management Branch No. 1
Division of Contracts and Property Management

ACCEPTED: TASK ORDER NO. 4 Mod 5

By Peter E Dunn DEC 8 2000
NAME DATE

Peter E. Dunn
Assistant Vice President for Research
TITLE

Modification (No. 5) to the Statement of Work for Task Order #4, "Phase Separation in Tees," under Contract No. NRC-04-97-046 and Job Code W6749, "Thermal-Hydraulic Research"

Additional Work Requirements (12/1/00 - 11/30/01)

Modify Task 11 and add new Tasks 12 through 14 to the existing SOW.

Task 11. Provide Technical Support

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

Estimate Level of Effort: 0.5 staff-month (for this performance period)
Estimated Completion Date: November 30, 2001 (new date)

Task 12. Hot-Leg Inlet Conditions on Liquid Entrainment to a Tee

Liquid entrainment from a hot leg to a tee junction depends on the hot-leg liquid level, which is assumed in the existing correlations for thermal-hydraulic system codes to be the same as the two-phase mixture level in the reactor vessel. However, test results at OSU indicate that this assumption is not true because the mixture level in the vessel is higher than the liquid level in the hot leg. This task is to study the hot-leg inlet conditions on liquid entrainment to a tee. Minor facility modification is needed by adding an internal. The task involves conducting experiments, collecting data, and developing a model or correlation. Prepare a letter report in both text and electronic format.

Estimated Level of Effort: 7 staff-months
Estimated Completion Date: June 30, 2001

Task 13. Impact of Cross Flow

The previous experiments at OSU were to study phase separation and liquid entrainment in vertical tees without cross flow (no steady horizontal flow in the hot leg where the vertical tee is located). This task is investigate the entrainment process with a cross flow through the hot leg. Minor facility modification is needed. The task involves conducting experiments, collecting data, and developing a model or correlation. Prepare a letter report in both text and electronic format.

Estimated Level of Effort: 6 staff-months
Estimated Completion Date: September 30, 2001

Task 14. Interfacial Area Transport in a Tee

This task is to continue the work to measure the change in interfacial area concentration in a vertical tee. The work involves data collection, analysis, and model development. The task also requires coordination and cooperation with Purdue University. Prepare a letter report in both text and electronic format.

Estimated Level of Effort: 1.5 staff-months

Estimated Completion Date: November 30, 2001

Meetings and Travel:

The contractor is expected to attend two meetings in the Washington, D.C. area, and each meeting will involve up to two people for two days. The contractor will also make two trips to Purdue University in West Lafayette, Indiana (for Task 14); each trip will involve one person for a week. In addition, the contractor is allowed to attend and make presentations at two national technical conferences for up to two people. However, any travel must be approved in advance by the NRC Technical Monitor.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF PAGES
	1	2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
One	See block 16C.	03-00-002 - 11/20/00	

6. ISSUED BY CODE

U.S. Nuclear Regulatory Commission
Division of Contracts and Property Mgt.
Attn: Yvette Brown - Mail Stop T-7-I-2
Contract Management Branch 2
Washington DC 20555

7. ADMINISTERED BY (If other than Item 6) CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

SONALYSTS, INC.
ATTN: LaVeria Sanders
215 Parkway North
P.O. Box 280
Waterford CT 06385

CODE FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO.: NRR-00-002

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.: Con# NRC-03-00-002

X 10B. DATED (SEE ITEM 13): 11-20-2000

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment of each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

120-15-101-125 J-2846 31X0200.120
Obligation Amount $100,000.00

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). (such as changes in paying office, appropriation date, etc.)
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☒ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE PAGE 2 FOR MODIFICATION DETAILS

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
	Sharon D. Stewart
15B. CONTRACTOR/OFFEROR / 15C. DATE SIGNED	16B. UNITED STATES OF AMERICA / 16C. DATE SIGNED
(Signature of person authorized to sign)	BY (Signature of Contracting Officer) 12-14-00

STANDARD FORM 30 (REV. 10-83)

Template=ADM-001

ADM02

The purpose of this modification is to provide incremental funding in the amount of $100,000.00, thereby increasing the contract's obligated amount from $30,000.00 to $130,000.00. Accordingly, the contract is hereby modified as follows:

Under Subsection B.2 entitled "CONSIDERATION AND OBLIGATION-COST PLUS FIXED FEE" (JUN 1988) ALTERNATE 1 (JUN 1991), paragraphs (c) and (d) are deleted in their entirety and substituted with the following in lieu thereof:

"(c) The amount currently obligated by the Government with respect to this contract is $130,000.00, of which the sum of $92,550.00 represents the estimated reimbursable costs, and of which $7,450.00 represents the fixed fee.

(d) It is estimated that the amount currently allotted will cover performance through March 31, 2001."

All other terms and conditions of the contract remain unchanged, including the ceiling amount of $796,886.00.

A summary of obligations for this contract from award date, through the date of this action is given below:

Total FY00 Obligations:	$ 30,000.00
Total FY01 Obligations:	$100,000.00
Cumulative Total of NRC Obligations:	$130,000.00

This modification obligates FY01 funds in the amount of $100,000.00.