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Radioisotope Distribution Program Progress Report for March 1977

E. Lamb

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OPERATIONS DIVISION

RADIOISOTOPE DISTRIBUTION PROGRAM
PROGRESS REPORT FOR MARCH 1977

E. Lamb

Work Sponsored by
ERDA Division of Biomedical and
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RADIOISOTOPE DISTRIBUTION PROGRAM
PROGRESS REPORT FOR MARCH 1977

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SUMMARY

Information is reported on new production,
inventory status, operational problems,
and radioisotope sales.

RADIOISOTOPE PRODUCTION AND MATERIALS DEVELOPMENT

REACTOR-PRODUCED RADIOISOTOPES

Reactor Products Pilot Production (*R. W. Schaich*)
(Production and Inventory Accounts)

<u>Processed Units</u>	
<u>Radioisotope</u>	<u>Amount (mCi)</u>
Calcium-47	19

ACCELERATOR-PRODUCED ISOTOPES

Cyclotron Products Pilot Production (*M. R. Skidmore*)
(Production and Inventory Accounts)

The ORNL 86-Inch Cyclotron was shut down during the entire month of March 1977 for repairs and maintenance.

FISSION PRODUCTS

Krypton-85 Enrichment Facility (*R. W. Schaich*)

The ^{85}Kr enrichment columns were inoperative during the month of March. A maintenance program was initiated in January to upgrade the operational safety of the system and maintenance will be completed in April on all of the columns. Preliminary analysis on the sections unloaded in February showed 225 Ci of ^{85}Kr enriched to 14.96%.

Cesium-137 Pilot Production (*R. W. Schaich*)
(Production and Inventory Accounts)

1. Process Status

Process equipment is in standby status.

2. Operational Summary

Product Inventory

(Decay calculated through August 31, 1976)

<u>Inventory Material</u>	<u>Amount (Ci)</u>
Cesium-137 chloride powder	35,450
<u>Total Inventory Material</u>	<u>35,450</u>
<u>Non-Inventory Material</u>	<u>Amount (Ci)</u>
Special Form cans	4,500
Material returned or stored for customer	
J. L. Shepherd	4,000
New England Nuclear Corporation	3,200
Puerto Rico sources	8,100
Lockheed	20,100
AECL powder	54,000
Radiation Resources	19,700
Minn. Mining & Mfg. Company	6,600
Gamma Industries	<u>8,600</u>
<u>Total Non-Inventory Material</u>	<u>128,800</u>
TOTAL INVENTORY AND NON-INVENTORY MATERIAL	164,250

Fabrication Summary

	<u>Mar. 1977</u>		<u>CY 1977</u>		<u>FY 1977</u>	
	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>
Sources						
Fabricated	0	0	5	15,846	22	16,146
Shipped	2	14,627	7	30,475	66	45,413
Special Form Cans						
Fabricated	0	0	0	0	0	0
Shipped	1	100	4	2,100	4	2,100

3. Current Orders

All orders on hand have been completed and the material placed into storage awaiting receipt of release for the material.

Strontium-90 Pilot Production (R. W. Schaich)
(Production and Inventory Accounts)

1. Process Status

The ^{90}Sr vacuum hot press is being replaced to fabricate three sources for Sentinel-25 generators for Teledyne Energy Systems in July, 1977.

Product Inventory

(Decay calculated through August 31, 1976)

<u>Inventory Material</u>	<u>Amount (Ci)</u>
^{90}Sr titanate powder ($\pm 5\%$)	77,000
Sources in fabrication	0
RCA source	57,300
^{90}Sr silicate powder (est.)	28,000
Stock powder cans	<u>3,780</u>
<u>Total Inventory Material</u>	<u>166,080</u>
<u>Non-Inventory Material</u>	<u>Amount (Ci)</u>
Calorimeter Standards	4,900
FPDL recovery material	19,700
Quehanna recovery material	44,000
Weather Bureau source	11,700
SNAP-7B	160,200
SNAP-7C	25,200
SNAP-7D	146,600
SNAP material purchase ^a	<u>254,500</u>
<u>Total Non-Inventory Material</u>	<u>666,800</u>
<u>TOTAL INVENTORY AND NON-INVENTORY MATERIAL</u>	<u>832,880</u>

^aStrontium-90 purchased under DRRD program.

Fabrication Summary

	<u>Mar. 1977</u>		<u>CY 1977</u>		<u>FY 1977</u>	
	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>
Sources						
Fabricated	0	0	0	0	0	0
Shipped	0	0	1	20,000	1	20,000
Special Form Cans						
Fabricated	0	0	0	0	0	0
Shipped	0	0	1	10	1	10

Short-Lived Fission Production (*R. W. Schaich*)
(Production and Inventory Accounts)

<u>Isotope</u>	<u>Number of Batches</u>	<u>Amount (Ci)</u>
Xenon-133	2	1760
Iodine-131	1	50

RADIOISOTOPE SALES

J. E. Ratledge

Shipments made during the month that may be of interest are listed below:

<u>Customer</u>	<u>Isotope</u>	<u>Amount</u>
<u>Large Quantities</u>		
New England Nuclear Corporation	Tritium	12,000 Ci
Self-Powered Lighting	Tritium	2,000 Ci
Schwarz/Mann	Tritium	1,000 Ci
Saunders-Roe Development, Ltd., England	Tritium	5,000 Ci
ICN Pharmaceuticals	Tritium	1,000 Ci

Withdrawn Items

Cleveland Metropolitan General Hospital	Iodine-131	50 mCi
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Items Used in Cooperative Programs

University of Southern California	Platinum-195m	30 mCi
Wadley Institute of Molecular Medicine	Platinum-195	5 mCi
Mary Hitchcock Memorial Hospital	Platinum-195	~20 mCi

The radioisotope sales and shipments for October 1975 through March 1976 and the first six months of fiscal year 1977 are given in Table 2.

Table 2. Radioisotope Sales and Shipments

<u>Item</u>	<u>10-1-75 thru 3-31-76</u>	<u>10-1-76 thru 3-31-77</u>
Inventory items	\$ 143,776	\$ 187,402
Major products	26,792	57,602
Radioisotope services	39,743	131,251
Cyclotron irradiations	101,704	170,551
Miscellaneous processed materials	27,560	35,492
Packing and Shipping	56,035	99,419
Total	\$ 395,610	\$ 681,717
Number of shipments	1,090	1,255

PUBLICATIONS

REPORTS

E. Lamb, *Radioisotope Distribution Program Progress Report for February 1977*, ORNL/TM-5867, Oak Ridge National Laboratory (March 1977).



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