**List of ERDA Radioisotope
Customers with Summary
of Radioisotope Shipments
FY 1974**

Prepared for the U.S. Energy
Research and Development Administration
under Contract AT(45-1):1830

Battelle

Pacific Northwest Laboratories

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U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
Under Contract AT(45-1)-1830

On January 19, 1975, research and development programs of the U.S. Atomic Energy Commission (AEC) became part of the newly formed Energy Research and Development Administration (ERDA). In this report, since it refers to work done in 1974, most references are to AEC programs.

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Radioisotope and
Radiation Applications

LIST OF ERDA RADIOISOTOPE CUSTOMERS
WITH SUMMARY OF RADIOISOTOPE SHIPMENTS
FY-1974

Compiled by
Janice L. Simmons and Sue Mandell

Editing/Writing Section
Communications Department

Published for the Division of Biomedical and
Environmental Research U.S. Energy Research and
Development Administration

Battelle
Pacific Northwest Laboratories
Richland, Washington 99352

NOMENCLATURE

I. CLASSIFICATIONS

Cyclotron Service Irradiations	CSI	Miscellaneous Compound Preparations	MCP
Depleted Uranium	DU	Normal Uranium	NU
Enriched Uranium	EU	Reactor Service Irradiations	RSI
Fission Products	FP	Special Services	SS
Fission Products Special Services	FPSS	Targets	Tgs

II. ISOTOPE SUPPLIER AND CONTACT

Argonne National Laboratory R. G. Damm Special Materials Division Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 FTS 312-739-3793 Commercial 312-739-7711 Extension 3739	(A)	Hanford Engineering Development Laboratory D. Engel Richland, WA 99352 FTS 509-942-3202 Commercial 509-942-3202	(H)
Battelle, Pacific Northwest Laboratories F. J. Zelle Safety and Nuclear Materials Management Battelle, Pacific Northwest Laboratories 3746/2 Richland, WA 99352 FTS 509-946-2804 Commercial 509-946-7411 Extension 2804	(P)	Dr. W. T. Cave, Director Nuclear Operations Department Monsanto Research Corporation P. O. Box 32 Miamisburg, OH 45342 FTS 513-866-7141 Commercial 513-866-7444 Extension 7141	(M)
Brookhaven National Laboratory P. Colsmann Isotopes and Special Materials Group Brookhaven National Laboratory Upton, Long Island, NY 11973 FTS 516-345-4058 Commercial 516-345-3441 Extension 4058	(B)	Oak Ridge National Laboratory J. E. Ratledge, Supervisor Isotope Sales/Isotope Development Ctr. Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830 FTS 615-483-6661 Commercial 615-483-8611 Extension 6661	(O)
Idaho Operations Office R. A. Hasse Aerojet Nuclear Company 550 - 2nd So. Idaho Falls, ID 83401 FTS 208-526-4266 Commercial 208-526-6640 Extension 4266	(I)	Savannah River Plant I. A. Hobbs, Director Technical and Production Division P. O. Box X Aiken, SC 29801 FTS 803-642-2217 Commercial 803-824-6331 Extension 2217	(S)
		United Nuclear Inc. P. A. Carlson, Manager Reactor Technology Richland, WA 99352 FTS 509-942-1631 Commercial 509-942-1631	(U)

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LIST OF AEC RADIOISOTOPE CUSTOMERS WITH SUMMARY OF RADIOISOTOPE SHIPMENTS

FY 1974

INTRODUCTION

The eleventh edition of the AEC radioisotope customer list has been prepared at the request of the Division of Biomedical and Environmental Research. The purpose of this document is to list the FY 1974 commercial radioisotope production and distribution activities of USAEC facilities at Argonne National Laboratory, Battelle, Pacific Northwest Laboratories, Brookhaven National Laboratory, United Nuclear Inc., Idaho Operations Office, Hanford Engineering Development Laboratory, Mound Laboratory, Oak Ridge National Laboratory, and Savannah River Plant.

The information is divided into four sections. Section I is an alphabetical list of domestic and foreign customers and their addresses. Each customer has been designated a number according to its alphabetical position which provides a means of cross-referencing in the following sections. The isotopes purchased are listed after the address of the customer and the laboratory supplying each isotope is indicated by a letter set off by parentheses (see Page ii, Nomenclature, Part II).^(a) Section II is an alphabetical list of isotopes, cross-referenced to customer numbers and again divided into the domestic and foreign categories. This section provides a quick idea of the amount of companies purchasing a particular isotope. If more information is needed, the reader can locate the customer by number and determine the laboratory supplying the isotope. The third section is an alphabetical list of states and countries, also cross-referenced to customer numbers, indicating geographical concentrations of isotope users. Section IV summarizes the FY 1974 radioisotope shipment activities of USAEC laboratories in a comprehensive table providing an alphabetical listing of the isotopes and their suppliers. The shipments, quantities and dollars are broken down for each isotope under the Domestic, Foreign, and Project (AEC facilities) categories, and the total figures for each isotope are also provided.

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

PREVIOUS REPORTS

Previous reports in this series are TID-21620 (FY 1964), ORNL-IIC-6 (FY 1965), ORNL-IIC-9 (FY 1966), ORNL-IIC-13 (FY 1967), ORNL-IIC-17 (FY 1968), ORNL-IIC-27 (FY 1969), ORNL-IIC-32 (FY 1970), ORNL-IIC-38 (FY 1971), BNWL-1744 (FY 1972), and BNWL-1824 (FY 1973). Similar reports covering stable isotope distribution have also been prepared (ORNL-TM-4693), "Stable Isotope Customer List and Summary of Shipments, FY 1974," and (MLM-2182), "Stable Isotope Sales: Mound Laboratory Customer and Shipment Summaries, FY 1974." Both reports are available from the National Technical Information Center, U.S. Department of Commerce, 5285 Port Royal Rd, Springfield, VA 22161 for \$4.00 (printed) and \$2.25 (microfiche).

I. ALPHABETICAL LIST OF CUSTOMERS, WITH ISOTOPES
PURCHASED AND RESPECTIVE SUPPLIERS

<p>A. DOMESTIC</p> <p>1 Abbott Laboratories
1400 Sheridan Rd.
North Chicago, IL 60064</p> <p>$^{99}\text{Tc}(0)$</p> <p>2 Advanced Technology Center, Inc.
P.O. Box 6144
Dallas, TX 75222</p> <p>$^{252}\text{Cf}(S)$</p> <p>3 Aerojet Nuclear Company
550 Second St.
P.O. Box 1845
Idaho Falls, ID 83401</p> <p>$^{140}\text{Ba}(0)$, $^{140}\text{BaLa}(H)$, $^{252}\text{Cf}(0)$, $^{137}\text{Cs}(0)$,
$\text{DU}(H)$, $\text{FP}(0)$, $^{236}\text{Pu}(0)$, $^{244}\text{Pu}(0)$,
$^{103}\text{Ru}(0)$, $^{106}\text{Ru}(0)$, $^{151}\text{Sm}(0)$, $\text{SS}(H)$,
$^{233}\text{U}(0)$, $^{235}\text{U}(0)$, $^{238}\text{U}(0)$, $^{133}\text{Xe}(0)$,
$^{95}\text{Zr}(0)$</p> <p>4 Aerojet Solid Propulsion Co.
P.O. Box 13400
Sacramento, CA 95813</p> <p>$^{252}\text{Cf}(S)$</p> <p>5 Air Reduction Company
Airco Industrial Gases Division
Union Landing and River Roads
Riverton, NJ 08077</p> <p>$^{85}\text{Kr}(0)$</p> <p>6 Airco, Inc.
Central Research Laboratories
Murray Hill, NJ 07974</p> <p>$^{85}\text{Kr}(0)$</p> <p>7 Alabama, University of
Medical Center
1919 Seventh Ave. S.
Birmingham, AL 35233</p> <p>$^{67}\text{Cu}(0)$, $^{133}\text{Xe}(0)$</p> <p>8 Alabama, University of
College of Engineering
Loyde Hall
University, AL 35486</p> <p>$^{252}\text{Cf}(S)$</p> <p>9 Allen-Bradley Company
136 W. Greenfield Ave.
Milwaukee, WI 53204</p> <p>$^{85}\text{Kr}(0)$</p> | <p>10 American Atomics Corporation
425 S. Plumer
Tucson, AZ 85719</p> <p>$^{85}\text{Kr}(0)$</p> <p>11 American Oncologic Hospital
Central and Shelmire Ave.
Fox Chase
Philadelphia, PA 19111</p> <p>$^{252}\text{Cf}(S)$</p> <p>12 American Science and Engineering, Inc.
P.O. Box 549
Cambridge, MA 02139</p> <p>$^{252}\text{Cf}(S)$, $^{67}\text{Ga}(0)$</p> <p>13 Amersham-Searle Corporation
Arlington Heights, IL 60005</p> <p>$^{241}\text{Am}(0)$, $\text{CSI}(0)$, $^{129}\text{I}(0)$</p> <p>14 ARCO Nuclear Company
P.O. Box 546
Leechburg, PA 15656</p> <p>$^{238}\text{Pu}(0)$</p> <p>15 Argonne National Laboratory
P.O. Box 2528
Idaho Falls, ID 83401</p> <p>$^{140}\text{BaLa}(H)$, $\text{DU}(H)$, $\text{EU}(H)$,
$\text{RSI}(H)$, $\text{SS}(H)$, $^{232}\text{Th}(H)$</p> <p>16 Argonne National Laboratory
9700 S. Cass Ave.
Argonne, IL 60439</p> <p>$^{243}\text{Am}(0)$, $^{37}\text{Ar}(0)$, $^{140}\text{Ba}(0)$, $^{140}\text{BaLa}(H)$,
$^{249}\text{Bk}(0)$, $^{249}\text{Cf}(0)$, $^{248}\text{Cm}(0)$, $\text{CSI}(P)$,
$^{253}\text{Es}(0)$, $^{254}\text{Es}(0)$, $^{257}\text{Fm}(0)$, $\text{MCP}(0)$,
$^{95}\text{Nb}(0)$, $^{237}\text{Np}(0)$, $^{238}\text{Pu}(0)$, $^{239}\text{Pu}(H)$,
$^{239}\text{Pu}(0)$, $^{240}\text{Pu}(0)$, $^{241}\text{Pu}(0)$, $^{242}\text{Pu}(0)$,
$^{244}\text{Pu}(0)$, $\text{RSI}(B)$, $^{106}\text{Ru}(0)$, $^{151}\text{Sm}(0)$,
$^{89}\text{Sr}(0)$, $^{170}\text{Tm}(I)$, $\text{Tgs}(0)$, $^{230}\text{Th}(0)$,
$\text{U}(M)$, $^{232}\text{U}(0)$, $^{233}\text{U}(0)$, $^{235}\text{U}(0)$,
$^{236}\text{U}(0)$, $^{91}\text{Y}(0)$, $^{95}\text{Zr}(0)$</p> <p>17 Arizona Medical Center
P.O. Box 4339
Tucson, AZ 85717</p> <p>$^{67}\text{Ga}(0)$</p> <p>18 Arizona State University
Tempe, AZ 85281</p> <p>$\text{RSI}(I)$</p> |
|--|--|

- 19 Arizona, University of
P.O. Drawer 4100
Tucson, AZ 85721

 $^{67}\text{Cu}(0)$
- 20 Arkansas, University of
Fayetteville, AR 72701

 $^{237}\text{Np}(0)$, $^{236}\text{Pu}(0)$, $^{239}\text{Pu}(M)$, $^{233}\text{U}(0)$
- 21 Atlantic Richfield Hanford Company
P.O. Box 250
Richland, WA 99352

 $^{227}\text{Ac}(H)$, $^{140}\text{BaLa}(H)$, $^{141}\text{Ce}(H)$,
 $^{144}\text{CePr}(H)$, $^{60}\text{Co}(H)$, $^{51}\text{Cr}(H)$, $^{137}\text{Cs}(H)$,
 $^{203}\text{Hg}(H)$, $^{166}\text{Ho}(H)$, $^{210}\text{Pb}(H)$, $^{147}\text{Pm}(H)$,
 $^{210}\text{Po}(H)$, $^{236}\text{Pu}(H)$, $^{238}\text{Pu}(H)$, $^{238}\text{Pu}(M)$,
 $^{239}\text{Pu}(M)$, $^{240}\text{Pu}(H)$, $^{106}\text{Ru}(H)$, $^{85}\text{Sr}(H)$,
 $^{90}\text{SrY}(H)$, $^{182}\text{Ta}(H)$, $^{95}\text{ZrNb}(H)$
- 22 Atomics International, Division of
North American Rockwell Corporation
P.O. Box 309
Canoga Park, CA 91304

 $\text{RSI}(H)$, $\text{SS}(H)$
- 23 Deleted
- 24 Augsburg College
Minneapolis, MN 55404

 $^{252}\text{Cf}(S)$
- 25 Barnes Engineering Company
Stamford, CT 06904

 $\text{U}(S)$
- 26 Battelle Memorial Institute
Columbus Laboratory
505 King Ave.
Columbus, OH 43201

