

**UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY  
ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM**

Financial Statements

September 30, 1994 and 1993

**MASTER**

**DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED**

*me*

## **DISCLAIMER**

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.**

## **DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

**UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY**

**ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM**

**Table of Contents**

**September 30, 1994 and 1993**

	<u>Page</u>
Overview	1-6
Independent Auditors' Report on Financial Statements	7-8
Financial Statements:	
Statements of Financial Position	9-10
Statements of Operations and Changes in Net Position	11-12
Statements of Cash Flows	13-14
Statements of Budgetary Resources and Actual Expenses	15
Notes to Financial Statements	16-24
Supplemental Financial and Management Information	25-36
Independent Auditors' Report on Compliance with Laws and Regulations	37
Independent Auditors' Report on the Internal Control Structure	38-47

# DEPARTMENT OF ENERGY ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

## OVERVIEW

The charter of the Department of Energy (DOE) Isotope Production and Distribution (IP&D) Program covers the production and sale of radioactive and stable isotopes, byproducts, surplus materials such as lithium and deuterium, and related isotope services. Such services include, but are not limited to, irradiation services, target preparation and processing, source encapsulation and other special preparations, analyses and separations, services related to shipping, and processing returned isotopes. These products and services are sold worldwide and are used for a wide variety of research, development, biomedical, and industrial applications.

Atoms of an element that have the same atomic number, but different atomic masses, are called isotopes of that element. Many uses for isotopes have emerged over the past generation as an adjunct of nuclear research, defense, and power development programs, and a substantial infrastructure has been built around the use of isotopes. As the range of available isotopes and the recognized uses for them have increased, the applications have become interwoven with progress in medical research and practice, new industrial processes, and scientific methods. Among the best known of these isotopes and their uses are: technetium-99m (Tc-99m), thallium-201, and fluorine-18 for medical imaging; iridium-192 (Ir-192) for nondestructive testing; cobalt-60 (Co-60) for sterilization and teletherapy medical application; americium-241 for smoke detectors; and helium-3 for neutron detectors. There are also hundreds of less well-known, but valuable, applications. The very existence of certain industries such as medical imaging by emission tomography, nondestructive testing, radiation sterilization, and paper gauging is dependent on the ready availability of isotopes.<sup>1</sup>

One example of the use of isotopes in medical research and practice is that one of every three persons admitted to U.S. hospitals now undergoes a nuclear medicine procedure for diagnosis or therapy; which represents a \$2 billion/year industry. The development and introduction of nuclear medicine, which originated from the research programs of the Atomic Energy Commission, is an example of highly successful technology transfer from government research to commercial application.

The IP&D Program reports to the Director of the Office of Nuclear Energy, and operates as a revolving fund. The costs of producing isotopes and providing related services, as well as salaries, travel, and other IP&D costs, are financed by revenues from sales of isotopes and services and by annual appropriations. The IP&D staff was increased to five professionals and two secretaries late in FY 1994. The staff will be further increased during FY 1995 as part of the restructuring discussed later in this section.

---

<sup>1</sup> See Supplemental Financial and Management Information, pg. 32-36: Prominently Sold Isotopes and Their Uses.

The IP&D Program, as a user of DOE facilities, has access to the entire spectrum of facilities and technical capabilities in all DOE installations. The IP&D Program provides program direction and oversight for the production and sale of its products and services. Management of the facilities is the responsibility of other offices within DOE. Facilities and separation and production processes include reactors, accelerators, calutrons, gas centrifuges, chemical exchange, and thermal diffusion. Isotope products and services are provided at the following sites: Brookhaven National Laboratory (BNL), EG&G Mound Applied Technologies (Mound), EG&G Idaho, Los Alamos National Laboratory (LANL), Oak Ridge National Laboratory (ORNL), and Westinghouse Hanford Company (WHC)/Pacific Northwest Laboratories (PNL).<sup>2</sup>

Prior to October 1, 1989, the IP&D Program was subsidized by DOE through a combination of appropriated funds and isotope sales revenue. In response to a DOE request, the FY 1990 Appropriations Act, Public Law 101-101, authorized a separate IP&D Revolving Fund account for the Program, which was to support itself solely from the proceeds of isotope sales. The initial capitalization was \$16,016,000, plus the value of the isotope assets in inventory or on loan for research and the unexpended appropriation available at the close of FY 1989. In addition to the initial resources, the Program was authorized in FY 1993 and FY 1994 to utilize borrowing authority from the U.S. Treasury in the amount of \$8.5 million and \$5 million, respectively. In FY 1994, the Program received \$4.9 million in appropriations and utilized the carry-over of its borrowing authority in the amount of \$985,000. Subsequently, all borrowing authority previously granted to the Program since 1991 was converted to direct appropriations.

The IP&D Program continues to provide hundreds of products and related services that are essential for medical, research, industrial, and agricultural applications. However, DOE is engaged in isotope production and distribution activities only where there is no U.S. private sector capability, or because of the need for unique government facilities, such as nuclear reactors and associated hot cells, particle accelerators, and isotope enrichment facilities, or where other productive capacity is insufficient to meet pressing U.S. needs.

During late FY 1994, the IP&D Program was programmatically and financially restructured, as reflected in the recently published National Isotope Strategy approved by the Secretary of Energy and the FY 1995 Energy and Water Development Appropriations Act (Public Law 103-316). The National Isotope Strategy establishes two primary missions for the IP&D Program. The first is to produce and distribute certain isotopes for research and development, medical diagnostics and therapy, and other applications that are in the national interest, at prices that ensure reasonable compensation and encourage research.

The second mission is to produce and distribute other isotope products and services that are in demand on a business-like basis. Prices for these products are based on a number of factors, including production costs and market value. In addition, the Department will evaluate opportunities for the private sector to co-fund or invest in new ventures, and will seek to divest itself from ventures that can be operated more profitably or reliably by the private sector.

---

<sup>2</sup> See Supplemental Financial and Management Information, pg. 31: Manufacturing Overview.

Under the FY 1995 Energy and Water Development Appropriations Act, the following provisions were established:

- The Secretary of Energy may transfer available amounts appropriated for use by the Department of Energy under Title III of previously enacted Energy and Water Development Appropriations Acts into the IP&D Program Fund to continue IP&D activities. The authority to use the amounts appropriated is effective from the enactment date of August 26, 1994.
- Fees set by the Secretary for the sale of isotopes and related services will be determined without regard to the provisions of the Energy and Water Development Appropriations Act (Public Law 101-101), which required full cost recovery.
- Amounts provided for IP&D activities in previous Energy and Water Development Acts shall be treated as direct appropriations and shall be merged with funds appropriated under this head.

In addition to financial restructuring, the Program's organization was restructured, consistent with the National Isotope Strategy and the FY 1995 Appropriation Act (Public Law 103-316). By the close of FY 1995, the IP&D Program staff will total 12, including 10 professionals and two secretaries. Program management will consist of a director, a business manager, an operations manager, a marketing manager, and an Mo-99 project manager.

An adequate supply of medical and research isotopes, produced by either domestic or foreign sources, is essential to maintain effective diagnosis, treatment, and research capabilities for the Nation's health care system and to support basic research and industrial applications that contribute to national economic competitiveness. The Department is committed to ensuring a reliable (domestic) supply of both stable and radioactive isotopes for these applications. This restructuring of the IP&D Program will provide a sound financial basis, as well as the programmatic direction and oversight needed to ensure an adequate supply of isotopes and related services.

### **Program Performance**

The IP&D data bank includes hundreds of customers. Customers serviced in FY 1994 totaled over 300. Twenty-two customers comprise 83 percent of sales. Shipments totaled 1049, of which 293 were made to foreign entities. There were 10 formal customer complaints. More than 95 percent of stable isotope deliveries were received by customers as scheduled; 91 percent of radioisotopes were delivered as scheduled. Most delays involved deliveries of reactor-produced isotopes and were caused by changes in operating schedules and circumstances related to other programs.

A marketing survey conducted for the IP&D Program by Arthur Andersen & Co. began in August 1994 and was completed in November 1994. Preliminary results related to customer feedback show improvement in the Program's focus on trying to understand and meet customer needs. Prioritizing customer needs and scheduling production facilities, however, remains a significant obstacle.

It should be noted that it is difficult to determine whether feedback from customer surveys reflects the changes that IP&D Program management has begun implementing. Customers are generally aware of the Program's strategic plan (the National Isotope Strategy); however, there are concerns as to whether the Program can meet specified customer requirements.

The Program is enhancing its marketing methods to fully address customer requirements and to forecast future trends. This is being done through frequent interactions between customers and IP&D staff, particularly the marketing manager; data obtained from IP&D business reply cards; and coordination of isotope activities with stakeholders in the isotope community, including other federal agencies.

The IP&D Program has invested more than \$12 million over the last several years on process development for several products. The most important performance measures for new initiatives are whether startup and operating costs are within the estimates used to formulate product quotations to isotope customers, and whether startup and product delivery schedules are achieved as projected. The Program's most significant initiative is to establish a U.S. production capability for molybdenum-99 (Mo-99) and related medical isotopes. Mo-99 is a precursor of Tc-99m, which is used in over 36,000 medical procedures each day in the U.S. alone. At present, there are no U.S. sources for Mo-99 and those related medical isotopes that are essential to health care and research.

Initial Mo-99 production was scheduled for mid-1993, however, the Omega West Reactor (OWR) at LANL was shut down in December 1992, primarily due to operator error and the subsequent discovery of a main coolant leak in January 1993. Due to this shutdown, isotope production at Omega West was delayed, resulting in a reduction of several million dollars in projected FY 1993 and 1994 revenues. This reactor, which was used previously for defense research purposes, is currently the responsibility of the DOE Office of Defense Programs (DP). In September 1993, DP determined that it has no current or future programmatic need for this facility and authorized LANL to place the reactor in a permanent safe shutdown condition, pending decontamination and decommissioning.

In early 1993, the IP&D Program began evaluating the Annular Core Research Reactor (ACRR) at Sandia National Laboratories as a potential source for Mo-99 production. When the OWR option was eliminated, the ACRR became a logical choice. The ACRR is a 2 MW pool-type research reactor with a nearby hot cell facility that was designed for pulse operation and has operated in that mode for most of its 27 years of operation. While the ACRR has never been used on a continuous production basis (such as that required for Mo-99 production), the reactor meets all technical criteria for Mo-99 production. Substantial modifications of this facility will be needed, however, to ensure a stable production source.

