GROUP: A

FOIA/PA NO.: 2014-0075

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ACCESSION #: 9706250117



June 18, 1997

Ms. Carla J. Maurer
Sanyo North America Corporation
1751 Sheridan Street
Richmond, IN 47374

SUBJECT: INSPECTION OF THE FORMER AVCO CORPORATION SITE (INSPECTION REPORT NO. 040-06304/97001 (DNMS)

Dear Ms. Maurer:

This refers to the inspection conducted on June 4-6, 1997, at the former AVCO Corporation facility located in Richmond, Indiana. This refers also to the discussion of our preliminary findings with you at the conclusion of the inspection.

The enclosed copy of our inspection report details the results of the visit and identifies the area surveyed during the inspection.

Based on the results of this inspection, the NRC has determined that no radioactivity from licensed materials was distinguishable from background radiation. Therefore, NRC has no further regulatory interest in this property.

Elevated radiation levels were identified from naturally occurring radioisotopes of the uranium series, the thorium series and potassium-40. This radioactivity was contained in coal/fly ash which was generated from the operation of the onsite boilers from 1937 to 1989, and which is now broadly distributed across the site. The findings regarding coal/fly ash will be provided to the State of Indiana and the Environmental Protection Agency by forwarding them a copy of the inspection report.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

C. Maurer -2-

Should you have any questions regarding the inspection, please do not hesitate to contact Mr. P. Lee at (630) 829-9870.

Sincerely,

Original Signed by

Roy J. Caniano, Acting Director
Division of Nuclear Materials Safety



A1

Docket No. 040-06304
License No. SMB-0103 (Terminated)

Enclosure: Inspection Report
No. 040-06304/97001 (DNMS)

cc w/encl: J. Ruyack, Indiana State Department
of Health
J. Makela, Richmond Sanitary District
L. Jensen, USEPA, Region V

bcc w/encl: M. Weber, NMSS
P. Goldberg, NMSS
PUBLIC (IE 07)

DOCUMENT NAME: R:\INSPRPTS\CONTAMIN\AVC97001.DNM

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| OFFICE | RIII | RIII | RIII |
|---|---|---|---|
| NAME | Lee:ib | Jorgensen | Caniano |
| DATE | 06/ /97 | 06/ /97 | 06/ /97 |

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 040-06304

License No: SMB-0103 (Terminated)
13-12285-01 (Terminated)

Licensee: AVCO Corporation

Location: Richmond, IN

Date: June 4-6, 1997

Inspectors: P. J. Lee, Ph.D., Radiation Specialist
E. L. Kulzer, Radiation Specialist

Accompanied by: John Ruyack, Indiana State Department of Health (IDH)
Rex Bowser, IDH
Jane Smith, IDH

Approved By: B. L. Jorgensen, Chief
Decommissioning Branch

## EXECUTIVE SUMMARY

AVCO CORPORATION
NRC Inspection Report No. 040-06304/97001(DNMS)

The purpose of the inspection was to determine whether the facility, where former AVCO Corporation was located, was adequately decontaminated prior to terminating the license. The inspectors conducted independent radiation surveys, collected samples for laboratory radioanalyses in the

facilities where the former licensee's activities had taken place, and interviewed personnel at the site.

Based on the results of this inspection, the NRC has determined that no radioactivity from licensed materials was distinguishable from background radiation. Therefore, NRC has no further regulatory interest in this Sanyo property.

Elevated levels of radioactivity were identified from naturally occurring radioisotopes of the uranium series, the thorium series and potassium-40 which were contained in coal/fly ash. The coal/fly ash was generated from the operation of on-site boilers from 1937 to 1989, and was widely distributed on the site.

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DETAILS

1. Background

The Nuclear Regulatory Commission (NRC) is conducting a review of terminated license files, with the support of a contractor, to identify potential cases where licensed activities may have been stopped without full and documented verification that any residual radioactivity met guidelines for unrestricted release.

Atomic Energy Commission (AEC) license No. 13-12285-01 was issued to AVCO Corporation on June 14, 1967, and expired on June 30, 1972. This license authorized the use of atomic numbers 1-83 to study the effects of radiation on electronic components at the licensee's facility in Richmond, Indiana. All products were reported to have been returned to the sender. A total of 0.02 Ci were authorized under this license. The former AVCO facility is now owned by Sanyo Corporation.