 $^{252}\text{Cf}(S)$, $^{238}\text{Pu}(0)$
- 27 Battelle, Pacific Northwest Laboratory
P.O. Box 999
Richland, WA 99352

 $^{241}\text{Am}(H)$, $^{249}\text{Bk}(0)$, $^{144}\text{CePr}(H)$,
 $^{249}\text{Cf}(0)$, $^{252}\text{Cf}(S)$, $^{244}\text{Cm}(0)$, $^{57}\text{Co}(H)$,
 $^{60}\text{Co}(H)$, $^{51}\text{Cr}(H)$, $^{137}\text{Cs}(H)$, $\text{CSI}(0)$,
 $^{253}\text{Es}(0)$, $^{154}\text{Eu}(H)$, $^3\text{H}(H)$, $^3\text{H}(0)$,
 $^{181}\text{Hf}(0)$, $^{131}\text{I}(H)$, $^{22}\text{Na}(H)$, $^{24}\text{Na}(H)$,
 $^{210}\text{Pb}(H)$, $^{147}\text{Pm}(H)$, $^{210}\text{Po}(H)$, $^{210}\text{Po}(M)$,
 $^{236}\text{Pu}(0)$, $^{238}\text{Pu}(H)$, $^{239}\text{Pu}(H)$, $^{239}\text{Pu}(0)$,
 $^{244}\text{Pu}(0)$, $^{226}\text{Ra}(H)$, $^{106}\text{Ru}(H)$, $^{106}\text{Ru}(0)$,
 $^{90}\text{SrY}(H)$, $^{170}\text{Tm}(U)$, $^{238}\text{U}(H)$, $^{65}\text{Zn}(H)$
- 28 Bell Telephone Laboratories
Murray Hill, NJ 07971

 $\text{MCP}(0)$, $\text{SS}(0)$
- 29 Bendix Corporation, The
2000 E. Bannister Rd.
Kansas City, MO 64131

 $^{147}\text{Pm}(0)$, $\text{SS}(0)$
- 30 Boston University
100 Cunnington St.
Boston, MA 02215

 $^{89}\text{Sr}(0)$
- 31 Brookhaven National Laboratory
Upton, Long Island, NY 11973

 $^{47}\text{Ca}(0)$, $^{244}\text{Cm}(0)$, $^{137}\text{Cs}(0)$, $\text{FPSS}(0)$,
 $^3\text{H}(0)$, $^{237}\text{Np}(0)$, $^{244}\text{Pu}(0)$, $^{103}\text{Ru}(0)$,
 $^{90}\text{Sr}(0)$, $\text{SS}(0)$, $^{99}\text{Tc}(0)$, $^{229}\text{Th}(0)$,
 $^{229}\text{Th}(M)$, $^{236}\text{U}(0)$
- 32 Brooklyn College
Chemistry Department
Brooklyn, NY 11201

 $\text{RSI}(B)$
- 33 Burroughs Corporation
460 Sierra Madre Villa
Pasadena, CA 91107

 $^{85}\text{Kr}(0)$
- 34 California Institute of Technology
1201 E. California Bl.
Pasadena, CA 91106

 $^{243}\text{Am}(0)$, $^{252}\text{Cf}(S)$, $\text{FPSS}(0)$, $\text{MCP}(0)$,
 $\text{RSI}(B)$, $^{233}\text{U}(0)$, $^{234}\text{U}(0)$, $^{236}\text{U}(0)$
- 35 California State University
5151 State College Dr.
Los Angeles, CA 90032

 $^{252}\text{Cf}(S)$
- 36 California State University
18111 Nordhoff St.
Northridge, CA 91324

 $^{252}\text{Cf}(S)$
- 37 California, University of
400 Sproul Hall
Berkeley, CA 94720

 $^{131}\text{I}(0)$
- 38 California, University of
Lawrence Berkeley Laboratory
Berkeley, CA 94701

 $^{249}\text{Bk}(0)$, $^{249}\text{Cf}(0)$, $^{250}\text{Cf}(0)$, $^{248}\text{Cm}(0)$,
 $^{253}\text{Es}(0)$, $^{254}\text{Es}(0)$, $^{257}\text{Fm}(0)$, $\text{MCP}(0)$,
 $\text{SS}(0)$, $^{99}\text{Tc}(0)$, $^{229}\text{Th}(0)$

- 39 California, University of
P.O. Box CA
Irvine, CA 92664
 $^{252}\text{Cf}(\text{S})$
- 40 California, University of
Lawrence Livermore Laboratory
Box 808
Livermore, CA 94550
 $^{241}\text{Am}(\text{O})$, $^{249}\text{Bk}(\text{O})$, $^{252}\text{Cf}(\text{O})$, $^{244}\text{Cm}(\text{O})$,
 $^{248}\text{Cm}(\text{O})$, $^{253}\text{Es}(\text{O})$, $^{257}\text{Fm}(\text{O})$, $^3\text{H}(\text{O})$,
 $^{181}\text{Hf}(\text{O})$, $\text{MCP}(\text{O})$, $^{237}\text{Np}(\text{O})$, $^{238}\text{Pu}(\text{M})$,
 $^{242}\text{Pu}(\text{O})$, $^{244}\text{Pu}(\text{O})$, $\text{Tgs}(\text{O})$, $^{232}\text{Th}(\text{O})$,
 $^{234}\text{U}(\text{O})$, $^{235}\text{U}(\text{O})$, $^{236}\text{U}(\text{O})$, $^{238}\text{U}(\text{O})$
- 41 California, University of
Los Alamos Scientific Laboratory
P.O. Box 990
Los Alamos, NM 87544
 $^{140}\text{BaLa}(\text{H})$, $\text{DU}(\text{H})$, $^{238}\text{Pu}(\text{S})$, $^{238}\text{Pu}(\text{M})$,
 $^{239}\text{Pu}(\text{M})$, $\text{SS}(\text{H})$, $^{232}\text{Th}(\text{M})$, $^{238}\text{U}(\text{M})$
- 42 California, University of
Los Alamos Scientific Laboratory
P.O. Box 1663
Los Alamos, NM 87544
 $^{241}\text{Am}(\text{O})$, $^{140}\text{Ba}(\text{O})$, $^{252}\text{Cf}(\text{O})$, $^{244}\text{Cm}(\text{O})$,
 $^{60}\text{Co}(\text{O})$, $^{85}\text{Kr}(\text{O})$, $^{244}\text{Pu}(\text{O})$, $\text{SS}(\text{O})$,
 $^{233}\text{U}(\text{O})$, $^{234}\text{U}(\text{O})$, $^{235}\text{U}(\text{O})$, $^{236}\text{U}(\text{O})$
- 43 California, University of
Los Angeles
650 Circle Dr. S.
Los Angeles, CA 90405
 $^{28}\text{Mg}(\text{B})$
- 44 California, University of
405 Hilgard Ave.
Los Angeles, CA 90024
 $^{137}\text{Cs}(\text{O})$, $^{153}\text{Gd}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 45 California, University of
San Diego
3175 Miramar Rd.
La Jolla, CA 92037
 $\text{RSI}(\text{A})$
- 46 California, University of
San Francisco Medical Center
San Francisco, CA 94122
 $\text{MCP}(\text{O})$
- 47 California, University of
School of Medicine
San Francisco, CA 94122
 $^{252}\text{Cf}(\text{S})$
- 48 Carnegie-Mellon University
5000 Forbes
Pittsburgh, PA 15213
 $^{232}\text{Cf}(\text{S})$, $^{181}\text{Hf}(\text{O})$, $^{237}\text{Np}(\text{O})$, $^{230}\text{Th}(\text{O})$
- 49 Case Western Reserve University
2220 Circle Dr.
Cleveland, OH 44106
 $\text{FPSS}(\text{O})$, $^{129}\text{I}(\text{O})$
- 50 Chemical and Geological Laboratory
420 W. First St.
Casper, WY 82601
 $^{232}\text{Th}(\text{M})$, $\text{U}(\text{M})$
- 51 Chevron Research Company
555 Market St.
San Francisco, CA 94120
 $^3\text{H}(\text{O})$, $^{85}\text{Kr}(\text{O})$,
- 52 Chicago, University of
1160 E. 55th St.
Chicago, IL 60615
 $^{67}\text{Cu}(\text{O})$, $\text{MCP}(\text{O})$, $^{89}\text{Sr}(\text{O})$
- 53 Chicago, University of
5801 Ellis Ave.
Chicago, IL 60637
 $\text{RSI}(\text{A})$
- 54 Children's Hospital of Boston
300 Longwood Ave.
Boston, MA 02115
 $^{52}\text{Fe}(\text{B})$
- 55 Cincinnati General Hospital
3221 Burnet Ave.
Cincinnati, OH 45202
 $^{52}\text{Fe}(\text{B})$, $^{123}\text{I}(\text{B})$
- 56 Cincinnati, University of
Cincinnati, OH 45221
 $^{252}\text{Cf}(\text{S})$
- 57 Clark University
Worcester, MA 01610
 $^{89}\text{Sr}(\text{O})$
- 58 Cleveland Metropolitan General Hospital
3395 Scranton Rd.
Cleveland, OH 44109
 $^{131}\text{I}(\text{O})$
- 59 Cleveland State University
1983 E. 24th St.
Cleveland, OH 44115
 $\text{MCP}(\text{O})$

- 60 Cleveland University Hospital
University Circle
Cleveland, OH 44106
 $^{43}\text{K}(\text{O})$
- 61 Colorado State University
Fort Collins, CO 80521
 $^{85}\text{Kr}(\text{O})$, $^{239}\text{Pu}(\text{O})$
- 62 Columbia Scientific Industries
3625 Bluestein Bl.
Austin, TX 78702
 $^{252}\text{Cf}(\text{S})$
- 63 Columbia University
630 W. 168th St.
New York, NY 10001
RSI(B)
- 64 Columbia University
Box 6, Law Library
New York, NY 10027
 $^{252}\text{Cf}(\text{S})$
- 65 Consumers Power Company
Palisades Nuclear Plant
Rt. 2, Box 154
Covert, MI 49043
 $^{133}\text{Xe}(\text{O})$
- 66 Control for Environmental Pollution
1925 Rosina St.
P.O. Box 5351
Santa Fe, NM 87501
 $^{243}\text{Am}(\text{O})$
- 67 Cornell University
Ithaca, NY 14850
 $^{235}\text{U}(\text{O})$
- 68 Cryogenic Rare Gas Laboratories, Inc.
730 S. 13th St.
Newark, NJ 07103
 $^3\text{H}(\text{O})$, $^{85}\text{Kr}(\text{O})$
- 69 Cyclotron Corporation
950 Gilman St.
Berkeley, CA 94710
 $^3\text{H}(\text{O})$
- 70 Donald W. Douglas Laboratories
2955 George Washington Way
Richland, WA 99352
 $^{147}\text{Pm}(\text{O})$
- 71 Dow Chemical Company
Rocky Flats Division
P.O. Box 888
Golden, CO 80401
 $\text{Am}(\text{S})$, $\text{Cm}(\text{S})$, $^{238}\text{Pu}(\text{M})$, $^{242}\text{Pu}(\text{S})$
- 72 Downstate Medical Center
450 Clarkson Ave.
Brooklyn, NY 11201
 $^{28}\text{Mg}(\text{B})$
- 73 Du Pont de Nemours and Company, E. I.
Savannah River Plant
Aiken, SC 29801
 $^{252}\text{Cf}(\text{S})$, $^{252}\text{Cf}(\text{O})$, $^{248}\text{Cm}(\text{O})$, $^{253}\text{Es}(\text{O})$,
 $^{237}\text{Np}(\text{O})$, $^{239}\text{Pu}(\text{O})$, $^{238}\text{U}(\text{O})$
- 74 Duke University
Durham, NC 27706
 $\text{SS}(\text{O})$, $\text{Tgs}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 75 Eastern Michigan University
Ypsilanti, MI 48197
 $^{252}\text{Cf}(\text{S})$
- 76 Eastern New Mexico University
Portales, NM 88130
 $^{252}\text{Cf}(\text{S})$
- 77 Eastman Kodak Company
Kodak Park Works
Rochester, NY 14650
 $^{252}\text{Cf}(\text{S})$
- 78 Edgerton, Germeshausen and Grier
95 Brookline Ave.
Boston, MA 02215
 $^{252}\text{Cf}(\text{S})$
- 79 Edgerton, Germeshausen and Grier
P.O. Box 98
Goleta, CA 93017
 $^{37}\text{Ar}(\text{O})$, $^{252}\text{Cf}(\text{S})$
- 80 Environmental Protection Agency
National Environmental Research Center
Bldg. 5
3876 W. Patrick Lane
Las Vegas, NV 89118
 $^{238}\text{Pu}(\text{M})$
- 81 Environmental Protection Agency
Division of Financial Management
Accounting Operations Office
Washington, DC 20460
 $^{133}\text{Xe}(\text{O})$

- 82 Ethicon, Inc.
Rt. 22
Somerville, NJ 08876

RSI(B)
- 83 Fairchild Semiconductors
P.O. Box 790
Mountain View, CA 94040

 $^{85}\text{Kr}(0)$
- 84 Fairchild Semiconductors
333 Western Ave.
S. Portland, MA 04106

