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This document consists of 13 pages.  
No. 6 of 11 copies, Series A

CONTRACT NO. AT(30-1)-696 TITLE

CONTRACTOR: HORIZONS INCORPORATED  
Princeton, New Jersey

CONTRACT FOR: RESEARCH AND DEVELOPMENT

COMMISSION OBLIGATION: \$9140.80

PAYMENT: To be made by Division of Disbursement,  
United States Treasury Department, New  
York, N. Y. (Submit Invoices to: United  
States Atomic Energy Commission, P.O.  
Box 30, Ansonia Station, New York 23,  
New York

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEW DATE: 11/15/76	1. DECLASSIFICATION (CIRCLE NUMBER(S))
AUTHORITY: DOE, 251 DM	2. CLASSIFICATION RETAINED
NAME: M. Murray	3. DECLASSIFIED OR CHANGED TO:
2ND REVIEW DATE: 1/1/77	4. CONTAINS AN-DOE CLASSIFIED INFO
AUTHORITY: DO	5. CORRELATE WITH:
NAME: M. Murray	6. CLASSIFICATION CANCELED
	7. CLASSIFIED INFO BRACKETED
	OTHER (SPECIFY): CR 25 1-13

A TRUE COPY  
Margaret M. Murray

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Encl 4

Attach 1

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Contract No. AT(30-1)-696

THIS CONTRACT, entered into the 5th day of July, 1949, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), and HORIZONS INCORPORATED (hereinafter referred to as the "Contractor"), a corporation organized and existing under the laws of the State of New Jersey, with principal place of business in Princeton, New Jersey,

WITNESSETH, THAT:

WHEREAS, the Government desires to have the Contractor perform certain research and development work, as hereinafter provided; and

WHEREAS, this contract is authorized by and executed under the Atomic Energy Act of 1946;

NOW, THEREFORE, the parties hereto mutually agree as follows:

ARTICLE I - THE WORK

1. a. The Contractor shall conduct research and perform development work on a process for the preparation of ductile, high-purity, zirconium (preferably in coherent form) by fused salt electrolysis.

b. The Contractor shall perform all the studies, investigations, experiments, operations, and other facets of the work provided for above, by utilization of its know-how and (except as the Commission may otherwise approve in writing at any time or times) the following minimum technical time of the following designated Contractor personnel: (i) the part-time services of its Chief Chemist, to the extent the work requires his services, (ii) the full-time services of a qualified metallurgist, (iii), the full-time services of a qualified chemist and, (iv) the full-time services of a qualified laboratory assistant. It is understood that the word "qualified" is used in the preceding sentence in correlation with the Contractor's undertakings hereunder and in the light of the particular needs for the proper prosecution thereof.

c. The Contractor shall perform said work in its laboratories in Cleveland, Ohio.

2.a. From time to time in the course of the work under this contract, the Government at the election of the Commission may furnish the Contractor items of materials, equipment, and other property for use by the Contractor in said work.

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b. To the extent that the Government does not furnish such items of property pursuant to a above, and the Contractor is able so to do, the Contractor shall furnish all supplies, materials, equipment, and facilities requisite for the proper performance of the work under this contract; it is understood, however, that this provision is subject to the provisions of paragraph 2 of Article III.

3. The Contractor shall confer with the Commission at mutually agreeable times relative to the Contractor's activities under this contract, and shall keep the Commission fully advised of its progress, and of the difficulties, if any, that it encounters in the course of the work hereunder. The Contractor shall comply promptly with Commission requests relative, (i) to the emphasis or relative emphasis to be placed on the various phases of the work, (ii) to the delivery (to Commission-designated recipients) of sample or resultant materials, or of any other items of Government-owned property in the custody or possession of the Contractor by virtue of this contract, and/or (iii) to such other matters of concern to the Commission under this contract as the Commission indicates in its requests.

#### ARTICLE II - THE PERIOD OF PERFORMANCE

1. The period of performance of the work under this contract shall commence on July 15, 1949, and, subject to the provisions of paragraph 2 next following, shall expire on November 15, 1949.

