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List of DOE Radioisotope Customers with Summary of Radioisotope Shipments, FY 1983

D. A. Baker

August 1984

**Prepared for
Office of Health and Environmental
Research
Office of Energy, ER-73
U.S. Department of Energy
under Contract DE-AC06-76RLO 1830**

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

PNL-5126

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Richland, Washington 99352

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Pacific Northwest Laboratory
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UNC Nuclear Industries, Inc.

PREVIOUS REPORTS

Previous reports in this series are:

TID-2160 (FY 1964)	ORNL-IIC-38 (FY 1971)	PNL-2930 (FY 1978)
OHNL-IIC-6 (FY 1965)	BNWL-1774 (FY 1972)	PNL-3274 (FY 1979)
ORNL-IIC-9 (FY 1966)	BNWL-1824 (FY 1973)	PNL-3839 (FY 1980)
ORNL-IIC-13 (FY 1967)	BNWL-1902 (FY 1974)	PNL-4177 (FY 1981)
ORNL-IIC-17 (FY 1968)	BNWL-1993 (FY 1975)	PNL-4759 (FY 1982)
ORNL-IIC-27 (FY 1969)	BNWL-2147 (FY 1976)	
ORNL-IIC-32 (FY 1970)	PNL-2572 (FY 1977)	

Similar reports covering DOE's stable isotopes' distribution programs 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 Sales: Mound Facility Customer and Shipment Summary,"
FY 1979, MLM-2718; FY 1980, MLM-2843; FY 1981, MLM-2994; FY 1982,
MLM-3095.

"Stable Isotope Customer List and Summary of Shipments,"
FY 1979, ORNL/TM-7214; FY 1980, ORNL/TM-7764; FY 1981, ORNL/TM-8302;
FY 1982, ORNL/TM-8704; FY 1983, ORNL/TM-8979.

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SUMMARY

This edition of the radioisotope customer list was prepared at the request of the Office of Health and Environmental Research (ER-73), Office of Energy Research, Department of Energy (DOE). This document lists DOE's radioisotope production and distribution activities by its facilities at Argonne National Laboratory; Pacific Northwest Laboratory; Idaho Operations Office; Los Alamos National Laboratory; Oak Ridge National Laboratory; Savannah River Plant; and UNC Nuclear Industries, Inc.

The information is divided into five sections:

1. Isotope Suppliers, Facility Contacts, and Isotopes or Services Supplied. Table 1 lists suppliers of 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. Lists of Customers, Suppliers and Isotopes Purchased. Table 2 is an alphabetical list of domestic and foreign customers and their addresses. Each customer has a customer code. This code is used to cross-reference data in the other sections of the report. Isotope purchases for each customer are listed after each customer code in Table 2A along with the supplier code for the laboratory supplying the isotopes.
3. List of Isotopes Purchased Cross-Referenced to Customer Codes. Table 3 alphabetically lists isotopes and cross-references them to customer codes. This section provides a quick idea of the number of customers purchasing a particular isotope.
4. Geographic locations of Radioisotope Customers. Table 4 is an alphabetical list of states and foreign countries that is cross-referenced to customer codes and indicates the geographical concentration of isotope users.
5. Radioisotope Sales and Transfers - FY 1983. Table 5 summarizes the FY-1983 radioisotope shipment activities of the DOE laboratory facilities listed in Table 1. A table alphabetically lists the isotopes with their suppliers (denoted by the first letter of their name). Data on shipments, quantities (including units of measure), and dollar values of each isotope are listed under domestic, DOE, and foreign categories.

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LIST OF ABBREVIATIONS

AL-26	Aluminum 26	CO-60	Cobalt 60
AM-241	Americium 241	CS-137	Cesium 137
AM-243	Americium 243	CS ■	Cyclotron Service Irradiations
AT-211	Astatine 211	CSI-B	Cyclotron Service Irradiations by Brookhaven
AU-195	Gold 195	CSI-L	Cyclotron Service Irradiations by Los Alamos
BA-140	Barium 140	CSI-86	Cyclotron Service Irradiations by ORNL 86-inch cyclotron
BK-249	Berkelium 249	CU-65	Copper 65
BR-77	Bromine 77	CU-67	Copper 67
C-11	Carbon 11	DU	Depleted Uranium
C-14	Carbon 14	E	Enriched
CA-47	Calcium 47	ES-253	Einsteinium 253
CAP	Encapsulation	EU	Enriched Uranium
CD-109	Cadmium 109	EU-152	Europium 152
CE-144	Cerium 144	F-18	Fluorine 18
CF-249	Californium 249	FE-52	Iron 52
CF-252	Californium 252	FE-55	Iron 55
Ci	Curie	FE-59	Iron 59
CM-243	Curium 243	FP	Fission Products
CM-244	Curium 244	g	gram
CM-248	Curium 248	GA-67	Gallium 67
CO-57	Cobalt 57		
CO-58	Cobalt 58		

GD-148	Gadolinium 148	MI	Miscellaneous Isotopes
GD-153	Gadolinium 153	MIS	Miscellaneous Quantities
GE-68	Germanium 68	MS	Miscellaneous Services
H-3	Hydrogen 3 (tritium)	NA-22	Sodium 22
HF-172	Hafnium 172	NA-24	Sodium 24
I-123	Iodine 123	NB-95	Niobium 95
I-129	Iodine 129	NI-63	Nickel 63
I-131	Iodine 131	NP-237	Neptunium 237
IN-111	Indium 111	NU	Natural Uranium
IR-192	Iridium 192	OS-191	Osmium 191
kCi	kilocurie	P-33	Phosphorus 33
kg	kilogram	PD-109	Palladium 109
KR-85	Krypton 85	PM-147	Promethium 147
KR-85E	Enriched Krypton 85	PO-208	Polonium 208
LU-172	Lutetium 172	PU-236	Plutonium 236
LU-173	Lutetium 173	PU-237	Plutonium 237
mg	milligram	PU-238	Plutonium 238
MG-28	Magnesium 28	PU-239	Plutonium 239
μCi	microcurie	PU-240	Plutonium 240
mCi	millicurie	PU-241	Plutonium 241
MCP	Miscellaneous Compound Preparations	PU-242	Plutonium 242
μg	microgram	RB-81	Rubidium 81
mg	milligram	RB-83	Rubidium 83

RS ■	Reactor Service Irradiations	TP	Target Preparations
RU-97	Ruthenium 97	u-233	Uranium 233
RU-103	Ruthenium 103	U-234	Uranium 234
RU-106	Ruthenium 106	U-235	Uranium 235
RW	Withdrawn radioisotopes prepared under special approval	U-236	Uranium 236
		U-238	Uranium 238
SE-75	Selenium 75	V-48	Vanadium 48
SI-31	Silicon 31	v-54	Vanadium 54
SM-151	Samarium 151	XE-127	Xenon 127
SN-117	Tin 117	Y-87	Yttrium 87
SP	Special Processing	Y-88	Yttrium 88
SR-82	Strontium 82	ZR-95	Zirconium 95
SR-89	Strontium 89		
SR-90	Strontium 90		
SS	Special Services		
TR-158	Terbium 158		
TC-99	Technetium		
TH-229	Thorium 229		
TH-230	Thorium 230		
TH-232	Thorium 232		
TI-44	Titanium 44		
TM-167	Thulium 167		
TM-170	Thulium 170		

1. ISOTOPE SUPPLIERS, FACILITY CONTACTS, AND
ISOTOPES OR SERVICES SUPPLIED

TABLE 1. ISOTOPE SUPPLIER, FACILITY CONTACT, AND ISOTOPES OR SERVICES SUPPLIED

<u>Isotope Supplier</u>	Supplier <u>Code</u>	<u>Facility Contact</u>	<u>Isotopes or Service</u>
Argonne National Laboratory	ANL	R. B. Perry Special Materials Division Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 FTS 972-3425 Commercial (312) 972-3425	CSI, F-18, RB-81
Brookhaven National Laboratory	BNL	P. Colsmann Isotopes and Special Materials Group Brookhaven National Laboratory Upton, Long Island, NY 11973 FTS 666-4058 Commercial (516) 282-4058	AT-211, AU-195, C-11, C-14, CD-109, CM-244, CO-57, CO-58, CO-60, CS-137, CSI, F-18, FE-52, GA-67, GE-68, I-123, I-131, IN-111, MG-28, MI, OS-191, PD-109, RSI, SI-31, SR-82, U-238, V-54, Y-87, XE-127
Hanford Engineering Development Laboratory	HEDL	W. R. Brooksher, Manager Safeguards and Security HEDL P. O. Box 1970 Richland, WA 99352 FTS 444-9927 Commercial (509) 376-9927	No Isotopes Produced in FY 1983
Idaho National Engineering Laboratory	INEL	R. E. Korenke EGBG Idaho, Inc. P. O. Box 1625 Idaho Falls, ID 83415 FTS 583-4466 Commercial (208) 526-4466	RSI, Co-60

TABLE 1. (continued)

<u>Isotope Supplier</u>	<u>Supplier Code</u>	<u>Facility Contact</u>	<u>Isotopes or Service</u>
Los Alamos National Laboratory	LANL	Mrs. Karen E. Peterson Group INC-3, Mail Stop J514 University of California Los Alamos National Laboratory Los Alamos, NM 87545 FTS 843-4675 Commercial (505) 667-4675	BR-77, CU-67, FE-59, GD-148, GE-68, I-123, LU-172, LU-173, NA-22, RB-83, SR-82, TB-158, TI-44, V-48, XE-127, Y-88
Oak Ridge National Laboratory	ORNL	G. M. Carpenter Isotope Sales Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830 FTS 624-6984 Commercial (615) 575-6984	AL-26, AM-241, AM-243, BA-140, BK-249, C-14, CA-47, CAP, CE-144, CF-252, CM-243, CM-244, CM-248, CO-60, CS-137, CSI, ES-253, EU-152, FE-55, GD-153, H-3, I-129, IR-192, KR-85, KR-85E, MCP, MG-28, MS, NB-95, NI-63, NP-237H, NP-2370, NU, P-33, PM-147, PU-236, PU-237, PU-238, PU-239, PU-240, PU-241, PU-242, RU-103, RU-106, RW, SE-75, SP, SR-89, SR-90, SS, TC-99, TH-229, TH-230, TH-232, TM-170, TP, U-233, U-234, U-235, U-236, U-238, XE-127, ZR-95
Pacific Northwest Laboratory	PNL	J. V. Filsinger Safety and Materials Management Pacific Northwest Laboratory P. O. Box 999 Richland, WA 99352 FTS 375-2051 Commercial (509) 375-2051	No Isotopes produced in FY 1983

