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U.S. ATOMIC ENERGY COMMISSION

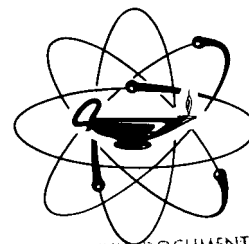
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ORNL-IIC-17
UC-23 — Isotopes-Industrial Technology

LIST OF AEC RADIOISOTOPE CUSTOMERS WITH SUMMARY OF RADIOISOTOPE SHIPMENTS FY 1968

ISOTOPES INFORMATION CENTER



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Contract No. W-7405-eng-26

LIST OF AEC RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY 1968

Compiled by Ruth Curl
Isotopes Information Center

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DECEMBER 1968

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

This document is
PUBLICLY RELEASABLE

Larry E. Williams

Authorizing Official

Date: *06/13/2007*

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Previous reports in this series:

TID-21620	(FY 1964)
ORNL-IIC-6	(FY 1965)
ORNL-IIC-9	(FY 1966)
ORNL-IIC-13	(FY 1967)

CONTENTS

Introduction	1
I. Alphabetical List of Customers, with Contacts and Isotopes Purchased	2
A. Domestic	2
B. Foreign	19
11. Alphabetical List of Isotopes, Cross-Referenced to Customer Numbers	24
A. Domestic	24
B. Foreign	26
111. Alphabetical List of States and Countries, Cross-Referenced to Customer Numbers	28
A. Domestic	28
B. Foreign	29
IV. Radioisotope Sales FY 1968	30

LIST OF AEC RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY 1968

INTRODUCTION

This fifth 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 1968 by Commission facilities at Argonne National Laboratory, Brookhaven National Laboratory, Douglas-United Nuclear, Inc., Idaho Nuclear Corporation, Mound Laboratory, and Oak Ridge National Laboratory. Shipments from Savannah River Plant are included in ORNL sales.

The information is divided into four sections. The first is an alphabetical list of customers that includes, as far as was practical, contacts (or purchasers), and isotopes purchased during the fiscal year. It is further 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 are followed by (B); those by Douglas-United Nuclear, Inc., by (D); those by Idaho Nuclear Corporation, by (I); and those by Mound, by (M). 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 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.

A similar report covering stable isotope distribution has also been prepared (ORNL-TM-2401), Stable Isotope Customer List and Summary of Shipments, FY 1968.

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

A. Domestic

- 1 Abbott Laboratories
1400 Sheridan Road
North Chicago, Illinois 60064
L. H. Keepper, Purchasing Department
 ^{47}Ca , ^{14}C , ^{137}Cs , ^{86}Rb , ^{99}Tc
- 2 Aerospace Corporation
Post Office Bx 35085
Los Angeles, California 90045
E. F. Martina
 ^{144}Ce , ^{63}Ni
- 3 Air Reduction Company
Murray Hill, New Jersey 07571
W. A. Keats
 ^{133}Xe
- 4 Air Reduction Company
Airco Industrial Gases Division
Union Landing and River Roads
Riverton, New Jersey 08077
K. E. Kinsey
 ^{85}Kr
- 5 Alabama, University of
Medical Center
1919 Seventh Avenue, South
Birmingham, Alabama 35486
J. P. Wingo, Purchasing Agent
 ^{89}Sr , ^{133}Xe
- 6 Alabama, University of
P. O. Box 6147
University, Alabama 35486
 ^{89}Sr
- 7 Allen-Bradley Company
136 W. Greenfield Avenue
Milwaukee, Wisconsin 53204
A. D. Domino, Purchasing Agent
 ^{85}Kr
- 8 American Atomic Corporation
425 South Plumer
Tucson, Arizona 85719
D. L. Ledbetter, Purchasing Agent
 ^{85}Kr
- 9 American Cyanamid Company
Lederle Laboratories Division
Pearl River, New York 10965
W. Hoffer, Senior Buyer
3H
- 10 American Cyanamid Company
1937 W. Main Street
Stamford, Connecticut 06504
3H
- 11 American Nuclear Corporation
Post Office Box 426
Oak Ridge, Tennessee 37830
K. W. Graybeal
 ^{137}Cs , FPSS
- 12 The American Novawood Corporation
Lynchburg, Virginia 24505
E. H. Cann, Jr., Accountability Representative
 ^{60}Co
- 13 Ames Laboratory
Box 1129, I. S. U. Station
Ames, Iowa
A. F. Voigt, Director
RSI(I)
- 14 Ardel Corporation
619 Justin Avenue
Glendale, California 51201
E. G. Harrington, Purchasing Department
 ^{85}Kr
- 15 Argonne National Laboratory
3700 South Cass Avenue
Argonne, Illinois 60439
B. D. Devine
Louis Bova, Reactor Eng. Div.
 ^{241}Am , ^{37}Ar , ^{133}Ba , ^{140}Ba , ^{144}Ce , ^{59}Fe ,
 ^{181}Hf , ^{3}H , ^{129}I , ^{85}Kr , $^{203}\text{Mg}(B)$,
 ^{147}Nd , ^{63}Ni , ^{237}Np , ^{143}Pr , RSI,
RSI(I), ^{106}Ru , SI(A), SS, ^{99}Tc ,
 ^{133}Xe , ^{91}Y , ^{95}Zr
- 16 Argonne National Laboratory
National Reactor Testing Station
Idaho Falls, Idaho
D. C. Cutforth
RSI(I)
- 17 Arkansas, University of
Fayetteville, Arkansas 72701
R. W. Bair, Purchasing Agent
Dr. Erown, Agronomy Dept.
 ^{140}Ba , ^{14}C , $^{203}\text{Mg}(B)$, ^{147}Nd , ^{86}Rb ,
 ^{103}Ru , ^{106}Ru , ^{95}Zr
- 18 Atlantic Richfield Hanford Company
Richland, Washington 55352
M. J. Szulinski
 ^{241}Am , RSI(D)
- 19 Atlantic Research Corporation
A Division of the Susquehanna Corporation
Shirley Highway and Edsall Road
Alexandria, Virginia 22314
 ^{90}Sr
- 20 Atomic Corporation of America
7901 San Fernando Road
Sun Valley, California 31352
J. P. Rips, Purchasing
 ^{36}Cl
- 21 Atomic International Division
North American Rockwell Corporation
Post Office Box 309
Canoga Park, California 51304
 ^{140}Ba , FPSS, ^{181}Hf , ^{3}H , ^{114}In , ^{192}Ir ,
 ^{95}Nb , ^{147}Pm , ^{143}Pr , ^{103}Ru , ^{106}Ru ,
 ^{122}Sb , ^{89}Sr , ^{204}Tl , ^{185}W , ^{90}Y ,
 ^{95}Zr

- 22 Babcock Electronics Corporation
P. O. Box 1499
Costa Mesa, California 52628
85Kr
- 23 Babcock and Wilcox Company
Research and Development Division
1562 Beeson Street
Alliance, Ohio 44601
99Mo, 106Ru
- 24 Bartol Research Corporation
Suarthmore, Pennsylvania 19081
F. A. Ernst, Purchasing Agent
RSI, 182Ta
- 25 Baylor University
College of Medicine
1200 M. D. Anderson Boulevard
Houston, Texas 77025
P. E. Rertehl
CSI
- 26 Bell Telephone Laboratory
Murray Hill, New Jersey 07971
J. D. Struthers
K. Wolfstirn
SS, 238U
- 27 Bendix Aviation Corporation
Scintilla Division
Sidney, New York 13838
C. L. Kessler, Purchasing
137Cs
- 28 Birdwell Surveys
Division Of SSC
Post Office 8cx 1590
Tulsa, Oklahoma 74101
G. F. Moore, Purchasing
140Ba
- 29 Boston City Hospital
818 Harrison Ave.
Boston, Massachusetts 02118
Dr. J. V. Messer
85Kr
- 30 Boston University
700 Commonwealth Avenue
Boston, Massachusetts 02215
W. Peters
B. Chasan
SI(A)
- 31 Brookhaven National Laboratory
Upton, Long Island, New York 11572
R. F. Keller, Buyer
**47Ca, 252Cf, 60Co, 181Hf, 3H, 114In,
192Ir, 132I, 85Kr, 99Mo, 231Pa,
103Ru, SS, 99Tc, 91Y**
- 32 Brooklyn College
Chemistry Department
Bedford Avenue and Avenue H
Brooklyn, New York 11210
Prof. H. L. Finston
RSI(B)
- 33 Broward General Hospital
1600 S. Andrews Avenue
Ft. Lauderdale, Florida 33316
133Xe
- 34 Brown University
Providence, Rhode Island 02912
R. L. Crowley
35S, Tgs
- 35 Bulova Watch Company
Bulova Park
Flushing, New York 11370
237Np
- 36 Calbichem
3625 Medford Street
Los Angeles, California 90063
14C, 3H
- 37 California Institute of Technology
1201 E. California Boulevard
Pasadena, California 91105
K. A. Jacobson
Larry Varnell, Physics 34
Dr. D. S. Burnett
RSI(E), RSI(I), 106Ru, 99Tc
- 38 California, University of
400 Sproul Hall
Berkeley, California 34704
F. S. Harter, Purchasing Agent
137Cs, 131I, 106Ru, 90Sr
- 39 California, University of
Davis, California 95616
R. E. Schwartz
Dr. Hjerpe
28Mg(B), 86Rb, 89Sr, 90Sr
- 40 California, University of
Post Office Box 103
La Jolla, California 92038
B. F. Millijour
14C, 85Kr
- 41 California, University of
405 Hilgard Avenue
Los Angeles, California 90024
K. A. Weydert
3H, 237Np, SS
- 42 California, University of
Post Office Box 112
Riverside, California 92502
47Ca, 91Y

- 43 California, University of
San Francisco Medical Center
San Francisco, California 94122
Edith Shoaf
 ^3H , ^{147}Pm , ^{86}Rb , ^{96}Sc , SS, ^{133}Xe
- 44 California, University of
Lawrence Radiation Laboratory
Berkeley, California 94701
R. P. Connell
Mrs. R. J. Barrett
 ^{140}Ba , ^{137}Cs , FPSS, ^3H , ^{114}In ,
RSI(I), ^{106}Ru
- 45 California, University of
Lawrence Radiation Laboratory
Accounting Office
Box 808
Livermore, California 94550
R. P. Connell, Business manager
 ^{241}Am , ^{37}Ar , ^{60}Co , CSI, FPSS,
 ^{129}I , ^{131}I , ^{85}Kr , ^{237}Np , ^{147}Pm ,
 ^{106}Ru , SS, ^{107}W
- 46 California, University of
Los Alamos Scientific Laboratory
Post Office Box 1663
Los Alamos, New Mexico 87544
P. M. Peterson
 ^{140}Ba , ^{144}Ce , CSI, ^{137}Cs , ^3H , ^{192}Ir ,
 ^{131}I , ^{85}Kr , ^{95}Nb , ^{147}Nd , ^{106}Ru , Tgs.
 ^{185}W , ^{91}Y , ^{95}Zr
- 47 Cambridge Nuclear Corporation
131 Fortland Street
Cambridge, Massachusetts 02119
D. F. McEhlinney, Business Manager
 ^{140}Ba , ^{47}Ca , ^{36}Cl , ^{137}Cs , ^3H , ^{192}Ir ,
 ^{95}Nb , ^{147}Pm , ^{86}Rb , ^{103}Ru , ^{89}Sr ,
 ^{95}Zr
- 48 Conrad Precision Industries
630 Fifth Avenue
New York, New York 10020
 ^3H
- 49 Carnegie-Mellon University
5000 Forbes
Pittsburgh, Pennsylvania 15213
R. Edwards
J. Serio
J. Tanner
 $^{152+154}\text{Eu}$, SI(A)
- 50 Carnegie Institution of Washington
115 W. University Parkway
Baltimore, Maryland 21210
 ^{14}C
- 51 Case Western Reserve University
2220 Circle Drive
Cleveland, Ohio 44106
B. Robinson
C. Slabinski
G. J. Kitler
 ^{86}Rb , SI(A), ^{35}S
- 52 Baird Atomics, Inc.
33 University Road
Cambridge, Massachusetts 02138
 ^{133}Ba
- 53 Fred Charlton
2 West 46th Street
Room 804-A
New York, New York 10036
RSI(B)
- 54 Chevron Research Company
576 Standard Avenue
Richmond, California 94804
R. M. Hoyt
 ^{60}Co , ^3H , ^{85}Kr
- 55 Chicago, University of
1160 East 55th Street
Chicago, Illinois 60615
E. H. Wilkens
FP, ^{131}I , RSI
- 56 Chicago, University of
5801 South Ellis Avenue
Chicago, Illinois
R. Ganapatny
M. Griem
R. Keays
S. Schulman
SI(A)
- 57 Chicago-Wesley Memorial Hospital
250 East Superior Street
Chicago, Illinois 60611
J. D. Dempsey, Purchasing Agent
 ^{47}Ca , CSI
- 58 Childrens Hospital of Pittsburgh
125 De Soto Street
Pittsburgh, Pennsylvania 15213
Dr. Philip Fireman
RSI(E)
- 59 Christian Brothers College
East Parkway at Central
Memphis, Tennessee 38104
Brother Edward Dood y
 ^{60}Co
- 60 Cincinnati, University of
Cincinnati, Ohio 45221
P. J. Carson, Jr.
 ^{36}Cl
- 61 Claircl Research Laboratories
Tindall Avenue
Norwalk, Connecticut 06851
 ^3H
- 62 Clarkson College of Technology
Potsdam, New York 1367.3
John L. Brien, Purchasing Agent
 ^{181}Hf