2. a. The period of performance may be terminated by the Commission, for the convenience of the Government, whenever the Commission, in its discretion, considers such action advisable; it is understood that this paragraph does not concern itself with the right of the Government to terminate in the event of the breach by the Contractor of any of the provisions of this contract. Termination under this paragraph shall be effected by a notice in writing, mailed or delivered by the Commission to the Contractor, specifying the effective date of such termination.

b. Upon termination under this paragraph, the Contractor shall perform the following close-out work:

- (1) the discontinuance of the terminated work, as directed or approved by the Commission;
- (2) the protection, and delivery to Commission-designated recipients, as directed or approved by the Commission, of Government-owned property in the custody or possession of the Contractor by virtue of this contract; and

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- (3) the taking of such other steps, relative to the termination, or to final settlement of this contract, as the Commission directs or approves.

c. The Contractor shall be reimbursed for its actual costs in performing close-out work under this paragraph, in addition to being paid the sums due it under Article III for work performed up to the effective date of termination, subject to the provisions of paragraph 2 of Article III.

3. In the event the period of performance is not terminated by the Government pursuant to paragraph 2 above, and expires on the date specified in paragraph 1 above, the Contractor shall similarly perform such close-out work as the Commission directs or approves, and the provisions of subdivision c of paragraph 2 above shall apply with respect to such close-out work.

#### ARTICLE III - THE CONSIDERATION

1. In full monetary consideration for the performance of the work under this contract (other than the close-out work referred to in Article II) the Contractor shall receive from the Government:

a. Reimbursement for the cost of the supplies, materials, and equipment furnished by the Contractor pursuant to 2b of Article I. The term "cost", as used in the preceding sentence, shall be deemed to mean:

- (1) The prices paid by the Contractor to vendors for items purchased for the work under this contract; plus taxes levied upon, with respect to, or measured by, the sales, purchases, storage, or use, of said items, it being the intent of the parties that such taxes shall be paid by the Contractor (and reimbursed hereunder) to the same extent as the Contractor would normally pay such taxes in connection with supplies, materials, and equipment purchased for its own (non-Government connected) use; plus shipping charges (including special handling and insurance), if any, paid by the Contractor (but not including handling expenses of the Contractor). All cash and trade discounts, rebates, allowances, credits, commissions,

and bonifications, which are for the Contractor's benefit shall be deducted if taken by the Contractor, and if not taken by the Contractor shall be deducted only if not taken due to an act or failure to act constituting negligence attributable to the Contractor.

- (2) The reasonable value, but in no event greater than the original cost (including taxes of the types mentioned in (1) above) to the Contractor, as established by generally accepted accounting practice consistently applied, of items furnished from the Contractor's store rooms, (but not including such handling expenses of the Contractor as may be involved in such furnishing).

b. Reimbursement for such shipping charges as it incurs, pursuant to direction of the Commission, in delivering Government-owned property.

c. Payment at the rate of:

- (1) \$14.10 per hour expended by the Chief Chemist (pursuant to lb of Article I) in the technical phases of the work under this contract;
- (2) \$7.81 per hour expended by the metallurgist (pursuant to lb of Article I) in the technical phases of the work under this contract;
- (3) \$6.97 per hour expended by the chemist (pursuant to lb of Article I) in the technical phases of the work under this contract; and
- (4) \$3.14 per hour expended by the laboratory assistant (pursuant to lb of Article I) in the technical phases of the work under this contract.

2. There has been obligated for this contract, from obligational authority available to the Commission, the sum of Nine Thousand One Hundred Forty Dollars and Eighty Cents (\$9,140.80). Said amount may be increased by the Commission (in writing) in its discretion, from time to time. Notwithstanding any other provisions of this contract:

- (1) the total liability of the Government under this contract (including the close-out work referred to in Article II) shall be limited to the Commission obligation specified in this paragraph, as same may be increased by the Commission in writing;
- (2) irrespective of whether or not the amount of the Commission obligation is reached by the Contractor (i.e. the Contractor earns sums hereunder totalling said amount), and irrespective of whether or not the Commission increases such limiting amount if and when reached by the Contractor, the Contractor shall nevertheless be obligated to continue its performance hereunder (at no additional cost to the Government) until expiration of the period of performance provided for in Article II, it being understood, however, that (i) the Contractor shall not be obligated hereunder, in any event, to furnish pursuant to 2b of Article I supplies, materials and/or equipment the reimbursement for which (under this contract) would total more than \$1,000.00, unless the Commission increases the then Commission obligation under this contract and notifies the Contractor in writing that all or part of such increase shall represent an increase in said \$1,000.00 figure (in which case said figure shall be considered modified accordingly), and (ii) the Contractor shall not be obligated to perform any close-out work under Article II the cost of which when added to the other sums earned by the Contractor under this contract would result in a total in excess of the then Commission obligation, unless the Commission increases the then Commission obligation under this contract to cover the cost of the desired close-out work involved.

