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MEMORANDUM

TO: FILE

DATE 10/26/87

FROM: C. Young

SUBJECT: ELIMINATION RECOMMENDATION

SITE NAME: Norton Company  
Refractories Division  
CITY: Worcester, MA

ALTERNATE NAME:

STATE: MA

OWNER(S)  
Past: Norton Company Current: UNKNOWN  
Owner contacted  yes  no; if yes, date contacted

TYPE OF OPERATION

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

TYPE OF CONTRACT

- Prime
- Subcontractor
- Purchase Order
- Other information (i.e., cost + fixed fee, unit price, time & material, etc)

W-7405 Aug-292  
AT(30-1)-1317  
AT(30-1)-1564  
AT(30-1)-2174

Contract/Purchase Order # AT(30-1)-864

CONTRACTING PERIOD: 1943 - 1954 and probably through licensed period 1955-1957

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 checked="" type="checkbox"/>	<input type="checkbox"/>
BUILDINGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ORE OR RAW MATL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FINAL PRODUCT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
WASTE & RESIDUE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Uranium Dioxide for uranium refractories through 1954 was furnished by the AEC. Records indicate Norton worked with Thoma materials prior to work performed for AEC. Other materials - magnesite, boron, kyanite - were furnished to a large degree by the contractor, Norton.

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

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

*AEC provided assistance and instruments.*

MATERIALS HANDLED:

Type (on basis of records reviewed)

- No Radioactive
- Natural Radioactive from Feed Materials Production
  - Ore
  - Refined Source Material
  - Residue
- Natural Radioactive Material from Non-Nuclear Activities
- Man-Made
- Other *Boron, Benzilium, Magnesium, Dolomite*

Comment *Most of the refractory work, if not all, was done at the Norton facility in Chippewa Falls ~~Wisconsin~~ plant, Niagara Valley Canal.*

Quantities (on the basis of records reviewed)

- None
- Production Quantities
- Small Amounts *of radioactive materials.*

Comment *Handled at the Worcester facility*

OTHER PERTINENT FACTS:

- Facility was Licensed (*Worcester facility*)

- During AEC/MED-Related Operations
- For Similar Activities
- For Other Activities

Comment *License issued Dec 12, 1955 authorizing possession and title to 300 pounds of refined source material for use in the development of processes for manufacture of ceramic or powder metallurgy thermal elements.*

- Commercial Production Involving Radioactive Material Operations

- Facility was Decontaminated and Released

- Availability of Close Out Records

- None
- Some
- Sufficient

- Radioactive Status:

YES      MAYBE      PROBABLY      NOT

NOT

Contaminated	---	---	X	(Worcester)
Potential for Exposure (accessible)	---	---	X	---

1430

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 Based on limited quantity of radioactive material handled or processed 1943-1954. Facility was also licensed.

REFERENCES: See attached bibliography.

Norton had facilities at Worcester, MA; Niagara, Canada (Chippewa Falls <sup>PEABODY</sup> ~~PEABODY~~). Most refractory operations involving UO<sub>2</sub> were done at Chippewa Falls. <sup>Norton</sup> Work with Thorium was done at Worcester facility.

SUMMARY

Norton did a large volume of business with the AEC involving the manufacture of refractory products from boron, beryllium, uranium and thorium. Most of the large scale operations were done at their plant in Canada because the facilities to perform the work were at that location. AEC exercised no control over actual operations at Norton facilities. Very little information is available to describe in detail the operation at the Norton facilities. Potential for residual contamination (radioactive) is considered low. Any contamination found would probably be undetectable. AEC sponsored operations versus commercial operations. Furthermore, the site was licensed, thus, authority to conduct remedial action, if required, would be difficult to establish.

NORTON COMPANY

DATE	FILE#	FROM	TO	SUBJECT	SITES
6-07/07/54	MA.12	B. SCHWARTZ	W. HENSON	PURCHASE REQUISITION FOR THORIUM RODS	NORTON
04/29/54	MA.12	W. HENSON	D. MASKET	PRICE QUOTES FOR NORTON OXIDES AND COMMISSION OXIDE	NORTON
10/19/54	MA.12	V. DEL VECCHIA	J. MORGAN	COST ANALYSIS OF NORTON CO. APRIL - JULY 1953 -- WORK WITH PRODUCTION OF DOLOMITE	NORTON
11/24/54	MA.12	F. CALLAGHAN	F. TRENT	NORTON CONTRACT AT(40-1)-2174 SECURITY INFORMATION PROPERT DISPOSITION OF CLASSIFIED DOCUMENTS AND DECLASSIFICATION OF DOCUMENTS ON PROCUREMENT OF MAGNESIUM ORE	NORTON
<del>07/30/53</del>	<del>MA.62</del>	<del>SCHUMAR, J.</del>	<del>HENSON, W.</del>	<del>URANIUM DIOXIDE REFRACTORY SPECIFICATIONS</del>	<del>NORTON</del> <i>duplicate record</i>
03/22/44	MA.6	KILPATRICK, M.	FILE	VISIT TO THE NORTON CO. ON 3/22/44 TO DISCUSS PRODUCTS 666 AND 89	NORTON, NIAGARA SMELTING
03/24/44	NY.52	KILPATRICK, M.	FILE	INSPECTION TRIP TO NIAGARA SMELTING CO. ON 3/22/44 TO DISCUSS PRODUCTION OF PRODUCT 666	NIAGARA SMELTING CO., NORTON <i>Not found</i>
07/28/47	3.1NY00	BELMERE, F.	CONSIGLIO, J.	SF SHIPPING FORMS (LIST OF INSTALLATIONS UNDER JURISDICTION OF NY00)	A.C. SPARK-PLUS, MCM, HARSHAW, MIT, METAL HYDRIDES, VITRO, NBS, NORTON, duPONT
07/07/44	MA.12	ZEITLIN, F.		PROCUREMENT OF PRODUCT 89 - NORTON CO.	NORTON COMPANY, STAUFFER CHEMICAL CO.
06/24/46	3.9	QUIDOR, J.	DISTRICT ENGINEER	TRANSMITTAL OF CONTRACTUAL DOCUMENTS (LIST OF CONTRACT NUMBERS)	MULTIPLE, LEDOUX, AMERICAN CYANAMID, NATIONAL SMELTING, KINETICS, PREGEL, BRUSH BERYLLIUM, CALLITE TUNGSTEN, CARBOLLOY, ELECTROMET, MCM, METALS RESERVE, VANADIUM, NORTON, VASCOLOY-RAMET, WESTINGHOUSE