In July 1994, the DOE Office of Nuclear Energy requested an independent review of its Mo-99 production plans. The review report concluded that a window of risk will exist for the next 18 to 48 months, during which the U.S. will remain dependent on a single irradiation source, a multipurpose test reactor operated by Atomic Energy of Canada, Ltd. While the report supported the current DOE program as a short-term solution, it recommended long-term Mo-99 production by the private sector. To this end, the report recommended DOE take an active role in finding and supporting private sector production ventures.



The review also endorsed DOE's plan to establish a source for Mo-99 production at Sandia and notes that, for the near-term, there are no existing domestic or international alternatives to the Department's plan. The ACRR was found to be an appropriate choice for Mo-99 production if detailed cost, schedule, environmental, organizational, and technical evaluations prove to be acceptable.

Currently, the IP&D Program is funding Sandia's performance of National Environmental Policy Act (NEPA) requirements, as well as preparation of a fully resource-loaded schedule. The ACRR evaluation process was completed in December 1994, and a final decision on use of the reactor for Mo-99 production will be made in 1995. A long-term solution will be pursued in parallel with the Sandia project.

Another significant performance issue is production of Iridium-192 (Ir-192), which is used primarily in radiography (e.g., inspection to verify the structural integrity of aircraft, bridges, etc).<sup>3</sup> As a result of a failed target incident at Oak Ridge National Laboratory in September 1993, rigid quality assurance and safety analysis caused the Program to incur a cost overrun of about \$.5 million for Ir-192 production start-up. In addition, production costs exceeded revenues by over \$.2 million because of high operating costs and lower specific activities than required by customers. Due to the lower specific activities, curies were priced proportionately lower than the projected selling prices. Subsequently, however, specific activity has exceeded customer requirements.

Several future issues may impact the IP&D Program's ability to meet its performance objectives. One such issue involves the Los Alamos Meson Physics Facility (LAMPF), which is operated and funded by the DOE Office of Energy Research (ER). Funding for FY 1995 LAMPF operations has been provided by Congress, and the IP&D Program will continue production of accelerator isotopes at this facility during FY 1995. LAMPF operations beyond FY 1995 will depend on the availability of future appropriations. It should be noted that, since the IP&D Program is a user of DOE facilities and operates similarly to the DOE Work-for-Others Program, costs associated with decontamination and decommissioning of DOE facilities, particularly legacy costs, are the responsibilities of other DOE programs. Cleanup costs which are directly attributable to isotope processing, however, will be borne by the IP&D Program.

In addition, the Brookhaven Linear Isotope Producer (BLIP) is being modified to enhance the Program's ability to provide additional radioactive accelerator-produced isotopes. This effort should be completed in 1996. The availability of accelerator-produced isotopes will depend on the time frame between closure of LAMPF and completion of BLIP modifications.

Another issue is project definition of the National Biomedical Tracer Facility (NBTF), which is an ER-sponsored activity. The NBTF is a significant research initiative that could provide an additional source of accelerator-produced isotopes. Project proposals should be completed by February 1995, at which time the Department will make an evaluation.

---

<sup>3</sup> See Supplemental Financial and Management Information, pg. 25-27: Process Development Costs.

Finally, because U.S. production of tritium gas is not currently scheduled, the DOE Office of Defense Programs will terminate its supply of tritium gas to the IP&D Program at the close of FY 1995. The Program is attempting to find alternative sources of tritium, both internal and external. Sales from tritium inventories may continue beyond FY 1995, however, if it is determined that IP&D customers cannot find an alternative source.

It should be noted that the Mound facility, which produces noble gases and sells tritium and helium for the IP&D Program, is currently scheduled for transfer to the DOE Office of Environmental Management (EM) for decontamination and decommissioning. In the near term, IP&D activities will continue at this facility. For the long term, however, the IP&D Program is researching other alternatives.

### **Financial Performance**

IP&D sales projections for FY 1994 were \$11.0 million, while actual sales were \$10.0 million. Radioisotopes outsold stable isotopes by a 59:41 ratio. More than one third of total sales were made to foreign customers. Total FY 1994 sales were \$1.7 million less than total FY 1993 sales.<sup>4</sup>

The FY 1994 gross profit for the IP&D Program was 18.8 percent. The \$7.9 million deficiency of revenues over expenses was caused by several factors, including a decline in sales, increased allowance for excessive inventory quantities, high operating costs, and less sharing of DOE facilities with other programs.

### **Financial Statements Limitations**

The IP&D Financial Statements have been prepared to report the financial position and results of IP&D Program operations, pursuant to the requirements of the Chief Financial Officers Act of 1990. While the statements have been prepared from the books and records of the IP&D Program in accordance with the formats prescribed by the Office of Management and Budget (OMB), the statements are different from the financial reports used to monitor and control budgetary resources, which are prepared from the same books and records.

The statements should be read with the realization that they are for DOE; that unfunded liabilities reported in the financial statements cannot be liquidated without enactment of an appropriation, and that payment of all liabilities other than for contracts can be abrogated by the DOE entity (the IP&D Program).

---

<sup>4</sup> See Supplemental Financial and Management Information, pg. 30: IP&D Sales Categories.

## **Independent Auditors' Report on Financial Statements**

Office of Nuclear Energy  
United States Department of Energy:

We have audited the accompanying statements of financial position of the Isotope Production and Distribution Program as of September 30, 1994 and 1993, and the related statements of operations and changes in net position, cash flows, and budgetary resources and actual expenses for the years then ended. These financial statements are the responsibility of the management of the Isotope Production and Distribution Program. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards; *Government Auditing Standards* (1988 revision), issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin 93-06, *Audit Requirements for Federal Financial Statements*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As described in note 1, these financial statements were prepared in conformity with the hierarchy of accounting principles and standards approved by the principals of the Federal Accounting Standards Advisory Board. This hierarchy is a comprehensive basis of accounting other than generally accepted accounting principles.

As explained in the Overview, the program was restructured late in fiscal year 1994. As part of the restructuring, Public Law 103-316 converted all borrowing authority previously granted the program to direct appropriations, and eliminated the full cost recovery requirement that previously governed the establishment of fees for sales of isotopes and related services, as discussed in note 1(c).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the United States Department of Energy's Isotope Production and Distribution Program as of September 30, 1994 and 1993, the results of its operations and changes in net position, its cash flows, and its budgetary resources and actual expenses for the years then ended on the basis of accounting described in note 1.

(Continued)

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The information presented in management's *Overview* and *Supplemental Financial and Management Information* is not a required part of the basic financial statements but is supplementary information required by OMB Bulletin 94-01, *Form and Content of Agency Financial Statements*. We have considered whether this information is materially inconsistent with the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion on it. Performance information included in management's *Overview* and *Supplemental Financial and Management Information* is addressed in our auditors' report on the internal control structure in accordance with OMB Bulletin 93-06.

This report is intended for the information of the management of the Isotope Production and Distribution Program and the United States Department of Energy. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

KPMG Peat Marwick LLP

November 30, 1994

**This page intentionally left blank.**

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Statements of Financial Position**

As of September 30, 1994 and 1993

<u>Assets</u>	<u>1994</u>	<u>1993</u>
Entity assets:		
Intragovernmental assets:		
Fund balance with Treasury	\$ 6,522,967	4,983,701
Accounts receivable, net (note 3)	<u>493,146</u>	<u>298,029</u>
	7,016,113	5,281,730
Governmental assets:		
Accounts receivable, net (note 3)	998,644	2,198,254
Advances and prepayments	<u>500</u>	<u>—</u>
	999,144	2,198,254
Inventories held for sale, net (note 4):		
Radioisotopes	1,942,121	1,651,968
Stable isotopes	<u>5,294,799</u>	<u>8,070,638</u>
Total inventories held for sale	<u>7,236,920</u>	<u>9,722,606</u>
Inventories on loan or lease, net (note 4)	78,442	138,206
Equipment, net (note 5)	547,820	656,098
Total entity assets	\$ <u>15,878,439</u>	<u>17,996,894</u>

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Statements of Financial Position**

As of September 30, 1994 and 1993

<u>Liabilities and Net Position</u>	<u>1994</u>	<u>1993</u>
Liabilities covered by budgetary resources:		
Intragovernmental liabilities:		
Accrued interest payable (note 6)	-	435,877
Debt (note 6)	-	12,515,000
Accrued expenses	<u>93,864</u>	<u>135,377</u>
	93,864	13,086,254
Liabilities not covered by budgetary resources		
Intragovernmental liabilities:		
Accrued leave	17,456	11,584
Governmental liabilities:		
Deferred revenue	<u>247,355</u>	<u>413,115</u>
Total liabilities	<u>358,675</u>	<u>13,510,953</u>
Net position:		
Balances:		
Invested capital	41,618,336	23,208,336
Cumulative results of operations	<u>(26,098,572)</u>	<u>(18,722,395)</u>
Total net position	15,519,764	4,485,941
Commitments and contingencies (notes 9, 10, and 11)		
Total liabilities and net position	\$ <u><u>15,878,439</u></u>	<u><u>17,996,894</u></u>

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Statements of Operations and Changes in Net Position

Years ended September 30, 1994 and 1993

	<u>1994</u>	<u>1993</u>
Revenues from sales of goods and services:		
To the public:		
Domestic	\$ 5,366,579	6,920,987
Foreign	<u>3,985,316</u>	<u>3,155,670</u>
Total revenues from sales to the public	9,351,895	10,076,657
Intragovernmental sales of goods and services	<u>687,533</u>	<u>1,623,014</u>
Total revenues from sales of goods and services	10,039,428	11,699,671
Cost of sales and services	<u>(8,154,381)</u>	<u>(10,902,203)</u>
Gross profit	<u>1,885,047</u>	<u>797,468</u>
Expenses:		
Program expenses:		
Process development	217,014	3,072,207
Marketing	350,366	150,899
Isotope storage and distribution	3,542,111	3,667,742
General and administrative (note 7)	<u>1,689,457</u>	<u>1,018,984</u>
Total program expenses	<u>5,798,948</u>	<u>7,909,832</u>
Other expenses:		
Depreciation	152,820	150,000
Provision for doubtful accounts receivable	135,796	408,538
Interest on borrowings from Treasury (note 6)	833,240	800,558
Lower of cost or market inventory adjustment	208,868	252,001
Increase (decrease) in allowance for excessive inventory quantities (note 4)	<u>2,668,946</u>	<u>(298,149)</u>
Total other expenses	<u>3,999,670</u>	<u>1,312,948</u>
Total expenses	<u>9,798,618</u>	<u>9,222,780</u>
Deficiency of revenues over total expenses	\$ <u>(7,913,571)</u>	<u>(8,425,312)</u>

