

MI: 11-1

October 7, 1994

Behnke Warehousing Incorporated
(Former site of Oliver Corp.)
ATTN: Mr. Mac Behnke
P. O. Box 2102
Battle Creek, MI 49016

SUBJECT: RADIOLOGICAL SURVEY INSPECTION (REPORT NO. 999-90003/94056)

Dear Mr. Behnke:

This refers to the special inspection conducted by Messrs. William Snell and Mike Kurth on September 26, 1994, of the facility formerly occupied by the Oliver Corporation, located at 433 East Michigan Avenue, Battle Creek, Michigan. Licensed activities were previously authorized by Atomic Energy Commission (AEC) Source Material License Nos. SNM-591, SUB-579 and C-3725. The preliminary results of our inspection findings were discussed with you just before the conclusion of the inspection on September 26, 1994.

The enclosed copy of our inspection report identifies areas examined during the inspection. The inspection consisted of independent surveys and measurements of the large warehouse at 433 East Michigan Avenue, Battle Creek, Michigan. The two-story facility was the only remaining structure that dated back to the time of licensed operations and contained approximately 60,000 ft² of floor space. The building was located on the northeast corner of the intersection of Michigan Avenue and South Union Street.

Based upon the inspection findings, we have determined that the warehouse located at the above referenced address has residual radiation levels less than current NRC unrestricted use criteria. The NRC criteria is described in a 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. Consequently, we have no further questions regarding this matter.

Mr. Mac Behnke

-2-

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning the inspection.

Sincerely,

Original Signed By

Gary L. Shear, Chief
Fuel Cycle and Decommissioning Branch

License SNM-591 (Terminated)
License SUB-579 (Terminated)
License C-3725 (Terminated)

Enclosure: Inspection Report
No. 999-90003/94056(DRSS)

cc w/encl: D. Minnaar, Michigan Department of Public Health

bcc w/encl: P. Goldberg, IMNS
T. Johnson, LLWM

DOCUMENT: B:\BEH94056.DSS

To receive a copy of this document, indicate in the box "C" - Copy without attach/encl "E" - Copy with attach/encl "N" - No copy

OFFICE	RIII	E	RIII	E	RIII	E	RIII
NAME	Snell WGS		Kurth MK		McCann Hum		Shear GCS
DATE	10/6/94		10/6/94		10/6/94		10/7/94

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 999-90003/94056(DRSS)

License No. SNM-591 (terminated)
License No. SUB-579 (terminated)
License No. C-3725 (terminated)

Former Licensee: Oliver Corporation

Inspection At: Behnke Warehousing Incorporated
433 East Michigan Avenue
Battle Creek, MI 49016

Inspection Conducted: September 26, 1994

Inspector: William Snell
William Snell
Senior Radiation Specialist

10/6/94
Date

Mike Kurth
Mike Kurth
Radiation Specialist

10/6/94
Date

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

10/6/94
Date

Inspection Summary

Inspection on September 26, 1994 (Report No. 999-90003/94056(DRSS))

Areas Inspected: This was a special inspection to determine whether the facilities where the former Oliver Corporation was located were adequately decontaminated prior to terminating the license. The inspectors conducted independent radiation surveys in the only remaining building where the former licensee's activities may have taken place. 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 these facilities had a potential for residual radioactive contamination.

Results: The NRC inspector did not identify any radiation levels above background in the building formerly used by the Oliver Corporation in Battle Creek, Michigan. Based upon the inspection findings, it was concluded that the building meets the current NRC release criteria for release of facility for unrestricted use.

DETAILS

1. Persons Contacted

Mac Behnke, Behnke Warehousing Inc.
Dave Minnaar, Michigan Department of Public Health

The preliminary results of the inspection were discussed with the above individuals on September 26, 1994.

2. Background

In 1957 and 1962, the Oliver Corporation was licensed to receive, store and use a natural uranium tetrafluoride magnesium blend (UF₄-Mg) at 423 East Michigan Avenue, Battle Creek, Michigan. Activities involved the receipt of UF₄-Mg in ten gallon cans from the National Lead Company of Ohio. The cans were dumped into a ventilated shoot which emptied into a mold cavity for a 3000 ton press. The UF₄-Mg was pressed into a briquette, returned to the ten gallon can, and then shipped back to the National Lead Company. Each briquette weighed approximately 100 pounds. The mold cavity was equipped with local ventilation which was exhausted to a dust collector. The dust collector contained wool felt dust tubes which were greater than 99.8 percent efficient for the UF₄-Mg.

