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Personnel -1 FOIA
FOLDER Amersham Corp.

717254

JAN 23 1981

Mr. David G. Hunt
Technical Manager
Radiation Sources
Amersham Corporation
2636 South Clearbrook Drive
Arlington Heights, Illinois 60005

Dear Mr. Hunt:

YOUR FREEDOM OF INFORMATION ACT REQUEST OF JANUARY 12, 1981

This letter is in response to your Freedom of Information Act (FOIA) request of January 12, 1981. Your request was received by the Oak Ridge Operations' (ORO) Freedom of Information Officer on January 16, 1981.

Please be advised that no record exists which contains the information you desire. In order to honor your request, ORO would have to extract the data you desire from the voluminous sets of records it has for each institution. The FOIA clearly states that there is no obligation on the part of any agency to compile or create a record solely for the purpose of satisfying a request for information.

I, as the Authorizing Official, ORO, am the person responsible for making the above determination. My position title within the DOE is Acting Assistant Manager for Administration.

DOE's regulations provide that a determination that there are no documents responsive to a request may be appealed to DOE's Office of Hearings and Appeals by writing the Director, Office of Hearings and Appeals, Department of Energy, 2000 M Street, N. W., Washington, D. C. 20461, within thirty (30) days from your receipt of this letter. Both the envelope and letter must be clearly marked "Freedom of Information Appeal." Additional requirements of an appeal are set forth

CERTIFIED MAIL:
RETURN RECEIPT REQUESTED

PERSONNEL -1
FOIA
565

Mr. David G. Hunt

- 2 -

JAN 23 1981

in 10 CFR Part 1004.8(b). Judicial review will be available after the appeal determination either in the district in which you reside or have a principal place of business, or in which the records are situated, or in the District of Columbia.

Thank you for your interest in DOE programs.

Sincerely,

ORIGINAL SIGNED BY
H. S. OSTER, JR.

H. Stanton Oster, Jr.
Acting Assistant Manager
for Administration
Authorizing Official

CC-10:ACM

bcc: W. Range, PIO
J. L. Foutch, OCC

CC-10:ACMoseley:klc:6-1212:1/22/81

CONCURRENCE
RTG. SYMBOL
CC-10
INITIALS/SIG.
Moseley
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1/22/81
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CC-10
INITIALS/SIG.
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DATE
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RTG. SYMBOL
M-3
INITIALS/SIG.
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OFFICE OF CHIEF COUNSEL
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 without special authority

P15 8768080

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 Show to whom, date, and address of delivery.

(CONSULT POSTMASTER FOR FEES)

2. **ARTICLE ADDRESSED TO:**
 Mr. David G. Hunt, Technical Mgr.
 Radiation Sources, Amersham Corp.
 2636 S. Clearbrook Drive
 Arlington Heights, Illinois 60005

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	8768080	

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 Technical Manager
 Radiation Sources
 Amersham Corporation
 2636 S. Clearbrook Drive
 Arlington Heights, ILL 60005

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 Amersham Corp.

1113590



Amersham

AMERSHAM CORPORATION
A SUBSIDIARY OF THE RADIOCHEMICAL CENTRE

2636 S. Clearbrook Dr., Arlington Heights, IL 60005 312 593 6300

January 12, 1981

Wayne Range
FOI Officer
Oak Ridge Operations
Department of Energy
Oak Ridge, Tennessee 37830

FOI Request

Dear Sir:

This is a request for information under the Freedom of Information Act. The Department of Energy has published the document PNL-3274, UC-23 "List of DOE Radioisotope Customers with Summary of Radioisotope shipments FY 1979" compiled by J.C. Burlison. This publication lists what institutions received certain radioisotopes from the DOE. Please send to me the quantities of each radioisotope listed below that were shipped to the institutions shown during fiscal '79.

<u>Radioisotope</u>	<u>Institution</u>	<u># mCi's</u>
241 Am	# 64 Gamma Industries	
192 Ir	# 65 Gamma Industries	
241 Am	# 80 Gulf Nuclear	
153 Gd	# 80 Gulf Nuclear	
137 Ir	# 80 Gulf Nuclear	
241 Am	# 95 Isotope Products Labs	
109 Cd	# 95 Isotope Products Labs	
137 Cs	# 95 Isotope Products Labs	
137 Cs	# 127 Minnesota Mining & Manufacturing Company	
241 Am	# 130 Monsanto Research Corp.	
252 Cf	# 130 Monsanto Research Corp.	
241 Am	# 140 New England Nuclear	
153 Gd	# 140 New England Nuclear	
109 Cd	# 140 New England Nuclear	
³ H	# 140 New England Nuclear	
85 Kr	# 140 New England Nuclear	
CSI-	# 140 New England Nuclear	

401 1 11 91 WVP 10.

1113591

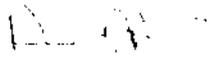
PERSONNEL - 1
FOIA 347

Wayne Range
FOI Officer
January 12, 1981
Page 2

<u>Radioisotope</u>	<u>Institution</u>	<u># mCi's</u>
How many cyclotron service irradiations were performed and for what targets?		
²⁴¹ Am	# 151 Nuclear Sources & Services	
¹⁹² Ir	# 211 Technical Operations	
CSI	# 202 Spire Corporation	

How many CSI irradiations were performed?

Sincerely,


David G. Hunt
Technical Manager
Radiation Sources

DGH/nf

40 : 1 11 91

1113592

**List of DOE Radioisotope
Customers with
Radioisotope Shipments
FY 1979**

J. S. Burlison

Prepared for
Office of Health and Environmental Research
Office of the Assistant Secretary for
Environment
U.S. Department of Energy
Washington, D. C. 20545
Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute



LIST OF DOE RADIOISOTOPE CUSTOMERS WITH
SUMMARY OF RADIOISOTOPE SHIPMENTS

Compiled by
J. S. Burlison

June 1980

Prepared for
Office of Health and Environmental Research
Office of the Assistant Secretary for Environment
U.S. Department of Energy
Washington, D.C. 20545
Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington

1113594A

ACKNOWLEDGMENTS

The compiler thanks the following laboratories and DOE Area Offices for their annual contributions from which this report is compiled.

Argonne National Laboratory
Brookhaven National Laboratory
Hanford Engineering Development Laboratory
Idaho Operations Office/EG&G Idaho, Inc.
Los Alamos Scientific Laboratory
Mound Facility
Oak Ridge National Laboratory
Pacific Northwest Laboratory
Rocky Flats Area Office
Savannah River Plant/DOE
UNC Nuclear Industries, Inc.

PREVIOUS REPORTS

Previous reports in this series are:

TID-2160 (FY 1964)	ORNL-IIC-17 (FY 1968)	BNWL-1774 (FY 1972)
ORNL-IIC-6 (FY 1965)	ORNL-IIC-27 (FY 1969)	BNWL-1824 (FY 1973)
ORNL-IIC-9 (FY 1966)	ORNL-IIC-32 (FY 1970)	BNWL-1902 (FY 1974)
ORNL-IIC-13 (FY 1967)	ORNL-IIC-38 (FY 1971)	BNWL-1993 (FY 1975)
BNWL-2147 (FY 1976)	PNL-2572 (FY 1977)	PNL-2930 (FY 1978)

Similar reports covering stable isotope distribution have also been prepared and are available from the National Technical Information Center, U.S. Department of Commerce, 5285 Port Royal Rd, Springfield, VA 22161.

- "Stable Isotope Customer List and Summary of Shipments, FY 1978," Oak Ridge National Laboratory, ORNL/TM-6710, May 1979 (\$4.50 printed; \$3.00 microfiche).
- "Stable Isotope Sales: Mound Facility Customer and Shipment Summaries, FY 1978." MLM-2594, March 16, 1979 (\$4.00 printed; \$3.00 microfiche).
- "Stable Isotope Sales: Mound Facility Customer and Shipment Summaries, FY 1977." MLM-2504, April 27, 1978 (\$4.00 printed; \$3.00 microfiche).
- "Stable Isotope Sales: Mound Facility Customer and Shipment Summaries, FY 1976 and 1976 A." MLM-2403, June 6, 1977 (\$4.00 printed; \$3.00 microfiche).
- "Stable Isotope Sales: Mound Facility Customer and Shipment Summaries, FY 1975." MLM-2295, April 30, 1976 (\$4.00 printed; \$3.00 microfiche).

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LIST OF DOE RADIOISOTOPE CUSTOMERS WITH
SUMMARY OF RADIOISOTOPE SHIPMENTS FY 1979

INTRODUCTION

The fifteenth edition of the radioisotope customer list was prepared at the request of the Division of Financial Services, Office of the Assistant Secretary for Environment, Department of Energy (DOE). This document lists DOE's radioisotope production and distribution activities by its facilities at Argonne National Laboratory; Pacific Northwest Laboratory; Brookhaven National Laboratory; Hanford Engineering Development Laboratory; Idaho Operations Office; Los Alamos Scientific Laboratory; Mound Facility; Oak Ridge National Laboratory; Rocky Flats Area Office; Savannah River Laboratory; and UNC Nuclear Industries, Inc.

The information is divided into five sections:

1. Isotope Suppliers, Facility, Contracts and Isotopes or Services Supplied. Section 1 lists suppliers of isotopes, the isotopes supplied, and the contact person for each DOE facility. If a reader needs more specific information that is not supplied in this report about isotope sales or shipments for a particular facility, he or she should contact the person listed for that facility.
2. Alphabetical List of Customers, and Isotopes Purchased. Section 2 is an alphabetical list of domestic and foreign customers and their addresses. Each customer has a customer number. This number is used to cross-reference data in the other sections of the report. Isotope purchases are listed after each customer's address, and the laboratory supplying each isotope is indicated by a letter abbreviation set off by parentheses.
3. Alphabetical List of Isotopes Cross-Referenced to Customer Numbers. Section 3 alphabetically lists isotopes and cross-references them to customer numbers. This section provides a quick idea of the number of companies purchasing a particular isotope. If the reader needs more information he or she can refer to the customer list in Section 2 to determine the laboratory supplying the isotope.
4. Geographical Location of Radioisotope Customers. Section 4 is an alphabetical list of states and foreign countries that is cross-referenced to customer numbers and indicates the geographical concentration of isotope users.
5. Radioisotope Sales and Transfers-FY 1979. Section 5 summarizes the FY-1979 radioisotope shipment activities of the DOE laboratory facilities listed in Section 1. A table alphabetically lists the isotopes and their suppliers. Data on shipments, quantities, and dollar values of each isotope are listed under domestic, foreign, and project (DOE facilities) categories.

1. ISOTOPE SUPPLIER(a), FACILITY CONTACT, AND ISOTOPES OR SERVICES SUPPLIED

<u>Facility</u>	<u>Abbreviation</u>	<u>Facility</u>	<u>Abbreviation</u>
Argonne National Laboratory J. C. Haugen Special Materials Division Argonne National Laboratory 9700 S. Cass Ave Argonne, IL 60439 FTS 972-6778 Commercial (312)972-6778 <u>Isotopes or Services:</u> CSI, RSI	(A)	Idaho Operations Office R. E. Tiller, Director Department of Energy EG&G Idaho, Inc. 550 Second Street Idaho Falls, ID 83401 FTS 583-1439 Commercial (208)526-1439 28Al, 139Ba, 80Br, 82Br, 38Cl, 165Dy, 166Ho, 56Mn, 99Mo, 24Na, 147Nd, 186Re, 188Re, RSI, 182Ta	(I)
Brookhaven National Laboratory P. Colsman Isotopes and Special Materials Group Brookhaven National Laboratory Upton, Long Island, NY 11973 FTS 664-4058 Commercial (516)345-3441 Extension 4058 <u>Isotopes or Services:</u> 211At, 77Br, 109Cd, 18F, 52Fe, 123I, 28Mg, 191Os, 81Rb, RSI, 103Ru, 178W, 123Xe, 127Xe	(B)	Los Alamos Scientific Laboratory C. Longaire Los Alamos Scientific Laboratory University of California P.O. Box 1663 Los Alamos, NM 87545 FTS 843-4948 Commercial (505)667-4948 77Br, 52Fe, 82Sr, 85Sr	(L)
Hanford Engineering Development Laboratory D. Engel, Manager Materials Department Richland, WA 99352 FTS 444-3548 Commercial (509)942-3548 241Am, 133Ba, 144CePr, 252Cf, 57Co, 60Co, 134Cs, 137Cs, 3H, 203Hg, 192Ir, 54Mn, 92Nb, 239Np, 147Pm, 210Po, 238Pu, 239Pu, 240Pu, RaDEF, 106Ru, 90Sr, 90SrY, 182Ta, 232Th, U(N), 238U, 95Zr	(H)	Mound Facility L. P. Thomas Sales/Marketing Manager Stable Isotope Sales Monsanto Research Corporation P.O. Box 32 Miamisburg, OH 45342 FTS 774-3896 Commercial (513)865-3896 Extension 7147 227Ac, 252Cf, 3H, 231Pa, 210Po, 238Pu, 239Pu, 240Pu, 242Pu, 229Th, 230Th, 234U, 238U, 133Xe	(M)

(a) All entries for Argonne, UNC, and Idaho are either reactor service irradiations, cyclotron service irradiations, or both with no processed isotopes being sold; entries for Savannah River represent material for resale and loans.

Oak Ridge National Laboratory (O)

J. E. Ratledge, Supervisor
Isotope Sales
Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, TN 37830

FTS 624-6984
Commercial (615)574-6984
Extension 6661

²⁴¹Am, ²⁴³Am, ³⁷Ar, ²⁴⁹Bk, ⁴⁷Ca, Cap,
²⁴⁹Cf, ²⁵⁰Cf, ²⁵²Cf, ¹⁴⁴Ce, ⁶⁰Co,
¹³⁷Cs, CSI, ²⁴³Cu, ²⁴⁴Cu, ²⁴⁵Cu,
²⁴⁸Cu, ²⁵³Es, ¹⁵²Eu, ¹⁵³Gd, ³H,
¹⁸¹Hf, ¹²⁹I, ¹³¹I, ¹⁹²Ir, ⁴³K,
⁸⁵Kr, MCP, ⁹⁵Nb, ²³⁷Np-high purity,
²³⁷Np-metal, ²³⁷Np-oxide, NU, ³³P,
²³¹Pa, ¹⁴⁷Pm, ²³⁶Pu, ²³⁷Pu, ²³⁸Pu,
²³⁹Pu, ²⁴⁰Pu, ²⁴¹Pu, ²⁴²Pu, ²⁴⁴Pu,
RW, ¹⁰³Ru, ¹⁰⁶Ru, ¹⁵¹Sm, ⁵⁵Sr, ⁸⁹Sr,
⁹⁰Sr, Tgs, ⁹⁹Tc, ²²⁹Th, ²³⁰Th, ²³²Th,
²³²U, ²³³U, ²³⁴U, ²³⁵U, ²³⁶U, ²³⁸U,
¹³³Xe, ⁹¹Yb, ⁹⁵Zr

Pacific Northwest Laboratory (P)

J. V. Filsinger
Safety and Materials Management
Pacific Northwest Laboratory
PO Box 999
Richland, WA 99352

FTS 444-2051
Commercial (509)375-2051

²⁴¹Am, Cm, D₂O, DU, EU, ³H, Np, Nu, Pu,
²³⁸Pu, ²⁴²Pu, Th, ²³³U

Rocky Flats Area Office (R)

G. T. Echert
Manufacturing Branch
Rocky Flats Area Office
P.O. Box 928
Golden, CO 80401

FTS 332-2646
Commercial (303)497-2646

Am shipped as AmO₂ to the
Oak Ridge Laboratory Isotope
Pool

Savannah River Plant (S)

M. J. Sires, Acting Director
Technical and Production Division
Department of Energy
P.O. Box A
Aiken, SC 29801

FTS 239-2217
Commercial (803)-725-6211
Extension 2217

²⁴¹Am, ²⁵²Cf, ²³⁸Pu

UNC Nuclear Industries, Inc. (U)

P. A. Carlson, Manager
Reactor Technology
Richland, WA 99352

FTS 444-1631
Commercial (509)942-1631

¹⁷⁰Tm, ¹⁴⁷Nd, ¹⁴⁹Nd, ⁶⁰Co
All produced from reactor service
irradiations

2. ALPHABETICAL LIST OF CUSTOMERS, SUPPLIERS,
AND ISOTOPES PURCHASED

The following abbreviations are used in this customer listing:

Cyclotron Service Irradiations	CSI	Natural Uranium	NU
Depleted Uranium	DU	Reactor Service Irradiations	RSI
Encapsulation	Cap	Withdrawn radioisotopes prepared under special approval	RW
Enriched Uranium	EU	Special Services	SS
Fission Products	FP	Targets	Tgs
Miscellaneous Compound Preparations	MCP		

The letter following each isotope or service entry is the supplier abbreviation listed in Section 1.

DOMESTIC CUSTOMERS

- | | |
|---|--|
| <p>1 AAI Corporation
PO Box 6767
Baltimore, MD 21204

DU(P)</p> | <p>7 ARCO Nuclear Company
PO Box 546
Leechburg, PA 15656

238Pu(0)</p> |
| <p>2 Airco, Inc.
Central Research Laboratories
Murray Hill, NJ 07974

85Kr(0)</p> | <p>8 Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

241Am(0), 241Am(P), 249Bk(0), Cap(0),
249Cf(0), 252Cf(S), 243Cm(0), 60Co(0),
137Cs(0), DU(P), 253Es(0), 95Nb(0),
Np(P), 237Np(0), Pu(P), 241Pu(0),
242Pu(0), RSI(B), 103Ru(0), 90Sr(0),
99Tc(0), Tgs(0), 230Th(0)</p> |
| <p>3 Albert Einstein Hospital
Newport and Morris Avenue
Bronx, NY 10461

81Rb(B)</p> | <p>9 Automation Industries, Inc.
Instruments Division
Route #113, Kimberton Road
Phoenixville, PA 19460

192Ir(H), 192Ir(0)</p> |
| <p>4 America Atomics Corporation
425 South Plumer
Tucson, AZ 85719

3H(0), 85Kr(0), SS(0)</p> | <p>10 Babcock and Wilcox Company
20 South Van Buren Avenue
Barberton, OH 44203

SS(0)</p> |
| <p>5 Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005

241Am(0), 109Cd(B*), CSI(0), 153Gd(0),
129I(0), 106Ru(0), RW(0)</p> | <p>11 Babcock Electronics Corporation
PO Box 1499
Costa Mesa, CA 92626

85Kr(0)</p> |
| <p>6 Amoco Oil Co.
Naperville, IL 60540

RSI(A)</p> | |

• Oak Ridge billed.

