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ORNL-IIC-32

UC-23 — Radioisotopes and Radiation Applications

**LIST OF AEC RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY 1970**

Compiled by

Ruth Curl

ISOTOPES INFORMATION CENTER

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LIST OF AEC RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY 1970

Compiled by Ruth Curl

Published by
Isotopes Information Center
for the
Division of Isotopes Development
U. S. Atomic Energy Commission

FEBRUARY 1971

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee
operated by
UNION CARBIDE CORPORATION
for the
U. S. ATOMIC ENERGY COMMISSION

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LIST OF AEC RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY 1970

(Introduction)

This seventh edition of the AEC radioisotope customer list has been prepared, as previously, at the request of the Division of Isotopes Development of the Commission as a compilation of radioisotope sales during FY 1970 by Commission facilities at Argonne National Laboratory, Brookhaven National Laboratory, Douglas-United Nuclear, Inc., Idaho Nuclear Corporation, Mound Laboratory, Oak Ridge National Laboratory, and Savannah River Plant.

The information is divided into four sections. The first is an alphabetical list of customers, with isotopes purchased during the fiscal year. It is subdivided into domestic and foreign customers. In order to differentiate among the suppliers, the isotopes furnished by Oak Ridge National Laboratory have no other designation. Those furnished by Argonne National Laboratory are followed by (A); those by Brookhaven National Laboratory, by (B); those by Douglas-United Nuclear, Inc., by (D); those by Idaho Nuclear Corporation, by (I); those by Mound, by (M); and those by Savannah River Plant, by (S). All entries for Argonne, Douglas, and Idaho are either reactor service irradiations or cyclotron service irradiations, or both, with no processed isotopes being sold. The entries for Savannah River represent material for resale and loans. The designations CSI, RSI, and SS denote, respectively, cyclotron service irradiations, reactor service irradiations, and special services (including such items as target fabrication, source encapsulation, and preparation of special chemical forms). Targets are designated as Tgs, and fission products as FP.

The second section is an alphabetical list of isotopes, cross-referenced to customer numbers and again divided into the domestic and foreign categories. The third section is an alphabetical list of states and countries, also cross-referenced to customer numbers, the purpose of which is to indicate geographical concentrations of isotope users. The final section is a comprehensive table which includes an alphabetical listing of the isotopes and a breakdown into shipments, quantities, and dollars for each isotope under the domestic, foreign, and project (AEC facilities) categories. There are also included the total figures for each isotope.

Previous reports in this series are TID-21620 (FY 1964), ORNL-IIC-6 (FY 1965), ORNL-IIC-9 (FY 1966), ORNL-IIC-13 (FY 1967), ORNL-IIC-17 (FY 1968), and ORNL-IIC-27 (FY 1969).

A similar report covering stable isotope distribution has also been prepared (ORNL-TM-3146), Stable Isotope Customer List and Summary of Shipments, FY 1970.

I. ALPHABETICAL LIST OF CUSTOMERS, WITH
CONTACTS AND ISOTOPES PURCHASED

A. Domestic

- 1 Atbott Laboratories
1400 Sheridan Road
North Chicago, Illinois 60064

 ^{133}Ba , ^{14}C , CSi , ^{137}Cs , ^{86}Rb
- 2 Aerojet Nuclear Systems Company
P. O. Box 13070
Sacramento, California 95813

FPSS, $^{3\text{H}}$, ^{90}Sr
- 3 Air Reduction Company
Murray Hill, New Jersey 07911

 ^{133}Xe
- 4 Air Reduction Company
Airco Industrial Gases Division
Union Landing and River Roads
Hiverton, New Jersey 08077

 ^{85}Kr
- 5 Allen-Radley Company
136 W. Greenfield Avenue
Milwaukee, Wisconsin 53234

 ^{85}Kr
- 6 American Atomics Corporation
425 South Plumer
Tucson, Arizona 85719

 ^{85}Kr , SS
- 7 American Cyanamid Company
Lederle Laboratories Division
Pearl River, New York 10965

 $^{3\text{H}}$
- 8 Ames Laboratory
Box 1129, I. S. U. Station
Ames, Iowa 50010

 RSI(I) , $^{99}\text{Tc(S)}$
- 9 M. D. Anderson Hospital
6723 Bertner Avenue
Houston, Texas 77025

 $^{252}\text{Cf(S)}$
- 10 Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439

 ^{111}Ag , ^{37}Ar , ^{133}Ba , ^{140}Ba , ^{249}Bk , ^{144}Ce ,
 ^{252}Cf , CSi , ^{253}Es , $^{152+154}\text{Eu}$, $^{3\text{H}}$,
 ^{192}Ir , $^{28}\text{Mg(B)}$, ^{147}Nd , ^{237}Np , ^{143}Pr ,
 ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , ^{86}Rb ,
 RSI(B) , RSI(I) , ^{103}Ru , ^{106}Ru ,
 SI(A) , ^{89}Sr , SS, ^{99}Tc , ^{233}U , ^{234}U ,
 ^{235}U , ^{236}U , ^{238}U , ^{133}Xe , ^{95}Zr
- 11 Argonne National Laboratory
P. O. Box 2528
Idaho Falls, Idaho 83401

 RSI(D) , ^{99}Tc
- 12 Arkansas, University of
Fayetteville, Arkansas 72701

 ^{86}Rb
- 13 Atlantic Richfield Company
155 North Wacker Drive
Chicago, Illinois 60605

 ^{131}I , ^{85}Kr
- 14 Atlantic Richfield Hanford Company
P. O. Box 769
Richland, Washington 99352

 $^{239}\text{Pu(M)}$
- 15 Atlas Chemical Industries, Inc.
Valley Forge Industrial Park
Valley Forge, Pennsylvania 19481

 ^{85}Kr
- 16 Atomchem Corporation
1 East Main Street
Bay Shore, New York 11706

 ^{137}Cs , FPSS, ^{90}Sr
- 17 Atomics International Division
North American Rockwell Corporation
Post Office Box 309
Canoa Park, California 91304

 ^{140}Ba , ^{181}Hf , ^{114}In , ^{95}Nb , ^{239}Pu ,
 ^{240}Pu , ^{241}Pu , ^{86}Rb , ^{103}Ru
- 18 Avco Corporation
Drauer V/Admiral Station
Tulsa, Oklahoma 74115

 ^{242}Pu , ^{233}U , ^{234}U
- 19 Babcock Electronics Corporation
P. O. Box 1499
Costa Mesa, California 92626

 ^{85}Kr
- 20 Babcock and Wilcox Company
Research and Development Division
1562 Beeson Street
Alliance, Ohio 44601

 ^{99}Tc , ^{233}U , ^{234}U , ^{95}Zr
- 21 Bartol Research Corporation
Swarthmore, Pennsylvania 19081

 RSI

- 22 Battelle Memorial Institute
505 King Highway
Columbus, Ohio 43201
 ^{233}U
- 23 Bell Telephone Laboratories
Murray Hill, New Jersey 07971
 ^{133}Ba , CsI , ^{114}In
- 24 Bendix Corporation. The
Electrical Components Division
Sidney, New York 13838
 ^{137}Cs
- 25 Bio-Nuclear
Division of BioAssay Laboratories
6324 Midvale
Houston, Texas 77017
 ^{241}Am , ^{90}Sr , ^{133}Xe , ^{91}Y
- 26 Boeing Corporation. The
Aero-Space Division
Post Office Box 3707
Seattle, Washington 98124
 ^{252}Cf
- 27 Boston College
Chestnut Hill, Massachusetts 02167
 ^{252}Cf
- 28 Boston University
100 Cumnation Street
Boston, Massachusetts 02215
 CsI , SS
- 29 Bowman Gray School of Medicine
Winston-Salem, North Carolina 27103
 ^{187}W
- 30 Brigham Young University
Provo, Utah 84601
 ^{63}Ni
- 31 Brookhaven National Laboratory
Upton, Long Island, New York 11973
 ^{210}Bi , ^{47}Ca , $^{252}\text{Cf}(\text{S})$, ^{137}Cs , ^{181}Hf ,
 ^{3}H , ^{114}In , ^{132}I , ^{236}Pu , ^{239}Pu , ^{240}Pu ,
 ^{241}Pu , ^{242}Pu , $\text{RSI}(\text{B})$, SS , ^{99}Tc ,
 ^{204}Tl , ^{233}U , ^{234}U , ^{235}U , ^{236}U , ^{238}U ,
 ^{95}Zr
- 32 Broward General Hospital
1600 S. Andrews Avenue
Ft. Lauderdale, Florida 33316
 ^{133}Xe
- 33 Bulova Watch Company
Bulova Park
Flushing, New York 11370
 ^{237}Np
- 34 California Institute of Technology
1201 E. California Boulevard
Pasadena, California 91109
 ^{143}Pr , RSI , $\text{RSI}(\text{B})$, $\text{RSI}(\text{I})$, ^{106}Ru
- 35 California, University of
400 Sproul Hall
Berkeley, California 94720
 ^{131}I , ^{106}Ru , ^{89}Sr
- 36 California, University of
Davis, California 95515
 ^{36}Cl , $^{137}\text{Cs}(\text{B})$, $^{152+154}\text{Eu}$
- 37 California, University of
P. O. Box CP
Irvine, California 92664
 ^{252}Cf
- 38 California, University of
Post Office Box 133
La Jolla, California 92037
 ^{109}Pd , ^{233}U , ^{234}U , ^{133}Xe
- 39 California, University of
405 Milgard Avenue
Los Angeles, California 90024
 ^{186}Re , ^{133}Xe
- 40 California, University of
San Francisco Medical Center
San Francisco, California 34122
 ^{86}Rb , ^{133}Xe
- 41 California, University of
Lawrence Radiation Laboratory
Berkeley, California 94701
 ^{243}Am , ^{249}Bk , ^{249}Cf , $^{252}\text{Cf}(\text{S})$, ^{246}Cm ,
 ^{248}Cm , ^{253}Es , ^{181}Hf , ^{192}Ir , ^{237}Np ,
 $^{237}\text{Np}(\text{S})$, ^{239}Pu , $^{238}\text{Pu}(\text{S})$, $^{239}\text{Pu}(\text{S})$,
 ^{106}Ru , ^{182}Ta , ^{133}Xe , ^{95}Zr
- 42 California, University of
Lawrence Radiation Laboratory
Box 808
Livermore, California 94550
 ^{241}Am , ^{243}Am , ^{249}Bk , ^{252}Cf , ^{246}Cm ,
 ^{248}Cm , ^{60}Co , ^{253}Es , ^{3}H , ^{95}Nb , ^{63}Ni ,
 ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{244}Pu , Tqs , ^{229}Th ,
 ^{234}U , ^{235}U , ^{236}U , ^{95}Zr
- 43 California, University of
Los Alamos Scientific Laboratory
Post Office Box 1553
Los Alamos, New Mexico 87544
 ^{241}Am , ^{249}Cf , ^{252}Cf , ^{246}Cm , ^{248}Cm ,
 ^{253}Es , ^{192}Ir , ^{95}Nb , ^{234}Pa , $^{238}\text{Pu}(\text{M})$,
 $^{239}\text{Pu}(\text{M})$, ^{106}Ru , ^{90}Sr , SS , ^{230}Th ,
 ^{232}U , ^{91}Y

