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FOIA

Survey No. NY-104

Survey of Accounting Control
Over Uranium and Thorium Materials
USMC, New York Operations Office
Station COL
New York, New York

A survey of accounting control maintained over uranium and thorium at the USMC, New York Operations Office, Station COL, was made by A. R. Williams of the New York Operations Office on December 26 and 29, 1953 and January 7, 1954, covering the period from January 1, 1953 through December 31, 1953. This survey consisted of an examination of accounting records, a review of the system of internal control, and a count and test-weighting of physical inventories.

1.0 General Status

1.1 The records maintained at Station COL and the procedure followed in regard to accountability are considered to be adequate.

2.0 Summary Description of Operations

2.1 The handling of SF materials by Station COL is restricted to:

- (a) Storing solid metal (rods, slugs, chips, plates, etc.) and miscellaneous chemicals to be utilized as samples by the New York Operations Office personnel and for experimental work at various installations.
- (b) Receiving monthly reports for SF material at the Health and Safety Laboratory of NYOC, which is part of the COL inventory.
- (c) Arranging and maintaining records on research issuances.

3.0 Quantities of Materials Handled

3.1 The details of the receipts and shipments are contained in the attached material balance statements.

4.0 Material Unaccounted For

4.1 The normal uranium unaccounted for reported by Station COL from January 1, 1953 through December 31, 1953 is shown below:

Survey No. NY-104
ATA B. R/T
Station QW
New York, N.Y.

-2-

| | | <u>Blankets</u> |
|-----|----------------|-----------------|
| (a) | January 1953 | 1 |
| | February 1953 | (1) |
| | March 1953 | 2 |
| | | 1 |
| | April 1953 | (1) |
| | May 1953 | 2 |
| | June 1953 | - |
| | July 1953 | (2) |
| | August 1953 | 1 |
| | September 1953 | (2) |
| | October 1953 | 6 |
| | | 1 |
| | November 1953 | - |
| | December 1953 | (1) |
| | Total | <u>6</u> |

- (b) An analysis of the above indicates that there was a 2 kilogram gain due to rounding and an 8 kilogram loss as a result of machining and experimenting. Although the unaccounted for material is 0.8% of material used, it is considered reasonable, in view of the extensive machining operations and the resulting large amounts of decanted coolant severed.
- (c) The frequency of gains and losses due to rounding is attributable to the fact that inventories are carried on the lot cards as pounds only, while receipts and shipments are shown in the records as kilograms. Each month, when inventories are summarized, the total pounds are converted to kilograms, which may result in either a gain or a loss.

5.0 Records

- 5.1 The records consist of:

Survey No. NY-104
DOEAC, NYCO
Station 700
New York, N. Y.

- 3 -

- (a) SF Shipping Forms - Filed by series.
 - (b) SF Material Inventory Cards - Maintained for each lot and filed according to material type, e.g., normal uranium and thorium. Dates, description, and source of material, net and SF net weights (in pounds), piece count, shipments, and remaining balances are recorded on the cards. (A similar set of cards is also maintained for all materials sent out under research issuances.)
 - (c) Material Balance Summary Book - SF Forms for shipments and receipts are entered chronologically and monthly material balance reports are prepared from this record. Cumulative year-to-date totals are also maintained.
 - (d) Files on Research Issuances - Contain applications for SF material as a research issuance, together with correspondence and approvals. Semi-annual reports on SF material outstanding under research issuances are also included.
 - (e) Journal Entries - Prepared for all adjustments affecting material balance totals.
 - (f) Material Balance Reports - Prepared monthly and sent in duplicate to the NYCO Accountability Branch. The file of these reports includes working papers and monthly addition of inventory cards.
 - (g) Correspondence File - Contains letters, receipts, etc., as well as monthly reports from contractors doing experimental work under the direction of NYCO, indicating the status of SF material being worked on and processing losses, if any.
- 5.2 All SF forms for the period of the survey were reviewed and checked to the material balance summary book. The complete physical inventory of SF materials on hand at the New York Operations Office and the American Machine and Foundry Company was observed, test weighed, recorded and reconciled to records during the survey.

5.3 Research Issuances

- (a) All research issuances for the period were reviewed for proper authorization and checked to the material balance reports. Written evidence of receipts by the research organizations was also inspected and found to be in order.

Survey No. NY-151
COLLINS, N.Y.
Station COI,
New York, N. Y.