(Continued)



UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Statements of Operations and Changes in Net Position, Continued**

	<u>1994</u>	<u>1993</u>
Net position, beginning balance, as previously stated	\$ 4,485,941	13,158,661
Prior period adjustment to revalue inventories (note 2)	<u>          —</u>	<u>(1,446,860)</u>
Net position, beginning balance, as restated	4,485,941	11,711,801
Deficiency of revenues over total expenses	(7,913,571)	(8,425,312)
Appropriations (note 1(c))	18,410,000	—
Non-operating changes (note 8)	<u>    537,394</u>	<u>  1,199,452</u>
Net position, ending balance	\$ <u>15,519,764</u>	<u>  4,485,941</u>

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Statements of Cash Flows**

Years ended September 30, 1994 and 1993

	<u>1994</u>	<u>1993</u>
Cash flows from operating activities:		
Deficiency of revenues over total expenses	\$ <u>(7,913,571)</u>	<u>(8,425,312)</u>
Adjustments to reconcile deficiency of revenues over total expenses to net cash used in operating activities:		
Depreciation	152,820	150,000
Provision for doubtful accounts receivable	135,796	408,538
Non-operating changes	537,394	1,199,452
(Increase) decrease in operating assets:		
Accounts receivable	868,697	940,057
Inventories	2,545,450	97,738
Advances and prepayments	(500)	150
Increase (decrease) in operating liabilities:		
Accrued interest payable	(435,877)	127,880
Deferred revenue	(165,760)	386,112
Accrued expenses	(41,513)	32,281
Accrued leave	<u>5,872</u>	<u>(9,022)</u>
Total adjustments	<u>3,602,379</u>	<u>3,333,186</u>
Net cash used in operating activities	<u>(4,311,192)</u>	<u>(5,092,126)</u>
Cash flows used in investing activities - purchases of equipment	<u>(44,542)</u>	<u>(76,701)</u>
Cash flows provided by financing activities:		
Borrowing from Treasury	-	4,015,000
Appropriations received and transferred	<u>5,895,000</u>	<u>-</u>
Net cash provided by financing activities	<u>5,895,000</u>	<u>4,015,000</u>
Net increase (decrease) in cash	1,539,266	(1,153,827)
Fund balance with Treasury, beginning of year	<u>4,983,701</u>	<u>6,137,528</u>
Fund balance with Treasury, end of year	\$ <u><u>6,522,967</u></u>	<u><u>4,983,701</u></u>

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Statements of Cash Flows, Continued

	<u>1994</u>	<u>1993</u>
Supplemental disclosure of cash flow information:		
Cash paid for interest	\$ <u>1,269,117</u>	<u>672,678</u>
Supplemental disclosure of non-cash financing activities:		
Conversion of debt to direct appropriations	\$ <u>12,515,000</u>	<u>—</u>

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Statements of Budgetary Resources and Actual Expenses**

Years ended September 30, 1994 and 1993

Budget				Actual	
1994		1993		1994	1993
<u>Resources</u>	<u>Obligations</u>	<u>Resources</u>	<u>Obligations</u>	<u>Expenses</u>	<u>Expenses</u>
\$ <u>17,909,368</u>	<u>14,416,991</u>	<u>19,490,294</u>	<u>17,947,729</u>	<u>9,798,618</u>	<u>9,222,780</u>

1994                      1993

**Budget reconciliation:**

Total expenses		\$	<u>9,798,618</u>		<u>9,222,780</u>
Add:					
Capital acquisitions			44,542		76,701
Cost of sales and services			<u>8,154,381</u>		<u>10,902,203</u>
			<u>8,198,923</u>		<u>10,978,904</u>
Less:					
Depreciation			(152,820)		(150,000)
(Increase) decrease in accrued leave			(5,872)		9,022
Provision for doubtful accounts receivable			(135,796)		(408,538)
Other unfunded expenses			<u>(1,213,406)</u>		<u>(1,521,821)</u>
			<u>(1,507,894)</u>		<u>(2,071,337)</u>
Accrued expenditures			16,489,647		18,130,347
Less reimbursements collected			<u>(12,332,870)</u>		<u>(12,639,728)</u>
Accrued expenditures, direct		\$	<u>4,156,777</u>		<u>5,490,619</u>

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Notes to Financial Statements**

September 30, 1994 and 1993

**(1) Basis of Presentation, Description of Reporting Entity and Summary of Significant Accounting Policies**

**(a) Basis of Presentation**

These financial statements have been prepared to report the financial position and results of operations of the Isotope Production and Distribution Program (IP&D), as required by the Chief Financial Officers Act of 1990. The statements have been prepared from the books and records of IP&D in accordance with the applicable form and content requirements of Office of Management and Budget (OMB) Bulletin 94-01 and IP&D's accounting policies, which are summarized in this note. These statements are therefore different from the financial reports, also prepared by IP&D pursuant to OMB directives, that are used to monitor and control IP&D's use of budgetary resources.

The United States Department of Energy's (DOE's) headquarters, field offices, and the management and operating (M&O) contractors operating the DOE facilities discussed in note 1(b) record IP&D activity in their accounting systems. The M&O contractors integrate their accounting systems with DOE through the use of reciprocal accounts. All M&O contractors are required under provisions of their respective contracts to maintain a separate set of accounts and records for recording and reporting IP&D financial transactions in accordance with DOE accounting practices and procedures. These financial statements are prepared by extracting and adjusting IP&D-related data from the financial records of DOE and its contractors.

**(b) Reporting Entity**

IP&D's charter is the production, processing, distribution, and sale of radioisotopes, stable isotopes, and related services for a wide variety of research, development, biomedical and industrial applications. IP&D is a user of DOE facilities and provides funding through DOE site offices to M&O contractors for the production and distribution of isotopes and related services. Since IP&D uses only a small portion of the capacity of each facility, management of the facilities producing isotopes and related services is the responsibility of other offices within DOE. IP&D provides program direction and oversight for the production and sale of its products and services. The full cost of providing the products and services, including such items as labor, benefits and packaging, is charged to IP&D.

Isotope production and related activities are performed at the following sites: Brookhaven National Laboratory (BNL), Upton, New York; EG&G Mound Applied Technologies (Mound), Miamisburg, Ohio; Los Alamos National Laboratory (LANL), Los Alamos, New Mexico; Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho; Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee; and Westinghouse Hanford Company (WHC)/Pacific Northwest Laboratories (PNL), Richland, Washington.

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

(c) *Revolving Fund , Borrowing Authority, and Conversion to Direct Appropriations*

The fiscal year 1990 Appropriations Act, Public Law 101-101, established a separate IP&D Revolving Fund for the program with an initial appropriation of \$16,016,000; inventory on hand at October 1, 1989; and the unexpended balances of previous appropriations for similar activities. Revenues from isotope sales and related services were credited to the Revolving Fund, and fees were set by the Secretary of Energy to provide for full cost recovery including administrative expenses, depreciation, accrued leave, and probable losses.

In addition to the initial resources, in fiscal years 1992 and 1993, the program was authorized to utilize borrowing authority from the Treasury in the amount of \$8.5 million and \$5 million, respectively. These funds were used to establish a U.S. production capability for molybdenum 99 (Mo-99) and related medical isotopes, and to maintain sufficient working capital for the program.

In fiscal year 1994, Public Law 103-126 authorized a direct appropriation to the program of approximately \$3.9 million. On August 26, 1994, Public Law 103-316 authorized a transfer of \$1.0 million in unobligated balances from other DOE programs to IP&D. Public Law 103-316 also converted the borrowing authority previously granted to the program since 1991 to direct appropriations, resulting in an additional \$13.5 million of appropriations in fiscal year 1994. In addition, Public Law 103-316 eliminated the requirement that fees for the sale of isotopes and related services be set to achieve full cost recovery.

(d) *Basis of Accounting*

IP&D uses the accrual method of accounting. The accrual method of accounting requires recognition of the financial effects of transactions, events, and circumstances in the periods when those transactions, events, and circumstances occur, regardless of when cash is received or paid. IP&D also uses budgetary accounting to facilitate compliance with legal constraints and to keep track of its budget authority at the various stages of execution, including allotment, obligation, and eventual outlay.

The financial statements are prepared in accordance with the following hierarchy which constitutes a comprehensive basis of accounting:

Individual standards agreed to and published by the Joint Financial Management Improvement Program Principals, based upon recommendations from the Federal Accounting Standards Advisory Board.

Form and content requirements included in OMB Bulletin 94-01, *Form and Content of Agency Financial Statements*.

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Notes to Financial Statements**

Accounting standards contained in agency accounting policy, procedures manuals, and/or related guidance as of March 29, 1991, so long as they are prevalent practices.

Accounting principles published by authoritative standard setting bodies and other authoritative sources (1) in the absence of other guidance in the first three parts of this hierarchy, and (2) if the use of such accounting standards improves the meaningfulness of the financial statements.

**(e) Pricing Policy**

Following the enactment of Public Law 103-316, IP&D changed its pricing policy to determine prices based on production costs, market value, the needs of the research community, and other factors. Prices set may or may not achieve cost recovery. Prior to Public Law 103-316, the program set prices to recover the full cost of isotope production and services, and all period costs, through sales of isotopes and related services. Accordingly, isotope sales prices included an added factor intended to achieve full cost recovery.

**(f) Fund Balance with Treasury**

IP&D cash receipts and disbursements are processed through the United States Treasury. The funds with the Treasury are available to pay current liabilities and finance authorized purchase commitments.

**(g) Allowance for Doubtful Accounts**

Accounts receivable have been reduced by an allowance for estimated doubtful accounts. This allowance has been determined based on an analysis of outstanding balances, past experience, and present market conditions.

**(h) Inventories**

IP&D inventories consist of two major categories - radioisotopes and stable isotopes. Radioisotopes (except for inventory at INEL), non-electromagnetic stable isotopes and all other stable isotopes, exclusive of the sales pool at ORNL, are valued based on a first - in, first - out (FIFO) specific identification methodology. The radioisotope inventory at INEL and the stable isotopes in the ORNL sales pool are valued based on average cost. Inventory values at September 30, 1994 and 1993 are stated at the lower of cost or market value. Inventory quantities that exceed the total quantity sold during the preceding five years are included in the allowance for excessive inventory quantities.

