

Contract No. AT-(40-1)-2478
Modification No. 6

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 8th day of December, 1964, effective as of the 1st day of November, 1964, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into Contract No. AT-(40-1)-2478 and modifications thereto numbered 1 through 5 providing for the Contractor's performance of certain research; and

WHEREAS, the parties desire to amend the contract further to provide for the continuance of this research and/or the performance of additional research and to provide for certain other changes; and

WHEREAS, this Supplemental Agreement is authorized by law, including the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties do mutually agree that said contract, as amended, is hereby further amended in the following particulars, but in no others:

1. The date "October 31, 1964", as such appears in ARTICLE II - THE PERIOD FOR PERFORMANCE, in Paragraph (a) of ARTICLE III - CONSIDERATION, and in the portion of Appendix "A" which states the Contract Period, is deleted and the date "October 31, 1965" is substituted therefor.

2. Paragraph (a) of ARTICLE III - CONSIDERATION is revised to read as follows:

"(a) In full consideration of the Contractor's performance hereunder for the period commencing on November 1, 1964, and expiring on October 31, 1965, the Commission shall pay the Contractor the sum of \$21,301.00.

3. The provisions of Appendix "A" to the contract are deleted and the provisions of the revised Appendix "A", attached hereto and made a part hereof, are substituted therefor.

REPOSITORY Oak Ridge Operations
Records Holding Area
COLLECTION Documents 1944-1994
BOX No. H-178-2 Bldg. 2714-H
Contract No. AT(40-1)2478
FOLDER Univ. of Texas

4. The following Article B-XXVII is added to Appendix "B":

"ARTICLE B-XXVII - CIVIL RIGHTS ACT OF 1964

"It is agreed that when implementing rules, regulations or orders are issued and made effective pursuant to Sec. 602 of Title VI of the Civil Rights Act of 1964, the Contractor shall, to the extent a grant or program or activity under the contract is covered by such rules, regulations or orders, promptly notify the Commission in writing that it will comply therewith or, alternatively, that it elects not to accept them as conditions of the contract or grant, as the case may be. Should the choice be the latter, the Commission may terminate the contract pursuant to the provisions of this contract respecting the right to terminate for the convenience of the Government or may terminate the grant; in the latter regard, the Commission may require that the Contractor revert in the Government title to any items of equipment, in the Contractor's possession or custody, vested in the Contractor by grant from the Commission between July 9, 1964, and the date of termination."

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY
COMMISSION

BY: Richard B. Martin
ACTING DIRECTOR
RESEARCH AND DEVELOPMENT DIVISION
(Contracting Officer)

THE UNIVERSITY OF TEXAS SOUTHWESTERN
MEDICAL SCHOOL

BY: A. J. Gill
A. J. Gill, M.D.
TITLE: Dean

APPENDIX "A"

For the Contract Period November 1, 1964 through October 31, 1965.

A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

The Contractor will continue research on ultraviolet and X-radiation damage in living cell systems. Experiments employing ultraviolet microbeams generated by the recently developed ultraviolet microbeam phase contrast television microscope will be used to irradiate focal areas of living cells. These will include the cytoplasmic membrane, the paranuclear bodies, the nuclear membrane, the nucleus and the nucleolus. One of the purposes of this irradiation will be to study the ultraviolet alterations induced by such ultraviolet microbeams. The second purpose will be to try to determine whether or not there is an area within the cell which when irradiated will suppress mitosis. These studies will be compared with the effects of ultraviolet irradiation on the suppression of mitosis when the irradiation is applied to the whole cell. An investigation will be made of the dose time relationships involved in the production of ultraviolet cellular damage. These studies will seek to determine whether or not survival can be altered by dose fractionation. In order to try to understand the role of various irradiated cell organelles in virus proliferation, studies employing ultraviolet microbeams will be carried out on cells infected by viruses. The relationship between gravity and the electromagnetic spectrum will be explored by means of biological models. These models will include bacteria and human cells. In the case of human cells a new instrument--the centrifuge television microscope--will be constructed to explore the responses of living human cells to increased gravitational fields and to compare these responses to those of similar cells subjected to both increased gravity and increased irradiation.

A-II APPROXIMATE LEVEL OF RESEARCH EFFORT

<u>(a) Contractor Personnel:</u>	<u>Approx. % of time</u>
Dr. P. O'B. Montgomery, Principal Investigator	20%
Engineering Technician	70%
Research Technician	90%
Student Laboratory Assistants	As Needed
Secretary	50%

(b) Premises, Facilities, and Materials to be
Furnished by the Contractor:

Laboratory space and facilities necessary to conduct research on ultraviolet and X-radiation damage in living cell systems will be available to the project. A tissue culture laboratory, with incubators, roller drum, and salamander aquaria will also be provided. A complete optical and electronic workshop will be available for the fabrication of new instruments and modification and improvement of existing instruments. Equipment available includes ultraviolet flying spot television microscope with time lapse motion picture photography equipment and other related instruments.

<u>A-III ITEMS OF EQUIPMENT TO BE PURCHASED OR FABRICATED BY CONTRACTOR COSTING \$500 OR MORE</u>	<u>Estimated Cost</u>
1. Scanner tubes, Cathode ray tubes, multiplier photo tubes, etc.	\$2,200.00
2. Transistors, vacuum tubes, amplifiers, optical components, etc.	\$1,525.00

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 28th day of February, 1964, effective as of the 1st day of November, 1963, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and ~~SOUTHWESTERN MEDICAL SCHOOL OF THE UNIVERSITY OF TEXAS~~ (hereinafter referred to as the "Contractor").

~~THE UNIVERSITY OF TEXAS~~
SOUTHWESTERN MEDICAL SCHOOL
WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into Contract No. AT-(40-1)-2478 and modifications thereto numbered 1 through 4 providing for the Contractor's performance of certain research; and

WHEREAS, the parties desire to amend the contract further to provide for: (a) the continuance of this research and/or the performance of additional research; (b) the revisions and/or additions of certain provisions thereof in accordance with current applicable rules and regulations of the Commission; and (c) as a result thereof, restate the provisions of this contract as of the effective date of this Supplemental Agreement; and

WHEREAS, this Supplemental Agreement is authorized by law, including the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties do mutually agree that the contract (including its Appendices) as amended, is hereby revised to read as follows:

ARTICLE I - THE RESEARCH TO BE PERFORMED

(a) The Contractor shall furnish personnel, facilities, equipment, materials, and supplies substantially to the extent set forth in Appendix "A", attached hereto and made a part hereof, endeavor to procure or fabricate the items specified in A-III of said Appendix "A", and therewith perform to the best of its ability the research provided for in Appendix "A" and report thereon pursuant to the provisions of this contract. Substantial deviations from the foregoing shall be discussed with and subject to the written approval of the Commission.

(b) This work shall be conducted under the direction of Dr. P. O'B. Montgomery or such other member of the Contractor's staff as may be mutually satisfactory to the parties.

ARTICLE II - THE PERIOD FOR PERFORMANCE

The period for performance under this contract shall expire on October 31, 1964; provided, however, that this period may be extended for additional periods by the mutual written agreement of the parties.

ARTICLE III - CONSIDERATION

(a) In full consideration of the Contractor's performance hereunder for the period commencing on November 1, 1963, and expiring on October 31, 1964, the Commission shall pay the Contractor the sum of \$20,720.00.

ARTICLE IV - ADDITIONAL CONTRACT PROVISIONS

Appendix "B", attached hereto and made a part hereof, sets forth additional general contract provisions of this contract.

ARTICLE V - GOVERNMENT PROPERTY

(a) The following items of property to be procured or fabricated by the Contractor are hereby listed as "Government property": None.

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: *R. G. Huppries*
R. G. Huppries
Director, Contract Division, GRC
(Contracting Officer)

THE UNIVERSITY OF TEXAS
SOUTHWESTERN MEDICAL SCHOOL
~~SOUTHWESTERN MEDICAL SCHOOL OF THE~~
~~UNIVERSITY OF TEXAS~~

BY: *A. J. Gill* A. J. Gill, M.D.

TITLE: Dean

APPENDIX "A"

For the Contract Period November 1, 1963 through October 31, 1964.

A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

The Contractor will continue to conduct research on ultraviolet (uv) and X-radiation damage in living cell systems. This research will include such approaches as (1) use of the uv flying spot television microscope to investigate the dose time relationship in uv induced cellular damage, (2) further studies on photoreversal in various human tissue cells, (3) uv microbeam studies directed at determination of minimal lethal dose of uv irradiation delivered to one micron square area of a cell, (4) studies on uv microbeam irradiation of cell organelles, (5) comparison of nucleolar lesions produced by chemical carcinogens with those produced by uv microbeam irradiation, (6) study of the role of various cell organelles in virus proliferation, and (7) studies directed at determination of whether or not X-irradiation of bacteria will induce changes identical to those produced by gravity.

A-II APPROXIMATE LEVEL OF RESEARCH EFFORT

<u>(a) Contractor Personnel:</u>	<u>Approx. % of time</u>
Dr. P. O'B. Montgomery, Principal Investigator	20%
Research Technician	90%
Secretary	50%

<u>(b) Premises, Facilities, and Materials to be Furnished by the Contractor:</u>	
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Laboratory space and facilities necessary to conduct research on ultraviolet and X-radiation damage in living cell systems will be available to the project. A tissue culture laboratory, with incubators, roller drum, and salamander aquaria will also be provided. A complete optical and electronic workshop will be available for the fabrication of new instruments and modification and improvement of existing instruments. Equipment available includes ultraviolet flying spot television microscope with time lapse motion picture photography equipment and other related instruments.

<u>A-III ITEMS OF EQUIPMENT TO BE PURCHASED OR FABRICATED BY CONTRACTOR COSTING \$500 OR MORE</u>	<u>Estimated Cost</u>
1. 4 ultraviolet cathode ray scanner tubes	\$3,000.00
2. 16mm. camera	1,675.00

APPENDIX "B"

ARTICLE B-I - DEFINITIONS

(a) The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for the purpose of deciding an appeal under the article entitled "Disputes."

(b) The term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successors or any duly authorized representative of any such person.

(c) Except as otherwise provided in this contract the term "subcontracts" includes purchase orders under this contract.

ARTICLE B-II - INSPECTION, REPORTS, RECORDS AND ACCOUNTS

(a) The Commission shall have the right to inspect, in such manner and at all reasonable times as it deems appropriate, all activities of the Contractor arising in the course of its activities under this contract.

(b) The Contractor shall make progress and other reports in such manner and at such times as specified in Article B-XXI. The Contractor shall also make such other reports to the Commission, with respect to its activities under this contract, as the Commission may reasonably require from time to time.

(c) The Contractor agrees to keep records and books of account, in accordance with generally accepted accounting principles and practices, covering its costs and expenditures for the research work under this contract.

(d) The Commission shall at all reasonable times be afforded access to the premises and to these books and records and to related correspondence, receipts, vouchers, memoranda, and other data of the Contractor; and the Contractor shall preserve such books and papers, without additional compensation therefor, for a period of three (3) years after completion of this contract.

ARTICLE B-III - PUBLICATION OF RESULTS

(a) Research results obtained under this contract shall be made available to all through normal and accepted channels without restriction except that no Restricted Data as defined in the

Atomic Energy Act of 1954 or other classified information shall be disclosed to unauthorized persons. Such publication shall indicate that the research was supported by the Commission. A copy of each article submitted by the Contractor for publication shall be promptly sent to the Commission. The Contractor shall also inform the Commission when the article is published and furnish a copy of the article as finally published.

(b) It is recognized that during the course of the work hereunder or subsequent thereto, the Contractor, its employees, or its subcontractors, may from time to time, desire to publish, within the limit of security requirements, information regarding technical or scientific developments arising in the course of the contract. In order that public disclosure of such information will not adversely affect the patent interest of the Commission, such information shall be withheld from public disclosure if it discloses an invention or discovery, which shall be promptly reported to the Commission, and in such case, it shall be withheld for a period of four (4) months after submission of the information to the Commission for patent review and possible patent application, unless the Commission approves earlier release.

ARTICLE B-IV - DISCLOSURE OF INFORMATION

(a) It is mutually expected that the activities under this contract will not involve Restricted Data or other classified information or material. It is understood, however, that if in the opinion of either party this expectation changes prior to the expiration or termination of all activities under this contract, said party shall notify the other party accordingly in writing without delay. In any event, the Contractor shall classify, safeguard, and otherwise act with respect to all Restricted Data and other classified information and material, in accordance with applicable law and the requirements of the Commission, and shall promptly inform the Commission in writing if and when Restricted Data or other classified information or material becomes involved. If and when Restricted Data or other classified information or material becomes involved, or in the mutual judgment of the parties it appears likely that Restricted Data or other classified information or material may become involved, the Contractor shall have the right to terminate performance of the work under this contract and in such event the provisions of this contract respecting termination for the convenience of the Government shall apply.

(b) The Contractor shall not permit any individual to have access to Restricted Data, or other classified information, except in accordance with the Atomic Energy Act of 1954, as amended, and the Commission's regulations or requirements.

(c) The term "Restricted Data" as used in this article means all data concerning the design, manufacture, or utilization of atomic weapons, the production of special nuclear material, or the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954, as amended.

ARTICLE B-V - RESPONSIBILITY FOR THE WORK

(a) The Contractor is solely responsible for the conduct of the work.

(b) In instances where the carrying out of the contract work involves a Commission license the provisions of the pertinent license shall prevail over any inconsistent provisions of this contract.