- 44 Cambridge Nuclear Corporation
131 Portland Street
Cambridge, Massachusetts 02139
 ^{140}Ba , ^{36}Cl , ^{95}Nb , ^{86}Rb , ^{95}Zr
- 45 Cambridge Nuclear Corporation
P. O. Box 528
Princeton, New Jersey 08540
 ^{133}Xe
- 46 Canrad Precision Industries
630 Fifth Avenue
New York, New York 10020
3H
- 47 Carnegie-Mellon University
5000 Forbes
Pittsburgh, Pennsylvania 15213
 ^{181}Hf , ^{147}Nd , ^{151}Sm , ^{185}W
- 48 Catholic University of America
104 McCort-Ward Hall
Washington, D. C. 20017
 ^{14}C , SS
- 43 Chevron Research Company
576 Standard Avenue
Richmond, California 94804
99Tc
- 50 Chicago University of
1160 East 55th Street
Chicago, Illinois 60615
 ^{241}Am , ^{47}Ca , ^{14}C , $^{28}\text{Mg(B)}$, RSI,
RSI(B), SI(A)
- 51 Chicago University of
Enrico Fermi Institute
5630 S. Ellis Avenue
Chicago, Illinois 60637
RSI(B), SI(A)
- 52 Children's Hospital Research Foundation
Elland Avenue and Bethesda
Cincinnati, Ohio 45229
 $^{137}\text{Cs(B)}$, SI(A)
- 53 Cincinnati General Hospital
3231 Burnet Avenue
Cincinnati, Ohio 45229
 ^{133}Xe
- 54 Cincinnati University of
Cincinnati, Ohio 45221
 ^{36}Cl , 3H, ^{133}Xe
- 55 Clark University
Worcester, Massachusetts 01610
 $^{152+154}\text{Eu}$
- 56 Clemson University
Clemson, South Carolina 29632
 ^{103}Ru
- 57 Cleveland Metropolitan General Hospital
3395 Scranton Road
Cleveland, Ohio 44109
 ^{131}I
- 58 Cleveland University Hospital
University Circle
Cleveland, Ohio 44136
 ^{47}Ca , ^{235}U
- 59 College of William and Mary
Williamsburg, Virginia 23185
 ^{85}Kr
- 50 Colorado University of
Boulder, Colorado 80302
 $^{239}\text{Pu(M)}$
- 61 Columbia Scientific Research Institute
3625 Bluestein Blvd.
Austin, Texas 78757
 $^{252}\text{Cf(S)}$
- 52 Columbia University
Box 6, Low Library
New York, New York 10027
 ^{140}Ba , ^{237}Nd , ^{229}Th , ^{230}Th , ^{170}Tm ,
 ^{238}U
- 53 Conrac Corporation
1600 S. Mountain Avenue
Duarte, California 91010
SS
- 64 Continental Oil Company
Ponca City, Oklahoma 74602
 ^{36}Cl , ^{14}C , ^{85}Kr
- 55 Cornell University
Room 160, Dav Hall
Ithaca, New York 14850
 ^{252}Cf , ^{89}Sr , ^{90}Sr , SS
- 56 Corning Glass Works
Houghton Park
Corning, New York 14830
- 67 Dhom Products Ltd.
11120 Cumpston Street
North Hollywood, California 91501
3H
- 58 Donald W. Douglas Laboratories
2955 George Washington Way
Richland, Washington 93352
 $^{239}\text{Pu(M)}$

59 Douglas United Nuclear, Inc.
P. O. Box 490
Richland, Washington 93352

RSI(D)

70 Dow Chemical Company
Rocky Flats Division
Post Office Box 888
Golden, Colorado 30401

^{241}Am , ^{243}Am , ^{252}Cf , ^{238}Pu

71 Duke University
Durham, North Carolina 27706

^{14}C , ^{131}I , ^{86}Rb , ^{133}Xe

72 Du Pont de Nemours and Company, E. I.
Savannah River Plant
Aiken, South Carolina 29801

^{241}Am , ^{252}Cf , ^{244}Cm , ^{248}Cm , $^{238}\text{Pu}(M)$,
RSI, ^{106}Ru , SS, ^{233}U , ^{95}Zr

73 Du Pont de Nemours and Company, E. I.
Wilminaton, Delaware 19898

^{36}Cl

74 Eagle-Picher Industries, Inc.
Miami, Oklahoma 74354

^{248}Cm

75 Eastman Kodak Company
Kodak Park Works
Rochester, New York 14650

^{192}Ir , ^{129}I

76 Cberline Instrument Coroordtion
Post Office Box 279
Santa Fe, New Mexico 87501

^{133}Xe

77 Cducation Develepment Center
55 Chapel Street
Newton, Massachusetts 02160

^{237}No , ^{235}U

78 C, G. and G. Inc.
680 Cast Sunset Road
Los Veaas, Nevada 89109

$^{238}\text{Pu}(M)$

79 Emory University
Atlanta, Georgia 30322

$^{241}\text{Am}(S)$, $^{244}\text{Cm}(S)$, ^{194}Os , $^{238}\text{Pu}(S)$,
 ^{186}Re

80 Fairchild Semiconductor
Post Office Box 790
Mountain View, California 94040

^{85}Kr

81 Fairchild Semiconductors
333 Western Avenue
So. Portland, Maine 04106

^{85}Kr

82 Florida State University
Tallahassee, Florida 32306

^{252}Cf , ^{244}Cm , ^{233}U , ^{238}U

83 Florida, University of
Gainesville, Florida 32601

^{252}Cf , ^3H , $^{244}\text{Mg}(B)$, ^{86}Rb

84 Ford Motor Company
21500 Oakwood Boulevard
Dearborn, Michiaan 48124

^{182}Ta

85 Sammie Nuclear Services
Franklin Park, Illinois 60131

SI(4)

86 Gulf Energy and Environmental Systems, Inc.
Post Office Box 508
San Diego, California 92112

^{140}Ba , ^{252}Cf , ^{239}Pu , ^{242}Pu , ^{89}Sr

87 General Dynamics Corporation
P. O. Box 748
Fort Worth, Texas 76101

$^{252}\text{Cf}(S)$

88 General Electric Company
21800 Tungsten Road
Cleveland, Ohio 44117

^3H , ^{85}Kr , ^{133}Xe

89 General Electric Company
Post Office Box 254
San Jose, California 95103

^{241}Am , ^{252}Cf , ^{181}Hf , ^{99}Mo , ^{95}Nb ,
 ^{63}Ni , ^{239}Pu , ^{241}Pu , ^{242}Pu , ^{233}U , ^{235}U ,
 ^{235}U , ^{238}U

90 General Electric Co.
Pinellas Peninsula Plant
Post Office Box 11508
St. Petersburg, Florida 33733

^{85}Kr

91 General Electric Company
The Knolls, Post Office Box 1088
Schenectady, New York 12301

RSI(B)

92 General Electric Company
Valley Forge Space Technology Center
Goddard Blvd.
King of Prussia, Pennsylvania 19406

$^{238}\text{Pu}(M)$

- 93 General Electric Conoanv
Vallecitos Nuclear Center
P.O. Box 846, Vallecitos Road
Pleasanton, California 94556
 $^{238}\text{Pu}(\text{M})$
- 94 General Electric Conoanv
Building No. 7
Electronics Park Laboratory
Syracuse, New York 13201
 ^{85}Kr
- 95 General Electric Conoanv
General Electric Drive
Waynesboro, Virginia 22980
 ^{85}Kr
- 96 General Motors Corporation
Friaudaire Division
Dauton, Ohio 45501
 ^{85}Kr
- 97 General Motors Institute
General Motors Corporation
Flint, Michigan 48504
 ^{241}Am
- 98 General Nuclear, Inc.
6740 Telean
Houston, Texas 77034
 **^{241}Am , ^{37}Ar , ^{133}Ba , ^{137}Cs , FP , FPSS ,
 ^{85}Kr , ^{210}Pb , ^{210}Po , ^{89}Sr , ^{91}Y ,
 ^{95}Zr**
- 99 Georgia Institute of Technology
725 North Avenue, N.W.
Atlanta, Georgia 30332
 $^{252}\text{Cf}(\text{S})$
- 100 General Nuclear Division, Tyco Laboratories,
2811 Metropolitan Place
Pomona, California 91767
 ^{85}Kr
- 101 Georgetown University
3800 Reservoir Road, NW
Washington, D. C. 20007
 ^{133}Xe
- 102 Georgia, University of
Athens, Georgia 30601
 $^{252}\text{Cf}(\text{S})$, ^{89}Sr , ^{90}Sr , SS
- 103 Geosensors, Inc.
15721 Coit Road
Dallas, Texas 75240
 $^{252}\text{Cf}(\text{S})$
- 104 Goddard Space Flight Center
Greenbelt, Maryland 20770
 $^{252}\text{Cf}(\text{S})$
- 105 Gulf Research and Development Company
Post Office Drawer 2038
Pittsburgh, Pennsylvania 15230
 $^{252}\text{Cf}(\text{S})$
- 106 Harper Hospital
3825 Brush
Detroit, Michigan 48201
 CSI
- 107 Harvard Medical School
25 Shattuck Street
Boston, Massachusetts 02115
 $^{28}\text{Mg}(\text{B})$
- 108 Honeywell, Inc.
2701 Fourth Avenue, So.
Minneapolis, Minnesota 55408
 ^{63}Ni
- 109 Hughes Aircraft Company
P. O. Box 92907
Los Angeles, California 90009
 ^{85}Kr
- 110 Huntington Memorial Hospital
100 Congress Street
Pasadena, California 91105
 CSI
- 111 Idaho Nuclear Corporation
550 Second Street
P. O. Box 1845
Idaho Falls, Idaho 83401
 **^{241}Am , ^{243}Am , $^{243}\text{Am}(\text{S})$, ^{252}Cf , CSI ,
 ^{137}Cs , FPSS , ^{131}I , ^{63}Ni , ^{147}Pm ,
 ^{239}Pu , ^{240}Pu , ^{241}Pu , $^{241}\text{Pu}(\text{S})$, $\text{RSI}(\text{I})$,
 ^{233}U , ^{235}U , ^{238}U , ^{133}Xe**
- 112 Idaho State College
Pocatello, Idaho 83201
 CSI
- 113 I. I. T. Research Institute
10 West 35th Street
Chicago, Illinois 60616
 ^{37}Ar
- 114 Illinois Geological Survey
136 Natural Resources Bldg.
Urbana, Illinois 61801
 $\text{SI}(\text{A})$