License No. STB-0103 was issued to AVCO on February 20, 1961, and expired on March 31, 1965. This license authorized the use of 1,000 pounds of depleted uranium (DU) and 50,000 pounds of 3% magnesium-thorium alloy. The license authorized forming, grinding and machining of the licensed material.

License No. SMB-0103 was issued on March 31, 1965, superceding STB-0103, and terminated on January 17, 1974. This license authorized the use of .500 pounds of natural uranium and 2,000 pounds of thorium. The thorium was used to manufacture missile components and the uranium was used for making shells. Welding, grinding and machining were authorized.

The license files did not document final surveys and disposition of materials for these terminated licenses.

2. Independent Measurements

The NRC inspector performed independent radiation surveys with G-M pancake detectors, micro-R meters, and gamma scintillation detectors (Attachment A).

The inspector surveyed about 10 percent of the floors and lower walls in the east and west buildings for alpha/beta activity (Attachment B). The results of the surveys indicated less than the

minimum detectable activity (MDA), which is about 1000 dpm/100 cm**2 alpha/beta. Also, a total of 90 wipes were randomly collected from locations throughout the buildings.

The inspector conducted outside radiation surveys at the west end of the west building and at the north end of the east building. One area, extending from the west side of the boiler house out about 40 feet, showed elevated radiation levels from 15 [symbol omitted]R/h (4 nC/kg/h) to 22 [symbol omitted]R/h (6 nC/kg/h). A mound, extending from the west side of the fence line inward about 40 feet, showed elevated radiation levels



from 10 [symbol omitted]R/h (3 nC/kg/h) to 15 [symbol omitted]R/h (4 nC/kg/h). Also, outside the fence off the north end of the east building, elevated radiation levels from 17 [symbol omitted]R/h (4 nC/kg/h) to 30 [symbol omitted]R/h (8 nC/kg/h) were observed.

Direct radiation measurements were not capable of identifying the specific isotope(s) causing the elevated readings. Eight soil samples were collected for laboratory radio-analysis.

3. Results of Sample Analyses

Wipe samples from the building interiors were analyzed by a gas flow proportional counter (Gamma Products G-5000) and the results reported in disintegrations per minute per 100 square centimeters (dpm/100 cm**2) . Analysis of the 90 wipes collected showed that the gross alpha/beta was less than the minimum detectable activity (MDA) which is 15 dpm/100 cm**2. Based on the results of survey and wipe samples analyses, no contamination was distinguishable from the background in the buildings.

A high purity germanium detector was used for qualitative identification and quantitative determination of the contamination in the soils collected from the elevated areas. The results of areas with elevated readings are listed below:

(1) Boiler house area:

A soil sample collected from a location where an elevated reading of 22 uR/hr was detected, contained 11.2 +/- 1.2 pCi/gram of natural thorium, 12.2 +/- 1.2 pCi/gram of natural uranium, and 7.9 +/- 1.9 pCi/gram of potassium-40.

(2) West end mound area:

A soil sample collected from a location where an elevated reading of 15 uR/hr was detected, contained 6.1 +/- 0.8 pCi/gram of natural thorium, 6.6 +/- 1.0 pCi/gram of natural uranium, and 16.3 +/- 2.9 pCi/gram of potassium-40.

(3) North end area:

Three soil samples collected from locations where elevated readings of about 20 uR/hr were detected, contained 9.4 +/- 1.1, 6.2 +/- 0.8, and 9.8 +/- 1.1 pCi/gram of natural thorium. The same samples contained 13.5 +/- 1.4, 7.2 +/- 1.1, and 9.8 +/- 1.2 pCi/gram of natural uranium respectively, and 15.4 +/-

2.8, 11.8 +/- 2.6, 10.9 +/- 2.3 pCi/gram of potassium-40.