 $^{85}\text{Kr}(0)$
- 85 Florida State University
Tallahassee, FL 32306

 $^{67}\text{Ga}(0)$
- 86 Florida, University of
Gainesville, FL 32601

 $^{152+154}\text{Eu}(0)$, SS(0), Tgs(0)
- 87 Gamma Industries
P.O. Box 2543
Baton Rouge, LA 70821

 $^{252}\text{Cf}(S)$
- 88 Gamma Industries
9320 Travenor
P.O. Box 34526
Houston, TX 77034

 $^{241}\text{Am}(0)$, $^{140}\text{Ba}(0)$, $^{137}\text{Cs}(0)$, $^{129}\text{I}(0)$,
MCP(0), SS(0), $^{91}\text{Y}(0)$, $^{95}\text{Zr}(0)$
- 89 Gammie Nuclear Service Company
3737 Mt. Prospect Rd.
Franklin Park, IL 60131

RSI(A)
- 90 General Atomic Company
P.O. Box 81608
San Diego, CA 92138

 $^{59}\text{Fe}(H)$
- 91 General Electric Company
21800 Tungsten Rd.
Cleveland, OH 44117

 $^3\text{H}(0)$, $^{85}\text{Kr}(0)$
- 92 General Electric Co.
Pinellas Peninsula Plant
P.O. Box 11508
St. Petersburg, FL 33733

 $^{85}\text{Kr}(0)$
- 93 General Electric Company
Vallecitos Nuclear Center
P.O. Box 846, Vallecitos Rd.
Pleasanton, CA 94566

 $^{252}\text{Cf}(S)$, RSI(H)
- 94 General Electric Corporation
Vallecitos Nuclear Center
175 Curtner Ave.
San Jose, CA 95125

SS(H)
- 95 General Electric Company
W. Wall St.
Morrison, IL 61270

 $^{85}\text{Kr}(0)$
- 96 General Electric Company
P.O. Box 8694
Philadelphia, PA 19101

 $^{153}\text{Gd}(0)$, SS(0)
- 97 General Electric Company
P.O. Box 254
San Jose, CA 95103

 $^{241}\text{Am}(0)$, $^{237}\text{Np}(0)$, $^{239}\text{Pu}(0)$, $^{235}\text{U}(0)$,
 $^{236}\text{U}(0)$, $^{238}\text{U}(0)$, $^{133}\text{Xe}(0)$
- 98 General Electric Company
Space Division, Bldg. 800
King of Prussia, PA 19406

 $^{238}\text{Pu}(M)$, $^{232}\text{Th}(M)$
- 99 General Electric Company
General Electric Dr.
Waynesboro, VA 22980

MCP(0)
- 100 General Electric Research &
Development Center
Bldg. K-1, Box 8
Schenectady, NY 12301

RSI(B)
- 101 General Motors Corporation
Frigidaire Division
Dayton, OH 45501

 $^{85}\text{Kr}(0)$
- 102 General Nucleonics Division,
Tyco Laboratories
2811 Metropolitan Place
Pomona, CA 91767

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

- 103 General Radioisotope Products, Inc.
A Division of General Nuclear, Inc.
3120 Crow Canyon Rd.
San Ramon, CA 94583
 $^{137}\text{Cs}(0)$, $^{129}\text{I}(0)$, $^{99}\text{Tc}(0)$
- 104 George Washington University
Washington, DC 20006
 $^{67}\text{Cu}(0)$
- 105 Georgetown University
3800 Reservoir Rd., N.W.
Washington, DC 20007
 $\text{MCP}(0)$, $^{133}\text{Xe}(0)$
- 106 Georgia Institute of Technology
225 N. Ave, N.W.
Atlanta, GA 30332
 $^{252}\text{Cf}(S)$, $^{85}\text{Kr}(0)$, $^{232}\text{Th}(0)$
- 107 Georgia, University of
Athens, GA 30601
 $^{252}\text{Cf}(S)$, $^{89}\text{Sr}(0)$
- 108 Gollub Analytical Service Corporation
47 Industrial Rd.
Berkeley Heights, NJ 07922
 $^3\text{H}(0)$, $^{85}\text{Kr}(0)$
- 109 Gulf Energy and Environmental Systems
P.O. Box 608
San Diego, CA 92112
 $^{95}\text{Nb}(0)$, $^{232}\text{Th}(M)$, $^{235}\text{U}(0)$
- 110 Gulf Research and Development Co.
P.O. Box 2038
Pittsburgh, PA 15230
 $^{252}\text{Cf}(S)$
- 111 Harvard University
Cambridge, MA 02138
 $^{252}\text{Cf}(S)$
- 112 Health and Safety Laboratory
USAEC New York Operations Office
376 Hudson St.
New York, NY 10014
 $^{252}\text{Cf}(S)$, $\text{RSI}(B)$
- 113 Henry Ford Hospital
2799 W. Grand Bl.
Detroit, MI 48202
 $^{153}\text{Gd}(0)$, $^{133}\text{Xe}(0)$
- 114 Hughes Aircraft Company
P.O. Box 92907
Los Angeles, CA 90009
 $^{85}\text{Kr}(0)$
- 115 ICI America, Inc.
Atlas Aerospace Division
Valley Forge Industrial Park
Valley Forge, PA 19481
 $^{85}\text{Kr}(0)$
- 116 ICN-NBCo
26201 Miles Rd.
Cleveland, OH 44128
 $^{241}\text{Am}(0)$, $^{144}\text{Ce}(0)$, $^{137}\text{Cs}(0)$, $\text{CSI}(0)$,
 $^3\text{H}(0)$, $^{33}\text{P}(0)$, $^{106}\text{Ru}(0)$, $^{90}\text{Sr}(0)$,
 $^{235}\text{U}(0)$, $^{95}\text{Zr}(0)$
- 117 Illinois, University of
203 Administration Bldg. E
Urbana, IL 61803
 $^{129}\text{I}(0)$
- 118 Indiana University
630 W. New York St.
Indianapolis, IN 46202
 $\text{MCP}(0)$
- 119 Industrial Nucleonics Corporation
650 Ackerman Rd.
Columbus, OH 43202
 $^{137}\text{Cs}(0)$, $^{85}\text{Kr}(0)$, $\text{MCP}(0)$
- 120 Industrial Reactor Labs, Inc.
Plainsboro, NJ 08536
 $^{137}\text{Cs}(0)$
- 121 Interex Corporation
66 Woerd Ave.
Waltham, MA 02154
 $^{85}\text{Kr}(0)$
- 122 International Institutional Services, Inc.
305 E. 45th St.
New York, NY 10017
 $^{90}\text{Sr}(0)$
- 123 Isomedix, Inc.
P.O. Box 177
25 Eastmans Rd.
Parsippany, NJ 07054
 $^{137}\text{Cs}(0)$, $\text{FPSS}(0)$
- 124 International Nutronics, Inc.
Los Altos, CA 94022
 $^{252}\text{Cf}(S)$

- 125 Intetcom. Rad. Tech.
P.O. Box 20817
San Diego, CA 92138
 $^{252}\text{Cf}(\text{S})$
- 126 Isotope Products Laboratories
404 S. Luke St.
Burbank, CA 91502
 $^{252}\text{Cf}(\text{O})$, $^{244}\text{Cm}(\text{O})$, $^{85}\text{Kr}(\text{O})$, $^{147}\text{Pm}(\text{O})$,
 $^{230}\text{Th}(\text{O})$
- 127 Isovac Engineering Company
6220 San Fernando Rd.
Glendale, CA 91204
 $^{85}\text{Kr}(\text{O})$
- 128 J. C. Haynes Company
Newark, OH 43055
 $^{144}\text{Ce}(\text{O})$
- 129 Johns Hopkins Medical School
Baltimore, MD 21218
 $^{52}\text{Fe}(\text{B})$, MCP(O)
- 130 Joint Center for Graduate Study
100 Sprout Rd.
Richland, WA 99352
 $^{232}\text{Th}(\text{H})$, $^{238}\text{U}(\text{H})$
- 131 Kansas State University
Manhattan, KS 66502
 $^{252}\text{Cf}(\text{S})$
- 132 Kansas, University of
Medical Center
Kansas City, KS 66103
 $^{133}\text{Xe}(\text{O})$
- 133 Kentucky, University of
Department of Chemistry
Lexington, KY 40506
RSI(A)
- 134 Kerr-McGee Corporation
Kerr-McGee Bldg.
Oklahoma City, OK 73102
 $^{252}\text{Cf}(\text{S})$
- 135 LFE, Environmental Laboratory Division
2030 Wright Ave.
Richmond, CA 94804
 $^{137}\text{Cs}(\text{O})$, $^{238}\text{Pu}(\text{O})$
- 136 Lockheed Aircraft Corporation
P.O. Box 504
Missiles and Space
Sunnyvale, CA 94088
 $^3\text{H}(\text{O})$, $^{238}\text{Pu}(\text{M})$
- 137 Louisiana State University
Department of Physics and Astronomy
Baton Rouge, LA 70803
 $^{252}\text{Cf}(\text{S})$
- 138 Lovelace Clinic
4800 Gibson Bl. S.E.
Albuquerque, NM 87108
 $^{241}\text{Am}(\text{O})$, $^{249}\text{Bk}(\text{O})$, $^{244}\text{Cm}(\text{O})$, $^{67}\text{Ga}(\text{O})$,
 $^{238}\text{Pu}(\text{O})$, $^{91}\text{Y}(\text{O})$
- 139 Lowell Technological Institute
One Textile Ave.
Lowell, MA 01845
 $^{252}\text{Cf}(\text{S})$
- 140 Mallinckrodt Chemical Works
3600 N. Second St.
St. Louis, MO 63160
 $^3\text{H}(\text{O})$
- 141 Maryland, University of
College Park, MD 20742
 $^3\text{H}(\text{O})$, $^{43}\text{K}(\text{O})$, RSI(A), Tgs(O), $^{233}\text{U}(\text{O})$
- 142 Massachusetts General Hospital
Isotope Laboratory
Boston, MA 02114
 $^{47}\text{Ca}(\text{O})$
- 143 Massachusetts Institute of Technology
Box 69
Cambridge, MA 02139
 $^{232}\text{Th}(\text{O})$
- 144 Massachusetts, University of
Amherst, MA 01002
CSI(O)
- 145 Mayo Foundation
Rochester, MN 55901
 $^{67}\text{Cu}(\text{O})$, $^{43}\text{K}(\text{O})$, $^{89}\text{Sr}(\text{O})$
- 146 McDonnell Douglas Astronautics Company
Western Division
5301 Bolsa Ave.
Huntington Beach, CA 92647
MCP(O), $^{147}\text{Pm}(\text{O})$, $^{238}\text{Pu}(\text{O})$

- 147 Merck and Company
Rahway, NJ 07065
 $^{60}\text{Co}(\text{O})$
- 148 Metropolitan Museum of Art
New York, NY 10001
RSI(B)
- 149 Meyer Line
Brooklyn, NY 11201
Th(S), U(S)
- 150 Midlands Technical Education Center
316 Beltline Bl.
Columbia, SC 29250
 $^{252}\text{Cf}(\text{S})$
- 151 Mine Safety Appliance Company
201 N. Braddock Ave.
Pittsburgh, PA 15208
 $^{131}\text{I}(\text{O})$
- 152 Minnesota Mining and Manufacturing Co.
P.O. Box 3121
St. Paul, MN 55101
 $^{137}\text{Cs}(\text{O})$, MCP(O), $^{95}\text{Nb}(\text{O})$, $^{147}\text{Pm}(\text{O})$,
 $^{90}\text{Sr}(\text{O})$
- 153 Minnesota, University of
402 Morrill Hall
Minneapolis, MN 55455
 $^{252}\text{Cf}(\text{S})$, $^{238}\text{U}(\text{O})$
- 154 Mississippi State University
Box 307
State College, MS 39762
 $^{252}\text{Cf}(\text{S})$
- 155 Mississippi, University of
Jackson, MS 39205
 $^{43}\text{K}(\text{O})$, $^{85}\text{Kr}(\text{O})$
- 156 Missouri, University of
General Service Bldg.
Rolla, MO 65401
 $^{252}\text{Cf}(\text{S})$
- 157 Monsanto Company
P.O. Box 1311
Texas City, TX 77591
 $^{133}\text{Xe}(\text{O})$
- 158 Monsanto Research Corporation
Dayton Laboratory
1515 Nicholas Rd.
Dayton, OH 45407
 $^{241}\text{Am}(\text{O})$, $^{252}\text{Cf}(\text{O})$, $^{238}\text{Pu}(\text{O})$
- 159 Deleted
- 160 Monsanto Research Corporation
Mound Laboratory
P.O. Box 32
Miamisburg, OH 45342
 $^{244}\text{Cm}(\text{O})$, $^{192}\text{Ir}(\text{O})$, $^{238}\text{Pu}(\text{S})$, SS(H)
- 161 Motorola, Inc.
5005 E. McDowell Rd.
Phoenix, AZ 85008
 $^{85}\text{Kr}(\text{O})$
- 162 Mount Sinai Hospital
Fifth Ave. and 100th St.
New York, NY 10029
NU(O)
- 163 National Accelerator Laboratory
P.O. Box 500
Batavia, IL 60510
 $^{106}\text{Ru}(\text{O})$
- 164 National Bureau of Standards
Center for Radiation Research
Route 70 S. - Quince Orchard Rd.
Gaithersburg, MD 20260
 $^{140}\text{BaLa}(\text{H})$, DU(H), $^{238}\text{Pu}(\text{M})$, SS(H),
 $^{235}\text{U}(\text{H})$
- 165 National Bureau of Standards
Connecticut Ave. and Van Ness St. N.W.
Washington, DC 20234
 $^{37}\text{Ar}(\text{O})$, $^{252}\text{Cf}(\text{S})$, $^{129}\text{I}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 166 Deleted
- 167 National Institute of Health
Bethesda, MD 20014
 $^{52}\text{Fe}(\text{B})$
- 168 National Lead Company
Fernald, OH
Th(S), $^{232}\text{Th}(\text{M})$, U(S)
- 169 National Semiconductor Corporation
2900 Semiconductor Dr.
Santa Clara, CA 95051
 $^{85}\text{Kr}(\text{O})$