- 4 -

A review of the semi-annual reports furnished by the individuals having material under research issuance revealed that no one had quantities in excess of the maximum limits allowed.

- (b) All but five individuals having material under research issuance furnished semi-annual reports of materials on hand at December 31, 1953. The COI accountability representative is taking action to secure reports from these individuals. In the event that a report is not secured immediately, a request should be made to return the SF material to Station COI.
 - (c) For non-destructive tests, it was necessary for SYL to ship SF material to the Sperry Products, Inc., Hambury, Conn. Permission was granted to Sperry Products, Inc. to receive this material under a research issuance from COI, provided the amount of SF Material did not exceed 50 kilograms. Pending receipt of the signed research issuance application from Sperry Products, Inc., material was shipped to Sperry Products, Inc. Sperry Products, Inc. has not as yet returned its signed application nor have they notified COI of the amount of material received from SYL. This is under active investigation at the present time.
 - (d) A review of the semi-annual reports from individuals having material under research issuance reveals that the explanations of losses were generally adequate. However, it should be pointed out to certain individuals that every effort must be made to save all wastes resulting from their studies. For instance, Professor Ricci, New York University, mentioned that four pounds of normal UO₃ had been used in the course of solubility determinations. It could very well be that this loss, representing about 10% of the material received, was justified, but without more information this is impossible to determine since solutions may have been salvageable. It is suggested that COI note the reasonableness of these explanations and, if necessary, obtain more information by corresponding with the individuals involved.
- 5.4 The examination revealed that the records at COI were complete and adequate for the size and type of operation involved.

Survey No. 106-104
U.S.N.C., N.Y.C.
Station 300
New York, N. Y.

- 5 -

6.0 Adequacy of Accounting Control

- 6.1 The survey disclosed the system of SF material accounting control at COL is generally adequate.

7.0 Measurement Methods and Statistics

- 7.1 Metal received is weighed on a Detecto scale with tenth of a pound graduations. Since any large quantities of material handled are metal, no measurements are made other than weighing. For the materials weighed at N.Y.C. the agreement with shipper's weights is the test for scale accuracy.
- 7.2 For this survey, approximately 92% of the normal uranium and 50% of the thorium included in the inventory were weighed.
- 7.3 No statistical studies are planned for this station.

8.0 Recommendations of Previous Survey

- 8.1 A better system of control in the Health and Safety Laboratory must be set up immediately. The material should be in a locked safe and only one person should be responsible for its safekeeping. Individuals using material should sign receipts for material in their possession and be held strictly accountable for such material. When not in use, the material should be returned to the responsible individual. Monthly physical verification of the materials should be made, and, as material is consumed in experiments, the information should be reported to the responsible individual for inclusion in his monthly report to the COL accountability representative.

Action: The system of control in the Health and Safety Laboratory is very much improved since the last survey, and the above recommendations have been carried out. However, physical inventory is taken periodically rather than monthly. The physical inventory taken on December 29, 1953 revealed no unaccounted for material.

- 8.2 All wastes resulting from experiments should be stored and records kept of the estimated SF content.

Action: During the period of this survey all wastes of the Health and Safety Laboratory were returned to the COL accountability representative and subsequently shipped out. Wastes at N.Y.C. are returned periodically.

Survey No. NY-104
USAFM, NYCO
Station COL
New York, N. Y.

- 6 -

- 8.3 Efforts should be made to determine the status of the SF material loaned to any other installation. It should be returned or authorized as a research issuance.

Action: This has been done.

- 8.4 SF material under control of Station COL should be stored in a locked room to which access is restricted to the accountability representative for Station COL or his designated representative.

Action: This has not been done. The Guard Force has access to the same room in which SF materials are stored. This is necessary because of the presence in this room of the air-filtering system. On occasion, it is also necessary for the repairmen to enter this room to work on the air-filtering system. This is done, however, under the supervision of the guards.

9.0 Recommendations

- 9.1 The individuals having material under research issuance who have not filed their semi-annual reports at this late date should be contacted immediately, in accordance with the procedures set forth in the COL manual. Should they then fail to comply with our request for a report, the material should be recalled through the person originally requesting the research issuance.
- 9.2 The material at Sperry Products, Inc. must be returned to COL or an individual at Sperry Products, Inc. must sign the research issuance. In addition, this individual must give a report on the amount of material received from SYL, the amount returned, if any, and the amount presently on hand.