- 12 Battelle Memorial Institute
Columbus Laboratory
505 King Ave.
Columbus, OH 43201

DU(P)

Battelle, Pacific Northwest Laboratories
see Pacific Northwest Laboratory
- 13 Bell Telephone Laboratories
Murray Hill, NJ 07971

CSI(0), MCP(0), SS(0)
- 14 Bendix Corporation
2000 East Bannister Road
Kansas City, MO 64131

 $^{147}\text{Pm}(0)$, SS(0)
- 15 Best Industries, Inc.
PO Box 681
Washington, DC 20044

 $^{137}\text{Cs}(0)$, MCP(0)
- 16 Boston University
100 Cunningham Street
Boston, MA 02215

 $^{89}\text{Sr}(0)$
- 17 Bowman Gray School of Medicine
Winston-Salem, NC 27103

 $^{133}\text{Xe}(0)$
- 18 Brookhaven National Laboratory
Upton, NY 11973

 $^{77}\text{Br}(0)$, $^{252}\text{Cf}(S)$, $^3\text{H}(0)$, $^{103}\text{Ru}(0)$,
 $^{99}\text{Tc}(0)$
- 19 Brooklyn College
Chemistry Department
Brooklyn, NY 11210

RSI(B)
- 20 Burroughs Corporation
PO Box 203
Paoli, PA 19301

 $^{85}\text{Kr}(0)$
- 21 Campbell Pacific Nuclear Corporation
130 Buchanan
Pareco, CA 94553

 $^{241}\text{Am}(P)$
- 22 Carnegie-Mellon University
5000 Forbes
Pittsburgh, PA 15213

 $^{181}\text{Hf}(0)$
- 23 Case-Western Reserve University
2220 Circle Drive
Cleveland, OH 44106

CSI(0), $^{28}\text{Mg}(B^*)$
- 24 Centronic
1101 Bristol Road
Mountainside, NJ 07092

 $^{238}\text{U}(H)$
- 25 Chamberlain Manufacturing Corporation
East 4th and Esther St.
Waterloo, IA 50705

DU(P)
- 26 Chevron Research Company
555 Market Street
San Francisco, CA 94120

 $^3\text{H}(0)$, $^{106}\text{Ru}(0)$, $^{133}\text{Xe}(0)$
- 27 Children's Hospital
Howard Medical School
300 Longwood Ave.
Boston, MA 02115

 $^{43}\text{K}(0)$, $^{191}\text{Os}(B)$, $^{81}\text{Rb}(B)$, $^{178}\text{W}(B)$
- 28 Colorado School of Mines
PO Box 112
Golden, CO 80402

 $^{230}\text{Th}(0)$
- 29 Colorado State Department of
Occupational Health
4210 East 11th Avenue
Denver, CO 80220

 $^{236}\text{Pu}(0)$, SS(0), $^{229}\text{Th}(0)$

- 30 Columbia Presbyterian Hospital
622 W 168th Street
New York, NY 10032
81Rb(B)
- 31 Columbia University
630 West 168th Street
New York, NY 10032
28Mg(B*)
- 32 Continental Oil Company
PO Box 1267
Ponca City, OK 74601
89Sr(0)
- 33 Cook Electric Company
6201 Oakton Street
Morton Grove, IL 60053
85Kr(0)
- 34 Cooper Medical Center
6th and Stevens Street
Camden, NJ 08103
127Xe(B*)
- 35 Cornell University
Division of Nutritional Sciences
Ithaca, NY 14853
47Ca(0), 28Mg(B*)
- 36 Creighton University
2410 California
Omaha, NB 68131
47Ca(0)
- 37 Cryogenic Rare Gas Laboratories, Inc.
730 S. 13th Street
Newark, NJ 07103
85Kr(0)
- 38 DCA Reliability Laboratory
975 Bernicia Avenue
Sunnyvale, CA 94086
85Kr(0)
- 39 Delco Electronics
General Motors Corporation
Kokomo, IN 46901
85Kr(0)
- 40 Department of Energy-ID
Health Services Laboratory
550 2nd Street
Idaho Falls, ID 83401
147Nd(I), 186Re(I), 188Re(I)
- 41 Department of Law Enforcement
Bureau of Scientific Studies
515 E. Woodruff Road
Joliet, IL 60432
RSI(A)
- 42 Diagnostic Isotopes
225 Belleville Avenue
Bloomfield, NJ 07003
127Xe(B*)
- 43 Diagnostic Radiopharmacy
6980 Aragon Circle
Suite 5
Buena Park, CA 90620
133Xe(0)
- 44 Downstate Medical Center
450 Clarkson Avenue
Brooklyn, NY 11203
28Mg(B*)
- 45 Dresser Atlas
Division of Dresser Industries, Inc.
PO Box 1407
Houston, TX 77001
3H(0), Tgs(0)
- 46 Duke University
Durham, NC 27706
Tgs(0), 238U(0), 133Xe(0)
duPont
see, E.I. duPont de Nemours Co., Inc.
- 47 EAD Metallurgical, Inc.
71 Pearce Avenue
Tonawanda, NY 14150
241Am(0), Cap(0)

- 48 East Carolina University
Purchasing Department
Greenville, NC 27834
89Sr(0)
- 49 Eberline Instrument Corporation
PO Box 279
Santa Fe, NM 87501
Tgs(0), 230Th(0)
- 50 Edinboro State College
Edinboro, PA 16444
252Cf(S)
- 51 Edsel B. Ford Institute for
Medical Research
Department of Physics and Biophysics
Henry Ford Hospital
2799 West Grand Boulevard
Detroit, MI 48202
252Cf(S)
- 52 EG&G Idaho, Inc.
550 Second Street
PO Box 1845
Idaho Fall, ID 83401
243Am(0), Cap(0), 249Cf(0), 252Cf(0),
244Cm(0), 95Nb(0), 236Pu(0), 239Pu(0),
241Pu(0), SS(0), 229Th(0), 233U(0),
235U(0), 236U(0), 133Xe(0), 95Zr(0)
- 53 EG&G Idaho, Inc.
TRA/PO Box 1625
Idaho Falls, ID 83401
28Al(I), 139Ba(I), 80Br(I), 82Br(I),
38Cl(I), 165Dy(I), EU(P), 166Ho(I),
56Mn(I), 99Mo(I), 24Na(I), 147Nd(I),
231Pa(M), 109Pd(I), RSI(I), 182Ta(I)
- 54 E. I. du Pont de Nemours Co., Inc.
Savannah River Plant
Aiken, SC 29801
243Am(0), Cap(0), 252Cf(0), 244Cm(0),
D₂O(P), DU(P), 3H(M), 238Pu(M), 238Pu(0),
242Pu(0), 106Ru(0), SS(0), Th(P), 233U(0),
95Zr(0)
- 55 EMR Photo Electric
Division of Weston Instruments
PO Box 44
Princeton, NJ 08540
3H(0)
- 56 Environmental Protection Agency
Division of Financial Management
Accounting Operations Office
Washington, DC 20460
99Tc(0)
- 57 Esso Research and Engineering Company
PO Box 642
Linden, NJ 07036
99Tc(0)
- 58 Exxon Nuclear Co., Inc.
2101 Horn Rapids Road
Richland, WA 99352
EU(P)
- 59 Exxon Nuclear Idaho Company, Inc.
Idaho Chemical Processing Plant
550 Second St.
Idaho Falls, ID 83401
EU(P)
- 60 Exxon Nuclear Idaho Company, Inc.
1955 Fremont Avenue
Idaho Falls, ID 83401
RSI(I)
- 61 Fairchild Semiconductor
PO Box 790
Mountain View, CA 94040
85Kr(0)
- 62 Flinchbaugh Products, Inc.
315 Richard Mine Road
Wharton, NJ 07885
DU(P)
- 63 Florida State University
Tallahassee, FL 32306
230Th

- 64 Gamma Industries
9320 Travenor
PO Box 34526
Houston, TX 77034

241Am(0), Cap(0)
- 65 Gamma Industries, Inc.
PO Box 2543
Baton Rouge, LA 70821

192Ir(0)
- 66 Gammie Nuclear Company, Inc.
11941 Waveland Avenue
Franklin Park, IL 60131

RSI(A)
- 67 General Electric Company
Lynchburg, VA 24502

85Kr(0)
- 68 General Electric Company
PO Box 254
San Jose, CA 95103

239Pu(0), 240Pu(0), 241Pu(0), RW(0), SS(0),
Tgs(0), 234U(0), 238U(0)
- 69 General Electric Company
General Electric Drive
Waynesboro, VA 22980

85Kr(0)
- 70 General Electric Company
Neutron Services Department
Pinellas Peninsula Plant
St. Petersburg, FL 33733

238Pu(M), 239Pu(M)
- 71 General Electric Research and
Development
PO Box 8
Schenectady, NY 12301

239Pu(0), RSI(B), Tgs(0)
- 72 General Nucleonics Division
Tyco Laboratories
2811 Metropolitan Place
Pomona, CA 91767

85Kr(0)
- 73 George Washington University
23rd and Eye St. N.W.
Washington, DC 20037

77Br(L)
- 74 George Washington University
25th and H Streets N.W.
Washington, DC 20037

77Br(B)
- 75 Georgia Institute of Technology
225 North Avenue, N.W.
Atlanta, GA 30332

85Kr(0), MCP(0), 90Sr(0)
- 76 Gollub Analytical Service Corporation
47 Industrial Road
Berkeley Heights, NY 07922

3H(0)
- 77 Goodyear Atomic Corp.
PO Box 628
Piketon, OH 45661

EU(P), 99Tc(0)
- 78 Grumman Aerospace Corporation
PO Box 177
Bethpage, NY 11714

RSI(B)
- 79 Gulf Energy and Environmental Systems
PO Box 608
San Diego, CA 92112

103Ru(0), 95Zr(0)
- 80 Gulf Nuclear, Inc.
202 Medical Center
Webster, TX 77598

241Am(0), Cap(0), 137Cs(0), 153Gd(0),
3H(0), 192Ir(0), MCP(0), Tgs(0)

Hanford Development Engineering
Laboratory
See
Westinghouse Hanford Company

- 81 Harvard Medical School
50 Binney Street
Boston, MA 02115
211At(8)
- 82 Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80401
SS(0), 229Th(0)
- 83 Henry Ford Hospital
2799 West Grand Boulevard
Detroit, MI 48202
47Ca(0)
- 84 Holy Family Hospital
N 5633 Lidgerwood Street
Spokane, WA 99207
133Xe(0)
- 85 Hughes Aircraft Company
PO Box 11337
Tucson, AZ 85706
85Kr(0)
- 86 Hughes Aircraft Company
PO Box 92907
Los Angeles, CA 90009
85Kr(0)
- 87 ICI America, Inc.
Atlas Aerospace Division
Valley Forge Industrial Park
Valley Forge, PA 19481
85Kr(0)
- 88 ICI-NBCo.
26201 Miles Road
Cleveland, OH 44128
137Cs(0), CSI(0), ³H(0), ³³P(0),
106Ru(0), ⁹⁰Sr(0), ⁹⁹Tc(0)
- 89 Industrial Nuclear Company
1124 Chess Drive
Foster City, CA 94404
192Ir(0)
- 90 INTEL Corporation
3065 Bowers Avenue
Santa Clara, CA 95051
85Kr(0)
- 91 Intelcom Rad Tech
PO Box 80817
San Diego, CA 92138
237Np(0), Tgs(0), 235U(0), 238U(0)
- 92 International Nutronics, Incorporated
1237 N. San Antonia Road
Palo Alto, CA 94303
252Cf(S)
- 93 Iowa State University
Ames, IA 50010
238U(0)
- 94 Isomedix, Inc.
PO Box 177
25 Eastmans Road
Parsippany, NJ 09054
137Cs(0)
- 95 Isotope Products Laboratories
404 S Luke Street
Burbank, CA 91502
241Am(0), 109Cd(B*), 252Cf(0), 137Cs(0),
CSI(0), 129I(0), 236Pu(0), 106Ru(0),
⁹⁰Sr(0), SS(0), 230Th(0), ⁹⁵Zr(0)
- 96 Isovac Engineering Company
6220 San Fernando Road
Glendale, CA 91204
85Kr(0)
- 97 Jewish Hospital of St. Louis
216 S. Kingshighway Blvd.
St. Louis, MO 63110
133Xe(0)
- 98 John Hopkins Hospital
650 North Wolfe Street
Baltimore, MD 21205
127Xe(B*), 47Ca(0)

- 99 K & K Laboratories
121 Express Street
Plainview, NY 11803
238U(M)
- 100 Kaman Nuclear
1700 Garden of the Gods Road
Colorado Springs, CO 80907
3H(O), Tgs(O)
- 101 Kaman Scientists Corp.
195 W 2950 South
Salt Lake City, UT 84115
90Sr(H)
- 102 KMS Fusion, Inc.
3941 S. Research Park Drive
PO Box 1567
Ann Arbor, MI 48106
3H(O)
- 103 K & K Laboratories
- Los Alamos Scientific Laboratory
See
University of California
Los Alamos Scientific Laboratory
- 108 Los Angeles County USC Medical Center
1200 N. State Street, Box 112 GH
Los Angeles, CA 90033
47Ca(O)
- 109 Lovelace Clinic
4800 Gibson Boulevard S.E.
Albuquerque, NM 87108
243Cm(O), SS(O)
- 110 Loyola University
Medical Center
2106 S. First Avenue
Maywood, IL 60153
CSI(A)
- 111 Mallinckrodt Chemical Division
-

- 116 Measurex Corporation
10475 Imperial Avenue
Cupertino, CA 95014
85Kr(0)
- 117 Medical College of Wisconsin
8700 W. Wisconsin Avenue
Milwaukee, WI 53226
43K(0)
- 118 Medi-Physics, Inc.
5855 Christie Avenue
Emeryville, CA 94608
99Tc(0)
- 119 Memorial Hospital
Department of Nuclear Medicine
1400 E. Boulder
Colorado Springs, CO 80909
133Xe(0)
- 120 Methodist Hospital
1604 N. Capitol
Indianapolis, IN 46202
127Xe(B*)
- 121 Michael-Reese Hospital
29th St. and Ellis Ave.
Chicago, IL 60616
133Xe(0)
- 122 Micro-Rel, Inc.
2340 W 10 Place
Tempe, AZ 85281
85Kr(0)
- 123 Microtest Systems, Inc.
1188 Bordeaux Drive
Sunnyvale, CA 94086
85Kr(0)
- 124 Mine Safety Appliance Company
201 N. Braddock Ave.
Pittsburgh, PA 15208
131I(0)
- 125 Mine Safety Appliances Company
RD 2
Evans City, PA 16033
131I(0)
- 126 Minnesota Mining and Manufacturing
Company
Bldg 590
Twin Cities Army Ammunition Plant
New Brighton, MN 55112
210Po(H), 210Po(M)
- 127 Minnesota Mining and Manufacturing
Company
PO Box 3121
St. Paul, MN 55101
137Cs(0), MCP(0), 95Nb(0), 147Pm(0),
127Xe(B*)
- 128 Monolithic Memories, Inc.
1165 E. Arques Ave.
Sunnyvale, CA 94086
85Kr(0)
- 129 Monsanto Company
PO Box 1311
Texas City, TX 77591
133Xe(0)
- 130 Monsanto Research Corporation
Dayton Laboratory
1515 Nicholas Road
Dayton, OH 45407
241Am(0), Cap(0), 252Cf(S), 238Pu(0)
- 131 Moravak Biochemicals
15302 E. Proctor Avenue
City of Industry, CA 91745
3H(0)
- 132 Motorola, Inc.
5005 E. McDowell Road
Phoenix, Az 85008
85Kr(0)

- 133 Mount Sinai Medical Center
4300 Alton Road
Miami Beach, FL 33139
CSI(0)
- 134 Nassau County Medical Center
Meadowbrook Hospital
2201 Hempstead Turnpike
East Meadow, NY 11554
 $^{47}\text{Ca}(0)$
- 135 National Bureau of Standards
Route 270 and Quince Orchard Road
Gaithersburg, MD 20760
 $^{242}\text{Pu}(M)$, $^{127}\text{Xe}(B)$
- 136 National Bureau of Standards
Connecticut Ave. and Van Ness St., N.W.
Washington, DC 20234
 $^{252}\text{Cf}(0)$, $^{241}\text{Pu}(0)$, SS(0), Tgs(0),
 $^{133}\text{Xe}(0)$
- 137 National Lead Co of Ohio
PO Box 39158
Cincinnati, OH 45239
DU(P)
- 138 National Semiconductor Corporation
2900 Semiconductor Drive
Santa Clara, CA 95051
 $^{85}\text{Kr}(0)$
- 139 New Brunswick Laboratory
9800 S. Cass Avenue
Argonne, IL 60439
RSI(A)
- 140 New England Nuclear Corporation
575 Albany St
Boston, MA 02118
 $^{241}\text{Am}(0)$, Cap(0), $^{109}\text{Cd}(B^*)$, $^{144}\text{Ce}(0)$,
 $^{137}\text{Cs}(0)$, CSI(0), $^{152+154}\text{Eu}(0)$, $^{153}\text{Gd}(0)$,
 $^3\text{H}(0)$, $^{129}\text{I}(0)$, $^{85}\text{Kr}(0)$, MCP(0), $^{33}\text{P}(0)$,
 $^{147}\text{Pm}(0)$, $^{103}\text{Ru}(0)$, RW(0), $^{90}\text{Sr}(0)$, SS(0),
 $^{99}\text{Tc}(0)$, $^{127}\text{Xe}(B^*)$, $^{133}\text{Xe}(0)$, $^{178}\text{W}(B^*)$,
 $^{95}\text{Zr}(0)$
- 141 New York Hospital
525 East 68th Street
New York, NY 10021
 $^{81}\text{Rb}(B)$
- 142 New York State Department of Health
Office of Fiscal Management
84 Holland Avenue
Albany, NY 12208
 $^{244}\text{Cm}(0)$, SS(0), $^{229}\text{Th}(0)$
- 143 New York University Medical Center
550 First Avenue
New York, NY 10016
 $^{244}\text{Pu}(0)$
- 144 North Carolina Baptist Hospital
300 S. Hawthorne
Winston-Salem, NC 27103
 $^{127}\text{Xe}(B^*)$
- 145 North Carolina Memorial Hospital
Division of Nuclear Medicine
Chapel Hill, NC 27514
 $^{99}\text{Tc}(0)$, $^{127}\text{Xe}(B^*)$
- 146 Northwestern Memorial Hospital
239 E. Chicago Avenue
Chicago, IL 60611
 $^{127}\text{Xe}(B^*)$
- 147 Northwestern University
619 Clark Street
Evanston, IL 60201
SS(0)
- 148 Nuclear Metals, Inc.
2229 Main Street
Concord, MA 01742
DU(P)
- 149 Nuclear Radiation Development, Inc.
2937 Alt Blvd.
Grand Island, NY 14072
 $^{241}\text{Am}(0)$, Cap(0)

- 150 Nuclear Research Corporation
Street Road and Second Street Pike
Southampton, PA 18966
137Cs(O), MCP(O)
- 151 Nuclear Sources and Services
PO Box 14023
Houston, TX 77021
241Am(O), Cap(O), Tgs(O)
- 152 Oak Ridge Associated Universities
PO Box 117
Oak Ridge, TN 37830
CSI(O), SS(O), 99Tc(O)

Oak Ridge National Laboratory
See
Union Carbide Corporation
Oak Ridge National Laboratory
- 153 Occidental Oil Shale Company, Inc.
PO Box 2999
Grand Junction, CO 81501
85Kr(O)
- 154 Ohio State University
190 North Oval Drive
Columbus, OH 43210
3H(O), Tgs(O)
- 155 Ohio State University
Research Foundation
1314 Kinnear Road
Columbus, OH 43212
89Sr(O)
- 156 Ohio University
Athens, OH 45701
3H(O), Tgs(O)
- 157 Orlando Laboratories, Inc.
PO Box 8025A
Orlando, FL 32806
243Am(O)
- 158 Oregon State University
Corvallis, OR 97330
252Cf(S)
- 159 Pacific Northwest Laboratory
999 Battelle Blvd.
Richland, WA 99352
241Am(H), 241Am(O), 37Ar(O), 252Cf(H),
60Co(H), 60Co(O), 134Cs(H), 137Cs(H),
CSI(O), 3H(H), 85Kr(O), MCP(O), 95Nb(O),
147Nd(U), 149Nd(U), 237Np(O), Nu(H),
238Pu(H), 239Pu(H), 240Pu(H), 238Pu(O),
239Pu(O), 240Pu(O), 241Pu(O), 242Pu(O),
244Pu(O), RaDEF(H), RSI(A), 106Ru(H),
90SrY(H), 90Sr(O), SS(O), 99Tc(O), Tgs(O),
230Th(O), 170Tm(U), 95Zr(O)
- 160 Pacific Radiopharmacy
347 N. Kuakini St.
Honolulu, HI 96817
133Xe(O)
- 161 Palmdale General Hospital
Palmdale, CA 93550
133Xe(O)
- 162 Pennsylvania State University
University Park, PA 16802
99Tc(O)
- 163 Penrose Hospital
2215 N. Cascade
Colorado Springs, CO 80907
133Xe(O)
- 164 Pharmatopes
2944 Corvin Drive
Santa Clara, CA 95051
133Xe(O)
- 165 Pleasant Valley Hospital
2309 Antonio Ave.
Camarillo, CA 93010
133Xe(O)

