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# Radioisotope Distribution Program Progress Report for July 1975

E. Lamb



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Contract No. W-7405-eng-26

OPERATIONS DIVISION

RADIOISOTOPE DISTRIBUTION PROGRAM  
PROGRESS REPORT FOR JULY 1975

E. Lamb

Work Sponsored by  
ERDA Division of Biomedical and  
Environmental Research

OCTOBER 1975

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CONTENTS

	<u>Page</u>
RADIOISOTOPE PRODUCTION AND MATERIALS DEVELOPMENT. . . . .	1
REACTOR-PRODUCED RADIOISOTOPES . . . . .	1
Reactor Products Pilot Production. . . . .	1
ACCELERATOR-PRODUCED ISOTOPES. . . . .	1
Cyclotron Products Pilot Production. . . . .	1
FISSION PRODUCTS . . . . .	2
Krypton-85 Enrichment. . . . .	2
Cesium-137 Pilot Production. . . . .	2
Strontium-90 Pilot Production. . . . .	3
Short-Lived Fission Production . . . . .	4
RADIOISOTOPE SALES . . . . .	4
PUBLICATIONS . . . . .	5
REPORTS. . . . .	5

RADIOISOTOPE DISTRIBUTION PROGRAM  
PROGRESS REPORT FOR JULY 1975

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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	10

ACCELERATOR-PRODUCED ISOTOPES

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

July 1975 ORNL 86-Inch Cyclotron runs for ORNL and non-ORNL programs are given in Table 1.

Table 1. Cyclotron Irradiations and Runs for July 1975

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Target</u>	<u>Total Time (hr:min)</u>	<u>Total Charges</u>
<u>ORNL Programs</u>					
6-30-75	ORAU	Carbon-11	Boron Oxide	3:30	\$ 340
7-17-75	ORAU	Carbon-11	Boron Oxide	3:00	292
7-17-75	ORAU	Carbon-11	Boron Oxide	3:00	289
7-22-75	ORAU	Carbon-11	Boron Oxide	3:00	288
7-24-75	M. W. Poore, Y-12	Cobalt-56	Iron	6:15	827
7-29-75	ORAU	Carbon-11	Boron Oxide	5:00	482
7-30-75	ORAU	Carbon-11	Boron Oxide	3:00	288
				26:45	\$ 2,806
<u>Non-ORNL Programs</u>					
7-3-75	Union Carbide, Tuxedo	Technetium-95m	Molybdenum	3:15	\$ 525
<u>Isotopes Sales Inventory</u>					
7-10-75	Isotopes Sales Dept.	Cobalt-57	Nickel	51:15	\$ 7,412

## FISSION PRODUCTS

Krypton-85 Enrichment Facility (*L. N. Case*)

The Krypton-85 Enrichment Facility functioned normally through the report period. An automatic pumping system was installed to periodically remove condensate from the cell floors to prevent activating the cooling water alarm system. Two samples for mass analysis have been taken from the enriched section of the column since startup. The krypton-85 enrichment of the last sample on July 10, 1975 was 5.25% as compared with feed of 4.34%. The 90-day cycle, at which time approximately 12% krypton-85 will be available, will be completed September 12, 1975.

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

## 1. Process Status

The  $^{137}\text{Cs}$  process equipment is in standby condition.

## 2. Operational Summary

Product Inventory

(Decay calculated through April 30, 1975)

<u>Inventory Material</u>	<u>Amount (Ci)</u>
Cesium-137 chloride powder	0
Special form cans	<u>5,070</u>
<u>Total Inventory Material</u>	<u>5,070</u>
<u>Non-Inventory Material</u>	
Material returned or stored for customer	
Puerto Rico sources	8,400
Lockheed	27,600
AECL powder	92,000
Radiation Resources	35,900
Minn. Mining & Mfg. Company	13,700
Gamma Industries	8,800
J. L. Shepherd	<u>19,800</u>
<u>Total Non-Inventory Material</u>	<u>206,200</u>
TOTAL INVENTORY AND NON-INVENTORY MATERIAL	211,270

Fabrication Summary

	<u>July 1975</u>		<u>CY 1975</u>		<u>FY 1976</u>	
	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>	<u>No.</u>	<u>Ci</u>
Sources						
Fabricated	0	0	29	8,374	0	0
Shipped	0	0	29	8,374	0	0
Special Form Cans						
Fabricated	0	0	0	0	0	0
Shipped	0	0	5	2,081	0	0

## 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. Schleich*)  
(Production and Inventory Accounts)

## 1. Process Status

The <sup>90</sup>Sr process and manipulator cells are being decontaminated under the DWMT Decommission Program. The <sup>90</sup>Sr powder was removed from the FPDL, encapsulated, and stored for future orders.

Product Inventory

(Decay calculated through April 30, 1975)

<u>Inventory Material</u>	<u>Amount (Ci)</u>
<sup>90</sup> Sr titanate powder (±5%)	491,800
Sources in fabrication	0
RCA source	59,200
<sup>90</sup> Sr silicate powder	28,900
Stock powder cans	<u>4,680</u>
<u>Total Inventory Material</u>	<u>584,580</u>
<u>Non-Inventory Material</u>	<u>Amount (Ci)</u>
FPDL recovery material	18,700
Quehanna recovery material	45,500
Weather Bureau source	12,100
SNAP-7B	165,600
SNAP-7C	26,000
SNAP-7D	151,500
SNAP material purchase <sup>a</sup>	<u>263,000</u>
<u>Total Non-Inventory Material</u>	<u>682,400</u>
<u>TOTAL INVENTORY AND NON-INVENTORY MATERIAL</u>	<u>1,266,980</u>

<sup>a</sup>Strontium-90 purchased under DRRD program.

Fabrication Summary

	<u>July 1975</u>		<u>CY 1975</u>		<u>FY 1976</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	0	0	0	0
Special Form Cans						
Fabricated	0	0	0	0	0	0
Shipped	0	0	2	20	0	0

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

<u>Isotope</u>	<u>Number of Batches</u>	<u>Amount (Ci)</u>
Xenon-133	2	700
Iodine-131	1	50
Niobium-95	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	6,000 Ci
Self-Powered Lighting Limited	Tritium	2,000 Ci
<u>Withdrawn Items</u>		
Cleveland Metropolitan General Hospital	Iodine-131	150 mCi
<u>Items Used in Cooperative Programs</u>		
ORAU	Erbium-171	199 mCi

The radioisotope sales and shipments for the first month of FY 1975 and FY 1976 are given in Table 2.

Table 2. Radioisotope Sales and Shipments

Item	7-1-74 thru 7-31-74	7-1-75 thru 7-31-75
Inventory items	\$ 28,911	\$ 13,469
Major products	3,280	5,080
Radioisotope services	1,900	1,850
Cyclotron irradiations	10,767	11,939
Miscellaneous processed materials	9,828	6,326
Packing and Shipping	<u>6,715</u>	<u>6,638</u>
Total	\$ 61,401	\$ 45,302
Number of shipments	136	144

## PUBLICATIONS

## REPORTS

E. Lamb, *Radioisotope Distribution Program Progress Report for June 1975*, ORNL-TM-5031, Oak Ridge National Laboratory (July 1975).



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