

MA.10-3  
MA.10

No # at information  
Municipal Library would not help over phone  
says No Help

MEMORANDUM

TO: FILE

9 AREA CODE  
No National Research Directory

DATE 7/29/87

FROM: M.LAU

555 - 1212 (617) 498-9080

SUBJECT: ~~Collect More Data Recommendation~~  
No Authority Determination Recommended

SITE NAME: National Research Corporation

ALTERNATE NAME:

CITY: 70 Memorial Drive, Cambridge STATE: MA

OWNER(S)

Past: \_\_\_\_\_ Current: \_\_\_\_\_  
Owner contacted  yes  no; if yes, date contacted \_\_\_\_\_

TYPE OF OPERATION

- Research & Development
- Facility Type
- Production scale testing
- Manufacturing
- Pilot Scale
- University
- Bench Scale Process
- Research Organization
- Theoretical Studies
- Government Sponsored Facility
- Sample & Analysis
- Other \_\_\_\_\_
- Production
- Disposal/Storage

TYPE OF CONTRACT

- Prime
- Subcontractor to Mallinckrodt
- Purchase Order
- Other information (i.e., cost + fixed fee, unit price, time & material, etc) \_\_\_\_\_  
AT(30-1)-1270 - cost + fixed fee

Contract/Purchase Order # AT(30-1)-1270 W-7405 - eng - 293 (C.P.O.)

CONTRACTING PERIOD: { October 1951 - October 1952  
July 1948 - April 1949  
1944

OWNERSHIP:

	AEC/MED OWNED	AEC/MED LEASED	GOVT OWNED	GOVT LEASED	CONTRACTOR OWNED	CONTRACTOR LEASED
LANDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUILDINGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ORE OR RAW MATL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FINAL PRODUCT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WASTE & RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The uranium for the Mallinckrodt contract was supplied via Mallinckrodt.  
The AEC procured or assisted in procurement of thorium for contract: AT(30-1)-1270.

AEC/MED INVOLVEMENT AT SITE

Control

- AEC/MED managed operations
- AEC/MED responsible for accountability
- AEC/MED overviewed operations
- Contractor had total control
- unknown

Health Physics Protection - Unknown

- Little or None
- AEC/MED responsibility
- Contractor responsibility

MATERIALS HANDLED:

Type (on basis of records reviewed)

- No Radioactive
- Natural Radioactive from Feed Materials Production
  - Ore
  - Refined Source Material *Uranium, Thorium*
  - Residue
- Natural Radioactive Material from Non-Nuclear Activities
- Man-Made
- Other *Also, zirconium, beryllium.*

Comment \_\_\_\_\_

Quantities (on the basis of records reviewed)

- None
- Production Quantities
- Small Amounts

Comment *Approximately 500 lbs of uranium (X-metal), An 11% loss equaling 69 kg of thorium was described (MA, 10 11/24/52). This calculates to 1380 lbs of thorium. Records at the end of 1948 (3.3 12/31/48) show 3,674 lbs of uranium at National Research,*

OTHER PERTINENT FACTS:

- Facility was Licensed *No licensing data have yet been found*
  - During AEC/MED-Related Operations
  - For Similar Activities
  - For Other Activities

Comment \_\_\_\_\_

Commercial Production Involving Radioactive Material during AEC/MED Operations

Facility was Decontaminated and Released

Availability of Close Out Records

- None
- Some
- Sufficient

Radioactive Status:

	YES	MAYBE	PROBABLY NOT	NOT
Contaminated Potential for Exposure (accessible)	---	X	---	---
	---	X	---	---

QUANTITY OF RECORDS AVAILABLE:

Very Little                       Some                       Sufficient

PROBABILITY OF FINDING ADDITIONAL RECORDS:

Low                       Possible                       High

RECOMMENDATIONS:

Eliminate  
 Consider for Remedial Action  
 Collect More Data

Comment National Research's use for 3,674 lbs of uranium is not yet known.

REFERENCES: SEE Attached Data Base Listing

3.3 12/31/48 Pipeline Inventory Detail of Research Inventory.

SUMMARY

National Research had MED experience in working with vacuum centrifugal castings, in developing jets and baffles for diffusion pumps, and in developing cold trap systems. National Research's work with vacuum centrifugal castings (contract W-7405-eng 293) involved casting tuballoy (uranium metal) using the "lost wax" technique (SEE 3.1CHO 12/31/44) (SEE MA.10 4/17/44). However, the exact quantities used are unknown.

In 1948 National Research did work for Mallinckrodt involving the vacuum melting of approximately 500 lbs of X-metal (uranium). National Research was thus made an SF accountability station (SEE MA.10 8/12/48). A year end research inventory shows 3,674 lbs of uranium metal at National Research. National Research's exact involvement with this metal is not yet known. Furthermore, an AEC memorandum indicates the shipment of scrap equipment to Lake Ontario (SEE MA.10 4/12/49). Nevertheless, the exact nature of this scrap is not explained.