- 63 Cleveland Metropolitan General Hospital
3395 Scranton Road
Cleveland, Ohio 44109
Dr. E. M. Dobyns
131I
- 64 Cleveland, University Hospital
University Circle
Cleveland, Ohio 44106
Dr. Pearson
137Cs
- 65 Colorado School of Mines
Research Foundation, Inc.
Post Office Box 112
Golden, Colorado 80402
F. L. Smith
H. Ponder
SI(A)
- 66 Colorado State University
Purchasing Department
Fort Collins, Colorado 80521
E. B. McCall, Purchasing Agent
85Kr
- 67 Colorado, University of
Boulder, Colorado 80304
Mrs. Dori Boneertz, Buyer
123I, 204Tl
- 68 Colorado, University of
4200 E. Ninth Avenue
Denver, Colorado 80220
123I, 130I
- 69 Columbia University
Government Contract Division
Box 6, Low Library
New York, New York 10027
R. N. Jenkins, Purchasing
37Ar, 140Ba, 237Np, 86Rb, 186Re,
106Ru, 89Sr, SS, Tgs, 95Zr
- 70 Columbia University
Pupin Building
538 W. 120th Street
New York, New York 10027
P. M. Lorio
Dr. Wu
RSI(B)
- 71 Combustion Engineering, Inc.
Naval Reactors Division
Box 400
Windsor, Connecticut 06095
85Kr
- 72 Combustion Engineering Superheater, Inc.
Nuclear Division
Post Office Box 500
Windsor, Connecticut 06095
Dominic J. Zarcou, Purchasing Agent
133Xe
- 73 Connecticut Agriculture Experiment Station
Post Office Box 1106
New Haven, Connecticut 06504
Gilbert H. Aklgren, Business Manager
137Cs
- 74 Connecticut, University of
Storrs, Connecticut 06268
Dr. H. V. Koontz, Biological Sciences Group
20Mg(B)
- 75 Conrac Corporation
Instrument / Controls Division
1600 S. Mountain Avenue
Duarte, California 91010
SS
- 76 Continental Oil Company
Ponca City, Oklahoma 74602
J. H. Murphy, Buyer
14C, 152+154Eu
- 77 Cornell University
Medical College
1300 Park Avenue
New York, New York 10021
Dr. H. Hempling
Dr. Helena Gilder
85Kr
- 78 Cornell University
Purchasing Department
Room 160, Day Hall
Ithaca, New York 14850
Reynolds Metz
89Sr, 90Sr, 91Y
- 79 Dayton, University of
Dayton, Ohio 45409
D. R. Geiger
133Ba
- 80 Detroit General Hospital
1326 St. Antoine
Detroit, Michigan 48226
86Rb
- 81 Dhom Products Ltd.
11120 Cumpston Street
North Hollywood, California 91601
Eileen Hess
14C, 3H
- 82 Donald W. Douglas Laboratories
2955 George Washington Way
Richland, Washington 99352
H. B. Thiss
244Cm, FPSS, 147Pm
- 83 Douglas United Nuclear, Inc.
Richland, Washington
H. F. Tew
RSI(D)

- 84 Dow Chemical Company
Rocky Flats Division
Post Office Box 888
Golden, Colorado 80401
152+154Eu
- 85 Downstate Medical Center
Brooklyn, New York
Dr. Stanley Wallach
20Mg(B)
- 86 Duke University
Durham, North Carolina 27706
J. E. Daxey
14C, 131I, 86Rb, 133Xe
- 87 E. I. du Pont de Nemours and Company
Savannah River Plant
Aiken, South Carolina 25802
L. R. Bailey, Purchasing Department
241Am, 140Ba, 144Ce, FPSS, 147Nd,
210Po(M), 103Ru, 106Ru, SS, 95Zr
- 88 Eberline Instrument Corporation
Post Office Box 279
Santa Fe, New Mexico 87501
G. Salazar
144Ce, 192Ir, 238U
- 89 Electrochemical Laboratories Corporation
530 South Lewis
Tulsa, Oklahoma 74104
Robert E. Fearon, President
3H, 85Kr
- 90 Emergy Tumor Group
615 So. Westlake
Los Angeles, California 90057
T. W. Lynch
131I
- 91 Emory University
Atlanta, Georgia 30322
C. W. Hayes, Director of Purchases
47Ca
- 92 Eon Corporation
175 Pearl Street
Brooklyn, New York 11201
M. Youdin
137Cs
- 93 Fairchild Semiconductor
Post Office Box 750
Mountain View, California 94040
L. R. Swasey, Jr., Purchasing
85Kr
- 94 First Atomic Ship Transport, Inc.
39 Broadway
New York, New York 10006
J. E. Bone, Executive Vice-President
131I, SS
- 95 Florida State University
Tallahassee, Florida 32306
W. R. Beyer
237Np
- 96 Florida, University of
Gainesville, Florida 32601
B. G. Dunavant
114In, 86Rb, RSI, 89Sr
- 97 Ford Motor Company
21500 Lakewood Boulevard
Dearborn, Michigan 48124
L. I. Webb, Senior Buyer
106Ru
- 98 Fundamental Methods Associates, Inc.
31 Union Square West
New York, New York 10003
M. S. Cohen
RSI
- 99 Gamma Process Company, Inc.
160 Eroadway
New York, New York 10038
J. Arnel, President
60Co
- 100 Gammie Nuclear Services
Franklin Park, Illinois
D. Gammie
SI(A)
- 101 Mathew Garte
667 Madison Avenue
New York, New York 10021
RSI(B)
- 102 Geigy Chemical Corporation
Saw Mill River Road
Ardsley, New York 10502
36Cl
- 103 Gem Irradiation Laboratories, Inc.
580 Fifth Avenue
New York, New York 10036
N. Leuko
RSI(B)
- 104 Gulf General Atomic Corporation
Post Office Box 608
San Diego, California 92112
140Ba, 252Cf, 137Cs, 99Mo
- 105 General Electric Company
1495 Fillmore Avenue
Buffalo, New York 14211
F. J. Feller
85Kr

- 106 General Electric Company
Nuclear Materials and Propulsion Operation
Post Office Box 15132
Cincinnati, Ohio 45215
F. E. Knapp, Purchasing Agent
85Kr
- 107 General Electric Company
21800 Tungsten Road
Cleveland, Ohio 44117
M. Coates
3H, 85Kr
- 108 General Electric Company
Post Office Box 254
San Jose, California 55103
J. G. Jorgenson
241Am, 14C, FPSS, 129I, 147Pm, 99Tc, 238U, 133Xe, 91Y
- 109 General Electric Co.
Pinellas Peninsula Plant
Post Office Box 11508
St. Petersburg, Florida 33733
A. D. Seabury, Buyer
85Kr
- 110 General Electric Company
The Knolls, Post Office Box 1088
Schenectady, New York 12301
R. C. Dawes, Manager
152+154Eu, 3H, RSI(B)
- 111 General Electric Company
General Electric Drive
Waynesboro, Virginia 22980
B. S. Thayer
85Kr
- 112 General Motors Corporation
Frigidaire Division
Dayton, Ohio 45501
J. T. Heavin, Purchasing Agent
85Kr
- 113 General Nuclear, Inc.
6740 Telean
Houston, Texas 77034
W. Peeples, Jr.
241Am, 137Cs, FPSS, 63Ni, 147Pm, SS
- 114 General Nucleonics Corporation
115 S. Spring Street
Claremont, California 91712
85Kr
- 115 General Radioisotope Processing Company
A Division of General Nuclear, Inc.
3120 Crow Canyon Road
San Ramon, California 94583
241Am, 140Ba, 144Ce, 137Cs, 152+154Eu, 181Hf, 192Ir, 129I, 132I, 95Nb, 147Nd, 86Rb, 106Ru, 46Sc, 89Sr, 90Sr, 182Ta, 204Tl, 185W, 187W, 91Y, 95Zr
- 116 Georgia Institute of Technology
225 North Avenue, N.W.
Atlanta, Georgia 30332
R. L. Zimmerman, Radiation Safety Officer
192Ir, 103Ru
- 117 Georgia, University of
Athens, Georgia 30601
F. E. Johnston, Jr.
14C, 131I, 35S, 238U
- 118 W. R. Grace and Company
Washington Research Center
Clarksville, Maryland 21029
J. G. Merson
181Hf, 95Zr
- 119 Grumman Aircraft Engineering Corporation
Bethpage, Long Island, New York 11714
M. D'Agostino
RSI(E)
- 120 Harper Hospital
3825 Brush Street
Detroit, Michigan 48201
V. M. Farneti, Purchasing Agent
CSI
- 121 Harvard Medical School
Boston, Massachusetts
Dr. G. P. Kennedy, Dept. of Biological Chemistry
20Mg(B)
- 122 Harvard University
75 Mount Auburn Street
Cambridge, Massachusetts 02138
P. S. Mullen
85Kr, 186Re
- 123 Henry Ford Hospital
2799 West Grand Boulevard
Detroit, Michigan 48202
L. Preuss
89Sr
- 124 Hittman Associates, Inc.
9109 Red Branch Road
Columbia, Maryland 21043
FPSS, **147Pm**
- 125 Honeywell, Inc.
2701 Fourth Avenue, So.
Minneapolis, Minnesota 55408
D. C. Prem
63Ni
- 126 Hughes Aircraft Company
Post Office Box 11337
Tucson, Arizona 85706
A. L. Dubach, Purchasing
85Kr

- 127 Idaho Nuclear Corporation
550 Second Street
P. O. Box 1845
Idaho Falls, Idaho 83401
R. L. Heath
J. W. Henscheid
C. H. Hogg
J. J. Scoville

 **^{140}Ba , ^{144}Ce , ^{131}I , ^{147}Nd , RSI(I),
 ^{106}Ru , SI(A), ^{90}Sr , ^{133}Xe , ^{95}Zr**
- 128 Idaho State College
Pocatello, Idaho 83201
Dr. J. L. Thorppson

CSI
- 129 Idaho, University of
Moscow, Idaho 83843
L. C. Warner, Purchasing Agent

 ^{46}Sc
- 130 Illinois, University of
Champaign, Illinois
B. Chrisnan
M. Atac

SI(A)
- 131 Illinois, University of
203 Administration Building E
Urbana, Illinois 61803
D. L. Hartman, Buyer

 ^{47}Ca , ^{181}Hf , ^{63}Ni , ^{86}Rb
- 132 Indiana University
Bloomington, Indiana 47401
R. H. Cooper, Purchasing Department

 ^{140}Ba , ^{192}Ir , ^{90}Y
- 133 Indiana University Medical Center
1100 West Michigan Street
Indianapolis, Indiana 46207
J. R. Neel, Purchasing Agent

RSI(B)
- 134 Industrial Nucleonics Corporation
650 Ackerman Acad
Columbus, Ohio 42202
J. D. Spillers

 ^{137}Cs , FPSS, ^{85}Kr
- 135 Institute for Muscle Disease, Inc.
515 East 71st Street
New York, New York 10021
Irene Morgan, Purchasing Department

35s
- 136 International Business Machines Corp.
Post Office Box 218
Yorktown Heights, New York 10598
J. A. Brigggs, Buyer

SS
- 137 International Business Machines Corp.
1701 North Street
Endicott, New York 13760

204Tl
- 138 International Chemical and Nuclear Corporation
13332 East Amar Street
City of Industry, California 91744
Miss Ann Schoonderbeck

 ^{14}C , 3H
- 135 International Resistance Co.
401 North Broad Street
Philadelphia, Pennsylvania 19108
R. N. Kampf, Buyer

3H
- 140 Iowa State College
Ames, Iowa 50010
A. F. Voigt, Radiation Safety Officer

 ^{14}C , ^{143}Pr , ^{91}Y
- 141 Iowa, State University of
Iowa City, Iowa 52240
A. G. Burks, Purchasing Agent

 ^{252}Cf , ^{123}I
- 142 Iowa, University of
Ames, Iowa
C. Duke
E. Riley

SI(A)
- 143 Isotopes Incorporated
123 Woodland Avenue
Westwood, New Jersey 07675
P. W. Krey

CSI, **^{137}Cs , $^{133}\text{I(B)}$, ^{238}U**
- 144 Isotopes Inc.
Palo Alto Laboratories
4062 Fabian Way
Palo Alto, California 54303

 ^{37}Ar , ^{133}Xe
- 145 Isotope Products Laboratories
920 North Citrus Avenue
Los Angeles, California 90038
Karl Amlauer

 ^{85}Kr , ^{147}Pm
- 146 Jefferson Medical College
1025 Walnut Street
Philadelphia, Pennsylvania 19107
Frank M. Rosenbury, Jr.