- 170 Nebraska, University of
Behlen Laboratory of Physics
Department of Physics
Lincoln, NB 68508
 $^{239}\text{Pu}(\text{M})$
- 171 Nevada, University of
Reno, NV 89507
 $^{114}\text{In}(\text{O})$
- 172 New England Medical Center Hospitals
171 Harrison Ave.
Boston, MA 02111
 $^{140}\text{Ba}(\text{O})$, $^{99}\text{Tc}(\text{O})$, $^{95}\text{Zr}(\text{O})$
- 173 New England Nuclear Corporation
575 Albany St.
Boston, MA 02118
 $^{241}\text{Am}(\text{O})$, $^{140}\text{Ba}(\text{O})$, $^{144}\text{Ce}(\text{O})$, $^{137}\text{Cs}(\text{O})$,
 $\text{CSI}(\text{O})$, $^{153}\text{Gd}(\text{O})$, $^3\text{H}(\text{O})$, $^{129}\text{I}(\text{O})$,
 $^{85}\text{Kr}(\text{O})$, $\text{MCP}(\text{O})$, $^{33}\text{P}(\text{O})$, $^{106}\text{Ru}(\text{O})$,
 $^{151}\text{Sm}(\text{O})$, $^{89}\text{Sr}(\text{O})$, $^{90}\text{Sr}(\text{O})$, $^{99}\text{Tc}(\text{O})$,
 $^{95}\text{Zr}(\text{O})$
- 174 New Hampshire, University of
Parsons Hall
Durham, NH 03824
 $^3\text{H}(\text{O})$, $\text{RSI}(\text{B})$
- 175 New Jersey, College of Medicine and
Dentistry
100 Bergen St.
Newark, NJ 07103
 $^{43}\text{K}(\text{O})$, $^{85}\text{Kr}(\text{O})$
- 176 New Mexico Institute of Mining
and Technology
TERA Group
Socorro, NM 87801
 $\text{DU}(\text{P})$
- 177 New Mexico, University of
Albuquerque, NM 87103
 $^{133}\text{Xe}(\text{O})$
- 178 New York, State University of
3435 Main St.
Buffalo, NY 14214
 $^{89}\text{Sr}(\text{O})$, $^{95}\text{Zr}(\text{O})$
- 179 New York State, University of
Department of Earth & Space Science
Stony Brook, NY 11790
 $\text{RSI}(\text{B})$
- 180 New York, State University of
Research Foundation
Stony Brook, NY 11790
 $^{106}\text{Ru}(\text{O})$, $^{235}\text{U}(\text{O})$
- 181 North Carolina State University
P.O. Box 5935
Raleigh, NC 27607
 $^{137}\text{Cs}(\text{O})$, $^{28}\text{Mg}(\text{B})$
- 182 Nuclear/Chicago
2000 Nuclear Dr.
Des Plaines, IL 60016
 $^{123}\text{I}(\text{B})$
- 183 Nuclear Dynamics
2614 Seaman Ave.
El Monte, CA 91733
 $^3\text{H}(\text{O})$
- 184 Nuclear Environmental Engineering, Inc.
P.O. Box 58866
Houston, TX 77058
 $^{241}\text{Am}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $^3\text{H}(\text{O})$, $\text{MCP}(\text{O})$, $^{95}\text{Nb}(\text{O})$
- 185 Nuclear Fuel Services, Incorporated
Erwin, TN 37650
 $^{230}\text{Th}(\text{O})$
- 186 Nuclear Materials and Equipment Corp.
Subsidiary of Babcox & Wilcox Corp.
609 N. Warren Ave.
Apollo, PA 15613
 $^{241}\text{Am}(\text{O})$, $^{238}\text{Pu}(\text{M})$
- 187 Nuclear Radiation Developments, Inc.
2937 Alt Bl. N.
Grand Island, NY 14072
 $^{241}\text{Am}(\text{O})$
- 188 Nuclear Research Corporation
Street Rd. and Second St. Pike
Southampton, PA 18966
 $^{239}\text{Pu}(\text{S})$
- 189 Nuclear Sources and Services
P.O. Box 14023
Houston, TX 77021
 $^{241}\text{Am}(\text{O})$, $^3\text{H}(\text{O})$, $^{85}\text{Kr}(\text{O})$
- 190 Deleted
- 191 Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, TN 37830
 $^{252}\text{Cf}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $^{67}\text{Ga}(\text{O})$, $^{43}\text{K}(\text{O})$,
 $\text{MCP}(\text{O})$

- 192 Deleted
- 193 Deleted
- 194 Deleted
- 195 Ohio State University
2009 Millikin Road
Columbus, OH 43210

RSI(B)
- 196 Ohio State University
190 N. Oval Dr.
Columbus, OH 43210

 $^{252}\text{Cf}(\text{S})$
- 197 Ohio State University
Research Foundation
1314 Kinnear Rd.
Columbus, OH 43212

 $^{89}\text{Sr}(\text{O})$
- 198 Ohio University
Athens, OH 45701

 $^{252}\text{Cf}(\text{S})$
- 199 Orange, County of
P.O. Box 564
Room 362, Engineering Bldg.
Santa Ana, CA 92702

 $^{133}\text{Xe}(\text{O})$
- 200 Oregon Medical School, University of
3181 S.W. Sam Jackson Park Rd.
Portland, OR 97201

SS(P), $^{133}\text{Xe}(\text{O})$
- 201 Palmdale General Hospital
Palmdale, CA 93550

 $^{133}\text{Xe}(\text{O})$
- 202 Panametrics, Inc.
221 Crescent St.
Waltham, MA 02154

 $^{85}\text{Kr}(\text{O})$
- 203 Parkwell Laboratories, Inc.
429 N. High St.
Croton, OH 43013

 $^{241}\text{Am}(\text{O})$, $^{238}\text{Pu}(\text{O})$
- 204 Pennsylvania, Hospital of
the University of
3400 Soryce
Philadelphia, PA 19104

 $^{252}\text{Cf}(\text{S})$
- 205 Pennsylvania State University
207 Old Main Bldg.
University Park, PA 16802

 $^{252}\text{Cf}(\text{S})$
- 206 Pennsylvania, University of
233 S. 33rd St.
Philadelphia, PA 19104

RSI(B)
- 207 Penrose Hospital
2215 N. Cascade
Colorado Springs, CO 80907

 $^{133}\text{Xe}(\text{O})$
- 208 Pittsburgh, University of
Pittsburgh, PA 15213

 $^{131}\text{I}(\text{O})$, $^{89}\text{Sr}(\text{O})$
- 209 Potter and Brumfield
Princeton, IN 47570

 $^{85}\text{Kr}(\text{O})$
- 210 Purdue University
Pharmacy Annex
Lafayette, IN 47907

 $^{252}\text{Cf}(\text{O})$, CSI(A), RSI(A)
- 211 Radiation Dynamics, Inc.
1800 Shames Dr.
Westbury, NY 11590

 $^3\text{H}(\text{O})$, Tgs(O)
- 212 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, CA 94070

 $^{252}\text{Cf}(\text{S})$, $^{238}\text{U}(\text{O})$
- 213 Rensselaer Polytechnic Institute
Service Bldg.
Troy, NY 12180

RSI(B)

- 214 Republic Steel Corporation
221 East 131st St.
Cleveland, OH 44108
 $^{252}\text{Cf}(\text{S})$
- 215 Reynolds Electric Engineering Company
P.O. Box 14400
Las Vegas, NV 89114
SS(0)
- 216 Richmond Laboratories, Inc.
P.O. Box 3382
Augusta, GA 30904
 $^{252}\text{Cf}(\text{S})$
- 217 Rochester, University of
575 Elmwood Ave.
Rochester, NY 14627
 $^{131}\text{I}(0)$
- 218 Rush-Presbyterian Saint Luke's
Medical Center
1753 W. Congress Parkway
Chicago, IL 60612
CSI(A), $^{52}\text{Fe}(\text{A})$, $^{89}\text{Sr}(0)$
- 219 Rutgers, The State University
New Brunswick, NJ 08903
 $^{252}\text{Cf}(\text{S})$
- 220 Saint Vincent's Hospital
2131 W. Third St.
Los Angeles, CA 90057
 $^{133}\text{Xe}(0)$
- 221 Sanders Nuclear Corporation
95 Canal St.
Nashua, NJ 03060
 $^{252}\text{Cf}(\text{S})$
- 222 Sandia Corporation
Sandia Laboratories
Kirtland Air Force Base (East)
Bldg. 869
Albuquerque, NM 87115
 $^{238}\text{Pu}(\text{M})$, $^{232}\text{Th}(\text{M})$, U(M)
- 223 Sandia Corporation
P.O. Box 5800
Albuquerque, NM 87115
 $^{252}\text{Cf}(0)$, $^{60}\text{Co}(0)$, $^{137}\text{Cs}(0)$, FPSS(0),
SS(0), $^{235}\text{U}(0)$
- 224 Sam Houston State University
Huntsville, TX 77340
 $^{252}\text{Cf}(\text{S})$
- 225 Savannah River Plant
E.I. DuPont de Nemours & Co.
Dunbarton, SC 30908
 $^{252}\text{Cf}(\text{B})$, $^{238}\text{Pu}(\text{M})$
- 226 Savannah River Laboratory
Aiken, SC 29801
 $^{252}\text{Cf}(\text{S})$
- 227 Schlumberger Technology Corporation
Old Quarry Rd.
P.O. Box 307
Ridgefield, CT 06877
 $^3\text{H}(0)$
- 228 Schwarz Bio-Research, Inc.
Mountain View Ave.
Orangeburg, NY 10962
 $^3\text{H}(0)$
- 229 Scripps Clinic and Research Foundation
476 Prospect St.
La Jolla, CA 92037
MCP(0), $^{133}\text{Xe}(0)$
- 230 Self-Powered Lighting, Ltd.
629 5th Ave.
Pelham, NY 10830
 $^3\text{H}(0)$
- 231 Shell Development Company
1410 45th St.
Emeryville, CA 94608
 $^{140}\text{Ba}(0)$
- 232 Shepherd and Associates, J. L.
1614 Victory Bl.
Glendale, CA 91201
 $^{137}\text{Cs}(0)$, FPSS(0)
- 233 Sloan-Kettering Institute
425 E. 68th St.
New York, NY 10021
 $^{47}\text{Ca}(0)$, $^{252}\text{Cf}(\text{S})$, $^{52}\text{Fe}(\text{B})$, $^{133}\text{Xe}(0)$,
- 234 Southeastern Missouri State College
Cape Girardeau, MO 63701
 $^{252}\text{Cf}(\text{S})$
- 235 Southern California, University of
University Park
Los Angeles, CA 90007
MCP(0)