- 166 Potter and Brumfield
Princeton, IN 47570
85Kr(0)
- 167 Princeton University
James Forrestal Campus
Princeton, NJ 08540
CSI(0), 237Np(0)
- 168 Princeton University
Box 451
Princeton, NJ 08544
RSI(B)
- 169 Proctor and Gamble Company
PO Box 175
Grosbeck Station
Cincinnati, OH 45239
95Zr(0)
- 170 Radiation Resources, Inc.
24 Kulick Road
Fairfield, NJ 07006
137Cs(0), MCP(0)
- 171 Raytheon Company
350 Ellis Street
Mountain View, CA 94042
133Xe(0)
- 172 Raytheon Company
350 Lowell St.
West Andover, MA 01810
85Kr(0)
- 173 RCA
Route 12, Fostoria Road
Findlay, OH 45840
85Kr(0)
- 174 RCA
Raritan, NJ 08869
85Kr(0)
- 175 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, CA 94070
NU(0), 239Pu(0), Tgs(0), 235U(0), 238U(0)
- 176 Reluxtrol
333 Victory Avenue
South San Francisco
CA 94080
DU(P)
- 177 Rensselaer Polytechnic Institute
Troy, NY 12181
28Mg(B*), RSI(B), 230Th(0)
- 178 Research Triangle Institute
PO Box 12086
Research Triangle Park, NC 27709
106Ru(0), SS(0)
- 179 Reuter-Stokes Electronics Components
18530 South Miles Parkway
Warrensville Heights
Cleveland, OH 44128
28Mg(B*), 234U(0), 238U(0)
- 180 Richland Memorial Hospital
3301 Harden Street
Columbia, SC 29203
127Xe(B*)
- 181 Rockwell Hanford Operations
PO Box 800
Richland, WA 99352
DU(P), 3H(H)
- 182 Rockwell International
8900 Desoto Avenue
Canoga Park, CA 91304
182Ta(H)
- 183 Rockwell International
Rocky Flats Plant
Golden, CO 80401
DU(P), 238Pu(M)

- 184 Rush Presbyterian-St. Luke's Medical Center
1753 W Congress Parkway
Chicago, IL 60612
52Fe(8), 89Sr(0)
- 185 Rutgers University
School of Chemistry
Busch Campus
Piscataway, NY 08854
RSI(8)
- 186 Rutgers University
New Brunswick, NY 08903
Tgs(0), 235U(0)
- 187 Sacred Heart Medical Center
Nuclear Medicine
West 101 8th Avenue
Spokane, WA 99204
133Xe(0)
- 188 Sandia Corporation
PO Box 5800
Albuquerque, NM 87115
85Kr(0), 237Np(0), Tgs(0), 235U(0),
238U(0)
- 189 Sandia Laboratories
Kirtland Air Force Base (East)
Receiving Section, Building 894
Albuquerque, NM 87115
238Pu(M), 239Pu(M)
- 190 Sandia Laboratories
Livermore Laboratory
PO Box 969
Livermore, CA 94550
3H(P)
- 191 San Jose State College
Health/Physics Committee
125 South Seventh St.
San Jose, CA 95114
DU(P)
- 192 Schlumberger Technology Corporation
Old Quarry Road
PO Box 307
Ridgefield, CT 06877
252Cf(S)
- 193 Schwarz Bio-Research, Inc.
Mountain View Avenue
Orangeburg, NY 10962
3H(0)
- 194 Self-Powered Lighting, Ltd.
8 Westchester Plaza
Elmsford, NY 10523
3H(0)
- 195 Shell Development Company
1410 45th Street
Emeryville, CA 94608
85Kr(0)
- 196 Shepherd and Associates, J.L.
1614 Victory Blvd.
Glendale, CA 91201
137Cs(0), MCP(0)
- 197 Signetics, Inc.
811 East Arques Ave.
Sunnyvale, CA 94086
85Kr(0)
- 198 Silicon General, Inc.
11651 Monarch St.
Garden Grove, CA 92641
85Kr(0)
- 199 Sloan-Kettering Institute
425 E. 68th St
New York, NY 10021
133Xe(0)
- 200 Solid State Testing
56 Middlesex Turnpike
Burlington, MA 01803
133Xe(0)

- 201 Source Production and
Equipment Co., Inc.
625 Oxley St.
Kenner, LA 70062
192Ir(0)
- 202 Spire Corporation
Patriots Park
Bedford, MA 01730
CSI(0), RW(0), 151Sm(0), SS(0)
- 203 St. John's Hospital
333 N. F St.
Oxnard, CA 93030
133Xe(0)
- 204 St. Patrick Hospital
524 S. Ryan St.
Lake Charles, LA 70601
133Xe(0)
- 205 St. Vincent Medical Center
3rd and Grandview
Los Angeles, CA 90057
133Xe(0)
- 206 State University of New York
Downstate Medical Center
450 Clarkson Ave.
Brooklyn, NY 11203
28Mg(β*), 99Tc(0)
- 207 State University of New York
Department of Earth and Space Sciences
Stony Brook, NY 11790
RSI(B)
- 208 Swedish-American Hospital
1400 Charles St.
Rockford, IL 61101
133Xe(0)
- 209 Statek Corporation
1200 Alvarez Ave.
Orange, CA 92668
85Kr(0)
- 210 Syntex Corporation
3401 Hillview Ave.
Palo Alto, CA 94304
3H(0)
- 211 Technical Operations
South Avenue
Burlington, MA 01803
192Ir(0)
- 212 Teledyne Isotopes
Nuclear Systems Division
110 W. Timonium Road
Timonium, MD 21093
MCP(0), 90Sr(0)
- 213 Texas Instruments, Inc.
Science Services Division
PO Box 5012, Mail Stop 6
Dallas, TX 75222
85Kr(0)
- 214 Texas Instruments, Inc.
PO Box 66027, Mail Stop 615
Houston, TX 77006
85Kr(0)
- 215 TII Corporation
100 N. Strong Ave.
Lindenhurst, NY 11757
3H(0)
- 216 TII Industries, Inc.
PO Box 433
Toa Alta, PR 00758
3H(0)
- 217 Touro Infirmary Research Department
1401 Foucher St.
New Orleans, LA 70115
28Mg(β*)
- 218 Trio-Tech, Inc.
2435 N. Naomi
Burbank, CA 91504
85Kr(0)

- 219 TRW Systems Group
One Space Park
Redondo Beach, CA 90277
85Kr(O)
- 220 JNC Nuclear Industries
PO Box 490
Richland, WA 99352
60Co(U), DU(P), EU(P)
- 221 Union Carbide Corporation
Nuclear Division
Oak Ridge Gaseous Diffusion Plant
PO Box P
Oak Ridge, TN 37830
85Kr(O), 238U(M)
- 222 Union Carbide Corporation
Oak Ridge National Laboratory
Isotope Pool
Oak Ridge National Laboratory
Box X
Oak Ridge, TN 37830
Am(R)
- 223 Union Carbide Corporation
Oak Ridge National Laboratory
PO Box X
Oak Ridge, TN 37830
227Ac(M), 241Am(O), 243Am(O), 47Ca(O),
Cap(O), 252Cf(M), 252Cf(O), Cm(P),
137Cs(O), CSI(O), 3H(O), 131I(O),
192Ir(O), 85Kr(O), MCP(O), 95Nb(O),
237Np(O), 231Pa(M), 231Pa(O), Pu(P),
239Pu(O), 242Pu(P), RW(O), SS(O),
99Tc(O), Tgs(O), 229Th(M), 230Th(M),
232U(O), 233U(O), 234U(M), 235U(O),
236U(O), 238U(O), 133Xe(O), 95Zr(O)
- 224 Union Carbide Corporation
Oak Ridge National Laboratory
Nuclear Division, Y-12 Plant
PO Box Y
Oak Ridge, TN 37930
CSI(O), DU(P), EU(P), 153Gd(O), 192Ir(O),
MCP(O), 236Pu(O), 242Pu(O), 244Pu(O),
SS(O), 233U(O)
- 225 Union Carbide Corporation
Sterling Forest Research Center
PO Box 324
Tuxedo, NY 10987
MCP(O), 90Sr(O), 99Tc(O)
- 226 Unit Process Assemblies, Inc.
53-15 37th Ave.
Woodside, NY 11377
147Pm(O), 90Sr(O)
- 227 United Nuclear Corporation
Fuel Recovery Operations
Woodriver Junction, RI 02894
EU(P)
- 228 United States Air Force Academy
USAF Academy, CO 80840
252Cf(S)
- 229 United States Army
Armament Research and Development
Aberdeen Proving Ground
Aberdeen Proving Ground, MD 21005
DU(P)
- 230 United States Army
Letterman Medical Center
Finance and Accounting Division
Building 102
Presidio of San Francisco, CA 94129
47Ca(O)
- 231 United States Army
Materials and Mechanics Research Center
Watertown Arsenal
Watertown, MA 02172
DU(P)
- 232 United States Army
Picatinny Arsenal
Ordnance Corps
Dover, NJ 07801
DU(P)
- 233 United States Army
Aberdeen Proving Ground
Aberdeen Proving Ground, MD 21005
DU(P)

- 234 United States Department of Agriculture
Building 307, Room 215
Beltsville, MD 20502
 $^{28}\text{Mg}(8^*)$
- 235 United States Department of Energy
Chicago Operations Office
Finance Division
9800 S. Cass Ave
Argonne, IL 60439
 $^{242}\text{Pu}(0)$, $^{233}\text{U}(0)$, $^{234}\text{U}(0)$, $^{236}\text{U}(0)$
- 236 United States Department of Energy
376 Hudson St. 5th Fl.
New York, NY 10014
 $^{236}\text{Pu}(0)$, $^{55}\text{S}(0)$, $^{229}\text{Th}(0)$
- 237 United States Department of Energy
Richland Operations Office
PO Box 550
Richland, WA 99352
 $^{244}\text{Cm}(0)$, $^{236}\text{Pu}(0)$, $^{238}\text{Pu}(0)$, $^{240}\text{Pu}(0)$,
 $^{244}\text{Pu}(0)$, $^{106}\text{Ru}(0)$, $^{55}\text{S}(0)$, $^{95}\text{Zr}(0)$
- 238 United States Department of Interior
Geological Survey
National Center
12201 Sunrise Valley Drive
Reston, VA 22092
 $^{243}\text{Am}(0)$, $^{252}\text{Cf}(5)$, $^{244}\text{Cm}(0)$, $^{237}\text{Np}(0)$,
 $^{236}\text{Pu}(0)$
- 239 United States National Aeronautics and
Space
Ames Research Center
Moffett Field, CA 94035
 $^{47}\text{Ca}(0)$
- 240 United States National Aeronautics and
Space
Lyndon B. Johnson Space Center
Transportation Officer, Building 420
Houston, TX 77058
RSI(8)
- 241 United States National Aeronautics and
Space Administration
George C. Marshall Flight Center
Huntsville, AL 35812
MCP(0)
- 242 United States Navy
Naval Electronics Lab Center
271 Catalina Blvd.
San Diego, CA 92152
 $^{95}\text{Zr}(0)$
- 243 United States Navy
National Naval Medical Center
Building #144
Bethesda, MD 20014
 $^{127}\text{Xe}(8^*)$
- 244 United States Navy
Naval Regional Medical Center
8750 Mountain Boulevard
Oakland, CA 94627
 $^{47}\text{Ca}(0)$, $^{127}\text{Xe}(8^*)$
- 245 United States Environmental Protection
Agency
Accounting Operations Office, Durham
Research Triangle Park, NC 27711
CSI(0)
- 246 United States Public Health Service
National Institutes of Health
Isotope Laboratory
Building 21
Bethesda, MD 20014
 $^{47}\text{Ca}(0)$, $^{43}\text{K}(0)$, $^{127}\text{Xe}(8^*)$
- 247 United States Public Health Service
Hospital
15th Avenue and Lake St.
San Francisco, CA 94118
 $^{47}\text{Ca}(0)$
- 248 United States Radium Corporation
4150 Old Berwick Road
PO Box 380
Bloomsbury, PA 17815
 $^3\text{H}(0)$

- 249 Unitrode Corporation
580 Pleasant St
Watertown, MA 01970
85Kr(0)
- 250 University of Alabama
Medical Center
1919 Seventh Avenue, South
Birmingham, AL 35486
133Xe(0)
- 251 University of Arizona
Post Office Drawer 4100
Tucson, AZ 85724
127Xe(B*)
- 252 University of Arkansas
Fayetteville, AR 72701
252Cf(S), 238U(H)
- 253 University of California
Davis, CA 95616
DU(P), 129I(0)
- 254 University of California
Ernest O. Lawrence Laboratory
PO Box 808
Livermore, CA 94551
241Am(P), Nu(P), Pu(P), 238Pu(P)
- 255 University of California at La Jolla
3175 Miramar Road
La Jolla, CA 92093
82Sr(L), 85Sr(L), 127Xe(B*)
- 256 University of California
Lawrence Berkeley Laboratory
Berkeley, CA 94701
249Bk(0), 249Cf(0), 250Cf(0), 82Sr(L),
85Sr(L), SS(0)
- 257 University of California
Lawrence Livermore Laboratory
Livermore, CA 94550
227Ac(M), 241Am(0), 243Am(0), 249Bk(0),
249Cf(0), 244Cm(0), 245Cm(0), 3H(0),
MCP(0), 92Nb(H), Tgs(0), 230Th(0),
232Th(0), 235U(0), 238U(0)
- 258 University of California
Los Alamos Scientific Laboratory
PO Box 1663
Los Alamos, NM 87545
241Am(0), 211At(B), 249Bk(0), Cap(0),
249Cf(0), 252Cf(S), 243Cm(0), 137Cs(0),
DU(P), 131I(0), Pu(P), 236Pu(0),
238Pu(M), 240Pu(M), SS(0), Tgs(0),
230Th(0), 232Th(0), 234U(0), 235U(0),
238U(M), 238U(0), 95Zr(0)
- 259 University of California
Los Angeles, CA 90024
241Am(0), 47Ca(0), 52Fe(L) MCP(0),
239Pu(0), 242Pu(0), SS(0), 133Xe(0)
- 260 University of California
San Francisco Medical Center
San Francisco, CA 94122
133Xe(0)
- 261 University of Chicago
5641 S. Ingleside Ave.
Chicago, IL 60637
CSI(A), RSI(A)
- 262 University of Chicago
950 E 59th Street
Chicago, IL 60637
252Cf(S)
- 263 University of Chicago
Office of the Comptroller
1525 E. Hyde Park Blvd.
Chicago, IL 60615
47Ca(0), 28Mg(B*), 89Sr(0)

- 264 University of Cincinnati
Cincinnati, OH 45221
99Tc(0)
- 265 University of Connecticut
Health Center
Farmington, CT 06032
43K(0)
- 266 University of Florida
Gainesville, FL 32601
28Mg(B*), 147Pm(0)
- 267 University of Georgia
Athens, GA 30601
Tgs(0), 238U(0)
- 268 University of Illinois
203 Administration Building E
Urbana, IL 61803
239Pu(0), Tgs(0), 233U(0)
- 269 University of Illinois
College of Veterinary Medicine
Urbana, IL 61801
81Rb(B)
- 270 University of Illinois
Physics Department
Urbana, IL 61801
RSI(A)
- 271 University of Iowa Hospitals
Nuclear Medicine
Iowa City, IA 52242
127Xe(B*)
- 272 University of Kansas
Kansas City, KS 66103
77Br(L), 47Ca(0)
- 273 University of Kentucky
800 Rose Street
Lexington, KY 40506
252Cf(S), MCP(0), 28Mg(B*)
- 274 University of Mississippi
Jackson, MS 39216
43K(0)
- 275 University of Missouri
Columbia, MO 65201
Nu(P), 233U(0)
- 276 University of New Mexico
Radiopharmacy
Pharmacy and Nursing Building
Albuquerque, NM 87131
77Br(L)
- 277 University of Oregon
Medical School
3181 S.W. Sam Jackson Park Road
Portland, OR 97201
133Xe(0)
- 278 University of Pennsylvania
3025 Walnut St.
Philadelphia, PA 19104
133Xe(0)
- 279 University of Pennsylvania Hospital
3400 Spruce Street
Philadelphia, PA 19104
18F(B), 123I(B), 28Mg(B*)
- 280 University of Pittsburgh
Radiation Safety Office
Pittsburgh, PA 15261
NU(P)
- 281 University of Rochester
Exxon Research
Laboratory for Laser Energetics
College of Engineering
South Campus
East River Road
Rochester, NY 14642
3H(M)
- 282 University of Rochester
Rochester, NY 14642
47Ca(0), RSI(B)

- 283 University of South Alabama
2451 Sillingim
Mobile, AL 36617

28Mg(B*)
- 284 University of Southern California
School of Pharmacy
1985 Zonal Avenue
Los Angeles, CA 90033

252Cf(S)
- 285 University of Southern California
University Park
Los Angeles, CA 90007

MCP(O)
- 286 University of Tennessee
865 Jefferson Avenue
Memphis, TN 38103

47Ca(O)
- 287 University of Tennessee
1299 Bethel Valley Road
Oak Ridge, TN 37830

47Ca(O), 28Mg(B*)
- 288 University of Texas
5108 Medical Center Drive
Dallas, TX 75235

47Ca(O), 127Xe(B*)
- 289 University of Texas Medical Branch
Nuclear Medicine Division
Room 229, Clinical Science Building
Galveston, TX 77550

127Xe(B*), 133Xe(O)
- 290 University of Texas
PO Box 688
Richardson, TX 75080

230Th(O), 235U(O)
- 291 University of Utah
Purchasing Department
Salt Lake City, UT 84112

244Pu(O), 133Xe(O)
- 292 University of Utah
Radiobiology Division
2C-108 Medical Center
Salt Lake City, UT 84112

Pu(P)
- 293 University of Virginia
RWMF, 11th and Lee Street
Charlottesville, VA 22901

127Xe(B*)
- 294 University of Virginia
Charlottesville, VA 22903

MCP(O), SS(O), 127Xe(B*), 133Xe(O)
- 295 University of Washington
400 Administration Building
Seattle, WA 98105

89Sr(O), 133Xe(O)
- 296 University of Wisconsin
750 University Avenue
Madison, WI 53706

3H(O)
- 297 U.S. Testing Company, Inc.
2800 George Washington Way
Richland, WA 99352

241Am(H), 3H(H), Nu(HO), 147Pm(H),
239Pu(H), RaDEF(H), 90SrY(H)
- 298 Vanderbilt University
Business Manager's Office
Nashville, TN 37203

248Cm(O)
- 299 VA Calm 361
Data Processing Center
1615 Woodward St. E.
Austin, TX 78772

MCP(O), 133Xe(O)
- 300 Veterans Administration Center
Wood, WI 53193

43K(O)