 ^{86}Rb
- 147 Johns Hopkins University
Purchasing Department
Baltimore, Maryland 21218
C. W. Mareck, Buyer

 **^{111}Ag , ^{133}Ba , ^{47}Ca , ^{36}Cl , ^{60}Co , ^{114}In ,
 ^{123}I , ^{237}Np , ^{191}Os , ^{86}Rb , ^{133}Xe**

- 148 Johnson Foundation
University of Pennsylvania
Philadelphia, Pennsylvania
Dr. Berton C. Pressman
 $^{28}\text{Mg(B)}$
- 149 Kansas State College
Manhattan, Kansas 66504
John P. Lambert, Radiation Safety Officer
 ^{111}Ag
- 150 Kansas, University of
Business Office
Lawrence, Kansas 66044
Gene Puckett
 ^{14}C , SS, Tgs
- 151 Kentucky, University of
Lexington, Kentucky 40506
Y. D. Devore
W. Ehmann
Y. Smith
SI(A), ^{133}Xe
- 152 Knolls Atomic Power Laboratory
Post Office Box 1072
Schenectady, New York 12301
H. C. Metzger
M. Indig
H. F. Larkin
 ^{133}Ba , RSI(B), RSI(I)
- 153 Lockheed Aircraft Corporation
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Missiles and Space
Sunnyvale, California 94088
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 ^{144}Ce , ^3H , ^{131}I , SS
- 154 Lockheed-Georgia Company
Nuclear Laboratory
Dawsonville, Georgia 30534
P. C. Hale, Purchasing
 ^{137}Cs , ^{85}Kr
- 155 Loras College
Dubuque, Iowa 52001
 ^{72}Ga
- 156 Louisiana State University
Nuclear Science Center
Baton Rouge, Louisiana 70805
H. D. Richardson
Mr. Zganjar
 ^{192}Ir , ^{191}Os , SI(A)
- 157 Louisville, University of
Belknap Campus
Louisville, Kentucky 40208
U. M. Gruber
 ^{36}Cl
- 158 Lovelace Clinic
4800 Gibson Boulevard, S. E.
Albuquerque, New Mexico 87108
C. R. Tiber
 **^{140}Ba , ^{144}Ce , ^{137}Cs , ^{155}Eu , FPSS,
 ^{95}Nb , ^{90}Sr , ^{91}Y , ^{95}Zr**
- 159 Loyola University
6526 N. Sheridan Road
Chicago, Illinois 60626
Dr. H. Spencer
 ^{47}Ca
- 160 Maimonides Hospital
Brooklyn, New York 11215
Dr. Kramer
 ^{131}I
- 161 Mallinckrodt Chemical Works
3600 N. Second Street
St. Louis, Missouri 65160
 $^{152+154}\text{Eu}$
- 162 Mallinckrodt Nuclear
2703 Uagner Place
Maryland Heights, Missouri 63042
L. W. Powitzky, Purchasing Agent
 ^{137}Cs , $^{152+154}\text{Eu}$, RSI
- 163 Mallinckrodt Nuclear
100 N. Crystal Lake Drive
P. O. Box 6458
Orlando, Florida 32803
 ^{36}Cl , ^{90}Sr
- 164 Martin-Marietta Corporation
Baltimore, Maryland 21203
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FPSS, ^{90}Sr
- 165 Maryland, University of
College Park, Maryland 20742
R. Arsenault
SI(A)
- 166 Massachusetts General Hospital
Isotope Laboratory
Boston, Massachusetts 02114
J. F. Balcius
 ^{111}Ag
- 167 Massachusetts Institute of Technology
Box 69
Cambridge, Massachusetts 02138
 ^{140}Ba , ^{95}Zr
- 168 Massachusetts, University of
Amherst, Massachusetts 01002
Y. R. Harvey
 ^{46}Sc

- 169 Mayo Foundation
Hochester, Minnesota 55901
E. G. Southwick, Purchasing Agent
 ^{47}Ca , ^{64}Cu , SS, ^{133}Xe
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Chicago, Illinois 60616
W. McCrone
SI(A)
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Richmond, Virginia 23219
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- 172 Melpar, Incorporated
7700 Arlington Boulevard
Falls Church, Virginia 22042
J. J. Rooney, Purchasing Agent
 ^{86}Rb
- 173 Menorah Pedical Center
4949 flockhill Road
Kansas City, Misscuri 64110
 ^{86}Rb
- 174 Merck and Company
Rahway, New Jersey 07065
A. R. Braunmuller
 ^{60}Co
- 175 Metropolitan Dade County
Court House on Flager Street
Miami, Florida 33131
 ^{133}Xe
- 176 Metropolitan Sanitary District of Greater Chicago
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Houghton, Michigan 49931
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D. Daavettila
SI(A)
- 179 Michigan State College
East Lansing, Michigan 48823
W. B. Richards
 ^{14}C , ^3H
- 180 Michigan, University of
Ann Arbor, Michigan 48104
W. L. Bulbick, Director of Purchasing
 ^{192}Ir , ^{90}Sr , ^{133}Xe
- 181 Minnesota Mining and Manufacturing Company
Post Office Box 3121
St. Paul, Minnesota 55101
R. J. Kunz
Willis J. Olson, Purchasing Agent
 ^{241}Am , ^{133}Ba , ^{144}Ce , ^{137}Cs , FPSS,
 ^{114}In , ^{95}Nb , ^{147}Pm , $^{210}\text{Po(M)}$, ^{86}Rb ,
 ^{106}Ru , ^{90}Sr , SS, ^{204}Tl
- 192 Minnesota, University of
402 Merrill Hall
Minneapolis, Minnesota 55455
H. M. Lampert, Buyer
J. Lowman
L. Singer
 ^{36}Cl , ^{131}I , ^{95}Nb , ^{86}Rb , SI(A),
 ^{89}Sr , ^{133}Xe , ^{91}Y
- 183 Mississippi, University of
Jackson, Mississippi 39205
W. E. Pitts, Purchasing Agent
 ^{86}Rb
- 184 Missouri, University of
General Service building
Rolla, Missouri 65401
Neal Kietzer, Purchasing Agent
 ^{192}Ir
- 185 Mobil Oil Corporation
P. O. Box 900
Dallas, Texas 75221
 ^{86}Rb
- 186 Monsanto Company
Post Cffice Box 1311
Texas City, Texas 77591
 ^{86}Rb , ^{133}Xe
- 187 Monsanto Company
800 N. Lindbergh Blvd.
St. Louis, Missouri 63166
Felix H. Wright, Jr.
RSI(B)
- 188 Monsanto Research Corporation
Dayton Laboratory
1515 Nicholas Road
Dayton, Ohio 45407
H. B. iionious
Harold A. Malson
 ^{241}Am , ^{36}Cl , ^{14}C , ^3H , ^{237}Np , $^{210}\text{Po(M)}$,
 ^{106}Ru
- 189 Montefiore Hospital
E. 210th Street and bainbridge Avenue
Bronx, New York 10467
Dr. H. Hart
 ^{85}Kr

- 190 Pound Laboratory
Monsanto Research Corporation
Miamisburg, Ohio 45342
David L. Scott, Plant Manager
 ^{241}Am
- 191 Murray State University
67 University Station
Murray, Kentucky 42071
 $^{152+154}\text{Eu}$, ^{106}Ru
- 192 National Bureau of Standards
Connecticut Avenue and Van Ness Street, N.W.
Washington, D. C. 20234
C. B. Kipps, Chief Procurement Section
Dr. Vernon Myers
 **^{181}Hf , ^3H , ^{194}Ir , ^{85}Kr , ^{95}Nb , ^63Ni ,
 ^{191}Os , RSI, RSI(B), ^{103}Ru , ^46Sc ,
Tgs, ^{95}Zr**
- 193 National Center for Atmospheric Research
1420-30th Street
Boulder, Colorado 80302
 ^{140}Ba , ^{95}Nb
- 194 Nebraska, University of
511 Administration
Lincoln, Nebraska 68508
E. O. Ingram, Division of Purchases
 ^{140}Ba , ^{210}Bi , ^{252}Cf , ^{129}I , ^{131}I
- 195 Nevada, University of
Reno, Nevada 89507
R. M. Moyers
 ^{140}Ba
- 196 New England Medical Center Hospitals
171 Harrison Avenue
Boston, Massachusetts 02111
 ^{85}Kr
- 197 New England Nuclear Corporation
575 Albany Street
Boston, Massachusetts 02118
C. B. Killian
 **^{241}Am , CSI, ^{137}Cs , $^{152+154}\text{Eu}$, FPSS,
 ^3H , ^{114}In , ^{129}I , ^{85}Kr , ^63Ni , ^{147}Pm ,
 ^{33}P , ^{86}Rb , ^{90}Sr , SS, ^{99}Tc , ^{133}Xe**
- 198 New Jersey College of Medicine
24 Baldwin Avenue
Jersey City, New Jersey 07304
Stanley J. Mills, Business Manager
 ^{85}Kr
- 199 New Mexico, University of
Albuquerque, New Mexico 87102
Dr. M. L. Riedesel
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- 200 New York, State University of
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Upstate Medical Center
766 Irving Avenue
Syracuse, New York 13210
D. Thompson
 ^{36}Cl , ^{85}Kr , ^{103}Ru
- 201 New York, State University of
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450 Clarkson Avenue
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 ^{47}Ca
- 202 New York, State University of
Research Foundation
Stony Brook, New York 11750
Dr. J. M. Alexander
M. Pickering
RSI(B), ^{90}Sr
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Washington Square
New York, New York 10016
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CSI, ^{90}Y beads (B)
- 204 North Carolina State University
P. O. Box 5935
Raleigh, North Carolina 27607
John C. Williams, Purchasing Agent
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 ^{137}Cs , ^{133}I (B), ^{28}Mg (B), ^{89}Sr
- 205 North Carolina A and T State University
Greensboro, North Carolina 27411
 ^{129}I , SS
- 206 North Carolina, University of
Chapel Hill, North Carolina 27514
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 ^{137}Cs , FPSS, ^{181}Hf , RSI
- 207 North Dakota State University
State University Station
Fargo, North Dakota 58102
Ronald J. Corliss, Purchasing Agent
Dr. Jerry L. Sell, Animal Science Dept.
 ^{28}Mg (E)
- 208 North Dakota, University of
Grand Forks, North Dakota 58201
Dr. H. D. Bale
RSI
- 209 North Texas State University
P. O. Box 13767
N. T. Station
Denton, Texas 76203
 ^{144}Ce , ^{106}Ru
- 210 Notre Dame, University of
Notre Dame, Indiana 46556
J. J. Sechowski
J. Mihelich
 ^{114}In , ^{95}Nb , SI(A)
- 211 Nuclear-Chicago Corporation
333 East Howard Avenue
Des Plaines, Illinois 50018
R. 9. Young
 ^{137}Cs , ^{147}Pm , SS, ^{99}Tc

