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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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to
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New sites
licensing
NRC

JAN 22 1982

Filed 11/27/01

Department of Energy
ATTN: Dr. William E. Mott, Director
Environmental and Safety
Engineering Division (EP-32)
Washington, D.C. 20545

Dear Dr. Mott:

Enclosed is the list of contaminated or potentially contaminated sites that I promised to send you during our recent meeting. The sites have been broken down into the following four categories:

1. Sites with known contamination that have never been licensed.
2. Formerly licensed sites with known contamination.
3. Currently licensed sites that are being decontaminated prior to decommissioning.
4. A list of formerly licensed sites that need to be visited to determine if they have been properly decontaminated prior to decommissioning.

If there are any questions, please call me at 427-4309.

Sincerely,

R. G. Page, Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS

Enclosures: As stated

Sites With Known Contamination
That Have Never Been Licensed

1. Name

Location

McGean Dump

Newburg Heights, Ohio

2. License Status -

No NRC/AEC license was involved.

3. Contamination, Demography and Size of Problem -

The contamination resulted from the decontamination of the property which was formerly owned by Chemetron, a source material licensee, by the purchaser McGean Chemical Company. The contamination is depleted uranium oxide (U_3O_8) on building rubble and the estimated volume is less than 20 yards. The quantity of source material is unknown. The McGean dump is located in an industrial area inter mixed with residences in a suburb of Cleveland.

4. Remarks -

It is anticipated that this problem will be resolved by the staff position paper on disposal of uranium residues either by burial at the dump or by removal to the Chemetron property and burial.

1. Name

Location

Private Residences

Maywood, New Jersey

2. License Status -

No license was ever issued.

3. Contamination, Demography and Size of Problem -

The contamination is tailings from thorium processing at Maywood Chemical Company (now Stepan Chemical Co.). The tailings were moved there by the owner of the property prior to the Atomic Energy Act. The DOE is currently surveying the property to determine the extent of contamination. The State of New Jersey is investigating whether or not they have funds available to decontaminate the property and also whether or not Stepan will accept the material for storage under their license if there is no other place to move the material.

The area is residential but only two residence are involved.

4. Remarks -

No action is needed by NRC; however, we have offered to help the State by providing radiological coverage during removal of the material.

1. Name

Reed-Kepler Park

Location

West Chicago, Illinois

2. License Status -

Never licensed.

3. Contamination, Demography and Size of Problem -

Tailings from the processing of thorium and rare-earths at the Lindsey Light and Chemical Plant (now Kerr-McGee) were used as a landfill in this park in the late thirty's and/or forty's. The site is restricted with a fence to prevent access. Concentrations are unknown but NRC is going to perform a radiological survey of the site starting in September 1981 to characterize the magnitude of the problem.

4. Remarks -

A determination of what, if any, remedial action will be made when the radiological survey is complete.

Formerly Licensed Sites
With Known Contamination

1. Name Location
Velsicol (Formerly Michigan Chemical Co.) St. Louis, Michigan

2. License Status -

AEC License No. SMB-833, Terminated April 1971

Company was engaged in the extraction of rare-earths from monasite ores. The source material was a byproduct of this activity. Prior to licensing, in 1966, Michigan Chemical Company (MCC) manufactured purified rare-earths from concentrates for the AEC in AEC owned facilities which MCC purchased from the AEC in the early 1960's.

3. Contamination, Demography and Size of Problem -

One building and a small portion of the grounds are contaminated with thorium; however, Velsicol has been using the site for the manufacture of hazardous organic chemicals such as PBB, DDT, Tris and HBB and the entire 50 acre site is contaminated with these compounds. EPA is currently working with Velsicol to require them to isolate the property to prevent migration of the organic offsite. It is the staff's opinion that the EPA requirements adequately protect the public from the thorium residues.

Since the licensed activity was only a small portion of the overall chemical operations, the radioactive contamination is minor compared to the chemical contamination. Most of site is at background levels although some hot-spots have a gross alpha activity as high as 13,000 pCi/gram.

4. Remarks -

The next action is to reach an agreement with EPA on the best method to include radioactivity in their enforcement action. This is currently under review by ELD.