National Research was awarded contract AT(30-1)-1270 in October 1951 to design a vacuum furnace for more efficient melting of thorium-zinc biscuits. Modifications to an existing National Research furnace were made, and the AEC provided the thorium-zinc biscuits. However, the contract was canceled due to cost overruns. Additionally, National Research could not account for 69 kg of thorium metal (> 11% loss) (SEE MA.10 11/24/52).

The amounts of uranium used under contract W-7405-eng 293 are unknown, the exact use of 3674 lbs of uranium at the end of 1948 is unknown, and the extent of contamination from the thorium loss is unknown. Therefore, it is recommended that more data be collected on this site. GLO

NATIONAL RESEARCH

HISTORICAL LISTING

FILE	RECE	BOX	DATE	FROM	TO	SUBJECT
MA.10	1317	136/13	12/09/46	FIELDS, K.COE	AREA ENGINEER	LEAK DETECTOR FOR THE NATIONAL RESEARCH CORPORATION
3.1NYOD	1330	20	10/10/51	BROWN, S.	MOORE, D.	WEEKLY REPORT FOR WEEK ENDING 10/10/51 - GREEN SALT RUN AT FMPC, NATIONAL RESEARCH CORP CONTRACT
MA.10	1336		09/15/50	STAUFFER, R.NRC	SMITH, R.	TRANSMITTAL OF REPORT ON HIGH PURITY ZIRCONIUM
3.9	1364	16/31	08/09/45	LIST		NOTIFICATION OF MODIFICATION TO CONTRACTS AND SUBCONTRACTS
MA.10	1367	16/7	04/17/44	McKINLEY, J.COE	WENSEL, H.	NATIONAL RESEARCH CORP WORK AT MIT FOR PROJECT Y
MA.10	1478	CONTRAC	10/08/51	CONTRACT		CONTRACT - NATIONAL RESEARCH CORPORATION
CA.12	1626		10/25/60	POLSON, C.	CUTHBERT, F.	LETTER OF JUSTIFICATION FOR ELECTRON BEAM MELTING TO BE DONE AT STAUFFER
CA.12	1651		01/19/60	EISENBERRY, H./STECK, R.	DAVIS, H.	ELECTRON BEAM MELTING
3.4	1667	22/12	08/20/45	McKEE, J.	AREA ENGINEER	STATUS OF CONTRACT PAYMENTS (11 AUGUST 1945)
3.10ND	2169	MUC	07/13/49	ERANT, P.ML	DISTRIBUTION	ZIRCONIUM DEVELOPMENT AND PROCUREMENT PROGRAM

NATIONAL RESEARCH

HISTORICAL LISTING

FILE	RECE	BOX	DATE	FROM	TO	SUBJECT
3.1CHD	2202	44/16	10/31/44	INDEX OF REPORTS		INDEX TO METALLURGY REPORTS FROM LABORATORIES OUTSIDE CHICAGO - APRIL 1941 TO OCTOBER 1944
3.1CHD	2205	45/15	12/31/44	ABSTRACTS OF REPORTS		ABSTRACTS OF MISCELLANEOUS REPORTS - APRIL 1941 TO DECEMBER 1944
3.1CHD	2268	7/17	05/18/56	JOHNSON, R. CHO	HILBERRY, N.	PRODUCTION OF ZIRCONIUM
MA.14	2629	FDIA	04/12/49	MORGAN, J. NYDO	EPP, F.	SCRAP FROM NATIONAL RESEARCH
MA.10	2940	71/35	10/04/51	STAUFFER, R. NATIONAL	BROWN, S.	REQUEST FOR SCHEDULE CHANGE ON THEIR RESEARCH-DEVELOPMENT CONTRACT
3.1NYDO	2996	49/16	10/10/52	GUSTAVSON, S.	MOORE, J.	SF ACCOUNTABILITY SURVEY
MA.10	3182	100/42	07/23/48	STAUFFER, R.	HARRINGTON, C.	PROPOSAL TO MCW BY NATIONAL RESEARCH CORPORATION FOR PREPARING 12 INGOTS OF X-METAL TO BE USED IN STUDY OF CASTING TECHNIQUES.
MA.10	3252	108/16	08/12/48	REICHARD, H.	GUSTAVSON, S.	SF ACCOUNTABILITY INSTRUCTIONS - NATIONAL RESEARCH CORPORATION
3.1NYDO	3580	17	11/14/51	KELLEY, W. NYDO	COOK, R.	STATUS OF THORIUM SEMI-WORKS PLANT PROJECT