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

(i) *Equipment*

IP&D is a user of DOE facilities and, as such, does not own or fully control the land, buildings and other assets. IP&D, however, does make equipment purchases as needed for IP&D operations. Equipment costing more than \$5,000 with an expected life of more than two years is capitalized and depreciated on a straight-line basis over the estimated useful life of the asset.

(j) *Deferred Revenue*

Certain customers may be required to make payment in advance of delivery. These advances are recorded as a liability by IP&D; revenue is recognized upon delivery.

(k) *Annual, Sick, and Other Leave*

Annual leave is accrued when earned, and the accrual is reduced as leave is taken. The accrued annual leave liability is principally long term in nature. Sick leave and other leave are expensed as taken.

(l) *Pensions and Other Retirement Benefits*

All permanent DOE employees participate in either the Civil Service Retirement System (CSRS) or the Federal Employees Retirement System (FERS). Both are contributory pension plans and are not covered under the Employee Retirement Income Security Act of 1974. Retirement benefit expense under CSRS is equivalent to 7% of eligible employee compensation and under FERS is variable based upon options chosen by the participant.

Actuarially determined data for CSRS and FERS, regarding the present value of accumulated benefits, assets available for benefits, and unfunded pension liability, are maintained by the Office of Personnel Management and are not allocated to individual departments and agencies. Reporting such amounts is the responsibility of the Office of Personnel Management.

(m) *Reclassifications*

Certain 1993 amounts have been reclassified to conform with the 1994 presentation.

(2) *Prior Period Adjustment*

The fiscal year 1993 prior period adjustment of \$1,446,860 is attributable to one isotope, which was in transit between IP&D locations at September 30, 1992. Although the isotope was included in the inventory balance, it was not included in the fiscal year 1992 allowance for excessive inventory quantities.

(Continued)



UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

(3) *Accounts Receivable*

Accounts receivable consist of the following at September 30, 1994 and 1993:

		1994	
		<u>Governmental</u>	<u>Intragovernmental</u>
Accounts receivable	\$	1,879,784	493,146
Less allowance for doubtful accounts		<u>(881,140)</u>	<u>—</u>
	\$	<u>998,644</u>	<u>493,146</u>
		1993	
		<u>Governmental</u>	<u>Intragovernmental</u>
Accounts receivable	\$	2,943,598	298,029
Less allowance for doubtful accounts		<u>(745,344)</u>	<u>—</u>
	\$	<u>2,198,254</u>	<u>298,029</u>

(4) *Inventories*

Inventories held for sale consist of the following at September 30, 1994 and 1993:

		1994	
		<u>Radioisotopes</u>	<u>Stable Isotopes</u>
Cost	\$	4,844,277	42,663,396
Less:			
Allowance for excessive inventory quantities		(2,752,260)	(37,057,624)
Valuation adjustment to the lower of cost or market value		<u>(149,896)</u>	<u>(310,973)</u>
	\$	<u>1,942,121</u>	<u>5,294,799</u>

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

	1993	
	<u>Radioisotopes</u>	<u>Stable Isotopes</u>
Cost	\$ 4,401,752	42,423,918
Less:		
Allowance for excessive inventory quantities	(2,699,503)	(34,151,560)
Valuation adjustment to the lower of cost or market value	<u>(50,281)</u>	<u>(201,720)</u>
	<u>\$ 1,651,968</u>	<u>8,070,638</u>

Inventories on loan or lease consist of the Research Materials Collection (RMC). The RMC is an inventory of enriched stable isotopes which was produced to be available for loan at no charge to research projects involving nondestructive use. Since the inception of the Revolving Fund in October 1989, IP&D has converted the loan program to a lease program so that revenue can be collected for this material. Lease charges are based on the current sales value of the isotope being leased. In addition, an annual renewal fee of \$3,200 is charged for each isotope leased. Lease revenues for fiscal years 1994 and 1993 were \$159,925 and \$150,817, respectively. The value of the RMC material on loan or lease at September 30, 1994 and 1993 is summarized in the following table:

	<u>1994</u>	<u>1993</u>
Cost	\$ 677,337	1,026,976
Less allowance for excessive inventory quantities	(598,895)	<u>(888,770)</u>
	<u>\$ 78,442</u>	<u>138,206</u>

RMC material not on loan or lease is held for sale.

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

Activity in the allowance for excessive inventory quantities for fiscal years 1994 and 1993 is as follows:

	<u>Inventories held for sale</u>		<u>Inventories on loan or lease</u>	
	<u>Radioisotopes</u>	<u>Stable</u>	<u>Stable</u>	<u>Total</u>
Balance, October 1, 1992	\$ 1,083,805	34,075,991	1,431,326	36,591,122
Prior period adjustment (note 2)	1,446,860	--	--	1,446,860
Current year increase (decrease)	<u>168,838</u>	<u>75,569</u>	<u>(542,556)</u>	<u>(298,149)</u>
Balance, September 30, 1993	2,699,503	34,151,560	888,770	37,739,833
Current year increase (decrease)	<u>52,757</u>	<u>2,906,064</u>	<u>(289,875)</u>	<u>2,668,946</u>
Balance, September 30, 1994	\$ <u>2,752,260</u>	<u>37,057,624</u>	<u>598,895</u>	<u>40,408,779</u>

(5) *Equipment*

Equipment consists of the following at September 30, 1994 and 1993:

	<u>1994</u>	<u>1993</u>
Shipping casks (note 9)	\$ 750,000	750,000
Production equipment	<u>138,140</u>	<u>93,598</u>
	888,140	843,598
Less accumulated depreciation	<u>(340,320)</u>	<u>(187,500)</u>
	\$ <u>547,820</u>	<u>656,098</u>

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Notes to Financial Statements

(6) *Debt*

As discussed in note 1(c), on August 26, 1994, Public Law 103-316 converted the borrowing authority previously granted to the program to direct appropriations in fiscal year 1994. The program received \$8.5 million of borrowing authority in August 1991, all of which was drawn down by IP&D during fiscal year 1992. In fiscal year 1993, Public Law 102-377 provided IP&D with an additional \$5 million in borrowing authority, and the program drew down \$4.015 million of this authority. Interest expense for fiscal year 1994 on the amounts borrowed and previously accrued was \$833,240; interest expense for fiscal year 1993 was \$800,558. All accrued interest was paid as of September 30, 1994. Accrued interest payable was \$435,877 at September 30, 1993.

(7) *General and Administrative Expenses*

General and administrative expenses for the years ended September 30, 1994 and 1993 consist of the following:

	<u>1994</u>	<u>1993</u>
Departmental administrative charges	\$ 89,985	132,027
Personal services and benefits	508,077	330,540
Travel and transportation	32,609	21,469
Contractor and other program expenses	<u>1,058,786</u>	<u>534,948</u>
	\$ <u>1,689,457</u>	<u>1,018,984</u>

(8) *Non-Operating Changes*

Non-operating changes consist primarily of transfers to offset depreciation expense charged to the program. Net transfers during the years ended September 30, 1994 and 1993, consist of:

	<u>1994</u>	<u>1993</u>
Albuquerque Field Office	\$ 466,340	937,911
Oak Ridge Field Office	<u>71,054</u>	<u>261,541</u>
	\$ <u>537,394</u>	<u>1,199,452</u>

(Continued)

UNITED STATES DEPARTMENT OF ENERGY  
OFFICE OF NUCLEAR ENERGY

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Notes to Financial Statements**

**(9) *Acquisition and Royalty Agreement***

During fiscal 1992, DOE entered into a cooperative agreement with Cintichem, Inc. through which DOE acquired isotope production equipment, technology, and processes to allow IP&D to expand its ability to provide critical medical isotopes to the U.S. nuclear medical community. IP&D paid Cintichem \$750,000 at the inception of the agreement and will also provide Cintichem with a four-percent royalty on gross worldwide sales of molybdenum 99 (Mo-99) produced by DOE for a period of five years from the start of Mo-99 production using Cintichem's technology. No such production has occurred as of September 30, 1994.

**(10) *Environmental Costs***

DOE Order 5820.2A establishes policies and guidance for the decontamination and decommissioning of radioactively contaminated facilities under DOE ownership or control. For multiple user facilities, the program office shall determine the decommissioning liability for user program offices based on each program's overall contribution to the contamination, or some other mutually acceptable basis. Consequently, a portion of the decontamination and decommissioning costs related to the facilities at which IP&D conducts operations could be allocable to the program. However, no estimates of the total decontamination and decommissioning costs or the portion applicable to IP&D, if any, are currently available.

**(11) *Litigation***

There is a pending claim against DOE in which the plaintiff alleges negligent design and manufacture of cesium capsules leased from DOE prior to the inception of the Revolving Fund. The amount of damages sought is approximately \$200 million. DOE believes that valid defenses exist against this claim and will vigorously contest it. However, it is not possible to predict the outcome of the litigation or the range of any damages that might be assessed against the government, and it is uncertain whether IP&D will be responsible for any damages assessed.

# U.S. DEPARTMENT OF ENERGY ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

## Supplemental Financial and Management Information

### Introduction

The Department of Energy (DOE) Isotope Production and Distribution (IP&D) Program provides hundreds of products such as radioactive and stable isotopes, byproducts, and surplus materials such as lithium and deuterium, as well as related isotope services. Such services include, but are not limited to, irradiation services, target preparation and processing, source encapsulation and other special preparations, analyses and separations, services related to shipping, and processing returned isotopes. These products and services are sold worldwide and are used for a wide variety of research, development, biomedical, and industrial applications.

The IP&D Program operates under a Revolving Fund and must operate within its revenues and the appropriations provided by Congress. As a user of DOE facilities, the IP&D Program has access to the entire spectrum of facilities and technical capabilities in all DOE installations. The Program provides program direction and oversight for the production and sale of its products and services. Management of the facilities which produce the isotopes and other related services for IP&D is the responsibility of other offices within DOE. DOE is engaged in isotope production and distribution activities only where there is no U.S. private sector capability or because of the need for unique government facilities such as nuclear reactors and associated hot cells, particle accelerators, and isotope enrichment facilities, or where other productive capacity is insufficient to meet pressing U.S. needs.