- 212 Nuclear Equipment Chemical Corporation
165 Marine Street
Farmingdale, New York 11735
⁹⁵Nb, ¹⁰⁶Ru
- 213 Nuclear Fuel Services, Inc.
Box 124
West Valley, New York 14171
Homer B. Culp, Purchasing Agent
131I
- 214 Nuclear Corporation of America
2 Richwood Place
Denville, New Jersey 07834
R. Kurkewicz, Purchasing Agent
⁹⁰Sr
- 215 Nuclear Materials and Equipment Corp.
Apolitic, Pennsylvania 15613
C. W. Flint
FPSS. **⁸⁵Kr, ⁹⁰Sr**
- 216 Nuclear Science and Engineering Corporation
A Division of International Chemical and Nuclear
post Office Bcx 10901
Pittsburgh, Pennsylvania 15236
P. A. Weston
**³⁶Cl, CSI, ¹³⁷Cs, ¹⁴⁷Pm, ¹⁵¹Sm, SS,
99Tc**
- 217 The Nucleus
Box R
Oak Ridge, Tennessee 37830
¹³³Ba, ⁹⁰Sr
- 218 oak Ridge Associated Universities
post Office Bcx 117
Oak Ridge, Tennessee 37830
H. E. Elliot, Purchasing Agent
**²⁴¹Am, ¹³³Ba, ⁷²Ga, ¹¹⁴In, ¹²³I, ⁸⁶Rb,
RSI, ⁴⁶Sc, SS, ⁹¹Y**
- 219 Ohio Agricultural Research and Development Center.
Wooster, Ohio 44691
W. R. Vaughn, Comptroller
¹⁴⁴Ce, ⁹⁰Sr
- 220 Oberlin College
Oberlin, Ohio 44074
J. L. Powell
³⁶Cl, ⁸⁹Sr
- 221 Oak Ridge Technical Enterprises Corporation
102 Midland Road
Oak Ridge, Tennessee 37830
S. C. Irwin, Purchasing Agent
¹⁸¹Hf
- 222 Ohio State University
190 North Oval Drive
Columbus, Ohio 43210
J. E. Medley, Director of Purchasing
¹⁴C, ¹²³I, ¹³¹I, ⁸⁶Rb
- 223 Ohio State University
Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212
E. D. Carter
¹⁴C, ⁸⁹Sr
- 224 Ohio University
Athens, Ohio 45701
W. H. Herbert, Purchasing Agent
W. Unruh
SI(A)
- 225 Oregon State College
Corvallis, Oregon 57330
Lila Shore, Authorizing Agent
¹⁹²Ir
- 226 Oregon University of
Eugene, Oregon 97207
W. M. McLaughlin, Business manager
¹³¹I, ⁹⁰Sr
- 227 Owens-Illinois Glass Company
1700 N. Westwood Avenue
Toledo, Ohio 43607
¹⁴⁷Pm, RSI
- 228 Pacific Northwest Laboratories
Battelle Memorial Institute
P. O. box 999
Richland, Washington 99352
L. G. Hendrickson
M. R. Weicer
R. O. Budd, Manager, Nuclear Materials Mgm.
**¹⁴⁰Ba, ¹⁴⁴Ce, CSI, ¹³⁷Cs, ¹³¹I, ¹⁴⁷Nd,
²³⁷Np, ²¹⁰Po(M), RSI(D), ¹⁰⁶Ru,
¹²²Sb, ¹⁵³Sm, ⁹⁰Sr, ²⁰⁴Tl, ¹⁸⁵W,
⁹⁵Zr**
- 229 Pan American World Airways
Post Office Box 670
Las Vegas, Nevada 89101
F. Zurenda, Purchasing Agent
**¹⁴⁰Ba, ¹³⁷Cs, ¹³¹I, ¹³²I, ¹⁴⁷Nd, ¹⁰³Ru,
¹⁸²Ta, ⁹⁵Zr**
- 230 Panametrics, Inc.
221 Crescent Street
Waltham, Massachusetts 02154
A. Cucchiara
⁸⁵Kr
- 231 Pennsylvania Hospital
8th and Spruce Street
Philadelphia, Pennsylvania 19107
Dr. G. N. Ling
⁸⁶Rb
- 232 Pennsylvania State University
University Park, Pennsylvania 16802
D. A. Baker
¹¹⁴In, ⁸⁹Sr

- 233 Peter Bent Brigham Hospital
721 Huntington Avenue
Boston, Massachusetts 02115
Dr. R. Gorlin
⁸⁵Kr
- 234 Philco-Ford Corporation MED
2920 San Ysidro Way
Santa Clara, California 95051
J. E. Welsh, Euyer
⁸⁵Kr
- 235 Picker X-Ray Corporation
17325 Euclid Avenue
Cleveland, Ohio 44112
J. Dunn
⁶⁰Co, ¹³⁷Cs, FPSS, RSI
- 236 Piper Well Surveys
Box 261
Bradford, Pennsylvania 16701
D. J. Piper
⁴⁶Sc
- 237 Pittsburgh, University of
Pittsburgh, Pennsylvania 15213
D. J. Brewer, Director of Purchases
¹³¹I
- 238 Potter and Brunfield
Princeton, Indiana 47570
E. Cox, Purchasing
⁸⁵Kr
- 239 Pratt and Whitney Aircraft
United Aircraft Corporation
Gate 17-C-Silver Lane
East Hartford, Connecticut 06108
⁶³Ni
- 240 Presbyterian Medical Center
Clay and Webster Streets
San Francisco, California 94115
Dr. J. M. Lowenstein
⁸⁶Rb
- 241 Pressure Chemical Company
3419-25 Smallman Street
Pittsburgh, Pennsylvania 15201
E. L. Clark
⁹⁹Tc
- 242 Princeton University
Princeton, New Jersey 08540
R. A. Winters
¹³³Ba
- 243 Proctor and Gamble Company
Miami Valley Laboratories
Post Office Box 35175
Groesbeck Station
Cincinnati, Ohio 45236
H. W. Lampe
³H, RSI(B), ³⁵S
- 244 Puerto Rico, University of
Puerto Rico Nuclear Center
College Station
Mayaguez, Puerto Rico 00709
J. 4. Colon
¹⁴⁰Ba, ⁶⁰Co, ¹³¹I, ¹³²I, ⁸⁵Kr, ⁸⁹Sr, ⁹⁵Zr
- 245 Puerto Rico Water Resources Authority
San Juan, Puerto Rico 00923
J. C. Muniz
¹³¹I, ⁸⁵Kr
- 246 Purdue University
Lafayette, Indiana 47907
P. L. Ziemer
B. Banzal
K. Blomberg
R. Brodzinski
D. Case
¹⁴⁰Po, ¹⁸¹Hf, ¹¹⁴In, ⁸⁶Rb, RSI, ¹⁰³Ru, SI(A), SS
- 247 Radiation Machinery Corporation
1280 Route 46
Parsippany, New Jersey 07054
Milton Parkin
¹³⁷Cs, FPSS
- 248 Radioactive Materials Corporation
Power Drive
Buffalo, New York 14214
¹⁸¹Hf
- 249 Radic corporation of America
Bcx 432
Princeton, New Jersey 08540
R. F. Bailey
⁹⁰Sr
- 250 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, California 94070
²³⁸U
- 251 Rensselaer Polytechnic Institute
110 8th Street
Troy, New York 12181
D. Howells II, Manager of Purchasing
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⁸⁵Kr, RSI(B)
- 252 Reynolds Electric Engineering Company
Post Office Box 14400
Las Vegas, Nevada 89114
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¹⁴⁰Ba, ¹⁸⁷W
- 253 Rice University
P. O. Box 2666
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H. R. Pitman, Chief Accountant
³H, RSI

- 254 Rochester General Hospital
1425 Portland Avenue
Rochester, New York
Dr. Stanley E. Troup

28Mg(B)
- 255 Rochester, University of
575 Elmwood Avenue
Rochester, New York 14660
R. H. Hayes

36Cl, 131I, 86Rb
- 256 Rockefeller University
66th Street and York Avenue
New York, New York 10021

3H, 28Mg(B)
- 257 St. Joseph's Hospital, Research Laboratory
69 West Exchange Street
St. Paul, Minnesota 55102

86Rb
- 258 Saint Louis University
221 North Grand Boulevard
St. Louis, Missouri 63103
Dr. N. E. Melechen

114In, 95Zr
- 259 Saint Luke's Episcopal Hospital
6720 Bertner
Houston, Texas 77025

CSI
- 260 Sanders Nuclear Corporation
Nashua, New Hampshire
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RSI(D)
- 261 San Diego State College
San Diego, California 92115
S. C. Hartigan, Business Manager

252Cf
- 262 Schlumberger Technology Corporation
Old Quarry Road
P. O. Box 307
Ridgefield, Connecticut

3H
- 263 Schwarz Bio-Research, Inc.
Mountain View Avenue
Orangeburg, New York 10962
R. Capodiceci

14C, 3H, SS
- 264 Scripps Clinic and Research Foundation
476 Prospect Street
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Dr. Arthur Dawson
D. Piper

SI(A), 133Xe
- 265 Select Services
800 Erocklawn
Eoulder, Colorado 80302

46Sc
- 266 Shell Oil Company
Houston Refinery
Post Office Box 100
Deer Park, Texas 77536

140Ba, 144Ce, 46Sc, 95Zr
- 267 Signalite, Inc.
1933 Heck Avenue
Neptune, New Jersey 07753

137Cs
- 268 Signetics, Incorporated
811 East Arques Avenue
Sunnyvale, California 94086

85Kr
- 269 Sloan-Kettering Institute
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P. C. Wrenn

131Ba, 47Ca, 89Sr, 95Zr
- 270 Smithsonian Institution
10th Street and Constitution Avenue N. W.
Washington, D. C. 20560
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- 271 South, University of the
Sewanee, Tennessee 37375
Dr. T. Felder Dorn

35S
- 272 South Carolina, University of
Columbia, South Carolina 29208
J. F. Taylor

133Ba, 36Cl, 152+154Eu, 181Hf, 89Sr
- 273 Southern California, University of
University Park
Los Angeles, California 90007
D. L. McNamara

89Sr
- 274 Southwestern Medical School
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131I
- 275 Stanford University
Controller's Office
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M. F. Moron

CSI, 237Np, 86Rb, 133Xe

- 276 Stauffer Chemical Company
Eastern Research Center
Dobbs Ferry, New York 10552
W. Chess
RSI(B)
- 277 Strong Memorial Hospital
575 Elmwood Avenue
Rochester, New York
Dr. Russell Hayes
28Mg(B)
- 278 Sylvania Electric Products, Inc.
Towanda, Pennsylvania 18848
147Nd, 91Y
- 279 Sylvania Electric Products, Inc.
100 Sylvan Road
Woburn, Massachusetts 01801
85Kr
- 280 Syntex Corporation
3401 Hillview Avenue
Palo Alto, California 94304
Donald B. Fegles, Purchasing Agent
3H
- 281 Technical Associates
Division of International Chemical and Nuclear
140 W. Providencia
Burbank, California 91503
85Kr
- 282 Technical Operations
South Avenue
Burlington, Massachusetts 01803
R. J. Prest
137Cs, FPSS
- 283 Tennessee, University of
Knoxville, Tennessee 37516
W. F. O'Toole, Director of Purchasing
CSI, 114In, 187W
- 284 UT-AEC
Agriculture Research Laboratory
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Nathan S. Hall, Laboratory Director
131I, 86Rb, 90Sr, 185W
- 285 Tennessee Valley Authority
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14C
- 286 Texas Instruments, Inc.
Post Office Box 5621
Dallas, Texas 75222
M. D. Noell, Purchasing Agent
37Ar, 85Kr, SS, 133Xe
- 287 Texas A and M University
Post Office Box 44
College Station, Texas 77840
Dr. C. Ellis
252Cf
- 288 Texas Technological College
Texas Agricultural Experiment Station
Lubbock, Texas 79409
J. P. House
91Y
- 289 Texas, University of
Nuclear Medicine Service
Galveston, Texas 77550
89Sr
- 290 Texas Woman's University
Box 2906, TWU Station
Denton, Texas 76204
47Ca
- 291 Tracerlab, Inc.
1601 Trapelo Road
Waltham, Massachusetts 02154
W. Karp
140Ba, 36Cl, 3H, 129I, 85Kr, 63Ni,
89Sr, 90Sr
- 292 TRW Semiconductors, Inc.
14520 South Aviation Boulevard
Lawndale, California
S. J. Nevills, Purchasing
85Kr
- 293 TRW Systems Group
One Space Park
Redondo Beach, California 90277
C. A. Pierce, Ouyer
85Kr, 106Ru, 46Sc
- 294 Union Carbide Corporation
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Lona Meadow Road
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Tuxedo, New York 10987
R. W. Harrison
144Ce, 14C, 103Ru, 90Sr, 133Xe
- 295 Union Carbide Corporation, Nuclear Division
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Post Office Box F
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99Tc
- 296 Union Carbide Corporation, Nuclear Division
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241Am, 144Ce, 36Cl, 60Co, 137Cs,
152+154Eu, FF, FPSS, 72Ga, 181Hf,
3H, 114In, 192Ir, 129I, 130I, 131I,
132I, 85Kr, 95Nb, 147Nd, 237Np,
109Pd, RSI, RSI(D), 103Ru, 106Ru,
SI(A), 151Sm, 153Sm, 90Sr, SS,
182Ta, 187W, 133Xe, 95Zr

