

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 999-90003/94007(DRSS)

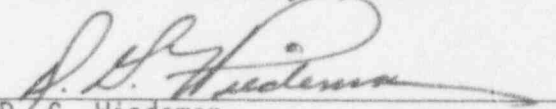
Docket No. 040-00235 (terminated)

License No. STB-0362 (terminated)

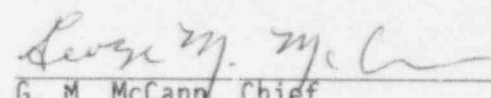
Licensee: Brooks & Perkins Corporation  
1950 West Fort Street  
Detroit, Michigan 48216

Inspection At: Building and property owned by Frome Investment Company  
(a former Brooks & Perkins Corp. facility)  
1950 West Fort Street  
Detroit, Michigan

Inspection Conducted: February 1, 1994

Inspector:   
D. G. Wiedeman  
Senior Health Physicist

2/17/94  
Date

Approved by:   
G. M. McCann, Chief  
Fuel Facilities and Decommissioning  
Section

2/17/94  
Date

Inspection Summary

Inspection on February 1, 1994 (Report No. 999-90003/94007(DRSS))

Areas Inspected: This was a special inspection to review the former licensee's activities and to determine if the facilities were adequately decontaminated prior to terminating the license. The inspector conducted independent radiation surveys in the former licensee's manufacturing, processing and storage areas. This inspection was part of an NRC project which evaluated approximately 17,000 retired licenses. An NRC contractor, Oak Ridge National Laboratories (ORNL) performed the evaluation. On the basis of the information in the retired license file, such as type and quantity of authorized materials and lack of adequate decontamination documentation, ORNL concluded that this facility has a potential for residual radioactive contamination.

Results: The NRC inspector did not identify any radiation levels above background in the building formerly used by Brooks & Perkins; however, an area outside the building, believed to be a former disposal area showed levels of radiation (gamma) approximately eight times above background. A sample analysis indicated the soil contamination exceeds the NRC release criteria.

## DETAILS

### 1. Persons Contacted

\*William Ellmann, Frome Investment Company  
@\*Sheila Ellmann, Frome Investment Company  
Greg Driscoll, Eaton, (lessee of building)  
Perry Zinger, Foreman, Eaton  
Timothy Skelly, Esq., Senior Counsel, AAR Corporation  
\*Kenneth Coble, Health Physicist, Michigan Department of Health

\*Attended the exit meeting conducted on February 1, 1994.

@Telephone conversation on February 14, 1994 regarding results of laboratory analyses of samples collected at the time of the inspection.

### 2. Background

AEC License No. D-547 was issued on January 17, 1957, then superseded by license No. STB-0362 on August 10, 1961, to Brooks & Perkins Corporation. This license authorized 15,000 pounds of thorium as contained in 40% thorium master alloy and thorium magnesium alloy containing not more than 3% thorium. The license authorized two locations of use: 1950 West Fort Street, Detroit and 12633 Inkster Road, Livonia, Michigan (Attachment A). This inspection report covers activities at the 1950 West Fort Street facility only. For details regarding the Livonia, Michigan facility see NRC Inspection Report No. 999-0003/94012(DRSS).

Authorized activities included rolling, melting, casting, forming, cutting, sanding and welding manufactured products containing licensed source material. The licensee requested termination of the license in a letter dated February 5, 1971, and provided a radiation survey by their consultant of the Livonia and Detroit facilities. The NRC inspectors review of this survey shows that one area at Livonia exceeded the release criteria and the survey results did not include all areas where licensed materials were used (in both facilities).

### 3. Facility Status

Frome Investment Company purchased the building some time in the late 1960 to early 1970 time period (exact date was unknown) from Brooks & Perkins Corporation. Currently the building is leased to Eaton Company and is used as a warehouse for air filters. Eaton has four employees that work at the site.

#### 4. Independent Measurements

Background radiation measurements were taken in the downtown area of Detroit, Michigan with a Victoreen Model 190 and Ludlum Model 19 portable survey instruments. Background measured 45-55 counts per minute (cpm) with the Victoreen and 7-15 microroentgens per hour ( $\mu\text{R/h}$ ) {1.8-3.8 nanocoulomb per kilogram per hour} (nC/kg/h) with the Ludlum.