### Program Performance Measures

#### Sales Volume Activity

IP&D sales projections are dynamic, and therefore require frequent modification. Early (October 1993) projections for Fiscal Year (FY) 1994 were \$11.0 million, while actual sales totaled \$10.0 million. Radioisotopes outsold stable isotopes by a 59:41 ratio. More than one third of total sales were made to foreign customers. Total FY 1994 sales were \$1.7 million less than total FY 1993 sales. See Chart 1 - IP&D Annual Revenues on page 29 for a six-year comparison of sales.

#### Process Development Costs

The IP&D Program has invested more than \$12 million over the last several years on process development for several products. The most important performance measurements for the new initiatives are whether startup and operating costs are within the estimates which form the bases for production quotations to isotope customers, and whether startup and product delivery schedules are achieved as forecast.

Mo-99 has a 66-hour half-life and is essential in nuclear medicine to produce Tc-99m for use in diagnostic studies of the brain, heart, and other organs. Tc-99m is used in more than 70 percent of all nuclear medicine procedures, equal to more than 36,000 procedures each day in the U.S. alone. The importance of multiple supply sources of such short-lived medical isotopes, including an indigenous U.S. source, is the basic motivation for this significant initiative on Mo-99 and related isotopes. This initiative was made possible by the use of borrowing authority from the U.S. Treasury.

Because of the importance of this isotope to nuclear medicine and its availability from only a single Canadian supplier, the Society of Nuclear Medicine and the three major radiopharmaceutical manufacturing communities have encouraged DOE to explore the feasibility of producing Mo-99 in DOE facilities. A Phase I feasibility study concluded that the Omega West Reactor (OWR) was the only reactor in the DOE complex capable of promptly meeting the economic and delivery requirements for this product. In November 1991, the IP&D Program purchased Cintichem technology to produce Mo-99 and related isotopes at Omega West.

As of September 1994, IP&D expenditures towards this effort from inception, including interest, totaled \$7.3 million. During FY 1993 and early FY 1994, Mo-99 cost estimates were on target. Mo-99 production was scheduled to begin by mid-1993. Because of the shutdown of OWR due to operational problems and the discovery of a primary system coolant leak in late 1992 and early 1993, operations were suspended. Delays caused by the shutdown of the OWR have negatively affected the IP&D Program, resulting in the loss of several million dollars from projected FY 1993 and 1994 revenues.

It should be noted that this reactor was operated by the DOE Office of Defense Programs (DP) and was used previously for defense research purposes. In September 1993, DP determined that it has no current or future programmatic need for this facility and authorized Los Alamos National Laboratory to place the reactor in a permanent safe shutdown condition, pending decontamination and decommissioning.

In early 1993, the IP&D Program began evaluating the Annular Core Research Reactor (ACRR) at Sandia National Laboratories as a potential source for Mo-99 production. When the OWR option was eliminated, the ACRR became a logical choice. The ACRR is a 2 MW pool-type research reactor with a nearby hot cell facility that was designed for pulse operation and has operated in that mode for most of its 27 years of operation. While the ACRR has never been used on a continuous production basis (such as that required for Mo-99 production), the reactor meets all technical criteria for Mo-99 production. Substantial modifications to this facility will be needed, however, to ensure a stable production source.

An independent review conducted in 1994 endorsed DOE's plan to establish a source for Mo-99 production at Sandia. The ACRR was found to be an appropriate choice for Mo-99 production if detailed cost, schedule, environmental, organizational, and technical evaluations prove to be acceptable.

Currently, the IP&D Program is funding Sandia's performance of National Environmental Policy Act (NEPA) requirements, as well as preparation of a fully resource-loaded schedule. The ACRR evaluation process is expected to be completed by December 1994, and a final decision

on use of the reactor for Mo-99 production will be made in early 1995. A long-term solution will be pursued in parallel with the Sandia project.

Another significant performance issue is production of Iridium-192 (Ir-192), which is used primarily in radiography (e.g., inspection to verify the structural integrity of aircraft, bridges, etc). As a result of a failed target incident at Oak Ridge National Laboratory in September 1993, rigid quality assurance and safety analysis caused the Program to incur a cost overrun of about \$.5 million for Ir-192 production start-up. In addition, production costs exceeded revenues by over \$.2 million because of high operating costs and lower specific activities than required by customers. Due to the lower specific activities, curies were priced proportionately lower than the projected selling prices. Subsequently, however, specific activity has exceeded customer requirements.

### Customer Data and Satisfaction

A total of over 300 customers were serviced in FY 1994, a decrease of 13 percent from the FY 1993 total. Twenty-two customers comprised 83 percent of sales. The total number of deliveries/shipments made was 1049, a decrease of over 30 percent from FY 1993. Of these 1049 deliveries, 599 were domestic, 293 were foreign, and 157 were intragovernmental. Since IP&D sales are not static, customers served and deliveries made are influenced by external and international factors such as production and processing cycles, diagnostic and teletherapy procedures, research, and, of course, competition.

The total number of formal customer complaints was ten. Determination of the percentage of deliveries received by customers as scheduled requires further elaboration and is addressed below. Generally, however, deliveries of stable isotopes were above satisfactory, while overall radioisotope deliveries were satisfactory.

A marketing survey conducted for the IP&D Program by Arthur Andersen & Co. began in August 1994 and was completed in November 1994. This survey addresses topics such as the overall size of the market, pricing pressures, competition, and customer feedback, and is intended to update the marketing analysis performed as part of Arthur Andersen's 1992 study. Preliminary results related to customer feedback show improvement in the Program's focus on trying to understand and meet customer needs. However, the Program still operates under many constraints that affect its ability to effectively meet customer needs. Prioritizing customer needs and scheduling production facilities remains a significant obstacle.

It should be noted that it is difficult to determine whether the feedback from customer surveys reflects the changes that IP&D Program management has begun implementing. Customers are generally aware of the Program's strategic plan (the National Isotope Strategy); however, there are concerns as to whether the Program can meet specified customer requirements.

The Program is enhancing its marketing methods to fully address customer requirements and to forecast future trends. This is being done through frequent interactions between customers and IP&D staff, particularly the marketing manager; data obtained from IP&D business reply cards; and coordination of isotope activities with stakeholders in the isotope community, including other federal agencies.



## Percentage of Deliveries Received as Scheduled

### Stable Isotopes:

More than 95 percent of the stable isotope orders were shipped within the promised shipping date.

### Radioisotopes:

In the aggregate, about 91 percent of radioisotopes were delivered as scheduled. While deliveries of accelerator isotopes, such as germanium-68, and other isotopes, such as yttrium-90 and tritium, were delivered on time; some reactor isotopes such as Ir-192 were not. Delays in radioisotope distribution were caused by packaging, processing, and shipping hold-ups, as well as logistical problems (such as meeting security requirements for 93 percent enriched uranium-235 at ORNL's Y-12 facility).

## **Financial Performance Measures**

### Profitability

The gross margin for the IP&D Program for FY 1994 was 18.8 percent, as compared to 6.8 percent in FY 1993.

### Accounts Receivable Collections

IP&D's net accounts receivable turnover for FY 1994 was 5.0 times, or every 73 days.

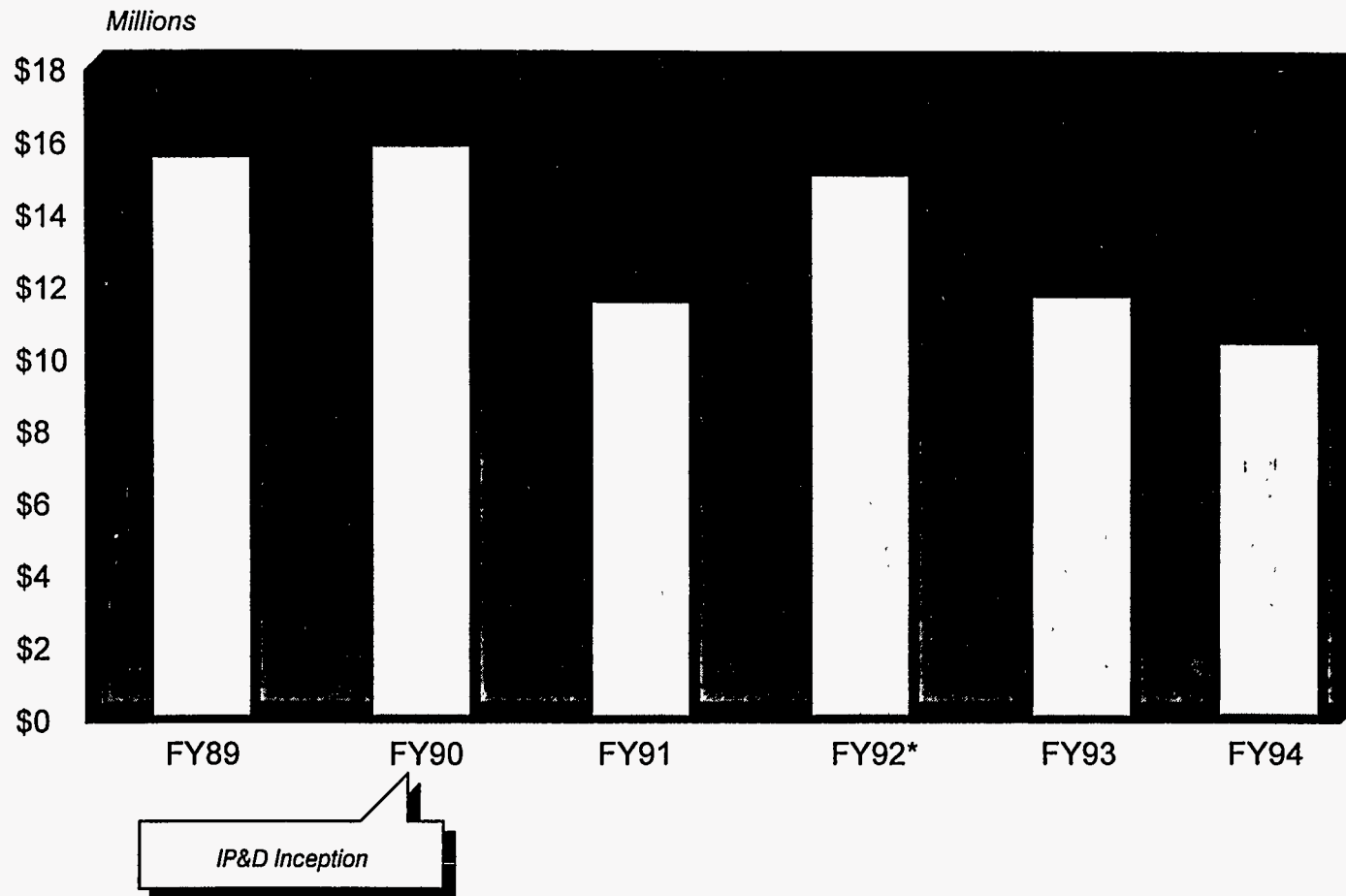
### Inventory Turnover

The IP&D Program has two major inventory categories: radioisotopes and stable isotopes. Generally, because of the short shelf-life of most of the radioisotopes sold by IP&D, a large inventory is not maintained. In addition, some products are purchased as needed from other DOE program inventories. Inventory turnover to sales for capitalized radioisotopes was a satisfactory 1.61 times, based on the average net inventory value during the year.