- 115 Illinois. University of
203 Administration Building E
Urbana, Illinois 51903
 ^{47}Ca , ^{252}Cf , ^{36}Cl , $^{141}\text{Cs(S)}$, ^3H ,
 ^{86}Rb , $^{121}\text{Sn(S)}$
- 116 Illinois. University of
P. O. Box 4348
Chicago, Illinois 50680
 ^3H
- 117 Indiana State College
6th and Chestnut Streets
Terre Haute, Indiana 47809
 SI(A)
- 118 Indiana University
Bloomington, Indiana 47431
 ^{14}C , SI(A)
- 119 Industrial Nuclearics Corporation
650 Ackerman Road
Columbus, Ohio 49202
 ^{14}C , ^{85}Kr , SS
- 120 Industrial Reactor Labs., Inc.
Plainsboro, New Jersey 08536
 ^{90}Sr , SS
- 121 Industrial Technology Corporation
Division of Ardel Corporation
142 Nevada Street
El Segundo, California 90245
 ^{85}Kr
- 122 International Business Machines Corp.
1701 North Street
Endicott, New York 13760
 ^{204}Tl
- 123 International Chemical and Nuclear Corporation
272.7 Campus Drive
Irvine, California 92664
 ^{36}Cl , ^{14}C , CSL , ^{137}Cs , ^3H , ^{63}Ni ,
 ^{151}Sm , ^{95}Zr
- 124 Iowa State University
Ames, Iowa 50010
 RSI , ^{89}Sr , ^{91}Y
- 125 Isotopes Incorporated
123 Woodland Avenue
Westwood, New Jersey 07675
 ^{131}I , ^{239}Pu , ^{242}Pu , ^{233}U , ^{238}U
- 126 Isotopes, Inc.
Nuclear Systems Division
110 W. Timonium Road
Timonium, Maryland 21093
 FPSS , ^{90}Sr
- 127 Jet Propulsion Lab.
4800 Oak Grove Drive
Pasadena, California 91103
 $^{252}\text{Cf(S)}$
- 128 Johns Hopkins University
Baltimore, Maryland 21218
 ^{131}Ba , ^{133}Ba , ^{114}In , ^{86}Rb
- 129 Kaman Nuclear
1700 Garden of the Gods Road
Colorado Springs, Colorado 80907
 ^3H
- 130 Kansas. University of
Medical Center
Kansas City, Kansas 66103
 ^{89}Sr
- 131 Kentucky. University of
Lexington, Kentucky 40506
 SI(A) , ^{133}Xe
- 132 Knolls Atomic Power Laboratory
Post Office Box 1372
Schenectady, New York 12301
 ^{89}Sr
- 133 Lockheed Aircraft Corporation
Post Office Box 504
Missiles and Space
Sunnyvale, California 94098
 ^3H , SS
- 134 Lockheed-Georgia Company
Dawsonville, Georgia 30534
 FPSS , ^{85}Kr
- 135 Lockheed Electronics Company
16811 El Camino Real
Houston, Texas 77058
 ^{144}Ce
- 135 Loma Linda University Hospital
Loma Linda, California 92354
 ^{133}Xe
- 137 Los Angeles, County of
Hall of Administration
Los Angeles, California 90012
 ^{133}Xe
- 138 Louisiana State University
Nuclear Science Center
Baton Rouge, Louisiana 70803
 $^{60}\text{Co(B)}$

139 Louisiana State University
New Orleans, Louisiana 70122

SI(A)

140 Lovelace Clinic
4800 Gibson Boulevard, S. E.
Albuquerque, New Mexico 87108

^{140}Ba , ^{244}Cm , ^{95}Nb , ^{90}Sr , ^{91}Y ,
 ^{95}Zr

141 Loyola University Medical Center
P. O. Box 282
Maywood, Illinois 50153

^{47}Ca

142 Mallinckrodt Chemical Works
3600 N. Second Street
St. Louis, Missouri 63160

^{182}Ta

143 Mallinckrodt Nuclear Company
P. O. Box 312
Carlstadt, New Jersey 07072

^{133}Xe

144 Maryland University of
College Park, Maryland 20742

HSI

145 Massachusetts General Hospital
Isotope Laboratory
Boston, Massachusetts 02114

^{131}I

146 Massachusetts Institute of Technology
Box 69
Cambridge, Massachusetts 02139

^{252}Cf

147 Massachusetts University of
Amherst, Massachusetts 01002

$^{28}\text{Mg(B)}$

148 McCrone Research Institute
451 East 31st Street
Chicago, Illinois 60616

SI(A)

149 McDonnell Douglas Astronautics Company
Western Division
5301 Bolsa Avenue
Huntington Beach, California 92647

FPSS, ^{129}I , ^{147}Pm , $^{238}\text{Pu(M)}$, SS

150 Medical College of Georgia
TAMM Memorial Hospital
Austonia, Georgia 30902

^{85}Kr

151 Medical College of the State of South Carolina
Charleston, South Carolina 29402

^{133}Xe

152 Merck and Company
Rahway, New Jersey 07065

^{60}Co , ^{90}Sr , SS

153 Metropolitan Dade County
Court House on Flagler Street
Miami, Florida 33131

^{133}Xe

154 Metropolitan Sanitary District of Greater Chicago
100 E. Erie
Chicago, Illinois 60611

^{46}Sc

155 Miami Heart Institute
4701 North Meridian Avenue
Miami Beach, Florida 33140

^{133}Xe

156 Miami University of
Post Office Box 8066
Coral Gables, Florida 33146

RSI, SS

157 Miami University
Oxford, Ohio 45056

^{106}Ru

158 Michigan State University
East Lansing, Michigan 48823

^{14}C

159 Michigan University of
Ann Arbor, Michigan 48104

^{140}Ba , ^{144}Ce , ^{252}Cf , ^{137}Cs , ^{110}In ,
 ^{106}Ru , ^{95}Zr

160 Minnesota Mining and Manufacturing Company
Post Office Box 3121
St. Paul, Minnesota 55101

^{137}Cs , FPSS, ^{95}Nb , ^{147}Pm , $^{210}\text{Po(M)}$,
 ^{106}Ru , ^{90}Sr , ^{99}Tc

161 Minnesota University of
402 Morrill Hall
Minneapolis, Minnesota 55455

^{131}I , ^{86}Rb , ^{89}Sr , ^{182}Ta , ^{235}U , ^{133}Xe

162 Missouri University of
Columbia, Missouri 65201

^{14}C

- 153 Mobil Research and Development Corporation
Paulsboro, New Jersey 08066
 ^{147}Pm , SS
- 154 Moleculon Research Corporation
139 Main Street
Cambridge, Massachusetts 02142
 ^{106}Ru
- 155 Monsanto Company
Post Office Box 1311
Texas City, Texas 77591
 ^3H , ^{85}Kr
- 156 Monsanto Research Corporation
Dayton Laboratory
1515 Nicholas Road
Dayton, Ohio 45407
 **^{241}Am , FPSS, ^{147}Pm , $^{210}\text{Po(M)}$,
 $^{238}\text{Pu(M)}$, ^{90}Sr**
- 157 Monsanto Research Corporation
Mound Laboratory
P. O. Box 32
Niamisburg, Ohio 45342
 **^{140}Ba , ^{252}Cf , CSI, $^{238}\text{Pu(S)}$, SS,
 ^{235}U , ^{95}Zr**
- 158 Murray State University
67 University Station
Murray, Kentucky 42071
 ^{252}Cf
- 159 National Accelerator Laboratory
P. O. Box 500
Batavia, Illinois 60510
 ^{106}Ru
- 160 Natl. Bureau of Standards
Rt. 705 and Quince Orchard Rd.
Gaithersburg, Maryland 20760
 $^{252}\text{Cf(S)}$
- 161 National Bureau of Standards
Connecticut Avenue and Van Ness Street, N.W.
Washington, D. C. 20234
 ^{129}I , ^{151}Sm , SS, ^{238}U
- 162 National Institutes of Health
Bethesda, Maryland 20014
 $^{28}\text{Mg(B)}$
- 163 Neisler Laboratories
Long Meadow Road
Tuxedo, New York 10987
 ^{133}Xe
- 164 New England Deaconess Hospital
185 Pilgrim Road
Boston, Massachusetts 02215
 ^{103}Ru , ^{95}Zr
- 165 New England Nuclear Corporation
575 Albany Street
Boston, Massachusetts 02118
 **^{140}Ba , ^{144}Ce , CSI, ^{137}Cs , ^3H , ^{114}In ,
 ^{192}Ir , ^{85}Kr , ^{63}Ni , ^{147}Pm , ^{33}P ,
 ^{106}Ru , ^{151}Sm , ^{90}Sr , ^{133}Xe , ^{95}Zr**
- 166 New Hampshire University of
Durham, New Hampshire 03824
 ^3H , RSI(B)
- 167 New Jersey College of Medicine
100 Bergen Street
Newark, New Jersey 07103
 ^{85}Kr
- 168 New York State University of
Downstate Medical Center
450 Clarkson Avenue
Brooklyn, New York 11203
 ^{47}Ca , $^{28}\text{Mg(B)}$
- 169 New York State University of
Research Foundation
Binghamton, New York 13901
 ^{129}I
- 170 North Carolina State University
P. O. Box 5935
Raleigh, North Carolina 27607
 ^{137}Cs , ^{237}Nd , ^{86}Rb , ^{235}U
- 171 North Carolina University of
Chapel Hill, North Carolina 27514
 ^{137}Cs , FPSS, RSI
- 172 North Dakota State University
State University Station
Fargo, North Dakota 58102
 $^{28}\text{Mg(B)}$
- 173 Northwestern University
619 Clark Street
Evanston, Illinois 60201
 ^{144}Ce
- 174 Notre Dame University of
Notre Dame, Indiana 46556
SI(A), ^{182}Ta
- 175 Nuclear Corporation of America
2 Richwood Place
Denville, New Jersey 07834
 ^{90}Sr
- 176 Nuclear Fuel Services, Inc.
Box 124
West Valley, New York 14171
 ^{233}U