- 301 Veterans Administration Hospital
11201 Benton Street
Loma Linda, CA 92354
127Xe(B*)
- 302 Veterans Administration Hospital
Wilshire and Sawtelle Boulevards
Los Angeles, CA 90073
47Ca(0)
- 303 Veterans Administration Hospital
1201 Northwest 16th Street
Miami, FL 33125
133Xe(0)
- 304 Veterans Administration Hospital
Chief Supply Service
Building #7
Hines, IL 60141
47Ca(0), 252Cf(S)
- 305 Veterans Administration Hospital
1400 V.F.W. Parkway
West Roxbury, MA 02132
123Xe(B), 127Xe(B*)
- 306 Veterans Administration Hospital
Nuclear Medicine
Northport, NY 11768
127Xe(B*)
- 307 Veterans Administration Hospital
Syracuse, NY 13210
133Xe(0)
- 308 Veterans Administration Hospital
Fulton St. and Durham Rd.
Durham, NC 22705
47Ca(0)
- 309 Veterans Administration Hospital
1310 24th Ave. S.
Nashville, TN 37203
133Xe(0)
- 310 Veterans Administration Hospital
4435 Beacon Avenue South
Seattle, WA 98108
103Ru(B)
- 311 Veterans Administration Medical Center
3350 La Jolla Village
San Diego, CA 92161
103Ru(0)
- 312 Vetter Research
3189 C Airway Ave.
Costa Mesa, CA 92626
3H(0)
- 313 Vought Corporation
PO Box 6144
Dallas, TX 75222
252Cf(S)
- 314 Washington State University
Nuclear Radiation Center
Pullman, WA 99163
EU(P)
- 315 Washington University
499 S. Euclid
St. Louis, MO 63110
77Br(L)
- 316 Washington University
Lindell and Skinker
ST. Louis, MO 63130
133Xe(0)
- 317 Washington University School of Medicine
Mallinckrodt Institute of Radiology
510 South Kings Highway
St. Louis, MO 63110
252Cf(S)

- 318 Western Electric Company, Inc.
PO Box 241
Reading, PA 19603
85Kr(0)
- 319 Western Electric Company, Inc.
PO Box 1409
Lawrence, MA 01842
85Kr(0)
- 320 Western Electric Company, Inc.
555 Union Blvd.
Allentown, PA 18103
85Kr(0)
- 321 Western Electric Company, Inc.
777 N. Blue Parkway
Lee's Summit, MO 64063
85Kr(0)
- 322 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
PO Box 79
West Mifflin, PA 15122
Tgs(0), 235U(0)
- 323 Westinghouse Hanford Company
Hanford Engineering Development
Laboratory
PO Box 1970
Richland, WA 99352
241Am(0), 133Ba(H), 144CePr(H),
252Cf(0), 57Co(H), 60Co(H), 60Co(O),
134Cs(H), 137Cs(H), CSI(O), DU(P), EU(P),
203Hg(H), 54Mn(H), 237Np(O), 239Np(H),
NU(H), NU(O), NU(P), 238Pu(H), 239Pu(H),
239Pu(O), 240Pu(O), 241Pu(O), Pu(P),
90SrY(H), SS(O), Tgs(O), 232Th(H),
232Th(O) Th(P), 233U(P), 233U(O),
235U(O), 238U(O), 133Xe(O)
- 324 Yale-New Haven Hospital
333 Cedar Street
New Haven, CT 06510
103Ru(B)
- 325 Yale University
20 Ashmun St
New Haven, CT 06520
129I(0), 103Ru(0)
- 326 Zilog, Inc.
10460 Babb Rd.
Cupertino, CA 95014
85Kr(0)

1113615

FOREIGN CUSTOMERS

AUSTRALIA

327 Australian AEC
Research Establishment
Lucas Heights, Australia
 $^{244}\text{Cm}(0)$, $^{231}\text{Pa}(0)$, $^{127}\text{Xe}(B^*)$

328 Australian National University
PO Box 4
Canberra, A.C.T. Australia
 $^{37}\text{Ar}(0)$

329 Embassy of Australia
1601 Massachusetts Ave., N.W.
Washington, D.C. 20036
 $^{242}\text{Pu}(0)$

330 Western Australian Institute of
Technology
Hayman Road
Bentley South 6102
Western Australia, Australia
 $^{89}\text{Sr}(0)$

AUSTRIA

331 International Atomic Energy Agency
Kaerntnerring 11-13
A-1010 Vienna, Austria
 $^{239}\text{Pu}(0)$, $^{240}\text{Pu}(0)$, $^{241}\text{Pu}(0)$, $^{242}\text{Pu}(0)$,
 $^{244}\text{Pu}(0)$, $\text{Tgs}(0)$, $^{233}\text{U}(0)$, $^{235}\text{U}(0)$,
 $^{236}\text{U}(0)$, $^{238}\text{U}(0)$

BELGIUM

332 Centre d'Etude de l'Energie Nucleaire
144 Avenue Plasky
Brussels 4, Belgium
 $^{237}\text{Np}(0)$, $\text{Tgs}(0)$, $^{235}\text{U}(0)$, $^{238}\text{U}(0)$

333 Katholieke Universiteit Leuven
Dienst Radioprotektie
De Croylaan 54
Henerlee, Belgium
 $^{28}\text{Mg}(B^*)$, $^{127}\text{Xe}(B^*)$

334 EURATOM
51-53 Rue Belliard
Brussels, Belgium
 $^{242}\text{Pu}(0)$

335 European Atomic Energy Commission
Central Bureau for Nuclear Measurements
Geel, Belgium
 $^{243}\text{Am}(0)$, $\text{Cap}(0)$, $^{237}\text{Np}(0)$, $^{239}\text{Pu}(0)$,
 $^{240}\text{Pu}(0)$, $^{241}\text{Pu}(0)$, $^{242}\text{Pu}(0)$, $^{244}\text{Pu}(0)$,
 $\text{Tgs}(0)$, $^{235}\text{U}(0)$, $^{238}\text{U}(0)$

336 Institut National des Radioelements
Avenue Eugene Plasky, 144
1040 Brussels, Belgium
 $^{192}\text{Ir}(0)$, $^{85}\text{Kr}(0)$

337 Universite de Liege
2 rue Armand Stevart
Liege, Belgium
 $^{243}\text{Am}(0)$, $^{248}\text{Cm}(0)$

BRAZIL

338 Empresas Nucleares Brasileiras S/A
Nuclebras
Rua General Polidoro
316 Rio de Janeiro (RJ), Brazil
 $^{242}\text{Pu}(0)$

CANADA

339 Atomic Energy of Canada, Limited
PO Box 6300
Postal Station J
Ottawa, Canada
 $^{137}\text{Cs}(0)$, $\text{MCP}(0)$

340 Atomic Energy of Canada, Ltd.
Commercial Products
Ottawa, Canada K2A 3W3
 $^{133}\text{Xe}(M)$

- 341 Atomic Energy of Canada, Ltd.
Chalk River Nuclear Laboratories
Metallurgy Engineering Branch
Chalk River, Ontario, K0J1J0, Canada
95Zr(H)
- 342 Atomic Energy of Canada, Limited
Whiteshell Nuclear Research
Establishment
Pinawa, Manitoba, Canada
242Pu(O), 230Th(O), 234U(O), 238U(O)
- 343 Bondar-Clegg and Company, Limited
764 Belfast Road
Ottawa, Ontario, K1G 0Z5, Canada
252Cf(O)
- 344 Dalhousie University
Halifax, Nova Scotia, Canada
95Zr(O)
- 345 Health Sciences Center
Nuclear Medicine
700 William Avenue
Winnipeg, Canada
127Xe(B*)
- 346 McGill University
Montreal 2, P.Q., Canada
133Xe(O)
- 347 McMaster University
Hamilton, Ontario, Canada
3H(O), 129I(O), 99Tc(O)
- 348 McMaster University Medical Center
Forsyth Avenue Receiving
Hamilton, Ontario, Canada
127Xe(B*), 133Xe(O)
- 349 Ontario Hydro
700 University Avenue
Toronto, Ontario, Canada M5G 1X6
243Am(O)
- 350 Royal Ontario Museum
100 Queens Park
Toronto, Ontario, Canada M5S 2C6
230Th(O)
- 351 St. Joseph's Hospital
Nuclear Medicine Department
268 Grosvenor Street
London, Ontario, N-6A4V2, Canada
127Xe(B*)
- 352 Universite de Laval
Case Postale 2208
Parvillon Vachon
Quebec 10, P.Q. Canada
133Xe(O)
- 353 University Hospital
Nuclear Medicine Department
London, Ontario, Canada
127Xe(B*)
- 354 University of Alberta
Edmonton, Alberta, Canada T6G2H1
133Xe(O), 3H(O)
- 355 University of British Columbia
Vancouver, British Columbia, Canada
89Sr(O)

DENMARK

- 356 Gammatec
Stormly 16
3500 Hareskov
Denmark
153Gd(O), 88(O)
- 357 Isotope Pharmacy
378 Frederikssundsvej
Broenshoej, Denmark
127Xe(B*)
- 358 Rigshospitalet
Pshcho Chem Lab
9 Blegdamovej
Copenhagen, Denmark
28Mg(B*)
- 359 University of Copenhagen
Raadmansgade 71, DK 2200
Copenhagen N, Denmark
28Mg(B*)

FRANCE

- 360 CEA
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 $^{153}\text{Gd}(0)$, $^{55}\text{S}(0)$
- 361 French Atomic Energy Commission
1730 Rhode Island Ave., N.W.
Suite 1217
Washington, DC 20036
 $^{241}\text{Am}(0)$, $^{238}\text{Pu}(0)$, $^{242}\text{Pu}(0)$
- 362 Laboratoire Curie
Institut du Radium
11, rue Pierre et Marie Curie
75231 Paris, Cedex 05
France
 $^{237}\text{Np}(0)$, $^{238}\text{U}(0)$
- 363 Universite de Nice
Laboratoire de Geologie Structurale
Parc Valrose, 06100
Nice, France
 $^{55}\text{S}(0)$, $^{229}\text{Th}(0)$
- 364 American Hoechst Corporation
PO Box 2500
Somerville, NJ 08876
 $^{85}\text{Kr}(0)$

GERMANY, FEDERAL REPUBLIC OF

- 365 Buchler and Company
Frankfurter Str. 294
Braunschweig
Federal Republic of Germany
 $^{37}\text{Ar}(0)$, $^{237}\text{Np}(0)$
- 366 Darmstadt, Technischen Hochschule
61 Darmstadt
Federal Republic of Germany
 $^{236}\text{Pu}(0)$
- 367 EURATOM Transuranium Institute
PO Box 452
74 Karlsruhe
Federal Republic of Germany
 $^{237}\text{Np}(0)$, $^{230}\text{Th}(0)$
- 368 Freie Universitat Berlin
Fachbereich Physik
FB20 WLIA
Boltzmannstrasse 20
1000 Berlin 33
Federal Republic of Germany
 $^{127}\text{Xe}(B^*)$, $^{133}\text{Xe}(0)$
- 369 Gesellschaft fur Kern forschung mbH
Institute fuer Angewandte Reaktor
Physike
Weberstrasse 5
75 Karlsruhe
Federal Republic of Germany
 $^{241}\text{Am}(0)$, $^{243}\text{Am}(0)$, $^{238}\text{Pu}(0)$, $^{235}\text{U}(0)$
- 370 Gesellschaft fur Schwerionen forschung,
mbH
Finanz Abbielung
Postfach 541
D-6100 Darmstadt
Federal Republic of Germany
 $^{236}\text{Pu}(0)$, $^{235}\text{U}(0)$
- 371 Johanna Wolfgang Goeth University
Frankfurt/Main
Federal Republic of Germany
 $^{230}\text{Th}(0)$, $^{234}\text{U}(0)$
- 372 Kernforschung Sanlage
Postfach 365
517 Julich
Federal Republic of Germany
 $^{237}\text{Np}(0)$, $^{239}\text{Pu}(0)$, $^{151}\text{Sm}(0)$, $^{232}\text{Th}(0)$, $^{235}\text{U}(0)$, $^{238}\text{U}(0)$
- 373 Max Planck Institut fur Kernphysik
Saupfercheckveg
Heidelberg
Federal Republic of Germany
 $^{236}\text{U}(0)$
- 374 Medizinische Hochschule Hannover
Karl-Wiechert-Allee 9
3000 Hannover 61
Federal Republic of Germany
 $^{127}\text{Xe}(B^*)$

- 375 University of Munster
44 Munster/ Westfalln
Federal Republic of Germany
37Ar(0)
- 376 Philipps Universitat, F.B. 14
Kern Chemic
355 Marburg, Lahnberg
Federal Republic of Germany
243Am(0), Cap(0)
- 377 W. Maier Komm. Ges.
7220 Schweningen a.N.
Postfach 126
Federal Republic of Germany
147Pm(0)
- 378 University of Mainz/Rhein
Mainz am Rhein
Federal Republic of Germany
242pu(0), 244pu(0), Tgs(0)
- 379 University of Erlangen Nurnberg
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852 Erlangen
Federal Republic of Germany
252Cf(0), Tgs(0)

GREAT BRITAIN

- 380 British Embassy
3100 Massachusetts Avenue, N.W.
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Tgs(0), 238U(0)
- 381 Brandhurst Co., Ltd.
Wellington Road
High Wycombe, Bucks HP12 3PS
England, Great Britain
3H(0)
- 382 Edlow International Company
Suite 404-5
1100 17th St., N.W.
Washington, DC 20036
3H(0)

- 383 Hammersmith Hospital
Ducane Road
London W12 0HS, England
Great Britain
85Sr(L), 82Sr(L)
- 384 Institute of Oceanographic Sciences
Brook Road
Wormley
Surrey GU8, 5UB, England
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- 385 Mallinkrodt, Ltd.
Building 521 129G
Southampton Road
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Great Britain
127Xe(8*)
- 386 Medical Research Council
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England, Great Britain
- 387 Medical Research Council
Cambridge, CB2 2QH, England
Great Britain
MCP(0)
- 388 Radio Chemical Centre
White Lion Road
Amersham, Bucks, England
Great Britain
Cap(0), 244Cm(0), CSI(0), 153Gd(0), 3H(0),
85Kr(0), MCP(0), 237Np(0), 147Pm(0),
106Ru(0), 151Sm(0), 89Sr(0), 99Tc(0),
Tgs(0), 91Y(0), 95Zr(0),
- 389 Saunders-Roe Developments, Ltd.
North Hyde Road
Hayes, Middlesex, England
Great Britain
3H(0)
- HONG KONG
- 390 National Cash Register Mfg. Co., Ltd.
No. 55 Wong Chuk Hang Road
Aberdeen, Hong Kong
85Kr(0)

391 Semi-Conductor Devices, Ltd.
59-61 Wong Chuk Hang Road
Aberdeen, Hong Kong

$^{85}\text{Kr}(0)$

INDIA

392 Bhabha Atomic Research Center
Government of India
3rd Floor Mohatta Building
Bombay 1, India

$^{249}\text{Bk}(0)$

ISRAEL

393 Embassy of Israel
1621-22nd Street N.W.
Washington, DC 20008

$^3\text{H}(0)$

ITALY

394 CNEN Laboratorio Dati Nucleari
% Laboratorio FRAE via Biancamano
Possatore Di Medicina
Bologna, Italy

$^{252}\text{Cf}(0)$, $\text{Tgs}(0)$

395 Comitato Nazionale l'Energia Nucleari
818 Eighteenth St., N.W.
Washington, DC 20009

$^{242}\text{Pu}(0)$

JAPAN

396 Japan Radioisotope Association
Hon-Komagome 2 Chome 28
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Tokyo, Japan

$^{243}\text{Am}(0)$, $\text{Cap}(0)$, $^{244}\text{Cm}(0)$, $^{85}\text{Kr}(0)$,
 $\text{Tgs}(0)$

397 Kyoto University
Engineering Research Institute
Kyoto, Japan

$^{133}\text{Xe}(0)$

398 Marubeni American Corporation
14 Henderson Drive
West Caldwell, NJ 07006

$^{233}\text{U}(0)$

399 Nissho-Iwai American Corporation
1211 Avenue of the Americas
New York, NY 10036

$^{242}\text{Pu}(0)$, $^{233}\text{U}(0)$

400 Toshiba Corporation
1-6 Uchisaiwaicho, 1-Chome
Chiyoda-Ku, Tokyo, Japan

$^{234}\text{U}(0)$

401 University of Tokyo
Azabu, Minato-Ku
Tokyo, Japan

$^{234}\text{U}(0)$, $^{236}\text{U}(0)$

NETHERLANDS

402 Institute for Atomic Sciences in
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Keyenbergseweg 6, Wageningen,
The Netherlands

$^{243}\text{Am}(0)$

403 N.V. Philips-Duphar
PO Box 2
Weesp, The Netherlands

$^{99}\text{Tc}(0)$

404 Reactor Centrum Nederland
Petten N.H.
The Netherlands

$^{230}\text{Th}(0)$

405 Rijksinkoopbureau
55 A Laan van Meerdervoort
The Hague, The Netherlands

NORWAY

406 Institutt for Atom Energi
OECD Halden Reactor Project
Halden, Norway

$\text{EU}(P)$

407 Institute for Atomic Energy
Isotope Laboratories
N-2007
Kjeller, Norway
 $^{127}\text{Xe}(\text{B}^*)$

SOUTH AFRICA

408 Tygerberg Hospital
Nuclear Medicine Department
Parowvallei
Cape Province, South Africa
 $^{127}\text{Xe}(\text{B}^*)$

SWEDEN

409 Centralab
Radiation Physics
Lasarettet, S221 85
Lund, Sweden
 $^{127}\text{Xe}(\text{B}^*)$

410 University of Uppsala
Uppsala, Sweden
 $^{252}\text{Cf}(\text{O})$, $\text{Tgs}(\text{O})$

SWITZERLAND

411 Basel Universitat
4000 Basel
Switzerland
 $\text{Tgs}(\text{O})$, $^{232}\text{Th}(\text{O})$

412 Eidg. Institut fur Reaktorforschung
Wurenlingen, Switzerland
 $^{244}\text{Cm}(\text{O})$, $^{230}\text{Th}(\text{O})$, $^{234}\text{U}(\text{O})$

413 University of Fribourg
1700 Fribourg, Switzerland
 $^{237}\text{Np}(\text{O})$, $\text{Tgs}(\text{O})$

414 Merz and Bentelli AG
Bumplizstrasse 91
3018 Bern, Switzerland
 $^3\text{H}(\text{O})$

415 Radium Chemie
A. Zeller and Company
9053 Teufen/Ar
Switzerland
 $^3\text{H}(\text{O})$, $\text{MCP}(\text{O})$, $^{147}\text{Pm}(\text{O})$

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416 United Pacific Semiconductor Corporation
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Su-Lin Cheng, Taipei, Hsien, Taiwan
 $^{85}\text{Kr}(\text{O})$

YUGOSLAVIA

417 Institut Ruder Boskovic
Bijenicka Cesta 54
Zagreb, Yugoslavia
 $^{37}\text{Ar}(\text{O})$

3. ALPHABETICAL LIST OF ISOTOPES
CROSS-REFERENCED TO CUSTOMER NUMBERS

DOMESTIC

Actinium 227 (Ac)	Californium 249 (Cf)
223, 257	8, 52, 256, 257, 258
Aluminum 28 (Al)	Californium 250 (Cf)
53	256
Americium (Am)	Californium 252 (Cf)
222	8, 18, 50, 51, 52, 54, 92, 95, 106,
Americium 241 (Am)	107, 130, 136, 158, 159, 192, 223, 228,
5, 8, 21, 47, 64, 80, 95, 130, 140,	238, 252, 258, 262, 273, 284, 304, 313,
149, 151, 159, 223, 254, 257, 258, 259,	317, 323
297, 323	Cerium 144 (Ce)
Americium 243 (Am)	140
52, 54, 157, 223, 238, 257	Cerium 144 + Praseodymium (CePr)
Argon 37 (Ar)	323
159	Cesium 134 (Cs)
Astatine 211 (At)	159, 323
81, 258	Cesium 137 (Cs)
Barium 133 (Ba)	8, 15, 80, 88, 94, 95, 127, 140, 150,
324	159, 170, 196, 223, 258, 323
Barium 139 (Ba)	Chlorine 38 (Cl)
53	53
Berkelium 249 (Bk)	Cobalt 57 (Co)
8, 256, 257, 258	323
Bromine 77 (Br)	Cobalt 60 (Co)
18, 73, 74, 272, 276, 315	8, 159, 220, 323
Bromine 80 (Br)	Curium (Cm)
53	223
Bromine 82 (Br)	Curium 243 (Cm)
53	8, 109, 258
Cadmium 109 (Cd)	Curium 244 (Cm)
5, 95, 140	52, 54, 142, 237, 238, 257
	Curium 245 (Cm)
	257