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1.3 1

TABLE 1. (continued)

<u>Isotope Supplier</u>	<u>Supplier Code</u>	<u>Facility Contact</u>	<u>Isotopes or Service</u>
Savannah River Plant	(SRP)	C. G. Halsted Process 8 Weapons Division Department of Energy P. O. Box A Aiken, SC 29801 FTS 239-2217 Commercial (803) 725-6211 Extension 2217	CF-252
UNC Nuclear Industries, Inc.	(UNC)	G. L. Smith, Manager UNC Nuclear Industries, Inc. P. O. Box 490 Technology Section Operation Division Richland, WA 99352 FTS 444-3541 Commercial (509) 373-3541	CO-60, RU-97 All produced from reactor service irradiations

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2. LISTS OF CUSTOMERS, SUPPLIERS AND ISOTOPES PURCHASED

TABLE 2. List of Customers in Alphabetical Order

DOMESTIC CUSTOMERS

ARC	Accu Ray Corporation 650 Ackerman Road P. O. Box 00248 Columbus, OH 43202	BM ■	Battelle Memorial Institute 505 King Highway Columbus, OH 43201
AMS	Advanced Medical Services, Inc. 621 Factory Row Geneva, OH 44041	BTL	Bell Telephone Laboratories Murray Hill, NJ 07971
AMD	Advanced Micro Devices, Inc. P. O. Box 453 Sunnyvale, CA 94086	BEC	Bendix Corporation, The 2000 East Bannister Road Kansas City, MO 64131
ABC	Allen-Bradley Company 136 W. Greenfield Avenue Milwaukee, WI 53204	BII	Best Industries, Incorporated P.O. Box 681 Washington, DC 20044
ALT	Alpha Test 1188 Bordeaux Drive Sunnyvale, CA 94086	BWH	Brigham & Women's Hospital 10 Vining Street Boston, MA 02115
AMC	Amersham Corporation Arlington Heights, IL 60005	BNL	Brookhaven National Laboratory Chemistry Department Upton, Long Island, NY 11973
ANI	Analytics Incorporated 1094 Hemphill Avenue Atlanta, GA 30318	BCP	Burroughs Corporation 460 Sierra Madre Villa Pasadena, CA 91109
ANL	Argonne National Laboratory 9700 South Cass Ave. Argonne, IL 60439	CSF	California State University Department of Chemistry Fullerton, CA 92624
AII	Automation Industries, Inc. P. O. Box 245 Phoenixville, PA 19460	CSN	California State University Department of Chemistry Northridge, CA 91330
BWP	Babcock & Wilcox Company Power Generation Group 20 South Van Buren Avenue Barberton, OH 44203	CVA	Calm VA-1 (690) P. O. Box 2971 Austin, TX 78769

TABLE 2. (continued)

CDM	Camp Dresser & McKee, Inc. 1455 W. 48th Avenue Wheatridge, CO 80033	COR	Cornell University Purchasing 120 Maple Avenue Ithaca, NY 14850
CWR	Case-Western Reserve University 2220 Circle Drive Cleveland, OH 44106	CRU	Creighton University 2410 California Omaha, NE 68131
CRC	Chevron Research Company 555 Market Street San Francisco, CA 94802	CRG	Cryogenic Rare Gas Laboratories, Inc. 46 Liberty Street Newark, NJ 07103
CMC	Children's Medical Center 300 Longwood Avenue Boston, MA 02115	CYC	Cyclotron Corporation 950 Gilman Street Berkeley, CA 94710
CSU	Colorado State University Fort Collins, CO 80502	DUP	E.I. du Pont de Nemours Company, Inc. Savannah River Plant Aiken, SC 29801
COU	Columbia University 630 West 168 Street New York, NY 10032	SQS	E.R. Squibb and Sons Radio Pharmaceutical R & D P. O. Box 191 New Brunswick, NJ 08901
CUM	Columbia University Medical School Neurological Institute 630 W. 168th Street New York, NY 10032	EAL	EAL Corporation 2030 Wright Avenue Richmond, CA 94804
COE	Combustion Engineering, Inc. Box 400 Windsor, CT 06095	EET	EETech Electronics Energy and Technology Div. of Beatrice Co. 2352 Utah Avenue El Segundo, CA 90245
CTL	Continental Testing Laboratories 763 U. S. Highway 17-92 Fern Park, FL 32730	EGG	EGBG Idaho, Inc. P.O. Box 1625 Idaho Falls, ID 83415
CLI	Core Laboratories, Inc. 1330 S. Potomac, Suite 104 Aurora, CO 80012		

TABLE 2. (continued)

FCM	Fairchild Camera & Instrument Corp. Linear Division P. O. Drawer 7282 Mt. View, CA 94042	GEI	Gearhart Industries P. O. Box 1936 Fort Worth, TX 76101
FCS	Fairchild Camera & Instrument Corp. Discrete Division 4300 Redwood Highway San Rafael, CA 94903	GEC	General Electric Company Domestic Products Division Mail Code 399 175 Curtner Avenue San Jose, CA 95125
FAS	Fairchild Semiconductor 333 Western Avenue Portland, ME 04016	GEL	General Electric Company Lynchburg, VA 24502
FNA	Fermi National Accelerator Lab. Batavia, IL 60510	GEP	General Electric Company Vallecitos Nuclear Company Vallecitos Road Pleasanton, CA 94566
FSU	Florida State University Tallahassee, FL 32306	GEW	General Electric Company General Electric Drive Waynesboro, VA 22980
GAT	GA Technologies P. O. Box 85608 San Diego, CA 92138	GES	General Electric Company P.O. Box 254 San Jose, CA 95103
GEO	GEO Reliability Laboratory 975 Benicia Avenue Sunnyvale, CA 94086	GIC	General Instrument Corporation 600 West John Street Hicksville, NY 11802
GPU	GPU Nuclear Corporation P. O. Box 1018 Reading, PA 19603	GWM	George Washington Medical Center Walter G. Ross Hall 2300 Eye Street, NW. Washington, DC 20037
GTE	GTE Products Corporation Hawes Street Towanda, PA 18848	GWU	George Washington University Academic Center 801 22nd Street Washington, DC 20056
GI	Gamma Industries, Inc. P.O. Box 2543 Baton Rouge, LA 70821		

TABLE 2. (continued)

GIT	Georgia Institute of Technology Nuclear Research Center 225 North Avenue, NW. Atlanta, GA 30332	ICN	ICN-NB Co. 26201 Miles Road Cleveland, OH 44128
GAS	Gollob Analytical Service Corp. 47 Industrial Road Berkeley Heights, NJ 07922	INP	INTEL Corporation P. O. Box 35900 Pheonix, AR 85069
GAC	Goodyear Atomic Corporation P. O. Box 628 Piketon, OH 45661	INS	INTEL Corporation 3065 Bowers Avenue Santa Clara, CA 95051
GN	Gulf Nuclear, Inc. 202 Medical Center Webster, TX 77598	IB	Indiana University Bloomington, IN 47401
HAS	Harris Semiconductor P. O. Box 883 Melbourne, FL 32901	IUI	Indiana University - Purdue University at Indianapolis 630 W. New York Street Indianapolis, IN 46202
HMS	Harvard Medical School Shields Warren Laboratory 50 Binney Street Boston, MA 02115	INC	Industrial Nuclear Company 1124 Chess Drive Foster City, CA 94404
HUP	Harvard University Department of Physics Gordon McKay Labs. Cambridge, MA 02138	ISU	Iowa State University Physics Department Ames, IA 50011
HON	Honeywell 1150 East Cheyenne Mountain Blvd. Colorado Springs, CO 80906	ISI	Isomedix Inc. P.O. Box 177 25 Eastmans Road Parsippany, NJ 07054
HAC	Hughes Aircraft Company P.O. Box 92907 Los Angeles, CA 90009	IPL	Isotope Products Laboratories 404 South Luke Street Burbank, CA 91502
HUS	Humanoid Systems 17022 Montanero Street Carson, CA 90746	JHM	Johns Hopkins Med. Institutions Divisions of Nuclear Medicine & Radiation Health Sciences 615 N. Wolf Street Baltimore, MD 21205

TABLE 2. (continued)

KIC	Kaman Instrumentation Corp. P. O. Box 7463 Colorado Springs, CO 80933	MMC	Martin Marietta Corporation East Sand Lake Road Orlando, FL 32855
LLL	Lawrence Livermore National Lab. Box 808, L-233 Livermore, CA 94550	MGH	Massachusetts General Hospital Isotope Laboratory Boston, MA 02114
LIW	Litton Industries Guidance and Control Systems 5500 Conoga Avenue Woodland Hills, CA 91367	MAF	Mayo Foundation 200 1st Street, S.W. Rochester, MN 55905
LIG	Litton Systems, Inc. Guidance and Control Systems Div. 1001 Redwood Highway Spur Grants Pass, OR 97526	MEC	Measurex Corporation 10475 Imperial Avenue Cupertino, CA 95014
LAN	Los Alamos National Laboratory CNC-11, MS-824 P.O. Box 1663 Los Alamos, NM 87545	MER	Merck and Company Rahway, NJ 07065
LAC	Los Angeles County USC Med. Center 1200 N. State Street Box 112 G.H. Los Angeles CA 90033	MEH	Methodist Hospital 1604 N. Capitol Avenue Indianapolis, IN 46202
LOC	Lovelace Clinic 4800 Gibson Boulevard, S.E. Albuquerque, NM 87108	MIR	Micro-Re1, Inc. 2340 West 10th Place Tempe, AZ 85280
LUM	Loyola University Medical Center 2160 So. First Avenue Maywood, IL 60153	MMM	Minnesota Mining Manufacturing Co. P.O. Box 3121 St. Paul, MN 55101
MAN	Mallinckrodt Nuclear P.O. Box 5840 St. Louis, MO 63134	MM■	MonoIithic Memories Inc. 1275 Mission College Blvd. Santa Clara, CA 95050
MAI	Mallinkrodt, Inc. 2703 Wagner Place Maryland Heights, MO 63043	MON	Monsanto Company P. O. Box 1311 Texas City, TX 77591
		MOM	Monsanto Research Corporation Mound Laboratory P. O. Box 32 Miamisburg, OH 45342

TABLE 2. (continued)