- 187 Nuclear Materials and Equipment Corp.
Apollo, Pennsylvania 15613
 ^{241}Am , $^{238}\text{Pu}(\text{M})$
- 188 Nuclear Medical Computer Corporation
1620 Midwest Plaza Building
Minneapolis, Minnesota 55402
 ^{133}Xe
- 189 Nuclear Radiation Development, Inc.
2937 Alt Blvd.
Grand Island, N. Y. 14072
 ^{241}Am , ^{14}C , ^{63}Ni , $^{210}\text{Po}(\text{M})$
- 190 Oak Ridge Associated Universities
Post Office Box 117
Oak Ridge, Tennessee 37830
 ^{72}Ga , ^{95}Nb , ^{147}Nd , RSI, ^{106}Ru ,
 ^{46}Sc , ^{90}Sr
- 191 Ohio State University
190 North Oval Drive
Columbus, Ohio 43210
 ^{142}Pr , ^{86}Rb
- 192 Ohio State University
Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212
 ^{89}Sr
- 193 Oregon Medical School, University of
3181 S. W. Sam Jackson Park Road
Portland, Oregon 97201
 ^{133}Xe
- 194 Oregon, University of
Eugene, Oregon 97403
 ^3H , ^{131}I , Tqs
- 195 Pacific Northwest Laboratory
Richland, Washington 99352
 ^{241}Am , ^{140}Ba , ^{249}Bk , ^{144}Ce , ^{252}Cf ,
 ^{244}Cm , $^{239}\text{Pu}(\text{B})$, ^{239}Pu , RSI(D), ^{106}Ru ,
 ^{90}Sr , ^{235}U , ^{238}U , ^{185}W , ^{91}Y , ^{95}Zr
- 196 Panametrics, Inc.
221 Crescent Street
Waltham, Massachusetts 02154
 ^{85}Kr
- 197 Parkwell Laboratories, Inc.
42Y North High Street
Croton, Ohio 45013
 ^{241}Am , ^{137}Cs , $^{210}\text{Po}(\text{M})$
- 198 Pennsylvania Department of Highways
1118 State Street
Harrisburg, Pennsylvania 17105
 ^{46}Sc , SS
- 199 Pennsylvania Hospital
8th and Spruce Street
Philadelphia, Pennsylvania 19107
 ^{86}Rb
- 200 Pennsylvania, University of
3025 Walnut Street
Philadelphia, Pennsylvania 19104
 ^{47}Ca , RSI(B)
- 201 Pennsylvania, University of, Hospital
Dept. of Radiology
Philadelphia, Pa. 19104
 $^{252}\text{Cf}(\text{S})$
- 202 PPG Industries, Inc.
P. O. Box 4026
Corpus Christi Texas 78408
 ^{99}Tc
- 203 Pittsburgh, University of
Pittsburgh, Pennsylvania 15213
 ^{131}I , ^{239}Pu
- 204 Portland State College
1701 S. W. 6th Street
Portland, Oregon 97207
RSI(D)
- 235 Potter and Brumfield
Princeton, Indiana 47570
 ^{85}Kr
- 206 Pressure Chemical Company
3419-25 Smallman Street
Pittsburgh, Pennsylvania 15201
 ^{99}Tc
- 207 Proctor and Gamble Company
Post Office Box 175
Groesbeck Station
Cincinnati, Ohio 45239
SI(A)
- 208 Puerto Rico, University of
Puerto Rico Nuclear Center
College Station
Mayaguez, Puerto Rico 30703
 ^{131}I , SS
- 209 Puerto Rico, University of
Puerto Rico Nuclear Center
Caparra Heights Station
San Juan, Puerto Rico 00935
 ^{60}Co
- 210 Purdue University
Lafayette, Indiana 47907
 ^{181}Hf , ^{239}Pu , SI(A)

- 211 Radiation Machinery Corporation
25 Eastman Road
Parsippany, New Jersey 07054
 ^{137}Cs , ^{90}Sr , ^{60}Co
- 212 Radiation Resources, Inc.
24 Kulick Road
Fairfield, New Jersey 07005
FPSS
- 213 Radiation Materials Corporation
124 Calvary Street
Waltham, Massachusetts 02154
 ^{144}Ce , ^{95}Nb , ^{106}Ru , ^{182}Ta
- 214 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, California 94070
 ^{238}U
- 215 Hensselaer Polytechnic Institute
110 8th Street
Troy, New York 12181
 ^{144}Ce , $^{152+154}\text{Eu}$, ^{90}Sr , ^{170}Tm
- 216 Republic Corporation
1960 West 139th Street
Gardena, California 90249
 ^{85}Kr
- 217 Republic Steel Corp.
221 E. 131 St.
Cleveland, Ohio 44108
 $^{252}\text{Cf}(\text{S})$
- 218 Research Triangle Institute
P. O. Box 12086
Research Triangle Park, North Carolina 27709
 ^{63}Ni
- 219 Hevnolds Electric Enaineerina Company
Post Office Box 14400
Las Vegas, Nevada 89114
 ^{89}Sr
- 220 Rider College
Lawrenceville Road
Trenton, New Jersey 08602
 ^{36}Cl
- 221 Robbin Laboratories, Inc.
P. O. Box 808
Chapel Hill, North Carolina 27514
 ^{137}Cs , FPSS
- 222 Rochester, University of
575 Elmwood Avenue
Rochester, New York 14527
 ^{3}H , ^{131}I , ^{240}Pu , ^{238}U
- 223 Rockefeller University
66th Street and York Avenue
New York, New York 10021
 $^{24}\text{Mg}(\text{B})$
- 224 Roswell Park Memorial Institute
666 Elm Street
Buffalo, New York 14203
 ^{137}Cs
- 225 Rutgers, The State University
New Brunswick, New Jersey 08903
 ^{89}Sr
- 226 Saint Joseph's Hospital, Research Laboratory
69 West Exchange Street
St. Paul, Minnesota 55102
 ^{86}Rb
- 227 Saint Mary's Long Beach Hospital
509 East Tenth Street
Long Beach, California 90813
 ^{133}Xe
- 228 Saint Procopius College
Lisle, Illinois 60532
 ^{63}Ni
- 229 Salk Institute
P. O. Box 1809
San Diego, California 92112
 ^{63}Ni
- 230 Sandia Corporation
Special Projects Building 4-1428
Cape Kennedy Air Force Station
Florida
 $^{238}\text{Pu}(\text{M})$
- 231 Sandia Corporation
Post Office Box 5800
Albuquerque, New Mexico 87115
 ^{252}Cf , ^{85}Kr , $^{232}\text{Th}(\text{M})$
- 232 Sanoma State College
1801 East Cotate Avenue
Rohnert Park, California 94928
 $^{239}\text{Pu}(\text{M})$
- 233 San Jose State College
145 South Seventh Street
San Jose, California 95114
 $^{239}\text{Pu}(\text{M})$
- 234 Schlumberger Technology Corporation
Old Quarry Road
P. O. Box 307
Ridgfield, Connecticut 06877
 $^{252}\text{Cf}(\text{S})$, ^{3}H , ^{238}U

- 235 Schwarz Bio-Research, Inc.
Mountain View Avenue
Orangeburg, New York 10962
 ^{34}H , ^{33}P
- 236 Scripps Clinic and Research Foundation
476 Prospect Street
La Jolla, California 92037
 ^{133}Xe
- 237 Seattle University
900 Broadway
Seattle, Washington 98122
 $^{239}\text{Pu}(\text{M})$
- 238 Shell Oil Company
Houston Refinery
Post Office Box 2633
Deer Park, Texas 77536
 ^{144}Ce , ^{46}Sc , ^{95}Zr
- 239 Shepherd and Associates, J. L.
1614 Victory Boulevard
Glendale, California 91201
 ^{137}Cs , FPSS
- 240 Siemens Corporation
186 Wood Avenue South
Iselin, New Jersey 03330
 ^{151}Sm
- 241 Siemens Medical of America, Inc.
685 Liberty Avenue
Union, New Jersey 07083
 ^{133}Xe
- 242 Sianetics, Incorporated
811 East Araucos Avenue
Sunnyvale, California 94086
 ^{85}Kr
- 243 Sloan-Kettering Institute
425 East 68th Street
New York, New York 10021
 ^{47}Ca , ^{133}Xe , ^{95}Zr
- 244 South Carolina University of
Columbia, South Carolina 29208
 ^{181}Hf , $^{237}\text{Np}(\text{S})$, $^{239}\text{Pu}(\text{S})$, ^{103}Ru
- 245 Stanford University Hospital Center
300 Pasteur Drive
Palo Alto, California 94304
 ^{133}Xe
- 246 State University College
Plattsburgh, New York 12901
 $^{28}\text{Mg}(\text{B})$
- 747 Strong Memorial Hospital
575 Elmwood Avenue
Rochester, New York 14620
 $^{28}\text{Mg}(\text{B})$
- 248 Sylvania Electric Products, Inc.
100 Sylvan Road
Woburn, Massachusetts 01801
 ^{85}Kr
- 249 Tennessee University of
Knoxville, Tennessee 37916
 ^{106}Ru
- 250 UT-AEC
Agriculture Research Laboratory
1299 Bethel Valley Road
Oak Ridge, Tennessee 37830
 ^{47}Ca , ^{131}I , ^{90}Sr
- 251 Teledyne Isotopes
110 West Timonium Road
Timonium, Maryland 21093
 $\text{Th}(\text{M})$
- 252 Tennessee Valley Authority
Central Accounting Office
Knoxville, Tennessee 37902
 ^{14}C
- 253 Tennessee Valley Authority
River Oaks Building
Muscle Shoals, Alabama 35660
 $^{239}\text{Pu}(\text{M})$
- 254 University of Tennessee Medical Units
Memphis, Tennessee 38103
 $^{239}\text{Pu}(\text{M})$
- 255 Texas A and M University
Post Office Box 44
College Station, Texas 77343
 $^{239}\text{Pu}(\text{M})$, ^{233}U
- 256 Texaco Incorporated
2100 Hunters Point Avenue
Long Island City, New York 11101
 $^{252}\text{Cf}(\text{S})$
- 257 Texas Instruments, Inc.
Science Services Division
Post Office Box 5521
Dallas, Texas 75222
 ^{85}Kr
- 258 Texas Nuclear Corporation
Post Office Box 9267
Austin, Texas 73756
 ^{34}H