Curium 248 (Cm)
298

Cyclotron Service Irradiations (CSI)
5, 13, 23, 88, 95, 110, 111, 133, 140,
152, 159, 167, 202, 223, 224, 245, 261,
323

Depleted Uranium (DU)
1, 8, 12, 25, 54, 62, 137, 148, 176,
181, 183, 191, 220, 224, 229, 231, 232,
233, 253, 258, 323

Deuterium Oxide (D₂O)
54

Dysprosium 165 (Dy)
53

Einsteinium 253 (Es)
8

Encapsulation (Cap)
8, 47, 52, 54, 64, 80, 130, 140, 149,
151, 223, 258

Enriched Uranium (EU)
53, 58, 59, 77, 220, 224, 227, 314

Europium 152+154 (Eu)
140

Fluorine 18 (F)
113, 279

Gadolinium 153 (Gd)
5, 80, 115, 140, 224

Hafnium 181 (Hf)
22

Holmium 166 (Ho)
53

Iodine 123 (I)
279

Iodine 129 (I)
5, 95, 140, 253, 325

Iodine 131 (I)
124, 125, 223, 258

Iridium 192 (Ir)
9, 65, 80, 89, 201, 211, 223, 224

Iron 52 (Fe)
184, 259

Krypton 85 (Kr)
2, 4, 11, 20, 33, 37, 38, 39, 61, 67,
69, 72, 75, 85, 86, 87, 90, 96, 105,
116, 122, 123, 128, 132, 138, 140, 153,
159, 166, 172, 173, 174, 188, 195, 197,
198, 209, 213, 214, 218, 219, 221, 223,
249, 318, 319, 320, 321, 326

Magnesium 28 (Mg)
23, 31, 35, 44, 177, 179, 206, 217,
234, 263, 266, 273, 279, 283, 287

Manganese 54 (Mn)
323

Manganese 56 (Mn)
53

Mercury 203 (Hg)
323

Miscellaneous Compound Preparations (MCP)
13, 15, 75, 80, 113, 127, 140, 150,
159, 170, 196, 212, 223, 224, 225, 241,
257, 259, 273, 285, 294, 299

Molybdenum 99 (Mo)
53

Natural Uranium (NU)
175, 280, 323

Neodymium 147 (Nd)
40, 53, 159

Neodymium 149 (Nd)
159

Neptunium (Np)
8

Neptunium 237 (Np)
8, 91, 159, 167, 188, 223, 238, 323

Neptunium 239 (Np)

323

Niobium 92 (Nb)

257

Niobium 95 (Nb)

8, 52, 127, 159, 223

Osmium 191 (Os)

27

Palladium 109 (Pd)

53

Phosphorus 33 (P)

88, 140

Plutonium (Pu)

8, 223, 254, 258, 323

Plutonium 236 (Pu)

28, 52, 95, 224, 226, 227, 229, 250, 262

Promethium 147 (Pm)

14, 127, 140, 226, 266, 297

Protactinium 231 (Pa)

53, 223

RaDEF

159, 297

Reactor Service Irradiations (RSI)

6, 8, 19, 41, 53, 60, 66, 71, 78, 139, 159, 168, 177, 185, 207, 240, 261, 270, 282

Rhenium 186 (Re)

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Rhenium 188 (Re)

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4. GEOGRAPHICAL LOCATION OF RADIOISOTOPE CUSTOMERS
(identified by customer numbers)

STATES

Alabama (AL)	Indiana (IN)
241, 250, 283	41, 120, 166
Arizona (AZ)	Iowa (IA)
6, 85, 122, 132, 251	27, 93, 271
Arkansas (AR)	Kansas (KS)
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California (CA)	Kentucky (KY)
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Colorado (CO)	Louisiana (LA)
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Connecticut (CT)	Maryland (MD)
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District of Columbia (DC)	Massachusetts (MA)
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Florida (FL)	Michigan (MI)
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Georgia (GA)	Minnesota (MN)
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Hawaii (HI)	Mississippi (MS)
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Idaho (ID)	Missouri (MO)
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Illinois (IL)	Nebraska (NB)
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Yugoslavia

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5. RADIOISOTOPE SALES AND TRANSFERS - FY 1979

	Domestic			Foreign			Project			Total		
	Shpts	Amount mCi	Dollars	Shpts	Amount mCi	Dollars	Shpts	Amount mCi	Dollars	Shpts	Amount mCi	Dollars
einsteinium-253(O)												
encapsulation(O)												
enriched												
uranium(P)(a)	6	28,598 g	29,300	3	14,400	14,000	51	57,057	56,900	60	100,055	100,200
europium-152(O)	1	15.0	300				1	15.0		1	15.0	300
Fluorine-18(B)	4	77.0					4	77.0		4	77.0	
gadolinium-153(O)	8	6,916.0	10,375	4	5,500.0	6,650	4	4008.0	5,750	16	16,424.0	22,975
hafnium-181(O)	1	20.0	60					1.6	60	1	20.0	60
holmium-166(I)												
iodine-123(B)	1	25.0								1	25.0	
iodine-129(O)	7	5,203.0 mg	3,777	3	1,251.0 mg	1,051	78	1,121.5	16,083	10	6,454.0 mg	4,828
iodine-131(O)	2	250.0	250							80	1,371.5	16,333
iodine-131(H)	4	76.0								4	76.0	
iridium-192(H)	176	1,011,859 Ci	1,486,660	9	37,542 Ci	52,869	6	461 Ci	674	191	1,049,862 Ci	1,540,203
iridium-192(O)	3	35.0								3	35.0	
iron-52(B)												
iron-52(L)												
krypton-85												
enriched(O)	2	200 Ci	17,000	1	50 Ci	3,000				3	250 Ci	20,000
krypton-85(O)	190	6,729 Ci	148,392	16	943 Ci	20,746	29	1,409 Ci	18,875	234	9,081 Ci	188,013
magnesium-28(B)(b)												
manganese-54(H)	33	8.7	3,146	3	0.8	319	1	0.11 uCi	300	36	9.5	3,465
manganese-56(I)												
mercury-203(H)												
miscellaneous												
compounds												
preparations(O)	26	265.0	1,104	2	8.0	88	3	0.001	56,867	31	273.0	58,059
preparations(O)												
mojiblanum-99(I)												
natural uranium(H)												
natural uranium(O)												
natural												
uranium(P)(a)	4	1,450.0	64							7	8	30
neodymium-147(I)												
neodymium-147(U)												
neodymium-149(I)												
neodymium-149(U)												
neptunium-237												
neptunium(P)(a)												
neptunium-237												
high purity(O)	1	1,000.0 mg	362	5	20,474.0 mg	5,921	5	3,087.0 mg	2,264	11	24,561.0 mg	8,547
neptunium-237												
metal(O)												
neptunium-237												
oxide(O)	1	365	365	5	65 y	15,225	2	31.9 g	9,006	8	96.9 g	24,596
neptunium-239(H)												
niobium-92(H)												
niobium-95(O)	27	440.0	11,000	1			1	8.3 Ci	700	3	200.41	11,700
osmium-191(B)	13	10,724.5					6	28.0		33	468.0	

5. RADIOISOTOPE SALES AND TRANSFERS - FY 1979

	Domestic			Foreign			Total		
	Shots	Amount mCi	Dollars	Shots	Amount mCi	Dollars	Shots	Amount mCi	Dollars
Caesium-132(H)	1	3.0	55,562	1	0.9 Ci	30	1	0.9 Ci	30
Caesium-132(I)	25	77,830.0 mg	4,280						
Target									
Preparations(O)			68,484						
Technetium-99(O)	6	52,560.0 mg	2,890	9	32,762.0 mg	314,908	1	3.0	481,951
Thorium-230(H)	3	195		12	1.4 g	1,868	40	163,152.0 mg	9,058
Thorium-230(I)				2	10.9 mg	70	2	1.4 g	70
Thorium-230(H)				2	0.2 mg		7	0.3 mg	
Thorium-230(I)				2	56,921 g	130	2	56,921 g	505
Thorium-230(H)	5	15.1 mg	1,413	3	115.0 mg	212	5	116.9 mg	450
Thorium-230(I)	3	20.0 mg	526	3	14.0 mg	292	9	129.1 mg	11,532
Thorium-230(H)				4	90.0 mg		5	110.0 mg	2,862
Thorium-232(H)				2	3,000.0 mg	160	1	0.1 g	
Thorium-232(I)				9	21,399.8 mg	585	11	24,399.8 mg	745
Thorium-232(U)				1	14,000	250	1	14,000	250
Tritium(H)	10	96.0 Ci		3	24 uCi		3	14 uCi	
Tritium(I)	212	1,050,061 Ci	821,877	30	2,811 Ci	3,409	10	95.0 Ci	1,831,470
Tritium(P)	4	276.0				3,000	294	2,390,435 Ci	3,000
Tungsten-178(B)	1	10.0					4	276.0	
Tungsten-178(B)(b)							1	10.0	
Uranium-232(O)	2	116.0 mg	141	13	11,707.3 mg	65	1	16,423.3 mg	65
Uranium-233(O)				1	97 g	4,715	18	97 g	16,919
Uranium-233(P)				1	10.0 g	7,000	1	10.0 g	7,000
Uranium-234(H)				2	50.0 g		10	5,501.0 mg	46,930
Uranium-234(O)	3	3,400.0 mg	28,483	17	153,424.7 mg	393	31	231,536.7 mg	13,475
Uranium-235(O)	5	5,460.0 mg	867	4	3,300.0 mg	1,035	7	3,876.0 mg	692
Uranium-235(I)	3	1.02		6	2,644.0 g	260	3	1.02	
Uranium-235(H)	1	91.0 g		13	151,682.1 mg	743	7	2,355 g	14,047
Uranium-238(H)	8	874,630.0 g	1,807				30	1,629,797.1 mg	
Uranium-238(O)				7	3,100.0	9,854	24	64,432.0	181,562
Mitochondrial radioisotopes(O)	17	61,332.0	171,708				1	110.0	
Xenon-123(O)	1	110.0					2	73.0	
Xenon-127(O)	1	25.0					160	36,214.0	51,196
Xenon-127(B)(b)	122	24,514.0	35,533				503	752 Ci	53,016
Xenon-133(H)	428	691 Ci	47,349	24	31 Ci	1,857	2	5.0	58
Xenon-133(O)				51	50 Ci	355	29	1,212.5	9,024
Ytterbium-91(O)	14	1,321.0	6,757	10	330.5	1,912	1	1 Ci	180,395
Zirconium-95									
Zirconium-95(H)									
Handling Charges(O)			140,805			23,065			
Subtotal	2,741		5,649,012	340		1,581,064	1,214		865,681
Loans									
TOTAL									

(a) If no amount is listed, all of the shipments were less than a reportable quantity. If an amount is listed, part of the shipments were less than a reportable quantity.
 (b) None of the shipments were less than a reportable quantity.
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Stable Isotope Customer List and Summary of Shipments—FY 1979

W. C. Davis

OPERATED BY
UNION CARBIDE CORPORATION
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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STABLE ISOTOPE CUSTOMER LIST AND SUMMARY
OF SHIPMENTS - FY 1979

Compiled by
W. C. Davis

Date Published - April 1980

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
operated by
UNION CARBIDE CORPORATION
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1113639

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STABLE ISOTOPE CUSTOMER LIST AND SUMMARY
OF SHIPMENTS - FY 1979

W. C. Davis

INTRODUCTION

This compilation is published as an aid to those concerned with the separation and sale of stable isotopes. The information is divided into four sections:

1. alphabetical list of domestic and foreign customers, showing the stable isotopes purchased during the fiscal year;
2. alphabetical list of isotopes, cross-referenced to customer numbers and divided into domestic and foreign categories;
3. alphabetical list of states and countries, cross-referenced to customer numbers and indicating geographical concentrations of isotope users; and
4. tabulation of the shipments, quantities, and dollars for domestic, foreign, and project categories for each isotope.

Other reports published in this series are:

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ORNL/TM-3146	ORNL/TM-6710
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Livermore, California 94550
108, 118, 118Ba, 118Cl, 118Hf, 118Hf,
7Li, 176Lu, 184Nd, 76Se, 80Se,
82Se, 84Sr, 87Sr, SS, Tqs
- 28 California, University of
Los Alamos Scientific Laboratory
Post Office box 1663
Los Alamos, New Mexico 87544
118, 118Ba, 118Ba, 118Ba, 117Ba, 118Ba,
81Br, 109Ca, 109Er, 154Eu, 59Fe,
157Gd, 158Gd, 158Gd, 76Ge, 80K,
81Li, 209Mg, 209Mg, 209Pb, 209Pb,
109Rb, 109Rb, 209Si, 109Sm, 109Sm,
109Sm, 118Sn, 120Sn, 122Sn, SS, 123Te,
124Te, 124Te, 124Te, 126Te, 130Te, Tqs,
147Tl, 147Tl, 147Tl, 203Tl, 122W, 122W,
124Y, 124Y
- 29 Carnegie-Mellon University
5000 Forbes
Pittsburgh, Pennsylvania 15213
92Mo, 100Mo, 100Mo, 76Se, 120Te
- 30 Catholic University of America
104 McCort-Ward Hall
Washington, D. C. 20017
Tqs
- 31 Cincinnati, University of
Cincinnati, Ohio 45221
110Cd, 125Te, 120Te
- 32 Colorado State University
Fort Collins, Colorado 80521
65Cu, 64Fe, 66Fe
- 33 Colorado, University of
Boulder, Colorado 80302
108, 118, 118Cl, 102Pd, 102Pd, 100Pt,
87Rb, 174Yb
- 34 Columbia University
Box 6, Low Library
New York, New York 10027
109Ca, 109K, 176Lu, 209Pb, 209Pb, SS
- 35 Consumers Power Company
Palisades Nuclear Plant
Route 2, Box 154
Covert, Michigan 49043
7Li
- 36 Cornell University
Ithaca, New York 14850
6Li, 7Li
- 37 Cyclotron Corporation
950 Gilman Street
Berkeley, California 94710
100Mo, SS, 123Te, 124Te, 203Tl
- 38 Department of Chemistry
Mount Holyoke College
South Hadley, Massachusetts 01070
113Cd
- 39 Diagnostic Isotopes
123 Pleasant Avenue
Upper Saddle River, New Jersey 07430
SS, 203Tl
- 40 Diamond Shamrock Corp.
1901 Spring Street
Redwood City, California 94063
7Li
- 41 Dow Chemical USA
Texas Division
Freeport, Texas 77541
6Li
- 42 Dresser Atlas
Division of Dresser Industries, Inc.
P. O. Box 1407
Houston, Texas 77001
108
- 43 Duke University
Durham, North Carolina 27706
63Cu, 65Cu, 209Mg, 65Ni, 65Si, 60Si,
SS, Tqs, 67Ti
- 44 Eastern Michigan University
Accounting Department
Ypsilanti, Michigan 48197
109Nd
- 45 Eastman Kodak Company
Kodak Park works
Rochester, New York 14650
107Ag, 109Os, 109Os, 66Ru

1113643

- 45 Triton California, Incorporated
19451 Bardsen Avenue
Irvine, California 92715
*74b
- 47 Environmental Protection Agency
Division of Financial Management
Accounting Operations Office
Washington, D. C. 20460
122Te
- 48 Florida State University
Tallahassee, Florida 32306
*40Ca, 144Dy, 170Er, 54Fe, 57Fe,
204Hg, 190Os, 192Os, 198Pt, 198Pt,
Tgs, 174Yb
- 49 Florida, University of
Gainesville, Florida 32601
*0Ga
- 50 GTE Sylvania
100 Endicott Street
Danvers, Massachusetts 01923
170Hg
- 51 Georgetown University
3801 Reservoir Road, N.W.
Washington, D. C. 20007
*54b
- 52 Georgia Institute of Technology
225 North Avenue, N.W.
Atlanta, Georgia 30332
151Eu, 157Eu, 4Li
- 53 Gulf Energy and Environmental Systems
P. O. Box 610
San Diego, California 92112
144Nd, 150Nd, 157Sm
- 54 Harshaw Chemical Company
Division of Kewanee Oil Company
6801 Cochran Road
Solon, Ohio 44139
*Li, 7Li, Tgs
- 55 Harvard University
Cambridge, Massachusetts 02138
190Os, 117Sn, SS, 47Zn
- 56 Hewlett Packard Company
1501 Page Mill Road
Palo Alto, California 94304
*5Rb, *7Rb
- 57 Hewlett-Packard Company
Accounts Payable
P. O. Box 10222
Palo Alto, California 94303
149Hg, *52Hf
- 59 Howard University
2401 Gth Street
Washington, D. C. 20001
*3Cu, *4Cu
- 59 ICN-NBCo
26201 Miles Road
Cleveland, Ohio 44128
*0Tl
- 60 Illinois, University of
203 Administration Building E
Urbana, Illinois 61803
154Er, 150Er, *5Mo, *7Mo, SS
- 61 Indiana University
Bloomington, Indiana 47401
*40Ca, *40Ca, *37Cl, *151Eu, *152Eu,
155Gd, 154Gd, 150Gd, *39K, *41K, 7Li,
*2Mo, *207Pb, 198Pd, 198Pt, 194Pt,
*88Rb, *88Rb, 144Sm, 144Sm, 155Sm,
154Sm, *117Sn, Tgs, 182W, 182W, 186W,
171Yb, *2Zr
- 62 Indiana and Michigan Power Company
Donald C. Cook Nuclear Plant
P. O. Box 450
Bridgman, Michigan 49106
*Li
- 63 Iowa State University
Ames, Iowa 50010
157Sm, Tgs, *0Zn
- 64 Iowa, University of
Iowa City, Iowa 52240
*Li, *Li
- 65 Isotope Products Laboratories
404 South Luke Street
Burbank, California 91502
170Hf, *7Se, *0Tl
- 66 Johns Hopkins University
Baltimore, Maryland 21218
158Gd, Tgs
- 67 Kansas, University of
Lawrence, Kansas 66044
114Cd, 157Eu, 155Gd
- 68 Kentucky, University of
Lexington, Kentucky 40506
124Sn
- 69 Litton Industries
Guidance and Control Systems
5500 Canoga Avenue
Woodland Hills, California 91367
*5Rb, *7Rb