1. Name

Location

Original Licensee - Continental Mining and Milling	Hazelwood, Missouri
2nd Licensee - Commercial Discount Corporation	Hazelwood, Missouri
Last Licensee - Cotter Corporation	Hazelwood, Missouri

2. License Status -

Original - License No. SMA-862
Second - License No. SMC-907
Last - SUB-1072, Terminated November 1974 40-80 81

None of the licensees performed work under an AEC/DOE contract but the residues processed at this site were purchased from the AEC by the original licensee.

3. Contamination, Demography and Size of Problem -

Originally, four buildings and 1 1/2 acres were involved but the buildings and the 3 1/2 acres surrounding them were decontaminated and released for unrestricted use.

At present, no buildings are involved but approximately 7 acres of land contains an estimated 30,000 cubic yards of dirt that is contaminated with ore residues which were generated from the processing of ores by Mallinckrodt Chemical Co. for the Manhattan Project. About 12,000 cubic yards of dirt was accumulated during the decontamination of the 3 1/2 acres and the buildings; this is now stored in a pile onsite. The estimated additional 18,000 yds³ will be generated during completion of the decontamination effort.

The facility is surrounded by other industrial plants. The nearest residences are located approximately one mile away; however, it is located in heavily populated St. Louis County.

The contamination was identified by IE Region III and a formal radiological survey was performed for IE by DRNL.

The main contaminants are natural uranium, radium 226, thorium 230, protactinium 231 and actinium 227. The average level of activity is 9300 pCi/gram of which the main constituent is Th-230 with an activity of 8860 pCi/gram. The highest Th-230 concentration measured in the original survey indicated concentrations as high as 36,000 pCi/gram on the surface.

4. Remarks -

Cotter Corporation, the last licensee, has contracted to pay for the decontamination effort. The only problem has been finding a suitable disposal site. It has been suggested that the dirt be moved to an old AEC storage site, where the residues originated, adjacent to the St. Louis Airport; however, the AEC gave this property and the associated responsibilities to the City of St. Louis and the City now refuses to accept the Latty Avenue material unless DOE agrees to retake possession of the property.

Currently Licensed Sites
That Are Being Decontaminated
Prior To Decommissioning

<u>1.</u>	<u>Name</u>	<u>Location</u>
	Chemetron Corporation	2910 Harvard Avenue Cuyahoga Heights, Ohio

2. License Status -

Chemetron holds a license (SUB-1357, Docket No. 40-8724, Expiration date July 31, 1982) for the decontamination of facilities at the Cuyahoga Heights site.

3. Contamination, Demography and Size of Problem -

The site has been partially decontaminated of the depleted uranium used in petroleum catalyst manufacture. The remaining waste has a volume of about 45,000 cubic feet and contains about 10,000 pounds of depleted uranium. The estimated transportation off-site burial costs for the remaining waste is \$730,000 (3/80).

The contaminated building and ground is in a heavily industrialized area. There is no public access to the area.

4. Remarks -

The licensee has asked for clarification of policy relating to on-site burial and has stopped active decontamination work pending a determination on this problem.

1. Name

Location

Vistron Corporation

Ft. Amada and Adgate Roads
Lima, Ohio

2. License Status -

Vistron holds a license for use of depleted uranium in catalyst manufacture (SUB-908, Docket No. 40-7604, Expiration date March 31, 1981). The license is under timely renewal. No manufacturing activities are under way.

3. Contamination, Demography and Size of Problem -

The remaining contamination is depleted uranium in soil. Partial cleanup has been accomplished; however, the guideline for cleanup (35 pCi/gram of soil) is still exceeded in a number of areas. The licensee has been instructed (letter dated August 6, 1980) to either complete soil removal to meet the guideline or to request permission to use a higher level. The site is an industrial area.

4. Remarks -

No additional information has been received on decontamination efforts since our letter of August 6, 1980.

<u>Name</u>	<u>Location</u>
Kerr-McGee Nuclear Corporation	Cimarron Uranium Fuel Fabrication Facility

2. License Status -

Kerr-McGee holds a current license (SNM-928, Docket No. 70-925) for possession of source and special nuclear material.