3. The Government will make payments to the Contractor monthly or in the discretion of the Commission at more frequent intervals, upon submission to and approval by the Commission of pertinent vouchers supported by such evidence as the Commission may require.

ARTICLE IV - GOVERNMENT PROPERTY

1. Title to all items of property furnished the Contractor by the Government under this contract shall remain the property of the Government.

2. Title to all items of property furnished by the Contractor under this contract, the cost of which is reimbursable under this contract, shall vest in the Government: (i) immediately after the moment of acquisition of title by the Contractor, with respect to items purchased for the work hereunder, and (ii) with respect to items from the Contractor's store rooms, at the moment of such furnishing.

3. All items of property referred to in paragraphs 1 and 2 above shall, together with the resulting or incidental products, by-products, work-in-process, salvage, residues, and scrap, remain the property of the Government.

4. All technical data (including, but not limited to, notes, drawings, reports, designs, specifications and memoranda) furnished or prepared by the Contractor pursuant to, or developed in connection with, the Contractor's undertakings under this contract, shall be the property of the Government, and the Government shall have the right to use said data in any manner and for any purpose without any claim on the part of the Contractor for additional compensation therefor.

5. All items of Government-owned property referred to above are hereinafter collectively referred to as "Government property". To the extent practicable, the Contractor shall cause all non-expendable 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, in a manner satisfactory to the Commission, records showing the disposition and/or use of Government property. Such records shall be subject to Commission inspection at all reasonable times.

6. The Contractor shall promptly notify the Commission of any loss or destruction of or damage to Government property (but not of any consumption of materials or supplies in the performance of its undertakings hereunder nor of lost, destroyed, or damaged technical data which are worthless from monetary, practical, and security standpoints). Except as otherwise specifically provided in this contract, the Contractor shall not be liable for loss or destruction of or damage to Government property (in the possession or custody of the Contractor in connection with this contract) unless such loss, destruction or damage is due to negligence or wilful misconduct attributable to the Contractor.

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7. With the written approval of the Commission, the Contractor may (i) transfer or otherwise dispose of items of Government property to such parties and upon such terms as so approved, or (ii) itself acquire title to items of Government property at prices mutually agreed upon by the Contractor and the Commission. The proceeds of any such transfer or disposition, and the agreed price of any such Contractor acquisition, shall be paid (or credited) by the Contractor to the Government as the Commission directs.

#### ARTICLE V - INVENTIONS AND DISCOVERIES

1. Whenever any invention or discovery is made or conceived by the Contractor, its employees, or others engaged by the Contractor, in the course of any of the work 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 the rights under any application or patent that may result; provided, however, that the Contractor, in any event, shall retain at least a non-exclusive, irrevocable, royalty-free, license under said invention, discovery, application or patent, such license being limited to the manufacture, use, and sale for purposes other than use in the production of fissionable material or atomic energy. Subject to the license retained by the Contractor, as provided in this paragraph, the judgment of the Commission on these matters shall be accepted as final, and the Contractor, for itself, its employees, and the others engaged by the Contractor, 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. It is understood that the right granted to the Contractor in this paragraph is subject to the provisions of Article VI below (as are all the provisions of this contract).