4

Three soil samples, collected from locations where elevated readings of about 30 uR/hr were detected, contained 13.2 +/- 1.0, 13.8 +/- 1.2, and 15.5 +/- 1.3 pCi/gram of natural thorium. The same samples contained 13.9 +/- 0.8, 14.9 +/- 1.2, and 16.2 +/- 1.3 pCi/gram of natural uranium respectively, and 7.5 +/- 0.6, 8.4 +/- 1.6, and 10.0 +/- 1.8 pCi/gram of potassium-40.

Both the natural thorium (Th-232 + Th-228) and natural uranium (U-238 + U-234) discussed above were with daughters present and in equilibrium.

Based on the above results of soil sample analyses and interviews of personnel, the source of radiological contamination detected on the site was determined to be the coal/fly ash generated from the operation of the onsite boilers from 1937 to 1989.

4. Conclusions

No residual radioactive contamination was found which resulted from formerly-licensed activities. The Nuclear Regulatory Commission has no further regulatory interest in the Sanyo property at 1751 Sheridan Street in Richmond, Indiana.

5. EXIT MEETING

At the conclusion of the onsite inspection on June 6, 1997, the preliminary results of the inspection were discussed with the individuals identified below.

Partial List of Persons Contacted

*C. Maurer, Property Manager, Sanyo N. America Corp.
*J. Ruyack, Division Director, ISDH
*R. Bowser, Emergency Response Coord., ISDH
*J. Smith, Radiochemistry Lab, ISDH

*Attended onsite exit meeting conducted June 6, 1997.

Attachment A: Survey Instruments
Attachment B: Survey Locations and Results

5

Attachment A

Survey Instruments

| Instrument | Model No. | Serial No. | Probe | Last Calibration |
|---|---|---|---|---|
| Ludlum | 2241-2 | 115135 | Ludlum 44-9 | 08/02/96 |
| Ludlum | 2241-2 | 059756 | Ludlum 44-9 | 6/14/96 |
| Ludlum | 2241-2 | 115135 | Ludlum 44-10 | 08/02/96 |

| | | | | |
|---|---|---|---|---|
| Ludlum | 2241-2 | 059756 | Ludlum 44-10 | 06/14/96 |
| Ludlum | 19 | 011021 | n/a | 11/04/96 |

ATTACHMENT B, "Former AVCO property: Richmond, Indiana Survey Locations and Results," omitted.

*** END OF DOCUMENT ***

June 18, 1997

Ms. Carla J. Maurer
Sanyo North America Corporation
1751 Sheridan Street
Richmond, IN 47374

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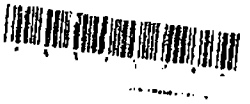

A2

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Docket No. 040-06304
License No. SMB-0103 (Terminated)

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No. 040-06304/97001(DNMS)

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J. Makela, Richmond Sanitary District
L. Jensen, USEPA, Region V

bcc w/encl: M. Weber, NMSS
P. Goldberg, NMSS
PUBLIC (IE 07)

DOCUMENT NAME: R:\INSPRPTS\CONTAMIN\AVC97001.DNM

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

| | |
|---|---|
| Docket No: | 040-06304 |
| License No: | SMB-0103 (Terminated)<br>13-12285-01 (Terminated) |
| Licensee: | AVCO Corporation |
| Location: | Richmond, IN |
| Date: | June 6, 1997 |
| Inspectors: | P. J. Lee, Ph.D., Radiation Specialist<br>E. L. Kulzer, Radiation Specialist |
| Accompanied by: | John Ruyack, Indiana State Department of Health (IDH)<br>Rex Bowser, IDH<br>Jane Smith, IDH |
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Attachment B: Survey Locations and Results