- 259 Texas, University of
Austin, Texas 78712
 ^{252}Cf , ^3H , ^{129}I , ^{89}Sr
- 250 Tracerlab Technical Products
Division of Intl. Chemical and Nuclear Corp.
1601 Trapelo Road
Waltham, Massachusetts 02154
 **^{241}Am , ^{36}Cl , ^{137}Cs , ^3H , ^{129}I , ^{85}Kr ,
 ^{85}Kr , ^{204}Tl , ^{133}Xe**
- 251 Transition Electronics Corporation
168 Albion Street
Wakefield, Massachusetts 01880
 ^{85}Kr
- 252 TXU Systems Group
One Space Park
Redondo Beach, California 90277
 ^{85}Kr , $^{238}\text{Pu(M)}$, Th(M)
- 253 Union Carbide Corporation, Nuclear Division
Y-12 Plant
Post Office Box Y
Oak Ridge, Tennessee 37830
 ^{60}Co , ^{33}P , ^{90}Sr , SS
- 254 Union Carbide Corporation, Nuclear Division
Oak Ridge National Laboratory
Post Office Box X
Oak Ridge, Tennessee 37830
 **^{243}Am , ^{133}Ba , ^{210}Bi , ^{249}Bk , ^{144}Ce ,
 ^{249}Cf , ^{252}Cf , $^{252}\text{Cf(S)}$, ^{36}Cl , ^{244}Cm ,
 ^{244}Cm , $^{244}\text{Cm(S)}$, ^{60}Co , ^{14}C , CSI,
 ^{137}Cs , $^{137}\text{Cs(B)}$, ^{253}Es , $^{152+154}\text{Eu}$,
 ^{72}Ga , ^{181}Hf , ^3H , ^{114}In , ^{192}Ir , ^{129}I ,
 ^{85}Kr , ^{95}Nb , ^{147}Nd , ^{237}Np , ^{191}Os .**
- 264 Union Carbide Corporation, Nuclear Division
Oak Ridge National Laboratory
Post Office Box X
Oak Ridge, Tennessee 37830
 **$^{231}\text{Pa(S)}$, ^{147}Pm , ^{33}P , ^{240}Pu , ^{241}Pu ,
 ^{244}Pu , $^{238}\text{Pu(M)}$, ^{86}Rb , ^{186}Re , RSI,
 ^{103}Ru , ^{106}Ru , ^{46}Sc , SI(A) , ^{90}Sr ,
SS, ^{182}Ta , ^{99}Tc , ^{229}Th , ^{230}Th , ^{233}U ,
 ^{238}U , ^{185}W , ^{95}Zr**
- 265 Union Carbide Corporation, Nuclear Division
Paducah Gaseous Diffusion Plant
Paducah, Kentucky 42002
RSI
- 266 Union Carbide Corporation
Sterling Forest Research Center
Post Office Box 324
Tuxedo, New York 10987
 ^{137}Cs , ^{103}Ru
- 267 United Aircraft Corp.
Silver Lane
East Hartford, Connecticut 06118
 ^{85}Kr
- 268 United States Air Force
McClellan Air Force Base, California 95552
 ^{237}Np , ^{133}Xe
- 269 United States Air Force
ASFC-3, Building 11, Area B
Wright Patterson Air Force Base, Ohio 45433
 ^{231}Pa
- 270 United States Army
Building 310
Aberdeen Proving Ground, Maryland 21305
 ^{237}Np , ^{235}U , ^{238}U
- 271 United States Army
Walter Reed Army Medical Center
Washington, D. C. 20012
 ^{133}Xe
- 272 United States Army
Finance and Accounting Officer
Fort Monmouth, New Jersey 07703
 ^{137}Cs , SS
- 273 United States Army
Frankford Arsenal
Bridge and Tacony Streets
Philadelphia, Pennsylvania 19137
 ^{85}Kr
- 274 United States Army
Harry Diamond Laboratories
Connecticut Avenue and Wampanoag St. N. W.
Washington, D. C. 20438
- 275 United States Army
Finance and Accounting Officer
Natick, Massachusetts 01760
 ^{137}Cs , FPSS
- 276 United States Army
White Sands Missile Range
New Mexico 88002
 $^{137}\text{Cs(S)}$
- 277 United States Atomic Energy Commission
National Reactor Testing Station
Idaho Falls, Idaho 83401
RSI(I)
- 278 United States Atomic Energy Commission
376 Hudson Street, Fifth Floor
New York, New York 10014
 **^{140}Ba , ^{60}Co , ^{137}Cs , FPSS, RSI,
RSI(B), ^{89}Sr , ^{185}W , ^{91}Y , ^{95}Zr**
- 279 United States Atomic Energy Commission
Washington, D. C. 20545
- 280 United States Bureau of Mines
Morgantown, West Virginia 26505
 $^{252}\text{Cf(S)}$

291 United States Department of Agriculture
Agricultural Research Service
Finance Branch. EA
Federal Center Building
Hvattsville. Maryland 20732

^{147}Pm , ^{90}Sr , ^{88}Sr , ^{201}Tl

282 United States Department of Agriculture
Plant. Soil and Nutrition Laboratory
Tower Road
Ithaca. New York 14850

^{28}Mg (B)

283 United States Department of Interior
Bureau of Mines
Bldg. 20, Federal Center
Denver, Colorado 80225

^{191}Os

284 United States Food and Drug Administration
Perrine Primate Research Branch
P. O. Box 490
Perrine, Florida 33157

^3H

285 United States National Aeronautics and Space Adm.
Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135

^3H , ^{238}U

236 United States Navy
Naval Research Laboratory
Washington, D. C. 20390

^3H , ^{238}U

287 United States Public Health Service
P. O. Box 232
Winchester, Massachusetts 01893

^{238}Pu , ^{241}Pu , ^{236}U

288 United States Public Health Service
Post Office Box 684
4505 Maryland Parkway
Las Vegas, Nevada 89101

^{37}Ar , ^{132}I , ^{88}Sr , ^{185}W , ^{187}W

289 United States Public Health Service
National Institutes of Health. Isotope Laboratory
Building 21
Bethesda, Maryland 20014

^{47}Ca

290 United States Public Health Service
DHCW-CPEHS
Division of Accounting. AA-130
Financial Service Branch
200 C. Street. S.W.
Washington, D. C. 20204

^{89}Sr

291 United States Public Health Service Hosoi
15th Avenue and Lake Street
San Francisco, California 94118

^{28}Mg (B)

292 United States Radium Corporation
4150 Old Berwick Road
Post Office Box 380
Bloomsburg, Pennsylvania 17815

^3H

293 Unitrode Corporation
580 Pleasant Street
Watertown, Massachusetts 01970

^{85}Kr

294 Unit Process Assemblies, Inc.
53 - 15 37th Avenue
Woodside, New York 11377

^{147}Pm

295 Universal Radioisotopes, Inc.
635 S. 31st Street
Richmond, California 94804

^{241}Am , ^{252}Cf , ^{137}Cs , ^{239}Pu , ^{106}Ru ,
 ^{238}U , ^{95}Zr

296 Utah, University of
Purchasing Department
Salt Lake City, Utah 84112

^{133}Xe

297 Vanderbilt University
Business Managers Office
Nashville, Tennessee 37203

^{110}In , ^{86}Rb

298 Veterans Administration Hospital
Chief, Fiscal Division
130 Kinasbridge Road
Bronx, New York 10468

^{131}I

299 Veterans Administration Hospital
3801 Junipero Serra Blvd.
Palo Alto, California 94304

^{170}Tm , ^{133}Xe

300 Veterans Administration Hospital
1481 West Tenth Street
Indianapolis, Indiana 46207

^{86}Rb

331 Veterans Administration Hospital
4435 Beacon Avenue South
Seattle, Washington 98108

^{47}Ca

- 302 Veterans Administration Center
Wood. Wisconsin 53193
 ^{133}Xe
- 303 Victoreen Instrument Division
10101 Woodland Avenue
Cleveland. Ohio 44104
 ^{133}Xe
- 304 Virginia Polytechnic Institute
Blacksburg. Virginia 24051
 ^3H , $^{28}\text{Mg}(\text{B})$
- 305 Walla Walla College
Box 307
College Place, Washington 99324
 ^{114}In
- 395 Washington State University
Comptroller's Office
Pullman. Washington 99163
 ^{129}I , $^{237}\text{Np}(\text{S})$, SS
- 307 Washington, University of
400 Administration Building
Seattle. Washington 98105
 ^{252}Cf , ^3H , ^{131}I , $^{239}\text{Pu}(\text{M})$, ^{89}Sr , Tqs , ^{233}U
- 308 Washington University
Lindell and Skinker
St. Louis, Missouri 63130
 ^{252}Cf , ^{114}In , ^{130}I , $^{28}\text{Mg}(\text{B})$, $\text{RSI}(\text{B})$
- 359 Western Electric Company, Inc.
P. O. Box 1409
Lawrence, Massachusetts 01842
 ^{85}Kr
- 310 Western Electric Company, Inc.
555 Union Boulevard
Allentown. Pennsylvania 18103
 ^{85}Kr
- 311 Western Electric Company
P. O. Box 241
Reading, Pennsylvania 19603
 ^{85}Kr
- 312 Western Electric Company, Inc.
777 North Blue Parkway
Lee's Summit. Missouri 64063
 ^{85}Kr
- 313 Western Electric Company, Inc.
3300 Lexington Road
Winston-Salem. North Carolina 27102
 ^{85}Kr
- 314 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
Post Office Box 79
West Mifflin, Pennsylvania 15122
 ^{252}Cf , ^{181}Hf , ^3H , ^{237}Np , ^{233}U
- 315 Westinghouse Electric Corporation
Astronuclear Laboratory
P. O. Box 10864
Pittsburgh. Pennsylvania 15236
 ^{181}Hf
- 316 Westinghouse Electric Corporation
Post Office Box 284
Elmira, New York 14902.
 $\text{RSI}(\text{B})$
- 317 Westinghouse Electric Corporation
Atomic Power Divisions
P. O. Box 355
Pittsburgh. Pennsylvania 15230
 ^{238}U
- 318 Westinghouse Electric Corporation
Nuclear Fuel Division
Box 5906
Columbia, South Carolina 29205
 ^{233}U
- 319 William Wayne Electronics, Inc.
Hastina Radiochemical Works
P. O. Box 479
Friendswood, Texas 77546
 CSi , ^{133}Xe
- 320 Wisconsin. University of
750 University Avenue
Madison, Wisconsin 53706
 ^{129}I , $^{28}\text{Mg}(\text{B})$, $^{239}\text{Pu}(\text{M})$
- 321 Xavier University
Victory Parkway and Dana Avenue
Cincinnati. Ohio 45207
 $^{239}\text{Pu}(\text{M})$
- 322 Yale-Neu Haven Hospital
P. O. Box 1001
Neu Haven, Connecticut 06504
 ^{131}Ba , ^{133}Pr
- 323 Yale University
20 Ashmun Street
New Haven, Connecticut 06520
 ^3H , $\text{RSI}(\text{B})$, ^{151}Sm
- 324 Yeshiva University
Albert Einstein College of Medicine
110 West 57 Street
New York. New York 10019
 $\text{RSI}(\text{B})$

B. Foreign

AUSTRIA

- 325 International Atomic Energy Agency
Kärntnerstrasse 11-13
A-1010 Vienna, Austria

^{37}Ar , ^{241}Pu , ^{242}Pu

BELGIUM

- 326 Albert Nils
2668 Av. de Tervueren
Bruxelles 15, Belgium

^{252}Cf , ^{85}Kr , ^{90}Sr , ^{133}Xe

327 EURATOM

51-53 Rue Belliard
Brussels, Belgium

^{243}Am , ^{244}Cm , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu ,
 ^{244}Pu , ^{233}U , ^{235}U , ^{236}U , ^{238}U

- 328 European Atomic Energy Commission
Central Bureau for Nuclear Measurements
Geel, Belgium