3. Contamination, Demography and Size of Problem -

The fuel fabrication facility was shut down in 1974. Decontamination and decommissioning work has continued since that time at a relatively low level of effort. All wastes from decommissioning are sent to licensed low level waste burial grounds.

4. Remarks -

This facility and its decommissioning present no unusual problems. No action by NRC is required.

1.	<u>Name</u>	<u>Location</u>
	Dow Chemical Company	Midland and Bay City, Michigan

2. License Status -

Dow Chemical has a license for possession of 201,300 pounds of thorium as metal, process sludge, oxides, fluorides or other compounds. The license (STB-527, Docket No. 40-17) is under timely renewal.

3. Contamination, Demography and Size of Problem -

Dow was licensed to possess thorium for use in making magnesium-thorium alloys at the two listed sites. Dow wants to decontaminate the Midland site to unrestricted use levels and to use the Bay City site for storage of magnesium-thorium slag. Information on the sites was requested on September 26, 1980, but Dow has not yet replied.

4. Remarks -

None.

1. <u>Name</u>	<u>Location</u>
Kawecki Berylco Industries, Inc.	Boyertown, Pennsylvania

2. License Status -

Kawecki Berylco (KBI) has a license (SMB-920, Docket No. 40-6940) for use of thorium in making thorium alloys.

The license is under timely renewal.

3. Contamination, Demography and Size of Problem -

The licensee wants the Boyertown facility released for unrestricted use. IE has been requested to evaluate the Boyertown site (letter from Miller to Higginbotham, dated August 12, 1980).

4. Remarks -

None.

1. Name

Location

U.S. Army

Weldon Spring, Missouri

2. License Status -

NRC/AEC Source Material License No. SMB-1314. The property was given to the Army by the AEC in 1967. All contamination at the site resulted from the operation of the facility by Mallinckrodt Chemical Works as a prime contractor to the AEC.

3. Contamination, Demography and Size of Problem -

The buildings and some of the surrounding area are contaminated with uranium and thorium residues; however, the largest amount of contamination is contained in four large raffinate pits on a 55 acre site that is owned and controlled by the DOE. The site is in a rural area surrounded by property owned primarily by the Federal Government.

4. Remarks -

In response to an order from the NRC, the Army submitted a decommissioning plan but they have stated that they will not start decommissioning until DOE decides what action DOE will take regarding the raffinate pits.

PLUTONIUM R&D AND PILOT PLANT FACILITIES

WHO PLAN OR HAVE INITIATED

DECONTAMINATION AND DECOMMISSIONING

Following are identified current NRC licensees who plan or have initiated decontamination and decommissioning actions on plutonium fuel facilities in their possession. Each licensee continues to possess the necessary skills and resources to accomplish the task which involves the decontamination of equipment and related structures to levels established by the NRC or the packaging of such materials along with wastes generated during the decontamination process for ultimate disposal. However, a major problem faced by these licensees is the disposition of the contaminated wastes. Since early 1980, no commercial disposal site is authorized to receive and dispose of transuranium (TRU) wastes that exceed a concentration of 10 nCi/gram. Because of this situation, some licensees have ceased or have not initiated decontamination activities. Others are proceeding by packaging the wastes as they are generated for temporary storage onsite. Both the industry and the NRC have urged DOE to accept these TRU wastes, with appropriate changes, for "retrievable" storage at DOE sites in the manner that DOE defense TRU wastes are being stored for eventual disposal in a Federal repository. DOE has responded by conducting a study to determine the volume of waste involved, estimated the costs for storage and disposal, and provided general packaging criteria, but has indicated it does not believe it possesses the authority to accept the waste. No action has been taken to obtain such authority. Full-scale efforts by the licensees identified below would result in the generation of a few tens of thousands cubic feet of waste over the two to three years required to accomplish the decontamination of the facilities, but this volume would represent only a small fraction of the TRU waste accumulated from DOE defense-related activities. Subsequent to this peak period, the volume of TRU waste generated in the commercial sector by existing licensees would be limited to a few hundred cubic feet per year from source manufacturers and R&D hot cell activities.