- 91 Nuclear Enterprises, Incorporated
630 Terminal Way
San Carlos, California 94070
*Li
- 94 Ohio State University
197 North Oval Drive
Columbus, Ohio 43210
150Dv, Tqs
- 95 Ohio State University
Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212
*Li, Tqs, *Zr
- 96 Ohio University
Athens, Ohio 45701
*Ni, SS
- 97 Ophios Instrument Company
9600 Overlea Drive
Rockville, Maryland 20850
100Hg, 200Hg, 201Hg, 202Hg, 203Hg,
*Rb
- 98 Oregon State University
Corvallis, Oregon 97330
100Nd, 100Ni, 100Nd, 20Si, 30Si,
107Sm, 107Te
- 99 Oramet, Inc.
Route 111
East Hampstead, New Hampshire 03826
*Li
- 100 Pacific Northwest Laboratory
Richland, Washington 99352
102Ce, 100Nd, 102Sm, SS, 107Yb
- 101 Pennsylvania State University
University Park, Pennsylvania 16802
113Cd
- 102 Pennsylvania, University of
3025 Walnut Street
Philadelphia, Pennsylvania 19104
113Cd, 70Ge, 70Ge, 102Ru, SS, *Zn
- 103 Pittsburgh, University of
Pittsburgh, Pennsylvania 15213
107Ag, 100Au, 100Er, 100Er, *Li,
20Si, 20Si, 30Si, SS, Tqs
- 104 Portland General Electric Company
621 S.W. Alder Street
Portland, Oregon 97205
*Li
- 105 Princeton University
James Forrestal Campus
Princeton, New Jersey 08540
70Br, 81Br, 72Ge, *Li, 7Li, 102Pd,
Tqs
- 106 Public Service Electric & Gas Co. (PS&G)
80 Park Place
Newark, New Jersey 07101
7Li
- 107 Purdue University
Pharmacy Annex
Lafayette, Indiana 47907
30Cl, 200Hg
- 108 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, California 94070
*K, 200Pb, 200Pb, *Sr
- 109 Rochester, University of
575 Elmwood Avenue
Rochester, New York 14627
113Cd, 77Fe, 100Hf, 200Pb, 32S, Tqs
- 110 Rockwell International
Atomics International Division
Rocky Flats Plant
P. O. Box 464
Golden, Colorado 80401
113Cd, 77Fe, 200Pb, 77Se
- 111 Rutgers, The State University
New Brunswick, New Jersey 08903
*Ga, 70Ga, *Ni, 100Pd, 100Sm,
113Sn
- 112 Sandia Corporation
Post Office Box 5800
Albuquerque, New Mexico 87115
*Li, 7Li
- 113 Singer Company
70 New Dutch Lane
Fairfield, New Jersey 07006
100Hg, 200Hg, 200Hg
- 114 South Carolina Electric and Gas Company
P. O. Box 764
Columbia, South Carolina 29278
7Li
- 115 South Carolina, University of
Columbia, South Carolina 29208
113Cd, 100Hg, 207Pb, 77Se
- 116 Southern California, University of
University Park
Los Angeles, California 90007
*Li, 7Li

1113646

- 117 Spine Corporation
Patriots Park
Bedford, Massachusetts 01730
133Eu, 133Sm
- 118 Stanford University
P. O. Box 4409
Stanford, California 94305
132Ca, 132Ge, 132Pd, 132Pd, 132Si, SS
- 119 Syracuse University
150 Marshall Street
Syracuse, New York 13210
132Fe, 132Fe
- 120 Teledyne Isotopes
123 Woodland Avenue
Westwood, New Jersey 07675
132Pb, 132Rb
- 121 Teledyne Wah Chang Albany
Division of Teledyne Ind Inc
P. O. Box 450
Albany, Oregon 97321
132Hf
- 122 Tennessee Valley Authority
Division of Purchasing
Chattanooga, Tennessee 37401
132Li
- 123 Tennessee University of
Knoxville, Tennessee 37916
132S
- 124 Texas A and M Research Foundation
P. O. Box H
College Station, Texas 77843
132Cr, 132Cr
- 125 Texas A and M University
Post Office Box 44
College Station, Texas 77843
132Ca, 132Ca, 132Li, 132Nd, 132Ni, 132Ni,
132Ni, 132Pb, 132Si, 132Sm, 132Sm, SS,
Tgs, 132Zn, 132Zn, 132Zn, 132Zr
- 125 Texas at Arlington, University of
Arlington, Texas 76010
132Cu, 132Cu
- 127 Texas University of
Austin, Texas 78712
Tgs, 132Zr
- 128 U. S. Atomic Energy Commission
Richland Operations Office
P. O. Box 530
Richland, Washington D. C. 99352
132Se
- 129 J. S. Energy Research and Development Administration
Purchasing Office
4300 Forbes Avenue
Pittsburgh, Pennsylvania 15213
132Hg
- 130 U.S. Services, Inc.
19 Ox Bow Lane
Summit, New Jersey 07901
132S
- 131 Union Carbide Corporation
Tarrytown Technical Center
Post Office Box 65
Tarrytown, New York 10591
132Ag
- 132 Union Carbide Corporation, Nuclear Division
Oak Ridge National Laboratory
Post Office Box X
Oak Ridge, Tennessee 37830
132B, 132Cu, 132Dy, 132Dy, 132Dy,
132Er, 132Er, 132Eu, 132Fe, 132Fe,
132Ir, 132Ir, 132K, 132K, 132Hg, 132Nd,
132Nd, 132Nd, 132Nd, 132Nd, 132Ni,
132Ni, 132Ni, 132Pb, 132Pb, 132Pb,
132Pt, 132Pt, 132Se, Si, 132Si, 132Sm,
132Sm, 132Sm, 132Sn, 132Sn, 132Sn,
132Sn, SS, 132Te, Tgs, 132Ti, 132Ti,
132U, 132U, 132Yb, 132Yb, 132Yb,
132Zn, 132Zn, 132Zn
- 133 United States Army
Finance and Accounting Officer
Fort Monmouth, New Jersey 07703
132Si
- 134 United States Department of Agriculture
Research Service
P. O. Box 53326
New Orleans, Louisiana 70150
132Cr, 132Cr, 132Cu, 132Fe, 132Zn,
132Zn
- 135 United States Geological Survey
Financial Management
National Center, Room 1447-A
12201 Sunrise Valley Drive
Reston, Virginia 22092
132Ca, 132Ca, 132Cu, 132Cu, 132K, 132Hg,
132Pb, 132Pb, 132Pb, 132Te, 132Te
- 135 United States National Aeronautics and Space Adm.
Ames Research Center
Moffett Field, California 94035
132Ca
- 137 United States Navy
National Naval Medical Center
Bethesda, Maryland 20814
132Fe
- 138 United States Navy
Naval Research Laboratory
Washington, D. C. 20390
132Hg, 132S, 132Si, 132Si

1113647

- 139 United States Public Health Service
National Institutes of Health, Isotope Laboratory
Building 21
Bethesda, Maryland 20914
57Fe
- 140 United Technologies Corporation
Silver Lane
East Hartford, Connecticut 06109
79Br, 83Br
- 141 University of Connecticut
Health Center
Farmington, Connecticut 06032
108Cd, 151Eu, 152Eu
- 142 University of Lowell
Lowell, Massachusetts 01854
6Li
- 143 University of New Orleans
Lakefront
New Orleans, Louisiana 70122
67Zn
- 144 University of Texas
P.O. Box 591
Richardson, Texas 75080
113Cd, 89Mo, 238Pu, 64Zn
- 145 Utah, University of
Purchasing Department
Salt Lake City, Utah 84112
113Sn
- 146 V. A. Medical Center
Attn Warehouse
3250 La Jolla Village
San Diego, California 92161
60Ca
- 147 Vanderbilt University
Business Managers Office
Nashville, Tennessee 37203
79Br, 113Cd
- 148 Vec-Tor, Incorporated
4126 Linden Avenue
Suite 102
Dayton, Ohio 45422
154Ho, 202Ho, 203Ho
- 149 Virginia Electric and Power Company
P. O. Box 1134
Richmond, Virginia 23209
7Li
- 150 Virginia Polytechnic Institute
Blacksburg, Virginia 24061
147Ce, 141Dy, 147Er, 153Eu, 159Gd,
138La, 176Lu, 145Nd, 208Pb, 87Rb,
140Sm, 118Sn, 172Yb
- 151 Virginia, University of
Charlottesville, Virginia 22903
57Ca, 57Ce, 53, Tm
- 152 Walter S. Vaning
8141 Meadow Road #104
Dallas, Texas 75231
108, 63Cu, 7Li, 113Sn
- 153 Washington, University of
400 Administration Building
Seattle, Washington 98105
57Ca, 147Er, 51K, 6Li, 238Pu, 238Pu,
208Pb, 208Pb, 238Si, 53
- 154 Wayne State University
Detroit, Michigan 48202
57Fe, 77Se, 89Se
- 155 West Virginia University
Administration Building
Morgantown, West Virginia 26506
57Fe
- 156 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
Post Office Box 79
West Mifflin, Pennsylvania 15122
151Eu, 176Hf, 177Hf
- 157 Westinghouse Electric Corporation
Research and Development Center
Beulah Road, Churchill Borough
Pittsburgh, Pennsylvania 15233
60Zr, 61Zr
- 158 Westinghouse Electric Corporation
Atomic Power Divisions
P. O. Box 355
Pittsburgh, Pennsylvania 15230
7Li
- 159 Westinghouse Hanford Company
P. O. Box 1970
Richland, Washington 99352
6Li, Tm
- 160 Wisconsin, University of
750 University Avenue
Madison, Wisconsin 53706
50Cr, 55Fe, 57Fe, 6Li, 60Mo
- 161 Wisconsin, University of, Milwaukee
2150 North Prospect Avenue
Milwaukee, Wisconsin 53202
138Mo
- 162 Yale University
20 Ashmun Street
New Haven, Connecticut 06520
57Ca, 112Cd, 113Cd, 159Gd, 159Gd,
238Pu

D. FOREIGN

ARGENTINA

- 163 Comision Nacional de Energia Atomica
Gerencia de Energia
Avda. del Libertador 4280
Buenos Aires, Argentina
- ^{75}Se

AUSTRALIA

- 164 Australian Atomic Energy Commission
Lucas Heights
Sydney, Australia
- ^{105}Re , ^{133}Sb
- 165 Australian National University
P. O. Box 4
Canberra, A. C. T., Australia
- ^{137}Ce , ^{139}Er , ^{147}Er , ^{148}Er , ^{170}Er ,
 ^{140}Gd , ^{176}Gd , ^{190}Hg , ^{200}Hg , ^{202}Hg ,
 ^{208}Hg , ^6Li , ^7Li , ^{70}Mg , ^{140}Nd , ^{60}Ni ,
 ^{120}Sn , ^{32}S , ^{152}Sm , ^{154}Sm , ^{170}Yb ,
 ^{171}Yb , ^{172}Yb , ^{173}Yb , ^{174}Yb
- 166 Canberra Community Hospital
Canberra City
Australian Capital Territory 2601, Australia
- ^{99}Mo , $^{99\text{m}}\text{Mo}$, ^{85}Sr , ^{131}I
- 167 Commonwealth Scientific and Ind. Res. Organization
Division of Applied Physics
University Grounds, City Road, Chippendale N.
Sydney, N. S. W., Australia
- ^{137}Er , ^{137}La
- 168 Embassy of Australia
1601 Massachusetts Avenue, N.W.
Washington, D.C. 20036
- ^{152}Gd
- 169 Melbourne, University of
Parkville N.2, Melbourne
Victoria, Australia
- ^{57}Co , ^{60}Co , ^{67}Co , ^{59}Cr , ^{52}Cr , ^{53}Cr ,
 ^{151}Eu , ^{153}Eu , ^{25}Mg , ^{60}Ni , ^{62}Ni , ^{32}S ,
 ^{152}Sm , ^{154}Sm , ^{156}Sm , ^{158}Sm , ^{85}Sr , ^{131}I ,
 ^{99}Mo , $^{99\text{m}}\text{Mo}$, ^{137}La , ^{137}Ce , ^{137}Pr , ^{137}Nd , ^{137}Pm , ^{137}Sm , ^{137}Eu , ^{137}Gd , ^{137}Hf , ^{137}Yb
- 170 Tasmania, University of
Hobart, Tasmania, Australia
- ^{137}La
- 171 The Flinders University of South Australia
School of Physical Sciences
Bedford Park, South Australia 5042
- ^6Li
- 172 The University of Sydney
Off Fisher Road
Sydney, N.S.W., 2006, Australia
- ^{59}Cr , ^{52}Cr , ^{53}Cr

- 173 University of Adelaide
Adelaide, South Australia 5001
- ^{137}Ce , ^{137}Pr , ^{137}Nd , ^{137}Pm , ^{137}Sm , ^{137}Eu , ^{137}Gd ,
 ^{137}Hf , ^{137}Yb , ^{137}Lu , ^{137}La , ^{137}Ce , ^{137}Pr , ^{137}Nd , ^{137}Pm ,
 ^{137}Sm , ^{137}Eu , ^{137}Gd , ^{137}Hf , ^{137}Yb
- 174 Western Australian Institute of Technology
Hayman Road
Bentley South 6102
Western Australia
- ^{150}Nd , ^{137}Sm

AUSTRIA

- 175 International Atomic Energy Agency
Kärntnering 11-13
A-1010 Vienna, Austria
- ^{151}Eu , ^{152}Eu , ^{99}Mo , ^{137}La

BANGLADESH

- 176 Atomic Energy Centre
P. O. Box No. 164
Rama, Dacca
Bangladesh
- ^{59}Cr , ^{52}Cr , ^{53}Cr , ^{58}Fe , ^{60}Co , ^{25}Mg ,
 ^{32}S , ^{99}Mo , ^{137}La

BELGIUM

- 177 Centre d'Etude de l'Energie Nucleaire
144 Avenue Plasky
Brussels 4, Belgium
- ^{137}La
- 178 European Atomic Energy Commission
Central Bureau for Nuclear Measurements
Geel, Belgium
- ^{152}Gd , ^{154}Gd , ^{200}Pb , ^{140}Nd , ^{85}Sr
- 179 IRE, Institut National des Radioelements
Avenue Eugene Plasky, 144
1040 Brussels, Belgium
- ^{79}Br , ^{81}Br , ^{60}Co , ^{113}Cd
- 180 Katholieke Universiteit Leuven
Department Natuurkunde
Instituut voor Kern-en Stralingsfysica
Celestijnenlaan 200 D
B-3030 Heverlee, Belgium
- ^{175}Lu , ^{176}Lu , ^{92}Se , ^{125}Te
- 181 Lab voor Kernfysica
Promftuinstraat 86
9000 Ghent
Belgium
- ^{106}Ru
- 182 Liege, Universite de
2 rue Armand Steuart
Liege, Belgium
- ^{99}Mo

193 Rijksuniversiteit Gent
Natuurkundig Laboratorium
Proeftuinstraat 40
Gent, Belgium

*2Ni, Tas

194 Université de Louvain
Institut de Physique Corpusculaire
Chemin du Cyclotron, 2
S-1343 Louvain-la-Neuve
Belgium

*Li, ¹¹³Sn, Tas

BRAZIL

195 Governo Federal, Conselho Nacional de Pesquisas
Instituto de Energia Atomica
Caixa Postal 11049
Sao Paulo S. S. P. A., Brazil

¹⁰⁸B, ¹⁰⁹Cd, ¹¹¹Cd, ¹³²Ce, ¹⁴¹Dy,
¹⁶⁷Er, ¹⁵³Eu, ¹⁵⁹Gd, ¹³⁸La, *Li,
¹⁷⁶Lu, ²⁰³Mg, ¹⁴³Nd, ¹⁵⁰Nd, ²⁰⁸Pb,

197 Cominco Limited
Exploration Research Laboratory
1486 East Pender
Vancouver, British Columbia
Canada V6L 1V8

*Li, ⁷Li

194 Geological Survey of Canada
Ottawa 4, Ontario, Canada

*9K, *1K, ²⁰⁸Po

195 Health Sciences Centre
791 Notre Dame Avenue
Winnipeg, Manitoba, Canada R3E 0M1

¹²⁷Ia

196 Health and Welfare Canada
Health Protection Branch, Research Centre
Ross Avenue Tunney's Pasture
Ottawa, Ontario, Canada

- 205 Queens University
Kingston, Ontario, Canada
52Cr, 57Fe, 59K, 59Ti, 66Zn
- 206 Saint Francis Xavier University
Antigonish, Nova Scotia, Canada
67Rb
- 207 Saskatchewan, University of
Saskatoon, Saskatchewan, Canada
6Li
- 209 Scintrex, Ltd.
222 Snidercroft Road
Concord, Ontario, Canada
208Pb, 207Pb, 208Pb, Tgs
- 209 Seakem Oceanography Limited
9817 West Saanich Road
Sidney, British Columbia v
Sidney, British Columbia V8L 3S1
Canada
57Fe, 60Ni, 115Sn, 125Sn, 66Zn
- 210 Simon Fraser University
Burnaby 2, B. C., Canada
125Te
- 211 Toronto, University of
Toronto, Ontario, Canada
74Ge, 198Pt
- 212 University of Alberta
Edmonton, Alberta, Canada T6G2K1
147Nd, 147Sm
- 213 Windsor, University of
Windsor, Ontario, Canada
109Ag, 58Fe, 70Ge, 72Ge, 73Ge,
74Ge, 76Ge, 100HF, 202Hg, 92Mo,
93Mo, 95Mo, 94Mo, 97Mo, 98Mo,
100Mo, 235U
- DENMARK
- 214 Aarhus, University of
Aarhus C, Denmark
59Cl, 144Er, 7Li, Tgs, 54Ti, 54Ti,
54Ti
- 215 Atomic Energy Commission
Research Establishment Riso
Isotope Division
Roskilde, Denmark
54Ca, 208Pb
- 215 Denmark Technical, University of
Lyngby, Denmark
57Fe
- 217 Kobenhavns Universitet
Blegdamsvej 17
Kobenhavn O, Denmark
144Er, 57Fe, 132Sm
- 218 Kobenhavns Universitet
Riso Pr.
Roskilde, Denmark
52Ca, 54Ca, 144Er, 174Hf, 204Hg, 92Mo,
93Mo, 100Pd, 133Sm, 154Sm, SS, 54Ti,
52Zr, 92Zr
- ENGLAND
- 219 Cambridge University
Cambridge, England
208Hg
- 220 Central Electricity Generating Board
Research Division
Berkeley Nuclear Laboratories
Berkeley, Glos., England
Tgs, 66Zn
- 221 D. A. Pitman Limited
Jesseway Road
Weybridge, Surrey
England
7Li
- 222 Derby Luminescents Ltd.
Levy West Division
Millmarsh Lane, Brimsdown
Enfield, Middx. EN3 7QW
England
6Li
- 223 Institute of Geological Sciences
15 and 17 Young Street, Kensington
London W.8, England
147Ce, 147Dy, 147Nd, 147Nd, 147Sm,
173Yb
- 224 Liverpool, University of
Liverpool 3, England
57Fe, 72Ge, 74Ge, 238Mg, 58Ni, 61Ni,
135, 135Se, 205Si, 205Si, 205Si, SS
- 225 Manchester University
Manchester 13, England
133Ba, 151Eu, 133Gd, 174Lu, 208Pb,
198Pt, 198Pt, 148Ru, 147Re, 98Ru,
Tgs
- 226 Ministry of Agriculture, Fisheries and Food
Fisheries Radiobiological Laboratory
Hamilton Dock, Lowestoft (Suffolk)
England
SS, Tgs, 133W
- 227 Nuclear Enterprises Limited
Sighthill, Industrial Estate
Sighthill, Edinburgh EH11 4EY
England
6Li

228 P. D. Swann, Ltd.
119 Fincham Road
London, E.C.2, England
115

229 Radiochemical Centre
White Lion Road
Amersham, Bucks, England

^{132}Ba , ^{44}Ca , ^{59}Cr , ^{133}Dy , ^{139}Gd ,
 ^{176}Lu , ^{99}Mo , ^{251}Po , ^{227}Th , ^{207}Tl ,
 ^{149}Yb

230 St. Mary's Hospital Medical School
Norfolk Pl, Paddington
London W2 1PG, England

^{60}Co

231 United Kingdom Treasury and Supply Delegation
25 Broadway
New York, New York 10004

^{140}Dy , ^{151}Eu , ^{72}Ge , ^{70}Ge , ^{201}Hg ,
 ^{203}Hg , ^{204}Pb , ^{204}Pb , ^{194}Pt ,
 ^{113}Sn , ^{124}Sn