Attachment A

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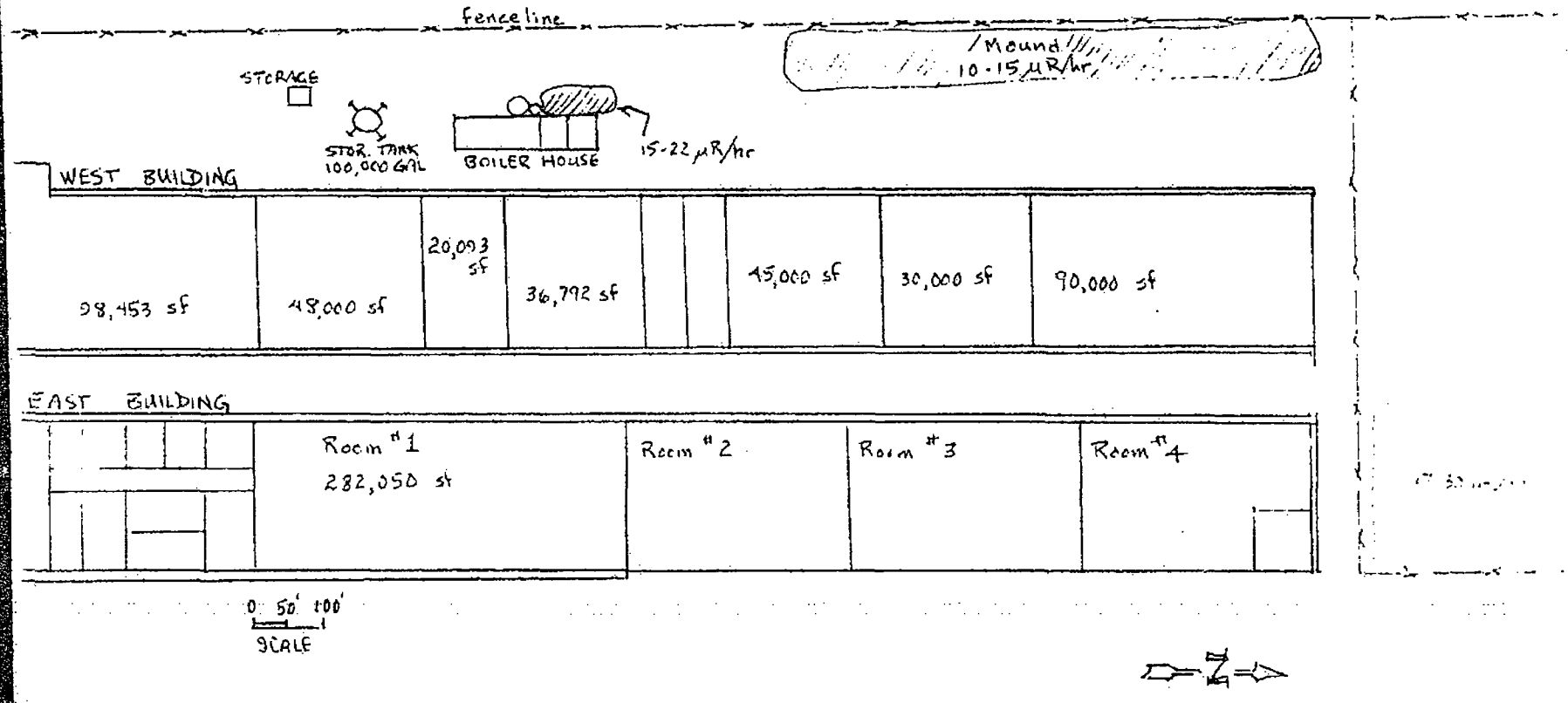
| Ludlum | 2241-2 | 115135 | Ludlum 44-10 | 08/02/96 |
| Ludlum | 2241-2 | 059756 | Ludlum 44-10 | 06/14/96 |
| Ludlum | 19 | 011021 | n/a | 11/04/96 |

ATTACHMENT B

Former AVCO property: Richmond, Indiana
Survey Locations and Results



## Graff, Mark

**From:** Graff, Mark
**Sent:** Thursday, November 21, 2013 7:30 AM
**To:** Gomez, Lola; Craver, Patti
**Subject:** 2013-0345 and 2014-0001A

Dear Patti/Lola:

For your awareness, appeal case numbered 2014-0001A was signed and closed, denying the requester's appeal of the fee waiver in this instance. As such, the underlying case, 2013-00345 was also administratively closed for the requester's failure to pay the fee estimate. No further action is necessary on either of these cases.

Mark H. Graff, Esq.
FOIA Specialist
Office of Information Services
U.S. Nuclear Regulatory Commission
Mark.Graff@nrc.gov
(301)-415-8154