Independent radiation surveys were performed with a Victoreen Model 190 portable survey instrument with a Model RP-1 pancake probe, NRC Tag No. 0405020, Ludlum Model 19, NRC Tag No. 015522, both calibrated on July 28, 1993 and an Eberline ESP alpha scintillation counter, NRC Tag No. 033845, calibrated on June 27, 1993. Prior to the surveys all instruments were checked for accuracy and constancy with dedicated and traceable check sources. All instruments responded as expected.

The inspector conducted radiation surveys in and around the former manufacturing, processing and storage areas in the building. The areas surveyed included restrooms, hallways, offices, former manufacturing areas, parking lots, building down spouts and loading docks. The NRC inspector's survey of the above referenced building and adjacent property did not identify any radiation levels above natural background. An open area located behind the garage facing W. Fort Street showed elevated radiation levels. Further investigation indicated that this area appeared to be a former radioactive waste disposal burial area. The inspector measured 120  $\mu\text{R/h}$  {30.8 nC/kg/h} on the ground surface and 15  $\mu\text{R/h}$  at 3 feet above the ground with the Ludlum Model 19 survey instrument. The Victoreen 190 showed 1,700 cpm (beta+gamma). No alpha activity was identified. See Attachment B for survey results.

#### 5. Laboratory Analyses

A sample of the contaminated material was collected for further analyses in the Region III laboratory. Analysis of the sample determined that the radioactive material is thorium with a concentration of 500 picocuries per gram (pCi/g) {18.3 becquerel per gram {Bq/g} which exceeds the NRC release criteria of 10 pCi/g {0.37 Bq/g}. Smear tests for removable activity were taken at random locations within the building and were analyzed for gross alpha and beta activity. The results for gross alpha and beta activity were less than 5 disintegrations per minute (dpm) (0.1 Bq)/100  $\text{cm}^2$  which is below the NRC limit of 200 dpm (3.33 Bq)/100  $\text{cm}^2$ . The NRC release criteria for buildings and equipment can be found in NRC document titled "Guidelines for Decontamination of Facilities and Equipment prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated August 1987.

6. Exit Meeting

The NRC inspector contacted the individuals identified in Section 1 of this report and summarized the findings of the inspection. The inspector informed the property owner that survey findings indicate that the building meets the NRC release criteria for release of facilities for unrestricted use; however, buried materials found near the garage facing West Fort Street appeared to exceed the NRC release criteria. During the exit meeting with the property owners, none of the participants indicated to the inspector that any of the inspection findings were considered proprietary.

Attachments:

- A. AEC license dtd 10-17-69
- B. Survey locations and results

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UNITED STATES  
ATOMIC ENERGY COMMISSION

SOURCE MATERIAL LICENSE

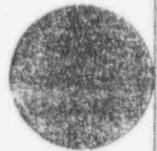
Pursuant to the Atomic Energy Act of 1954, and Title 10, Code of Federal Regulations, Chapter 1, Part 40, "Licensing of Source Material," and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, possess and import the source material designated below; to use such material for the purpose(s) and at the place(s) designated below; and to deliver or transfer such material to persons authorized to receive it in accordance with the regulations in said Part. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954 and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission, now or hereafter in effect, including Title 10, Code of Federal Regulations, Chapter 1, Part 20, "Standards for Protection Against Radiation," and to any conditions specified below.

Licensee		3. License No.
1. Name	Brooks & Perkins Corporation	STB-362
2. Address	1950 West Fort Street Detroit, Michigan 48216	4. Expiration Date July 31, 1970
		5. Docket No. 40-235
6. Source Material Thorium	7. Maximum quantity of source material which licensee may possess at any one time under this license 15,000 pounds of thorium as contained in 40% thorium master alloy and thorium magnesium alloy containing not more than 3% thorium.	

CONDITIONS

8. Authorized use (Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.)  
For use in accordance with the procedures described in the licensee's application dated August 16, 1962, and supplements dated March 27 and June 11, 1963; June 21 and July 13, 1966; July 26, 1967; and October 3, 1969.
9. Authorized Places of Use: The licensee's facilities at the address in Item 2 above and 12633 Inkster Road, Livonia, Michigan.