ARTICLE B-VI - FELLOWSHIPS

The Contractor agrees that, unless the Commission shall give its prior written approval, the Contractor shall not use any of the funds provided by the Commission under this contract to pay the stipend of any appointment for which commensurate services are not rendered under this contract or to pay any part of the stipend of a fellowship of any kind.

ARTICLE B-VII - WRITTEN MATERIAL

(a) The Contractor hereby grants to the Government a royalty-free, nonexclusive, irrevocable license to reproduce, translate, publish, use and dispose of, and to authorize others to do so, all copyrightable material produced or composed or delivered to the Government or its designees under this contract, including work not first produced or composed by the Contractor in the course of performance under this contract but incorporated in the material produced or composed or delivered under this contract (but only to the extent, that the Contractor now has, or prior to final settlement of the contract may have, the right to grant such license to such previously produced or composed work without becoming liable to pay compensation to others solely because of such grant).

(b) The Contractor agrees that, except as the Commission may otherwise specifically authorize in writing, the Contractor will not include in any report or other material delivered under this contract, or in any published material relating to the work under this contract, any copyrighted material owned by others which such owners have not consented to have so included.

(c) The Commission will not publish in advance of the Contractor's publication without prior consultation with the Contractor.

ARTICLE B-VIII - PATENTS

(a) Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of or under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights under any application or patent that may result. The judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

(b) No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this contract.

(c) Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs (a) and (b) of this article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

(d) Except as otherwise authorized in writing by the Commission the Contractor will insert in all subcontracts and purchase orders other than purchase orders for standard commercial items, provisions making this article applicable to the subcontract or purchase order. Except as otherwise authorized in writing by the Commission, the Contractor will insert in purchase orders for standard commercial items a provision indemnifying the Government against liability for use of any invention or discovery and for the infringement of any Letters Patent arising by reason of the purchase, use, or disposal by or for the account of the Government of items manufactured or supplied under the purchase order.

ARTICLE B-IX - PROPERTY ITEMS

(a) Except as otherwise provided in this paragraph (a) and paragraph (b) of this Article B-IX, title to all materials, supplies,

and equipment purchased or otherwise acquired by the Contractor in the performance of its research activities shall be and remain in the Contractor. Except as otherwise agreed in writing, title to any items of property listed as "Government property" shall pass directly to the Government; such property shall be subject to paragraphs (b), (c), (d), and (e) of this Article B-IX.

(b) Subject to the mutual agreement of the Commission and the Contractor, the Government may furnish the Contractor items of equipment, materials, supplies, or facilities for use by the Contractor in the performance of the contract work; title to these items shall remain in the Government unless otherwise agreed in writing. Such items of property and the items of property listed elsewhere in this contract as Government property are hereinafter referred to as "Government property." Title to Government property shall not be affected by the incorporation or attachment thereof to any property not owned by the Government nor shall any such property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty.

(c) To the extent practicable, the Contractor shall cause all items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain at all times and in a manner satisfactory to the Commission records showing the use and disposition of Government property, and unless otherwise authorized in writing by the Commission, shall use Government property only for the purposes of this contract. Such records shall be subject to Commission inspection at all reasonable times and the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

(d) The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property. It is understood that the Contractor shall not be liable for any such loss, destruction, or damage, unless same results from wilful misconduct or lack of good faith on the part of any corporate officer of the Contractor, or of one or more of the Contractor's representatives having supervision or direction of all or substantially all of the activities under this contract. If the Contractor is liable for any such loss, destruction, or damage, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction, or damage, it shall promptly account therefor to the satisfaction of the Commission.

(e) With the written approval of the Commission, the Contractor may sell, transfer or otherwise dispose of items of Government property to such parties and upon such terms as so approved, or itself acquire title to items of Government property upon such terms as may be mutually agreed upon in writing by the Contractor and the Commission. The proceeds of any such disposition, and any agreed price of any such Contractor acquisition, shall be paid by the Contractor to the Government, or credited on account of Commission payments to be made under this contract, as the Commission may direct. Subject to the other provisions of this contract, the Contractor shall deliver Government property to the Commission upon request (suitably packed and shipped at the Government's expense).

ARTICLE B-X - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT

(a) The performance of work under this contract may be terminated, in whole or from time to time in part, by the Government whenever for any reason the Contracting Officer shall determine that such termination is in the best interest of the Government. Termination of work hereunder shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the contract is terminated and the date upon which such termination becomes effective.

(b) After receipt of the Notice of Termination the Contractor shall cancel its outstanding commitments hereunder covering the procurement of materials, supplies, equipment, and miscellaneous items. In addition, the Contractor shall exercise all reasonable diligence to accomplish the cancellation or diversion of its outstanding commitments covering personal services and extending beyond the date of such termination to the extent that they relate to the performance of any work terminated by the notice. With respect to such canceled commitments the Contractor agrees to (1) settle all outstanding liabilities and all claims arising out of such cancellation of commitments, with the approval or ratification of the Contracting Officer, to the extent he may require, which approval or ratification shall be final for all purposes of this clause, and (2) assign to the Government, in the manner, at the time, and to the extent directed by the Contracting Officer, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Government shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

(c) The Contractor shall submit its termination claim to the Contracting Officer promptly after receipt of a Notice of

Termination, but in no event later than one year from the effective date thereof, unless one or more extensions in writing are granted by the Contracting Officer upon written request of the Contractor within such one-year period or authorized extension thereof. Upon failure of the Contractor to submit its termination claim within the time allowed, the Contracting Officer may, subject to any review required by the Contracting agency's procedures in effect as of the date of execution of this contract, determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

(d) Any determination of costs under paragraph (c) shall be governed by the cost principles set forth in Subpart 1-15.3 of the Federal Procurement Regulations (41 CFR 1-15.3), as in effect on the date of this contract, except that if the Contractor is not an educational institution the determination shall be governed by the cost principles set forth in Subpart 9-15.50 of the Atomic Energy Commission Procurement Regulations (41 CFR 9-15.50).

(e) Subject to the provisions of paragraph (c) above, and subject to any review required by the contracting agency's procedures in effect as of the date of execution of this contract, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the termination under this clause, which amount or amounts may include any reasonable cancellation charges thereby incurred by the Contractor and any reasonable loss upon outstanding commitments for personal services which it is unable to cancel: Provided, however, That in connection with any outstanding commitments for personal services which the Contractor is unable to cancel, the Contractor shall have exercised reasonable diligence to divert such commitments to its other activities and operations. Any such agreement shall be embodied in an amendment to this contract and the Contractor shall be paid the agreed amount.

(f) The Government may from time to time, under such terms and conditions as it may prescribe, make partial payments against costs incurred by the Contractor in connection with the terminated portion of this contract, whenever, in the opinion of the Contracting Officer, the aggregate of such payments is within the amount to which the Contractor will be entitled hereunder. If the total of such payments is in excess of the amount finally agreed or determined to be due under this clause, such excess shall be payable by the Contractor to the Government upon demand: Provided, That if such excess is not so paid upon demand, interest thereon shall be payable by the Contractor to the Government at the rate

of 6 percent per annum, beginning 30 days from the date of such demand.

(g) The Contractor agrees to transfer title to the Government and deliver in the manner, at the times, and to the extent, if any, directed by the Contracting Officer, such information and items which, if the contract had been completed, would have been required to be furnished to the Government, including:

(1) Completed or partially completed plans, drawings, and information; and

(2) Materials or equipment produced or in process or acquired in connection with the performance of the work terminated by the notice.

Other than the above, any termination inventory resulting from the termination of the contract may, with the written approval of the Contracting Officer, be sold or acquired by the Contractor under the conditions prescribed by and at a price or prices approved by the Contracting Officer. The proceeds of any such disposition shall be applied in reduction of any payments to be made by the Government to the Contractor under this contract or shall otherwise be credited to the price or cost of work covered by this contract or paid in such other manner as the Contracting Officer may direct. Pending final disposition of property arising from the termination, the Contractor agrees to take such action as may be necessary, or as the Contracting Officer may direct, for the protection and preservation of the property related to this contract which is in the possession of the Contractor and in which the Government has or may acquire an interest.

(h) Any disputes as to questions of fact which may arise hereunder shall be subject to the "Disputes" clause of this contract.

ARTICLE B-XI - PAYMENTS

(a) The Commission shall make payments to the Contractor with respect to the amount of consideration for each period as provided for in Article A-III of this contract as follows:

45% - following execution of this contract (and following the effectuation of each extended period).

45% - upon subsequent receipt of written request from the Contractor when the Contractor determines the amount requested is then required in connection with work under the contract.

10% - following submission by the Contractor of the annual progress report or final report provided for in Article B-XXI, in form and content satisfactory to the Commission, within a reasonable period of time following the expiration of an annual contract period.

(b) The payments made pursuant to paragraph (a) above shall not prejudice or otherwise affect adversely any of the Government's rights under the contract. For purposes of settlement in the event of termination pursuant to Article B-X hereof, these payments shall not be construed as evidentiary or otherwise indicative of the amount or proportion of the work actually performed by the Contractor, and any excess payment in the light of Article B-X shall be promptly returned to the Commission.

(c) All payments under this contract, except the first payment provided in (a) above, will be subject to the submission by the Contractor to the Commission of such invoices or vouchers as are satisfactory to the Commission.

ARTICLE B-XII - NONDISCRIMINATION IN EMPLOYMENT

(The following clause is applicable unless this contract is exempt under the rules and regulations of the President's Committee on Equal Employment Opportunity issued pursuant to Executive Order No. 10925 of March 6, 1961 (26 F.R. 1977).)

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under this clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, as amended, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(e) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, as amended, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to its books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, as amended, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to section 303 of Executive Order No. 10925 of March 6, 1961, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE B-XIII - CONVICT LABOR

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

ARTICLE B-XIV - WORK HOURS ACT OF 1962 - OVERTIME COMPENSATION

This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962. If this contract is with a state or political subdivision thereof this Article shall not apply to work performed by employees of the Contractor.

(a) No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

(b) In the event of any violation of the provisions of paragraph (a), the Contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph (a), in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a workweek without payment of the required overtime wages.

(c) The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor, the full amount of wages required by this contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for liquidated damages as provided in paragraph (b).

(d) The Contractor agrees to insert the foregoing paragraphs (a), (b), and (c), and this paragraph (d) in all subcontracts.

ARTICLE B-XV - DISPUTES

(a) Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or its duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

(b) This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph (a) above: Provided, That nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

ARTICLE B-XVI - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE B-XVII - COVENANT AGAINST CONTINGENT FEES

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE B-XVIII - EXAMINATION OF RECORDS

(a) The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this contract.

(b) The Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (i) purchase orders not exceeding \$2,500 and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE B-XIX - BUY AMERICAN ACT

(a) In acquiring end products, the Buy American Act (41 U.S. Code 10a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:

(i) "Components" means those articles, materials, and supplies, which are directly incorporated in the end products;

(ii) "End products" means those articles, materials, and supplies, which are to be acquired under this contract for public use; and

(iii) A "domestic source end product" means (A) an unmanufactured end product which has been mined or produced in the United States and (B) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50 percent of the costs of all its components. For the purposes of this (a) (iii) (B), components of foreign origin of the same type or kind as the products referred to in (b) (ii) or (iii) of this clause shall be treated as components mined, produced, or manufactured in the United States.

(b) The Contractor agrees that there will be delivered under this contract only domestic source end products, except end products:

(i) Which are for use outside the United States;

(ii) Which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;

(iii) As to which the Commission determines the domestic preference to be inconsistent with the public interest; or

(iv) As to which the Commission determines the cost to the Government to be unreasonable.

(The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954.)

ARTICLE B-XX - ASSIGNMENT: SUBCONTRACTING

Neither this contract nor any interest therein nor claim thereunder shall be assigned or transferred by the Contractor, except as expressly authorized in writing by the Commission. The Contractor shall not subcontract any research or development work under this contract, except as expressly authorized in writing by the Commission.

ARTICLE B-XXI - REPORTS AND RENEWAL PROPOSALS

The Contractor shall furnish six (6) copies of the following reports and renewal proposals, if any, addressed to:

Research and Development Division
Oak Ridge Operations Office
U. S. Atomic Energy Commission
Post Office Box E
Oak Ridge, Tennessee (37831)

(a) Progress Report

The progress report shall briefly describe the scope of investigations undertaken and the significant results obtained. It shall also explain any significant differences between the actual level of effort and that contemplated in the contract (see Article I). Technical reports and articles prepared for publication shall be listed with bibliographic references. Reprints or preprints of all such material shall be appended and material contained therein need not be duplicated in the

report. Progress reports shall be submitted approximately three months in advance of the expiration of the current contract term and shall give the Contractor's best estimate of the probable course and level of effort of the remainder of the current contract term. Except as the Commission may otherwise request, no further progress report will be required for any contract year unless there has been a significant change in level of effort or scientific results between the latest progress report by the Contractor and its actual experience; this shall be reported promptly.

(b) Final Report

Upon termination or expiration of the total period of performance, the Contractor shall submit, promptly, a summary of its activities for the entire period, including a list of publications issued during the total term of the contract and copies of any reprints not previously submitted, as well as a comprehensive evaluation of progress in the area of research supported by the contract.

(c) Renewal Proposals

A renewal proposal, if any, shall accompany the progress report.