- 297 Union Carbide Corporation, Nuclear Division
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RSI
- 298 Union Carbide Corporation, Nuclear Division
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Post Office Box Y
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 ^{60}Co , ^{3}H , RSI, ^{90}Sr , SS
- 299 United Aircraft Corp.
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 ^{85}Kr , ^{133}Xe
- 300 United States Department of Agriculture
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 ^{14}C , ^{86}Rb , ^{106}Ru , ^{90}Sr , SS, ^{99}Tc
- 301 United States Air Force
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Lida L. Moses, Contracting Officer
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- 302 United States Air Force
McClellan Air Force Base, California 95652
Charles H. Anderson, Captain
 ^{140}Ba , ^{144}Ce , ^{36}Cl , $^{133}\text{I(B)}$, ^{237}Np ,
 ^{103}Ru , ^{90}Sr , ^{185}W , ^{187}W
- 303 United States Air Force
Account and Finance Division
Robins Air Force Base, Georgia 31093
URCAF, Wiley B. Hencely, Jr.,
Guidance Unit Repairer
 ^{85}Kr
- 304 United States Air Force
ASCFC-13, Building 11, Area E
Wright Patterson Air Force Base, Ohio 45433
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 ^{243}Am , ^{60}Co , ^{147}Nd
- 305 United States Army
Building 310
Aberdeen Proving Ground, Maryland 21005
3H, ^{85}Kr
- 306 United States Army
Army Medical Center
Walter Reed Army Medical Center
Washington, D. C. 20012
J. J. Degen
 ^{133}Xe
- 307 United States Army
Fittsimons Hospital
Denver, Colorado 80240
Ora Lee Brown
 ^{133}Xe
- 308 United States Army
Fort McClellan, Alabama 36205
Mary W. Kirk
 ^{86}Rb
- 309 United States Army
Finance and Accounting Officer
Natick, Massachusetts 01760
 ^{60}Co
- 310 United States Army
Redstone Arsenal
P. and C. Division
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Redstone Arsenal, Alabama 35809
D. G. Rowland
RSI
- 311 United States Army
United States Military Academy
West Point, New York 10996
Fred A. Childs, Activity Supply Officer
 ^{144}Ce
- 312 United States Atomic Energy Commission
National Reactor Testing Station
Idaho Falls, Idaho
C. W. Sill
RSI(I)
- 313 United States Atomic Energy Commission
376 Hudson Street
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 ^{140}Ba , ^{137}Cs , FP, FPSS, ^{95}Nb ,
RSI, ^{89}Sr , SS, ^{95}Zr
- 314 United States Department of the Interior
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Washington, D. C. 20242
H. Millard
SI(A)
- 315 United States Department of Interior
Bureau of Mines
Bldg. 20, Federal Center
Denver, Colorado 80225
 ^{191}Os
- 316 United States Department of Interior
Bureau of Mines
4800 Forbes Avenue
Pittsburgh, Pennsylvania 15213
 ^{99}Tc
- 317 United States National Aeronautics and Space Adm.
Ames Research Center
Moffett Field, California
J. E. Hewitt
RSI(D)

- 318 United States National Aeronautics and Space Adm.
Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135
B. S. Torre
181Hf, 3H, 147Nd
- 319 United States National Aeronautics and Space Adm.
Goddard Space Flight Center
Glendale Road
Greenbelt, Maryland 20771
C. S. Dennis, Contracting Officer
85Kr
- 320 United States National Aeronautics and Space Adm.
Langley Research Center
Langley Station
Hampton, Virginia 23365
J. A. Gaines, Contracting Officer
CSI
- 321 United States National Aeronautics and Space Adm.
George C. Marshall Space Flight Center
Financial Mgt. Office
Huntsville, Alabama 35812
Edward M. Harper, Contracting Officer
85Kr
- 322 United States Navy
Ammunition Depot
Crane, Indiana 47522
J. W. Hudson, Contracting Officer
85Kr
- 323 United States Navy
Naval Ordnance Station
Indian Head, Maryland 20640
3H
- 324 United States Navy
Naval Postgraduate School
Monterey, California 93940
CWO 4 D. R. Siler,
Assistant Supply And Fiscal Officer
131I
- 325 United States Navy
Naval Radiological Defense Laboratory
San Francisco, California 94135
A. E. Cozby
252Cf, 132I, 109Pd, 86Rb, 103Ru,
95Zr
- 326 United States Navy
Naval Research Laboratory
Washington, D. C. 20390
D. Linehan, Contracting Officer
SI
- 327 United States Navy
Naval Submarine Base
Groton, Connecticut 06340
E. M. Haag, Contracting Officer
90Y
- 328 United States Navy
San Francisco Naval Shipyard
Comptroller's Office
Disbursing Officer
Vallejo, California 94592
181Hf, 95Zr
- 329 United States Nuclear Corporation
801 North Lake Street
Eureka, California 95503
R. Haslett
144Ce, 60Co, FPSS, 147Pm, 210Po(M),
90Sr
- 330 United States Public Health Service
Post Office Box 684
4505 Maryland Parkway
Las Vegas, Nevada 89101
R. D. Ostlund, General Services Assistant
132I, 187W
- 331 United States Public Health Service
National Institutes of Health, Isotope Laboratory
Building 21
Bethesda, Maryland 20014
J. M. Brown, Jr.
47Ca, 132I, 33P
- 332 United States Public Health Service
National Center for Radiological Health
1901 Chapman Avenue
Rockville, Maryland 20850
C. B. Kincaid
89Sr, 95Zr
- 333 United States Public Health Service
Bay Street and Vanderbilt Avenue
Staten Island, New York 10304
J. D. Sturges, Chief, Supply Section
85Kr
- 334 United States Public Health Service
Northeastern Radiological Health Laboratory
109 Helton Street
Winchester, Massachusetts 01890
Paul L. Poulin, Ordering Officer
SS
- 335 United States Radium Corporation
4150 Old Berwick Road
Post Office Box 380
Eloomsburg, Pennsylvania 17815
J. G. MacHutchen
241Am, 14C, 3H, 85Kr, 63Ni, 204Tl,
133Xe
- 336 Unit Process Assemblies, Inc.
53 - 15 37th Avenue
Woodside, New York 11377
J. J. Weinstock
147Pm
- 337 Utah, University of
Purchasing Department
Salt Lake City, Utah 84112
William Christensen, Purchasing Agent
Dr. David L. Woodward, Pharmacology Dept.
132I, 28Mg(Bj), 133Xe

- 338 Vanderbilt University
Business Managers Office
Nashville, Tennessee 31203
June Jenkins
CSI, ^{137}Cs , ^{72}Ga , ^{86}Rb
- 339 Veterans Administration Hospital
3801 Juniper Serra Blvd.
Palo Alto, California 94304
 ^{170}Tm , ^{133}Xe
- 340 Veterans Administration hospital
1200 Anastasia Avenue
Coral Gables, Florida 33134
W. G. Rather, Chief Supply Division
 ^{133}Xe
- 341 Veterans Administration hospital
Chief, Supply Division
General Storeroom, Building 142
Hines, Illinois E0141
Walter S. Kopacz
Dr. Ervin Kaplan
E. Kanabrocki
 ^{47}Ca , $^{203}\text{Mg(B)}$, SI(A)
- 342 Veterans Administration hospital
1481 West Tenth Street
Indianapolis, Indiana 46207
P. D. Dwenger
 ^{131}I , ^{86}Rb
- 343 Veterans Administration Hospital
Wilshire and Sawtelle Boulevards
Los Angeles, California 90073
George O. Hadley, Contracting Officer
 ^{131}I
- 344 Veterans Administration Hospital
4435 Beacon Avenue South
Seattle, Washington 98108
D. K. Hirahara
 ^{47}Ca , SS
- 345 Virginia Polytechnic Institute
purchasing Department
Blacksburg, Virginia 24060
H. W. Swink, Purchasing Agent
 ^3H , ^{95}Nb
- 346 Walla Walla College
Box 307
College Place, Washington 99324
 ^{114}In
- 347 Washington State University
Comptroller's Office
Pullman, Washington 99163
R. B. Smawley, Buyer
W. A. Cassatt
 ^{129}I , RSI(I),
- 348 Washington, University of
Purchasing Department
400 Administration Building
Seattle, Washington 98105
V. A. Sichter, Purchasing
R. Chaney
 ^{47}Ca , ^{252}Cf , ^{14}C , SI(A)
- 349 Washington University
Business Office
Lindell and Skinker
St. Louis, Missouri 63130
A. C. Wahl
Dr. S. D. Silver
Dr. R. M. Walker
M. Maurette
 ^{131}I , $^{203}\text{Mg(B)}$, RSI(B), SI(A)
- 350 Wayne State University
Accounting Department
Detroit, Michigan 48202
P. Grayson
 ^{86}Rb , ^{105}W
- 351 Western Electric Company
1600 Osgood Street
North Andover, Massachusetts 01645
E. J. Schmidt
 ^{85}Kr
- 352 Western Electric Company, Inc.
555 Union Boulevard
Allentown, Pennsylvania 18103
 ^{85}Kr
- 353 Western New York Nuclear Research Center
Purchasing Department
Service Center Building
Stores Drive
Buffalo, New York 14214
U. F. Pritchard, Purchasing Agent
 ^{60}Co , ^{129}I , ^{85}Kr , ^{63}Ni , SS, ^{133}Xe
- 354 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
Post Office Box 79
West Mifflin, Pennsylvania 15122
S. Dietrich
T. Ryan
J. J. Volpe
 ^{140}Ba , ^{137}Cs , $^{152+154}\text{Eu}$, ^{181}Hf , ^3H ,
 ^{147}Nd , ^{142}Pr , RSI(B), SI(A), ^{153}Sm ,
 ^{182}Tl
- 355 Westinghouse Electric Corp.
Astrenuclear Laboratory
P. O. Box 10864
Pittsburgh, Pennsylvania 15236
W. J. Schumer
 ^{252}Cf , ^{129}I , ^{103}Ru
- 356 Westinghouse Electric Corp.
Research and Development Center
Beulah Road, Churchillboro
Pittsburgh, Pennsylvania 15235
C. W. Mallick, Purchasing

357 Westinghouse Electric Corporation
Atomic Power Divisions
P. O. Box 355
Pittsburgh, Pennsylvania 15210

63Ni

358 William Beaumont Hospital
3601 W. Thirteen Mile Road
Royal Oak, Michigan

123I

359 William Wayne Electronics, Inc.
Hasting Radiochemical Works
P. O. Box 60448
Houston, Texas 77060
Othel L. Pirtle, Jr.

241Am , 137Cs , $152+154\text{Eu}$, FPSS, 85Kr ,
 86Rb , 89Sr , 133Xe , 95Zr

360 Wisconsin, university of
750 University Avenue
Madison, Wisconsin 53706
R. L. Farnsworth
R. Dodd

14C , $152+154\text{Eu}$, FF, 3H , SI(A)

361 Woods Hole Oceanographic Institute
Woods Hole, Massachusetts 02543
A. T. Henderson

140Ba

362 Yale University
20 Ashmun Street
New Haven, Connecticut 06520
R. H. Coe, Buyer

$152+154\text{Eu}$, 114In , 129I , 237Np , RSI,
RSI(B)

B. Foreign

ARGENTINA

363 Comision Nacional de Energia Atomica
Gerencia de Energia
Avda. del Libertador 8250
Buenos Aires, Argentina

47Ca

AUSTRALIA

364 Australian Consulate General
636 Fifth Avenue
New York, New York 10020
Mr. W. Bath

37Ar , 252Cf , 244Cm

AUSTRIA

365 Osterreichische Studiengesellschaft
fur Atomenergie Ges. M. E. H.
Lenaugasse 10
A-1082 Wien, Austria

137Cs , FPSS, 90Sr , SS

366 International Atomic Energy Agency
Kaerntnering 11-13
A-1010 Vienna, Austria

129I , 237Np

BELGIUM

367 Eurochemic
Mol-Donk, Belgium
R. M. Grolade, Head of Purchasing

240Pa , 99Tc , 233U

368 Albert Nils
2668 Av. de Terwueren
Bruxelles 15, Belgium

36Cl , 85Kr , 133Xe

369 EURATCM
51-53 Rue Belliard
Brussels, Belgium

242Cm , 239Pu , 242Pu , 233U , 235U , 236U ,
 238U , 240U

370 Universite de Liege
2 rue Armand Stevart
Liege, Belgium

241Am , 244Cm

BRAZIL

371 Universidade do Rio Grande do Sul
Instituto de Fisica Urgs
Porto Alegre, Brazil

182Ta

CANADA

372 Alberta, University of
Department of Physics
Edmonton, Alberta, Canada
Dr. A. H. Moawad, Department of Pharmacology

28Mg(B)