Date: 4/2/64

SF Materials Accountability Branch
New York Operations Office

By:

J.R.E.
Chief of Branch

Approved:

Acting Director of Production

New York Operations Office
Material Balance Report
July 1, 1952 - June 30, 1953

Survey No. NY-104

Schedule I

| | | <u>Material</u> | <u>Normal</u> | <u>Enriched</u> |
|---|---|--------------------|---------------------------------|----------------------------------|
| | | <u>Type</u> | <u>Uranium</u> <u>(Kgs.)</u> | <u>Uranium</u> <u>(Grams)</u> |
| <u>Out of Area Receipts</u> | | | | |
| Argonne National Lab. Illinois | | Slugs | 24 | |
| " " " | " | Tube | 2 | |
| " " " | " | Brown Oxide, etc. | 5 | |
| Battelle Memorial Institute | | Miscellaneous | 2 | |
| Metals and Controls Corp. | | Metal Samples | 4 | |
| Oak Ridge National Laboratory | | Black Oxide | -0- | |
| Los Alamos Scientific Laboratory | | U-Disc & foil | 1 | |
| Iowa State College | | Scrap | | 2 |
| Carbide & Carbon Chemical Co. | | Compounds | | 1 |
| <u>Total Out of Area Receipts</u> | | | <u>38</u> | <u>2</u> |
| <u>Out of Area Removals</u> | | | | |
| Argonne National Laboratory | | Slugs | 12 | |
| " " " | " | Flat, Plates, etc. | 43 | |
| Los Alamos Scientific Laboratory | | Disc. | 1 | |
| Metals and Controls Corp. | | Ears | 215 | |
| " " " " | " | Plates | 217 | |
| North American Aviation, Inc. | | Slugs | 270 | |
| General Electric Company | | Slugs | 125 | |
| E. I. duPont deNemours & Co. Georgia | | Plates | 404 | |
| " " " " | " | Slugs | 38 | |
| " " " " | " | Ears | 406 | |
| " " " " | " | Billets | 814 | |
| " " " " Dela. | | Slugs & Rod | 3 | |
| USAEC, Washington Office | | Slugs & Chips | 2 | |
| Iowa State College | | Scrap | | 1424 |
| " " " " | | Slugs, Chips | | 248 |
| General Electric Company, Richland, Wash. | " | | | 4377 |
| E. I. duPont deNemours & Co. Georgia | | Slugs | | 466 |
| " " " " Dela. | | Slugs | | -0- |
| <u>Total Out of Area Removals</u> | | | <u>2550</u> | <u>6515</u> |

Q.S. Material Inventory Statement
Material Control Report
July 1, 1952 - June 30, 1953

Survey No. 144-221

| | <u>Normal Inventory</u> <u>(Thousand Pounds.)</u> | <u>Thorium (Thousand Pounds.)</u> | <u>Unfinished Material</u> <u>(Thousand Pounds.)</u> |
|--|--|---|---|
| <u>Beginning Inventory, July 1, 1952</u> | <u>773</u> | <u>572</u> | <u>-</u> |
| <u>Adjustments</u> | <u>(15)</u> | <u>-</u> | <u>-</u> |
| <u>Adjusted Beginning Inventory</u> | <u>763</u> | <u>572</u> | <u>-</u> |
| <u>Material Received</u> | | | |
| Out of Area Receipts (See Schedule I) | 38 | 2 | 1 |
| Within Area Receipts (See Schedule II) | 12,411 | 6,190 | - |
| Research Issuance " (See Schedule III) | 40 | 1 | -3 |
| Other Receipts (See Schedule III) | 34 | 2 | - |
| <u>Total Receipts</u> | <u>12,463</u> | <u>6,194</u> | <u>1</u> |
| <u>Beginning Inventory Plus Receipts</u> | <u>13,226</u> | <u>6,567</u> | <u>1</u> |
| <u>Material Issued</u> | | | |
| Out of Area Removals (See Schedule I) | 2,550 | 6,515 | - |
| Within Area Removals (See Schedule II) | 3,236 | 35 | - |
| Research Issuances (See Schedule III) | 152 | 4 | 1 |
| <u>Total Removals</u> | <u>12,938</u> | <u>6,554</u> | <u>1</u> |
| <u>Ending Inventory, June 30, 1953</u> | <u>2,225</u> | <u>12</u> | <u>-</u> |
| <u>Ending Inventory Plus Removals</u> | <u>13,213</u> | <u>6,567</u> | <u>1</u> |
| <u>Material Unaccounted For</u> | <u>23</u> | <u>-</u> | <u>-</u> |