- 236 Stanford Research Institute
Menlo Park, CA 94025
 $^{129}\text{I}(\text{O})$
- 237 Stanford University
P.O. Box 4409
Stanford, CA 94305
 $^3\text{H}(\text{O})$, Tgs(O)
- 238 Statek Corporation
1200 Alvarez Ave.
Orange, CA 92668
 $^{85}\text{Kr}(\text{O})$
- 239 Syntex Corporation
3401 Hillview Ave.
Palo Alto, CA 94304
 $^3\text{H}(\text{O})$
- 240 Technical Operations
South Ave.
Burlington, MA 01803
 $^{137}\text{Cs}(\text{O})$, FPSS(O), MCP(O)
- 241 Teledyne Isotopes
Nuclear Systems Division
110 W. Timonium Rd.
Timonium, MD 21093
FPSS(O), $^{90}\text{Sr}(\text{O})$
- 242 Temple University
Broad and Montgomery St.
Philadelphia, PA 19140
 $^{90}\text{Sr}(\text{O})$
- 243 Tempset, Inc.
1251 Grover Rd.
St. Louis, MO 63125
 $^{85}\text{Kr}(\text{O})$
- 244 Tennessee Technological Institute
Cookeville, TN 38501
 $^{252}\text{Cf}(\text{S})$
- 245 Tennessee, University of
865 Jefferson Ave.
Memphis, TN 38103
 $^{252}\text{Cf}(\text{S})$
- 246 Tennessee, University of (AEC)
1299 Bethel Valley Rd.
Oak Ridge, TN 37830
 $^{144}\text{Ce}(\text{O})$, $^{28}\text{Mg}(\text{B})$
- 247 Texas A and M University
P.O. Box 44
College Station, TX 77843
 $^{252}\text{Cf}(\text{O})$, $^{99}\text{Tc}(\text{O})$
- 248 Texas Instruments, Inc.
Science Services Division
P.O. Box 5621
Dallas, TX 75222
 $^{85}\text{Kr}(\text{O})$
- 249 Texas Nuclear
P.O. Box 9627
Austin, TX 78766
 $^{252}\text{Cf}(\text{S})$
- 250 Texas, University of
Austin, TX 78712
 $^{252}\text{Cf}(\text{S})$, $^{237}\text{Np}(\text{O})$, $^{99}\text{Tc}(\text{O})$
- 251 Texas, University of
M.D. Anderson Hospital & Tumor
Institute
6723 Bertner Ave.
Houston, TX 77025
 $^{252}\text{Cf}(\text{S})$
- 252 Transition Electronics Corporation
168 Albion St.
Wakefield, MA 01880
 $^{85}\text{Kr}(\text{O})$
- 253 Trio-Tech Inc.
A Division of Tracer Flo
2435 N. Naomi
Burbank, CA 91504
 $^{85}\text{Kr}(\text{O})$
- 254 TRW Systems Group
One Space Park
Redondo Beach, CA 90277
 $^{85}\text{Kr}(\text{O})$
- 255 Deleted

- 256 Union Carbide Corporation,
Nuclear Division
Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, TN 37830

 $^{241}\text{Am}(\text{O})$, $^{241}\text{Am}(\text{P})$, $^{243}\text{Am}(\text{O})$, $^{249}\text{Bk}(\text{O})$,
 $^{144}\text{Cd}(\text{O})$, $^{249}\text{Cf}(\text{O})$, $^{252}\text{Cf}(\text{M})$, $^{252}\text{Cf}(\text{S})$,
 $\text{CM}(\text{S})$, $^{244}\text{Cm}(\text{O})$, $^{60}\text{Co}(\text{S})$, $^{137}\text{Cs}(\text{O})$,
 $^{152+154}\text{Eu}(\text{O})$, $^{153}\text{Gd}(\text{O})$, $^3\text{H}(\text{O})$, $^{181}\text{Hf}(\text{O})$,
 $^{85}\text{Kr}(\text{O})$, $^{237}\text{N}(\text{H})$, $^{237}\text{Np}(\text{O})$, $^{231}\text{Pa}(\text{M})$,
 $^{147}\text{P}(\text{O})$, $^{238}\text{Pu}(\text{O})$, $^{238}\text{Pu}(\text{S})$, $^{239}\text{Pu}(\text{O})$,
 $^{242}\text{Pu}(\text{O})$, $^{103}\text{Ru}(\text{O})$, $^{106}\text{Ru}(\text{O})$, $\text{SS}(\text{H})$,
 $\text{SS}(\text{O})$, $^{99}\text{Tc}(\text{O})$, $\text{Tgs}(\text{O})$, $^{229}\text{Th}(\text{O})$,
 $^{230}\text{Th}(\text{M})$, $^{230}\text{Th}(\text{O})$, $^{234}\text{U}(\text{M})$, $^{234}\text{U}(\text{O})$,
 $^{235}\text{U}(\text{O})$, $^{235}\text{U}(\text{S})$, $^{236}\text{U}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 257 Union Carbide Corporation
Nuclear Division
Y-12 Plant
P.O. Box Y
Oak Ridge, TN 37830

 $\text{DU}(\text{P})$, $^{153}\text{Gd}(\text{O})$, $\text{MCP}(\text{O})$, $^{237}\text{Np}(\text{O})$,
 $^{239}\text{Pu}(\text{O})$, $^{103}\text{Ru}(\text{O})$, $\text{SS}(\text{O})$, $^{232}\text{Th}(\text{O})$,
 $^{235}\text{U}(\text{O})$, $^{238}\text{U}(\text{O})$
- 258 Union Carbide Corporation
Sterling Forest Research Center
P.O. Box 324
Tuxedo, NY 10987

 $^{137}\text{Cs}(\text{O})$, $^3\text{H}(\text{O})$, $\text{Tgs}(\text{O})$
- 259 Unit Process Assemblies, Inc.
53-15 37th Ave.
Woodside, NY 11377

 $^{147}\text{Pm}(\text{O})$, $^{90}\text{Sr}(\text{O})$
- 260 United Aircraft Corp.
Silver Lane
East Hartford, CT 06118

 $^{153}\text{Gd}(\text{O})$, $\text{SS}(\text{O})$
- 261 United Nuclear Corporation
Chemical Operations
Rt. 21-A
Hematite, MO 63047

 $^{252}\text{Cf}(\text{S})$
- 262 United Nuclear Corporation
Recovery Operations
Wood River Junction, RI 02894

 $^{252}\text{Cf}(\text{S})$
- 263 United Nuclear Industries, Inc.
Box 490
Richland, WA 99352

 $^{241}\text{Am}(\text{H})$, $^{57}\text{Co}(\text{H})$, $^{137}\text{Cs}(\text{H})$, $^{131}\text{I}(\text{H})$,
 $^{22}\text{Na}(\text{H})$, $^{210}\text{Pb}(\text{H})$, $^{90}\text{SrY}(\text{H})$
- 264 United States Army
Aberdeen Proving Grounds, MD 21005

 $\text{DU}(\text{P})$
- 265 United States Army
Frankford Arsenal
SARFA-PDM-P
Bldg. 149-2
Bridge and Tacony St.
Philadelphia, PA 19137

 $\text{DU}(\text{P})$
- 266 United States Army
Materials and Mechanics Research Center
Watertown, MA 02172

 $^{252}\text{Cf}(\text{S})$
- 267 United States Army
Picatinny Arsenal
Dover, NJ 07801

 $^{252}\text{Cf}(\text{S})$
- 268 United States Army
Walter Reed Army Medical Center
Washington, DC 20012

 $^{133}\text{Xe}(\text{O})$
- 269 United States Army
White Sands Missile Range, NM 88002

 $^{137}\text{Cs}(\text{O})$, $\text{FPSS}(\text{O})$
- 270 United States Atomic Energy Commission
Schenectady Naval Reactors Office
P.O. Box 1069
Schenectady, NY 12301

 $\text{MCP}(\text{O})$
- 271 United States Bureau of Mines
1605 Evans Ave.
Reno, NV 89505

 $^{252}\text{Cf}(\text{S})$
- 272 United States Department of Agriculture
Research Service
P.O. Box 53326
New Orleans, LA 70150

 $^{85}\text{Kr}(\text{O})$
- 273 United States Department of Agriculture
Oxford, MS 38655

 $^{252}\text{Cf}(\text{S})$
- 274 United States Department of Interior
Geological Survey
Branch of Budget and Finance
Washington, DC 20242

 $^{252}\text{Cf}(\text{S})$, $^{89}\text{Sr}(\text{O})$

- 275 United States Geological Survey
Financial Management
National Center, Room 1447-A
12201 Sunrise Valley Dr.
Reston, VA 22092
 $^{230}\text{Th}(\text{O})$, $^{235}\text{U}(\text{O})$
- 276 United States National Aeronautics
and Space Administration
Goddard Space Flight Center
Glendale Rd.
Greenbelt, MD 20771
 $^{252}\text{Cf}(\text{S})$
- 277 United States National Aeronautics
and Space Administration
George C. Marshall Space Flight Center
Huntsville, AL 35812
 $^{85}\text{Sr}(\text{O})$
- 278 United States National Aeronautics
and Space Administration
Jet Propulsion Laboratory
Pasadena, CA 91103
 $^{252}\text{Cf}(\text{S})$
- 279 United States Naval Academy
Annapolis, MD 21402
 $^{252}\text{Cf}(\text{S})$
- 280 United States Navy
Naval Facilities Engineering Command
Washington Navy Yard
Washington, DC 20390
 $^{90}\text{Sr}(\text{O})$
- 281 United States Public Health
Environmental Protect
Accounting Operations Office,
Durham Research Triangle Park, NC 27711
 $^{89}\text{Sr}(\text{O})$
- 282 United States Public Health Service
National Institutes of Health,
Isotope Laboratory Bldg. 21
Bethesda, MD 20014
 $^{47}\text{Ca}(\text{O})$, $^{67}\text{Cu}(\text{O})$, $^{43}\text{K}(\text{O})$, MCP(O)
- 283 United States Public Health Service
P.O. Box 684
4505 Maryland Parkway
Las Vegas, NV 89101
 $^{236}\text{Pu}(\text{O})$, $^{238}\text{Pu}(\text{O})$
- 284 United States Radium Corporation
4150 Old Berwick Rd.
P.O. Box 380
Bloomsburg, PA 17815
 $^3\text{H}(\text{O})$
- 285 United States Testing Company
2800 George Washington Way
Richland, WA 99352
 $^{45}\text{Ca}(\text{H})$, $^{237}\text{Np}(\text{H})$
- 286 Unitrode Corporation
580 Pleasant St.
Watertown, MA 01970
 $^{85}\text{Kr}(\text{O})$
- 287 Utah, University of
Purchasing Department
Salt Lake City, UT 84112
 $^{133}\text{Xe}(\text{O})$
- 288 VA, Edward Hines, Jr. Hospital
Hines, IL 60141
 $^{252}\text{Cf}(\text{S})$
- 289 Vanderbilt University
Business Managers Office
Nashville, TN 37203
CSI(O), $^{153}\text{Gd}(\text{O})$, $^{43}\text{K}(\text{O})$, MCP(O),
 $^{133}\text{Xe}(\text{O})$
- 290 Veterans Administration Hospital
1055 Clermont St.
Denver, CO 80220
 $^{52}\text{Fe}(\text{B})$, $^{26}\text{Mg}(\text{B})$
- 291 Veterans Administration Hospital
Northport, NY 11768
 $^{52}\text{Fe}(\text{B})$, $^{123}\text{I}(\text{B})$
- 292 Veterans Administration Hospital
Newington, CT 06111
MCP(O)
- 293 Veterans Administration Hospital
Syracuse, NY 13210
 $^{133}\text{Xe}(\text{O})$
- 294 Victoreen Instrument Division
10101 Woodland Ave.
Cleveland, OH 44104
 $^{133}\text{Xe}(\text{O})$
- 295 Virginia Hospital, University of
Charlottesville, VA 22901
 $^{133}\text{Xe}(\text{O})$
- 296 Washington Hospital Center
110 Irving Ave. N.W.
Washington, DC 20014
 $^{47}\text{Ca}(\text{O})$

- 297 Washington State University
Comptroller's Office
Pullman, WA 99163
 $^{252}\text{Cf}(\text{S})$, $^{235}\text{U}(\text{O})$, $^{238}\text{U}(\text{O})$
- 298 Washington University
Lindell and Skinker St.
St. Louis, MO 63130
 $^{28}\text{Mg}(\text{B})$, $^{99}\text{Tc}(\text{O})$
- 299 Washington, University of
Quaternary Research Oceanography
Seattle, WA 98105
 $^{110}\text{Ag}(\text{I})$, $^{252}\text{Cf}(\text{S})$, $^{116}\text{In}(\text{I})$
- 300 Wayne State University
Detroit, MI 48202
 $^{252}\text{Cf}(\text{S})$, $^{129}\text{I}(\text{O})$
- 301 Western Electric Company
100 Central Ave.
Kearny, NJ 07032
 $^{137}\text{Cs}(\text{O})$
- 302 Western Electric Company, Inc.
P.O. Box 1409
Lawrence, MA 01842
 $^{85}\text{Kr}(\text{O})$
- 303 Western Electric Company, Inc.
777 N. Blue Parkway
Lee's Summit, MO 64063
 $^{85}\text{Kr}(\text{O})$
- 304 Westinghouse Electric Corporation
Advanced Reactors Division
Madison, PA 15663
RSI(H)
- 305 Deleted
- 306 Westinghouse Electric Corporation
Atomic Power Divisions
P.O. Box 355
Pittsburgh, PA 15230
 $^{238}\text{U}(\text{O})$
- 307 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P.O. Box 79
West Mifflin, PA 15122
 $^{252}\text{Cf}(\text{O})$
- 308 Deleted
- 309 Westinghouse Electric Corporation
Research and Development Center
Box 2278
Pittsburgh, PA 15222
SS(H)
- 310 Westinghouse Hanford Company
c/o ARHCO Receiving
1100 Area, Building 1166
Richland, WA 99352
 $^{238}\text{Pu}(\text{M})$
- 311 Westinghouse Hanford Company (HEDL)
P.O. Box 1970
Richland, WA 99352
 $^{41}\text{Ar}(\text{U})$, $^{140}\text{Ba}(\text{O})$, $^{237}\text{Np}(\text{O})$, $^{236}\text{Pu}(\text{O})$,
 $^{239}\text{Pu}(\text{O})$, $^{241}\text{Pu}(\text{O})$, $^{235}\text{U}(\text{O})$, $^{238}\text{U}(\text{O})$,
 $^{133}\text{Xe}(\text{O})$, $^{95}\text{Zr}(\text{O})$
- 312 William Beaumont Hospital
3601 W. Thirteen Mile Rd.
Royal Oak, MI 48067
 $^{85}\text{Kr}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 313 Wisconsin Public Service Corporation
Kewaunee Nuclear Power Plant
P.O. Box 159
Kewaunee, WI 54216
 $^{60}\text{Co}(\text{O})$, $^{137}\text{Cs}(\text{O})$
- 314 Wisconsin, University of
750 University Ave.
Madison, WI 53706
 $^{153}\text{Gd}(\text{B})$, MCP(O)
- 315 Wisconsin, University of
1300 University Ave.
Madison, WI 53706
 $^{239}\text{Pu}(\text{M})$
- 316 Wisconsin, University of
Oshkosh, WI 54904
 $^{252}\text{Cf}(\text{S})$
- 317 Worcester Foundation
Foundation for Experimental Biology
222 Maple Ave.
Shrewsbury, MA 01545
 $^3\text{H}(\text{O})$