(d) Report of Equipment Purchased or Fabricated

The Contractor shall itemize equipment having a useful life expectancy in excess of one year and an acquisition cost in excess of \$100.00, purchased or fabricated (omit any items appearing in Article V) and submit a report thereof immediately following the expiration of the contract year specified in Article II. This report shall show the actual invoice cost of each item purchased and an engineering estimate of the cost of each item fabricated.

ARTICLE B-XXII - FOREIGN TRAVEL

Foreign travel shall be subject to the prior approval of the Contracting Officer.

ARTICLE B-XXIII - PRIORITIES, ALLOCATIONS, AND ALLOTMENTS

The Contractor shall follow the provisions of DMS Regulation 1 and all other applicable regulations and orders of the Business and Defense Service Administration in obtaining controlled materials and other products and materials needed to fill this order. This contract carries rating: DO-E-2 certified for national defense under DMS Regulation 1.

ARTICLE B-XXIV - UTILIZATION OF CONCERNS IN LABOR SURPLUS AREAS

It is the policy of the Government to place contracts with concerns which will perform such contracts substantially in areas of persistent or substantial labor surplus, where this can be done consistent with the efficient performance of the contract and at prices no higher than are obtainable elsewhere. The Contractor agrees to use its best efforts to place its subcontracts in accordance with this policy. In complying with the foregoing and with paragraph (b) of the clause of this contract entitled "Utilization of Small Business Concerns," the Contractor in placing its subcontracts shall observe the following order of preference: (a) persistent labor surplus area concerns which are also small business concerns; (b) other persistent labor surplus area concerns; (c) substantial labor surplus area concerns which are also small business concerns; (d) other substantial labor surplus area concerns; and (e) small business concerns which are not labor surplus area concerns.

ARTICLE B-XXV - UTILIZATION OF SMALL BUSINESS CONCERNS

(a) It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.

(b) The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this contract.

ARTICLE B-XXVI - SOVIET-BLOC CONTROLS

In connection with the contract activities, the Contractor agrees to comply with the requirements set forth in Appendix "D", attached hereto and made a part of this contract, relating to the countries listed herein. From time to time, by written notice to the Contractor, the Commission shall have the right to change the listing of countries in Appendix "D" upon a determination by the Commission that such change is in conformance with national policy. The Contractor shall have the right to terminate its performance under this contract upon at least sixty (60) days' prior written notice to the Commission if the Contractor determines that it is unable, without substantially interfering with its policies as an educational institution or without adversely affecting its performance, to continue performance of the work under this contract as a result of a change in Appendix "D" made by the Commission pursuant to the preceding sentence. If the Contractor

elects to terminate performance the provisions of this contract respecting termination for the convenience of the Government shall apply.

APPENDIX "D"

REQUIREMENTS RELATING TO EXCHANGES OF INFORMATION

1. The requirements set forth herein relate to the dissemination by the Contractor of the information developed under this contract and/or under other Commission programs to Countries by or through exchange activities, including but not limited to employment, work participation, visits and correspondence. The term "Countries" (including where used in the term "Soviet-Bloc Countries"), as used in this Appendix "D", includes all nations (other than the United States, its territories and possessions), the embassies, consulates, and agencies of such nations, and individuals and organizations of such nations.
2. For the purpose of these requirements the Soviet-Bloc Countries consist of:

Group A

Albania
Bulgaria
Czechoslovakia
Estonia
Hungary
Latvia
Lithuania
Poland and Danzig
Rumania
Union of Soviet Socialist Republics

Group B

China, including Manchuria (includes Inner Mongolia; the provinces of Tsinghai and Sikang; Tibet; the former Kwantung Leased Territory, the present Fort Arthur Naval Base Area and Liaoning Province) and excluding Taiwan (Formosa).
Communist-controlled area of Viet Nam
East Germany (Soviet Zone of Germany and the Soviet Sector of Berlin)
North Korea
Outer Mongolia

3. The following exchange activities between the Contractor and any of the Soviet-Bloc Countries shall be subject to the prior written approval of the Commission on an individual case basis:

- a. Employees of the Contractor engaging in employment by, activities of, or travel to, any of the Soviet-Bloc Countries where such employees' travel or other activity is financially supported by the Commission.
 - b. Employment of, or participation in activities of the Contractor by, nationals of any of the Soviet-Bloc Countries in furtherance of or in connection with work under this contract.
 - c. Participation of nationals of any of the Soviet-Bloc Countries at U. S. conferences, meetings and symposia which are supported by Commission funds or are organized and directed by persons receiving financial support for such activities from the Commission and acting in the name of the Commission or the Contractor.
4. Unofficial travel to any of the Soviet-Bloc Countries by employees of the Contractor who hold a Commission security clearance will be subject to the prior approval of the Commission on an individual case basis.
 5. The Contractor shall inform all of its employees who formerly held a Commission security clearance of the Commission's desire to be advised of their proposed unofficial travel to any of the Soviet-Bloc Countries. The Contractor shall notify the Commission of all such proposed unofficial travel by its employees of which it becomes aware pursuant to the notification given in accordance with the provisions hereof.
 6. The Contractor, if the contract herein is of cost type rather than a fixed-price type, shall inform the Commission, in advance whenever feasible, of all proposed visits by nationals of any of the Soviet-Bloc Countries and shall furnish a report thereof in accordance with directions furnished by the Contracting Officer.
 7. All correspondence and other communications relative to the exchange of information whether with Soviet-Bloc or other Countries shall be subject to the following policy and procedure:
 - a. Transmittal of published information relating to the peaceful uses of atomic energy is permitted and encouraged provided the transmittals to Countries listed in Group B of Section 2, above, are made in the name of the Contractor or the individual scientist and not in the name of the Commission;

b. Transmittal of unpublished information relating to the peaceful uses of atomic energy is permitted and encouraged provided:

- (1) The information transmitted is made available to requesters in the United States. In order to insure availability to requesters in the United States, one copy of all such unpublished information (with the exception of personal correspondence covering informal scientific or technical opinion) shall be forwarded to the Contracting Officer; and
- (2) The transmittals to Countries listed in Section 2, above, are accompanied by a request for appropriate equally valuable material in return; and
- (3) The transmittals to Countries listed in Group B of Section 2, above, are made in the name of the Contractor or the individual scientist and not in the name of the Commission.

c. Requests for information not falling within the scope of the above stated policy and any unusual requests for published and unpublished information shall be forwarded to the Contracting Officer. Examples of unusual requests for published and unpublished information include: (1) Requests for collections of published documents or for unpublished information which are not readily available to the recipient of the request; (2) Requests for comprehensive and detailed unpublished design information and unpublished development information on major equipment, such as reactors, chemical processing plants, and accelerators; and (3) Official correspondence from any government other than the United States, its territories and possessions.

As used in this Section 7:

a. The term "published information" means all unclassified scientific and technical documents; internal and informal reports; reprints, preprints, page proofs of journal articles; engineering drawings; photographs; films; notes; irradiated emulsions; etc., originated within Commission programs, and available either from the Division of Technical Information Extension, Oak Ridge, Tennessee, AEC depository libraries, or other sources from which the public may obtain the above types of information by purchase or without cost.

- b. The term "unpublished information" means all unclassified scientific and technical documents; internal and informal reports; reprints, preprints, page proofs of journal articles; engineering drawings; photographs; films; notes; irradiated emulsions; etc., originating within Commission programs but which are not available from the Division of Technical Information Extension, Oak Ridge, Tennessee, AEC depository libraries, or from other sources from which the public may normally obtain the information by purchase or without cost.
8. In all exchanges of information, care should be taken that the release of the information does not result in the disclosure of Restricted Data or other classified information, or privileged information, in violation of applicable law and/or the provisions of this contract; or the disclosure of any information that would adversely affect the patent interest of the Commission in violation of the provisions of this contract.

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 10th day of December, 1962, effective as of the 1st day of November, 1962, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and the UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL) (hereinafter referred to as the "Contractor");

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into Contract No. AT-(40-1)-2478 and Modifications thereto numbered 1 through 3 providing for the Contractor's performance of certain research; and

WHEREAS, the parties desire to further amend the contract to provide for: (a) the continuance of this research and/or the performance of additional research; (b) the revisions and/or additions of certain provisions thereof in accordance with current applicable rules and regulations of the Commission; and (c) as a result thereof, restate the provisions of this contract as of the effective date of this Supplemental Agreement; and

WHEREAS, this Supplemental Agreement is authorized by law, including the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties do mutually agree that the contract (including its Appendices), as amended, is hereby revised to read as follows:

ARTICLE I - THE RESEARCH TO BE PERFORMED

1. The Contractor shall furnish personnel, facilities, equipment, materials, and supplies substantially to the extent set forth in Appendix "A" attached hereto and made a part hereof, endeavor to procure the items that may be listed under III of said Appendix "A", and therewith perform to the best of its ability the research provided for in Appendix "A" and report thereon pursuant to the provisions of this contract.

2. This work shall be conducted under the direction of Dr. Philip O'B. Montgomery or such other member of the Contractor's staff as may be mutually satisfactory to the parties.

ARTICLE II - THE PERIOD FOR PERFORMANCE

The period for performance under this contract shall expire on October 31, 1963; provided, however, that this period may be extended for additional periods by the mutual written agreement of the parties.

ARTICLE III - CONSIDERATION

In full consideration of the Contractor's performance hereunder for the period commencing on November 1, 1962, and expiring on October 31, 1963, the Commission shall pay the Contractor the sum of \$20,842.00.

ARTICLE IV - THE REMAINING CONTRACT PROVISIONS

Appendices "A" and "B" set forth the other provisions of this contract.

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: Herman M. Roth
HERMAN M. ROTH
DIRECTOR
RESEARCH AND DEVELOPMENT DIVISION
(Contracting Officer)

UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL)

BY: A. G. Pini
TITLE: DEAN

Appendix "A"

For the Contract Period November 1, 1962 through October 31, 1963.

A-I RESEARCH TO BE PERFORMED BY CONTRACTOR

The Contractor will continue to conduct research on ultraviolet and X-radiation damage in living cell systems. This research will consist of studies of (1) damage to selected morphologic areas of cells such as the nucleolus by ultraviolet microbeam irradiation followed by investigation of the function of these areas of the cell in relation to virus infections, (2) similar studies on cells rendered incapable of mitosis by X-irradiation, (3) use of the flying spot television microscope to determine whether photoreversal is a property of mammalian cells, and (4) a program for quantification of the amount of ultraviolet light emitted by the flying spot ultraviolet scanner tube.

A-II APPROXIMATE LEVEL OF RESEARCH EFFORT

<u>(a) Contractor Personnel:</u>	<u>Approx. % of time</u>
Dr. P. O'B. Montgomery, Principal Investigator	60%
Technician	100%
<u>(b) Premises, Facilities, and Materials to be Furnished by the Contractor:</u>	

Adequate laboratory space and facilities necessary to conduct research on ultraviolet and X-radiation damage in living cell systems will be available. Tissue culture laboratory, with incubators, roller drum, and salamander aquaria will also be provided to the project. Equipment available include ultraviolet flying spot television microscope with time lapse motion picture photography equipment.

A-III EQUIPMENT TO BE PURCHASED OR FABRICATED BY THE CONTRACTOR

NONE

A-IV EQUIPMENT TITLE TO WHICH IS TO REMAIN WITH GOVERNMENT

NONE

A-V SUBSTANTIAL DEVIATIONS

Substantial deviations from the foregoing shall be discussed with and subject to the written approval of the Commission.

APPENDIX "B"

October 12, 1962

ARTICLE B-I DEFINITIONS

1. The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for the purpose of deciding an appeal under the article entitled "Disputes".

2. The term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successors or any duly authorized representative of any such person.

ARTICLE B-II INSPECTION, REPORTS, RECORDS AND ACCOUNTS AND RESULTS

1. The Commission shall have the right to inspect, in such manner and at all reasonable times as it deems appropriate, all activities of the Contractor arising in the course of its activities under this contract.

2. The Contractor shall make progress and other reports in such manner and at such times as specified in Article B-XX. The Contractor shall also make such other reports to the Commission, with respect to its activities under this contract, as the Commission may reasonably require from time to time. A copy of each article submitted by the Contractor for publication shall be promptly sent to the Commission and the Contractor shall furnish the Commission with a reprint when the article is published.

3. The Contractor agrees to keep records and books of account in accordance with generally accepted accounting principles and practices covering its costs and expenditures for the research work under this contract.

4. The Commission shall at all reasonable times be afforded access to the premises and to these books and records and to related correspondence, receipts, vouchers, memoranda, and other data of the Contractor; and the Contractor shall preserve such books and papers, without additional compensation therefor, for a period of three (3) years after completion of this contract.

5. Research results obtained under this contract shall be made available to all through normal and accepted channels except that

no "restricted data" as defined in the Atomic Energy Act of 1954, or other classified information, shall be disclosed to unauthorized persons. In order that public disclosure of such information will not adversely affect the patent interest of the Commission, such information shall be withheld from public disclosure if it discloses an invention, which should be promptly reported to the Commission, and in such case, it shall be withheld for a period of four (4) months after submission of the information to the Commission for patent review and possible patent application, unless the Commission approves earlier release. Any publication shall indicate that the research was supported by the Commission.