^{252}Cf , ^{237}Np , ^{240}Pu , ^{238}U

BRAZIL

- 329 Comissao Nacional de Energia Nuclear
Rua General Severiano
90-Botafogo
Rio de Janeiro, Brazil

^{252}Cf

CANADA

- 330 Atomic Energy of Canada Limited
Tunney's Pasture
Ottawa, Ontario, Canada

$^{60}\text{Co(B)}$, ^{137}Cs , FPSS

- 331 Atomic Energy of Canada Limited
Chalk River, Ontario, Canada

^{252}Cf , ^{137}Cs , ^{85}Kr , ^{230}Th

- 332 Atomic Energy of Canada Limited
Whiteshell Nuclear Research Establishment
Pinawa, Manitoba, Canada

^{60}Co

- 333 Canada Department of Agriculture
Lacombe, Alberta, Canada

^{133}Ba

- 334 Hospital Maisonneuve
5415 Blvd. l'Assomption
Montreal, Quebec, Canada

$^{244}\text{Pu(B)}$

- 335 McGill University
Montreal 2, P.Q., Canada

$^{152+154}\text{Eu}$, ^{133}Xe

- 336 McMaster University
Hamilton, Ontario, Canada

^{252}Cf , ^{151}Sm , ^{89}Sr , ^{99}Tc

- 337 Microsystems International Ltd.
P. O. Box 3529 Station C
Ottawa, Ontario, Canada

^{85}Kr

- 338 National Research Council
Montreal Road Laboratories
Ottawa, Ontario, Canada

$^{244}\text{Pu(B)}$

- 339 Toronto General Hospital
101 College Street
Toronto 2, Ontario, Canada

^{133}Xe

- 340 Alberta, University of
Edmonton, Alberta, Canada

^{133}Xe

- 341 British Columbia, University of
Vancouver 8, B.C., Canada

^{3H}

CHILE

- 342 Comision Chilena de Energia Nuclear
Centro de Estudios Nucleares (CEN)
Santiago, Chile, South America

$^{137}\text{Cs(B)}$

CHINA

- 343 Chinese Government Procurement and Service Mission
61 Broadway
New York 6, New York 10006

^{14}C

DENMARK

- 344 Aarhus, University of
Aarhus C, Denmark

^{244}Cm

- 345 Embassy of Denmark
3200 Whitehaven Street, N.W.
Washington, D.C. 20008

^{244}Pu

ENGLAND

346 British Embassy
3100 Yassachusetts Avenue. N. W.
Washinaton. D. C. 20008

238U

347 Micro-Bio Labs.
46, Pembbridge Road
London. W. 11. England

28Mg(B)

348 United Kingdom Atomic Energy Establishment
Harwell, Didcot, Berkshire
England

238Pu(M)

349 United Kingdom Atomic Energy Authority
Radiochemical Centre
Amersham, Bucks, England

238Pu(M)

350 United Kingdom Treasury and Supply Deleaation
25 Broadwav
Neu York, New York 10004

241Am, 140Ba, 252Cf, 36Cl, 244Cm, 34,
129I, 85Kr, 63Ni, 147Pm, 210Po(M),
106Ru, 89Sr, 91Y, 95Zr

351 The Wellcome Foundation. Ltd.
Euston Road
London, N. W. 1, Enaland

28Mg(B)

FRANCE

352 C. E. A.
1346 Connecticut Avenue. N. W.
Washinaton. D. C. 20036

238U

353 C.E.A. Ned York Office
972 Fifth Ave.
New York. New York 10021

241Am, 37Ar, FPSS, 90Sr, SS

354 C.N.R.S. Neu York Office
972 Fifth Avenue
Neu York. New York 10021

129I

355 Groupement d'Importation des Produits Pharmaceut.
Apt. K.6
720 Milton Hoad
Rve, New York 10580

37Ar

GERMANY

356 American Hoechst Corporation
P. O. Box 2500
Somerville, New Jersev 08876

85Kr

357 Buchler and Companv
Frankfurter Str. 294
Braunschweig, tiermanv

252Cf, 147Pm, 99Tc

358 Buchler and Companv
Untermainkai 34
6 Frankfurt M. 1, Germanv

252Cf

359 EURATOM Transuranium Institute
P. O. box 452
75 Karlsruhe. West Germanv

243Am, 252Cf, 244Cm, 99Tc

360 Freie Universitat
1 Berlin 33, Germanv

241Am

351 Gesellschaft fur Kernforschung M.B.H.
Jeberstrasse 5
75 Karlsruhe
West Germanv

243Am, 252Cf, 244Cm, 237Np, 242Pu, 233U

362 Goettingen. Universitat
34 Goettingen, Germanv

252Cf

363 Kernforschung Sanlage
Postfach 365
517 Julich. Germanv

99Tc

364 Koln. Unlversitat
Zulpicher Str. 47
5 Koln 1, Germanv

252Cf, 238U

365 Mainz/Rhein. Universitat
Mainz am Rhein. Germanv

236U

366 Munchen. Technischen Hochschule
Arcistrasse 21
8 Munchen 2
Germanv

252Cf, 151Sm

357 Munchen, Unlversitat
8000 Munchen 2
West Germanv

243Am, 244Cm

358 Max Planck Institut fur Kernphysik
Saupfercheckwea
Heldelbera. Germanv

241Am, 243Am, 237Nd

INDIA

359 Bhabha Atomic Research Centre
Government of India
3rd Floor Mohatta Building
Bombay 1, India

241Am, 243Am, 244Cm, 137Cs(B), SI(A)

370 Kurukshetra University
Kurukshetra, Haryana
India

252Cf

ISRAEL

371 Embassy of Israel
1621-22nd Street, N. W.
Washington, D. C. 20008

241Am, 252Cf, 237Np, 242Pu

372 Government of Israel
Ministry of Defense
850 Third Avenue
New York, New York 10022

241Am, 14C

373 Hebrew University of Jerusalem, The
Jerusalem, Israel

241Am, 237Np

ITALY

374 Centro Siciliano di Fisica Nucleare
57 Corso Italia
95129 Catania, Italy

252Cf

375 Comitato Nazionale l'Energia Nucleare
818 Eighteenth Street, N. W.
Washington, D. C. 20009

239Pu, 242Pu

376 Fabbrica Italiana Magnetroni
Casella Postale 65
20099 Sesto S. Giovanni
Milan, Italy

137Cs

377 Istituto Nazionale di Fisica Nucleare
Casella Postale 70
00044 Frascati, Rome, Italy

252Cf

378 Italian Economic Corporation, The
25 West 51st Street
New York, New York 10019

252Cf

JAPAN

379 Japan Atomic Energy Research Institute
Tokai Research Establishment
Tokai-Mura, Naka-Gun, Ibaraki-ken
Japan

242Pu

380 Japan Radioisotope Association
Hon-Komaba 2 Chome 28
Liunkyo-Ku
Tokyo, Japan

85Kr

381 Mitsubishi International Corporation
277 Park Avenue
New York, New York 10017

140Ba, 63Ni, 147Pm, 89Sr, 95Zr

382 Sumitomo Shoji America, Inc.
345 Park Avenue, 14th Floor
New York, New York 10022
New York

85Kr, 85Kr

NETHERLANDS

383 Instituut voor Kernfysisch Onderzoek
Postbus 10
Amsterdam, Netherlands

252Cf, 237Np

384 Rijksinkoopbureau
(Netherlands Govt. Purchasing Office)
55 A Laan van Meerderuoort
The Hague, Netherlands

133Xe

385 N. V. Philips-Duphar
P. O. Box 2
Weeso, The Netherlands

137Cs, 204Tl

386 Reactor Centrum Nederland
Petten N. H. The Netherlands

252Cf, 137Cs, 147Pm

SWEDEN

387 Aktiebolaget Atomenergi
Studsvik,
Nykoping, Sweden

244Pu(B)

388 Forskningsradens Laboratorium
Studsvik
Nykoping, Sweden

103Ru

389 Uppsala, University of
Uppsala, Sweden

^{252}Cf

SWITZERLAND

330 Eidg. Institut für Reaktorforschung
Würenlingen, Switzerland

^{99}Tc

391 Embassy of Switzerland
2900 Cathedral Avenue, N.W.
Washington, D.C. 20009

^{242}Pu

332 Radium-Chemie
A. Zeller and Company
9053 Teufen / Ar
Switzerland

^3H , ^{147}Pm

393 Swiss Federal Institute of Technology
Sonneggstrasse 5
CH-8006 Zurich, Switzerland

^{89}Sr

II. ALPHABETICAL LIST OF ISOTYPES. CROSS-REFERENCED TO CUSTOMER NUMBERS

A. Domestic

Americium 241

25, 42, 43, 80, 70, 72, 79, 89, 97, 98,
166, 187, 189, 195, 197, 260, 295

Americium 243

41, 42, 70, 111, 264

Araon 037

10, 98, 113, 288

Barium 131

128, 322

Barium 133

1, 10, 23, 98, 128, 264

Barium 140

10, 17, 44, 52, 86, 140, 159, 167, 175, 195,
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Berkelium 249

10, 41, 42, 195, 264

Bismuth 210

31, 264

Calcium 047

31, 50, 58, 115, 141, 178, 200, 243, 250,
289, 301

Californium 249

41, 43, 264

Californium 252

9, 10, 26, 27, 31, 37, 41, 42, 43, 61, 65,
70, 72, 82, 83, 86, 87, 89, 99, 102, 103,
104, 105, 111, 115, 127, 145, 159, 167, 163,
170, 195, 201, 217, 231, 234, 256, 259, 254,
280, 295, 307, 308, 314

Carbon 014

1, 48, 50, 64, 71, 118, 119, 123, 158, 152,
189, 252, 264

Cerium 144

10, 135, 159, 175, 183, 195, 213, 215, 239,
264

Cesium 137

1, 15, 24, 31, 36, 52, 98, 111, 123, 159,
160, 175, 180, 181, 197, 211, 221, 224, 239,
260, 264, 266, 272, 275, 276, 278, 275

Cesium 141

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Chlorine 036

36, 44, 54, 64, 73, 115, 123, 220, 260, 264

Cobalt 060

42, 138, 152, 209, 263, 264, 278

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42, 43, 72, 79, 82, 140, 195, 264

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Curium 248

41, 43, 72, 74, 264

3v otron Service Irradiations

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Europium 152

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116, 123, 129, 133, 165, 175, 176, 194, 222,
234, 235, 258, 259, 260, 264, 284, 285, 286,
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17, 23, 31, 128, 159, 175, 264, 297, 305,
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Iodine 130

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Iodine 131

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208, 222, 250, 298, 307

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Iridium 192

10, 41, 43, 75, 175, 264

Krypton 085

4, 5, 6, 13, 15, 19, 59, 64, 80, 81, 88,
90, 94, 95, 95, 98, 100, 109, 119, 121, 134,
150, 165, 175, 177, 196, 205, 216, 231, 242,
248, 257, 260, 261, 262, 264, 267, 273, 293,
309, 310, 311, 312, 313

