

SUPPLEMENTAL AGREEMENT
BETWEEN
THE UNIVERSITY OF VIRGINIA
AND
THE U. S. NUCLEAR REGULATORY COMMISSION

THIS SUPPLEMENTAL AGREEMENT, effective the 1st day of October, 1979 by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES NUCLEAR REGULATORY COMMISSION (hereinafter referred to as the "Commission"), and THE UNIVERSITY OF VIRGINIA (hereinafter referred to as the "Contractor"),

WITNESSETH THAT:

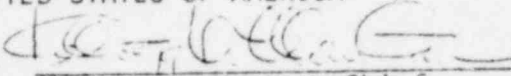
WHEREAS, the parties desire to modify Contract No. NRC-04-75-316 as hereinafter provided, and this supplemental agreement is authorized by law, including the Energy Reorganization Act of 1974, as amended, and the Atomic Energy Act of 1954, as amended.

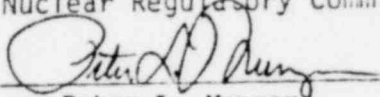
NOW, THEREFORE, said contract is hereby modified as follows:

1. Appendix A, attached to this supplemental agreement and made a part hereof, provides for the research to be performed by the Contractor during the contract period specified therein.
2. In Article II - The Period of Performance, the date "September 30, 1980" is substituted for the date "September 30, 1979".
3. In Article III - Consideration, the sum "\$447,586.00" is substituted for the sum "\$357,586.00".

IN WITNESS WHEREOF, the parties have executed this document.

UNITED STATES OF AMERICA

BY: 
Kellogg V. Morton, Chief
Research Contracts Branch
(title)

Nuclear Regulatory Commission
BY: 
Peter L. Munger
University Comptroller
(title)

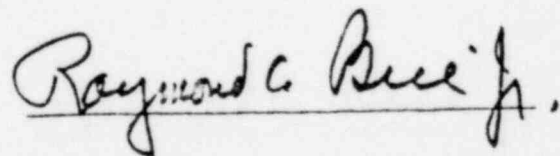
University of Virginia

I, Raymond C. Bice, Jr., certify that I am the
(attester)
Secretary to Board of Visitors of the Contractor named
(title)

under this document; that Peter L. Munger
(signatory)

who signed this document on behalf of said Contractor was then
University Comptroller of said Contractor; that
this document was duly signed for and on behalf of said Contractor by
authority of its governing body and is within the scope of its legal
powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of
said Contractor.



(SEAL)

CONTRACTOR: UNIVERSITY OF VIRGINIA

APPENDIX A

For the Contract period October 1, 1979 through September 30, 1980

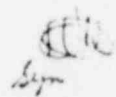
Article A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The unclassified scope of work under this contract entitled "Bubble Behavior in LMFBR Core Disruptive Accidents" is as follows:

1. Two-Phase Bubble Heat and Mass Transfer and Bubble Dynamics work will continue with emphasis on the use of the UVABUBL code and assistance on the analysis of the ORNL tests in FAST. The investigation of the nonequilibrium effects and entrainment should be included, in both underwa and under-sodium tests.
2. Flashing Fragmentation Experiments and Analysis will be conducted with emphasis to an experimental investigation of flashing fragmentation. Another objective will be the continued updating of the Monte Carlo code developed for the calculation of particle-size distributions.
3. Homogeneous Nucleation Condensation and Droplet Growth work will continue towards completing the analysis of the particle-size distribution in the ORNL CDV tests in Argon. The approach here will be to combine the calculations performed by the code WONDY and some earlier work done at UVa. and at the University of Toronto.
4. Publication of an annual report describing the work performed in items 1-3 above.

(b) The Principal Investigator expects to devote the following approximate amount(s) of time to the contract work:

- | | |
|----------------|---|
| A. B. Reynolds | - 20% of his time during the academic year |
| | 100% of his time during 1 summer month |
| | 50% of his time during 1 summer month |
| C. A. Erdman | - 20% of his time during the calendar ^{academic} year |
| | 100% of his time during 1 summer month |



ARTICLE A-II WAYS AND MEANS OF PERFORMANCE

(a) Items for which support will be provided as indicated in A-III, below

(1) Salaries and Wages \$ 47,011.00

(2) Equipment to be purchased or fabricated by the Contractor \$ 2,500.00

Under \$1,000.00

Fast Pressure Transducer	\$500.00
Material for Modified Chamber	\$500.00
Particle Collector & Stand	\$750.00
Heater Degaser	\$750.00

(3) Travel (i) Domestic \$ 2,000.00

(ii) Foreign \$ -0-

(4) Other direct costs including fringe benefits.

(5) Indirect costs based on a predetermined rate of 65 percent applicable to salaries and wages.

(b) Items, if any, significant to the performance of this contract, but excluded from computation of Support Cost and from consideration in proportioning costs: None

(c) Time or effort of Principal Investigator(s) including indirect costs and fringe benefits contributed by Contractor but excluded from computation of Support Cost and from consideration in proportioning costs: None

Article A-III

The total estimated cost of items under A-II(a) above for the contract period stated in this Appendix A is \$90,000.00; the Commission will pay 100 percent of the actual costs of these items incurred during the contract period stated in this Appendix A, subject to the provisions of Article III and Article B-XXVIII. The estimated NRC Support Cost for the contract period stated in this Appendix A is \$90,000.00.

The estimated NRC Support Cost is funded as follows:

(a) Estimated unexpended balance from prior period(s) \$ -0-

(b) New funds for the current period \$ 90,000.00

(c) The new funds being added in A-III(b) constitute the basis for advance payments provided under Article B-X.