ARTICLE B-III DISCLOSURE OF INFORMATION

1. It is mutually expected that the activities under this contract will not involve Restricted Data or other classified information or material. It is understood, however, that if in the opinion of either party this expectation changes prior to the expiration or termination of all activities under this contract, said party shall notify other party accordingly in writing without delay. In any event, the Contractor shall classify, safeguard, and otherwise act with respect to all Restricted Data and other classified information and material, in accordance with applicable law and the requirements of the Commission, and shall promptly inform the Commission in writing if and when Restricted Data or other classified information or material becomes involved. If and when Restricted Data or other classified information or material becomes involved, or in the mutual judgment of the parties it appears likely that Restricted Data or other classified information or material may become involved, the Contractor shall have the right to terminate performance of the work under this contract and in such event the provisions of this contract respecting termination for the convenience of the Government shall apply.

2. Except as the Commission may authorize in accordance with the Atomic Energy Act of 1954, as amended, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security. As used in this paragraph the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954, as amended.

3. The term "Restricted Data" as used in this Article means all data concerning the design, manufacture or utilization of atomic weapons, the production of special nuclear material, or the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Atomic Energy Act of 1954, as amended.

ARTICLE B-IV RESPONSIBILITY FOR THE WORK

1. The Contractor is solely responsible for the conduct of the work.

2. Attention is directed to the fact that, among other legal requirements that may be applicable to the conduct of the work, the Contractor will be obliged to satisfy all of the Commission's regulatory requirements (including those pertaining to the obtainment of Commission licenses) that may be pertinent.

ARTICLE B-V FELLOWSHIPS

The Contractor agrees that, unless the Commission shall give its prior written approval, the Contractor shall not use any of the funds provided by the Commission under this contract to pay the stipend of any appointment for which commensurate services are not rendered under this contract or to pay any part of the stipend of a fellowship of any kind.

ARTICLE B-VI WRITTEN MATERIAL

1. The Contractor hereby grants to the Government a royalty-free, nonexclusive, irrevocable license to reproduce, translate, publish, use and dispose of, and to authorize others to do so, all copyrightable material produced or composed or delivered to the Government or its designees under this contract, including work not first produced or composed by the Contractor in the course of performance under this contract but incorporated in the material produced or composed or delivered under this contract (but only to the extent, that the Contractor now has, or prior to final settlement of the contract may have, the right to grant such license to such previously produced or composed work without becoming liable to pay compensation to others solely because of such grant).

2. The Contractor agrees that, except as the Commission may otherwise specifically authorize in writing, the Contractor will not include in any report or other material delivered under this contract, or in any published material relating to the work under this contract, any copyrighted material owned by others which such owners have not consented to have so included.

3. Anything in this Article or otherwise in this contract notwithstanding, the Commission shall have the right to inspect, use, and have used by others, and to publish and have published at its convenience, any written material first produced or composed under this contract. The Commission will not publish in advance of the Contractor's publication without prior consultation with the Contractor.

ARTICLE B-VII PATENTS

1. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of or under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights under any application or patent that may result. The judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.

2. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this contract.

3. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purpose of paragraphs 1 and 2 of this Article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.

4. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts and purchase orders, other than purchase orders for standard commercial items, provisions making this article applicable to the subcontract or the purchase order. The Contractor will insert in purchase orders for standard commercial items a provision indemnifying the Government against liability for the use of any invention or discovery and for the infringement of any Letters Patent arising by reason of the purchase, use or disposal by or for the account of the Government of items manufactured or supplied under the purchase order.

ARTICLE B-VIII PROPERTY ITEMS

1. Except as otherwise provided in this paragraph 1 and paragraph 2 of this Article B-VIII, title to all materials, supplies, and equipment purchased or otherwise acquired by the Contractor in the performance of its research activities shall be and remain in the Contractor. Except as otherwise agreed in writing, title to any items of property listed as "Government property" shall pass directly to the Government; such property shall be subject to paragraphs 2, 3, 4 and 5 of this Article B-VIII.

2. Subject to the mutual agreement of the Commission and the Contractor, the Government may furnish the Contractor items of equipment, materials, supplies, or facilities for use by the Contractor in the performance of the contract work; title to these items shall remain in the Government unless otherwise agreed in writing. Such items of property and the items of property listed elsewhere in this contract as Government property, are hereinafter referred to as "Government property". Title to Government property shall not be affected by the incorporation or attachment thereof to any property not owned by the Government nor shall any such property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty.

3. To the extent practicable, the Contractor shall cause all items of Government property to be suitably marked with an identifying mark or symbol indicating that the items are the property of the Government. The Contractor shall maintain at all times and in a manner satisfactory to the Commission records showing the use and disposition of Government property, and unless otherwise authorized in writing by the Commission, shall use Government property only for the purposes of this contract. Such records shall be subject to Commission inspection at all reasonable times and the Commission shall at all reasonable times have access to the premises wherein any items of Government property are located.

4. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property. It is understood that the Contractor shall not be liable for any such loss, destruction, or damage, unless same results from wilful misconduct or lack of good faith on the part of any corporate officer of the Contractor, or of one of more of the Contractor's representatives having supervision or direction of all or substantially all of the activities under this contract. If the Contractor is liable for any such loss, destruction, or damage, it shall promptly account therefor to the satisfaction of the Commission; if the Contractor is not liable therefor, and is indemnified, reimbursed, or otherwise compensated for such loss, destruction, or damage, it shall promptly account therefor to the satisfaction of the Commission.

5. With the written approval of the Commission, the Contractor may sell, transfer or otherwise dispose of items of Government property to such parties and upon such terms as so approved, or itself acquire title to items of Government property upon such terms as may be mutually agreed upon in writing by the Contractor and the Commission. The proceeds of any such disposition, and any agreed price of any such Contractor acquisition, shall be paid by the Contractor to the Government, or credited on account of Commission payments to be made under this contract, as the Commission may direct. Subject to the other provisions of this contract, the Contractor shall deliver Government property to the Commission upon request (suitably packed and shipped at the Government's expense).

ARTICLE B-IX TERMINATION BY GOVERNMENT

1. The period for performance under this contract may be terminated by the Commission by written notice, either because of the breach by the Contractor of the provisions of this contract or for the convenience of the Government. In the event of such termination, the Contractor shall promptly furnish to the Commission such of the results of the work performed under this contract (and not theretofore furnished) as the Commission may request.

2. Upon a termination for convenience hereunder the parties shall agree in writing upon such amount to be paid the Contractor, in lieu of the monetary consideration specified in this contract with respect to the pertinent period, as they mutually consider to be fair and reasonable under the circumstances. If the parties fail so to agree in writing within a reasonable time, the amount shall be determined under the "Disputes" provisions of this contract. The amount otherwise due the Contractor under this contract shall be subject to such claims (if any) as the Government may have against the Contractor by reason of this contract. In the event of a termination for breach, the parties may, to the extent they mutually agree, stipulate, in writing, any monetary aspects of the situation.

3. In the event of a termination hereunder, the Contractor shall promptly comply with any Commission request for a refund of any partial payments in excess of such sums as are determined to be due to the Contractor under paragraph 2. above, theretofore made or for the delivery to Commission-designated recipients of any of the items of Government property acquired by the Contractor with the funds supplied by the Commission under this contract and which are then in the Contractor's possession or custody; said property shall be suitably packed and shipped at the Government's expense.

ARTICLE B-X PAYMENTS

1. The Commission shall make payments to the Contractor with respect to the amount specified in Article III. of the contract, as follows:

45% - following execution of this contract, upon receipt of written request therefor from the Contractor;

45% - upon subsequent receipt of written request from the Contractor when the Contractor determines the amount requested is then required in connection with work under the contract.

10% - following submission by the Contractor of the annual progress report or final report provided for in Article B-XX, in form and content satisfactory to the Commission, within a reasonable period of time following the expiration of an annual contract period.

2. The payments made pursuant to paragraph 1 above shall not prejudice or otherwise affect adversely any of the Government's rights under the contract. For purposes of settlement in the event of termination pursuant to Article B-IX hereof, these payments shall not be construed as evidentiary or otherwise indicative of the amount or proportion of the work actually performed by the Contractor, and any excess payment in the light of Article B-IX shall be promptly returned to the Commission.

3. All payments under this contract will be subject to the submission by the Contractor to the Commission of such invoices or vouchers as are satisfactory to the Commission.

ARTICLE B-XI NONDISCRIMINATION IN EMPLOYMENT

(The following clause is applicable unless this contract is exempt under the rules and regulations of the President's Committee on Equal Employment Opportunity issued pursuant to Executive Order No. 10925 of March 6, 1961 (26 F.R. 1977).)

In connection with the performance of work under this contract the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the

Contractor's commitments under this Nondiscrimination clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) the Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

(e) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by the rules, regulations, and orders of the said Committee; or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the Nondiscrimination clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled in whole or in part and the Contractor may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(g) The Contractor will include the provisions of the foregoing paragraphs (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 303 of Executive Order No. 10925 of March 6, 1961, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE B-XII CONVICT LABOR

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

ARTICLE B-XIII WORK HOURS ACT OF 1962 - OVERTIME COMPENSATION

This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

1. No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such workweek, whichever is the greater number of overtime hours.

2. In the event of any violation of the provisions of paragraph 1., the contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph 1., in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a workweek without payment of the required overtime wages.

3. The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor, the full amount of wages required by this contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for liquidated damages as provided in paragraph 2.

4. The Contractor agrees to insert the foregoing provisions 1., 2., and 3., and this provision 4. in all subcontracts.

ARTICLE B-XIV DISPUTES

1. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding

under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

2. This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph 1 above: Provided, That nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

ARTICLE B-XV OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE B-XVI COVENANT AGAINST CONTINGENT FEES

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a Commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover the full amount of such Commission, percentage, brokerage, or contingent fee.

ARTICLE B-XVII EXAMINATION OF RECORDS

1. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to this contract.

2. The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (i) purchase orders not exceeding \$2,500 and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

3. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE B-XVIII BUY AMERICAN ACT

1. In acquiring end products, the Buy American Act (41 U.S. Code 10a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:

(a) "Components" means those articles, materials, and supplies, which are directly incorporated in the end products;

(b) "End products" means those articles, materials, and supplies, which are to be acquired under this contract for public use; and

(c) A "domestic source end product" means (i) an unmanufactured end product which has been mined or produced in the United States and (ii) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50 percent of the costs of all its components. For the purposes of this 1(c)(ii), components of foreign origin of the same type or kind as the products referred to in (2) (b) or (c) of this clause shall be treated as components mined, produced, or manufactured in the United States.

2. The Contractor agrees that there will be delivered under this contract only domestic source end products, except end products:

(a) Which are for use outside the United States;

(b) Which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;

(c) As to which the Commission determines the domestic preference to be inconsistent with the public interest; or

(d) As to which the Commission determines the cost to the Government to be unreasonable.

(The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954.)

ARTICLE B-XIX ASSIGNMENT: SUBCONTRACTING

Neither this contract nor any interest therein nor claim thereunder shall be assigned or transferred by the Contractor, except as expressly authorized in writing by the Commission. The Contractor shall not subcontract any research or development work under this contract, except as expressly authorized in writing by the Commission.

ARTICLE B-XX REPORTS AND RENEWAL PROPOSALS

The Contractor shall furnish six (6) copies of the following reports and renewal proposals, if any, addressed to:

Research and Development Division
Oak Ridge Operations Office
U. S. Atomic Energy Commission
Post Office Box E
Oak Ridge, Tennessee

(a) PROGRESS REPORT

The progress report shall briefly describe the scope of investigations undertaken and the significant results obtained. It shall also explain any significant differences between the actual level of effort and that contemplated in the contract (see Appendix "A"). Technical reports and articles prepared for publication shall be listed with bibliographic references. Reprints or preprints of all such material shall be appended and material contained therein need not be duplicated in the report. Progress reports shall be submitted approximately three months in advance of the expiration of the current contract term and shall give the Contractor's best estimate of the probable course and level of effort of the remainder of the current contract term. Except as the Commission may otherwise request, no further progress report will be required for any contract year unless there has been a significant change in level of effort or scientific results between the latest progress report by the Contractor and its actual experience; this shall be reported promptly.

(b) FINAL REPORT

Upon termination or expiration of the total period of performance, the Contractor shall submit, promptly, a summary of its activities for the entire period, including a list of publications issued during the total term of the contract and copies of any reprints not previously submitted, as well as a comprehensive evaluation of progress in the area of research supported by the contract.

(c) RENEWAL PROPOSALS

A renewal proposal, if any, shall accompany the progress report.

(d) REPORT OF EQUIPMENT PURCHASED OR FABRICATED

The Contractor shall itemize equipment purchased or fabricated, referred to in A-III of Appendix "A" (omit any items also appearing in A-IV of Appendix "A"), and submit a report thereof immediately following the expiration of the contract year specified in Appendix "A". This

report shall show the actual invoice cost of each item purchased and an engineering estimate of the cost of each item fabricated.

ARTICLE B-XXI FOREIGN TRAVEL

Foreign travel shall be subject to the prior approval of the Contracting Officer.

ARTICLE V-XXII PRIORITIES, ALLOCATIONS, AND ALLOTMENTS

1. This contract carries rating: DO-E-2, Certified for national defense use under DMS Reg. 1.

2. The Contractor shall follow the provisions of DMS Regulation 1 and all other applicable regulations and orders of the Business and Defense Service Administration in obtaining controlled materials and other products and materials needed to fill this order.