MRC	Monsanto Research Corporation Dayton Laboratory 1515 Nicholas Road Dayton, OH 45407	NP ■	Neutron Products, Inc. P.O. Box 68 Mt. Ephraim Road Dickerson, MD 20753
MB ■	Moravek Biochemicals, Inc. 577 Mercury Lane Brea, CA 92621	NEB	New England Nuclear Corporation Radiopharmaceutical Div. 331 Treble Cove Road Billerica, MA 01862
MOS	Mostek P. O. Box 16'9 1215 West Crosby Road Carrollton, TX 75006	NEN	New England Nuclear Corporation 331 Treble Cove Road North Billerica, MA 01862
MIA	Motorola, Inc. 3501 Ed Bluestein Boulevard Austin, TX 78721	NEW	New England Nuclear Corporation 85 Wells Avenue Newton, MA 02159
MIP	Motorola, Inc. 5005 East McDowell Road Phoenix, AZ 85008	NJC	New Jersey College of Medicine and Dentistry 100 Bergen Street Newark, NJ 07103
MSH	Mount Sinai Hospital Fifth Avenue and 100th Street New York, NY 10029	NMH	New Mexico Health and Environmental Dept. Scientific Laboratory Division 700 Camino de Salud N. E. Albuquerque, NM 87106
NUS	NUS Corporation Park West II Cliff Mine Road Pittsburg, PA 15275	NYS	New York State Department of Health Division of Labs and Res. Empire State Plaza Albany, NY 12201
NAS	Nassau Hospital 259 First Street Mineola, NY 11501	NYU	New York University Medical Center 550 First Avenue New York, NY 10016
NSC	National Semiconductor Corp. 2900 Semiconductor Drive Santa Clara, CA 95051		
NST	National Semiconductor Corp. 5901 S. Calle Santa Cruz Tucson, AZ 85706		

TABLE 2. (continued)

NCB	North Carolina Baptist Hospital Nuclear Medicine 300 S. Hawthorne Winston-Salem, NC 27103	ORS	Oregon State University Corvallis, OR 97330
NCM	North Carolina Memorial Hospital Division of Nuclear Medicine 2nd Floor, Old Clinic Bldg. Chapel Hill, NC 27514	PAI	PA Inc. P. O. Box 7631 Houston, TX 77571
NCS	North Carolina State University P. O. Box 5935 Raleigh, NC 27607	PNL	Pacific Northwest Laboratory Battelle-Northwest P. O. Box 999 Richland, WA 99352
NMF	Nuclear Medicine Fund Presbyterian Hospital 622 West 168 Street New York, NY 10032	PTI	Piezo Technology, Inc. P. O. Box 7859 Orlando, FL 32854
NRD	Nuclear Radiation Dev., Inc. 2937 Alt Boulevard Grand Island, NY 14072	GEF	Pinellas Peninsula Plant P. O. Box 11508 St. Petersburg, FL 33733
NSS	Nuclear Sources and Services P.O. Box 14023 Houston, TX 77021	PAB	Potter and Brumfield Princeton, IN 47570
OMN	OMNI Technology 48881 Kata Road Fremont, CA 94539	RCA	RCA Raritan, NJ 08869
ORA	Oak Ridge Associated Universities P.O. Box 117 Oak Ridge, TN 37830	RAM	Raytheon Company 350 Ellis Street Mountain View, CA 94042
ORN	Oak Ridge National Laboratory P. O. Box X Oak Ridge, TN 37830	REI	Reactor Experiments, Inc. 963 Terminal Way San Carlos, CA 94070
OSU	Ohio State University Research Foundation 1314 Kinnear Road Columbus, OH 43212	RSE	Reuter-Stokes Electronics Components 18530 South Miles Parkway Warrensville Heights Cleveland, OH 44128
		RIU	Rice University P. O. Box 2666 Houston, TX 77001

TABLE 2. (continued)

RHC	Rockwell Hanford Company P. O. Box 769 Richland, WA 99352	SII	Signetics Incorporated 811 East Argues Avenue Sunnyvale, CA 94088
RIR	Rockwell International Atomics International Division Rocky Flats Plant P. O. Box 464 Golden, CO 80401	SIL	Siliconix, Inc. Mail Stop 60 2201 Laurelwood Road Santa Clara, CA 95054
RPS	Rush Presbyterian -- St. Luke's Medical Center Nuclear Medicine 1753 W. Congress Parkway Chicago, IL 60612	SKC	Sloan Kettering Cancer Center Department of Neurology 1275 York Avenue New York, NY 10021
SLC	Safety Light Corporation 4150-A Old Berwick Road Bloomsburg, PA 17815	SSS	Solid State Scientific, Inc. 3900 Welsh Road Willow Grove, PA 19090
SAC	Sandia Coporation P.O. Box 5800 Albuquerque, NM 87115	SST	Solid State Testing 56 Middlesex Turnpike Burlington, MA 01803
SCM	Schwarz/Mann 2 Ram Ridge Road Spring Valley, NY 10977	SPE	Source Production and Equipment Co., Inc. 625 Oxley Street Kenner, LA 70062
SCA	Science Applications 3 Choke Cherry Road Rockville, MD 20850	SSM	Sperry Systems Management 310.1 Goddard Space Flight Center Greenbelt, MD 20771
SPL	Self Powered Lighting, Ltd. 8 Westchester Plaza Elmsford, NY 10523	SQU	Squibb and Sons, E. R. P. O. Box 70 East Brunswick, NJ 08816
SDC	Shell Development Company 1410 45th Street Emeryville, CA 94608	SUB	State University of New York Downstate Medical Center 450 Clarkson Avenue Brooklyn, NY 11203
SAJ	Shepherd and Associates, J. L. 1614 Victor Boulevard Glendale, CA 91201		

TABLE 2. (continued)

SUH	State University of New York at Stony Brook Research Foundation Stony Brook, NY 11794	TVA	Tennessee Valley Authority Central Accounting Office Knoxville, TN 37902
SUN	State University of New York at Stony Brook Department of Radiology Health Sciences Center Stony Brook, NY 11794	TVA	Tennessee Valley Authority Central Accounting Office Knoxville, TN 37902
SYU	Syracuse University 150 Marshall Street Syracuse, NY 13210	TAR	Texas A and M Res. Foundation P. O. Box H College Station, TX 77843
TRW	TRW Systems Group One Space Park Redondo Beach, CA 90277	TAM	Texas A&M University P.O. Box 44 College Station, TX 77843
TYC	TYCO Laboratories General Nucleonics Division 2811 Metropolitan Place Pomona, CA 91767	TIS	Texas Instruments, Inc. Science Services Division P. O. Box 5012, Mail Stop 6 Dallas, TX 75222
TEO	Technical Operations South Avenue Burlington, MA 01803	TRC	Tracero Corporation P. O. Box 192 S. Houston, TX 77587
TFE	Technology for Energy Corp. One Energy Center Pellissippi Parkway Knoxville, TN 37922	TTI	Trio Tech International 2040 N. Lincoln Street Burbank, CA 91504
TET	Teledyne Isotopes Nuclear Systems Division 110 W. Timonium Road Timonium, MD 21093	DAA	U. S. Dept. of Agriculture National Animal Disease Center P. O. Box 70 Ames, IA 50010
TWC	Teledyne Wah Chang Albany Division of Teledyne Ind. Inc. P. O. Box 460 Albany, OR 97321	DAG	U. S. Department of Agriculture Research Service P. O. Box 53326 New Orleans, LA 70150

TABLE 2. (continued)

NOA	U. S. Dept. of Commerce, NOAA Great Lakes Environmental Research Laboratory 2300 Washtenaw Avenue Ann Arbor, MI 48104	UCR	Union Carbide Corporation Nuclear Division Oak Ridge National Laboratory P.O. Box X Oak Ridge, TN 37830
DOE	U. S. Department of Energy 376 Hudson Street, 5th Floor New York, NY 10014	UCY	Union Carbide Corporation Nuclear Division Y-12 Plant P.O. Box Y Oak Ridge, TN 37830
EPA	U. S. Environmental Protection Agency P. O. Box 3009 Montgomery, AL 36193	UPA	Unit Process Assemblies, Inc. 53-15 37th Avenue Woodside, NY 11377
GSR	U. S. Geological Survey National Center, Room 1447-A 12201 Sunrise Valley Drive Reston, VA 22092	KAF	United States Air Force Kirtland Air Force Base Albuquerque, NM 87117
GSG	U. S. Geological Survey, WRD Gulf Coast Hydrosience Center Building 1100, Room 312 NSTL Station, MS 39529	AFR	United States Army Armed Forces Radiobiological Research Institute Defense Nuclear Agency Bethesda, MD 20014
UNC	UNC Nuclear Industries P.O. Box 490 Richland, WA 99352	NAH	U. S. National Aeronautics and Space Administration Manned Spacecraft Center Building 240 Houston, TX 77058
UCF	Union Carbide Corporation Sterling Forest Research Center P. O. Box 324 Tuxedo, NY 10987	NBG	U. S. National Bureau of Standards Rec. Room, Bldg. 301 Route 270 Quince Orchard Road Gaithersburg, MD 20878
UCG	Union Carbide Corporation Nuclear Division Oak Ridge Gaseous Diffusion Plant P.O. Box P Oak Ridge, TN 37830	NIH	U. S. National Institute of Health 9000 Rockville Pike Bethesda, MD 20205

TABLE 2. (continued)

NM	United States Navy National Naval Medical Center Bethesda, MD 20014	UCI	University of Cincinnati Purchasing Department Cincinnati, OH 45221
NAO	United States Navy Naval Regional Medical Center 8750 Mountain Boulevard Building 505 Oakland, CA 94627	UCO	University of Colorado Regent Hall 122 Boulder, CO 80309
UIC	Unitrode Corporation 580 Pleasant Street Watertown, MA 01970	UCT	University of Connecticut Physical Sciences Building Central Warehouse Storrs, CT 06268
UAR	University of Arkansas Purchasing Section 321 Administration Building Fayetteville, AR 72701	UFL	University of Florida Gainesville, FL 32601
UCB	University of California Lawrence Berkeley Laboratory Berkeley, CA 94701	UIL	University of Illinois Division of Nuclear Medicine Research College of Veterinary Medicine Urbana, IL 61801
UCS	University of California Parnassus Avenue San Francisco, CA 94143	UKY	University of Kentucky Medical School 800 Rose Street Lexington, KY 40506
UCL	University of Calif. San Diego Accounting Office (Q-027) La Jolla, CA 92093	ULR	University of Lowell Research Foundation 450 Aiken Street Lowell, MA 01845
UCP	University of Chicago Physical Science Department 1525 E. Hyde Park Boulevard Chicago, IL 60615	UMD	University of Maryland College Park, MD 20742
UCR	University of Chicago Radiation Protection Service HP11, Department 1034 5835 S. Cottage Grove Avenue Chicago, IL 60637	UMM	University of Massachusetts Medical Center Department of Nuclear Medicine 55 North Lake Avenue Worcester, MA 01605