- 318 Wyoming, University of
Laramie, WY 82070
 $^{252}\text{Cf}(\text{S})$
- 319 Wright State University
7751 Colonel Glenn Highway
Dayton, OH 45431
 $^{89}\text{Sr}(\text{O})$
- 320 Yale University
20 Ashmun St.
New Haven, CT 06520
 $^{140}\text{Ba}(\text{O})$, $^{14}\text{C}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $^{181}\text{Hf}(\text{O})$,
 $\text{RSI}(\text{B})$, $\text{Tgs}(\text{O})$

B. FOREIGN

AUSTRALIA

- 321 Australian Atomic Energy Commission
Lucas Heights
Sydney, Australia
 $^{235}\text{U}(\text{O})$
- 322 Australian National University
P.O. Box 4
Canberra, A.C.T., Australia
 $^{37}\text{Ar}(\text{O})$
- 323 Commonwealth Scientific and Ind. Res.
Organization
Division of Applied Physics
University Grounds, City Road
Chippendale N.
Sydney, N.S.W., Australia
 $^{33}\text{P}(\text{O})$
- 324 Embassy of Australia
1601 Massachusetts Ave. N.W.
Washington, DC 20036
 $^{235}\text{U}(\text{O})$

AUSTRIA

- 325 International Atomic Energy Agency
Kaerntnerring 11-13
A-1010 Vienna, Austria
 $^{33}\text{P}(\text{O})$, $^{242}\text{Pu}(\text{O})$, $^{233}\text{U}(\text{O})$, $^{235}\text{U}(\text{O})$

BELGIUM

- 326 EURATOM
51-53 Rue Belliard
Brussels, Belgium
 $^{239}\text{Pu}(\text{O})$, $^{242}\text{Pu}(\text{O})$, $^{233}\text{U}(\text{O})$, $^{235}\text{U}(\text{O})$,
 $^{238}\text{U}(\text{O})$

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

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

- 328 IRE, Institut National des
Radioelements
Ave. Eugene Plasky, 144
1040 Brussels, Belgium

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

BRAZIL

- 329 Instituto de Energia Atomica
Caixa Postal, 11.049 - Pinheiros
05508 - Sao Paulo, Brazil

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

CANADA

- 330 Alberta, University of
Edmonton, Alberta, Canada
 $^3\text{H}(\text{O})$, $\text{Tgs}(\text{O})$, $^{133}\text{Xe}(\text{O})$
- 331 Atomic Energy of Canada Limited
Chalk River, Ontario, Canada
 $^3\text{H}(\text{O})$, $^{239}\text{Pu}(\text{O})$, $^{95}\text{Zr}(\text{O})$
- 332 British Columbia, University of
Vancouver 8, B.C., Canada
 $^{89}\text{Sr}(\text{O})$
- 333 Lakehead University
Thunder Bay
Ontario, Canada
 $^{144}\text{Ce}(\text{O})$, $^{137}\text{Cs}(\text{O})$
- 334 Manitoba, University of
Winnipeg, Manitoba, Canada
 $^3\text{H}(\text{O})$, $\text{Tgs}(\text{O})$
- 335 McGill University
Montreal 2, P.Q., Canada
 $^{133}\text{Xe}(\text{O})$
- 336 Ottawa, University of
Ottawa, Ontario, Canada
 $^{37}\text{Ar}(\text{O})$
- 337 Toronto General Hospital
101 College St.
Toronto 2, Ontario, Canada
 $^{43}\text{K}(\text{O})$, $^{133}\text{Xe}(\text{O})$

338 Western Ontario, University of
London, Ontario, Canada

$^{129}\text{I}(\text{O})$

CHINA

339 Institute of Nuclear Energy Research
P.O. Box 3
Lang-Tan, Taiwan, China

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

340 National Cash Register Mfg. Co., Ltd.
No. 55 Wong Chuk Hang Rd.
Aberdeen, Hong Kong, China

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

DENMARK

341 Atomic Energy Commission
Research Establishment Riso
Isotope Division
Roskilde, Denmark

$^{252}\text{Cf}(\text{O})$, $^{166}\text{Ho}(\text{S})$

342 Embassy of Denmark
3200 Whitehaven St., N.W.
Washington, DC 20008

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

EGYPT

343 Geological Survey
02150 Ontaniemi, Finland

$^{230}\text{Th}(\text{O})$, $^{235}\text{U}(\text{O})$

ENGLAND

344 Alfred Chester Beatty Body Dynamics Lab
Brooksdon, Cranbrook,
Kent, England

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

345 British Embassy
3100 Massachusetts Ave., N.W.
Washington, DC 20008

$^{238}\text{Pu}(\text{O})$, $^{242}\text{Pu}(\text{O})$, $^{244}\text{Pu}(\text{O})$, $^{235}\text{U}(\text{O})$,
 $^{238}\text{U}(\text{O})$

346 Christie Hospital
Withington, Manchester, England

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

347 Churchill Hospital
Headington, Oxford, England

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

348 Leeds, University of
Department of Animal Physiology
Heathrow, London, England

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

349 Manchester University
Manchester 13, England

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

350 Radiochemical Centre
White Lion Rd.
Amersham, Bucks, England

$^{144}\text{Ce}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $^{129}\text{I}(\text{O})$, $^{85}\text{Kr}(\text{O})$,
 $\text{MCP}(\text{O})$, $^{238}\text{Pu}(\text{O})$, $^{151}\text{Sm}(\text{O})$, $^{89}\text{Sr}(\text{O})$,
 $^{99}\text{Tc}(\text{O})$, $^{91}\text{Y}(\text{O})$, $^{95}\text{Zr}(\text{O})$

351 Micro-Bio Laboratories
46 Pembridge Rd.
London, England

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

352 Royal College of Surgeons
Lincoln in Field
London, England

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

353 Saunders-Roe Developments, Ltd.
North Hyde Rd.
Hayes, Middlesex, England

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

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

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

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

$^{241}\text{Am}(\text{O})$, $\text{SS}(\text{O})$, $^{99}\text{Tc}(\text{O})$

356 Wales, University of
Cardiff, Wales

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

FRANCE

357 C.E.A.
Department des Radioelements
B. P. No. 2
91190 Gif Sur Yvette, France

$^{37}\text{Ar}(\text{O})$, $^{144}\text{Ce}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $^{129}\text{I}(\text{O})$

- 358 C.N.R.S. New York Office
972 Fifth Ave.
New York, NY 10021
 $^{129}\text{I}(0)$
- 359 CRN, Labo PNPA
B. P. 20/CRO
67 Strasbourg 3, France
 $^{151}\text{Sm}(0)$
- 360 French Atomic Energy Commission
1730 Rhode Island Ave. N.W.
Suite 1217
Washington, DC 20036
 $^{241}\text{Am}(0)$, $^{140}\text{Ba}(0)$, $^{236}\text{Pu}(0)$, $\text{SS}(0)$,
 $^{99}\text{Tc}(0)$
- GERMANY
- 361 American Hoechst Corporation
P.O. Box 2500
Somerville, NJ 08876
 $^{85}\text{Kr}(0)$
- 362 Buchler and Company
Frankfurter Str. 294
Braunschweig, Germany
 $^{37}\text{Ar}(0)$, $^{235}\text{U}(0)$
- 363 EURATOM Transuranium Institute
P.O. Box 452
75 Karlsruhe, West Germany
 $^{241}\text{Am}(0)$, $^{252}\text{Cf}(S)$
- 364 Freie und Hansestadt Hamburg
2 Hamburg-Banrenfeld, Germany
 $^{151}\text{Sm}(0)$, $\text{Tgs}(0)$
- 365 GWK-Gesellschaft zur Wiederaufbereitung
von Kernb
D-7051 Leopoldshafen, West Germany
 $^{233}\text{U}(0)$
- 366 Gesellschaft fur Kernforschung mbH
Institute fuer Angewandte Reaktor
Physik
Weberstrasse 5
75 Karlsruhe, West Germany
 $^{241}\text{Am}(0)$, $^{238}\text{Pu}(0)$, $^{239}\text{Pu}(0)$, $^{240}\text{Pu}(0)$,
 $^{242}\text{Pu}(0)$, $^{232}\text{Th}(0)$, $^{233}\text{U}(0)$
- 367 Hahn-Meitner-Institut
fur Kernforschung Berlin,
Sektion Kernphysik
Berlin, Germany
 $^{252}\text{Cf}(S)$
- 368 Kernforschung Sanlage
Postfach 365
517 Julich, Germany
 $^{151}\text{Sm}(0)$
- 369 Mainz/Rhein, Universitat
Mainz am Rhein, Germany
 $^{95}\text{Zr}(0)$
- 370 Marburg/Lahn, Universitat
Marburg/Lahn, Germany
 $^{106}\text{Ru}(0)$, $^{151}\text{Sm}(0)$
- 371 Max Planck Institut fur Kernphysik
Saupfercheckweg
Heidelberg, Germany
 $^{237}\text{Np}(0)$, $^{236}\text{U}(0)$
- 372 Messerschmitt-Bolkow-Blohm
P.O. Box 801220
D8 Munchen 2, West Germany
 $\text{FPSS}(0)$, $^{90}\text{Sr}(0)$
- 373 Munchen, Technischen Hochschule
Arcistrasse 21
8 Munchen 2
Germany
 $\text{MCP}(0)$
- 374 NEN Chemicals GMBH
Frankfort Airport
Frankfort, Germany
 $^{28}\text{Mg}(B)$
- 375 Saarlands, Universitat des
66 Saarbrucken 15, West Germany
 $^{230}\text{Th}(0)$
- 376 Tuebingen University
West Germany
 $^{234}\text{U}(0)$, $^{236}\text{U}(0)$
- 377 W. Maier Komm. Ges.
722 Schwenningen a. N.
Postfach (P.O.B.) 126
West Germany
 $^{147}\text{Pm}(0)$
- 378 Physikalisch-Technische Bundesanstalt
33 Braunschweig
Bundesallu 100
West Germany
 $^{252}\text{Cf}(S)$

GREECE

- 379 Nuclear Research Center Democritos
Athens, Greece

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

HUNGARY

- 380 Institute of Experimental Physics
Kossuth University
Bem ter' 18.A
Debrecen, Hungary

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

ISRAEL

- 381 Embassy of Israel
1621 - 22nd St., N.W.
Washington, DC 20008

$^{238}\text{Pu}(\text{O})$, $^{233}\text{U}(\text{O})$

- 382 Israel Atomic Energy Commission
Ashod, Israel

$^{60}\text{Co}(\text{B})$

ITALY

- 383 CNEN-Servizio Approvvigionamenti
Viale Regina Margherita 125
Rome, Italy

$^{232}\text{Th}(\text{O})$

- 384 Euratom C.C.R.
Ispra (Varese), Italy

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

- 385 Fabbrica Italiana Magneti Marelli
Casella Postale 66
20099 Sesto S. Giovanni
Milan, Italy

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

JAPAN

- 386 Cancer Institute Hospital
Kami-Ikebukuro, Toshima-Ku
Tokyo, Japan

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

- 387 Marubeni-Lida (America), Inc.
200 Park Ave.
New York, NY 10017

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

- 388 Mitsubishi International Corporation
277 Park Ave.
New York, NY 10017

$^{140}\text{Ba}(\text{O})$, $^{137}\text{Cs}(\text{O})$, $\text{FP}(\text{O})$, $^{89}\text{Sr}(\text{O})$,
 $^{95}\text{Zr}(\text{O})$