ARTICLE B-XXIII UTILIZATION OF CONCERNS IN LABOR SURPLUS AREAS

It is the policy of the Government to place contracts with concerns which will perform such contracts substantially in areas of persistent or substantial labor surplus, where this can be done consistent with the efficient performance of the contract and at prices no higher than are obtainable elsewhere. The Contractor agrees to use his best efforts to place his subcontracts in accordance with this policy. In complying with the foregoing and with paragraph 2 of the article of this contract entitled "Utilization of Small Business Concerns", the Contractor in placing his subcontracts shall observe the following order of preference: (a) persistent labor surplus area concerns which are also small business concerns; (b) other persistent labor surplus area concerns; (c) substantial labor surplus area concerns which are also small business concerns; (d) other substantial labor surplus area concerns; and (e) small business concerns which are not labor surplus area concerns.

ARTICLE B-XXIV UTILIZATION OF SMALL BUSINESS CONCERNS

1. It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.

2. The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this contract.

ARTICLE B-XXV SOVIET-BLOC CONTROLS

In connection with the contract activities, the Contractor agrees to comply with all regulations or requirements of the Commission relating to Soviet-Bloc countries as identified by the AEC regulations or requirements.

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 21st day of December, 1961, effective as of the 1st day of November, 1961, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented herein by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and the UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL) (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the parties hereto have heretofore entered into Contract No. AT-(40-1)-2478 and Modifications thereto numbered 1 and 2 (hereinafter called the "contract") providing for the Contractor's performance of certain research; and

WHEREAS, the parties desire to amend the contract to provide for: (a) the continuance of this research and/or the performance of additional research; (b) the revisions and/or additions of certain provisions thereof in accordance with current applicable rules and regulations of the Commission; and (c) as a result thereof, restate the provisions of this contract as of the effective date of this Supplemental Agreement; and

WHEREAS, this Supplemental Agreement is authorized by and executed under the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties do mutually agree that the contract (including its Appendices) is hereby revised to read as follows:

ARTICLE I - SCOPE

1. The work shall consist of research concerning ultraviolet irradiation damage in living cell systems. The plan of approach to the problem and the agreed upon program and budget for the project are described in Appendix "A", which is hereby made a part of this contract. The Contractor shall be guided by, but not bound to conform to the details of, the budget described in Appendix "A".
2. The Contractor shall furnish all services, facilities, equipment, supplies and materials (except such services, equipment, supplies and materials as the Government has agreed to furnish herein) required for the performance of the research program described in section 1, above.
3. The work will be carried out by the Contractor under the direction of Dr. Philip O'B. Montgomery as Senior Investigator. Any change in Senior Investigator shall be made only with the written concurrence of the Commission, but without the necessity of a formal modification of the contract.
4. The Contractor shall commence the work as soon as feasible, prosecute it with due diligence and submit the reports required in Appendix "C", attached hereto and made a part hereof, as early as practicable but not later than the dates specified in Appendix "C".

ARTICLE II - SCHEDULE

4. The period during which the work under the contract may be conducted shall end on October 31, 1962.

ARTICLE III

1. Consideration

d. In consideration of the performance of the research activities described in TITLE IV of Appendix "A", and the Contractor's agreement to support that work in the estimated amount of Twenty-three Thousand, Eight Hundred Thirteen Dollars (\$23,813.00), the Government shall pay to the Contractor Seventeen Thousand, Nine Hundred Ninety-four Dollars (\$17,994.00).

2. Payment

a. On or before the date of commencement of work on the project described in Appendix "A", the Government shall pay to the Contractor, upon submission by the Contractor of a proper voucher, 45 per cent of the agreed consideration.

b. On or before the expiration of six months from the date of commencement of the project, the Government shall pay to the Contractor, upon submission by the Contractor of a proper voucher, 45 per cent of the agreed consideration.

c. Upon receipt and acceptance of a satisfactory progress report, in cases where the contract is to be renewed, or the final report if the contract is not to be renewed, the Government shall pay to the Contractor, upon submission by the Contractor of a proper voucher, the remaining 10 per cent of the agreed consideration. An extension of the contract work without additional funds shall not be considered a renewal of the contract and in such cases the retained 10 per cent of the agreed consideration will be paid upon submission and acceptance of a satisfactory final report.

d. In the event the contract is renewed, payments to the Contractor of any additional amount to be paid by the Government shall be made for the extended work in accordance with the schedule outlined in subsections a., b., and c., above.

3. Contract Renewal

When renewal of the contract is desired, the Contractor shall submit a renewal proposal, a progress report and a 200-word summary in such manner and at such times as specified in Appendix "C". The Contractor and the Commission shall then negotiate as to the amounts each will contribute for the additional research activities to be conducted, taking into consideration the actual costs incurred for the current work in comparison with the cost estimates in the contract, and, upon agreement, shall execute a formal modification of the contract.

ARTICLE IV - REPORTS, RECORDS AND INSPECTION

1. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate all activities of the Contractor arising in the course of the work under this contract.

2. The Commission shall at all times be afforded access to the premises and to all technical records, correspondence, instructions, drawings and memoranda of record value of the Contractor pertaining to said work.

3. The Contractor shall submit a complete scientific report and such other reports as may be required in Appendix "C" in such manner and at such times as specified in Appendix "C" and shall submit such other reports as required by this contract in such manner and at such times as requested by the Commission.

4. Examination of Records

a. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this contract.

b. The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (i) purchase orders not exceeding \$2500 and (ii) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

c. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE V - PROPERTY

In consideration of the Contractor's contribution to the research project described in Appendix "A" of this contract, title to all materials, tools, machinery, equipment and supplies acquired from any source, including the Government, or manufactured by the Contractor under this contract, shall vest in the Contractor, except that title to items of property described in subsection 2.b. of Appendix "A" shall vest or remain in the Government. Additional items may be added to such subsection 2.b. in writing without the necessity for a formal modification of the contract.

ARTICLE VI - PROCUREMENT OF MATERIAL AND SERVICES FROM COMMISSION FACILITIES; COMPLIANCE WITH COMMISSION REGULATIONS

The Contractor shall comply with all licensing and other requirements of the Commission with respect to possession and use of by-product material, source material, and special nuclear material (as these terms are defined in the Atomic Energy Act of 1954), and may purchase or acquire such materials, irradiation services, other radioactive material, cyclotron time, etc., from the Commission or Commission facilities in accordance with applicable procedures.

ARTICLE VII - GENERAL PROVISIONS

The provisions of Appendix "B", dated October 1, 1961, attached hereto, are hereby made a part of this contract.

ARTICLE VIII - ALTERATIONS

The following alterations to this contract were made by mutual agreement of the parties prior to its execution: None.

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement the day and year first above written.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: Herman M. Roth
DIRECTOR
RESEARCH AND DEVELOPMENT DIVISION
(Contracting Officer)

WITNESSES:

THE UNIVERSITY OF TEXAS (SOUTHWESTERN
MEDICAL SCHOOL)

Catharine Schulze
3907 Throckmorton, Dallas, Texas
(Address)

BY: A. J. Gill (A. J. Gill, M.D.)
TITLE: Dean

Jeanne Thweatt
4194 Valley Ridge Road, Dallas, Texas
(Address)

ACCEPTANCE BY SENIOR INVESTIGATOR

I have read the foregoing Supplemental Agreement and the Appendices attached hereto and made a part hereof and agree to be bound by the provisions of this document.

R. B. Montgomery M.D.
Senior Investigator

APPENDIX "A"

TITLE IV

This TITLE IV describes the research program and cost estimates agreed upon between the Commission and the Contractor.

1. PROGRAM

a. Scope and Plan of Approach:

The Contractor will continue the investigation of the damage produced in living cell systems by ultraviolet radiation or radioisotopes such as P-32 utilizing techniques such as scanning interference television microscopy, ultraviolet microbeam irradiation television microscopy in combination with visible light phase contrast television microscopy, and in selected instances electron microscopy, fluorescence microscopy and histochemistry. These techniques are to be applied to the investigation of damage to selected morphologic areas of the cell.

2. BUDGET

a. Outline of Cost Estimates:

(1) <u>Salaries and Wages:</u>		\$13,502.00
Dr. P. O'B. Montgomery (60% of time)	\$9,000.00	
Research Technician	4,200.00	
OASI and WCI	302.00	
(2) <u>Equipment:</u>		9,500.00
(3) <u>Supplies:</u>		1,500.00
(4) <u>Travel:</u>		1,000.00
(5) <u>Overhead:</u>		<u>16,305.00</u>
	TOTAL	\$41,807.00*

*It is recognized that the project may receive additional financial support as described in the Contractor's proposal.

- b. Items of property to be procured or manufactured by the Contractor, or to be furnished by the Government, title to which will vest or remain in the Government (see Article V): None

APPENDIX "B"

GENERAL PROVISIONS
October 1, 1961

(FOR DIRECT AEC RESEARCH CONTRACTS)

1. Patents

- a. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of or under this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights under any application or patent that may result. The judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.
- b. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this contract.
- c. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs a. and b. of this clause from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.
- d. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this clause applicable to the subcontractor and its employees.
- e. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all purchase orders and supply subcontracts, for the procurement of any materials, tools, machinery, equipment or supplies described in subsection 2.b. of Appendix "A" of this contract, provisions securing for itself and for the Government indemnification against liability for patent infringement with respect to the manufacture, use and sale of such materials, tools, machinery, equipment or supplies.

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2. Publications

It is intended that the Contractor shall have full freedom of publication of the results of the research under this contract and the Contractor is urged to disseminate the results of the work through customary scientific publication channels, except that "Restricted Data" as defined in the Atomic Energy Act of 1954 shall be governed by the provisions of Clause 3. of this Appendix "B" entitled "Security".

However, in order to insure that the public disclosure of such results will not adversely affect the patent interests of the Government provided in Clause 1. of this Appendix "D" entitled "Patents", approval for such release shall be secured from the Commission prior to any such publication.

All publications shall include a reference that the results were developed under a Commission sponsored project.

3. Security

- a. It is understood that the work under this contract will not involve restricted data or other classified matter and that the Contractor will perform such work as unclassified work. However, if in the course of such work any discoveries are made or any data used or developed that constitute restricted data or other classified matter, the Contractor shall promptly inform the Commission and will be bound by the following:

- (1) Contractor's Duty to Safeguard Restricted Data and Other Classified Information. In the performance of the work under this contract the Contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding restricted data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as such other material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under this contract. Except as otherwise expressly provided in the specifications the Contractor shall upon completion or termination of this contract transmit to the Commission any classified matter in the possession of the Contractor or any person under the Contractor's control in connection with performance of this contract.

- (2) Regulations. The Contractor agrees to conform to all security regulations and requirements of the Commission.
- (3) Definition of Restricted Data. The term "Restricted Data", as used in this clause, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954.
- (4) Security Clearance of Personnel. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1954, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security. As used in this paragraph, the term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954. Access to classified information other than Restricted Data shall not be granted unless the recipient possesses appropriate security clearance.
- (5) Criminal Liability. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data or any top secret, secret, or confidential matter that may come to the Contractor or any person under the Contractor's control in connection with work under this contract, may subject the Contractor, its agents, employees, and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, 68 Stat. 919), (See also Executive Order 10104 of February 1, 1950, 15 F. R. 597).
- (6) Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

- b. The continuation by the Contractor of work found to involve restricted data will be subject to mutual agreement of the Commission and the Contractor and shall be covered by a modification of this agreement.

4. Disputes

- a. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or its duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.
- b. This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph a. of this clause; Provided, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

5. Safety, Health and Fire Protection

The Contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of employees and members of the public and to minimize danger from all hazards to life and property, and shall comply with all health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission. In the event that the Contractor fails to comply with said regulations or requirements of the Commission, the Contracting Officer may, without prejudice to any other legal or contractual rights of the Commission,

issue an order stopping all or any part of the work; thereafter a start order for resumption of work may be issued at the discretion of the Contracting Officer. The Contractor shall make no claim for an extension of time or for compensation or damages by reason of or in connection with such work stoppage.

6. Officials Not to Benefit

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

7. Covenant Against Contingent Fees

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

8. Convict Labor

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

9. Termination

- a. The Commission may at any time upon 120 days' written notice terminate this contract in whole or in part.
- b. In the event of termination pursuant to paragraph a. of this clause, the Contractor shall submit a statement of costs incurred in performance of the work under the contract prior to such termination, and the Government shall pay to the Contractor that portion of the costs incurred which bears the same relationship to the total as the agreed Government support for the full term bears to the total of cost estimates for the full term, less the amount of all payments

theretofore made. If the total payments theretofore made to the Contractor exceed the amount to which it is entitled hereunder, the Contractor shall promptly remit the amount of any such excess to the Government.

10. Eight-Hour Law

- a. This contract, to the extent that it is of a character specified in the Eight-Hour Law of 1912, as amended (40 U. S. Code 324-326), and is not covered by the Walsh-Healey Public Contracts Act (41 U. S. Code 35-45), is subject to the following provisions and exceptions of said Eight-Hour Law of 1912, as amended, and to all other provisions and exceptions of said Law:

No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this clause. The wages of every laborer and mechanic employed by the Contractor or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day; and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this clause a penalty of five dollars shall be imposed for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this clause, and all penalties thus imposed shall be withheld for the use and benefit of the Government.

- b. If this contract is with a state or political subdivision thereof:
 - (1) Paragraph a. of this clause shall not apply to the work performed by employees of the Contractor.
 - (2) The Contractor agrees to insert paragraph a. of this clause in all subcontracts hereunder with private persons or firms.