TABLE 2. (continued)

UMA	University of Massachusetts Nuclear Physics Group Dept. of Physics & Astronomy Amherst, MA 01003	USC	University of Southern Calif. Accounts Payable P. O. Box 77967 Los Angeles, CA 90089
UMI	University of Michigan University B'ldg. 1061 North Ann Arbor, MI 48104	UTN	University of Texas Nuclear Medicine Service Galveston, TX 77550
UMS	University of Mississippi Medical Center Accounting Department 2500 North State Street Jackson, MS 39216	UTM	Univ. of Texas Medical School 6431 Fannin Houston, TX 77025
UNM	University of New Mexico Medical School Albuquerque, NM 87131	UTX	University of Texas at Dallas P.O. Box 30365 Dallas, TX 75230
UOK	University of Oklahoma Purchasing Department Health Sciences Center/ Nuclear Pharmacy Service Center Building Oklahoma City, OK 73190	UUT	University of Utah Purchasing Department Salt Lake City, UT 84112
URI	University of Rhode Island Grad. School of Oceanography South Ferry Road Narragansett, RI 02882	UVA	University of Virginia Radiation Safety Officer RWMF, 124 11th Street, S.W. Charlottesville, VA 22903
URM	University of Rochester 575 Elmwood Avenue Rochester, NY 14627	UWM	University of Wisconsin 750 University Avenue Madison, WI 53706
USF	University of South Florida Div. of Finance and Accounting 4202 Fowler Avenue Tampa, FL 33620	VAC	V. A. Hospital Wilshire and Sawtelle Boulevards Los Angeles, CA 90073
		VAU	V. A. Hospital, Houston CALM-VA-4-(580) P. O. Box 2974 Austin, TX 78769

TABLE 2. (continued)

VAT	V. A. Hospital, Northport CALM-VA-1-(632) P. O. Box 2971 Austin, TX 79879	WER	Western Electric Company P. O. Box 241 Reading, PA 19603
VAS	Veterans' Administration La Jolla Village Drive San Diego, CA 92161	WEL	Western Electric Company, Inc. P.O. Box 1409 Lawrence, MA 01842
VAA	Veterans' Administration Hospital Calm 361 1615 Woodward Street Austin, TX 78772	WES	Western Electric Company, Inc. 777 North Blue Parkway Lee's Summit, MO 64063
VAH	Veterans' Administration Hospital Chief, Supply Service Bldg. 1, Room G137 Hines, IL 60141	WEW	Westinghouse Electric Co., Inc. Bettis Atomic Power Laboratory P. O. Box 79 West Mifflin, PA 15122
VAN	Veterans' Administration Hospital Nuclear Medicine Middleville Road Northport, NY 11768	WEE	Westinghouse Electric Corp. P. O. Box 284 Elmira, NY 14902
VAW	Veterans' Administration Hospital Nuclear Medicine 1400 V.F.W. Parkway West Roxbury, MA 02132	WHC	Westinghouse Hanford Company P.O. Box 1970 Richland, WA 99352
VAM	Veterans' Admin. Medical Center Chief Supply Service 2411 Old Spanish Trail Houston, TX 77211	YAU	Yale University 20 Ashmun Street New Haven, CT 06520
WAU	Washington University Lindell and Skinker St. Louis, MO 63130	ZII	Zilog, Incorporated 10460 Bubb Road Cupertino, CA 95014
WTS	Wellman Thermal Systems Corp. No. 1 Progress Road Shelbyville, IN 46176		

TABLE 2 (continued)

FOREIGN COUNTRIES**AUSTRALIA**

- AAE Australian Atomic Energy
Commission
Private Mail Bag
Sutherland, 2232, NSW
- EOA Embassy of Australia
1601 Massachusetts Ave, NW.
Washington, D.C. 20036

BELGIUM

- CBN Central Bureau for Nuclear
Measurements of the European
Communities
8-2440 GEEL, Steenweg maar Retie
- KUL Katolieke Universiteit Leuven
Instituut Voor Kern-En
Stralingsfysika
Celestijnenlaan 200 D
3030 Leuven
- ULG Universite de Liege
Centre de Recherches
du Cyclotron
Sart Tilman
B-4000 Liege 1
- ULO Universite de Louvain
Institut de Physique
Corpusculaire
Chemin du Cyclotron, 2
8-1348 Louvain-la-Neuve

CANADA

- ACH Acute Care Hospital
Department of Medicine
2211 Westbrook Mal1
Vancouver, British Columbia
- AEC Atomic Energy of Canada Ltd.
Chalk River Nuclear Labs.
Chalk River, Ontario
- AEV Atomic Energy of Canada Ltd.
4004 Westbrook Mal1
Vancouver, B.C. VET 2AB
- AEK Atomic Energy of Canada Ltd.
Radiochemical Co.
413 March Road
P. O. Box 13500
Kanata, Ontario K2K 1X8
- CCI Canada Centre for Inland Waters
867 Lakeshore Road
P. O. Box 5050
Burlington, Ontario L7R 4A6
- FAO Fisheries and Oceans
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
- MMU McMaster University
Hamilton, Ontario
- SGH Scarborough General Hospital
Nuclear Medicine
3050 Lawrence Avenue East
Scarborough, Ontario H1P 2V5

TABLE 2. (continued)

UAE University of Alberta
Edmonton, Alberta, T6G 2H1

UBC University of British Columbia
Vancouver 8, British Columbia.

FEDERAL REPUBLIC OF GERMANY

AEG AEG-Telefunken Zentralfunk-
wartung Westzone
D8752 Grossweizheim
Frankfurt am Main

AHC American Hoechst Corporation
P. O. Box 2500
Somerville, NJ 08876

BUC Buchler and Company
Frankfurter Str. 294
Braunschweig

ETI EURATOM Transuranium Institute
P.O. Box 452
75 Karlsruhe

FAP Fachbereich Physik
der TU-München
Strahlenschutzabt. Z 62
James-Franck-Weg
D-8046 Garching B. München

GFK Gesellschaft für
Kernforschung mbH.
Institute für Angewandte
Reaktor Physik
Weberstrasse 5
75 Karlsruhe

GFS Gesellschaft für
Schwerionenforschung
Planckstrasse 1
D-6100 Darmstadt

KES Kernforschungsanlage
Postfach 1913
D-517 Jülich

UMU Sektion Physik
Der Universität München
Technologisches Labor.
8046 Garching am Coulombwall 1

UBZ University of Bremen
Zentraler Einkauf
280 Bremen

FRANCE

CEA CEA Department Des Radio-
elements
B.P. No.2
91190 Gif Sur Yvette

CEN Centre d'Etudes Nucleaires
de Sautenay-Aux-Roses
92260 Sautenay-Aux-Roses

ISRAEL

EMI Embassy of Israel
3514 International Drive, NW.
Washington, DC 20008

ITALY

ECC Euratom C. C. R.
Ispra (Varese)

INF Istituto Nazionale de Fisica
Nucleare
Laboratori Nazionali de Legnaro
Via Romea n. 4
35030 Legnaro
Padova

TABLE 2. (continued)

INN Istituto Nazionale di Fisica
Nucleare
Via A. Tarì, 3
80138 Napoli

JAPAN

JAT Japan Atomic Energy Research
Institute
Tokai Research Establishment
Toka i-Mura, Naka-Gun,
Barak i-Ken

KYU Kyoto University
Engineering Research Institute
Kyoto

NETHERLANDS

BVC Byk Mallinckrodt Cii B. V.
Westeiduinweg 3
1754 Z. G. Petten

RCN Reactor Centrum Nederland
Petten N. H.

RUG Rijksuniversiteit te Groningen
Department of Nuclear Medicine
Oostersingel 59
9713 E. Z. Groningen

NEW ZEALAND

UAU University of Auckland
Private Bag
Auckland

SWEDEN

LUU Lunds Universitet
Radiofysiska Institutionen
Lasarettet

SWITZERLAND

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

EIR Eidg. Institut fur
Reaktorforschung
Wurenlingen

MBM mb-Microtec, Inc.
Freiburgstrasse 624
CH-3172 Niederwangen/Berne

UNITED KINGDOM

AIL Amersham International Limited
White Lion Road
Amersham
Buckinghamshire
HP7 9LL England

AAH Astley Ainslie Hospital
South Lothian District
Grange Loan
Edinburgh, Scotland

BCL Brandhust Co. Ltd
Wellington Road
High Wycombe, Bucks
HP12 3PS England

BRE British Embassy
3100 Massachusetts, Ave., NW.
Washington, D.C. 20008

TABLE 2. (continued),

HAH	Hammersmith Hospital MRC Cyclotron Unit Ducane Road London, W12 0HS, England
SRD	Saunders Roe Developments, Ltd. North Hyde Road Hayes, Middlesex, England
SCD	Semi-Conductor Devices, Ltd. 59-61 Wong Chuk Hang Road Aberdeen, Hong Kong
UKF	UK Freight Forwarding Office 25 Broadway New York, NY 10004

TABLE 2A. List of Customer Codes with Isotopes
Purchased and Supplier Code

AAE	BNL:	XE-127						
	ORNL:	AM-243	TC-99	XE-127				
AAH	ORNL:	XE-127						
ABC	ORNL:	KR-85						
ACH	BNL:	MG-28						
AEC	INEL:	RSI						
	ORNL:	H-3	PU-238	SP	TH-230			
AEG	ORNL:	U-234						
AEK	ORNL:	CS-137	CSI	MCP	SR-90			
AEV	BNL:	XE-127						
AFR	ORNL:	SR-89						
AHC	ORNL:	KR-85						
AII	ORNL:	IR-192						
AIL	ORNL:	CE-144	CSI	FE-55	GD-153	H-3	MCP	PM-147
		RU-106	RW	SS	TC-99	ZR-95		
	SRP:	CF-252						
ALT	ORNL:	KR-85						
AMC	ORNL:	GD-153	I-129	KR-85				