Magnesium 028

10, 50, 83, 107, 147, 172, 178, 182, 195,
223, 246, 247, 282, 291, 304, 308, 320

Molybdenum 099

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Neodymium 147

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Neptunium 237

10, 33, 41, 62, 77, 180, 244, 264, 269, 270,
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Nickel 063

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228, 229

Niobium 095

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Osmium 191

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Palladium 109

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Phosphorus 033

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167, 187, 230, 262, 264

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10, 14, 17, 31, 41, 42, 43, 60, 86, 89,
125, 195, 203, 210, 232, 233, 237, 244, 253,
254, 255, 295, 307, 320, 321

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Plutonium 241

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Plutonium 242

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Praseodymium 143

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204, 215, 264, 265, 277, 278, 308, 316, 323,
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Rubidium 086

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161, 180, 191, 199, 226, 264, 297, 300

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154, 190, 198, 239, 264

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10, 50, 51, 52, 85, 114, 117, 118, 131, 139,
148, 184, 207, 210, 264

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120, 133, 149, 152, 156, 163, 167, 171, 198,
208, 211, 263, 264, 272, 281, 288, 306

Strontium 089

10, 35, 65, 85, 98, 102, 124, 130, 132, 161,
192, 219, 225, 259, 278, 290, 307

Strontium 090

2, 16, 25, 43, 65, 102, 20, 125, 140, 152,
160, 166, 175, 185, 190, 195, 211, 250, 263,
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Thorium 230

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Uranium 23310. 18. 20. 22. 31. 38. 72. 82. 89. 111.
125. 186. 255. 264. 307. 314. 318**Uranium 234**

10. 18. 20. 31. 42. 89. 222

Uranium 23510. 31. 42. 58. 77. 89. 111. 161. 167. 180.
195. 270. 286**Uranium 236**

10. 31. 38. 42. 287

Uranium 23810. 31. 62. 82. 89. 111. 125. 171. 195. 214.
234. 264. 270. 285. 295. 317**Xenon 133**3. in. 25. 32. 38. 39. 40. 41. 45. 53. 54.
71. 76. 88. 101. 111. 131. 136. 137. 143.
151. 153. 155. 161. 173. 175. 188. 193. 227.
236. 241. 243. 245. 260. 268. 271. 295. 299.
302. 303. 31Y**Yttrium 091**

25. 43. 98. 124. 140. 195. 278

Zirconium 09510. 20. 31. 41. 42. 44. 72. 98. 123. 140.
159. 167. 174. 175. 195. 238. 243. 264. 278.
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Americium 243

327. 359. 361. 367. 368. 369

Araon 037

325. 353. 355

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Barium 140

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361. 362. 364. 366. 370. 371. 374. 377. 378.
383. 386. 389**Carbon 014**

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Cesium 137

330. 331. 342. 369. 376. 385. 386

Chlorine 036

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Cobalt 060

330. 332

Curium 244

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Euroopium 152

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Hydrogen 003

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Iodine 129

350. 354

Krypton 085

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Lauresium 028

334. 338. 347. 351. 387

Neptunium 237

328. 361. 368. 371. 373. 383

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Plutonium 239

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336, 350, 381, 393

Strontium 090

326, 353

Technetium 099

336, 357, 359, 363, 390

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Thorium 230

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Uranium 233

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Uranium 234

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Uranium 235

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Uranium 236

327, 365

Uranium 238

327, 346, 352, 364

Xenon 133

326, 335, 339, 340, 384

Yttrium 091

350

Zirconium 095

350, 381

III. ALPHABETICAL LIST OF STATES AND COUNTRIES CROSS-REFERENCED TO CUSTOMER NUMBERS

A. Domestic

Alabama

253

Arizona

4

Arkansas

12

California

2, 17, 19, 34, 35, 36, 37, 38, 39, 40, 41,
42, 49, 63, 67, 80, 85, 89, 93, 100, 103,
110, 121, 121, 127, 133, 136, 137, 149, 214,
216, 227, 229, 232, 233, 236, 239, 242, 245,
262, 268, 291, 295, 299

Colorado

60, 70, 129, 283

Connecticut

234, 267, 322, 323

Delaware

73

District of Columbia

48, 101, 171, 271, 286, 290

Florida

32, 82, 83, 90, 153, 155, 156, 230, 284

Georgia

79, 99, 102, 134, 150

Idaho

11, 111, 112, 277

Illinois

1, 10, 13, 50, 51, 85, 113, 114, 115, 116,
141, 148, 154, 169, 183, 228

Indiana

117, 118, 184, 205, 210, 300

Iowa

8, 124

Kansas

130

Kentucky

131, 168, 265

Louisiana

138, 139

Maine

81

Maryland

104, 126, 128, 144, 170, 172, 251, 270, 281,
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Massachusetts

27, 28, 44, 55, 77, 107, 145, 146, 147, 164,
174, 175, 196, 213, 248, 260, 261, 275, 287,
293, 309

Michigan

84, 97, 106, 158, 159

Minnesota

108, 160, 161, 183, 226

Missouri

142, 162, 308, 312

Nevada

78, 219, 288

New Hampshire

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New Jersey

3, 4, 23, 45, 120, 125, 143, 152, 153, 177,
185, 211, 212, 220, 225, 240, 241, 272

New Mexico

43, 76, 140, 231, 276

New York

7, 16, 24, 31, 33, 46, 62, 65, 75, 91, 94,
122, 132, 173, 179, 173, 185, 189, 215, 222,
223, 224, 235, 243, 246, 247, 256, 266, 278,
282, 294, 298, 316, 324

North Carolina

29, 71, 180, 181, 218, 221, 313

North Dakota

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Ohio

20, 22, 52, 53, 54, 57, 58, 88, 96, 119,
157, 166, 167, 191, 192, 197, 207, 217, 269,
285, 303, 321

Oklahoma

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Oregon

193, 194, 204

Pennsylvania

15, 21, 47, 92, 105, 187, 198, 199, 200,
203, 206, 273, 292, 310, 311, 314, 315, 317

Puerto Rico

208, 209

South Carolina

56, 72, 151, 244, 318

Tennessee

190, 249, 250, 252, 254, 263, 264, 297

Texas

9, 25, 61, 87, 98, 103, 135, 165, 202, 238, 255, 257, 258, 259, 319

Utah

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Virainia

59, 95, 304

Washinaton

14, 26, 68, 69, 195, 237, 301, 305, 306, 307

West Virginia

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Wisconsin

5, 307, 320

B. Foreign**Austria**

325

Belgium

326, 327, 328

Brazil

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Canada

330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341

Chile

342

China

343

Denmark

344, 345

District of Columbia

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England

346, 347, 348, 349, 350, 351

France

352, 353, 354, 355

Germanv

356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368

India

369, 370

Israel

371, 372, 973

Italy

374, 975, 376, 377, 378

Japan

379, 380, 381, 382

Netherlands

383, 384, 385, 386

Sweden

387, 388, 389

Suitzerland

390, 392, 393

IV. RADIOISOTOPE SALES - FY 1970

(In each case where "withdrawn" items were sold, special approval was granted by the Commission.
Items from heavy-element pool were transferred on a no-cost basis to other AEC facilities.)

Isotope	Domestic			Foreign			Project			Total		
	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars
Americium-241	23	115,070 mg	115,070	16	166,173 mg	166,173	31	1,536,840 mg	173,342	70	1,818,083 mg	454,585 ^a
Americium-241 (s) ^b	1	5.3 µc								1	5.3 µc	
Americium-243				8	5,090 mg	54,501	8	20,199 mg		16	25,298 mg	54,501 ^a
Americium-243 (s) ^b	1	35.5 µg	-							1	35.5 µg	
Argon-37	3	2.6	160	6	9.6	765	1	6.0	360	10	18.2	1,285
Barium-131	10	24.0	4,470							10	24.0	4,470
Barium-133	4	3.6	535	4	3.5	525	2	5.0	750	10	12.1	1,810
Barium-140	21	276.4	1,980	13	285.0	1,725	12	85.0	593	46	646.4	4,298
Berkelium-249							12	4.5 mg		12	4.5 mg	
Bismuth-210							2	7.0	210	2	7.0	210
Calcium-47	101	85.2	21,838				17	14.1	3,525	118	99.3	25,363
Californium-249				2	0.2 mg					2	0.2 mg	
Californium-252	24	10.07 µg	10,118	27	13.01 µg	13,369	26	15,801.82 µg	600	77	15,824.90 µg	24,087 ^a
Californium-252 (s) ^b	29	3,630.8 µg					13	156.4 µg		42	3,787.2 µg	^a
Carbon-14	19	638.0	4,017	4	140.0	910	7	464.0	687	30	1,242.0	5,614
Cerium-141 (s) ^b	1	4,000.0								1	4,000.0	
Cerium-144	9	1,311.5	450	10	3,000.0	50	14	85.0	253	33	4,396.5	753
Cesium-137	42	171,680,485.0	23,560	8	3,587,410.0	595	6	114,012.0	59	56	175,381,907.0	24,214
Cesium-137 (B) ^b							5	508,000,000.0		5	508,000,000.0	
Cesium-137 (S) ^b	1	300.0								1	300.0	
Chlorine-36	14	Q.5	4,402	2	45.0	15,750	2	3.0	45	18	60.5	20,197 ^a
Cobalt-60 Metal							9	147,835,400.0	16,071	9	147,835,400.0	16,071
Cobalt-60 Metal (B) ^b				1	900,000.0		1	28,000,000.0		2	28,900,000.0	
Cobalt-60 Processed	1	25.0	100	1	50.0	200	3	11.2	90	5	86.2	390