FINLAND

232 Valtion Henkintakeskus
P. O. Box 134
Helsinki 53
Finland

^{63}Cu , Tqs, ^{22}Rn

FRANCE

233 CEA
Department des Radioisotopes
B. P. No. 2
91190 Gif sur Yvette, France

^{137}Cs , ^{88}Cr , ^{87}Cr , ^{67}Cu , ^{152}Eu ,
 ^{153}Eu , ^{76}Ge , ^{70}Ge , ^{199}Au ,
 ^{203}Au , ^{137}Ba , ^{150}Dy , ^{152}Dy , ^{194}Pt ,
 ^{197}Pt , ^{32}S , ^{30}Si , ^{144}Sm , ^{60}Sr , ^{90}Sr , ^{90}Sr , ^{90}Sr ,
 ^{125}Te , Tqs, ^{90}Zr , ^{92}Zr

234 CRN, Labo FNPA
B. P. 20/093
67 Strasbourg 3, France

^{150}Sm , ^{137}Ba , ^{40}Ca , ^{42}Ca , ^{44}Ca , ^{139}Ce ,
 ^{90}Cr , ^{92}Cr , ^{59}Fe , ^{142}Nd , ^{147}Nd , ^{144}Nd ,
 ^{146}Nd , ^{251}Po , ^{144}Sm , ^{122}Sn , ^{90}Sr , Tqs,
 ^{207}Tl , ^{171}Yb

235 Hydroelec
Avenue Eugene Freyssinet
19 Brive, France

103

236 Institut Max von Laue-Paul Langevin
Cedex 156
38 Grenoble-Gare, France

^{137}Cs , ^{152}Eu , ^{72}Ge , ^{90}Kr

237 Institut de Physique Nucleaire de Lyon
43 Boulevard du 11 Novembre 1918
69 Villeurbanne, France

^{94}Mo , ^{100}Mo , ^{87}Rb , Tqs

238 Laboratoire de Chimie Nucleaire
Universite de Bordeaux
Le Haut-Villaneau
33 Gradignan, France

^{104}Pd , ^{106}Pd , ^{110}Pd , Tqs

GERMANY

239 American Hoechst Corporation
P. O. Box 2500
Somerville, New Jersey 08076

^{59}Cr , ^{59}Fe , ^{139}Gd , ^{203}Hg , ^{90}Sr ,
 ^{149}Yb

240 Bochum, Ruhr-Universität
463 Bochum, West Germany

^{203}Hg

241 Bonn, Universität
Nussallee 12-14
53 Bonn, Germany

^{203}Hg , ^{204}Hg

242 Buchler and Company
Frankfurter Str. 224
Braunschweig, Germany

^{42}Ca , ^{59}Fe , ^{171}Er , Tqs, ^{171}Yb

243 Darmstadt, Technische Hochschule
61 Darmstadt, Germany

^{140}Ce , ^{204}Pb , Tqs, ^{90}Zr

244 Deutsches Krebsforschungszentrum
Berliner Str. 21
6900 Heidelberg, Germany

^{6}Li , ^{122}Te , Tqs

245 Erlangen-Nürnberg, Universität
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852 Erlangen, West Germany

^{107}Ag

246 Freie Universität
1 Berlin 33, Germany

^{137}Ba , ^{138}Ba , ^{137}Ba , ^{35}Cl , ^{170}Er ,
 ^{151}Eu , ^{152}Eu , ^{154}Gd , ^{156}Gd , ^{158}Gd ,
 ^{160}Gd , ^{203}Hg , ^{113}In , ^{7}Li , ^{152}Nd ,
 ^{154}Nd , ^{156}Nd , ^{158}Nd , ^{204}Pb , ^{144}Sm ,
 ^{147}Sm , ^{149}Sm , ^{122}Sn , ^{124}Sn , ^{126}Te ,
 ^{127}Te , ^{128}Te , ^{130}Te , ^{132}Te , Tqs,
 ^{171}Yb , ^{172}Yb , ^{174}Yb , ^{176}Yb

247 Freie und Hansestadt Hamburg
2 Hamburg-Bonnenfeld, Germany

^{140}Gd , ^{148}Nd , ^{41}Ni , ^{104}Pd , ^{106}Pd ,
Tqs

248 Gesamthochschule Wuppertal
FB9 - Prof. Burger
Gewerbeschulstr. 34
D-6600 Wuppertal 2
West Germany

^{87}Rb , ^{142}Ce , ^{35}Cl , ^{138}La , ^{150}Nd ,
 ^{87}Rb , ^{30}Si

- 249 Gesellschaft für Strahlen-
U. Umweltforschung München
Post Oberschleißheim
Ingoistädter Landstr. 1
D-8147 Neuberberg, FRG, West Germany
 ^{42}Ca , ^{40}Ca
- 250 Gesellschaft für Kernforschung mbH
Institute fuer Angewandte Reaktor Physik
Weberstrasse 5
75 Karlsruhe
West Germany
 ^{134}Ba , ^{138}Ba , ^{130}Ba , ^{130}Cd , ^{54}Fe ,
 ^{152}Gd , ^{140}Gd , ^{6}Li , ^{35}S , ^{124}Te , ^{128}Te ,
 ^{130}Te , ^{66}Zn
- 251 Gesellschaft für Schwerionenforschung, mbH,
Finanz Abteilung,
Postfach 541,
D-6100 Darmstadt,
West Germany
 ^{40}Ca , ^{154}Dy , ^{74}Ge , ^{143}Nd , ^{208}Pb ,
 ^{194}Pt , ^{124}Sn , ^{35}S , ^{124}Te , ^{66}Ti , ^{60}Ti
- 252 Gießen, Universität
6300 Gießen, Germany
 ^{30}Si , ^{70}Ge
- 253 Hahn-Meitner-Institut
für Kernforschung Berlin, Sexton Kernphysik
Berlin, Germany
 ^{134}Ba , ^{138}Ba , ^{130}Ba , ^{137}Ba , ^{40}Ca ,
 ^{110}Cd , ^{112}Cd , ^{114}Cd , ^{116}Cd , ^{140}Ce ,
 ^{132}Ce , ^{160}Dy , ^{161}Dy , ^{162}Dy , ^{163}Dy ,
 ^{164}Dy , ^{166}Er , ^{167}Er , ^{168}Er , ^{169}Er ,
 ^{170}Er , ^{191}Eu , ^{151}Eu , ^{152}Gd , ^{154}Gd ,
 ^{157}Gd , ^{159}Gd , ^{160}Gd , ^{72}Ge , ^{170}Hf ,
 ^{194}Hf , ^{41}K , ^{204}Hg , ^{210}Hg , ^{210}Mo , ^{210}Mo ,
 ^{60}Ni , ^{62}Ni , ^{142}Os , ^{104}Pd , ^{110}Pd ,
 ^{194}Pt , ^{197}Pt , ^{198}Pt , ^{199}Pt , ^{198}Sm ,
 ^{152}Sm , ^{154}Sm , ^{156}Sm , ^{158}Sm , ^{159}Sm ,
 ^{162}Sm , ^{164}Sm , ^{124}Sn , ^{68}Sr , ^{87}Sr ,
 ^{130}Te , ^{132}Te , ^{66}Ti , ^{67}Ti , ^{68}Ti , ^{69}Ti ,
 ^{70}Ti , ^{122}Yb , ^{124}Yb , ^{66}Zn
- 254 Hannover, Technische Hochschule
Hannover, N. Germany
 ^{77}Se
- 255 Institut der Max-Planck-Gesellschaft
Faradayweg 4-6
1 Berlin 33, West Germany
 ^{60}Ni , ^{35}S
- 255 Institute für Metallforschung-Metallphysik
Technische Universität Berlin
1 Berlin 15, Joachimstaler Str. 31/32
Germany
 ^{191}Ir , ^{193}Ir , ^6Li , ^7Li
- 257 Johann Wolfgang Goethe University
Frankfurt/Main, Germany
 ^{60}Ni
- 258 Kawasaki Steel Corporation
Dusseldorf Office
4 Dusseldorf, Kreuzstrabe 28, W. Germany
 ^{30}Si
- 259 Kernforschung Sanlage
Postfach 365
517 Jülich, Germany
 ^{50}Cr , ^{52}Cr , ^{134}Gd , ^{152}Gd , ^{154}Gd ,
 ^{156}Gd , ^{157}Gd , ^{160}Gd , ^{20}Mo , ^{24}Mo ,
 ^{24}Mg , ^{61}Ni , ^{62}Ni , ^{195}Pt , ^{196}Pt ,
 ^{197}Pt , ^{66}Ru , ^{76}Se , ^{77}Se , ^{78}Se ,
 ^{80}Se , ^{82}Se , ^{144}Sm , ^{147}Sm , ^{148}Sm ,
 ^{150}Sm , ^{152}Sm , ^{35}S , ^{124}Te , ^{128}Te ,
 ^{130}Te , ^{132}Te , ^{134}Te
- 260 Köln, Universität
Zulpicher Str. 47
5 Köln 1, Germany
 ^{70}Ge , ^{72}Ge , ^{74}Ge , ^{200}Hg , ^{201}Hg ,
 ^6Li , ^{60}Mo , ^{100}Mo
- 261 Kristallhandel Kelpin
IMSchilling 18
6906 Leimen bei Heidelberg, West Germany
 ^6Li , ^7Li
- 262 Mainz/Rhein, Universität
Mainz am Rhein, Germany
 ^{40}Ca , ^{102}Ru , ^{104}Ru , ^{70}Ge
- 263 Marburg/Lehn, Universität
Marburg/Lehn, Germany
 ^{194}Pt , ^{70}Ge
- 264 Max Planck Institut für Kernphysik
Saupfercheckweg
Heidelberg, Germany
 ^{40}Ca , ^{42}Ca , ^{44}Ca , ^{46}Ca , ^6Li , ^{20}Ne ,
 ^{92}Mo , ^{94}Mo , ^{96}Mo , ^{98}Mo , ^{100}Mo ,
 ^{60}Ni , ^{62}Ni , ^{64}Ni , ^{66}Ni , ^{112}Sn ,
 ^{114}Sn , ^{116}Sn , ^{118}Sn , ^{120}Sn , ^{122}Sn , ^{124}Sn , ^{126}Sn , ^{128}Sn ,
 ^{66}Ti
- 265 Max Planck Institute für Chemie
Sauerstrasse 23, Mainz
West Germany
 ^{87}Rb , ^{41}K , ^{61}Ni , ^{104}Pd , ^{66}Ru
- 266 Max-Planck Institut für Metallforschung-Verwaltung
92 Sauerstrasse
7000 Stuttgart, West Germany
 ^7Li
- 267 München, Technische Hochschule
Arcisstrasse 21
8 München 2
Germany
 ^{132}Ba , ^{134}Ba , ^{136}Ba , ^{42}Ca , ^{44}Ca , ^{46}Ca ,
 ^{110}Cd , ^{112}Cd , ^{114}Cd , ^{116}Cd , ^{140}Ce ,
 ^6Li , ^{160}Dy , ^{161}Dy , ^{162}Dy , ^{163}Dy ,
 ^{164}Dy , ^{166}Er , ^{167}Er , ^{168}Er , ^{169}Er ,
 ^{170}Er , ^{191}Eu , ^{151}Eu , ^{152}Gd , ^{154}Gd ,
 ^{157}Gd , ^{159}Gd , ^{160}Gd , ^{72}Ge , ^{170}Hf ,
 ^{194}Hf , ^{41}K , ^{204}Hg , ^{210}Hg , ^{210}Mo , ^{210}Mo ,
 ^{60}Ni , ^{62}Ni , ^{64}Ni , ^{66}Ni , ^{112}Sn ,
 ^{114}Sn , ^{116}Sn , ^{118}Sn , ^{120}Sn , ^{122}Sn , ^{124}Sn , ^{126}Sn , ^{128}Sn ,
 ^{130}Te , ^{132}Te
- 268 Münster, Universität
44 Münster/Westfalen, Germany
 ^{142}Ce , ^{161}Dy , ^{167}Er , ^{151}Eu , ^{152}Gd ,
 ^{174}Lu , ^{143}Nd , ^{29}Si , ^{30}Si , ^{147}Sm ,
 ^{149}Sm

269 Philipps Universität, F. S. 14
 Otto Dr. Reinhard Brandt
 Kern Chemie
 350 Marburg, Lahnberg, West Germany
 194Pt, Tds

270 Saarlands, Universität des
 66 Saarbrücken 15, West Germany
 63Cu

271 Universität Bielefeld
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272 Universität Regensburg
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273 der Universität Würzburg
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 Montgennring 8
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 133Dy

GREECE

274 Greek Atomic Energy Commission, N. R. C. Democ
 Agbia Paraskevi Attikis
 Athens, Greece
 37Fe

INDIA

275 Alligarh Muslim University
 Alligarh, U. P., India
 142Ca, 140Gd, 74Ge, 206Pb, 110Pd,
 80Se, 134Se, 100Y

276 Bhabha Atomic Research Centre
 Government of India
 3rd Floor Mahatta Building
 Bombay 1, India
 107Ag, 109Ag, 114Cd, 142Ce, 63Cu,
 64Cu, 188Er, 170Er, 151Eu, 89Ga,
 150Gd, 160Gd, 7Li, 25Na, 24Na,
 90Mo, 142Nd, 143Nd, 144Nd, 145Nd,
 150Nd, 59Ni, 60Ni, 42Ni, 204Pb,
 34S, 80Se, 134Se, 137Sn, 118Sn,
 119Sn, 122Sn, 84Sr, 172Yb, 174Yb,
 66Zn, 70Zn, 74Zn

277 Tata Institute of Fundamental Research
 Holiday Casa, Colaba
 Bombay 5, India
 114Cd, 140Ba, 200Hg, 201Hg, 204Hg,
 206Pb, 208Pb, 208Pb, 194Pt, 196Pt,
 198Pt

IRAN

278 Atomic Energy Organization of Iran
 Nuclear Research Centre
 P.O. Box 3327
 Tehran, Iran

64Ce, 80Cr, 64Cu, 58Fe, 202Hg, 61K,
 130La, 90Mo, 112Sn, 64Zn

279 University College
 Accounts Office
 Belfield, Dublin 4
 Ireland
 63Cu

ISRAEL

280 Government of Israel
 Ministry of Defense
 850 Third Avenue
 New York, New York 10022
 206Pb

281 Landsea Corporation
 1212 Avenue of the Americas
 New York, New York 10036
 155Gd, 74Ge, 76Ge, 143Nd, 145Nd,
 146Nd, 148Nd, 180Sm, 114Sn, 118Sn,
 130Te, Tds

282 Tel-Aviv University
 Ramat-Aviv
 Tel-Aviv, Israel
 119Sn

ITALY

283 Euratom C.C.R.
 Ispra (Varese), Italy
 37Cl, 204Pb

284 Istituto Nazionale di Fisica Nucleare
 Largo E. Fermi 2
 50125 Florence, Italy
 100Ru, 102Ru

285 Padova, Università degli Studi di
 Via F. Marzolo 8
 Padova, Italy
 92Mo, 94Mo, 96Mo, 102Pd, 104Pd,
 106Pd

JAPAN

286 Daito Yakuin Kaisha, Limited
 13, 4-Chome, Nihonbashi-honcho,
 Chuo-ku, Tokyo,
 Japan
 6Li

287 Japan Atomic Energy Research Institute
 Tokai Research Establishment
 Tokai-Mura, Naka-Gun, Ibaraki-Ken
 Japan
 143Nd, 145Nd, 146Nd, 148Nd, 55, 103Y

SWEDEN

306 Aktieforskningsinstitutet
Stafsjovik,
Nyköping, Sweden
57Fe, 7Li

307 Chalmers University of Technology
Gibraltargatan 5-b
Söthenburg, Sweden
4Li

308 Forskningsinstitutet för Atomfysik
Stockholm 83, Sweden
144Er, 158Gd, 174Hf, 190No, 198Nd,
173Sm, 172Yb, 170Yb

309 University of Lund
Sölvegatan 14
Lund, Sweden
S-223 62
113Cd, 199Au, 204Hg, 207Pb, 152Sm,
133Se, 119Sn, 172Zn

310 Uppsala, University of
Uppsala, Sweden
138Ba, 136Ba, 155Gd, 138La, 143Nd,
171Eb, 173So, 102n

SWITZERLAND

311 Erlaound, University of
1709 Fribourg, Switzerland
110Pd, Tgs

312 European Organization of Nuclear Research
1211 Geneva 23, Switzerland
109yb

313 Swiss Federal Institute of Technology
Sonneggstrasse 5
CH-8006 Zurich, Switzerland
143Nd, 47Rb, 141Sm

314 Swiss Institute for Nuclear Research
5234 Villigen, Switzerland
140Gd

315 Zurich, der universitat
8001 Zurich, Switzerland
142Dy, 58Ni, 68Ni, 62Ni, 33S, 23Si,
150Sm, 66Sr, Tgs, 66Zn, 66Zn

VENEZUELA

316 Instituto Venezolano de
Investigaciones Cientificas
Apartado 1827
Caracas, Venezuela
67Cu

317 Ministerio de Energia y Minas
Caracas, Venezuela

133Ba, 140Ca, 141Dy, 147Er, 151Eu,
157Gd, 138La, 174Lu, 140Nd, 147Sm,
171Yb

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Nickel 061
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Nickel 062
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 Rubidium 087
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 Ruthenium 102
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 165, 169, 199, 218, 231, 246, 253, 259, 275,
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 176, 213, 224, 229, 267, 268, 288
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Sulfur 034
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Tarapat Preparation Stable
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Tellurium 130
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Thallium 203
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Tin 112
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Tin 116
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Tin 117
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Tin 118
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Tin 119
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Ytterbium 171
165, 173, 185, 190, 234, 268, 305, 317

Ytterbium 172
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Ytterbium 173
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Ytterbium 174
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Ytterbium 176
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Zinc 066
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Zinc 067

185, 204, 244, 309

Zinc 068

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Zinc High Purity 70

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Zirconium 090

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Zirconium 091

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Zirconium 092

218, 232, 243, 288

Zirconium 096

276, 288

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

A. DOMESTIC	Massachusetts
Alabama	38, 50, 55, 71, 83, 117, 142
3	Michigan
Alaska	13, 35, 44, 62, 74, 75, 154
4	Minnesota
Arizona	78, 90
9	Missouri
Arkansas	79
10	New Hampshire
California	99
17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 37, 40, 46, 53, 56, 57, 65, 69, 72, 93, 116, 118, 136, 146	New Jersey
Colorado	6, 12, 39, 100, 106, 111, 113, 120, 130, 133
32, 33, 77, 110	New Mexico
Connecticut	28, 84, 112
149, 141, 152	New York
District of Columbia	15, 16, 34, 36, 45, 85, 86, 87, 109, 119, 131
30, 47, 51, 58, 82, 128, 133	North Carolina
Florida	43, 88, 89
46, 49, 81	Ohio
Georgia	31, 54, 55, 94, 95, 96, 148
52	Oregon
Idaho	98, 104, 121
2	Pennsylvania
Illinois	29, 101, 102, 103, 129, 156, 157, 158
7, 8, 60, 91	South Carolina
Indiana	114, 115
61, 92, 107	Tennessee
Iowa	73, 122, 123, 132, 147
63, 64	Texas
Kansas	1, 11, 41, 42, 80, 124, 125, 126, 127, 144, 152
67	Utah
Kentucky	145
68	Virginia
Louisiana	135, 149, 150, 151
134, 143	Washington
Maine	76, 100, 153, 159
14	West Virginia
Maryland	155
66, 70, 97, 137, 139	Wisconsin
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Bangladesh