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

137Cs , FPSS, 3H , 89Sr , 90Sr

374 Atomic Energy of Canada Limited
Chalk River, Ontario, Canada
H. B. Reid
Production Planning and Controls

252Cf , 36Cl , 63Ni , 238Pu , 242Pu

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

242Pu

376 Canada Department of Agriculture
Research Branch Experimental Farm
Lacombe, Alberta, Canada

133Ba

- 377 Charles E. Frost and Company
P. O. Box 247
Montreal, Quebec, Canada
 ^{99}Mo
- 378 Hospital for Sick Children
555 University Avenue
Toronto 2, Ontario, Canada
 $^{20}\text{Mg(B)}$
- 379 Hospital Maisonneuve
5415 Blvd. l'Assomption
Montreal, Quebec, Canada
 ^{85}Kr
- 380 The Manitoba Cancer Treatment and Research t'ound.
Winnipeg 3, Manitoba, Canada
Dr. Holloway
 $^{133}\text{I(B)}$
- 381 McGill University
Department of Chemistry
Montreal 2, P.Q., Canada
Prof. L. Yaffe
 ^{137}Cs
- 382 McMaster University
Department of Physics
Nuclear Research Building
Hamilton, Ontario, Canada
 ^{252}Cf , ^{85}Kr , ^{106}Ru
- 383 Northern Electric Co., Ltd.
P. O. Box 3529, Station C
Ottawa, Ontario, Canada
 ^{85}Kr
- 384 Picker X-Ray
Nuclear Division
230 Authier Street
Montreal 9, Quebec, Canada
 $^{20}\text{Mg(B)}$
- 385 Queens University
Kingston, Ontario, Canada
 ^{252}Cf , ^{85}Kr
- 386 Royal Victoria Hospital
Montreal 2, Quebec, Canada
 ^{133}Xe
- 387 Simon Fraser University
Department of Chemistry
Burnaby 2, B. C., Canada
 ^{140}Ba , ^{132}I
- 388 Toronto General Hospital
101 College Street
Toronto 2, Ontario, Canada
 ^{133}Xe
- 589 Manitoba, University of
Physics Department
Allen Building
Fort Garry, Manitoba, Canada
 ^{131}Ba , ^{36}Cl
- 390 Universite de Montreal
Departement de Physique
Case Postale 6128
Montreal, Canada
 ^3H
- CHILE
- 391 Universidad de Chile
Departamento de Fisica
Blanco Encalada 2008
Casilla 5487
Santiago, Chile
 ^{47}Ca
- CHINA
- 392 Chinese Government Procurement
2224 R. Street, N. W.
Washington, D. C. 20008
 ^3H
- COSTA RICA
- 393 Instituto Interamericano de Ciencias Aaricolas
Centro de Ensenanza e Investigacion
Turrialba, Costa Rica
 ^{185}W
- DENMARK
- 394 Neurochemical Institute
Radmadsgade 56
Copenhagen N., Denmark
 ^{131}I
- ENGLAND
- 395 British Embassy
3100 Massachusetts Avenue, N. W.
Washington, D. C. 20008
 ^{252}Cf , ^{242}Pu , ^{235}U
- 396 Cambridge University
University Chemical Laboratory
Lensfield Road
Cambridge, England
 ^{99}Tc
- 397 Hammersmith Hospital
Ducane Road
Lcnden, U.12, England
 ^{95}Nb , ^{88}Sr
- 398 United Kingdom Treasury and Supply Delegation
25 Broadway
Neu York, New York 10004
 **^{241}Am , ^{243}Am , ^{140}Ba , ^{144}Ce , ^{252}Cf , ^{36}Cl ,
 ^{137}Cs , ^{90}Sr , ^3H , ^{85}Kr , ^{63}Ni , ^{147}Pm ,
 ^{89}Sr , ^{90}Sr , ^{91}Y , ^{95}Zr**

- 399 United Kingdom Treasury and Supply Delegation
Radiochemical Centre
Amersham, Buck, England
Dr. K. H. Ansell
 ^{210}Po (M)
- 400 Wellcome Research Labs
London, England
 ^{28}Mg (B)
- FINLAND
- 401 University of Helsinki
Department of Physics
Siltavuorenpenger 20C
Helsinki, Finland
CSI, ^{130}I
- FRANCE
- 402 C.E.A. New York Office
972 Fifth Ave.
New York, N. Y. 10021
 **^{241}Am , ^{37}Ar , ^{144}Ce , ^{14}C , ^{137}Cs , FFSS,
 ^{123}I , ^{147}Pm , ^{90}Sr , SS**
- 403 C. E. A.
1346 Connecticut Avenue, N. W.
Washington, D. C. 20036
 ^{252}Cf
- 404 C. E. A., DRI-SCA
29-33 Rue de la Federation
Paris XVI, France
 ^{252}Cf , ^{230}Th , ^{238}U
- 405 C.N.R.S. New York Office
972 Fifth Avenue
New York, New York 10021
 ^{129}I
- 406 Centre National de Transfusion Sanguine
6 Rue Alexandre Cabanel
Paris 15, France
 ^{123}I
- 407 Laboratoires Lumina
19, Rue Henri Martin S. A.
Colombes (Seine), France
3H
- GERMANY
- 408 American Hoechst Corporation
777 Third Avenue
New York, New York 10017
 ^{85}Kr , ^{147}Pm , ^{204}Tl
- 409 Buchler and Company
Frankfurter Str. 294
Braunschweig, Germany
 ^{37}Ar , FPSS, ^{147}Pm , ^{90}Sr
- 410 Buchler and Company
Untermainkai 34
6 Frankfurt M. I., Germany
 ^{37}Ar
- 411 Deutsches Museum
Museumsinsel I
8 Munchen 26, Germany
 ^{99}Tc
- 412 Institut für Technische Kernphysik
der Technischen Hochschule Darmstadt
Schloßgartenstrasse 9
81 Darmstadt, Germany
SS
- 413 Kuhne and Nagei
Flughafenbuero
Berlin, Germany
 ^{28}Mg (B)
- 414 Gesellschaft für Kernforschung M.B.H.
Weberstrasse 5
75 Karlsruhe
West Germany
 ^{243}Am , ^{252}Cf , ^{244}Cm , ^{237}Np
- 415 Landessternwarte, Auf Dem
Königstuhl Bei Heidelberg
69 Heidelberg, Germany
 ^{129}I
- 416 W. Maier Komm.Ges.
722 Schwenningen a. N.
Postfach (P. G. E.) 126
West Germany
 ^{147}Pm
- 417 Universität Giessen
I Physikalisches Institut
Leihgesterner Weg
6300 Giessen, Germany
 ^{252}Cf
- 418 Physikalisches Institut
Tuebingen University
West Germany
 ^{252}Cf
- 419 Technischen Hochschule Munchen
Physik Department
Arcistrasse 21
8 Munchen 2
Germany
 ^{129}I , ^{151}Sm
- INDIA
- 420 Government of India
Bhabha Atomic Research Centre
Purchase Division
3rd Floor Mohatta Building
Eombay 1, India
 ^{241}Am , ^{244}Cm , ^{237}Np , ^{229}Th

421 Educational Services, Inc.
55 Chapel Street
Newton, Massachusetts 02160
252Cf

ISRAEL

422 Landseas Corporation
48 West 48th Street
New York, New York 10036
14C, Tgs

423 The Hebrew University of Jerusalem
Jerusalem, Israel
36Cl, RSI

424 Government of Israel
Ministry of Defense
850 Third Avenue
New York, New York 10022
140Ba, 144Ce, 137Cs, 103Ru, 106Ru,
95Zr

425 Embassy of Israel
1621-22nd Street, N. W.
Washington, D.C. 20008
252Cf, 14C, 129I

ITALY

426 Euratom C.C.R.
Sezione Doganale d'Ispra
Ispra (Varese), Italy
37Ar

427 Generay Generale Radiologica Spa
Via Monte Albanza, 9
Monza, Italy
137Cs, FPSS

428 Gorla Siana S. P. A.
Via Anadeco 42
Milan, Italy
FPSS

429 Universita Degli Studi di Padova
Istituto di Fisica Galileo Galilei
Via F. Marzolo, 8
Padova, Italy
3H

JAPAN

430 Mitsubishi International Corporation
277 Park Avenue
New York, New York 10017
140Ba, 137Cs, FP, FPSS, 3H, 85Kr,
147Pm, 89Sr, 90Sr, 95Zr

431 Sumitomo Shoji Kaisha, Ltd.
277 Park Avenue 25th Floor
New York, New York 10017
85Kr, 147Pm

MEXICO

432 Laboratorio de Dilucion
Comision Nacional de Energia Nuclear
Miguel Angel de Quevedo 530A
Mexico 21, D. F.

137Cs, FPSS, 91Y

NETHERLANDS

433 Rijksinkoopbureau
(Netherlands Govt. Purchasing Office)
55 A Laan van Meerdervoort
The Hague, Netherlands

133Ba, 129I, 182Ta, 99Tc, 133Xe

434 N. V. Philips-Duphar
Apollolaan 151
Amsterdam (Holland)
The Netherlands

137Cs

435 N. V. Philips-Duphar
P. O. Box 2
Weesp, The Netherlands

144Ce, CSI, 137Cs

436 Reactor Instituut
Berlageweg 15
Delft, The Netherlands

137Cs

NEW ZEALAND

437 Office of the Minister
New Zealand Embassy
1145-19th Street
Washington, D. C. 20036

3H, 131I

NORWAY

438 Institutt for Atomenergi
Isotope Department
Kjeller, Norway

20Mg(B), 89Sr

POLAND

439 PHZ Metronex
Al. Jerozolimskie 44
Warszawa 1, Poland

99Tc

SCOTLAND

440 Western Regional Hospital Board
S-13 W. Graham Street
Glasgow C.4, Scotland

123I

SWEDEN

441 Aktiebolaget Atomenergi
Studsvik, Fack. S'611 01
Nykoping, Sweden

144Ce, 137Cs, 114In, 192Ir, 85Kr,
133Xe

442 Fysiska Institutionen
Thumbergsvagen 7
Uppsala, Sweden

133Ba

SWITZERLAND

443 Eidg. Institut für Reaktorforschung
Würenlingen, Switzerland

129I, 238U

444 Klinik für Kinderkrankheiten
Universität Bern
Bern, Switzerland
Dr. Alfred J. Donath

20Mg(B)

445 Merz and Bentelli AG
Bumplizstrasse 91
3018 Bern, Switzerland

3H

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

3H, 147Pm, SS

TURKEY

447 Turkey, Embassy of
1606 23rd Street, N. W.
Washington, D. C. 20008

252Cf

VENEZUELA

448 Instituto Venezolano de
Investigaciones Cientificas
Apartado 1827
Caracas, Venezuela

FPSS, 147Pm

YUGOSLAVIA

449 Institute of Nuclear Sciences
Boris Kidrich
P.O.B. 522
Belgrade, Yugoslavia

241Am

II. ALPHABETICAL LIST OF ISOTOPES,
CROSS-REFERENCED TO CUSTOMER NUMBERS

A. Domestic

Americium 241

15, 18, 45, 87, 108, 113, 115, 181, 188,
197, 218, 296, 335, 359

Americium 243

304

Antimony 122

21, 225

Argon 037

15, 45, 69, 144, 286

Barium 131

269

Barium 133

15, 52, 79, 147, 152, 181, 217, 218, 242,
272

Barium 140

15, 17, 21, 28, 44, 46, 47, 69, 87, 104,
115, 127, 132, 158, 167, 193, 194, 195, 228,
229, 244, 246, 252, 266, 291, 302, 313, 354,
361

Bismuth 210

194

Calcium 047

1, 31, 42, 47, 57, 64, 91, 131, 147, 159,
169, 201, 269, 290, 331, 341, 344, 348

Californium 252

31, 104, 141, 177, 194, 261, 287, 325, 348,
355

Carbon 014

1, 17, 36, 40, 50, 76, 81, 86, 108, 117,
138, 140, 150, 179, 188, 222, 223, 263, 270,
285, 294, 300, 335, 348, 360

Cerium 144

2, 15, 46, 87, 88, 115, 127, 153, 158, 181,
209, 219, 228, 266, 294, 296, 302, 311, 329

Cesium 137

1, 11, 27, 38, 44, 46, 47, 73, 92, 104,
115, 134, 143, 154, 158, 162, 181, 197, 204,
205, 211, 216, 228, 225, 235, 247, 267, 282,
296, 313, 338, 354, 359

Chlorine 036

20, 47, 60, 102, 147, 157, 163, 182, 188,
200, 216, 220, 255, 272, 291, 296, 302

Cobalt 060

12, 31, 45, 54, 59, 99, 147, 174, 235, 244,
296, 298, 304, 309, 329, 353

Copper 064

169

Curium 244

82

Cyclotron Service Irradiations

1, 25, 45, 46, 57, 120, 128, 143, 197, 203,
216, 228, 259, 275, 283, 301, 320, 338

Europium 152

49, 76, 84, 110, 115, 161, 162, 191, 197,
272, 296, 354, 359, 360, 362

Europium 155

158

Fission Prod Source Spec Ser

11, 21, 44, 45, 82, 87, 108, 113, 124, 134,
158, 164, 181, 197, 206, 215, 235, 247, 282,
296, 313, 329, 359

Fission Products

15, 55, 296, 313, 360

Gallium 072

155, 218, 296, 338

Hafnium 181

15, 21, 31, 62, 115, 118, 131, 192, 206,
246, 248, 272, 296, 318, 329, 354

Hydrogen 003

9, 10, 15, 21, 31, 36, 41, 43, 44, 46, 47,
48, 54, 61, 81, 89, 107, 110, 138, 139, 153,
179, 188, 192, 197, 243, 253, 256, 262, 263,
280, 291, 296, 298, 305, 318, 323, 335, 345,
354, 356, 360