- 389 Sumitomo Shoji America, Inc.
345 Park Ave., 14th Floor
New York, NY 10022

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

NETHERLANDS

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

$\text{CSI}(\text{O})$, $^{114}\text{In}(\text{O})$

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

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

PUERTO RICO

- 392 Puerto Rico, University of
Puerto Rico Nuclear Center
College Station
Mayaguez, Puerto Rico 00709

$^{244}\text{Ca}(\text{O})$, $\text{FPSS}(\text{O})$, $^{131}\text{I}(\text{O})$

SCOTLAND

- 393 MRC Brain Metabolism Unit
1 George Square
Edinburgh, Scotland

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

SWEDEN

- 394 Aktiebolaget Atomenergi
Studsvik,
Nykoping, Sweden

$^{37}\text{Ar}(\text{O})$, $^{153}\text{Gd}(\text{O})$, $\text{SS}(\text{O})$, $^{133}\text{Xe}(\text{O})$

- 395 Uppsala, University of
Uppsala, Sweden

$^{192}\text{Ir}(\text{O})$

SWITZERLAND

- 396 Eidg. Institut for Reaktorforschung
Wurenlingen, Switzerland

$^{89}\text{Sr}(\text{O})$

- 397 Eribourg, University of
1700 Fribourg, Switzerland
Switzerland
Radium-Chemie
A. Zeiler and Company
9053 Teufen/Ar
Switzerland

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

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

A. DOMESTIC

Actinium
21

Americium
71

Americium 241
13, 27, 40, 42, 88, 97, 116, 138, 158,
173, 184, 186, 187, 189, 203, 256,
263

Americium 243
16, 34, 66, 256

Argon 37
16, 79, 165

Argon 41
311

Barium 140
3, 16, 42, 88, 172, 173, 231, 311, 320

Barium-Lanthanum 140
3, 15, 16, 21, 41, 164

Berkelium 249
16, 27, 38, 40, 138, 256

Boron 10
15, 308

Calcium 45
285

Calcium 47
31, 142, 233, 282, 296

Californium 249
16, 27, 38, 256

Californium 250
38

Californium 252
2, 3, 4, 8, 11, 12, 24, 26, 27, 34, 35,
36, 39, 40, 42, 47, 48, 56, 62, 64, 73,
75, 76, 77, 78, 87, 93, 106, 107, 110,
111, 112, 124, 125, 126, 131, 134, 137,
139, 150, 153, 154, 156, 158, 165, 191,
196, 198, 204, 205, 210, 212, 214, 216,
219, 221, 223, 224, 225, 226, 233, 234,
244, 245, 247, 249, 250, 251, 256, 261,
262, 266, 267, 271, 273, 274, 276, 278,
279, 288, 297, 299, 300, 307, 316, 318

Carbon 14
320

Cerium 141
21

Cerium 144
116, 128, 173, 246, 256

Cerium + Praseodymium 144
21, 27

Cesium 137
3, 21, 27, 31, 43, 88, 103, 116, 119,
120, 123, 135, 152, 173, 181, 184, 191,
223, 232, 240, 256, 258, 263, 269, 301,
313, 320

Chromium 51
21, 27

Cobalt 57
27, 263

Cobalt 60
21, 27, 42, 147, 223, 313

Copper 67
7, 19, 52, 104, 145, 282

Curium
71, 256

Curium 244
27, 31, 40, 42, 126, 138, 160, 256

Curium 248
16, 40, 73

Cyclotron Service Irradiations
13, 16, 27, 116, 144, 173, 210, 218, 289

Depleted Uranium
3, 15, 41, 164, 176, 257, 264, 265

Einsteinium 253
16, 27, 40, 73

Einsteinium 254
16

Enriched Uranium
15

Europium 154
27

Europium 152+154
86, 256

Fermium 257
16, 40

Fission Products (mixed)
3

Fission Products Special Services	Miscellaneous Compound Preparation
31, 34, 49, 123, 223, 232, 240, 241, 269	16, 28, 34, 40, 46, 52, 59, 88, 99, 105, 118, 119, 129, 146, 152, 173, 184, 191, 229, 235, 240, 257, 270, 282, 289, 292, 314
Gadolinium 153	Neptunium 237
44, 96, 113, 173, 256, 257, 260, 289, 314	16, 20, 31, 40, 48, 73, 97, 250, 256, 257, 285, 311
Gallium 67	Niobium 95
12, 17, 85, 138, 191	16, 109, 152, 184
Hafnium 181	Normal Uranium
27, 40, 48, 256, 320	162
Holmium 166	Phosphorus 33
21	116, 173
Hydrogen 3	Plutonium 236
27, 31, 40, 51, 68, 69, 91, 108, 116, 136, 140, 141, 173, 174, 183, 184, 189, 211, 227, 228, 230, 237, 239, 256, 258, 284, 317	3, 20, 21, 27, 135, 283, 311
Indium 114	Plutonium 238
171	14, 16, 21, 26, 27, 40, 41, 71, 80, 98, 136, 138, 146, 158, 160, 164, 186, 222, 225, 256, 283, 310
Indium 116	Plutonium 239
299	16, 20, 21, 27, 41, 73, 97, 170, 188, 256, 257, 311, 315
Iodine 123	Plutonium 240
55, 182, 291	16, 21
Iodine 129	Plutonium 241
13, 49, 88, 103, 117, 165, 173, 236, 300	16, 311
Iodine 131	Plutonium 242
27, 37, 58, 151, 208, 217, 263	16, 40, 71, 256
Iron 52	Plutonium 244
54, 55, 129, 167, 218, 233, 290, 291	3, 16, 27, 31, 40, 42
Iron 59	Polonium 210
90	21, 27
Iridium 192	Potassium 43
160	60, 141, 145, 155, 175, 191, 282, 289
Krypton 85	Promethium 147
5, 6, 9, 10, 31, 42, 51, 61, 68, 83, 84, 91, 92, 95, 101, 102, 106, 108, 114, 115, 119, 121, 127, 155, 161, 169, 173, 175, 189, 202, 209, 238, 243, 248, 252, 253, 254, 256, 272, 286, 302, 303, 312	21, 27, 29, 70, 146, 152, 256, 259
Lead 210	Protactinium 231
21, 27, 263	256
Magnesium 28	Radium 226
43, 72, 181, 246, 290, 298	27
Mercury 203	Reactor Service Irradiations
21	15, 16, 18, 22, 32, 34, 45, 53, 63, 82, 89, 100, 112, 133, 141, 148, 174, 179, 195, 206, 213, 304, 320
	Ruthenium 103
	3, 31, 256, 257

Ruthenium 106
 16, 21, 27, 116, 163, 173, 180, 256

 Samarium 151
 3, 16, 173

 Silver 110
 299

 Sodium 22
 27, 263

 Special Services
 3, 15, 22, 28, 29, 31, 41, 42, 74, 87,
 88, 94, 96, 160, 164, 200, 215, 223,
 256, 257, 260, 309

 Strontium 85
 21, 277

 Strontium 89
 16, 30, 52, 57, 107, 145, 173, 178, 197,
 208, 218, 274, 281, 319

 Strontium 90
 31, 116, 122, 152, 173, 241, 242, 259,
 280

 Strontium-Yttrium 90
 21, 27, 263

 Tantalum 182
 21

 Target Preparation, Radioisotope
 16, 40, 74, 88, 141, 211, 237, 256,
 258, 320

 Technetium 99
 1, 31, 103, 172, 173, 247, 250, 256, 298

 Thorium
 149, 168

 Thorium 229
 31, 256

 Thorium 230
 16, 48, 185, 256, 275

 Thorium 232
 15, 40, 41, 50, 98, 106, 109, 130, 143,
 168, 222, 257

 Thulium 170
 16, 27

 Uranium
 16, 25, 50, 149, 168, 222

 Uranium 232
 16

 Uranium 233
 3, 16, 20, 34, 42, 141

Uranium 234
 34, 40, 42, 256

 Uranium 235
 3, 16, 40, 42, 67, 97, 116, 164, 180,
 223, 256, 257, 275, 297, 311

 Uranium 236
 16, 31, 34, 40, 97, 109, 256

 Uranium 238
 3, 27, 40, 41, 73, 97, 130, 153, 212,
 257, 297, 306, 311

 Xenon 133
 3, 7, 44, 65, 74, 81, 97, 105, 113, 132,
 157, 165, 177, 199, 200, 201, 207, 220,
 229, 233, 256, 268, 287, 289, 293, 294,
 295, 311, 312

 Yttrium 91
 16, 88, 138

 Zinc 65
 27

 Zirconium 95
 3, 16, 88, 116, 172, 173, 178, 311

 Zirconium-Niobium 95
 21

B. FOREIGN

Americium 241
 355, 360, 363, 366

 Americium 243
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IV. RADIOISOTOPE SALES AND TRANSFERS - FY 1974

A = Argonne National Laboratory
 B = Brookhaven National Laboratory
 H = Hanford Engineering Development Laboratory
 I = Idaho Nuclear Corp.
 M = Mound Laboratory
 O = Oak Ridge National Laboratory
 P = Battelle-Pacific Northwest Laboratory
 S = Savannah River Plant
 U = United Nuclear Inc.

Isotope	Domestic			Foreign			Project (a)			Total		
	Ship-ments	Millicuries, unless noted	Dollars	Ship-ments	Millicuries, unless noted	Dollars	Ship-ments	Millicuries, unless noted	Dollars	Ship-ments	Millicuries, unless noted	Total Dollars
Actinium-227(H)	-	-	-	-	-	-	1	10	-	1	10	-
Americium-241(H)	-	-	-	-	-	-	15	101 μ Ci	-	15	101 μ Ci	-
Americium-241(O)	60	1,364 g	204,655	11	497 g	74,471	11	66 g	8,547	82	1,927 g	287,673
Americium-241(P)	2	673 g	-	-	-	-	1	2 g	-	3	675 g	-
Americium-243(O)	2	0.1	200	1	80	8,000	2	5,300 mg	-	5	5,380.1	8,200
Argon-37(O)	2	5.1	280	9	15.7	1,057	1	6	360	12	26.8	1,697
Barium-133(H)	-	-	-	-	-	-	13	0.2	-	13	0.2	-
Barium-140(O)	5	18	154	6	40	299	6	45	354	17	103	807
Barium-Lanthanum-140(H)	-	-	-	-	-	-	11	3,001.8	-	11	3,001.8	-
Berkelium-249(O)	-	-	-	-	-	-	7	17.3 mg	-	7	17.3 mg	-
Calcium-45(H)	-	-	-	-	-	-	1	5 μ Ci	-	1	5 μ Ci	-
Calcium-47(O)	58	54.8	13,500	-	-	-	12	30	750	70	57.8	14,250
Californium-249(O)	-	-	-	-	-	-	3	4.1 mg	-	3	4.1 mg	-
Californium-250(O)	-	-	-	-	-	-	1	0.2	-	1	0.2	-
Californium-252(B)	-	-	-	-	-	-	1	2 Ci	-	1	2 Ci	-
Californium-252(M)	-	-	-	-	-	-	1	300 μ g	-	1	300 μ g	-
Californium-252(O)	5	0.1 mg	130	6	0.2	120	10	71.7 mg	6,186	21	72 mg	6,436
Californium-252(S)	5	7.326 mg	82,435	6	12,302 mg	137,834	-	-	-	11	19.628 mg	220,269
Carbon-14(O)	4	-	-	-	-	-	-	-	-	4	-	-
Cerium-138(I)	-	-	-	-	-	-	1	400	245	1	400	245
Cerium-141(H)	-	-	-	-	-	-	2	4.0025	-	2	4.0025	-
Cerium-144(O)	5	3,200	299	7	5,101	200	2	105	100	14	8,406	599
Cerium-Praseodymium-144(H)	-	-	-	-	-	-	4	26.5	0	4	26.5	-