Stable isotopes do not decay and, therefore, have an unlimited shelf-life. As a cost-saving technique during FY 1994, the Program did not produce additional stable isotopes in the Oak Ridge calutrons, but drew down from existing inventories. The inventory turnover to sales for stable isotopes was .57 times, based on the average net inventory value during the year.

In the aggregate, it should be noted that isotope inventory analysis is difficult because of the wide variety in product types, processes, and lead times.

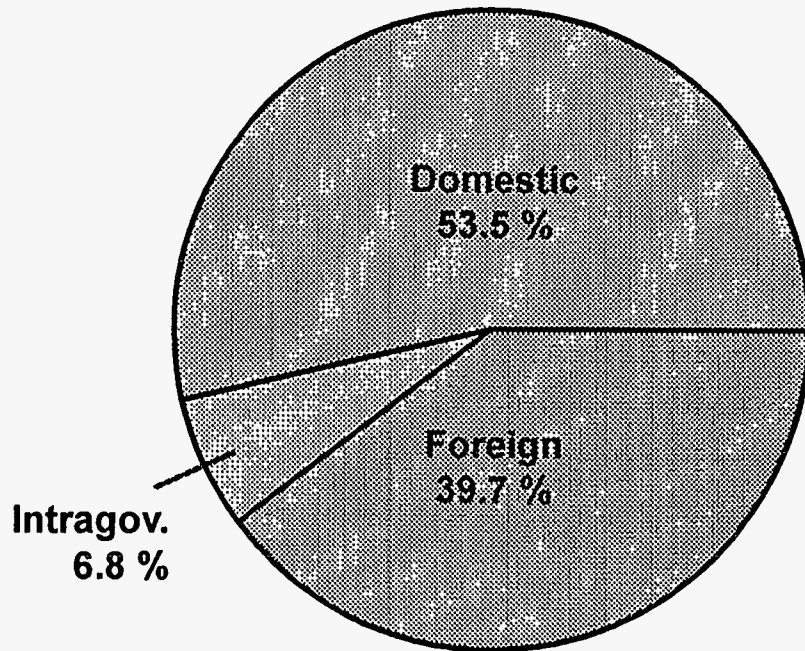
# CHART 1 - ISOTOPE SALES FOR FIVE YEARS



*\*Includes two large transactions totaling over \$3 million, one to DOE and the other to a commercial organization*

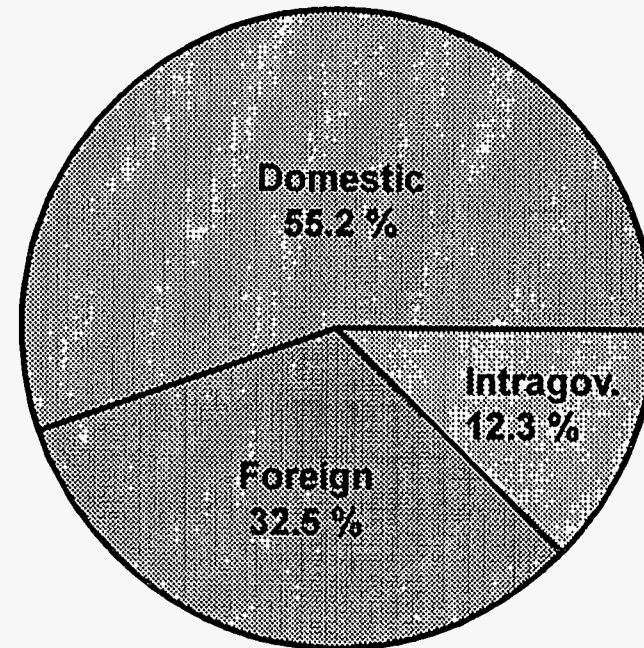
## CHART 2 - IP&D SALES CATEGORIES

FY94



Percentages of \$10.0  
M

Four-Year Summary



Percentages of \$48.2  
M

# ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

## CHART 3 - MANUFACTURING OVERVIEW

Process Type					
Manufacturing Location	Reactor	Accelerator	Calutron	Thermal Diffusion	Other
ORNL (A) Oak Ridge, TN	2 Primary Isotopes 6 Other Isotopes Shared Hot Cells from REDC and M&C	--	St-88, Tl-203, Zn-68, Ni-62, and Calcium Isotope Products sold from Stocks.	--	Li-6, U-234 by-products sold from Inventory.
LANL (B) Los Alamos, NM	--	5 Primary Products 12 Others	--	--	--
MOUND Miamisburg, OH	--	--	--	Kr-76, Kr-78, Xe-124, Xe-126	Tritium sold from Inventory; He-3 sold from a 4-10 year Inventory Supply.
BROOKHAVEN (B) Long Island, NY	--	2 Primary Isotopes 6 Other Isotopes	--	--	--
IDAHO (A) Idaho	3 Primary Isotopes	--	--	--	--
WHC Richland, WA	--	--	--	--	Separation of Y-90 is from stockpile of Sr-90 waste product
SNL Albuquerque, NM	Future Mo-99 production	--	--	--	--

A - Oak Ridge and Idaho both produce Ir-192 (Idaho provides all targets).

B - The LANL accelerator operates May/June-September and the BNL accelerator operates February-May. They both produce Ge-68 and Sr-82 for the same customers.

# ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

## PROMINENTLY SOLD ISOTOPES AND THEIR USES - AS OF FY 1994 -

<u>ELEMENT/ISOTOPES</u>	<u>IMPORTANT USES</u>	<u>WHERE AVAILABLE</u>
Aluminum/Al-26	Research: Alzheimers Disease Acid Rain	Los Alamos - LAMPF
Americium/Am-241	Neutron Source for oil well logging; smoke detectors	Los Alamos'- Inventory
Calcium/Ca-42* -43 -44 -46 -48	Research: Nutrition Bone Growth Nucleosynthesis Nuclear Physics	Oak Ridge - Calutrons
Californium/Cf-252	Cancer Therapy (particularly ovarian and cervical cancer); Portable Neutron Sources; Reactor Monitoring and Control	Oak Ridge - HFIR
Cadmium/Cd-109	X-Ray Fluorescence Instrument Calibration; Silver (Ag-109m) Generation (for short-time medical imaging)	Los Alamos - LAMPF
Cadmium/Cd-112*	Accelerator Targets for medical radioisotope production (such as In-111 used for physiological studies of soft tumors)	Oak Ridge - Calutrons
Cesium/Cs-137	Irradiation-Food; Medical Supplies; Blood	Hanford - Inventory Accessible

---

\* Separated Stable Isotopes; all others are radionuclides.

<u>ELEMENT/ISOTOPE</u>	<u>IMPORTANT USES</u>	<u>WHERE AVAILABLE</u>
Chromium/Cr-50* -53	Target for Cr-51 Radioisotope (medical research blood cell evaluation); General Research	Oak Ridge - Calutrons
Cobalt/Co-60	Radiation Sources; Cancer Teletherapy	Idaho National Engineering Laboratory - ATR
Copper/Cu-67	Antibody Labeling for cancer therapy & imaging	Los Alamos - LAMPF Brookhaven - BLIP
Dysprosium/Dy-163*	Accelerator Research Target- Neutrino generation	Oak Ridge - Calutrons
Gallium/Ga-69*	Needed in focused ion beam devices for research	Oak Ridge Calutrons
Germanium/Ge-68	Calibration Sources for PET Equipment; Antibody Labeling	Los Alamos - LAMPF Brookhaven - BLIP
Helium/He-3*	Lasers; Neutron Detectors; Cryogenics	Mound Lab - Inventory
Hydrogen/H-2* (Deuterium)	Isotopic Labeling; Mass Spectrometry Calibration	Mound Lab - Inventory
Hydrogen/H-3 (Tritium)	Remote/Emergency Lighting; Radiotracer	Mound Lab - Inventory
Iodine/I-125** -131**	Seed Implant Therapy; Thyroid Treatment; Medical Imaging	Sandia - ACRR

---

\* Separated Stable Isotopes; all others are radionuclides.

\*\* First samples planned in FY 1996.

<u>ELEMENT/ISOTOPES</u>	<u>IMPORTANT USES</u>	<u>WHERE AVAILABLE</u>
Iridium/Ir-192	Industrial Radiography Sources	Idaho Engineering Laboratory - ATR Oak Ridge - HFIR
Iron/Fe-54*	Target for Fe-55 (medical isotope); Metallurgy/Solid State Physics Agricultural Biology Solid State Physics	Oak Ridge - Calutrons
-57		
-58		
Krypton/Kr-78*	Optics (standard light sources); Reactor Fuel Tagging; Pulmonary Diagnosis	Mound Lab
-86		
Lead/Pb-204*	Chemical Analyses Target for Pb-205 (used in geology research)	Oak Ridge - Calutrons
Lithium/Li-6*	Physics and Chemistry Research; Neutron Capture Therapy Research	Oak Ridge - Inventory
Lutetium/Lu-176*	Basic Physics Research	Oak Ridge - Calutrons
Magnesium/Mg-28	Physiological Tracer	Brookhaven - BLIP
Molybdenum/Mo-99**	General Medical Imaging	Sandia - ACRR
Nickel/Ni-61*	Reactor Targets for radioisotope formation	Oak Ridge - Calutrons
-62		
Nickel/Ni-63	Gas Sensing Devices; Metabolic Radiotracer	Idaho Engineering Lab - ATR Oak Ridge - HFIR

\* Separated stable isotopes; all others are radionuclides.

\*\* First samples planned in FY 1996.