TABLE 2A (continued)

AMD	ORNL:	KR-85						
AMS	ORNL:	CO-60	MC?	SS				
AN I	BNL:	XE-127						
	ORNL:	XE-127						
ANL	BNL:	U-238						
	ORNL:	BK-249	CE-144	CM-243	CM-248	ES-253	NB-95	TH-230
		U-238	ZR-95					
ARC	ORNL:	KR-85						
AZC	ORNL:	H-3	KR-85	MCP	PM-147			
BCH	BNL:	MG-28						
BCL	ORNL:	H-3						
BCP	ORNL:	KR-85						
BEC	ORNL:	KR-85	PM-147	SS				
BIC	BNL:	CM-244						
B II	ORNL:	CS-137	MCP					
BMC	ORNL:	RU-103	TC-99					
BMI	ORNL:	KR-85						

TABLE 2A (continued)

BNL			
LANL:	GE-68	XE-127	
ORNL:	H-3	RU-103	TP
BNP			
LANL:	I-123		
BRE			
ORNL:	U-235	U-238	
BTL			
ORNL:	MCP	SS	
BUC			
ORNL:	I-129		
BWH			
BNL:	I-123		
ORNL:	CSI		
BWP			
ORNL:	SS		
CBN			
ORNL:	AM-243	TP	
CCI			
ORNL:	TH-229	U-233	
CDM			
ORNL:	SP		
CEA			
ORNL:	CSI	ZR-95	
CEN			
SRP:	CF-252		
CLI			
ORNL:	AM-243		
CMC			
BNL:	os-191		
COE			
ORNL:	NP-237	TP	U-238

TABLE 2A (continued)

COR					
ORNL:	CA-47	MG-28			
COU					
BNL:	1-123	1-131	IN-111	PD-109	
ORNL:	CSI				
CPH					
BNL:	I-123				
CRC					
ORNL:	CS-137				
CRG					
ORNL:	KR-85				
CRU					
ORNL:	CA-47				
CSF					
LANL:	CU-67				
CSN					
LANL:	V-48				
CSU					
ORNL:	U-235	U-238			
CTL					
ORNL:	KR-85				
CUM					
LANL:	CU-67				
CVA					
ORNL:	XE-127				
CWR					
BNL:	MG-28				
ORNL:	MG-28				
CYC					
ORNL:	H-3				
DAA					
ORNL:	CA-47				

TABLE 2A (continued)

DAG	ORNL:	CA-47							
DOE	ORNL:	BA-140							
DUP	ORNL:	CF-252	MS						
	SRP:	CF-252							
EAL	BNL:	CO-60							
	ORNL:	PU-236							
ECC	ORNL:	TC-99							
EET	ORNL:	KR-85							
EGG	INEL:	RS ■							
	ORNL:	CAP	PU-236	PU-241	SS	TP	U-233	ZR-95	
EIR	ORNL:	TC-99							
EMI	ORNL:	H-3							
EOA	ORNL:	TH-230							
EPA	ORNL:	BA-140							
ETI	ORNL:	PU-242	U-233						
FAO	ORNL:	SP	U-236						
FAP	ORNL:	CAP	NP-237						
FAS	ORNL:	KR-85							

TABLE 2A (continued)

FCM						
ORNL:	KR-85					
FCS						
ORNL:	KR-85					
FNA						
BNL:	SI-31					
FSU						
ORNL:	AM-243	CM-248	MS	PU-238	PU-239	TP
GAC						
ORNL:	TP	U-235				
GAS						
ORNL:	C-14	H-3	KR-85			
GAT						
ORNL:	SS					
GEC						
INEL:	RSI					
GEF						
ORNL:	KR-85					
GEI						
ORNL:	H-3	TP				
GEL						
ORNL:	KR-85					
GEO						
ORNL:	KR-85					
GEP						
INEL:	KSI					
SRP:	CF-252					
GER						
BNL:	RSI					
GES						
ORNL:	MCP	SS				
GEW						
ORNL:	KR-85					

TABLE 2A (continued)

GFK	ORNL:	PU-239	TP	U-238	ZR-95
GFS	SRP:	CF-252			
GIC	ORNL:	KR-85			
GII	ORNL:	IR-192	SS		
GIT	ORNL:	AM-241	CE-144	EU-152	PU-236 PU-238
GNI	ORNL:	AM-241	CAP	CS-137	GD-153 IR-192 MCP
GPU	ORNL:	KR-85			
GSG	ORNL:	TH-229			
GSR	ORNL:	AM-241	AM-243	PU-242	TH-230
GTE	ORNL:	NB-95			
GWM	BNL:	I-123			
GWU	LANL:	BR-77			
	ORNL:	CSI			
HAC	ORNL:	KR-85			
HAH	LANL:	GE-68	SR-82		
	ORNL:	CSI			
HAS	ORNL:	KR-85			

TABLE 2A (continued)

HMS	BNL:	AT-211						
HON	ORNL:	KR-85						
HUP	BNL:	GA-67						
HUS	ORNL:	PU-239	TH-232	U-235				
HYI	LANL:	Y-88						
	ORNL:	CSI						
ICN	ORNL:	CS-137	CSI	H-3	PM-147	RU-106	SE-75	SR-90
INC	ORNL:	IR-192						
INF	ORNL:	CF-252	TP					
INN	ORNL:	CF-252	TP					
INP	ORNL:	KR-85						
INS	ORNL:	KR-85						
IPL	ORNL:	CF-252'	CS-137	CSI	I-129	KR-85	PM-147	RU-106
		SP	SR-89	SR-90	SS	TC-99	TH-230	U-235
ISI	ORNL:	CS-137	MCP					
ISU	BNL:	CO-58	Y-87					
IUB	ORNL:	1-P						

TABLE 2A (continued)

IUI

ORNL: CA-47 CSI

JAT

ORNL: CAP CM-244 PU-238 U-234 U-236

JHM

BNL: I-123
LANL: CU-67

JHU

LANL: BR-77
ORNL: CSI RU-106 RW

JRA

ORNL: H-3 TP

KAF

ORNL: SP

KES

ORNL: TC-99

KIC

ORNL: H-3 TP

KUL

ORNL: I-129

KYU

ORNL: TH-230 TP U-234 U-235

LAC

ORNL: CA-47

LAN

BNL: GE-68
LANL: BR-77 CU-67 FE-59 LU-173 TB-158 TI-44 V-48
ORNL: AM-243 CAP CM-244 CM-248 H-3 MCP PU-236
PU-238 PU-239 PU-240 PU-242 SP SS TP

LIG

ORNL: KR-85

LIW

ORNL: KR-85

TABLE 2A (continued)

LLL	LANL:	GD-148						
	ORNL:	BK-249	CM-248	PU-239	SP	TH-232	TP	U-235
		11-236	U-238					
LOC	ORNL:	CE-144	CM-243	KR-85	MS	SP	SR-90	
LUM	ANL:	F-18						
LUU	ORNL:	1"-229						
MAD	BNL:	XE-127						
MAF	ORNL:	CA-47						
MAI	ORNL:	SE-75	XE-127					
MAN	ORNL:	1-c-99						
MAY	LANL:	CU-67						
MBI	ORNL:	H-3						
MBM	ORNL:	H-3						
MEC	ORNL:	KR-85						
MEH	BNL:	XE-127'						
	ORNL:	XE-127						
MER	ORNL:	CO-60						
MGH	BNL:	F-18	I-123					
	ORNL:	CA-47	CSI					

TABLE 2A (continued)

MIA	ORNL:	KR-85							
MIP	ORNL:	KR-85							
MIR	ORNL:	KR-85							
MMC	ORNL:	KR-85							
MMI	ORNL:	KR-85							
MMM	ORNL:	CS-137	KR-85	NB-95	SS				
MMU	ORNL:	TC-99							
MOM	ORNL:	PU-236							
MON	ORNL:	KR-85							
MOS	ORNL:	KR-85							
MPI	LANL:	I-123							
MRC	ORNL:	CAP	CM-244	CS-137	MCP	NP-237	PM-147	PU-238	
		SP	SS	TP					
	SRP:	CF-252							
MSH	ORNL:	MCP							
MSM	LANL:	GE-68							
MSN	LANL:	SR-82							

TABLE 2A (continued)

NAH	BNL:	RSI						
NAO	BNL:	XE-127						
	ORNL:	XE-127						
NAS	ORNL:	CA-47						
NBG	BNL:	XE-127						
NCB	BNL:	XE-127						
	ORNL:	XE-127						
NCM	BNL:	XE-127						
	ORNL:	XE-127						
NCS	ORNL:	TH-229	U-236					
NEB	BNL:	AU-195	CD-109	GE-68	SR-82			
NEN	LANL:	Y-88						
NEU	LANL:	BR-77						
NEW	ORNL:	CE-144	CSI	D-153	H-3	I-129	KR-85	P-33
		TC-99	ZR-95					
NIH	BNL:	F-18	FE-52					
	LANL:	SR-82						
	ORNL:	CA-47	CSI	MCP	MG-28			
NJC	ORNL:	MCP						
NMC	BNL:	XE-127						

TABLE 2A (continued)

NMF	ORNL:	CSI		
NMH	ORNL:	TH-229		
NNM	ORNL:	XE-127		
NOA	ORNL:	SP		
NPI	INEL:	CO-60		
	ORNL:	CO-60	RW	
NRD	ORNL:	H-3		
NSC	ORNL:	KR-85		
NSS	ORNL:	AM-241	CAP	KR-85
NST	ORNL:	KR-85		
NUS	ORNL:	AM-243	TH-229	
NYS	BNL:	RSI		
NYU	ORNL:	AM-243		
OMN	ORNL:	KR-85		
ORA	ORNL:	AM-241	CSI	SS
ORI	LANL:	GE-68		
ORN	BNL:	I-123		
	LANL:	AL-26	GE-68	

TABLE 2A (continued)

ORS

ORNL: NU

OSU

ORNL: SR-89

PAB

ORNL: KR-85

PAI

ORNL: CS-137 MCP

PNL

ORNL: CS-137 MCP SE-75 TC-99

SRP: CF-252

UNC: RU-97 TM-170

PT ■

ORNL: KR-85

RAM

ORNL: KR-85

RCA

ORNL: KR-85

RCN

ORNL: AM-243

RE ■

ORNL: TP U-235

RHC

ORNL: AM-243 PU-236 ZR-95

RIE

BNL: RSI

RIR

ORNL: PU-237

RIU

BNL: MG-28

ORNL: MG-28

RPS

ORNL: CSI

TABLE 2A (continued)