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10/16/69

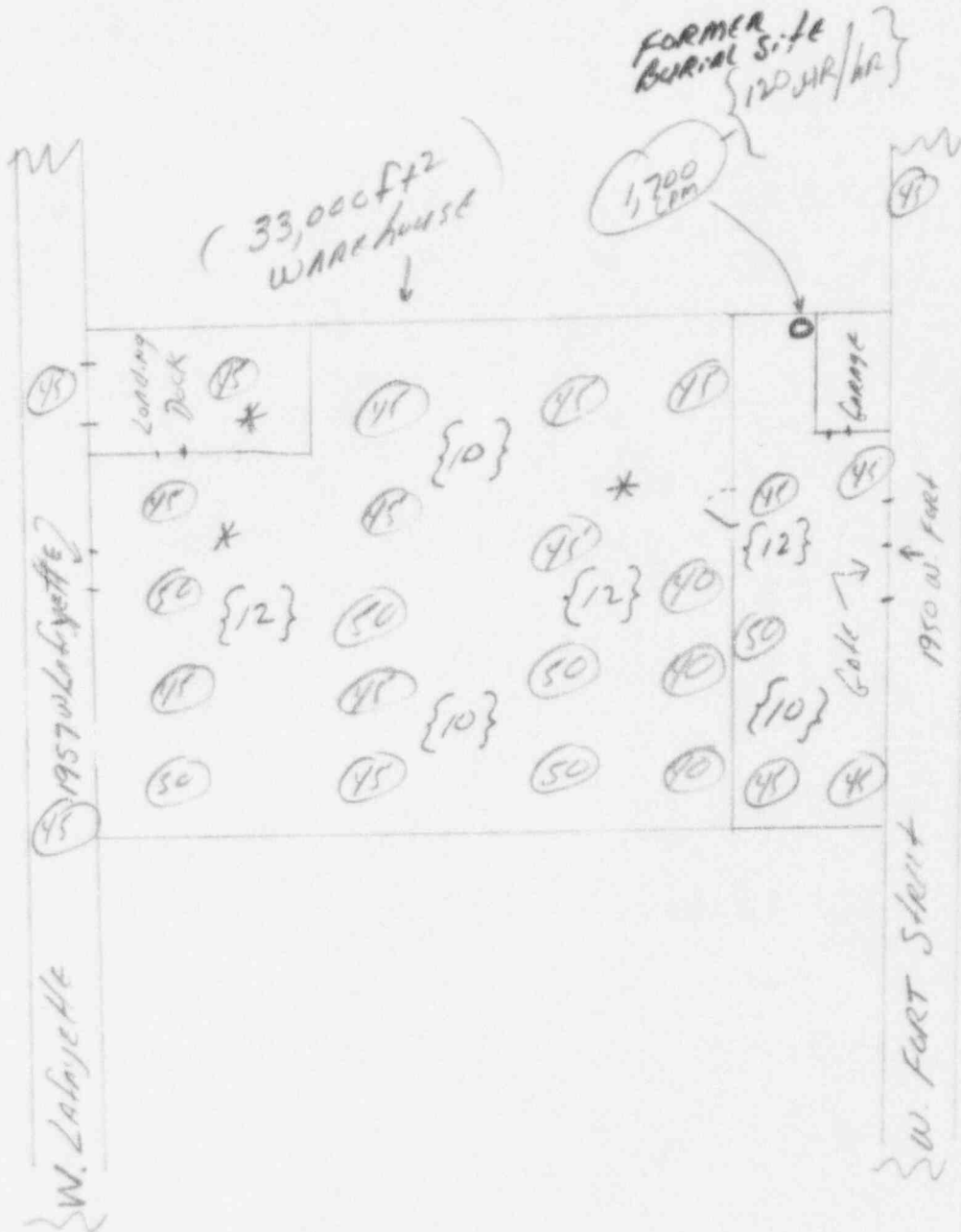
Date OCT 17 1969

For the U. S. Atomic Energy Commission  
Original signed by  
Don F. Harmon  
by Don F. Harmon

of Materials Licensing  
igton, D. C. 20545

ATTACHMENT A






Date of Survey- 2/1/94

Survey Instruments- Victoreen 190 w/pancake probe  
 Ludlum Model 13 microR meter  
 Eberline ESP alpha meter

Calibrated- 7/28/93

Survey units- counts/minute (cpm)   
 microrentgens/hour { }

Background radiation-45-55 cpm  
 7-15 microrentgens/hour

\* = approximate smear test locations

Survey by: D. G. Wiedeman (accompanied by Michigan Department of Health)