2. Except as to the inventions or discoveries covered by paragraph 1 above, the Contractor, for itself, its successors and assigns, agrees to and does hereby grant and convey to the Government an irrevocable, non-exclusive, royalty-free license, in and to any and all discoveries, inventions (whether patented or not), secret processes, technical information and know-how of the Contractor, conceived, made, developed, or acquired by the Contractor prior to or on the effective date of expiration or termination of this contract, which shall or can be utilized, tested, or embodied by the Contractor in the work under this contract, for Governmental purposes, in the manufacture, use and disposition of any article and material, and in the use of any method or process, such license to include the right to sell and have sold all products of any such process or method that are not used by or for the Government. The Contractor agrees that the Government, without waiving or forfeiting any right under this license, shall not be estopped at any time from



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contesting the enforceability of, and raising any defense with respect to, the validity or scope of, or the title to, any patent herein licensed. The Contractor hereby releases the Government, its officers, agents, servants and employees, from any and all claims that it has or may have because of the use by or for the Government now or in the future, within the scope of the license and rights herein granted to the Government, of any of the patented or unpatented discoveries, inventions, articles, designs or methods of the Contractor concerned with the work under this contract.

3. Without waiving any rights accruing to the Government under the foregoing provisions, it is agreed that all provisions of the Atomic Energy Act of 1946 relating to patents and inventions are hereby incorporated by reference. No claim for pecuniary award or compensation under the provisions of said Act shall be asserted by the Contractor, its employees, or the others engaged by the Contractor, or by any subcontractor, its employees or others it engages, with respect to any invention or discovery made in the course of said work.

4. Except as otherwise authorized in writing by the Commission, the Contractor will obtain appropriate agreements to effectuate the purposes of paragraphs 1 and 3 above from all persons who perform any part of said work, except such clerical and manual labor personnel as will not have access to technical data.

5. Except as otherwise authorized in writing by the Commission, the Contractor will insert in all subcontracts hereunder provisions making paragraphs 1 and 3 above applicable to the subcontractor, its employees, and others engaged by the subcontractor.

#### ARTICLE VI - DISCLOSURE OF INFORMATION

1. It is understood that unauthorized disclosure of, or failure to safeguard all, top-secret, secret, confidential and restricted matter that may come to the Contractor or any person under its control in connection with the undertakings 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 1946 (Public Law 585 - 79th Congress). See also Title I of an Act approved June 15, 1917 (40 Stat. 217; 50 U.S.C. 31-42), as amended by an Act approved March 28, 1940 (54 Stat. 79); and the provisions of an Act approved January 12, 1938 (52 Stat. 3; 50 U.S.C. 45-45d) as supplemented by Executive Order No. 8381, dated March 22, 1940, 5 F.R. 1147.

2. The Contractor agrees to conform to all security regulations and requirements of the Commission. Except as the Commission may authorize, in accordance with the Atomic Energy Act of 1946, the Contractor agrees not to permit any individual to have access to restricted data until the Federal Bureau of Investigation 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 or security. The term "restricted data" as used in this paragraph means all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power, but shall not include any data which the Commission from time to time determines may be published without adversely affecting the common defense and security.

3. The Contractor shall insert in all subcontracts under this contract provisions similar to the text of paragraphs 1 and 2 above.

#### ARTICLE VII - DISPUTES

Except as otherwise expressly provided in this contract, all disputes which may arise under this contract, and which are not disposed of by mutual agreement, shall be decided by a representative of the Commission duly authorized to supervise and administer performance of the Contractor's undertakings hereunder, who shall reduce his decision to writing and mail a copy thereof to the Contractor; said decision shall be final and conclusive on the parties hereto, subject to the right of the Contractor to appeal as provided for in the sentence next following. Within 30 days from said mailing, the Contractor may appeal in writing to the Commission, whose written decision thereon, or that of its duly authorized representative, representatives or board, not including the representative mentioned in the preceding sentence, shall be final and conclusive on the parties hereto. Pending the decision on any dispute hereunder, the Contractor shall diligently proceed with the performance of its undertakings under this contract.

#### ARTICLE VIII - MISCELLANEOUS PROVISIONS

1. Except to the extent that this provision is waived in writing by the Commission at any time or times, the Contractor (i) shall reduce to writing every commitment (which it makes under this contract for items of property the cost of which is reimbursable hereunder) involving an amount in excess of One Hundred Dollars (\$100.00), (ii) shall make no such commitments involving an amount in excess of Two Hundred Dollars (\$200.00) without the approval of the Commission, (iii) shall not furnish items of property from its store rooms which will

entail reimbursement hereunder in an amount in excess of Two Hundred Dollars (\$200.00) without the approval of the Commission, (iv) shall insert in all contractual commitments which are to be in writing (pursuant to this paragraph) a provision that they are assignable to the Government, and such other provisions as are required by this contract and/or by the Commission, and (v) shall make all commitments under this contract in its own name without binding or purporting to bind the Government.