RSE	ORNL:	TP	U-234	U-235
RUG	ORNL:	CSI		
RYU	ORNL:	U-233		
SAC	ORNL:	CS-137	MCP	SS
SAJ	ORNL:	CS-137	MCP	
SCA	ORNL:	CE-144	KR-85	
SCD	ORNL:	KR-85		
SCM	ORNL:	H-3		
SDC	ORNL:	KR-85		
SGH	BNL:	XE-127		
	ORNL:	XE-127		
SII	ORNL:	KR-85		
SIL	ORNL:	KR-85		
SKC	BNL:	FE-52	V-54	
	LANL:	SR-82		
SLC	ORNL:	H-3		
SPE	ORNL:	IR-192		

TABLE 2A (continued)

SPL	ORNL:	H-3	
SQS	LANL:	SR-82	
SQU	ORNL:	CSI	TC-99
SRD	ORNL:	H-3	
SSM	ORNL:	KR-85	
SSS	ORNL:	KR-85	
SST	ORNL:	KR-85	
SUB	ORNL:	T'C-99	
SUH	BNL:	XE-127	
	ORNL:	XE-127	
SUN	BNL:	C-11	
SYU	ORNL:	MCP	
TAM	ORNL:	TP	U-238
TAR	ORNL:	AM-243	PU-239
TEO	ORNL:	IR-192	SS
TET	BNL:	CS-137	
	ORNL:	MCP	SR-90

TABLE 2A (continued)

TFE	ORNL:	CS-137	MCP		
TIS	ORNL:	KR-85			
TRC	ORNL:	KR-85			
TRI	LANL:	BR-77			
TRW	ORNL:	KR-85			
TTI	ORNL:	KR-85			
TVA	ORNL:	CS-137	MCP		
TWC	ORNL:	U-233			
TYC	ORNL:	KR-85			
UAE	ORNL:	H-3			
UAR	ORNL:	NP-237	TP	U-235	U-238
UAU	ORNL:	RU-106			
UBC	ORNL:	MG-28	XE-127		
UBZ	ORNL:	XE-127			
UCB	LANL:	SR-82			
	ORNL:	CM-248			

UCF	ORNL:	RU-103							
UCG	ORNL:	TC-99	TP						
UCI	ORNL:	TC-99							
UCL	ORNL:	CA-47	MCP	SS					
UCM	LANL:	CU-67							
UCO	BNL:	MG-28							
	ORNL:	MG-28							
UCP	ORNL:	CSI	H-3	XE-127					
UCR	BNL:	XE-127							
	LANL:	GE-68							
	ORNL:	CAP	CF-252	CS-137	CSI	FE-55	H-3	IR-192	
		KR-85	MCP	NP-237	P-33	PU-236	RU-103	SP	
		TC-99	TH-230	TP	U-235	U-236	U-238	ZR-95	
UCS	BNL:	AT-21 1							
UCT	BNL:	MG-28							
	ORNL:	MG-28							
UCY	ORNL:	CSI	GD-153	IR-192	PM-147	PU-236	SS		
UEP	BNL:	XE-127'							
UFL	ORNL:	CF-252	TP						
UHG	LANL:	GE-68							

TABLE 2A (continued)

UIC	ORNL:	KR-85	
UIL	BNL:	N1-63	
UIN	BNL:	I-123	
UKF	ORNL:	TC-99	
UKY	BNL:	C-14	
	ORNL:	H-3	
ULG	ORNL:	CSI	
UL ■	LANL:	GE-68	SR-82
ULO	ORNL:	CF-252	TP
ULR	ORNL:	TP	U-235
UMA	LANL:	BR-77	
UMD	ORNL:	H-3	TP
UM ■	ORNL:	TP	U-238
UMM	ORNL:	RW	
UMS	ORNL:	KR-85	
UMU	ORNL:	TH-230	

TABLE 2A (continued)

UNC			
UNC:	CO-60		
UNM			
LANL:	BR-77		
UOK			
ORNL:	SE-75		
UPA			
BNL:	F-18		
ORNL:	SR-90		
URI			
ORNL:	NB-95		
URM			
ORNL:	CA-47		
USC			
ORNL:	MCP		
USF			
ORNL:	SP		
UTM			
LANL :	SR-82		
UTN			
BNL:	XE-127		
ORNL :	XE-127		
UTR			
LANL:	CU-67		
UTX			
ORNL:	CA-47	SR-89	
UUT			
ORNL:	CAP	PU-238	ZR-95
UVA			
BNL:	XE-127		
ORNL:	XE-127		
UWM			
ORNL:	CSI	H-3	

TABLE 2A (continued)

VAA	ORNL:	CA-47	CA-47	MG-28
VAC	ORNL:	CA-47		
VAE	BNL:	CO-57		
VAH	ANL:	RB-81		
	BNL:	MG-28		
VAM	BNL:	XE-127		
VAN	BNL:	XE-127		
VAS	LANL:	LU-172	Y-88	
VAT	ORNL:	XE-127		
VAU	ORNL:	XE-127		
VAW	BNL:	XE-127		
WAU	ORNL:	CSI		
WEE	ORNL:	U-234		
WEL	ORNL:	KR-85		
WER	ORNL:	KR-85		
WES	ORNL:	KR-85		

TABLE 2A (continued)

WEW					
ORNL:	CF-252	MS			
WHC					
ORNL:	CF-252	PU-239	TP	ZR-95	
WHC:	MS				
WTS					
ORNL:	KR-85				
WUM					
LANL:	HR-77	GE-68			
YAU					
ORNL:	CM-248				
ZII					
ORNL:	KR-85	KR-a5			

3. LIST OF ISOTOPES PURCHASED CROSS-REFERENCED TO CUSTOMER CODES

TABLE 3. Isotopes Purchased Cross-Referenced to Customer Code

AL-26	ORN													
AM-241	GIT	GNI	GSR	NSS	ORA									
AM-243	AAE	CBN	CLI	FSU	GSR	LAN	NUS	NYU	RCN	RHC	TAR			
AT-211	HMS	UCS												
AU-195	NEB													
BA-140	DOE	EPA												
BK-249	ANL	LLL												
BR-77	GWU	JHU	LAN	NEU	TRI	UMA	UNM	WUM						
C-11	SUN													
C-14	GAS	UKY												
CA-47	COR VAA	CRU VAA	DAA VAC	DAG	IUI	LAC	MAF	MGH	NAS	NIH	UCL	URM	UTX	
CAP	EGG	FAP	GNI	JAT	LAN	MRC	NSS	UCR	UUT					
CD-109	NEB													
CE-144	AIL	ANL	GIT	LOC	NEW	SCA								
CF-252	AIL ULO	CEN WEW	DUP WHC	DUP	GEP	GFS	INF	INN	IPL	MRC	PNL	UCR	UFL	
CM-243	ANL	LOC												
CM-244	BIC	JAT	LAN	MRC										
CM-248	ANL	FSU	LAN	LLL	UCB	YAU								
CO-57	VAE													
CO-58	ISU													
CO-60	AMS	EAL	MER	NPI	NPI	UNC								
CS-137	AEK TET	BII TFE	CRC TVA	GNI UCR	ICN	IPL	ISI	MMM	MRC	PAI	PNL	SAC	SAJ	

TABLE 3. (continued)

CSI	AEK NEW	AIL NIH	BWH NMF	CEA ORA	COU RPS	GWU RUG	HAH SQU	HYI UCP	ICN UCR	IPL UCY	IUI ULG	JHU UMM	MGH WAU
CU-67	CSF	CUM	JHM	LAN	MAY	UCM	UTR						
ES-253	ANL												
EU-152	GIT												
F-18	LUM	MGH	NIH	UPA									
FE-52	NIH	SKC											
FE-55	AIL	UCR											
FE-59	LAN												
GA-67	HUF												
GD-148	LLL												
GD-153	AIL	AMC	GNI	NEW	UCY								
GE-68	BNL	HAH	LAN	MSM	NEB	ORI	ORN	UCR	UHG	ULI	WUM		
H-3	AEC MBI UMM	AIL MBM	AZC NEW	BCL NRD	BNL SCM	CYC SLC	EMI SPL	GAS SRD	GEI UAE	ICN UCP	JRA UCR	KIC UKY	LAN UMD
I-123	BNP	BWH	COU	CPH	GMM	JHM	MGH	MPI	ORN	UIN			
I-129	AMC	BUC	IPL	KUL	NEW								
I-131	COU												
IN-111	COU												
IR-192	AIL	GII	GNI	INC	SPE	TEO	UCR	UCY					
KR-85	ABC FAS INF MON SDC UMS	AHC FCM INS MOS SII WEL	ALT FCS IPL NEW SIL WER	AMC GAS LIG NSC SSM WES	AMD GEF LIW NSS SSS WTS	ARC GEL LOC NST SST ZII	AZC GEO MEC OMN TIS	BCP GEW MIA PAB TRC	BEC GIC MIP PTI TRW	BMI GPU MIR RAM TTI	CRG HAC MMC RCA TYC	CTL HAS MMI SCA UCR	EET HON MMM SCD UIC
LU-172	VAS												

TABLE 3. (continued)

LU-173	LAN												
MCP	AEK NJC	AIL PAI	AMS PNL	AZC SAC	BII SAJ	BTL SYU	GES TET	GNI TFE	ISI TVA	LAN UCL	MRC UCR	MSH USC	NIH
MG-28	ACH VAA	BCH VAH	COR	CWR	CWR	NIH	RIU	RIU	UBC	UCO	UCO	UCT	UCT
MS	DUP	FSU	LOC	WEW	WHC								
NB-95	ANL	GTE	MMM	URI									
N1-63	UIL												
NP-237	COE	FAP	MRC	UAR	UCR								
NU	ORS												
os-191	CMC												
P-33	NEW	UCR											
PD-109	COU												
PM-147	AIL	AZC	BEC	ICN	IPL	MRC	UCY						
PU-236	EAL	EGG	GIT	LAN	MOM	RHC	UCR	UCY					
PU-237	RIR												
PU-238	AEC	FSU	GIT	JAT	LAN	MRC	UUT						
PU-239	FSU	GFK	HUS	LAN	LLL	TAR	WHC						
PU-240	LAN												
PU-241	EGG												
PU-242	ETI	GSR	LAN										
RB-81	VAH												
RSI	AEC	EGG	GEC	GEP	GER	NAH	NYS	RIE					
RU-103	BMC	BNL	UCF	UCR									
RU-106	AIL	ICN	IPL	JHU	UAU								