Isotope	Domestic			Foreign			Project			Total		
	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars
Curium-244	2	190 mg	100	11	5,131 mg	58,100	7	24,100 mg		20	29,421 mg	58,200 ^a
curium-244 (s)	1	4.2 µc			-		4	143,137,000.0		5	143,137,000.0	
Curium-246							2	0.78 mg		2	0.78 mg	-
curium-248					-		2	0.301 mg		2	0.301 mg	-
Einsteinium-253							11	0.339 mg		11	0.339 mg	-
Europium-152-154	3	3.1	90	1	2.0	40	4	9.0	185	8	14.1	315
Fission Products	1	1.0	25							1	1.0	25
Gallium-72							2	7.5	90	2	7.5	90
Hafnium-181	9	103.0	365	1	8.5	26	4	39.0	140	14	150.5	531
Indium-114	13	53.5	555				2	12.5	125	15	66.0	680
Iodine-129	14	20,671.8	11,868	8	2,503,920.0	4,416	1	58.5	117	23	2,524,650.3	16,401
Iodine-130	1	72.0	289							1	72.0	289
Iodine-131	73	5,838.0	5,078				3	75.0	100	76	5,913.0	5,178
Iodine-132	1	10.0	55				2			3	10.0	55
Iridium-1%	2	26.0	50				4	39.0	100	6	65.0	150
Krypton-E5	92	4,274,450.0	106,743	20	1,315,700.0	29,881	7	755,600.0	19,674	119	6,345,750.0	156,298
Magnesium-28 (B) ^b	60	6.9	9,590	14	1.0	1,400	2	0.2	280	76	8.1	11,270
Molybdenum-99	2	1,010.0	253	2	12,020.0	1,825				4	13,030.0	2,078
Neodymium-147	1	1.0	50	1	2.0	100	3	13.0	650	5	16.0	800
Neptunium-237	6	2,330 mg	677	19	111,300 mg	25,050	15	67,982 mg	8,456	40	181,612 mg	34,183 ^a
Neptunium-237 (s) ^b	2	1.6 g					3	1.25 µg		5	1.6 g	-
Nickel-63	16	3,316.3	18,490	7	2,000.0	44,000	2	25.0	125	25	11,341.3	62,615
Niobium-95	10	40.0	750				5	14.0	335	15	54.0	1,085
Osmium-191	1	1.0	25		-		2	3.0	65	3	4.0	90
Palladium-109	5	50.0	150		-					5	50.0	150

Isotope	Domestic			Ship- ments	Foreign		Ship- ments	Project		Ship- ments	Total	
	Ship- ments	Millicuries	Dollars		Millicuries	Dollars		Millicuries	Dollars		Millicuries	Dollars
Phosphorus-33	13	1,251.8	14,210	4	13.0	350	2	13.0	455	19	1,277.8	15,015
Plutonium-236							4	0.002 mg	65	4	0.002 mg	65
Plutonium-238	5	61,900 mg	61,900				8	46,767 mg	6	13	108,667 mg	61,906 ^a
Plutonium-238 (M) ^b				3	6.7 g	6,700	22	23,885.1 g		25	23,891.8 g	6,700
Plutonium-238 (S) ^b	1	3.8 µc					2	202,000.1		3	202,000.1	
Plutonium-239	7	453.5 mg	476	3	760 mg	562	14	137,144 mg	47	24	138,357.5 mg	1,085 ^a
Plutonium-239 (M) ^b	11	704.0 g					2	1,948.0 g		13	2,652.0 g	
Plutonium-239 (S) ^b	1	24 mg					2	0.25 µg		3	24 mg	
Plutonium-240	1	200 mg	598	3	205 mg	374	11	114,560 mg	30	15	114,965 mg	1,002 ^a
Plutonium-241	1	10 mg	80	2	1,824 mg	14,146	7	20,424 mg	30	10	22,258 mg	14,256 ^a
Plutonium-241 (S) ^b							1	570,000.0		1	570,000.0	
Plutonium-242	3	105 mg	1,670	8	182 mg	2,365	1	14,682 mg		12	14,969 mg	4,035 ^a
Plutonium-244				1	51 mg	895	4	10.74 mg		5	61.74 mg	895 ^a
Polonium-210 (M) ^b	25	5,883,600.0	110,727	1	105,300.0	1,500				26	5,988,900.0	112,227
Polonium-210 (S) ^b							1	37,584,000.0		1	37,584,000.0	
Praseodymium-142	1	5.0	45							1	j.0	45
Praseodymium-143	3	3.0	150				3	22.0	1,100	6	25.0	1,250
Promethium-147	17	51,050,050.1	11,051	69	13,002,100.0	4,821	2	701,000.0	450	88	64,753,150.1	16,322
Promethium-147 (S) ^b							1	200,000.0		1	200,000.0	
Protactinium-231							2	126.34 mg	-	2	126.34 mg	
Protactinium-231 (S) ^b							1	70.0		1	70.0	
Rhenium-186	2	6.0	65				2	6.0	75	4	12.0	140
Rubidium-86	60	1,699.7	1,379		-		2	101.0	85	62	1,800.7	1,464
Ruthenium-103	6	9.0	225	1	1.0	25	2	2.0	50	9	12.0	300
Ruthenium-106	16	37.0	925	3	33.0	377	16	49.0	1,225	35	119.0	2,527

Isotope	Domestic			Foreign			Project			Total		
	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars
Samarium-151	8	27.0	3,132	5		4,140				11	27.0	7,272
Scandium-46	11	200.6	425				2	12.5	25	13	213.1	450
Silver-111							1	2.0	30	1	2.0	30
Strontium-89	30	370.1	4,908	16	127.0	1,647	5	11.0	172	51	508.1	6,727
Strontium-90 Silicate							1	35,000,000.0	27,716	1	35,000,000.0	27,716
Strontium-90	31	33,605,400.1	10,694	9	300,406,150.0	60,144	9	84,049.2	260	49	334,095,599.3	71,098
Tantalum-182	5	18.5	205	1	5.0	50	2	5.0	50	8	28.5	305
Technetium-99	5	12,000.0	660	11	25,380.0	1,660	4	40,625.0	1,675	20	78,005.0	3,995 ^a
Technetium-99 (s) ^b	1	4.0								1	4.0	
Thallium-204	3	66.0	75	1	40.0	30	2	110.0	78	6	216.0	183
Thorium-229	1	0.228 mg	34				3	3.2 mg		4	3.428 mg	34 ^a
Thorium-230				1	10 mg	231	2	312 mg		3	322 mg	231 ^a
Thorium (M)							8	160,620.0 g		8	160,620.0 g	
Thulium-170	3	502.5	450				-	-		3	502.5	450
Thulium-170 (s) ^b							1	22,520,000.0		1	22,520,000.0	
Tin-121 (s)	1	2.0								1	2.0	
Tritium	135	116,087,646.0	99,317	19	210,337,000.0	158,893	38	7,915,035.0	7,884	192	334,339,681.0	266,094
Tungsten-185	2	7.0	57				4	11.0	107	6	18.0	164
Tungsten-187	4	34.0	612							4	34.0	612
Uranium-232							1	4 mg		1	4mg	
Uranium-233	6	493 mg	1,022	3	611 mg	1,576	13	87,176 mg	26	22	88,280 mg	2,624 ^a
uranium-234	4	260 mg	2,163	-			6	1,763 mg	335	10	2,023 mg	2,498 ^a
Uranium-235	5	22,960 mg	600	2	1,100 mg	155	18	483,169 mg	131	25	507,229 mg	886 ^a
uranium-236	1	2 mg	2	2	1,100 mg	560	5	2,512 mg		6	3,614 mg	562 ^a
Uranium-238	11	254,726 mg	6,846	7	271,935 mg	4,060	9	530,460 mg	64	27	1,057,121 mg	10,970 ^a

Isotope	Domestic			Foreign			Project			Total		
	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars	Ship- ments	Millicuries	Dollars
Xenon-133	866	1,092,654.2	61,850	62	106,000.0	4,935	30	1,017,120.0	12,425	958	2,215,774.2	79,260 ^a
Yttrium-91	10	15,008.2	14,800	4	33.0	363	4	16.0	190	18	15,057.2	15,353
Zirconium-95	13	236.5	1,305	10	233.0	1,199	19	3,095.0	705	42	3,564.5	3,213 ^a
Cyclotron Service Irr. ^c	76	76.0	126,218	4	4.0	5,040	10	9.0	2,787	90	89.0	134,045
Cyclotron Service Irr. ^c (A) ^b	60		10,197				187		-	247	-	10,197 ^a
Reactor Service Irr. ^d	47	48.0	5,355	1	1.0	390	73	67.0	10,502	121	116.0	16,247
Reactor Service Irr. ^d (A) ^b	98	-	5,278	-	-		126			224	-	5,278 ^a
Reactor Service Irr. ^d (B) ^b	90	-	45,797				880		30,198	970		75,995
Reactor Service Irr. ^d (D) ^b	-					-	30	9,010.0	3,700	30	9,010.0	3,700
Reactor Service Irr. ^d (I) ^b	32		10,766			-	64	-	1,945	96		12,711 ^a
Special Services	127	3.0	208,984	4		25,125	50	50.0	55,231	181	53.0	289,340
Total	2,478	383,743,782.7 ^e	1,167,156	444	532,313,016.6 ^e	721,764	1,981	933,689,478.8 ^e	386,885	4,903	1,849,746,278.1 ^e	2,275,805

^aMaterials are sometimes transferred between AEC sites without dollars or at costs other than normal.

^bA = Argonne National Laboratory; B = Brookhaven National Laboratory; D = Douglas-United Nuclear, Inc.; I = Idaho Nuclear Corp.; M = Mound Laboratory; S = Savannah River Plant.

^cRadioisotopes produced by cyclotron service irradiations: ⁷⁴As, ^{205,206,207}Bi, ¹⁰⁹Cd, ¹³⁴Ce, ^{56,57,61}Co, ¹⁴⁹Eu, ¹⁸F, ⁶⁷Ga, ⁶⁸Ce, ^{194,195}Au, ¹⁷³Hf, ¹¹¹In, ¹⁸⁴Ir, ^{185,188}Ir, ²⁶Mg, ⁵²Mn, ¹⁴⁰Nd, ⁴⁵K, ¹⁴³Pm, ^{181,183,184,189}Re, ⁹⁹Rh, ^{83,84}Rb, ^{95m}Tc, ^{154,156}Tb, ⁴⁹V, ^{87,88}Y.

Radioisotopes produced by reactor service irradiations: ^{28,28}Al, ^{235,236,237,238,239,242,243,244,246,247}Am, ¹²⁴Sb, ⁷⁶As, ^{242,243}Bk, ^{80,80m}Br, ^{41,45}Ca, ¹⁴¹Ce, ^{60,60m}Co, ⁶⁴Cu, ^{240,241}Cm, ^{248,250,251,252,253}Es, ¹⁶⁹Er, ^{155,156}Eu, ^{150,153}Gd, ^{71,73,75}Ge, ¹⁹⁸Au, ^{178,179,181}Hf, ¹²⁸I, ^{192m,194}Ir, ^{171,172,177}Lu, ⁵⁶Mn, ^{197,203}Hg, ¹⁴⁷Nd, ²³⁹Np, ^{94m}Nb, ⁵⁷Ni, ¹⁹¹Os, ¹⁰⁹Pd, ^{241,242}Pu, ²³³Pa, ^{186,187}Re, ^{103,105}Ru, ¹⁵³Sm, ⁴⁶Sc, ⁷⁵Se, ³¹Si, ^{105,108,110}Ag, ²⁴Na, ⁸⁹Sr, ¹⁸²Ta, ^{160,161}Tb, ¹⁷⁰Tm, ¹¹³Sn, ²³⁷U, ¹²⁸Xe, ^{169,177}Yb, ⁶⁹Zn.

^eDoes not include amounts reported as grams, milligrams, micrograms, and microcuries.