NORTON COMPANY

DATE	FILE#	FROM	TO	SUBJECT	SITES
12/12/55	MA.12	JOHNSON, L.	MABSTER, B.	SOURCE MATERIAL LICENSE FOR NORTON	NORTON
01/05/43	MI.7	HAGEL, T.	COOK, G.	CONTRACT WITH THE A.C. SPARK PLUG CO. OF FLINT, MI	A.C. SPARK PLUG CO., LINDSAY LIGHT, NORTON
09/30/43	MA.12	BROXON, J.	NORTON CO.	800 GRAIN SIZE B4C	NORTON CO.
09/20/46	OH.1	BOYD, C.	NELSON, H.	TRANSMITTAL OF THERMAL CONDUCTIVITY RODS MADE BY THE NORTON CO.	BATTELLE, NORTON
10/01/46	MA.12	FURNEY, L.	McKINLEY, J.	BACKGROUND ON THE NORTON COMPANY	NORTON COMPANY, CHIPPEWA FALLS, CANADA
10/04/46	MA.12	LOMBARD, R.	MUTCHINSON, C.	SHIPMENT OF HYDROGEN-FIRED BERYLLIA TUBES REPRESENTING THREE DIFFERENT COMPOSITIONS	NORTON-MASSACHUSETTS
03/12/47	MA.12	FURNEY, L.	FRYE, A.	SHIPMENTS TO NORTON COMPANY	NORTON COMPANY
03/24/47	MA.12	BRODY, J.	HAZEL, W.	ANALYSIS OF BeO SAMPLES	NORTON CO., NIAGARA FALLS, ONTARIO
07/30/53	MA.12	SCHUMAR, J.	HENSON, W.	URANIUM DIOXIDE REFRACTORY SPECIFICATIONS	NORTON
<sup>1 19</sup> <del>03/25/49</del> <sup>MA.12</sup> <del>NY-27</del>		MORGAN, J.	EPP, F.	FUSED URANIUM OXIDE MUC-350	NORTON
02/26/52	IA.1	JUKE, F.	GREENHALPH, R.	REQUEST FOR THORIUM MATERIALS	AMES, NORTON
05/31/52	3.1FMD	AEC PRODUCTION DIV	SLESSER, DR.	MONTHLY REPORT - PRODUCTION DIVISION MAY 31, 1952	MCW, NORTON, HARSHAM, VITRO, BATTELLE, NATIONAL RES. CORP

NORTON COMPANY

DATE	FILED	FROM	TO	SUBJECT	SITES
12/31/46	REPORT			SCHEDULE OF PROCUREMENT OF THORIUM BY MED AS OF 12/31/46	LINDSAY LIGHT, MACKAY, MAYWOOD, CITY CHEMICAL, GENERAL CHEMICAL, WESTINGHOUSE, NORTON, A.C. SPARK PLUB
03/20/50	MA.12	TREMEL,	ROBOFF, S.	ANL METALLURGY DIVISION REQUIREMENTS FOR SPECIAL MATERIAL FOR NORTON CO. - SMD83-8	ANL, NORTON
11/17/53	MA.12	RUDDLPH, D.	BATE, B.	FABRICATION OF URANIA CRUCIBLES BY NORTON COMPANY FOR ARGONNE	NORTON
02/04/54	MA.12	HENSON, W.	SCHWARTZ, B.	NBS AND ORNL REQUIREMENTS FOR 100 LBS OF FUSED MATERIAL AND 200 LBS OF UNFUSED URANIUM DIOXIDE	NORTON, NBS, ORNL
02/17/54	MA.12	HENSON, W.	OPINSKY, A.	SYLVANIA'S INTEREST IN URANIA REFRACTORIES (MENTIONS THAT NORTON DID NOT HAVE A LICENSE AT THAT TIME)	NORTON, SYLVANIA-BAYSIDE
03/02/54	MA.12	HENSON, W.	HURST, W.	REQUEST FOR URANIUM OXIDE CRUCIBLES BY WESTINGHOUSE	WESTINGHOUSE-PITTSBURGH, NORTON
04/07/54	MA.12	HARRIS, W.	BENEDICT, K.	HEALTH FACILITIES FOR CERAMIC OPERATIONS (INVOLVING BERYLLIA)	NORTON
06/04/54	MA.12	BRAIDEN, B.	VESPE, V.	SF MATERIAL LOCATED AT THE NORTON COMPANY	NORTON
09/11/47	MA.12	BALLARD, A.	BRACCO	INVENTORY OF BERYLLIA AND TUBALLOY (AT NORTON CO. CHIPPAWA PLANT)	CANADA, NORTON
10/16/47	MA.12	BELMORE, F.	MILLIGAN, L.	SHIPMENT OF SURVEY METERS	NORTON
08/22/47	MA.12	MILLIGAN, L.	BELMORE, F.	HEALTH CAUTION NOTICES FOR NORTON CUSTOMERS RECEIVING BERYLLIA AND THORIA	NORTON