11. Nondiscrimination in Employment

In connection with the performance of work under this contract, the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Commission setting forth the provisions of this Nondiscrimination clause.
- b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.
- c. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Commission, advising the said labor union or workers' representative of the Contractor's commitments under this Nondiscrimination clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.
- e. The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by the rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records, and accounts by the Commission and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- f. In the event of the Contractor's noncompliance with the Non-discrimination clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled in whole or in part and the Contractor may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.
- g. The Contractor will include the provisions of the foregoing paragraphs a. through f. in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to section 303 of Executive Order No. 10925 of March 6, 1961, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Commission may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, That in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

12. Definitions

As used in this contract:

- a. The term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successor or any duly authorized representative of such person.
- b. The term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for deciding an appeal under the clause entitled "Disputes".
- c. Except as otherwise provided in this contract, the term "subcontract" shall include purchase orders under this contract.

13. Fellowships

It is understood by the Contractor that none of the funds supplied by the Commission under this contract shall be used in any way to pay the stipend of any appointment for which commensurate services are not rendered under this contract; nor shall any of the funds be used to confer a fellowship, or to pay any part of the stipend of a fellowship, of any kind.

14. Foreign Travel

It is agreed that none of the funds supplied by the Commission under this contract shall be used to pay the expenses of foreign travel, except where such foreign travel is made with the prior approval of the Commission. "Foreign travel" as used herein means travel outside the continental United States, excepting, however, travel to Canada.

15. Buy American Act

- a. In acquiring end products, the Buy American Act (41 U.S. Code 10a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:
- (1) "Components" means those articles, materials, and supplies, which are directly incorporated in the end products;
 - (2) "End products" means those articles, materials, and supplies, which are to be acquired under this contract for public use; and
 - (3) A "domestic source end product" means (A) an unmanufactured end product which has been mined or produced in the United States and (B) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50 percent of the costs of all its components. For the purposes of this a.(3)(B), components of foreign origin of the same type or kind as the products referred to in b.(2) or (3) of this clause shall be treated as components mined, produced, or manufactured in the United States.
- b. The Contractor agrees that there will be delivered under this contract only domestic source end products, except end products:

- (1) Which are for use outside the United States;
- (2) Which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;
- (3) As to which the Commission determines the domestic preference to be inconsistent with the public interest; or
- (4) As to which the Commission determines the cost to the Government to be unreasonable.

16. Utilization of Concerns in Labor Surplus Areas

It is the policy of the Government to place contracts with concerns which will perform such contracts substantially in areas of persistent or substantial labor surplus where this can be done consistent with the efficient performance of the contract, at prices no higher than are obtainable elsewhere. The Contractor agrees to use his best efforts to place his subcontracts in accordance with this policy. In complying with the foregoing and with paragraph b. of the clause of this contract entitled "Utilization of Small Business Concerns", the Contractor in placing his subcontracts shall observe the following order of preference: (1) persistent labor surplus area concerns which are also small business concerns; (2) other persistent labor surplus area concerns; (3) substantial labor surplus area concerns which are also small business concerns; (4) other substantial labor surplus area concerns; and (5) small business concerns which are not labor surplus area concerns.

17. Utilization of Small Business Concerns

- a. It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.
- b. The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this contract.

18. Copyright

- a. The Contractor (i) agrees that the Commission shall determine the disposition of the title to and the rights under any copyright secured by the Contractor or its employees on copyrightable material first produced or composed and delivered to the Government under this contract and (ii) hereby grants to the Government a royalty-free, nonexclusive, irrevocable license to reproduce, translate, publish, use and dispose of, and to authorize others so to do, all copyrighted or copyrightable work not first produced or composed by the Contractor in the performance of this contract but which is incorporated in the material furnished under the contract, provided that such license shall be only to the extent the Contractor now has, or prior to the completion or final settlement of the contract may acquire, the right to grant such license without becoming liable to pay compensation to others solely because of such grant.
- b. The Contractor agrees that it will not include any copyrighted material in any written or copyrightable material furnished or delivered under this contract, without a license as provided for in paragraph a. of this clause, or without the consent of the copyright owner unless specific written approval of the Commission to the inclusion of such copyrighted material is secured.
- c. The Contractor agrees to report in writing to the Commission, promptly and in reasonable detail, any notice or claim of copyright infringement received by the Contractor with respect to any material delivered under this contract.

APPENDIX "C"

REPORTS AND PROPOSALS
August 1, 1961

(FOR DIRECT AEC RESEARCH CONTRACTS OTHER THAN OID)

1. If the Contractor contemplates renewal of this contract, the Contractor shall submit the number of copies of the following as indicated:

- | | |
|--|-----------|
| a. <u>Renewal Proposal</u> | Six (6) |
| b. <u>Progress Report</u> | Six (6) |
| c. <u>200-Word Summary of Purpose and Scope of Proposed Research</u> | Three (3) |

The above may be submitted at any time after the expiration of six (6) months of the current contract period, but in no event shall the above be submitted later than ninety (90) days prior to the date of expiration of the current contract period.

2. If the Contractor does not contemplate a renewal of this contract, or if the Contractor's renewal proposal is not accepted by the Commission, the Contractor shall submit six (6) copies of a Complete Scientific Report on the date of expiration of this contract.
3. Brief reports or manuscripts may be submitted as desired by the Senior Investigator.
4. All reports shall be addressed and delivered, postage prepaid, to:

Research and Development Division
Oak Ridge Operations Office
U. S. Atomic Energy Commission
Post Office Box E
Oak Ridge, Tennessee

5. The Complete Scientific Report shall include a complete technical summary of the results of the research performed under the contract from the date of its inception through the date of its expiration. Results of the investigations and developments should be described in sufficient detail to allow other interested groups to fully utilize the information.

6. The 200-Word Summary shall be set forth on a form entitled "Notice of Research Project". This form will be furnished by the Commission.
7. The Progress Report shall briefly describe the scope of investigations undertaken and the significant results obtained. It should also explain any significant differences between the actual level of activity (expressed in the various categories of man months, facilities procured, travel performed, etc.) and that contemplated in the contract. Technical reports and articles prepared for publication should be listed with bibliographic references. Reprints or preprints of all such material should be appended and material contained therein need not be duplicated in the report.
8. Renewal proposals shall contain the type of information outlined below unless the information is already contained in earlier proposals or in the accompanying progress report. Any contemplated change in program or scope for the additional work should be clearly explained and the cost estimated should be based upon past experience.
 - a. Title of the project.
 - b. The institution and department in which the work will be done.
 - c. Scientific background including literature relevant to the proposal, the significance, and the motivation. If the proposal is for continuation of work already in progress the extent of present support should be stated identifying amounts received from other Federal agencies.
 - d. Scientific scope of the proposed research, its objectives, its relation to present knowledge and to comparable work in progress elsewhere, and a plan of accomplishments for the work.
 - e. Scientific Personnel. Give the name, highest academic degree, position in the institution, scientific experience, publications and accomplishments of the Senior Investigator (the individual who will actively direct the research program) and of each regular staff scientist who it is proposed will engage in the work. Indicate the approximate fraction of the time of each to be devoted to the project. Scientific personnel to be newly employed for the project should be so designated, and professional records given if possible.

- f. Other Personnel. The number of persons of each sub-professional grade and the fraction of the time of each to be devoted to the project should be listed. Graduate student employees should be identified as such if their thesis is to be related to the project.
- g. Other Financial Assistance. If assistance for this or other activities involving the same personnel or facilities is to be proposed to or received from other Federal or non-university sources the extent of that assistance should be clearly stated, and the interplay of the arrangements should be fully explained.
- h. Materials, Equipment and Facilities. List those already available for the work and justify the need for major items to be procured.
- i. Travel and Other Items. Explain the purpose of the proposed travel, and of any other major items in the budget. Travel rates and the use of contract funds for attendance at regular scientific meetings should conform with the policy of the institution in the use of its own funds for these purposes.
- j. Budget. This should list in detail all items of cost necessary to carry the project. It should include: a list of the individual salaries attributable to the project, supplies and services, equipment (defined as things individually costing more than \$500 which will retain their utility for more than a year), travel, communication and publication, and the indirect costs allocable to the project. The basis for computing the indirect costs should be briefly explained. The budget should not include the stipend of fellows. All salaries chargeable to the project should be in accord with the established policies of the institution, or, if not, an explanation should be submitted.
- k. Amount Requested. A statement of the part of the total amount listed in the budget which the institution is prepared to bear, and the amount requested from the AEC, and a statement of any other sponsors of the project with the amounts contributed by each. The proposal should be signed by the Senior Investigator and endorsed by a responsible administrative officer of the institution.
- l. Statement of Current Expenditures. A current statement of its expenditures for the project, and an estimate of expenses to be incurred.

- m. Residual Funds. Any difference in the scope of the work from that contemplated in the contract, as brought out in the report, may be reflected in the amount requested. If no new funds are required, the contract may be renewed without funds. A proposal for such renewal should state the scope of the work proposed for use of residual funds.

Contract No. AT-(40-1)-2478
The University of Texas
(Southwestern Medical School)
Modification No. 2

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 1st day of December, 1960, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented herein by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and THE UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL) (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into Contract No. AT-(40-1)-2478, dated December 9, 1958, providing for research into ultra-violet irradiation damage in living cell systems; and

WHEREAS, the contract has been amended heretofore by Modification No. 1; and

WHEREAS, the Commission desires to provide for additional research as more particularly described in TITLE III of Appendix "A", to obtain reports thereon, and to effect certain other changes as are hereinafter more particularly described; and

WHEREAS, this Supplemental Agreement is authorized by and executed under the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties hereto do mutually agree that said contract is hereby modified in the following particulars, but in no others:

1. The following new section "3." is added to Article II:

"3. The period during which the work under this contract may be conducted is hereby extended to October 31, 1961."

2. The following new subsection "1. c." is added in Article III:

"c. In consideration of the performance of the additional work described in TITLE III of Appendix "A", and the Contractor's agreement to support that work in the estimated amount of Twenty-three Thousand, Eight Hundred Ninety-five Dollars (\$23,895.00), the Government will pay to the Contractor Sixteen Thousand, One Hundred Thirty-eight Dollars (\$16,138.00)."

3. The following sentence is added to subparagraph 3.a. (4) of Appendix "B":

"Access to classified information other than Restricted Data shall not be granted unless the recipient possesses appropriate security clearance."

4. Paragraph 16. of Appendix "B" is revised to read as follows:

"16. Use of Concerns in Labor Surplus Areas

It is the policy of the Government to place supply contracts with suppliers who will perform such contracts substantially in areas of current labor surplus where this can be done at prices no higher than are obtainable elsewhere. The Contractor agrees to use its best efforts to place its subcontracts in accordance with this policy to the extent consistent with the efficient performance of this contract. In complying with the foregoing, the Contractor, in placing its subcontracts, shall observe the following order of preference:

- a. small business concerns located in labor surplus areas;
- b. other concerns located in labor surplus areas;
- c. small business concerns not located in labor surplus areas; and
- d. any other concerns."

5. The following new paragraph "17." is added to Appendix "B":

"17. Use of Small Business Concerns

a. It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services be procured from small business concerns.

b. The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this contract."

6. The TITLE III attached hereto and made a part hereof is added to Appendix "A".

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement the day and year first above written.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: Herman M Roth
HERMAN M. ROTH
DIRECTOR
RESEARCH AND DEVELOPMENT DIVISION
(Contracting Officer)

WITNESSES:

E. A. Zell
1633 Perryton Drive
(Address) Dallas

Catherine Schulz
307 Throckmorton, Dallas
(Address)

THE UNIVERSITY OF TEXAS
(SOUTHWESTERN MEDICAL SCHOOL)

BY: A. J. Birn

TITLE: DEAN

ACCEPTANCE BY SENIOR INVESTIGATOR

I have read the foregoing Supplemental Agreement and the TITLE III attached hereto and made a part hereof and agree to be bound by the provisions of this document.

[Signature]
Senior Investigator

APPENDIX "A"

TITLE III

This TITLE III describes the research program and cost estimates agreed upon between the Commission and the Contractor.

1. PROGRAM

a. Scope and Plan of Approach:

The Contractor will continue the study of the manner in which living cells respond to ultraviolet irradiation at different times during their life cycles. Studies with ultraviolet irradiation will be made on such cells as the Hela cell, endothelium of the salamander Triturus, and the embryonic chick heart fibroblasts. In addition the Contractor will initiate studies consisting of the introduction of radioactive phosphorus into tissue cultures of living cells and following the effects of this irradiation by phase contrast, interference and ultraviolet time-lapse motion picture techniques.

2. BUDGET

a. Outline of Cost Estimates:

(1) <u>Salaries and Wages:</u>		\$13,315.00
<u>Dr. P. O'B. Montgomery (60% of time)</u>	\$9,000.00	
Research Technician	4,020.00	
OASI and WCI	295.00	
(2) <u>Equipment:</u>		8,500.00
(3) <u>Supplies:</u>		1,000.00
(4) <u>Travel:</u>		1,000.00
(5) <u>Overhead:</u>		<u>16,218.00</u>
	TOTAL	\$40,033.00 *

*It is recognized that the project may receive additional financial support as described in the Contractor's proposal.