Isotope	Domestic			Foreign			Project (a)			Total		
	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Total Dollars
Cesium-137(H)	-	-	-	-	-	-	15	24,801 μ Ci	-	15	24,801 μ Ci	-
Cesium-137(O)	93	258,410 Ci	40,919	24	22,647 Ci	10,192	9	208,020 Ci	50,318	126	489,077 Ci	101,429
Chromium-51(H)	-	-	-	-	-	-	2	1.001	-	2	1.001	-
Cobalt-57(H)	-	-	-	-	-	-	2	0.7001	-	2	0.7001	-
Cobalt-58(H)	-	-	-	-	-	-	3	0.25	-	3	0.25	-
Cobalt-60(8)	-	-	-	-	-	-	1	110,000	-	1	110,000	-
Cobalt-60(H)	-	-	-	-	-	-	17	16.9001	-	17	16.9001	-
Cobalt-60 Metal(O)	-	-	-	-	-	-	2	250,000	-	2	250,000	-
Cobalt-60(O)	4	70	280	-	-	-	-	-	-	4	70	280
Copper-67(O)	34	232.7	12,070	-	-	-	-	-	-	34	232.7	12,070
Curium-244(H)	-	-	-	-	-	-	1	1	-	1	1	-
Curium-244(O)	1	0.4 mg	100	-	-	-	15	8,157.1 mg	100	16	8,157.5 mg	200
Curium-248(O)	-	-	-	-	-	-	4	12.4 mg	-	4	12.4 mg	-
Einsteinium-253(O)	-	-	-	-	-	-	6	0.6 mg	-	6	0.6 mg	-
Einsteinium-254(O)	-	-	-	-	-	-	2	0.9 mg	-	2	0.9 mg	-
Europium-152(O)	1	2	40	-	-	-	1	5	100	2	7	140
Europium-154(H)	-	-	-	-	-	-	2	1	-	2	1	-
Fermium-257(O)	-	-	-	-	-	-	2	-	-	2	-	-
Fission Products Special Services(O)	-	-	79,886	-	-	11,540	-	-	52,700	-	-	144,126
Fission Products(O)	-	-	-	1	10	55	1	5	27	2	15	82
Gadolinium-153(O)	8	12,000	7,400	1	100	250	3	24,005	5,750	12	36,106	13,400
Gallium-67(O)	24	3,767.5	30,249	-	-	-	29	15	115	53	3,782.5	30,364
Hafnium-181(O)	2	18	54	-	-	-	3	14	75	5	32	129
Holmium-166(H)	-	-	-	-	-	-	1	10 μ Ci	-	1	10 μ Ci	-
Hydrogen-3(H)	-	-	-	-	-	-	12	25	-	12	25	-
Hydrogen-3(O)	172	147,752 Ci	134,036	14	31,150 Ci	23,569	24	5,962 Ci	3,629	210	184,867 Ci	161,234
Indium-114(O)	1	2.5	25	1	5	50	-	-	-	2	7.5	75
Iodine-123(B)	28	401	-	-	-	-	-	-	-	28	401	-
Iodine-129(O)	20	6,908 mg	5,831	7	4,836 mg	3,657	-	-	-	27	11,744 mg	9,488
Iodine-131(H)	-	-	-	-	-	-	9	1.001	-	9	1.001	-
Iodine-131(O)	38	3,955	3,950	-	-	-	2	30	50	40	3,985	4,000
Iridium-192(O)	-	-	-	1	25	25	1	25	25	2	50	50
Iron-52(B)	19	230	-	-	-	-	-	-	-	19	230	-
Iron-59(H)	-	-	-	-	-	-	4	1,000.075	-	4	1,000.075	-
Krypton-85(O)	131	3,793,200.8	83,816	9	653,000	14,366	4	101,000	2,396	144	4,547,200.8	100,578

Isotope	Domestic			Foreign			Project ^(a)			Total		
	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Total Dollars
Lead-210(H)	-	-	-	-	-	-	4	22.018 μ Ci	-	4	22.018 μ Ci	-
Magnesium-28(B)	21	1.65	2,310	12	1.40	1,960	-	-	-	33	3.05	4,270
Manganese-54(H)	-	-	-	-	-	-	4	0.75	-	4	0.75	0
Mercury-203(H)	-	-	-	-	-	-	1	1	-	1	1	-
Miscellaneous Compounds(O)	35	2,383 units	5,045	1	1 unit	925	23	196.9 units	1,257	59	2,585.9 units	7,227
Neptunium-237(H)	-	-	-	-	-	-	1	5 μ Ci	-	1	5 μ Ci	-
Neptunium-237(O)	4	6,054 mg	1,403	1	300 mg	67	17	192,739.1 mg	28,221	22	199,354.1 mg	29,691
Neptunium-239(H)	-	-	-	-	-	-	1	45 μ Ci	-	1	45 μ Ci	-
Niobium-95(O)	18	152	3,675	-	-	-	2	7	175	20	159	3,850
Phosphorus-33(O)	18	1,835	18,045	4	305	3,195	-	-	-	22	2,140	21,240
Plutonium-236(O)	3	-	1,290	-	-	-	3	-	-	6	-	1,290
Plutonium-236(H)	-	-	-	-	-	-	1	1 μ Ci	-	1	1 μ Ci	-
Plutonium-238(H)	-	-	-	-	-	-	1	<1 μ Ci	-	-	<1 μ Ci	-
Plutonium-238(M)	-	-	-	-	-	-	31	7,702 g	12,759	31	7,702	12,759
Plutonium-238(O)	14	171,326 mg	168,928	14	165,720 mg	187,298	7	40,001 mg	-	35	377,047	356,226
Plutonium-239(H)	-	-	-	-	-	-	25	72 nCi	-	25	72 nCi	-
Plutonium-239(M)	3	176	375	-	-	-	25	21,205	0	28	21,381	375
Plutonium-239(O)	2	2	137	4	49,429	1,046	15	444,892.5	-	21	494,323.5	1,183
Plutonium-240(H)	-	-	-	-	-	-	1	0.5 μ Ci	-	1	0.5 μ Ci	-
Plutonium-240(O)	-	-	-	1	30,000	-	1	1,000	-	2	31,000	-
Plutonium-241(O)	-	-	-	-	-	-	4	11,662	-	4	11,662	-
Plutonium-242(O)	-	-	-	10	30,379 mg	6,018	7	94,914.1 mg	-	17	125,293.1 mg	6,018
Plutonium-244(O)	-	-	-	1	2	35	9	4,010.7	-	10	4,012.7	35
Polonium-210(H)	-	-	-	-	-	-	13	5	-	13	5	-
Polonium-210(M)	-	-	-	-	-	-	1	43.3 Ci	412	1	43.3 Ci	412
Potassium-43(O)	110	848	23,120	2	4	400	1	0.5	-	113	852.5	23,520
Promethium-147(H)	-	-	-	-	-	-	17	11.0038 μ Ci	-	17	11.0038 μ Ci	-
Promethium-147(O)	9	166,642 Ci	47,139	50	500 Ci	2,000	1	1 Ci	100	60	167,143 Ci	49,239
Promethium-147(P)	3	150,000 Ci	186,300	-	-	-	-	-	-	3	150,000 Ci	186,300
Protactinium-231(M)	-	-	-	-	-	-	1	0.13 g	-	1	0.13 g	-
Radium-226(H)	-	-	-	-	-	-	1	22 μ Ci	-	1	22 μ Ci	-
Ruthenium-103(O)	4	16	400	-	-	-	9	63	1,575	13	79	1,975
Ruthenium-106(H)	-	-	-	-	-	-	2	3.5	-	2	3.5	-
Ruthenium-106(O)	4	46	1,150	1	1	25	14	563	14,090	19	610	15,265
Samarium-151(H)	-	-	-	-	-	-	1	0.5 μ Ci	-	1	0.5 μ Ci	-
Samarium-151(O)	1	2,000 mg	142	8	225 mg	3,728	1	-	519	10	2,225 mg	4,389

Isotope	Domestic			Foreign			Project(a)			Total		
	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Total Dollars
Sodium-22(H)	-	-	-	-	-	-	4	37 μ Ci	-	4	37 μ Ci	-
Sodium-24(H)	-	-	-	-	-	-	1	55 nCi	-	1	55 nCi	-
Strontium-85(H)	-	-	-	-	-	-	4	8	-	4	8	-
Strontium-89(O)	23	241	3,167	20	402	5,398	2	32	432	45	675	8,997
Strontium-90(O)	37	153,731,165	30,937	1	45,739,000	13,721	1	50	10	39	199,470,215	49,668
Strontium-Yttrium-90(H)	-	-	-	-	-	-	22	26	-	22	26	-
Tantalum-182	-	-	-	-	-	-	2	10.005	-	2	10.005	-
Technetium-99(O)	8	19.7 g	1,082	8	98.5 g	5,417	6	11.6 g	615	22	129.8 g	7,114
Thorium-229(M)	-	-	-	-	-	-	3	14.2 mg	-	3	14.2 mg	-
Thorium-229(O)	-	-	-	-	-	-	1	0.6 mg	-	1	0.6 mg	-
Thorium-230(M)	-	-	-	-	-	-	2	11.3 g	-	2	11.3 g	-
Thorium-230(O)	4	2.2 mg	63	2	28.3 mg	652	2	10 mg	-	8	40.5 mg	715
Thorium-232(H)	-	-	-	-	-	-	2	51	-	2	51	-
Thorium-232(M)	1	62 kg	1,500	-	-	-	13	120 kg	-	14	182 kg	1,500
Thorium-232(O)	2	200,004 mg	20	2	225,800 mg	40	2	69,705 mg	-	6	495,509 mg	60
Thulium-170(I)	4	116,000	1,795	-	-	-	-	-	-	4	116,000	1,795
Uranium(M)	-	-	-	-	-	-	4	584 g	-	4	584 g	-
Uranium-232(O)	-	-	-	-	-	-	1	10	-	1	10.0	0
Uranium-233(O)	3	130 mg	84	9	24,359 mg	6,432	6	7,635	-	18	32,124	6,516
Uranium-234(M)	-	-	-	-	-	-	1	13.8	-	1	13.8	-
Uranium-234(O)	1	10 mg	83	2	80 mg	665	6	23,991 mg	-	9	24,081 mg	748
Uranium-235(O)	7	25,843 mg	418	9	232,540 mg	4,080	17	162,320 mg	-	33	420,703 mg	4,498
Uranium-236(O)	3	211.5 mg	317	2	68	47	4	29,879.8 mg	-	9	30,159.3 mg	364
Uranium-238(O)	8	128,886 mg	2,029	2	211,000 mg	3,245	16	1,215,907.7 mg	-	26	1,555,593.7 mg	5,274
Uranium-238(H)	-	-	-	-	-	-	13	50	-	13	50	-
Uranium--Depleted(H)	-	-	-	-	-	-	11	<09 Ci	-	11	<09 Ci	-
Uranium--Enriched(H)	-	-	-	-	-	-	1	0.002 Ci	-	1	0.002 Ci	-
Uranium--Depleted(P)	13	394,404 g	591.63	-	-	-	-	-	-	13	394,404 g	591.63
Uranium--Normal(O)	-	-	-	-	-	-	1	10 mg	-	1	10 mg	-
Xenon-133(O)	329	313,412	27,120	121	483,000	20,045	35	35,390	4,530	485	1,031,802	51,695

Isotope	Domestic			Foreign			Project (a)			Total		
	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Dollars	Ship- ments	Millicuries, unless noted	Total Dollars
Yttrium-88(H)	-	-	-	-	-	-	3	4	-	3	4	-
Yttrium-91(O)	1	1	25	4	27	297	30	80,005	2,055	35	80,033	2,377
Zinc-65(H)	-	-	-	-	-	-	1	1 μ Ci	-	1	1 μ Ci	-
Zirconium-95(O)	5	31	212	17	223	1,223	3	19	107	25	273	1,542
Zirconium-Niobium-95(H)	-	-	-	-	-	-	2	3.5	-	2	3.5	-
Cyclotron Service Irradiations(A)	13	-	2,452	-	-	-	183	-	-	196	-	2,452
Cyclotron Service Irradiations(B)(b)	2	2	560	-	-	-	-	-	-	2	2	560
Cyclotron Service Irradiations(O)(b)	19	17	80,567	15	1,207	26,843	1	1	373	35	1,225	107,783
Cyclotron Service Irradiations(P)	2	90	-	-	-	-	-	-	-	2	90	-
Reactor Service Irradiations(A)	77	-	8,422	-	-	-	675	-	-	752	-	8,422
Reactor Service Irradiations(B)	68	-	16,135	-	-	-	445	-	35,026	515	-	51,161
Reactor Service Irradiations(H)	-	-	-	-	-	-	11	$\sim$ 0.002 Ci	-	11	$\sim$ 0.002 Ci	-
Reactor Service Irradiations(I)	1	1,000	110	-	-	-	-	-	-	1	1,000	110
Special Services(H)(c)	-	-	-	-	-	-	54	$\sim$ 327 Ci	-	54	$\sim$ 327 Ci	-
Special Services(P)	2	37 kg	1,221	-	-	-	-	-	-	2	37 kg	1,221
Special Services(O)(d)	1	5	21,767	-	-	2,400	7	150,000	18,260	8	150,005	42,427
Target Preparation(O) Radioisotope	-	-	5,680	-	-	1,925	1	2	12,760	1	2	20,365
TOTAL	1,602		\$1,366,125.63	427		\$584,812	2,114		\$264,103	4,143		\$2,216,040.63

(a) Materials are sometimes transferred between AEC sites without dollars or at costs other than normal.

(b) Radioisotopes produced by cyclotron service irradiations: ^{133m}Ba , ^{205}Bi , ^{207}Bi , ^{11}C , ^{129}I , ^{134}Cs , ^{56}Co , ^{64}Cu , ^{149}Eu , ^{153}Eu , ^{18}F , ^{67}Ga , ^{70}Ga , ^{67}Ge , ^{197}Au , ^{172}Hf , ^{111}In , ^{123}I , ^{173}Lu , ^{143}Pm , ^{189}Re , ^{95}Rh , ^{83}Rb , ^{95m}Tc , ^{168}Tm , ^{87}Y , ^{105}Ag , ^{26}Al , ^{109}Cd .

(c) Includes such items as stainless steel, fission monitors, flux monitors, and foils containing radioisotopes.

(d) Includes such items as target fabrication, source encapsulation, and preparation of special chemical forms.

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