Indium 114

21, 31, 44, 96, 147, 181, 197, 210, 216,
246, 258, 283, 296, 346, 362

Iodine 123

67, 68, 141, 147, 218, 222, 358

Iodine 129

15, 45, 108, 115, 194, 197, 205, 291, 296,
347, 353, 355, 362

Iodine 130

68, 296

Iodine 131

38, 45, 46, 55, 63, 86, 90, 94, 117, 127,
153, 160, 182, 194, 199, 213, 222, 226, 228,
229, 237, 244, 245, 255, 274, 284, 296, 324,
342, 343, 349

Iodine 132

31, 115, 229, 244, 296, 325, 330, 331, 337

Iodine 133

143, 204, 302

Iridium 192

21, 31, 46, 47, 88, 115, 116, 132, 156, 180,
184, 225, 296

Iridium 194

192

Krypton 085

4, 7, 8, 14, 15, 22, 29, 31, 40, 45, 46,
54, 66, 71, 77, 85, 93, 105, 106, 107, 109,
111, 112, 114, 122, 126, 134, 145, 154, 189,
192, 196, 197, 198, 200, 215, 230, 233, 234,
238, 244, 245, 251, 268, 279, 281, 286, 291,
292, 293, 296, 299, 303, 305, 319, 321, 322,
333, 335, 351, 352, 353, 359

LITR Service Irradiations

326

Magnesium 028

15, 17, 39, 74, 85, 121, 148, 204, 207, 254,
256, 277, 337, 341, 349

Molybdenum 099

23, 31, 104

Neodymium 147

15, 17, 46, 87, 115, 127, 228, 229, 278,
304, 318, 354

Neptunium 237

15, 35, 41, 45, 65, 95, 147, 188, 228, 275,
296, 302, 362

Nickel 063

2, 15, 113, 125, 131, 192, 197, 239, 291,
335, 353, 357

Niobium 095

21, 46, 47, 115, 158, 171, 181, 182, 192,
193, 210, 212, 296, 313, 345

Osmium 191

147, 156, 192, 318

Palladium 109

296, 325

Phosphorus 033

197, 331

Polonium 210

87, 181, 188, 228, 329

Praseodymium 142

354

Praseodymium 143

15, 21, 140

Promethium 147

21, 43, 45, 47, 82, 108, 113, 124, 145, 181,
197, 211, 216, 227, 329, 336

Protactinium 231

31

Reactor Service Irradiations

13, 15, 16, 18, 24, 32, 37, 44, 53, 55, 58,
70, 83, 86, 98, 101, 103, 110, 119, 127,
152, 162, 177, 187, 192, 202, 206, 208, 218,
227, 228, 235, 249, 246, 251, 253, 260, 276,
296, 297, 298, 310, 312, 313, 317, 347, 249,
354, 362

Rhenium 186

69, 122

Rubidium 086

1, 17, 39, 43, 47, 51, 65, 80, 86, 96, 115,
131, 146, 147, 172, 173, 181, 182, 183, 185,
186, 197, 218, 222, 221, 240, 246, 255, 257,
275, 284, 300, 308, 325, 338, 342, 350, 359

Ruthenium 103

17, 21, 31, 47, 87, 116, 192, 200, 229, 246,
294, 296, 302, 325, 355

Ruthenium 106

15, 17, 21, 23, 37, 38, 44, 45, 46, 69, 87,
97, 115, 127, 181, 188, 191, 203, 212, 228,
293, 296, 300

Samarium 151

216, 296

Samarium 153

228, 296, 354

Scandium 046

43, 115, 129, 168, 192, 218, 236, 265, 266,
293

Silicon

15, 30, 49, 51, 56, 68, 100, 127, 130, 142,
151, 156, 165, 170, 176, 178, 182, 210, 224,
246, 264, 296, 314, 341, 348, 349, 354, 360

Silver 111

147, 149, 166

Special Services

15, 26, 31, 41, 43, 45, 69, 75, 77, 94,
136, 150, 153, 169, 177, 181, 197, 205, 211,
216, 218, 246, 263, 286, 236, 298, 300, 313,
334, 344, 353

Strontium 089

5, 6, 21, 39, 47, 69, 78, 96, 115, 123,
204, 220, 223, 232, 244, 269, 272, 273, 289,
291, 313, 332, 359

Strontium 090

19, 38, 39, 78, 115, 127, 158, 163, 164,
181, 197, 202, 214, 215, 217, 219, 226, 228,
249, 284, 291, 294, 296, 298, 300, 302, 323

Sulfur 035

34, 51, 117, 135, 243, 271

Tantalum 182

24, 115, 229, 296, 354

Target Preparation Radiosotope

34, 46, 69, 150, 192

Technetium 099

1, 15, 31, 37, 108, 197, 211, 216, 241, 295,
300, 316

Thallium 204

21, 67, 115, 137, 181, 228, 335

Thulium 170

339

Tungsten 185

21, 46, 115, 228, 284, 302, 350

Tungsten 187

45, 115, 252, 283, 296, 302, 330

Uranium 238

26, 88, 108, 117, 143, 250

Xenon 1333, 5, 15, 33, 43, 72, 86, 108, 127, 144,
147, 151, 169, 175, 180, 182, 186, 197, 264,
275, 286, 234, 296, 299, 306, 307, 335, 337,
339, 340, 353, 359**Yttrium 090**

21, 132, 327

Yttrium 09115, 31, 42, 46, 78, 108, 115, 140, 158, 182,
218, 278, 288**Yttrium beads 090**

203

Zirconium 09515, 17, 21, 46, 47, 69, 87, 115, 118, 127,
158, 167, 192, 228, 229, 244, 258, 266, 269,
295, 313, 325, 328, 332, 359**B. Foreign****Americium 241**

370, 398, 402, 420, 445

Americium 243

393, 414

Argon 037

364, 402, 409, 410, 426

Barium 131

389

Barium 133

375, 433, 442

Barium 140

387, 398, 424, 430

Calcium 047

363, 391

Californium 252364, 374, 382, 385, 385, 398, 403, 404, 414,
417, 418, 421, 425, 447**Carbon 014**

402, 422, 425

Cerium 144

398, 402, 424, 435, 441

Cesium 137365, 373, 381, 398, 402, 424, 427, 430, 432,
434, 435, 436, 441**Chlorine 036**

368, 374, 389, 398, 423

Curium 242

369

Curium 244

364, 370, 414, 420

Cyclotron Service Irradiations

401, 435

Fission Prod Source Spec Ser365, 373, 398, 402, 409, 427, 428, 430, 432,
448**Fission Products**

430

Hydrogen 003373, 390, 392, 398, 407, 429, 430, 437, 445,
446**Indium 114**

441

Iodine 123

402, 406, 440

Iodine 129

366, 405, 415, 419, 425, 433, 443

Iodine 130

401

Iodine 131

394, 437

Iodine 132

387

Iodine 133

380

Iridium 192

441

Krypton 085368, 379, 382, 383, 385, 398, 408, 430, 431,
441**Magnesium 028**

372, 378, 384, 400, 413, 438, 444

Molybdenum 099

377

Neptunium 237
366, 414, 420

Nickel 063
374, 398

Niobium 095
397

Plutonium 238
374

Plutonium 239
369

Plutonium 242
369, 374, 375, 395

Polonium 210
399

Promethium 147
398, 402, 408, 409, 416, 430, 431, 446, 448

Protactinium 240
367

Reactor Service Irradiations
423

Ruthenium 103
424

Ruthenium 106
382, 424

Samarium 151
419

Special Services
365, 397, 402, 412, 446

Strontium 089
373, 398, 430, 438

Strontium 090
365, 373, 398, 402, 409, 430

Tantalum 182
371, 433

Target Preparation Radiosotope
422

Technetium 099
367, 396, 411, 433, 435

Thallium 204
408

Thorium 229
420

Thorium 230
404

Tungsten 185
393

Uranium 233
367, 369

Uranium 235
369, 395

Uranium 236
369

Uranium 238
369, 404, 443

Uranium 240
369

Xenon 133
368, 386, 388, 432, 441

Yttrium 091
398, 432

Zirconium 095
398, 424, 430

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

A. Domestic

Alabama

5, 5, 308, 310, 321

Arizona

8, 126

Arkansas

17

California

2, 14, 20, 21, 22, 36, 37, 38, 39, 40, 41,
42, 43, 44, 45, 54, 75, 01, 90, 93, 104,
109, 114, 115, 138, 144, 145, 152, 234, 240,
250, 251, 264, 268, 273, 275, 280, 281, 292,
293, 302, 317, 324, 325, 328, 329, 339, 143

Colorado

65, 66, 67, 68, 84, 153, 265, 307, 315

Connecticut

10, 61, 71, 72, 73, 74, 239, 262, 299, 327,
362

District of Columbia

192, 270, 306, 314, 326

Florida

33, 95, 96, 109, 163, 175, 177, 340

Georgia

91, 116, 117, 154, 303

Idaho

16, 127, 128, 129, 312

Illinois

1, 15, 55, 56, 57, 100, 130, 131, 159, 170,
175, 211, 341

Indiana

132, 133, 210, 238, 246, 322, 342

Iowa

13, 140, 141, 142, 155

Kansas

149, 150

Kentucky

151, 157, 191, 297

Louisiana

156

Maryland

50, 118, 124, 147, 164, 165, 300, 305, 319,
323, 331, 332

Massachusetts

29, 30, 47, 52, 121, 122, 166, 167, 168,
197, 230, 233, 279, 282, 291, 309, 334, 351,
361

Michigan

80, 97, 120, 123, 178, 179, 180, 350, 358

Minnesota

125, 169, 181, 182, 257

Mississippi

183

Missouri

151, 162, 173, 184, 187, 253, 349

Nebraska

194

Nevada

195, 229, 252, 330

New Hampshire

260

New Jersey

3, 4, 26, 143, 174, 198, 214, 242, 247, 249,
267

New Mexico

46, 88, 158, 199

New York

9, 27, 31, 32, 35, 48, 53, 62, 69, 70, 77,
78, 85, 92, 94, 98, 99, 101, 102, 103, 105,
110, 119, 135, 136, 137, 152, 160, 189, 200,
201, 202, 203, 212, 213, 249, 251, 254, 255,
256, 263, 269, 276, 294, 311, 313, 333, 336,
353

New York

277

North Carolina

86, 204, 205, 206

North Dakota

207, 208

Ohio

23, 51, 60, 63, 64, 79, 106, 107, 112, 134,
188, 190, 219, 220, 222, 223, 224, 227, 235,
243, 304, 318

Oklahoma

213, 76, 89

Oregon

225, 226

Pennsylvania

24, 49, 58, 139, 146, 148, 215, 216, 231,
232, 236, 237, 241, 278, 316, 335, 352, 354,
355, 356, 357

Puerto Rico

244, 245

Rhode Island	
34	
South Carolina	
87, 272	
Tennessee	
11, 59, 217, 218, 221, 271, 283, 284, 285, 295, 296, 298, 338	
Texas	
25, 113, 185, 186, 209, 253, 259, 266, 274, 286, 287, 298, 289, 290, 301, 355	
Utah	
337	
Virginia	
12, 19, 111, 171, 172, 320, 345	
Washington	
18, 82, 83, 228, 344, 346, 347, 24e	
Wisconsin	
7, 360	
B. Foreign	
Argentina	
363	
Australia	
364	
Austria	
365, 366	
Belgium	
367, 368, 369, 370	
Brazil	
371	
Canada	
372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390	
Chile	
391	
China	
392	
Costa Rica	
393	
Denmark	
394	
England	
395, 396, 397, 398, 399, 400	
Finland	
401	
France	
402, 403, 404, 405, 406, 407	
Germany	
408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419	
India	
420, 421	
Israel	
422, 423, 424, 425	
Italy	
426, 427, 428, 429	
Japan	
430, 431	
Mexico	
432	
Netherlands	
433, 434, 435, 436	
New Zealand	
437	
Norway	
438	
Poland	
439	
Scotland	
440	
Sweden	
441, 442	
Switzerland	
443, 444, 445, 446	
Turkey	
447	
Venezuela	
448	
Yugoslavia	
449	