TABLE 3. (continued)

RU-97	PNL													
RW	AIL	JHU	NPI	UMM										
SE-75	ICN	MAI	PNL	UOK										
SI-31	FNA													
SP	AEC	CDM	FAO	IPL	KAF	LAN	LLL	LOC	MRC	NOA	UCR	USF		
SR-82	HAH	MSN	NEB	NIH	SKC	SQS	UCB	ULI	UTM					
SR-89	AFR	IPL	OSU	UTX										
SR-90	AEK	ICN	IPL	LOC	TET	UPA								
SS	AIL ORA	AMS SAC	BEC TEO	BTL UCL	BWP UCY	EGG	GAT	GES	GII	IPL	LAN	MMM	MRC	
TB-158	LAN													
TC-99	AAE UCG	AIL UCI	BMC UCR	ECC UKF	EIR	IPL	KES	MAN	MMU	NEW	PNL	SQU	SUB	
TH-229	CCI	GSG	LUU	NCS	NMH	NUS								
TH-230	AEC	ANL	EOA	GSR	IPL	KYU	UCR	UMU						
TH-232	HUS	LLL												
TI-44	LAN													
TM-170	PNL													
TP	BNL KYU UMD	CBN LAN UMI	COE LLL WHC	EGG MRC	FSU REI	GAC RSE	GEI TAM	GFK UAR	INF UCG	INN UCR	IUB UFL	JRA ULO	KIC ULR	
U-233	CCI	EGG	ETI	RYU	TWC									
U-234	AEG	JAT	KYU	RSE	WEE									
U-235	BRE	CSU	GAC	HUS	IPL	KYU	LLL	REI	RSE	UAR	UCR	ULR		
U-236	FAO	JAT	LLL	NCS	UCR									
U-238	ANL	ANL	BRE	COE	CSU	GFK	LLL	TAM	UAR	UCR	UMI			

TABLE 3. (continued)

V-48	CSN	LAN											
v-54	SKC												
XE-127	AAE	AAE	AAH	AEV	ANI	ANI	BNL	CVA	MAD	MAI	MEH	MEH	NAO
	NAO	NBG	NCB	NCB	NCM	NCM	NMC	NNM	SGH	SGH	SUH	SUH	UBC
	UBZ	UCP	UCR	UEP	UTN	UTN	UVA	UVA	VAM	VAN	VAT	VAU	VAW
Y-87	ISU												
Y-88	HYI	NEN	VAS										
ZR-95	AIL	ANL	CEA	EGG	GFK	NEW	RHC	UCR	UUT	WHC	WHC		

4. GEOGRAPHIC LOCATIONS OF RADIOISOTOPE CUSTOMERS

TABLE 4. Geographic Locations of Customers by Customer Code

DOMESTIC

Alabama

EPA

Arizona

MIP MIR NST

Arkansas

INP UAR

California

ALT	AMD	BCP	CRC	CSF	CSN	CYC	EAL	EET	FCM	FCS	.GAT	GEC	GEO
GEP	GES	HAC	HUS	INC	INS	IPL	LAC	LIW	LLL	MBI	MEC	MMI	NAO
NSC	OMN	RAM	REI	SAJ	SDC	SII	SIL	TRW	TTI	TYC	UCB	UCL	UCS
USC	VAC	VAS	ZII										

Colorado

CDM CLI CSU HON KIC RIR UCO

Connecticut

COE UCT YAU

District of Columbia

BII GWM GWU

Florida

CTL FSU GEF HAS MMC PTI UFL USF

Georgia

ANI GIT

Idaho

EGG

Illinois

AMC ANL FNA LUM RPS UCP UCR UIL VAH

Indiana

IUB IUI MEH PAB WTS

Iowa

DAA ISU

Kentucky

UKY

Louisiana

DAG GII SPE

TABLE 4. (cont nued

Maine

FAS

Maryland

AFR JHM NBG NIH NNM NPI SCA SSM TET UMD

Massachusetts

BWH CMC HMS HUP MGH NEB NEN NEW SST TEO UIC ULR UMA UMM
VAW WEL

Michigan

NOA UMI

Minnesota

MAF MMM

Mississippi

GSG UMS

Missouri

BEC MAI MAN WAU WES

Nebraska

CRU

New Jersey

BTL CRG GAS ISI MER NJC RCA SQS SQU

New Mexico

KAF LAN LOC NMH SAC UNM

New York

BNL COR COU CUM DOE GIC MSH NAS NMF NRD NYS NYU SCM SKC
SPL SUB SUH SUN SYU UCF UPA URM VAN WEE

North Carolina

NCB NCM NCS

Ohio

AMS ARC BMI BWP CWR GAC ICN MOM MRC OSU RSE UCI

Oklahoma

UOK

Oregon

LIG ORS TWC

TABLE 4. (continued)

Pennsylvania

AII GPU GTE NUS SLC SSS WER WEW

Rhode Island

URI

South Carolina

DUP

Tennessee

ORA ORN TFE TVA TVA UCG UCR UCY

Texas

CVA GEI GNI MIA MON MOS NAH NSS PAI RIU TAM TAR TIS TRC
UTM UTN UTX VAA VAM VAT VAU

Utah

UUT

Virginia

GEL GEW GSR UVA

Washington

PNL RHC UNC

Wisconsin

ABC UWM

TABLE 4. (continued)

FOREIGN

AUSTRALIA

AAE EOA

BELGIUM

CBN KUL ULG ULO

CANADA

ACH AEC AEK AEV CCI FAO MMU SGH UAE UBC

FEDERAL REPUBLIC OF GERMANY

AEG AHC BUC ETI FAP GFK GFS KES UBZ UMU

FRANCE

CEA CEN

ISRAEL

EMI

ITALY

ECC INF INN

JAPAN

JAT KYU

NETHERLANDS

BMC RCN RUG

NEW ZEALAND

UAU

SWEDEN

LUU

SWITZERLAND

AZC EIR MBM

UNITED KINGDOM

AAH AIL BCL. BRE HAH SCD SRD UKF

5. RADIOISOTOPE SALES AND TRANSFERS - FY 1983

TABLE 5. Radioisotope Sales and Transfers - FY 1983

Domestic				DOE				Foreign				Total			
Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value
AL-26	L O	---	0	1	4.00	uCi	0	0	---		0	1	4.00	uCi	0
AM-241	0 12	485000.10 g	679200	2	71.40	g	100	0	---		0	14	485071.50	g	679300
AM-243	0 5	9.50 mg	1150	7	25010.00	mg	100	3	202.00	mg	20200	15	25221.50	mg	21450
AT-211	8 24	98.00 rnCi	0	0	---		0	0	---		0	24	98.00	rnCi	0
AU-195	8 1	30.00 rnCi	0	0	---		0	0	---		0	1	30.00	rnCi	0
BA-140	0 0	---	0	2	3.00	rnCi	416	0	---		0	2	3.00	mCi	416
BK-249	0 0	---	0	3	1.00	mg	0	0	---		0	3	1.00	mg	0
BR-77	L 20	2435.96 mCi	0	9	964.00	mCi	0	1	50.00	rnCi	0	30	3449.96	mCi	0
C-11	8 7	288.00 mCi	0	0	---		0	0	---		0	7	288.00	mCi	0
C-14	8 1	2.00 rnCi	0	0	---		0	0	---		0	1	2.00	rnCi	0
C-14	0 1	319.00 rnCi	797	0	---		0	0	---		0	1	319.00	mCi	797
CA-47	0 130	34.10 rnCi	16151	19	8.60	rnCi	4680	0	---		0	149	42.70	rnCi	20831
CAP	0 1	---	590331	4	---		124388	1	---		191875	6	---		906594
CD-109	8 1	300.00 uCi	3540	0	---		0	0	---		0	1	300.00	uCi	3540
CE-144	0 9	2421.00 rnCi	5995	5	2005.00	mCi	4400	2	200.00	mCi	800	16	4626.00	rnCi	11195
CF-252	0 4	3.00 ug	30	8	110.40	ug	0	3	3.00	ug	30	15	116.40	ug	60
CF-252	S 8	17.60 mg	199096	2	27.30	mg	1400	5	33.50	mg	364606	15	78.40	mg	565102
CM-243	0 1	8.00 mg	0	0	---		0	0	---		0	1	8.00	mg	0
CM-244	B 1	80.00 mCi	0	0	---		0	0	---		0	1	80.00	rnCi	0
CM-244	0 1	2.00 mg	200	2	150000.00	mg	0	2	1000.00	mg	100000	5	151002.00	mg	100200

TABLE 5. (continued)

	Domestic				DOE				Foreign				Total				
	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	
CM-248	0	2	5.00	ug	0	7	100.40	ug	0	0	---	0	9	105.40	ug	0	
CO-57	B	2	20.00	mCi	0	0	---	0	0	0	---	0	2	20.00	rnCi	0	
CO-58	B	1	100.00	uCi	0	0	---	0	0	0	---	0	1	100.00	uCi	0	
CO-60	B	1	9.00	uCi	0	0	---	0	0	0	---	0	1	9.00	uCi	0	
CO-60	I	2	659503.00	Ci	329751	0	---	0	0	0	---	0	2	659503.00	Ci	329751	
CO-60	0	3	696643.05	Ci	398354	0	---	0	0	0	---	0	3	696643.05	Ci	398354	
CO-60	U	0	---		0	2	610.00	rnCi	500	0	---	0	2	610.00	mCi	500	
CS-137	B	1	5.00	uCi	0	0	---	0	0	0	---	0	1	5.00	uCi	0	
CS-137	0	23	171278.00	kCi	19446	5	8917.1	4 kCi	11862	2	106401.20	kCi	10840	30	286596.34	kCi	42148
CSI	B	43	---		2150	0			0	0	---	0	43	---		2150	
CSI-86	0	22	---	MIS	145350	1	---	MIS	28664	20	---	MIS	86936	43	---	MIS	260950
CSI-8	0	0	---	MIS	30700	0	---	MIS	9094	0	---	0	0	---	MIS	39794	
CSI-L	0	0	---	MIS	72438	0	---	MIS	10584	0	---	MIS	4897	0	---	MIS	87919
CU-67	L	13	1253.43	rnCi	0	4	32.40	rnCi	0	4	493.00	mCi	0	21	1778.83	rnCi	0
ES-253	0	0	---		0	1	---	NA	0	0	---	0	1	---	NA	0	
EU-152	0	1	500.00	uCi	205	0	---		0	0	---	0	1	500.00	uCi	205	
F-18	A	24	---	NA	4660	0	---		0	0	---	0	24	---	NA	4660	
F-18	B	8	246.00	rnCi	0	0	---		0	0	---	0	8	246.00	rnCi	0	
FE-52	8	5	103.00	rnCi	2936	0	---		0	0	---	0	5	103.00	mCi	2936	
FE-55	0	0	---		0	1	53.00	rnCi	200	9	103999.70	rnCi	86238	10	104052.70	mCi	86438
FE-59	L	0	---		0	2	4.20	uCi	0	0	---	0	2	4.20	uCi	0	