- b. Items of property to be procured or manufactured by the Contractor, or to be furnished by the Government, title to which will vest or remain in the Government (see Article V): None

Contract No. AT-(40-1)-2478
The University of Texas (Southwestern
Medical School)
Modification No. 1

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT, entered into this 8th day of December, 1959, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented herein by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission"), and THE UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL) (hereinafter called the "Contractor");

WITNESSETH THAT:

WHEREAS, the Government and the Contractor entered into Contract No. AT-(40-1)-2478, dated December 9, 1958, providing for research into ultraviolet irradiation damage in living cell systems; and

WHEREAS, the Commission desires to provide for additional research as more particularly described in TITLE II of Appendix "A", to obtain reports thereon, and to effect certain other changes as are hereinafter more particularly described; and

WHEREAS, this Supplemental Agreement is authorized by and executed under the Atomic Energy Act of 1954;

NOW, THEREFORE, the parties hereto do mutually agree that said contract is hereby modified in the following particulars, but in no others:

1. The following new section "2." is added to Article II:

"2. The period during which the work under this contract may be conducted is hereby extended to October 31, 1960."

2. The following new subsection "1. b." is added in Article III:

"b. In consideration of the performance of the additional work described in TITLE II of Appendix "A", and the Contractor's agreement to support that work in the estimated amount of Thirteen Thousand, Twenty-seven Dollars (\$13,027.00), the Government will pay to the Contractor Fifteen Thousand, Eight Hundred Forty-four Dollars (\$15,844.00)."

3. In subsections 2. a., 2. b. and 2. c. of Article III, delete the words "properly certified voucher" and substitute therefor the words "proper voucher."

4. In subsection 2. d. of Article III, delete the word "term" and substitute therefor the word "work".

5. Subsections a. and b. of section 4., Examination of Records, of Article IV are revised to read as follows:

- "a. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under this contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this contract.

- "b. The Contractor further agrees to include in all its sub-contracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three years after final payment under the subcontract, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term 'subcontract' as used in this clause excludes (1) purchase orders not exceeding \$2500; (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public; and (3) subcontracts or purchase orders for general inventory items not specifically identifiable with the work under this contract."

6. Article V is deleted in its entirety, and the following new Article V is substituted therefor:

"ARTICLE V - PROPERTY

"In consideration of the Contractor's contribution to the research project described in Appendix "A" of this contract, title to all materials, tools, machinery, equipment and supplies acquired from any source, including the Government, or manufactured by the Contractor under this contract, shall vest in the Contractor, except that title to items of property described in section 2. b. of Appendix "A" shall vest or remain in the Government. Additional items may be added to such section 2. b. in writing without the necessity for a formal modification of the contract."

7. In Appendix "B", paragraph 4. is revised to read as follows:

"4. Disputes

- "a. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from

the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or its duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

- "b. This 'Disputes' clause does not preclude consideration of law questions in connection with decisions provided for in paragraph a., above; Provided, that nothing in this contract shall be construed as making final the decision of any administrative official, representative, or board on a question of law."

8. In Appendix "B", the second sentence of paragraph 7., Covenant Against Contingent Fees, is revised to read as follows:

"For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee."

9. In Appendix "B", subparagraph 11. b. is revised to read as follows:

- "b. The Contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials."

10. The following new paragraph "16." is added in Appendix "B":

"16. Placing Orders and Subcontracts with Firms Located in Areas of Substantial Labor Surplus

"It is the policy of the Government to place supply contracts with suppliers who will perform such contracts substantially in areas of current labor surplus where this can be done at prices no higher than are obtainable elsewhere. The Contractor agrees to use its best efforts to place its subcontracts and purchase orders in accordance with this policy to the extent consistent with the efficient performance of this contract."

11. The TITLE II attached hereto and made a part hereof is added to Appendix "A".

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement the day and year first above written.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: Herman M. Roth
HERMAN M. ROTH
DIRECTOR
~~RESEARCH AND DEVELOPMENT DIVISION~~
(Contracting Officer)

WITNESSES:

E. A. Bell
1633 Perryton Dr., Dallas
(Address)

Calhoun Schuff
3907 Trophimov Dr., Dallas
(Address)

THE UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL)

BY: A. J. Hill

TITLE: Dean

ACCEPTANCE BY SENIOR INVESTIGATOR

I have read the foregoing Supplemental Agreement and the Title II attached hereto and made a part hereof and agree to be bound by the provisions of this document.

A. J. Montgomery
Senior Investigator

APPENDIX "A"

TITLE II

This TITLE II describes the research program and cost estimates agreed upon between the Commission and the Contractor.

1. PROGRAM

a. Scope and Plan of Approach:

The Contractor will continue to utilize the ultraviolet flying spot television microscope, which is now fully developed except for periodic minor alterations, to investigate the response of various types of living cells to ultraviolet irradiation. The difference in response at various periods in the life cycles of the cells will be investigated. The studies will be extended to include metabolic and electron microscopic studies of irradiated amoeba. The method of study will be extended to other cell lines and an attempt will be made to more thoroughly document preliminary observations.

2. BUDGET

a. Outline of Cost Estimates:

(1) <u>Salaries and Wages:</u>	\$12,820.00
Dr. P. O'B. Montgomery (50% of time)	\$8,800.00
Research Technician	4,020.00
(2) <u>Social Security and Workmen's Compensation:</u>	295.00
(3) <u>Equipment:</u>	8,500.00
(4) <u>Supplies:</u>	1,000.00
(5) <u>Travel:</u>	1,000.00
(6) <u>Indirect Costs (41% of Salaries and Wages):</u>	<u>5,256.00</u>
	Total \$28,871.00 *

* It is recognized that the project may receive additional financial support as described in the Contractor's proposal.

- b. Items of property to be procured or manufactured by the Contractor, or to be furnished by the Government, title to which will vest or remain in the Government (see Article V): None

UNITED STATES
ATOMIC ENERGY COMMISSION

LUMP SUM
RESEARCH CONTRACT

Contract No. AT-(40-1)-2478

THIS CONTRACT, entered into this 9th day of December, 1958, by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter called the "Commission") and THE UNIVERSITY OF TEXAS (SOUTHWESTERN MEDICAL SCHOOL) (hereinafter called the "Contractor"):

ARTICLE I - PURPOSE AND SCOPE

1. The Commission, in furtherance of its policy of assisting and fostering private research, desires to support the Contractor's fundamental research in the field of atomic energy.

2. The work shall consist of research by the Contractor into ultraviolet irradiation damage in living cell systems. The plan of approach to the problem and the agreed upon program and budget for the project are described in Appendix "A", which is hereby made a part of this contract. The Contractor shall be guided by, but not bound to conform to the details of, the budget described in Appendix "A".

3. The Contractor shall furnish all services, facilities, equipment, supplies and materials (except such services, equipment, supplies and materials as the Government has agreed to furnish herein) required for the performance of the research program described in Section 2, above.

4. The work will be carried out by the Contractor under the direction of Dr. Philip O'B. Montgomery as Senior Investigator.

5. The Contractor shall commence the work as soon as feasible, prosecute it with due diligence and submit the reports required hereunder as early as practicable and not later than the dates specified in Appendix "C".

ARTICLE II - SCHEDULE

1. The period during which the work under the contract may be conducted shall end on October 31, 1959.

ARTICLE III

1. Consideration

a. In consideration of the performance of the research activities described in TITLE I of Appendix "A", and the Contractor's agreement to support that work in the estimated amount of Thirteen Thousand, Five Dollars (\$13,005.00), the Government shall pay to the Contractor Fifteen Thousand, Eight Hundred Twelve Dollars (\$15,812.00).

2. Payment

- a. On or before the date of commencement of work on the project described in Appendix "A", the Government shall pay to the Contractor upon submission by the Contractor of a properly certified voucher, 45 per cent of the agreed consideration.
- b. On or before the expiration of six months from the date of commencement of the project, the Government shall pay to the Contractor, upon submission by the Contractor of a properly certified voucher, 45 per cent of the agreed consideration.
- c. Upon receipt and acceptance of a satisfactory progress report, in cases where the contract is to be renewed, or the final report if the contract is not to be renewed, the Government shall pay to the Contractor, upon submission by the Contractor of a properly certified voucher, the remaining 10 per cent of the agreed consideration. An extension of the contract work without additional funds shall not be considered a renewal of the contract and in such cases the retained 10 per cent of the agreed consideration will be paid upon submission and acceptance of a satisfactory final report.
- d. In the event the contract is renewed, payments to the Contractor of any additional amount to be paid by the Government shall be made for the extended term in accordance with the schedule outlined in Paragraphs a., b., and c., above.

3. Contract Renewal

When renewal of the contract is desired, the Contractor shall submit to the Commission's Oak Ridge Operations Office a renewal proposal as outlined in Appendix "C" attached hereto. The Contractor and the Commission shall then negotiate as to the amounts each will contribute for the additional research activities to be conducted, taking into consideration the actual costs incurred for the current work in comparison with the cost estimates in the contract, and, upon agreement, shall execute a formal modification of the contract.

ARTICLE IV - REPORTS, RECORDS AND INSPECTION

1. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate all activities of the Contractor arising in the course of the work under this contract.

2. The Commission shall at all times be afforded access to the premises and to all technical records, correspondence, instructions, drawings and memoranda of record value of the Contractor pertaining to said work.

3. The Contractor shall make progress and other reports in such manner and at such times as specified in Appendix "C" which is attached and hereby made a part of this contract.

4. Examination of Records

a. The Contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this contract until the expiration of three years after final payment under this contract.

b. The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor involving transactions related to the subcontract until the expiration of three years after final payment under this contract. The term "subcontract" as used herein means any purchase order or agreement to perform all or any part of the

work or to make or furnish any materials required for the performance of this contract, but does not include (1) purchase orders not exceeding \$1,000, (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public, or (3) subcontracts or purchase orders for general inventory items not specifically identifiable with the work under this contract.

c. Nothing in this contract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this contract.

ARTICLE V - TITLE TO PROPERTY PURCHASED BY CONTRACTOR

In consideration of the Contractor's contribution to the research project described in Appendix "A" of this contract, title to all materials, tools, machinery, equipment and supplies, acquired from any source including the Government, or manufactured by the Contractor under this contract shall vest in the Contractor, except that title to items of property described in Section 2. b. of Appendix "A" shall vest in the Government.

ARTICLE VI - PROCUREMENT OF MATERIAL AND SERVICES FROM COMMISSION FACILITIES; COMPLIANCE WITH COMMISSION REGULATIONS

The Contractor shall comply with all licensing and other requirements of the Commission with respect to possession and use of by-product material, source material, and special nuclear material (as these terms are defined in the Atomic Energy Act of 1954), and may purchase or acquire such materials, irradiation services, other radioactive material, cyclotron time, etc. from the Commission or Commission facilities in accordance with applicable procedures.

ARTICLE VII - PURCHASE OF RADIOISOTOPES UNDER AN AEC DISCOUNT CERTIFICATE

If any radioisotopes are budgeted in the outline of cost estimates at the full amount of the price as established by the Commission, but are purchased at less than such established prices under an AEC Discount Certificate issued to the Contractor (See: Title 10 C.F.R., Part 37), then any difference between the established price and the price so paid shall be paid by the Contractor to the Government or otherwise credited to the Government's account as the Contracting Officer may direct or approve. The requirement for a report to be submitted to the Commission indicating the purchases under the discount program is outlined in Appendix "C".

ARTICLE VIII - GENERAL PROVISIONS

The provisions of Appendix "B", attached hereto, are hereby made a part of this contract.

ARTICLE IX - ALTERATIONS

The following alterations to this contract were made by mutual agreement of the parties prior to its execution: None.

IN WITNESS WHEREOF, the parties hereto have executed this contract the day and year first above written.

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

BY: *Herman M. Roth*

HERMAN M. ROTH
DIRECTOR
~~RESEARCH AND DEVELOPMENT DIVISION~~
(Contracting Officer)

WITNESSES:

Arthur M. Hughes

E. A. Gell

THE UNIVERSITY OF TEXAS (SOUTHWESTERN
MEDICAL SCHOOL)

BY: *Q. J. Sini*

TITLE: *Sen*

ACCEPTANCE BY SENIOR INVESTIGATOR

I have read the foregoing contract and the Appendices attached hereto and made a part hereof and agree to be bound by the provisions of this document.

Robt. Montgomerie
Senior Investigator

APPENDIX "A"

TITLE I

This TITLE I describes the research program and cost estimates agreed upon between the Commission and the Contractor.

1. PROGRAM

a. Scope and Plan of Approach:

Utilizing the ultraviolet flying-spot television microscope under development, the Contractor will conduct research on the manner in which living cells respond to ultraviolet irradiation at different times during their life cycles. Studies with ultraviolet irradiation will be made on such cells as the HeLa cell, endothelium of the salamander Triturus, and the embryonic chick heart fibroblasts. Cells will be studied in the resting state and in mitosis by a variety of techniques. Studies will be made of nucleolar irradiation, nuclear irradiation, and cytoplasmic irradiation, and finally total cell irradiation. Studies will be made in relation to total dose and fractional dose. Spindle formation, nuclear reconstruction, chromosome modification, etc., will be studied, and special attention will be paid during the first period of the work to studies upon the nucleolus.