IV. RADIOISOTOPE SALES - FY 1968

(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	38	115,225 mg	168,390	37	149,846 mg	203,769	10	177,436 mg	56,171	85	442,507 mg	428,330
Americium-243				2	2 mg	200	3	22 mg	100	5	24 mg	300
Antimony-122	1	3.0	27	-	-	-	3	13.0	117	4	16.0	144
Argon-37	5	7.7	394	6	19.7	1,158	3	12.5	760	14	39.9	2,312
Barium-131	5	5.0	900	1	1.0	180			-	6	6.0	1,080
Barium-133	8	18.9	2,830	5	3.7	555	3	2.7	405	16	25.3	3,790
Barium-140	31	118.5	1,240	19	352.0	2,695	20	138.0	1,163	70	608.5	5,098
Bismuth-210	1	2.0	60				-	-	-	1	2.0	60
Calcium-47	163	152.7	38,361	5	5.0	1,250	3	2.5	625	171	160.2	40,236
Californium-252	8		800	13		1,400	6		100	27		2,300
Carbon-14	45	48,055.0	179,607	2	30.0	195			-	47	48,085.0	179,802
Cerium-144	22	3,393.8	850	18	31,110.0	350	44	172,836.0	892	84	207,339.8	2,092
Cesium-137	63	315,072,496.0	48,527	21	219,419,140.0	34,712	21	205,649,123.5	25,161	105	740,140,759.5	108,400
Chlorine-36	20	8.0	2,808	7	52.1	18,201	1	0.6	227	28	60.7	21,236
Cobalt-60-P	7	515,259.0	3,169	-	-	-	5	498,654,015.0	46,338	12	499,169,274.0	49,507
Cobalt-60 (metal) ^c	2	1,644,769,000.0	217,381	-	-	-	1	339,000.0	119	3	1,645,108,000.0	217,500
Copper-64	38	5,700.0	12,840	-	-	-	-	-	-	38	5,700.0	12,840
Curium-242				1	10,000 mg	975			-	1	10,000 mg	975
Curium-244	1	1 mg	100	2	3 mg	300	3	6 mg		6	10 mg	400
Europium-152-154	11	32.2	660	-	-		7	19.0	395	18	51.2	1,055
Europium-155							1	1.0	25	1	1.0	25
Fission Products	1	1.0	25	3	20.0	110	5	18.0	205	9	39.0	340
Gallium-72	5	32.0	410	-	-		31	115.0	1,406	36	147.0	1,816
Hafnium-181	17	89.0	409	-	-	-	5	33.0	130	22	122.0	539
Indium-114	20	78.0	760	1	1.0	25	8	49.0	495	29	128.0	1,280
Iodine-123	60	241.0	6,025	2	25.0	625	1	1.0	25	63	267.0	6,675
Iodine-129	13	4,194.0	3,566	8	4,502.0	3,650	4	1,303.0	1,152	25	9,999.0	8,368
Iodine-130	2	10.5	63	3	15.0	75	1	5.0	25	6	30.5	163
Iodine-131	128	6,252.0	6,593	16	230.0	245	39	1,952.0	2,140	183	8,434.0	8,978
Iodine-132	18	180.0	960	3	30.0	135	5	32.0	200	26	242.0	1,295
Iodine-133	9	200.0	600	1	20.0	60				10	220.0	660
Iridium-192	11	180.0	245	1	2.0	25	4	7.0	75	16	189.0	345

Isotope	Domestic			Foreign			Project			Total		
	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars
Technetium-99m	9	30,501.0	1,010	5	12,100.0	755	2	92,500.0	3,618	16	135,101.0	5,363
Thallium-204	8	555.1	475	2	80.0	60	1	200.0	79	11	835.1	614
Thorium-229	-	-	-	1	-	100	-	-	-	1	-	100
Thorium-230	-	-	-	1	10 mg	231	4	414 mg	-	5	424 mg	231
Thorium-232	-	-	-	-	-	-	2	47,343 mg	-	2	47,343 mg	-
Thulium-170 ^c	1	30.0	150	-	-	-	1	200,000,000.0	-	2	200,000,030.0	150
Tritium	160	108,843,884.0	126,253	46	69,705,002.0	72,715	36	3,559,553.0	3,375	242	182,108,439.0	202,343
Tungsten-185	4	18.0	162	1	5.0	40	3	25.0	200	8	48.0	402
Tungsten-187	7	23.5	423	-	-	-	3	16.0	295	10	39.5	718
Uranium-232	-	-	-	-	-	-	3	50 mg	-	3	50 mg	-
Uranium-233	3	74,259 mg	1,200	3	2,150 mg	301	4	19,520 mg	-	10	95,929 mg	1,501
Uranium-234	-	-	-	1	817 mg	-	2	93 mg	-	3	910 mg	-
Uranium-235	1	2,080 mg	-	2	2,120 mg	18	7	129,574 mg	-	10	133,774 mg	18
Uranium-236	1	1 mg	-	2	200 mg	300	9	11,012 mg	-	12	11,213 mg	300
uranium-238	8	65,432 mg	1,059	3	292,930 mg	4,833	9	1,798,384 mg	-	20	2,156,746 mg	5,892
Xenon-133	34s	458,541.0	29,787	71	167,220.0	8,516	20	1,074,807.0	14,170	434	1,700,568.0	52,473
Yttrium-90	4	14.0	104	-	-	-	-	-	-	4	14.0	104
Yttrium-90 (beads)	1	100 beads	50	-	-	-	-	-	-	1	100 beads	50
Yttrium-91	10	322.0	3,94s	11	183.0	1,876	5	22.0	259	26	527.0	6,078
Zirconium-95	19	186.4	1,266	13	380.0	2,118	17	173.0	1,011	49	745.4	4,425
Cyclotron Service Irr. ^a	253	253.0	30,060	2	2.0	-	13	13.0	-	268	268.0	30,060
Reactor Service Irr. ^b	821	293,912,384.0	185,001	1	1.0	105	1,198	146,945,231.0	294,417	2,020	440,857,616.0	479,523
Special Services	38	-	87,596	2	-	48,684	14	-	58,988	54	-	195,268
Total	3,045	3,094,535,809.0	1,516,298	689	717,351,540.0	558,798	1,784	1,887,695,486.5	2,455,400	5,518	5,699,582,835.5	4,530,496

^aRadioisotopes produced by cyclotron service irradiations:

¹¹⁷Sb, ²⁰⁹,²¹⁰,²¹¹At, ⁷⁴As, ^{133m}Ba, ⁷Be, ²⁰⁵,²⁰⁷Bi, ¹⁰⁹Cd, ¹³⁸Ce, ¹²⁹,¹³²Cs, ⁵⁶,⁵⁷,⁶¹Co, ⁶⁷Cu, ¹⁵¹Gd, ⁶⁶,⁶⁷Ga, ⁶⁸Ge, ¹⁹⁵,¹⁹⁶Au, ¹¹¹In, ¹²³,¹³⁰I, ¹⁸⁴Ir, ⁵⁵Fe, ²⁰³Pb, ¹⁷²,¹⁷⁴Lu, ⁵²Mn, ⁵⁷Ni, ¹⁸¹,¹⁸³,¹⁸⁵Os, ²⁰⁷Po, ²³⁸,²⁴⁰Pu, ¹⁴³Pm, ²²⁶Ra, ¹⁸¹,¹⁸²,¹⁸³,¹⁸⁴Re, ¹⁰²Rh, ⁸⁴Rb, ¹⁰⁵,¹¹⁵Ag, ²⁴Na, ⁹⁵Tc, ¹⁵⁰,¹⁵¹,¹⁵⁶Tb, ²⁰²Tl, ¹⁶⁸Tm, ¹¹³Sn, ⁴⁴Ti, ¹⁸¹W, ⁴⁸V, ⁸⁶,⁸⁷,⁸⁸Y, ⁶²,⁶⁵Zn.

^bRadioisotopes produced by reactor service irradiations:

²⁸Al, ²⁴¹,²⁴³Am, ¹¹⁸,¹²²,¹²⁴Sb, ⁷⁶As, ¹³¹Ba, ¹¹³,¹¹⁵Cd, ²⁵²Cf, ⁴¹Ca, ¹⁴C, ¹⁴¹Ce, ¹³⁴,¹³⁶Cs, ⁵¹Cr, ⁶⁰Co, ⁶⁴Cu, ²⁴⁴Cm, ¹⁶⁹,¹⁷¹Er, ¹⁴⁷,¹⁵²,¹⁵⁴,¹⁵⁶Eu, ¹⁸F, ¹⁶¹Gd, ²⁰⁰,²⁰¹Au, ¹⁷²,¹⁷³,¹⁷⁹,¹⁸⁰,¹⁸¹,¹⁸²Hf, ¹⁶⁶Ho, ¹¹⁴In, ¹²⁸,¹³⁰I, ¹⁹²,¹⁹⁴,¹⁹⁵Ir, ⁵⁵,⁵⁹Fe, ¹⁷⁷Lu, ⁵⁶Mn, ¹⁴⁷,¹⁴⁹Nd, ²³⁸Np, ⁶³,⁶⁵Ni, ⁹⁴Nb, ¹⁹³Os, ¹⁰⁹Pd, ¹⁹¹Pt, ²³⁹,²⁴¹Pu, ⁴⁰,⁴²K, ¹⁴²Pr, ¹⁴⁷,¹⁴⁸,¹⁴⁹Pm, ²³²Pa, ¹⁸⁴,¹⁸⁶,¹⁸⁸Re, ⁸⁶Rb, ¹⁰³Ru, ¹⁵³Sm, ⁴⁶Sc, ⁷⁵Se, ³¹Si, ²⁴Na, ⁸⁵,⁹⁰Sr, ³⁵S, ¹⁸²,¹⁸³Ta, ¹²¹,¹²³,¹²⁵,¹³¹Te, ¹⁶¹Tb, ²⁰⁴Tl, ²²⁸Th, ¹⁷⁰,¹⁷¹Tm, ¹¹⁹,¹²¹Sn, ¹⁸¹,¹⁸³,¹⁸⁸W, ²³⁶,²³⁸U, ¹⁶⁹,¹⁷⁵V, ⁹⁰Y.

^cIn several cases, project transfers have involved redistribution as a part of cooperative programs; discrepancies have resulted between "amount shipped" and "amount received" and fund costs have not been assigned. Data reported are the best available.

Isotope	Domestic			Foreign			Project			Total		
	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars	Ship-ments	Millicuries	Dollars
Iridium-194	1	5.8	25							1	5.0	25
Krypton-85	98	3,824,051.0	88,886	22	947,101.5	21,445	24	1,204,297.9	20,547	144	5,975,450.4	130,878
Magnesium-28	39	3.9	5,390	17	1.4	1,960	1	0.1	140	57	5.4	7,490
Molybdenum-99	2	31.0	50	10	17,646.0	2,647	33	6,537.0	1,784	45	24,214.0	4,481
Neodymium-147	5	11.5	575			-	13	30.0	1,500	18	41.5	2,075
Neptunium-237	9	2,444 mg	1,153	10	15,200 mg	6,175	10	324,583 mg	53,947	29	342,227 mg	61,275
Nickel-63	17	6,296.0	35,255	6	2,505.0	13,788	1	10.0	39	24	8,811.0	49,082
Niobium-95	15	181.0	4,525	2	7.6	125	6	33.0	825	23	221.6	5,475
Osmium-191	6	14.0	290						-	6	14.0	290
Palladium-109	1	10.0	30				1	2.0	25	2	12.0	55
Phosphorus-33	2	11.0	385							2	11.0	385
Plutonium-238				1	505 mg	419	3	172 mg	-	4	677 mg	419
Plutonium-239	1	1 mg	475			-	12	65,610 mg	-	13	65,611 mg	475
Plutonium-240				2	200 mg	598	1	25,000 mg	-	3	25,200 mg	598
Plutonium-241							3	50,022 mg	-	3	50,022 mg	
Plutonium-242	2	102 mg	-	4	13 mg	207	4	15,330 mg	-	10	15,445 mg	207
Plutonium-244							4	7 mg	-	4	7 mg	
Polonium-210	37	32,939,000.0	38,877	9	240,000.0	4,000	12	116,052,000.0	1,711,767	58	149,231,000.0	1,754,644
Praseodymium-142							2	20.0	180	2	20.0	180
Praseodymium-143	1	1.0	50				2	2.5	125	3	3.5	175
Promethium-147 ^c	26	159,234,800.0	37,882	226	59,864,500.0	18,026	4	378,300,000.0	76,650	256	597,399,300.0	132,558
Protactinium-231	-	-	-				1	50 mg	237	1	50 mg	237
Rhenium-186	5	7.5	125	-	-					5	7.5	125
Rubidium-86	170	4,513.4	3,604				3	30.0	56	173	4,543.4	3,660
Ruthenium-103	11	21.0	525	1			5	33.0	825	17	54.0	1,350
Ruthenium-106	24	119.0	3,063	2	1.0	25	21	81.0	2,025	47	201.0	5,113
Samarium-151	1	2.0	378	1	1.5	283	1	8.5	1,605	3	12.0	2,266
Samarium-153		-					5	35.0	263	5	35.0	263
Scandium-46	18	377.7	818	-			1	5.0	25	19	382.7	843
Silver-111	5	15.0	228							5	15.0	228
strontium-89	48	838.0	11,012	21	229.0	3,091	3	4.0	77	72	1,071.0	14,180
strontium-90 ^c	45	534,852,939.2	113,408	9	366,939,010.0	74,432	15	335,641,105.2	67,590	69	1,237,433,054.4	255,430
Sulfur-35	8	128.0	2,030							8	128.0	2,030
Tantalum-182	4	11.5	120	2	5.5	55	3	27.5	275	9	44.5	450