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New York Operations Office
Material Balance Report
July 1, 1952 - June 30, 1953

Survey No. NY-104

Schedule II

| <u>Within Area Removals</u> | <u>Material Type</u> | <u>Normal</u> | <u>Enriched</u> |
|--|----------------------|--------------------------|--------------------------|
| | | <u>Uranium</u> (Kgs.) | <u>Thorium</u> (Kgs.) |
| National Lead Co. of Ohio | Plates & Bar | 145 | |
| | Slugs | - | 14 |
| | Miscellaneous | - | 5 |
| | Metal Scrap | 295 | |
| USAMC, New Brunswick Lab. | Slugs & Chips | - | 5 |
| | Miscellaneous | 85 | 10 |
| | Rods | 21 | |
| Sylvania Elec. Prod. Inc. (SYP) | Slugs | 23 | |
| (SYL) | Slugs & Plates | 225 | |
| | Oxide | 24 | |
| Superior Steel Corp. | Bars & Plates | 281 | |
| Vitro Mfg. Co. Div. of Vitro Corp. of America | Compound | 52 | |
| Hollingshead Chemical Works | Compound | 10 | |
| | Slugs | 215 | |
| | Metal Scrap | 136 | |
| Brookhaven National Laboratories - Compound | | | 1 |
| Massachusetts Inst. of Tech. | Ingots | 2,647 | |
| Middlesex Sampling Plant | Rods | 161 | |
| | Turnings | 1,362 | |
| Bridgeport Brass Co. | Metal | 2,604 | |
| <u>Total Within Area Removals</u> | | <u>\$,236</u> | <u>35</u> |

New York Operations Office
Material Balance Report
July 1, 1951 - June 30, 1962

Survey No. NY-104

Schedule II

| Material Type | Normal | Thorium (Kgs.) | Enriched |
|--|---------------------|-------------------|-------------------|
| | Lanthanum (Kgs.) | | Uranium (Kgs.) |
| <u>Within Area Receipts</u> | | | |
| Massachusetts Institute of Tech. | Rods | | 705 |
| " " " | Tube | 27 | |
| " " " | Miscellaneous | 4 | |
| " " " | U-Discs | 8 | |
| Simonds Saw and Steel Company | Rods | | 5,476 |
| " " " | Bars | 429 | |
| Brookhaven National Laboratories | U-Rods | - | |
| Markite Company, New York | Miscellaneous | 1 | 2 |
| National Lead Co. of Ohio | U-Plates | 2,507 | |
| " " " | Slugs | 109 | |
| " " " | Pod | 76 | |
| USAWC, New Brunswick Laboratory | Rods | 195 | |
| " " " | Miscellaneous | 2 | 5 |
| USAWC, Tonawanda Sub-Office | Rods | 633 | |
| " " " | Miscellaneous | 6 | |
| Sylvania Electric Products, Inc. (SEI) | Slugs | 15 | |
| " " " (SNF) | Slugs | 2 | |
| " " " (CWP) | Pins | 3 | |
| Mallinckrodt Chemical Works | U-Millets | 3,059 | |
| " " " | Zr. Billets | 2,933 | |
| " " " | Miscellaneous | 55 | |
| Superior Steel Corporation | U-Strip | 1,251 | |
| " " " | U-Shear Crop | 736 | |
| The Brush Beryllium Co. | Nisc. Metal | 215 | |
| | Slug | | 2 |
| <u>Total Within Area Receipts</u> | | <u>12,411</u> | <u>6,190</u> |

New York Operations Office
Material Balance Report
July 1, 1953 - December 31, 1953.