2. BUDGET

a. Outline of Cost Estimates:

(1) <u>Salaries and Wages:</u>	\$12,820.00
Dr. P. O'B. Montgomery (50% of time)	\$8,800.00
Research Technician	4,020.00
(2) <u>Social Security and Workmen's Compensation:</u>	241.00
(3) <u>Equipment:</u>	8,500.00
(4) <u>Supplies:</u>	1,000.00
(5) <u>Travel:</u>	1,000.00
(6) <u>Overhead (41% of salaries and Wages:</u>	5,256.00
	<u>\$28,817.00 *</u>

* It is recognized that the project may receive additional financial support as described in the Contractor's proposal.

b. Items of property to be procured or manufactured by the Contractor, title to which will vest in the Government (see Article V): None.

APPENDIX "B"

GENERAL PROVISIONS

(FOR DIRECT AEC RESEARCH CONTRACTS)

1. Patents

- a. Whenever any invention or discovery is made or conceived by the Contractor or its employees in the course of, in connection with, or under the terms of this contract, the Contractor shall furnish the Commission with complete information thereon; and the Commission shall have the sole power to determine whether or not and where a patent application shall be filed, and to determine the disposition of the title to and rights under any application or patent that may result. The judgment of the Commission on these matters shall be accepted as final; and the Contractor, for itself and for its employees, agrees that the inventor or inventors will execute all documents and do all things necessary or proper to carry out the judgment of the Commission.
- b. No claim for pecuniary award or compensation under the provisions of the Atomic Energy Acts of 1946 and 1954 shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of, in connection with, or under the terms of this contract.
- c. Except as otherwise authorized in writing by the Commission, the Contractor will obtain patent agreements to effectuate the purposes of paragraphs a. and b. of this article from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will not have access to technical data.
- d. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts provisions making this article applicable to the subcontractor and its employees.

2. Publications

It is intended that the Contractor shall have full freedom of publication of the results of the research under this contract and the Contractor is urged to disseminate the results of the work through customary scientific publication channels, except that "restricted data" as defined in the Atomic Energy Act of 1954 shall be governed by the provisions of Paragraph 3. of this Appendix "B".

However, in order to insure that the public disclosure of such results will not adversely affect the patent interests of the Government provided in Paragraph 1. of this Appendix "B" entitled "Patents" approval for such release shall be secured from the Commission prior to any such publication.

All publications shall include a reference that the results were developed under a Commission sponsored project.

3. Security

a. It is understood that the work under this contract will not involve restricted data or other classified matter and that the Contractor will perform such work as unclassified work. However, if in the course of such work any discoveries are made or any data used or developed that constitute restricted data or other classified matter, the Contractor shall promptly inform the Commission and will be bound by the following:

- (1) Contractor's Duty to Safeguard Restricted Data and Other Classified Information. In the performance of the work under this contract the Contractor shall, in accordance with the Commission's security regulations and requirements, be responsible for safeguarding restricted data and other classified matter and protecting against sabotage, espionage, loss and theft, the classified documents, materials, equipment, processes, etc., as well as such other material of high intrinsic or strategic value as may be in the Contractor's possession in connection with performance of work under this contract. Except as otherwise expressly provided in the specifications the Contractor shall upon completion or termination of this contract transmit to the Commission any classified matter in the possession of the Contractor or any person under the Contractor's control in connection with performance of this contract.
- (2) Regulations. The Contractor agrees to conform to all security regulations and requirements of the Commission.
- (3) Definition of Restricted Data. The term "Restricted Data", as used in this article, means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Atomic Energy Act of 1954.
- (4) Security Clearance of Personnel. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1954, the Contractor shall not permit any individual to have access to Restricted Data until the designated investigating agency shall have made an investigation and report to the Commission on the character, associations, and loyalty of such individual and the Commission shall have determined that permitting such person to have access to Restricted Data will not endanger the common defense and security. As used in this paragraph, the

term "designated investigating agency" means the United States Civil Service Commission or the Federal Bureau of Investigation, or both, as determined pursuant to the provisions of the Atomic Energy Act of 1954.

- (5) Criminal Liability. It is understood that disclosure of information relating to the work or services ordered hereunder to any person not entitled to receive it, or failure to safeguard any Restricted Data or any top secret, secret, or confidential matter that may come to the Contractor or any person under the Contractor's control in connection with work under this contract, may subject the Contractor, his agents, employees, and subcontractors to criminal liability under the laws of the United States. (See the Atomic Energy Act of 1954, 68 Stat. 919), (See also Executive Order 10104 of February 1, 1950, 15 F. R. 597.)
- (6) Subcontracts and Purchase Orders. Except as otherwise authorized in writing by the Contracting Officer, the Contractor shall insert provisions similar to the foregoing in all subcontracts and purchase orders under this contract.

- b. The continuation by the Contractor of work found to involve restricted data will be subject to mutual agreement of the Commission and the Contractor and shall be covered by a modification of this agreement.

4. Disputes

Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. Within 30 days from the date of receipt of such copy, the Contractor may appeal by mailing or otherwise furnishing to the Contracting Officer a written appeal addressed to the Commission, and the decision of the Commission shall, unless determined by a court of competent jurisdiction to have been fraudulent, arbitrary, capricious, or so grossly erroneous as necessarily to imply bad faith, or is not supported by substantial evidence, be final and conclusive: Provided, That if no such appeal to the Commission is taken, the decision of the Contracting Officer shall be final and conclusive. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its appeal.

Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

5. Safety, Health and Fire Protection

The Contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of employees and members of the public and to minimize danger from all hazards to life and property, and shall comply with all health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission. In the event that the Contractor fails to comply with said regulations or requirements of the Commission, the Contracting Officer may without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work; thereafter a start order for resumption of work may be issued at the discretion of the Contracting Officer. The Contractor shall make no claim for an extension of time or for compensation or damages by reason of or in connection with such work stoppage.

6. Officials Not to Benefit

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

7. Covenant Against Contingent Fees

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration the full amount of such commission, percentage, brokerage or contingent fee.

8. Convict Labor

In connection with the performance of work under this contract the Contractor shall not employ any person undergoing sentence of imprisonment at hard labor.

9. Termination

- a. The Commission may at any time upon 120 days' written notice terminate this contract in whole or in part.
- b. In the event of termination pursuant to subsection a., the Contractor shall submit a statement of costs incurred in performance of the work under the contract prior to such termination, and the Government shall pay to the Contractor that portion of the costs incurred which bears the same relationship to the total as the agreed Government support for the full term bears to the total of cost estimates for the full term, less the amount of all payments theretofore made. If the total payments theretofore made to the Contractor exceed the amount to which it is entitled hereunder, the Contractor shall promptly remit the amount of any such excess to the Government.

10. Eight-Hour Law

- a. No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this article. The wages of every laborer and mechanic employed by the Contractor or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this article a penalty of five dollars shall be imposed upon the Contractor for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this article, and all penalties thus imposed shall be withheld for the use and benefit of the Government: Provided, that this stipulation shall be subject in all respects to the exceptions and provisions of the Eight-Hour Laws as set forth in 40 U.S.C. 321, 324, 325, 325a and 326, which relate to hours of labor and compensation for overtime.
- b. This provision does not apply to work performed by employees of the Contractor if this contract is with a state or a state institution.

11. Nondiscrimination in Employment

- a. In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of the nondiscrimination clause.
- b. The Contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except (i) subcontracts for standard commercial supplies or raw materials, (ii) subcontracts to be performed outside the United States where no recruitment of workers within the limits of the United States is involved, (iii) purchase orders on pocket-size forms similar to U. S. Standard Form 44, and (iv) subcontracts to meet other special requirements or emergencies, if recommended by the Committee on Government Contracts. In the case of purchase orders hereunder which do not exceed \$5,000, the last sentence of paragraph a. above may be omitted.

12. Definitions

As used in this contract:

- a. the term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successor or any duly authorized representative of such person.
- b. the term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for deciding an appeal under the article entitled "Disputes".

13. Fellowships

It is understood by the Contractor that none of the funds supplied by the Commission under this contract shall be used in any way to pay the stipend of any appointment for which commensurate services are not rendered under this contract; nor shall any of the funds be used to confer a fellowship, or to pay any part of the stipend of a fellowship, of any kind.

14. Foreign Travel

It is agreed that none of the funds supplied by the Commission under this contract shall be used to pay the expenses of foreign travel, except where such foreign travel is made with the prior approval of the Commission. "Foreign travel" as used herein means travel outside the continental United States, excepting, however, travel to Canada.

15. Buy American Act

In the event this contract provides for the acquisition of articles, materials, or supplies by the Government, the following provision shall apply with respect to such items: The Contractor agrees that there will be delivered under this contract only such unmanufactured articles, materials and supplies (which term "articles, materials and supplies" is hereinafter referred to in this clause as "supplies") as have been mined or produced in the United States, and only such manufactured supplies as have been manufactured in the United States substantially all from supplies mined, produced, or manufactured, as the case may be, in the United States. The foregoing provisions shall not apply (i) with respect to supplies exempted by the Commission from the application of the Buy American Act (41 U.S.C. 10a-d), (ii) with respect to supplies for use outside the United States, or (iii) with respect to the supplies to be delivered under this contract which are of a class or kind determined by the Commission not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, or (iv) with respect to such supplies, from which the supplies to be delivered under this contract are manufactured, as are of a class or kind determined by the Commission not to be mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, provided that this exception (iv) shall not permit delivery of supplies manufactured outside the United States if such supplies are manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality.

APPENDIX "C"

REPORTS AND PROPOSALS

(FOR DIRECT AEC RESEARCH CONTRACTS)

	Date Due	Copies
1. Progress Report	AUG 1	Six
2. Renewal Proposal	-----	Six
3. 200-word summary of purpose and scope with submittal date indicated thereon	Within 30 days after NOV -	Three
4. Complete Scientific Report	On contract expiration or termination	Six
5. Radioisotopes Purchase Report	With renewal proposal if proposal is submitted, otherwise on contract expiration or termination	Three
6. Brief reports or manuscripts may be submitted as desired by Senior Investigator		

NOTES:

All of the above should be addressed to:

Research and Development Division
Oak Ridge Operations Office
U. S. Atomic Energy Commission
Post Office Box E
Oak Ridge, Tennessee

The progress report should briefly describe the scope of investigations undertaken and the significant results obtained. It should also explain any significant differences between the actual level of activity (expressed in the various categories of man-months, facilities procured, travel performed, etc.) and that contemplated in the contract. Technical reports and articles prepared for publication should be listed with bibliographic references. Reprints or preprints of all such material should be appended and material contained therein need not be duplicated in the report.

Renewal proposals, if any, should accompany the progress report and should contain the type of information outlined below unless the information is already contained in earlier proposals or in the accompanying progress report. Any contemplated change in program or scope for the additional work should be clearly explained and the cost estimated should be based upon past experience.

1062853

1. Title of the project.
2. The institution and department in which the work will be done.
3. Scientific background including literature relevant to the proposal, the significance, and the motivation. If the proposal is for continuation of work already in progress the extent of present support should be stated identifying amounts received from federal agencies.
4. Scientific scope of the proposed research, its objectives, its relation to present knowledge and to comparable work in progress elsewhere, and a plan of accomplishments for the work.
5. Scientific Personnel. Give the name, highest academic degree, position in the institution, scientific experience, publications and accomplishments of the Senior Investigator (the individual who will actively direct the research program) and of each regular staff scientist who it is proposed will engage in the work. Indicate the approximate fraction of the time of each to be devoted to the project. Scientific personnel to be newly employed for the project should be so designated, and professional records given if possible.
6. Other Personnel. The number of persons of each sub-professional grade and the fraction of the time of each to be devoted to the project should be listed. Graduate student employees should be identified as such if their thesis is to be related to the project.
7. Other Financial Assistance. If assistance for this or other activities involving the same personnel or facilities is to be proposed to, or received from other federal or non-university sources the extent of that assistance should be clearly stated, and the interplay of the arrangements should be fully explained.
8. Materials, Equipment and Facilities. List those already available for the work and justify the need for major items to be procured.
9. Travel and Other Items. Explain the purpose of the proposed travel, and of any other major items in the budget. Travel rates and the use of contract funds for attendance at regular scientific meetings should conform with the policy of the institution in the use of its own funds for these purposes.
10. Budget. This should list in detail all items of cost necessary to carry the project. It should include: a list of the individual salaries attributable to the project, supplies and services, equipment (defined as things individually costing more than \$500 which will retain their utility for more than a year), travel, communication and publication, and the indirect costs allocable to the project. The basis for computing the indirect costs should be briefly explained. The budget should not include the stipend of fellows. All salaries chargeable to the project should be in accord with the established policies of the institution, or, if not, an explanation should be submitted.

11. Amount Requested. A statement of the part of the total amount listed in the budget which the institution is prepared to bear, and the amounts requested from the AEC, and a statement of any other sponsors of the project with the amounts contributed by each. The proposal should be signed by the Senior Investigator and endorsed by a responsible administrative officer of the institution.
12. Statement of Current Expenditures. A current statement of its expenditures for the project, and an estimate of expenses to be incurred.
13. Residual Funds. Any difference in the scope of the work from that contemplated in the contract, as brought out in the report, may be reflected in the amount requested. If no new funds are required the contract may be renewed without funds. A proposal for such renewal should state the scope of the work proposed for use of residual funds.

The radioisotopes purchase report shall list all radioisotopes included in the budget at the regular price established by the Commission, but which are purchased, or will be purchased under the current budget, at a price less than the established price by utilizing the discount authorized by an AEC Discount Certificate issued to the Contractor. For each such purchase, the report shall state the price as established by the Commission, the price paid or to be paid using the discount, and the savings realized or to be realized. The report due on contract termination or expiration shall cover all such purchases actually made and not previously reported.