2. Records

a. The Contractor shall keep and maintain complete records adequately covering, to the satisfaction of the Commission, all time and costs (for items of property) to be paid for under this contract.

b. The Contractor shall preserve such records for a period of five (5) years after the date of final payment under this contract; the cost of such preservation shall not be reimbursable under this contract.

c. The Commission shall at all reasonable times, prior to and after the date of final payment under this contract, have the right (at Government expense) to examine, make copies of, and borrow, such records.

3. Inspections and Reports:

a. 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 its undertakings hereunder.

b. The Contractor shall make such reports to the Commission, with respect to the Contractor's activities under this contract, as the Commission may require from time to time.

4. Safety and Accident Prevention:

The Contractor agrees to conform to all health and safety regulations and requirements of the Commission. The Contractor shall take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, and shall make all reports and permit all inspections as provided in such regulations or requirements.

5. Eight-Hour 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 8 hours in any one calendar day upon such work at the site thereof, 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 8 hours per day and work in excess of 8 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 8 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 (\$5.00) 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 8 hours upon said work without receiving compensation computed in accordance with this paragraph, and all penalties thus imposed shall be withheld for the use and benefit of the Government. It is understood that the foregoing shall be subject in all respects to applicable exceptions and provisions now or hereafter provided by law.

6. Convict Labor:

The Contractor shall not employ any person undergoing sentence of imprisonment at hard labor. This provision shall not be construed to prevent the Contractor or any subcontractor hereunder from obtaining any of the supplies, or any component parts or ingredients thereof, to be furnished under this contract or any of the materials or supplies to be used in connection with the performance of this contract, directly or indirectly, from any Federal, State or territorial prison industry; provided, that such articles, materials or supplies are not produced pursuant to any contract or other arrangement under which prison labor is hired by or employed or used by any private person, firm or corporation.

7. 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.

8. Covenant Against Contingent Fees:

The Contractor warrants that it has not employed any person to solicit or secure this contract upon any agreement for a commission, percentage, brokerage, or contingent fee. Breach of this warranty shall give the Government the right to annul the contract, or, in its discretion, to deduct from the contract price or consideration the amount of such commission, percentage, brokerage, or contingent fees. This warranty shall not apply to commissions payable by contractors upon contracts or sales secured or made through bona fide established commercial or selling agencies maintained by the contractors for the purpose of securing business.

9. Assignment:

Neither this contract nor any interest therein or claim thereunder shall be assigned or transferred by the Contractor except with the prior written approval of the Commission.

10. Anti-Discrimination:

a. In performing the work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin.

b. The Contractor agrees that the provision in a above will also be inserted in all of its subcontracts under this contract. For the purpose of this paragraph, a subcontract is defined as any contract entered into by the Contractor with any individual, partnership, association, corporation, estate, or trust, or other business enterprise or legal entity, for the performance of a specific part of the work to be performed under this contract; provided, however, that a contract for the furnishing of standard or commercial articles or raw materials shall not be considered as a subcontract.

11. Definitions:

As used in this contract, the term "Commission" shall mean the United States Atomic Energy Commission or its duly authorized representative or representatives.

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

UNITED STATES OF AMERICA

BY: UNITED STATES ATOMIC ENERGY COMMISSION

Witnesses As To Execution  
in behalf of Contractor:

BY: /s/ E. Marshall Hubbard  
Authorized Representative of the U.S.  
Atomic Energy Commission

/s/ Evelyn G. Singer

Horizons Incorporated  
(Address)

/s/ Harry L. Olson

Horizons Incorporated  
(Address)

HORIZONS INCORPORATED

BY: /s/ Eugene Kainer

I Ezra T. Loding, hereby certify that I am the duly qualified President of Horizons Incorporated, the corporation referred to in this contract as the Contractor; that Eugene Kainer who signed this contract on behalf of said corporation was then Vice President of said corporation; that this contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation this 26 day of July, 1949.

/s/ Ezra T. Loding

Pres.

(Title)

(Corporate Seal)

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