Survey No. NY-104

| | Normal Uranium (Kgs.) | Thorium (Kgs.) |
|--|-----------------------------|-------------------|
| <u>Beginning Inventory, July 1, 1952.</u> | <u>2,223</u> | <u>13</u> |
| Adjustments | <u>2</u> | <u>-</u> |
| <u>Adjusted Beginning Inventory</u> | <u>2,225</u> | <u>13</u> |
| <u>Material Received (Note 1)</u> | | |
| Out of Area Receipts (See Schedule I) | 19 | - |
| Within Area Receipts (" " II) | 3,489 | - |
| Research Issuance Receipts (See " III) | 67 | - |
| Other Receipts (See " III) | - | - |
| <u>Total Receipts</u> | <u>3,595</u> | <u>-</u> |
| <u>Beginning Inventory Plus Receipts</u> | <u>10,820</u> | <u>13</u> |
| <u>Material Removed</u> | | |
| Out of Area Removals (See Schedule I) | 2,596 | - |
| Within Area Removals (" " II) | 7,252 | - |
| Research Issuance " (" III) | 104 | - |
| Other Removals (" " III) | - | - |
| <u>Total Removals</u> | <u>9,952</u> | <u>-</u> |
| <u>Ending Inventory, December 31, 1953</u> | <u>665</u> | <u>13</u> |
| <u>Ending Inventory Plus Removals</u> | <u>10,317</u> | <u>13</u> |
| <u>Material Unaccounted For</u> | <u>3</u> | <u>-</u> |

Note: 1 - In addition to the above, small quantities of plutonium, depleted, D-38, and enriched materials were received which were below reporting limits. They were shipped out on research issuances.

New York Operations Office
Material Balance Report
July 1, 1956 - September 21, 1956

Survey No. NY-104

Schedule I

| <u>Material Type</u> | <u>Radium</u> (Kcs.) | <u>Thorium</u> (Kcs.) |
|--|-------------------------|--------------------------|
| <u>Out of Area Receipts</u> | | |
| Metals and Controls Corp. Clad Samples | 3.9 | - |
| Carbide & Carbon Chem. Co. (Y-12) Uranium Solution | -9- | - |
| <u>Total Out of Area Receipts</u> | <u>1.9</u> | <u>-</u> |
| <u>Out of Area Removals</u> | | |
| Argonne National Laboratory Plates | 88 | - |
| Hattelle Memorial Institute Samples | 50 | - |
| Carbide & Carbon Chem. Co. Uranium Solution | -9- | - |
| Electrocircuits, Inc. Samples | 134 | - |
| ORNL, Grand Junction Opr. Ofc. Disc. | -9- | - |
| USMC, Washington Office, Rev Matls. Disc. | -9- | - |
| Metals and Controls Corp. Plates | 485 | - |
| E. I. duPont de Nemours & Co. | | |
| Georgia (SDA) Plates & Samples | 1,633 | - |
| " " (SPD) Plate | 1 | - |
| <u>Total Out of Area Removals</u> | <u>2,596</u> | <u>-</u> |

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New York Operations Office
Material Balance Report
July 1, 1953 - December 31, 1953

Survey No. 10000A

| Schedule II | | | | Normal | Thorium |
|--|-----------------|-----------------|-------|---------|---------|
| | | Material Type | (Kg.) | Uranium | (Kg.) |
| <u>Within Area Receipts</u> | | | | | |
| Hallinckrodt Chemical Works - | Green Flt. | UO ₃ | 15 | - | - |
| " " " | Orange " | SO ₃ | 35 | - | - |
| " " " | Nichfor | UO ₃ | 10 | - | - |
| " " " | Orange " | Miscellaneous | 5 | - | - |
| The Marshaw Chemical Co. | | Miscellaneous | - | - | - |
| " " | | Black Oxide | 1 | - | - |
| New Brunswick Laboratory | | Miscellaneous | 1 | - | - |
| USABC, St. Louis Area Office | AJ ₄ | - | - | - | - |
| Superior Steel Corporation | Samples | 494 | - | - | - |
| " " " | Strips | 1355 | - | - | - |
| Sylvania Electric Products, Inc. | Miscellaneous | 9 | - | - | - |
| National Lead Co. of Ohio Mach. | Slab Stock | 5429 | - | - | - |
| " " " " | Flat Stock | 1028 | - | - | - |
| " " " " | Lab. | Miscellaneous | 47 | - | - |
| <u>Total Within Area Receipts</u> | | | 3482 | - | - |
| <u>Within Area Shipments</u> | | | | | |
| Hallinckrodt Chemical Works - | Metal | Hillet Samples | 36 | - | - |
| " " " " | Green | Mg. Fluoride | -0- | - | - |
| " " " " | Met. P.P. | Miscellaneous | 11 | - | - |
| Massachusetts Institute of Technology | Discs | 5 | - | - | - |
| United Lead Company | Turnings | 1129 | - | - | - |
| USABC, New Brunswick Laboratory | Flates | 135 | - | - | - |
| " " " " | Strip | 17 | - | - | - |
| National Lead Co. of Ohio - Casting | Scrap | 674 | - | - | - |
| " " " " - Lab. | Miscellaneous | 43 | - | - | - |
| Sylvania Electric Products, Inc. (SYL) | Slugs | 9 | - | - | - |
| Superior Steel Corporation | Slabs | 4943 | - | - | - |
| <u>Total Within Area Shipments</u> | | | 7252 | - | - |