TABLE 5. (continued)

	Domestic					DOE				Foreign				Total						
	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value
GA-67	8	5	206.00	rnCi	0	0	---		0	0	---		0	5	206.00	mCi		0		
GO-148	L	0	---		0	2	10.80	rnCi	0	0	---		0	2	10.80	rnCi		0		
GO-153	0	32	35600.00	rnCi	169290	6	4004.00	rnCi	19400	3	2650.00	rnCi	12070	41	42254.00	rnCi		200760		
GE-68	B	5	873.00	rnCi	11121	0	---		0	0	---		0	5	873.00	rnCi		11121		
GE-68	L	5	22.06	mCi	0	4	274.12	rnCi	0	5	61.40	rnCi	0	14	357.58	rnCi		0		
ti-3	0	198	499751.00	Ci	548517	1	56955.44	Ci	25704	61	1307957.64	Ci	1412541	260	1864664.08	Ci		1986762		
1-123	B	46	1735.80	rnCi	8096	0	---		0	1	45.00	rnCi	126	47	1780.80	rnCi		8222		
1-123	L	2	279.00	rnCi	0	0	---		0	0	---		0	2	279.00	rnCi		0		
1-129	0	6	2247.00	rnCi	5358	0	---		0	4	1208.50	rnCi	2417	10	3455.50	rnCi		7775		
1-131	8	2	8625.00	uCi	0	0	---		0	0	---		0	2	8625.00	uCi		0		
IN-111	8	1	300.00	uCi	0	0	---		0	0	---		0	1	300.00	uCi		0		
IR-192	0	212	1023.28	kCi	1860994	5	1.17	kCi	2229	0	---		0	217	1024.45	kCi		1863223		
KR-85	0	211	5072.00	Ci	360633	3	583.20	Ci	30009	15	367.00	Ci	26057	229	6022.20	Ci		416699		
KR-85E	0	4	300.00	Ci	142325	0	---		0	0	---		0	4	300.00	Ci		142325		
LU-172	L	2	17.60	rnCi	0	0	---		0	0	---		0	2	17.60	mCi		0		
LU-173	L	0	---		0	2	960.00	uCi	0	0	---		0	2	960.00	uCi		0		
MCP	0	23	---	MIS	4612	2	---	MIS	538	0	---		0	25	---	MIS		5150		
MG-28	8	23	12245.00	uCi	5847	0	---		0	5	1586.00	uCi	614	28	13831.00	uCi		6461		
MG-28	0	1	3100.00	uCi	8538	1	350.00	uCi	977	1	250.00	uCi	855	3	3700.00	uCi		10370		
MI	B	15	---		420	0	---		0	0	---		0	15	---			420		

TABLE 5. (continued)

	Domestic				DOE				Foreign				Total				
	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	Ship	Quantity	Unit	\$ Value	
MS	0	0	---	6215	0	---		22830	0	---		0	0	---		29045	
NB-95	0	12	128.30 mCi	6900	1	5.00 mCi		200	0	---		0	13	133.38 mCi		7100	
NI-63	B	1	100.00 uCi	0	0	---		0	0	---		0	1	100.00 uCi		0	
NP-237H	0	5	4986.00 mg	1480	0	-5156.00 mg		-1830	0	---		0	5	-170.00 mg		-350	
NP-2370	0	2	4102.10 mg	930	1	10.00 mg		2	1	5000.00 mg		1125	4	9112.10 mg		2057	
NU	0	1	10.00 g	150	0	---		0	0	---		0	1	10.00 g		150	
os-191	8	2	1100.00 mCi	0	0	---		0	0	---		0	2	1100.00 mCi		0	
P-33	0	14	1920.00 mCi	35100	1	5.00 mCi		200	0	---		0	15	1925.00 mCi		35300	
PO-109	8	14	18847.00 mCi	0	0	---		0	0	---		0	14	18647.00 mCi		0	
PM-147	0	4	1005.00 Ci	1886	2	2.20 Ci		202	2	4161.80 Ci		5370	8	5169.00 Ci		7458	
PU-236	0	-1	---	NA	-580	1	---	NA	5868	0	---		0	---	NA	5288	
PU-237	0	0	---		0	1	---	NA	390	0	---		0	1	---	NA	390
PU-238	0	4	4984.00 mg	9081	1	1.00 mg		0	2	4720.00 mg		9998	7	9705.00 mg		19079	
PU-239	0	3	86.00 mg	208	3	9.00 mg		0	1	400.00 mg		968	7	495.00 mg		1176	
PU-240	0	0	---		0	2	1.00 mg		0	0	---		0	2	1.00 mg		0
PU-241	0	0	---		0	1	1.00 mg		0	0	---		0	1	1.00 mg		0
PU-242	0	0	---		0	2	1.00 mg		15	1	150.00 mg		2383	3	151.00 mg		2398
AB-81	A	11	---	NA	3097	0	---		0	0	---		0	11	---	NA	3097
RSI	B	19	---		9419	0	---		0	0	---		0	19	---		9419

TABLE 5. (continued)

	Domestic					DOE				Foreign				Total						
	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value
RSI	I	1	---		0	0	---		0		1	---		0		2	---		0	
RU-103	O	1	5.00	rnCi	200	3	20.00	rnCi	1480		8	160.40	rnCi	9136		12	185.40	rnCi	10816	
RU-106	O	11	135.00	rnCi	9804	0	---		0		5	303.00	rnCi	10324		16	438.00	rnCi	20128	
RU-97	U	0	---		0	1	180.00	rnCi	250		0	---		0		1	180.00	rnCi	250	
RW	O	11	---	MIS	2200	0	---		0		5	---	MIS	31500		16	---	MIS	33700	
SE-75	O	18	30627.00	rnCi	23345	2	180.00	rnCi	360		0	---		0		20	30807.00	rnCi	23705	
51-31	B	1	1.00	rnCi	0	0	---		0		0	---		0		1	1.00	rnCi	0	
SP	O	1	---	MIS	7978	41	---	MIS	152365		1	---	MIS	3075		43	---	MIS	163418	
SR-82	B	1	100.00	uCi	0	0	---		0		0	---		0		1	100.00	uCi	0	
SR-82	L	10	4077.00	rnCi	0	4	1621.00	rnCi	0		8	982.00	rnCi	0		22	6680.00	mCi	0	
SR-89	O	3	11.00	rnCi	1172	3	15.00	rnCi	600		0	---		0		6	26.00	rnCi	1772	
SR-90	O	8	89107.31	Ci	9910	1	262.35	Ci	200		1	0.30	Ci	200		10	89369.96	Ci	10310	
SS	O	23	---	MIS	203682	12	---	MIS	168771		2	---	MIS	15980		37	---	MIS	388433	
TB-158	L	0	---		0	1	10.00	uCi	0		0	---		0		1	10.00	uCi	0	
TC-99	O	16	64000.00	mg	3570	6	28159.80	mg	1373		13	164000.00	mg	9950		35	256159.80	mg	14893	
TH-229	O	3	---	NA	1347	1	---	NA	10		2	---	NA	20		6	---	NA	1377	
TH-230	O	2	4.00	mg	242	3	35.00	mg	214		5	260155.00	mg	4010		10	260194.00	mg	4466	
TH-232	O	1	5000.00	mg	10	1	96274.00	mg	0		0	---		0		2	101274.00	mg	10	
TI-44	L	0			0	1	13.00	uCi	0		0	---		0		1	13.00	uCi	0	

TABLE 5. (continued)

	Domestic					DOE				Foreign				Total						
	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value	Ship	Quantity	Unit	\$	Value
TM-170	U	0	---		0	2	24.00	Ci		500	0	---		0	2	24.00	Ci		500	
TP	0	1	---		59835	2	---			219365	1	---		30205	4	---			309405	
U-233	0	1	100.00	mg	258	4	13000.00	mg		0	3	5501.00	mg	14192	8	18601.00	mg		14450	
U-234	0	3	650.00	mg	18200	0	---			0	3	1060.00	mg	29680	6	1710.00	mg		47880	
U-235	0	9	319500.00	mg	16415	3	158427.00	mg		0	2	6000.00	mg	900	14	483927.00	mg		17315	
U-236	0	1	20.00	mg	8	2	2004.00	mg		0	2	350.00	mg	143	5	2374.00	mg		151	
U-238	8	1	59.00	uCi	0	0	---			0	0	---		0	1	59.00	uCi		0	
U-238	0	7	9920.50	mg	703	7	120351.30	mg		0	2	15000.00	mg	1425	16	145271.80	mg		2128	
V-48	L	4	24700.00	uCi	0	2	217.00	uCi		0	0	---		0	6	24917.00	uCi		0	
v-54	B	1	7.00	rnCi	0	0	---			0	0	---		0	1	7.00	rnCi		0	
XE-127	B	73	27461.40	rnCi	20400	0	---			0	23	4805.00	mCi	4585	96	32266.40	mCi		24985	
XE-127	L	0	---		0	5	20.82	Ci		0	0	---		0	5	20.82	Ci		0	
XE-127	0	1	22075.00	mCi	64197	1	1700.00	rnCi		6290	1	2854.00	rnCi	11915	3	26629.00	mCi		82402	
Y-87	B	1	100.00	uCi	0	0	---			0	0	---		0	1	100.00	uCi		0	
Y-88	L	4	36.00	rnCi	0	0	---			0	0	---		0	4	36.00	mCi		0	
ZR-95	0	5	520.00	rnCi	9800	5	42.00	mCi		1000	8	60.00	rnCi	1170	18	622.00	mCi		11970	
TOTAL	1485				6155393	242				855900	250			2519356	1977				9530649	

NOTES:

Letters in second column indicate supplier by first letter of laboratory name (L = Livermore, O = Oak Ridge, etc.).

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