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Belgium

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France

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Germany

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Greece

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India

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Iran

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Ireland

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Israel

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Italy

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Japan

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Netherlands

292, 293, 294, 295, 296, 297

New Zealand

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Norway

299, 300

Portugal

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Scotland

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South Africa

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Sweden

306, 307, 308, 309, 310

Switzerland

311, 312, 313, 314, 315

Venezuela

316, 317

West Germany

248, 249, 251, 258, 269, 271, 272

IV. STABLE ISOTOPE SALES - FY 1979

ISOTOPE	SHIP	DOMESTIC MILLIGRAMS	DOLLARS	SHIP	FOREIGN MILLIGRAMS	DOLLARS	SHIP	PROJECT MILLIGRAMS	DOLLARS	SHIP	TOTAL MILLIGRAMS	DOLLARS
ANTIMONY-121				3	585.7	820	3			3	585.7	820
ANTIMONY-123				3	125.7	176	3			3	125.7	176
BARIUM-130				1	3.0	106	1			1	3.0	106
BARIUM-132				3	405.0	5830	3			3	405.0	5830
BARIUM-134				7	4448.0	11197	1	40.0	106	8	4488.0	11303
BARIUM-135				4	1150.0	1610	1	100.0	85	4	1150.0	1610
BARIUM-136				7	13928.0	11838	1			2	14087.0	11973
BARIUM-137				2	300.0	150	2			2	300.0	150
BARIUM-138				2	34000.0	3850	2			2	34000.0	3850
BORON-10				9	594000.0	5505	2	8633.0	777	15	223333.0	202851
BORON-11				2	153300.0	14003	2	41980.0	1500	16	173180.0	6384
BROMINE-79				4	1435.0	1077	4			4	1435.0	1077
BROMINE-81				3	736.0	630	3			3	736.0	630
CADMIUM-106				4	63.0	1149	2	250.0	200	12	488.0	1506
CADMIUM-110				1	71.4	50	1			2	71.4	59
CADMIUM-111				5	5823.0	2441	1	100.0	65	4	6023.0	2506
CADMIUM-112				16	2707.0	2510	6			22	15295.0	7216
CADMIUM-113				6	203.0	1010	5			11	620.0	524
CADMIUM-114				1	201.0	150	1			2	201.0	150
CADMIUM-115				1	64791.0	19437	31			6	65143.1	20787
CALCIUM-40				2	193.0	1415	3	700.0	210	16	6273.0	17855
CALCIUM-42				31	1724.0	1415	3	600.0	3615	33	14805.0	14805
CALCIUM-43				3	251.0	576	1			3	251.0	1768
CALCIUM-44				2	251.0	462	1	600.0	740	3	4145.0	1768
CALCIUM-46				3	3495.0	5037	1			3	3495.0	5037
CALCIUM-48				5	55.0	14890	2	2399.1	389995	11	2552.1	353366
CERIUM-136				1	4.0	305	1	80.0	1052	1	84.0	1197
CERIUM-140				1	3003.0	150	7	5580.0		8	8580.0	1500
CERIUM-142				2	63.0	122	8	438.0	788	10	1006.0	1810
CHLORINE-35				3	1143.0	400	12	14900.0	900	16	17042.0	5965
CHLORINE-37				1	2.0	185	1	1000.0	350	2	1135.0	839
CHROMIUM-50				1	93.0	365	16	4174.0	15156	19	4270.0	15521
CHROMIUM-52				5	950.0	375	5	950.0	375	5	950.0	375
CHROMIUM-53				4	283.0	170	4	403.0	290	7	766.0	460
CHROMIUM-54				1	2.0	142	3	190.0	1249	4	210.0	1491
COPPER-63				4	458.0	687	11	17500.0	2625	17	24486.0	3612
COPPER-65				7	2024.0	607	3	1170.0	351	12	9098.0	2869
DYSPROSIUM-156				1	403.0	6700	1	300.0	5445	1	300.0	5445
DYSPROSIUM-158				3	60.0	777	3	60.0	777	3	60.0	7557
DYSPROSIUM-160				3	213.0	480	3	213.0	480	3	213.0	480
DYSPROSIUM-161				7	1130.0	363	1	80.0	50	9	1352.0	463
DYSPROSIUM-162				3	425.0	170	1	20.0	50	4	445.0	220
DYSPROSIUM-163				1	200.0	80	1	60.0	50	2	260.0	130
DYSPROSIUM-164				2	200.0	50	1	200.0	50	3	420.0	150
ERBIUM-164				1	330.0	924	4	330.0	924	4	330.0	924
ERBIUM-166				6	1286.0	300	1	20.0	50	9	2156.0	477
ERBIUM-167				2	43.0	350	1	100.0	50	10	1950.0	512
ERBIUM-168				3	653.0	680	1	1582.0	375	12	5432.0	1215
ERBIUM-170				4	423.0	210	4	866.0	260	8	1286.0	470
EUROPIUM-151				7	1383.0	623	11	10860.0	4779	18	14101.0	6389
EUROPIUM-153				5	934.2	420	12	9014.0	4069	17	9948.2	4489
GADOLINIUM-152				4	220.0	3483	4	220.0	3483	4	220.0	3483
GADOLINIUM-154				4	73.0	180	4	350.0	1400	4	425.0	1980
GADOLINIUM-155				5	653.0	1151	9	1757.0	3110	14	2415.0	4262
GADOLINIUM-156				2	203.0	150	5	1900.0	1525	7	2506.0	2000
GADOLINIUM-157				1	303.0	345	2	660.0	759	3	960.0	1104
GADOLINIUM-158				3	325.0	230	4	600.0	360	7	1710.0	1061

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ISOTOPE	D O M E S T I C		F O R E I G N		P R O J E C T		T O T A L			
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	
GADOLINIUM-160	3	603.0	540	14	30060.0	27054	2	400.0	31060.0	27554
GALLIUM-69	2	1101.0	500	1	500.0	225	1	100.0	1600.0	725
GALLIUM-71	1	53.0	50	5	3900.0	977	2	1030.0	5330.0	1377
GERMANIUM-70	2	403.0	100	5	3750.0	992	6	3050.0	4000.0	812
GERMANIUM-72	1	253.0	50	3	902.0	992	4	200.0	295.0	1888
GERMANIUM-73	1	143.0	846	5	902.0	1352	2	3050.0	12046.0	1452
GERMANIUM-74	1	133.0	1059	9	1470.0	5216	1	200.0	843.0	7469
GERMANIUM-76	2	763.0	9346	2	120.0	500	3	80.0	80.0	500
M.p. GD-154				1	100.0	335	1	50.0	195.0	335
M.p. GD-157				1	125.0	1525	1	50.0	150.0	2379
M.p. LEAD-204				5	150.0	277	1	170.0	170.0	277
M.p. LEAD-207				1	170.0	1266	2	16.0	22.0	1266
M.p. SM-150				4	6.0	929	2	16.0	16.0	929
M.p. ZINC-70				2	10.0	1076	1	100.0	520.0	1396
MAENIUM-174	1	1.0	314	2	420.0	5296	1	225.0	1022	6318
MAENIUM-176	1	1.5		2			2		1880.0	1458
MAENIUM-178	2	125.0	245	3	1080.0	1458	7	476.0	476.0	808
MAENIUM-178	1	43.0	275	5	350.0	642	5	30.0	1400.0	1843
MAENIUM-180	1	319.0	275	4	1160.0	15312	1	30.0	1500.0	1843
INDIUM-113	1			2	200.0	100	1	600.0	200.0	100
IRIDIUM-191	10	2865.0	5158	2	160.0	200	2	500.0	760.0	950
IRIDIUM-193	17	1703.0	100	13	731.0	1343	3	1732.0	5329.0	8661
IRON-54	12	1813.0	10845	19	980.0	1040	24	675.0	11400.0	11400
IRON-56	17	282.0	11509	7	45.0	1820	4	1.8	423.0	16723
IRON-57	10	39.2	1223	1	55.0	50	10	55.0	75.2	3043
IRON-58	2	27.0	111	1	395.0	2192	1	50.0	465.0	2580
LANTHANUM-138	2	259.0	170	1	450.0	2045	1	414.0	4850.0	4059
LEAD-204	5	2925.0	170	6	620.0	310	1	2116.0	5661.0	2326
LEAD-206	2	1693.0	1429	10	71530.0	21681	10	75700.0	81511.0	24651
LEAD-207	2	1693.0	1429	10	71530.0	21681	10	75700.0	81511.0	24651
LEAD-208	2	1693.0	1429	10	71530.0	21681	10	75700.0	81511.0	24651
LITHIUM-6	2	184816000.0	190841	12	1425000.0	1212	12	350.0	184816000.0	37546
LITHIUM-7	2	151.0	4104	6	102.0	607	2	200.0	452.0	5862
LUTETIUM-175	2	1793.0	4200	6	2485.0	869	4	1620.0	5805.0	2074
MAGNESIUM-24	10	2103.0	615	12	5308.0	2109	5	720.0	3500.0	7000
MAGNESIUM-26	3	453.0	615	12	197.0	9575	4	720.0	6478.0	11729
MERCURY-196	4	143.0	1631	4	190.0	126683	6	330.0	197.0	126683
MERCURY-198	8	493.0	5411	4	50.0	665	6	45.0	45.0	6076
MERCURY-199	2	123.0	2467	2	240.0	948	10	100.0	465.0	1817
MERCURY-200	4	383.0	3122	4	170.0	2796	1	32.0	32.0	5264
MERCURY-201	6	353.0	5583	4	130.0	1989	8	49.0	49.0	5111
MERCURY-202	10	259.0	440	8	1050.0	14563	16	529.2	1600.0	20146
MOLYBDENUM-92	4	1693.0	5500	15	193.2	190	15	3500.0	851.0	1720
MOLYBDENUM-94	3	646.8	194	5	288.0	580	8	353.5	1104	1104
MOLYBDENUM-96	4	125.0	325	6	648.0	910	10	1940.0	375.0	575
MOLYBDENUM-97	1	125.0	50	2	250.0	26350	3	375.0	21046.0	26350
MOLYBDENUM-98	4	11003.0	5500	7	21900.0	550	11	11500.0	21046.0	6050

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31836

22044

100

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202

24

72

100

72

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ISOTOPE	SHIP	DOMESTIC MILLIGRAMS	DOLLARS	SHIP	FOR E I G M MILLIGRAMS	DOLLARS	SHIP	PROJECT MILLIGRAMS	DOLLARS	SHIP	TOTAL MILLIGRAMS	DOLLARS
NEODYMIUM-142	2	113.0	218	6	1650.0	3652	2	230.0	625	12	1598.0	3696
NEODYMIUM-143				10	1216	1216	1	60.0	150	11	1880.5	1566
NEODYMIUM-144				9	1520.0	410	1	55.0	141	11	1421.0	1511
NEODYMIUM-145				9	1332.0	1410	1	60.0	161	11	1440.6	1523
NEODYMIUM-146	1	43.0	50	4	1253.0	564	2	1050.0	500	10	2620.0	1204
NEODYMIUM-148	2	312.0	140	6	830.0	1079	2	700.0	910	18	1819.0	2364
NEODYMIUM-150	4	269.0	451	12	377.0	4054	1	400.0	480	18	4153.0	4985
NEODYMIUM-150	5	376.0	715	12	47234.0	7234	1	2000.0	3000	16	51809.0	7749
NICKEL-58	2	1133.0	443	13	27853.3	4261	1			16	49066.3	7431
NICKEL-60	2	116.0	1817	6	200.0	1817				10	2172.7	4469
NICKEL-61	2	2150.0	4622	14	16324.7	36304				10	2172.7	4469
NICKEL-62	2	118.0	2489	19	430.0	4902				11	540.0	6991
OSMIUM-160	2	150.0	795	9	300.0	795				7	466.0	621
OSMIUM-161	4	150.0	1931	2	150.0	262	1	150.0	157	7	1468.0	2009
OSMIUM-162	2	151.0	157	2	1469.0	1415	1			6	138.0	1730
PALLADIUM-102	2	43.0	762	3	85.0	1440				4	300.0	610
PALLADIUM-104	1	30.0	60	3	170.0	350	1	100.0	200	5	725.0	750
PALLADIUM-106	2	523.0	550	5	580.0	554	1	500.0	270	9	1901.0	1694
PALLADIUM-106	2	303.0	693	6	1256.5	500	4	300.0	337	18	1306.5	2506
PALLADIUM-108	6	925.0	693	8	2390.0	2004	3	500.0	350	10	2390.0	2469
PALLADIUM-110				5	1395.0	870	2	420.0	763	16	1595.0	4700
PLATINUM-195	2	403.0	240	5	580.0	554				4	631.0	220
PLATINUM-196	4	413.0	405	10	1450.0	370	2	20.0	421	6	1472.1	13936
PLATINUM-198	4	183.0	450	12	2990.0	2407	1	160.0	50	4	270.0	250
POTASSIUM-39	2	365.0	110	2	265.0	110	1	10.0	64	26	592.0	207
POTASSIUM-40	2	27.0	4016	2	563.0	3403	1	10.0	50	3	1870.0	561
POTASSIUM-41	13	1074.0	6660	3	280.0	62	2	420.0	155	7	6924.0	24239
RHENIUM-185				1	150.0	370				32	1870.0	24239
RHENIUM-187	4	770.0	231	3	1300.0	370				5	500.0	625
RUBIDIUM-85	17	3159.0	11061	15	305.0	13425	1	100.0	165	3	500.0	480
RUBIDIUM-87	1	103.0	165	2	300.0	320	1	100.0	160	4	400.0	240
RUTHENIUM-99	1	103.0	60	3	400.0	150				4	500.0	475
RUTHENIUM-100	1	103.0	97	3	280.0	1756	3	400.0	380	10	2031.0	1868
RUTHENIUM-102	3	303.0	247	15	240.0	525				11	2500.0	673
RUTHENIUM-104	2	603.0	150	9	333.6	640	2	1075.0	322	10	3708.6	1112
SAMARIUM-147	1	503.0	150	7	200.0	700	1	200.0	50	15	3200.0	1800
SAMARIUM-148	1	203.0	162	10	1786.0	67	1	1900.0	112	12	2386.0	112
SAMARIUM-149	2	353.0	499	9	560.0	60	3	845.0	173	15	10634.0	1380
SAMARIUM-150	3	1133.0	732	9	576.0	934	2	98.0	10318	19	7724.0	1293
SAMARIUM-152	3	77.0	413	2	300.0	20010	6	320.0	2430	11	305.0	31069
SAMARIUM-154	2	57.0	20884	1	195.0	1123	3	30.0	310	6	590.0	4093
SELENIUM-74				2	700.0	1042	1	200.0	551	7	839.0	1613
SELENIUM-76	2	55.0	50	5	102.0	675	1	589.0	180	3	556.0	803
SELENIUM-77	1	1653.0	1402	4	130.0	4753	1	200.0	1675	7	362.0	6426
SELENIUM-80	6	983.0	2774	5	250.0	1105	1	1324.0	1125	16	4274.0	3632
SILICON-28	10	846.0	4274	18	388.0	17224	3	400.0	727	10	3940.0	10728
SILICON-30	7	2400.0	960	15	1400.0	15570	1	200.0	220	26	3756.0	18574
SILVER-107	1	103.0	60	4	1083.0	650	1	550.0	600	11	4359.0	1740
SILVER-109	3	3.0	415	8	700.0	2545	1	1000.0	600	16	2183.0	1310
STRONTIUM-84				2	500.0	350	1	4070.0	1314	11	4770.0	2961
STRONTIUM-86	1	103.0	50	2	500.0	295	1	12000.0	3633	3	12600.0	1664
STRONTIUM-87	2	323.0	144	1	120.0	54				5	440.0	3970

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ISOTOPE	SHIP	DOMESTIC MILLIGRAMS	DOLLARS	SHIP	FOREIGN MILLIGRAMS	DOLLARS	SHIP	PROJECT MILLIGRAMS	DOLLARS	SHIP	TOTAL MILLIGRAMS	DOLLARS
SULFUR-33	4	47.0	1539	4	255.0	5938	1	200.0	650	8	302.0	7477
SULFUR-34	2	147.0	481	12	961.0	3126	3	104.0	2676	18	1308.0	4257
TELLURIUM-123	1	213.0	5040	1	500.0	5040	1	100.0	1000	17	874.0	12756
TELLURIUM-124	6	2600.0	218622	11	15700.0	129940	1	395.0	118	17	41700.0	348762
TELLURIUM-125	1	43.0	101	4	600.0	251	1	1080.0	150	5	645.0	1451
TELLURIUM-126	1	503.0	150	4	835.0	936	13	5800.0	1036	13	1730.0	519
TELLURIUM-128	2	665.0	100	11	5640.0	610	11	50.0	52	21	464050.0	467882
TELLURIUM-130	15	40800.0	429030	5	50000.0	58800	1	169.0	2033	9	38222.0	17199
THALLIUM-203	4	3722.0	16749	1	1800.0	450	2	640.0	150	1	659.0	10682
THALLIUM-205	1	103.0	1935	1	10.0	150	1	1000.0	350	5	5.0	467
TIN-112	1	153.0	52	3	423.0	497	1	4000.0	2977	4	1593.0	572
TIN-115	1	60585.0	30293	4	1950.0	340	1	300.0	120	17	61536.0	30673
TIN-116	8	43.0	3111	9	1810.0	1351	1	300.0	120	9	5495.0	4578
TIN-118	1	10373.0	3111	9	2800.0	2053	1	847.0	552	17	17220.0	5166
TIN-119	1	43.0	64	1	1600.0	1120	2	300.0	120	9	2500.0	1170
TIN-120	3	710.0	375	9	1950.0	9770	13	125.0	143	12	2447.0	1712
TIN-122	3	683.0	979	6	985.0	1095	1	112.0	427	4	20550.0	10275
TITANIUM-46	1	43.0	20	2	2100.0	625	1	950.0	230	1	540.0	675
TITANIUM-47	1	967.0	248	3	500.0	745	1	212.0	353	11	3073.0	1045
TITANIUM-48	1	43.0	64	1	20600.0	33185	1	640.0	150	4	540.0	1045
TITANIUM-49	1	83.0	720	1	400.0	360	3	112.0	427	8	20852.0	33002
TITANIUM-50	2	63.0	150	1	1184.0	430	4	950.0	230	4	1800.0	1050
TUNGSTEN-180	3	513.0	230	2	264.0	1117	1	112.0	427	1	3027.0	1020
TUNGSTEN-182	2	53.0	6057	7	540.0	25812	2	21.0	965	10	1915.0	6087
TUNGSTEN-184	1	73.0	1492	1	530.0	3724	1	175.0	50	1	636.0	26270
VANADIUM-50	1	103.0	450	6	863.0	431	12	1500.0	620	10	705.0	4914
VIETRIUM-168	3	375.0	150	4	675.0	270	1	1000.0	50	7	2175.0	470
VIETRIUM-170	2	467.0	190	4	1300.0	650	1	900.0	278	5	2600.0	1050
VIETRIUM-172	3	833.0	415	8	4420.0	1989	2	320.0	245	10	1600.0	400
VIETRIUM-174	4	203.0	130	2	600.0	390	2	320.0	245	15	2431.0	771
ZINC-64	1	624.0	2487	4	314.5	1220	2	5300.0	5306	16	942.5	3707
ZINC-66	6	40287.0	5427	5	10785.0	14582	2	640.0	576	18	56372.0	74316
ZINC-68	9	463.0	18774	1	50.0	1155	1	576	1992	18	5100.0	14901
ZINC-70	5	3173.0	3001	12	1350.0	1324	1	200.0	285	6	325.0	4885
ZIRCONIUM-91	2	305.0	4620	5	990.0	1609	1	200.0	960	1	200.0	2852
ZIRCONIUM-92	3	1043.0	1243	5	990.0	1609	1	14.0	1159	1	200.0	960
ZIRCONIUM-94	1	273.0	248	2	11.0	910	1	11.0	1159	1	14.0	1159
ZIRCONIUM-96	1	198076007.3	1196025	1290	15312600.5	1051408	217	1650841.1	431199	2164	21503948.9	2678623
TOTAL	657	198076007.3	1196025	1290	15312600.5	1051408	217	1650841.1	431199	2164	21503948.9	2678623

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