New York Operations Office
Material Balance Report
July 1, 1952 - June 30, 1953

Survey No. NY-10A

Schedule III

| <u>Material Type</u> | <u>Normal Uranium (Kgs.)</u> | <u>Thorium (Kgs.)</u> | <u>Enriched Uranium (Kgms.)</u> |
|--|------------------------------|-----------------------|---------------------------------|
| <u>Receipts - Other</u> | | | |
| Gift received upon termination of NYCO Licensing Division | Compounds | 14 | 2 |
| <u>Research Issuance - Receipts</u> | | | |
| Markite Company | Compounds | - | 1 |
| Columbia University | " | -0- | - |
| Cornell University | " | -0- | - |
| National Bureau of Standards | " | -0- | - |
| Columbia University | Plutonium Sources | - | - |
| <u>Total Research Issuance Receipts</u> | | -0- | 1 |
| <u>Research Issuance - Easovals</u> | | | |
| New Brunswick Laboratory | Compound | | - |
| Columbia University | Rod | -0- | |
| Mass. Institute of Tech. | Mach. Electrodes | - | -0- |
| " " " | Compounds | 7 | |
| Horizons, Inc. | Metal | 8 | |
| " " " | Chips - Metal | - | 1 |
| Syracuse University | Chips - Metal | - | 1 |
| " " | Compound | 7 | |
| Allis Chalmers | Metal | 36 | |
| Metal Hydrides | Wafer | 2 | |
| " " | Compounds | 6 | |
| Markite Company | Compounds | 1 | 2 |
| Naval Research Lab. | Slugs & Misc. | 47 | |
| Tufts College | Compounds | 14 | |
| Tracerlab, Inc. | Miscellaneous | -0- | |
| Chemical Construction Co. | Metal | 4 | |
| Nuclear Developments | Disc. & Cylinder | 12 | |
| Western Reserve | Miscellaneous | -0- | |
| Catalytic Construction Co. | Metal | 8 | |
| John Hopkins | Compounds | -0- | |
| University of Washington | Compounds | -0- | |
| Princeton University | Miscellaneous | -0- | |
| <u>Total Research Issuance Easovals</u> | | 152 | 1 |

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New York Operations Office

Survey No. NY-10A

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Material Balance Sheet
July 1, 1953 - December 31, 1953

Schedule III

| | Material Type | Normal Uranium (Kee.) | Thorium (Kee.) |
|---|------------------|-----------------------|----------------|
| <u>Research Issuances - Receipts</u> | | | |
| Allis Chalmers | Fillet | 36 | - |
| Naval Research Lab. | Slug | 43 | - |
| Horizons, Inc. | Metal | 3 | - |
| Princeton University | Source | -0- | - |
| National Bureau of Standards | UF ₆ | -0- | - |
| Nuclear Developments | Metal | 5 | - |
| Mass. General Hospital | Uranium Solution | -0- | - |
| <u>Total Research Issuance Receipts</u> | | <u>87</u> | <u>-</u> |
| <u>Research Issuances - Shipments</u> | | | |
| Chemical Construction Co. | Compounds | -0- | - |
| Horizons, Inc. | Metal | 2 | - |
| Naval Research Lab. | Metal | 5 | - |
| Standard Oil Co. | Compound | 50 | - |
| Gloan - Metterling | Metal | 20 | - |
| Princeton University | Metal | -0- | - |
| Harvard University | Compound | 2 | - |
| New York University | " | 1 | - |
| Metal Hydrides | " | 10 | - |
| Toledo University | " | 1 | - |
| University of North Carolina | " | 5 | - |
| Sperry Products | " | 3 | - |
| <u>Total Research Issuances - Shipments</u> | | <u>106</u> | |