ELEMENT/ISOTOPESIMPORTANT USESWHERE AVAILABLE

Palladium/Pd-103

Prostate Cancer Implant  
Therapy

Oak Ridge - HFIR

Phosphorus/P-32\*\*

Leukemia; Bone Disease

Sandia - ACRR

Rubidium/Rb-87\*

Geology; Chemical Analyses;  
Beta Source

Oak Ridge - Calutrons

Samarium/Sm-152\*

Target for Sm-153 Production  
(used in medical research  
including bone cancer and  
arthritis)

Oak Ridge - Calutrons

Silicon/Si-29\*

Geology; Molecular Studies

Oak Ridge - Calutrons

Sodium/Na-22

Neurologic Research

Los Alamos - LAMPF

Strontium/Sr-82

Cardiac Imaging

Los Alamos - LAMPF  
Brookhaven - BLIP  
Los Alamos - LAMPF

-85

Diagnosis of Bone Lesions;  
Hypoparathyroidism  
Bone Cancer pain relief  
Heat Source for Small-Scale  
Remote Electric Generators;  
Yttrium-90 GeneratorDOE Reactor Site - Planned  
Hanford Inventory

-89

-90

Strontium/Sr-84\*

Geology; Reactor Targets  
for Sr-85

Oak Ridge - Calutrons

-88

Reactor Targets for Sr-89 (used  
in bone cancer therapy and  
labeling of monoclonal  
antibodies)

\* Separated stable isotopes; all others are radionuclides.

\*\* First samples planned in FY 1996.



<u>ELEMENT/ISOTOPES</u>	<u>IMPORTANT USES</u>	<u>WHERE AVAILABLE</u>
Tellurium/Te-124*	Target for Accelerator production of I-125 (used for diagnostic scanning)	Oak Ridge - Calutrons
Thallium/Tl-203*	Targets for Tl-201 Production in Accelerators (Tl-201 used in cardiac imaging)	Oak Ridge - Calutrons
Uranium/U-234	Neutron Sensing; Control Instrumentation	Oak Ridge - Inventory
Xenon/Xe-124* -126	Reactor Fuel Tagging; Targets for radioiodine production in reactors	Mound Lab
Xenon/Xe-127*** -133**	Neuroimaging; Lung Ventilation Lymphoid Tumor therapy; Lung Imaging	Brookhaven - BLIP Sandia - ACRR
Yttrium/Y-90	Cancer Therapy	Hanford
Zinc/Zn-66* -68 -70	Reactor Activation Reduction; Targets for Radionuclide Production (such as Ga-67, used for soft tumor scanning and diagnosis of Hodgkin's Disease)	Oak Ridge - Calutrons
Zirconium/Zr-90* -92 -94 -96	Irradiation Targets - Research	Oak Ridge - Calutrons

\* Separated stable isotopes; all others are radionuclides.

\*\* First samples planned in FY 1996.

\*\*\* Xe-127 not currently scheduled for production.

**Independent Auditors' Report on Compliance with Laws and Regulations**

Office of Nuclear Energy  
United States Department of Energy:

We have audited the financial statements of the Isotope Production and Distribution (IP&D) Program for the year ended September 30, 1994, and have issued our report thereon dated November 30, 1994.

We conducted our audit in accordance with generally accepted auditing standards; *Government Auditing Standards* (1988 revision), issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin 93-06, *Audit Requirements for Federal Financial Statements*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

Compliance with laws and regulations applicable to IP&D is the responsibility of IP&D's management. As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we tested compliance with laws and regulations that may directly affect the financial statements and certain other laws and regulations designated by OMB and the United States Department of Energy (DOE), including: *Public Law 101-101*, which created the Isotope Production and Distribution Program Revolving Fund; the *Chief Financial Officers' Act of 1990*; the *Budget and Accounting Procedures Act*; and the *Federal Managers' Financial Integrity Act*. However, the objective of our audit of the financial statements was not to provide an opinion on overall compliance with such laws and regulations. Accordingly, we do not express such an opinion.

As part of our audit, we also obtained an understanding of management's process for evaluating and reporting on internal control and accounting systems as required by the Federal Managers' Financial Integrity Act (FMFIA) and compared IP&D's most recent FMFIA reports with the evaluation we conducted of the entity's internal control structure.

The results of our tests indicate that, with respect to the items tested, IP&D complied in all material respects with the provisions referred to in the third paragraph of this report. With respect to items not tested, nothing came to our attention that caused us to believe that IP&D had not complied, in all material respects, with those provisions.

This report is intended for the information of IP&D management and the United States Department of Energy. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

*KPMG Peat Marwick LLP*

November 30, 1994



## Independent Auditors' Report on the Internal Control Structure

United States Department of Energy  
Office of Nuclear Energy:

We have audited the financial statements of the Isotope Production and Distribution (IP&D) Program as of and for the year ended September 30, 1994, and have issued our report thereon dated November 30, 1994.

We conducted our audit in accordance with generally accepted auditing standards; *Government Auditing Standards* (1988 revision), issued by the Comptroller General of the United States; and Office of Management and Budget (OMB) Bulletin 93-06, *Audit Requirements for Federal Financial Statements*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

In planning and performing our audit of the financial statements of IP&D for the year ended September 30, 1994, we considered its internal control structure in order to determine our auditing procedures for the purpose of expressing our opinion on the financial statements, and to determine whether the internal control structure meets the objectives identified in the following paragraph. Our consideration included obtaining an understanding of the internal control policies and procedures and assessing the level of internal control risk relevant to (1) all significant cycles, classes of transactions, or account balances, and (2) the performance information control objectives described in the following paragraph.

The management of IP&D is responsible for establishing and maintaining an internal control structure. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control structure policies and procedures. The objectives of an internal control structure are to provide management with reasonable, but not absolute, assurance that transactions, including those relating to obligations and costs, are executed in compliance with applicable laws and regulations that could have a direct and material effect on the financial statements and any other laws and regulations that OMB, management, or the Department of Energy have identified as being significant and for which compliance can be objectively measured and evaluated; funds, property and other assets are safeguarded against loss from unauthorized use or disposition; transactions are properly recorded and accounted for to permit the preparation of reliable financial reports in accordance with the accounting policies described in note 1 to the financial statements and to maintain accountability over the assets; and data that support reported performance measures are properly recorded and accounted for to permit preparation of reliable and complete performance information. Because of inherent limitations in any internal control structure, errors or irregularities may nevertheless occur and not be detected. Also, projection of any evaluation of the structure to future periods is subject to the risk that procedures may become inadequate because of changes in conditions or that the effectiveness of the design and operation of policies and procedures may deteriorate.



For the purpose of this report, we have classified the significant internal control structure policies and procedures in the following categories:

- Treasury
- Isotope inventory control and production costing
- Sales and receivables

For all of the internal control structure categories listed above, we obtained an understanding of the design of relevant policies and procedures, determined whether they had been placed in operation, assessed control risk, and performed tests of the control structure.

Our evaluation of the controls for performance information was limited to those controls designed to ensure the existence and completeness of the information. With respect to the performance measure control objective, we obtained an understanding of the relevant internal control structure policies and procedures designed to permit the preparation of reliable and complete performance information, and we assessed control risk.

We noted certain matters involving the internal control structure and its operation that we consider to be reportable conditions under standards established by the American Institute of Certified Public Accountants and OMB Bulletin 93-06. Reportable conditions involve matters coming to our attention relating to significant deficiencies in the design or operation of the internal control structure which, in our judgment, could adversely affect IP&D's ability to ensure that the objectives of the internal control structure, as previously defined, are being achieved. The conditions that we consider to be reportable conditions are included in Exhibit II of this report.

A material weakness is a reportable condition in which the design or operation of one or more of the specific internal control structure elements does not reduce to a relatively low level the risk that errors or irregularities in amounts that would be material in relation to the financial statements being audited, or material to a performance measure or aggregate of related performance data may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions. Our consideration of the internal control structure would not necessarily disclose all matters in the internal control structure that might be reportable conditions and, accordingly, would not necessarily disclose all reportable conditions that are also considered to be material weaknesses as defined above. The conditions we consider to be material weaknesses are included in Exhibit I of this report.

We considered the material weaknesses described in Exhibit I in forming our opinion on whether IP&D's 1994 financial statements are presented fairly, in all material respects, in accordance with the accounting policies described in note 1 to the financial statements, and this report does not affect our report on those financial statements dated November 30, 1994.

This report is intended for the information of the management of the Isotope Production and Distribution Program and the United States Department of Energy. This restriction is not intended to limit distribution of this report, which is a matter of public record.

*KPMG Peat Marwick LLP*

November 30, 1994

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Material Weaknesses**

**1. Improvement of Cost Accounting Procedures - Los Alamos National Laboratory (LANL), and Brookhaven National Laboratory (BNL)**

**Audit Comment**

DOE accounting policies require that the costs to produce radioisotopes be separately recorded and reported within the contractor's accounting records. For capitalizable radioisotopes, those with a half-life of more than one year, DOE orders further require that these costs be recorded in an inventory account on the statement of financial position. In our fiscal year 1993 report on the internal control structure, we reported that LANL's cost accounting system did not accumulate financial data needed to determine the cost of its radioisotope production. Although LANL agreed to develop procedures for determining and recording isotope production costs, it did not modify its labor reporting system to record production-related labor costs during fiscal year 1994. Therefore, information necessary for the accounting system to differentiate between production and non-production costs was still not available during fiscal year 1994. As a result, radioisotope inventories were understated by \$443,000 as of September 30, 1994, before audit adjustment.

In a similar manner, BNL classified all fiscal year 1994 program costs as radioisotope production costs, although a significant portion of these costs were non-production costs. This misclassification occurred because BNL did not require employees to charge time to production and non-production cost centers. As a result, cost of goods sold was overstated and non-production costs were understated by approximately \$200,000.

**Audit Recommendation**

IP&D management should require that LANL and BNL comply with DOE accounting policies by establishing cost accounting procedures to properly classify production and non-production costs in their accounting records.

**Management Response**

Concur. However, it should be noted that at the LANL site, modification of the laboratory's cost accounting system and the labor reporting system to accomplish the requirement was a significant endeavor because several alternatives had to be investigated during fiscal year 1994. The preferred alternative involved the use of the laboratory's cost code structure to provide details of direct production costs and indirect production costs, as well as inventoriable versus non-inventoriable production costs. LANL's isotope program has developed a time sheet that allows for labor to be tracked on an hourly basis. This system will provide the necessary detail to update the cost accounting system, and was implemented in October 1994. LANL is currently working to ensure that the isotope labor tracking system is properly integrated with the cost accounting system.