Documentation indicated that the NRC conducted an inspection of licensed activities at this facility on August 15, 1957. No items of non-compliance were identified as a result of the inspection.

In May 1962, the press and all miscellaneous equipment were decontaminated by the National Lead Company of Ohio. Surveys were conducted using an alpha scintillator (Eberline Model PAC-1s) with a sensitivity of 300 disintegrations per minute per 100 square centimeters (dpm/100 cm²). Most surfaces indicated background levels of radioactivity with no readings recorded above 500 dpm/100 cm².

3. Current Site Status

Based on a phone call to directory assistance for Battle Creek, Michigan, it was determined that the Oliver Corporation was no longer in existence in Battle Creek. A phone call to the Assessor's Office for the City of Battle Creek also determined that there was no longer any such address listed for 423 East Michigan Avenue, which was the address where the licensed activities took place. It was subsequently learned that the property at 433 East Michigan Avenue was the same location where licensed operations were once conducted by the Oliver Corporation. The property formerly owned by the Oliver Corporation was owned and occupied by Behnke Warehousing, Inc.

A large two-story warehouse located on the northeast corner of the intersection of Michigan Avenue and South Union Street at 433 East Michigan Avenue, Battle Creek, Michigan was the only remaining structure that dated back to the time of licensed operations. This building contained approximately 60,000 ft² of floor space. The building was 60-70 percent filled with stored materials. All other buildings that existed at the time when licensed activities were performed had been razed and other structures built over the old foundations.

There was no indication in the file as to the location at the site where the 3,000 ton press had been located. Behnke Warehousing has occupied the site for the past 20 years and had no knowledge that licensed activities had ever taken place at this location. As a result, there was no way to determine whether licensed activities took place in the one remaining building or another building that had been razed.

4. Independent Measurements

The NRC inspectors conducted radiological surveys in the 60,000 ft² warehouse. Due to the amount of material stored in the warehouse, only about 20 percent of the floor surface could be surveyed on the lower level. One hundred percent of this available surface area was surveyed. About 40 percent of the floor surface was available on the upper level. Approximately 90 percent of this available area was surveyed. There were no ventilation systems or drains identified.

Radiation surveys were performed with two Ludlum Model 12 portable survey instruments with Model 44-9 alpha-beta-gamma probes. The instruments, Serial Nos. 105718 and 105700, were calibrated on February 9, 1994 and August 29, 1994, respectively. Prior to the surveys, the instruments were checked for accuracy and constancy with a dedicated and traceable ⁹⁰Sr/⁹⁰Y check source. The instruments responded as expected. The instruments' results were also corrected for probe size and counting efficiency. This correction showed that for beta/gamma radiation with background included, $\approx 15,000$ dpm/100 cm², (the maximum unrestricted release level), instrument 105718 indicated 690 counts/minute (cpm) and instrument 105700 indicated 680 cpm. Background was measured and determined to be 40 cpm. Surveys included direct measurements for alpha and beta activity.

Surface scans for alpha and beta activity were indistinguishable from background. This survey indicated that the radioactivity was less than NRC unrestricted use criteria of 5,000 dpm (83 becquerel [Bq])/100 cm² average activity and 15,000 dpm (250 Bq)/100 cm² maximum activity. These criteria are found in NRC's "Guideline for Decontamination of Facilities and Equipment prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," August 1987.

In conclusion, the inspector's independent radiation measurements confirmed that no radioactive material was found that exceeded the NRC limits for release for unrestricted use.

5. Exit Meeting

The NRC inspectors met with the individuals identified in Section 1 of this report several times during the course of the inspection and summarized the preliminary findings. The inspector stated that the independent radiological survey identified no radioactive material which exceeded the NRC release criteria. During the course of the inspection, discussions with the current owner of the facility indicated that no documents, inspection findings and/or statements were identified as proprietary in nature. The facility owner was not available for an exit meeting at the conclusion of the inspection.