Licensee

Location of Facility

1. Babcock and Wilcox Company
Nuclear Materials and Manufacturing
Division
609 North Warren Avenue
Apollo, Pennsylvania 15613

Parks Township site near
Leechburg, Pennsylvania

License No. and Docket No: SNM-414, 70-364

2. Exxon Nuclear Company
2101 Horn Rapids Road
Richland, Washington 99352

Richland, Washington

License No. and Docket No: SNM-1227, 70-1257

Licensee

Location of Facility

3. General Electric Company
Vallecitos Nuclear Center
P. O. Box 460
Pleasanton, California 94566

License No. and Docket No: SNM-960, 70-754

Vallecitos Nuclear Center near
Pleasanton, California
4. Kerr-McGee Nuclear Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

License No. and Docket No: SNM-1174, 70-1193

Cimarron site near Crescent,
Oklahoma
5. Nuclear Fuel Services, Inc.
P. O. Box 1218
Erwin, Tennessee 37650

License No. and Docket No: SNM-124, 70-143

Erwin, Tennessee
6. Westinghouse Electric Corporation
Water Reactors Division
P. O. Box 355
Pittsburgh, Pennsylvania 15230

License No. and Docket No: SNM-1120, 70-1143

Cheswick, Pennsylvania

A List Of Formerly Licensed Sites
That Need To Be Visited To Determine
If They Have Been Properly Decontaminated
Prior to Decommissioning

Out of approximately 9,000 former Part 40 Docket Files evaluated by ORNL, 48 former source material licensees were identified as needing further checking. Thirty-two were in Agreement States and 16 were in non-Agreement States. To date, 29 facilities have been checked and 2, as noted, have been found to be contaminated. The 19 sites listed below remain to be checked:

- | | |
|------------------------------------------------|--------------------|
| 1. Sigma Minerals Corporation | Albuquerque, NM |
| 2. Titanium Alloy Manufacturing | Niagara Falls, NY |
| 3. Spencer Chemical Company | Baxter Springs, KS |
| 4. Martin-Marietta | Baltimore, MD |
| 5. Rare Earths Inc. | Curtis Bay, MD |
| 6. US Chemical Milling Company | Mahattan Beach, CA |
| 7. Anadite Inc. | South Gate, CA |
| 8. Chem Tronics Inc. | Santee, CA |
| 9. Sequoyah Metal Craft Inc. | San Carlos, CA |
| 10. South Gate Aluminum & Magnesium
Company | San Mateo, CA |
| 11. American Brake Shoe | Rivera, CA |
| 12. EJ Dupont | Wilmington, DE |
| 13. Atlantic Metals Corporation | Philadelphia, PA |
| 14. Bendix Corporation | Teterboro, NJ |
| 15. Wah Chang | Union City, NJ |
| 16. Department of Army | Granite City, IL |
| 17. Taylor Forge and Pipe Works | Cicero, IL |
| 18. American Bearing Company | Indianapolis, IN |
| 19. Allis-Chalmers | Greendale, WI |

The following former source material licensees have been found to be contaminated and further survey will be required to characterize the site:

- | | |
|-----------------------------------------------------------------------------|--------------------|
| Rare Earths Inc.
A Division of W. R. Grace | Pompton Plains, NJ |
| Rocky Mountain Research
Action is being taken by the Colorado officials. | Denver, CO |

A similar survey of all former Part 70 Docket Files was performed by ORNL and the following sites were identified as needing additional checking:

- | | |
|------------------------------------------------------|---------------------|
| 1. International Chemical and Nuclear
Corporation | Homestead, PA |
| 2. General Electric Company | Warren Township, MI |
| 3. Allis-Chalmers | Greendale, WI |
| 4. Union Carbide Corporation | Fostoria, OH |
| 5. Union Carbide Corporation | Niagara Falls, NY |
| 6. Twin Cities Army Ammo Plant | New Brighton, MN |
| 7. Pratt & Whitney Aircraft | East Hartford, CN |