Regarding BNL, the IP&D Program will work with DOE Chicago Operations Office (CH), the Brookhaven Area Office (BK), and BNL to develop cost accounting procedures to properly classify production and non-production costs in their accounting records. As with LANL, this will be a significant endeavor.

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Material Weaknesses, Continued**

**2. Classification of Costs - Oak Ridge National Laboratory (ORNL) and EG&G Mound Applied Technologies (Mound)**

**Audit Comment**

DOE accounting policies require that inventory costs include costs directly related to the production of isotopes, plus an allocation of indirect costs. Costs of idle capacity and other non-productive costs should not be included as inventory costs. Although the Oak Ridge calutron facility did not produce any isotopes in fiscal year 1994, ORNL employees performing maintenance and other non-productive functions often charged their time to production cost centers. This resulted in an overstatement of ORNL's isotope inventory cost. Our fiscal year 1993 and 1992 reports on the internal control structure contained similar comments and, during fiscal year 1994, ORNL established two new cost centers to accumulate production and non-production costs. However, ORNL did not provide sufficient guidance to its employees to allow them to make determinations as to the appropriate hours to be charged to each cost center. As a result, ORNL overstated its inventory by \$453,000 at September 30, 1994, before audit adjustment.

A similar problem existed at Mound, where modifications to isotope production facilities and processes costing \$663,000 were classified as production rather than non-production costs in fiscal year 1994. This problem occurred because Mound also did not provide sufficient guidance to its employees as to the distinction between production and non-production labor. This resulted in an overstatement of isotope inventories by \$663,000, before audit adjustment.

**Audit Recommendation**

IP&D management should require ORNL and Mound to establish proper procedures and controls to ensure that production and non-production costs are properly classified.

**Management Response**

Concur. The Albuquerque Operations Office (AL) has directed Mound to ensure that proper costs are capitalized into production inventory. Mound has instructed all program personnel in the stable isotope production group to charge nonproduction costs to a separate charge number. Only legitimate production costs will be charged to production charge numbers. Mound is currently developing written procedures which will formalize this policy.

Regarding ORNL, policy guidance was issued correcting this problem on January 5, 1995.

**ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM**

**Reportable Conditions**

**3. Posting Cash Receipts - Los Alamos National Laboratory (LANL)**

**Audit Comment**

Timely posting of transactions to the accounting records is an important internal control. Currently, LANL receives IP&D cash receipts and deposits them to a LANL holding account which is not included on IP&D's books. On a periodic basis, LANL draws a check on the holding account payable to the U.S. Treasury, to remit all IP&D cash receipts received since the last Treasury remittance. After LANL receives confirmation of the deposit by Treasury, then LANL records an entry on IP&D's general ledger and accounts receivable customer records to reflect the cash received.

For example, LANL remitted a periodic payment to Treasury on August 8, 1994. On August 10, LANL received an IP&D customer payment of \$20,175 which was included in the next periodic payment to Treasury made on September 15, 1994. However, this receipt was not recorded on the IP&D books and accounts receivable records until September 26, 1994, approximately 7 weeks after being received from the customer. In addition, receipts of \$44,970 received after the September 15 payment to Treasury, were not recorded on the IP&D books and accounts receivable records until after year end. This resulted in accounts receivable at year end being overstated by \$44,970, before audit adjustment.

**Audit Recommendation**

IP&D management should require LANL to:

- (1) Record cash receipts in the customer accounts receivable records immediately upon receipt.
- (2) Reconcile variances between actual cash received by LANL and recorded by IP&D, to amounts sent by LANL to Treasury.

**Management Response**

Concur. AL has directed LANL to correct deficiencies noted above. LANL has implemented procedures to correct the delays in posting cash receipts.

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Reportable Conditions, Continued**

**4. Ensuring that Shipments are Billed - LANL**

**Audit Comment**

Comparison of isotope billings to shipping records is an important internal control. However, during the last several months of fiscal year 1994 there was no regular communication between LANL's isotope sales office, which arranges isotope shipments, and the accounting department, which prepares isotope sales invoices, to ensure that all shipments were billed.

**Audit Recommendation**

IP&D management should instruct:

- (a) LANL's isotope sales office to send a listing of isotope shipments to the accounting department each month, for comparison to billing records.
- (b) LANL's accounting department to send a listing of year-to-date billings to the isotope sales office each month, for comparison to shipping records.

**Management Response**

Concur. AL has directed LANL to implement procedures to ensure that shipments are billed in a timely manner. LANL's isotope sales office will send a list of isotope shipments to the accounting department on a monthly basis for comparison to billing records. LANL's accounting department will send a listing of year-to-date billings to the isotope sales office on a monthly basis for comparison to shipping records.



ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Reportable Conditions, Continued**

**5. Accounts Receivable Procedures - Oak Ridge National Laboratory (ORNL):**

**Audit Comment**

Accounts receivable should represent amounts believed to be due and collectible. The ORNL accounts receivable subsidiary ledger contains \$476,000 of accounts receivable which have been outstanding for one year or longer and are considered uncollectible. ORNL has requested DOE's permission to write off these balances; however, DOE has not given its approval, although the requests were submitted up to two years ago. This delay causes both accounts receivable and the related allowance for doubtful accounts, to be overstated in the financial statements.

In a related issue, ORNL continues to accrue interest on these accounts, as required by DOE policies. This resulted in accounts receivable being overstated by \$126,000 for cumulative interest charges at September 30, 1994, before audit adjustment.

**Audit Recommendation**

IP&D management should instruct the Oak Ridge Field Office to work with ORNL to establish procedures to write off uncollectible accounts in a timely manner. Management should also request that DOE policies be amended to require accrual of interest on collectible accounts only.

**Management Response**

Concur. While we will try to expedite the review of doubtful accounts to write off uncollectible amounts, we are currently following collection policies prescribed in DOE Orders. OR accrues interest in accordance with DOE policy. By January 31, 1995, IP&D and OR will request that the Headquarters Chief Financial Officer make a policy change on this issue.

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

Reportable Conditions, Continued

6. Calculation of Cost of Sales - ORNL

**Audit Comment**

ORNL's isotope accounting procedures require calculation of cost of sales by using the ratio of the market value of items sold to the market value of the total inventory pool. During fiscal year 1994, ORNL calculated cost of sales using the base price, which considers an enrichment level of 100 percent, instead of the actual billing, or catalog price, which considers an actual enrichment level that is usually less than 100 percent. This error did not result in a material misstatement of cost of goods sold in fiscal year 1994 because most of the material sold during the year was highly enriched. However, the error would have resulted in ORNL significantly overstating cost of goods sold had material with a low enrichment level been sold.

ORNL also incorrectly recorded cost of goods sold for material sold from the Research Materials Collection (RMC). The cost of goods sold for RMC items should be the actual production cost which is identified in the accounting records. Instead, ORNL used the sales pool method of computing cost of sales for RMC inventories, resulting in an overstatement of the cost of RMC sales by \$1.6 million, before audit adjustment.

**Audit Recommendation**

IP&D management should instruct ORNL to ensure that the method for computing cost for material in the sales pool uses catalog value in determining the ratio for computing cost of goods sold. IP&D management should also instruct ORNL to establish procedures to ensure that cost of goods sold for material sold from the RMC is recorded at its actual cost as contained in the accounting records.

**Management Response**

Concur. The contractor noted that the calculation error involving base price existed early in December 1994. ORNL took steps to eliminate the problem by changing the computer program. The December accounting data submitted to DOE reported costs of goods sold calculated correctly. ORNL also made the necessary adjustment to correct costs of goods sold retroactive to October 1, 1994. In addition, OR instructed ORNL to calculate cost of goods sold on material sold from the RMC pool at its book value on January 6, 1995.

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Reportable Conditions, Continued**

**Outstanding Comments from Previous Reports**

**7. Improvement of Billing Procedures - EG&G Mound Applied Technologies (Mound) and Brookhaven National Laboratory (BNL)**

**Audit Comment**

Federal regulations require timely billing and collection of amounts owed the government. Our report on the internal control structure for fiscal year 1993 stated that Mound had significant delays between the time isotope shipments were made and the time sales were recorded in the accounting records, primarily because the shipping department was not providing documentation to accounting in a timely manner. Although Mound agreed to implement procedures for correcting the delay, billings and collections for isotope sales still were not performed in a timely manner for most of fiscal year 1994. As of September 30, 1994, we noted that Mound did not record an isotope sale in the accounting records for material that was shipped on September 30, 1994. This resulted in an understatement of sales and accounts receivable by \$2,000.

The problem concerning delays in recording isotope sales also exists at BNL -- shipping information is not forwarded to the accounting department on a timely basis. Since BNL only issues invoices once each month, BNL does not bill for some sales for up to five weeks after shipment. This results in significant delays in recording sales and collecting accounts receivable.

**Audit Recommendation**

IP&D management should require Mound and BNL to establish controls and procedures to ensure that isotope sales are recorded in the accounting records in a timely manner.

**Management Response**

Concur. AL has directed Mound to correct the deficiencies noted in the billing procedures. Mound held discussions with the appropriate personnel in the Traffic Department to emphasize the importance of providing timely shipping information to the Accounting Department. In addition, the Accounting Department will monitor the timeliness of the shipping information and notify both Traffic and the Isotope Sales Department of any problems.

IP&D will work with CH, BK, and BNL to develop controls and procedures to ensure that Isotope sales are recorded in the accounting records in a timely manner.

ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM

**Reportable Conditions, Continued**

**8. Reconciling Inventory Records With Accounting Records - ORNL**

**Audit Comment**

In our fiscal year 1993 and 1992 reports on the internal control structure, we commented that ORNL was not reconciling physical inventory quantities for radioisotopes to general ledger control accounts. ORNL agreed to perform the reconciliations on a quarterly basis. However, ORNL did not reconcile physical quantities to the general ledger at September 30, 1994, resulting in an understatement of inventories by \$329,000, before audit adjustment.

**Audit Recommendation**

IP&D management should establish procedures to assure that ORNL periodically reconciles IP&D radioisotope inventory quantities to the accounting records and adjusts for any differences.

**Management Response**

Concur. Upon completion of the first reconciliation in fiscal year 1994, ORNL committed to provide quarterly reports on the status of reconciliations. However, ORNL failed to do so. ORNL has committed to resolve this problem immediately. OR Financial Management Division (FMD) will direct ORNL to complete these reconciliations and advise the operations office of their progress. Further FMD will schedule quarterly meetings to assess the status of reconciliations and other accounting issues. The first such meeting will be scheduled on or about February 1, 1995.