U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 30-4399/82-01(DETP)

License No. 13-11822-01 Category C Priority 2

Docket No. 30-04399

Licensee: Midstate Testing Laboratory, Inc.
7943 New Jersey Avenue
Hammond, IN 46323

Inspection At: Midstate Testing Laboratory, Inc.
Hammond, IN

Inspection Conducted: June 18, July 30 and August 9, 1982

Inspectors: M. J. Oestmann — 9/17/82

S. Rozak — 9/17/82

W. J. Slawinski — 9/24/82

Approved By: D. J. Sreniawski, Chief — 9/17/82
Materials Radiation Protection
Section 2

Inspection Summary

Inspection on June 18, July 30 and August 9, 1982 (Report No. 30-4399/82-01(DETP))
Areas Inspected: Special announced inspections on June 18, 1982 and on July 30, 1982, were conducted to verify the security of licensed material following a June 2, 1982, notification that the licensee had been locked out of the facility by the landlord. The inspection included radiation and contamination surveys of the sources and the premises. The inspection involved 23 inspector-hours onsite by three NRC inspectors.
Results: Five radiographic cameras, (one empty, one containing a 1.7Ci cobalt-60 source, and three containing iridium-192 sources ranging from approximately 6 μCi to 3.4 Ci) were removed from the premises by the NRC on July 30, 1982. A radium-beryllium neutron source was removed by the State of Indiana at the same time. No radiation or contamination levels exceeding NRC guidelines for release of the premises for unrestricted use were found.

One item of apparent noncompliance involving failure to secure licensed material in an unrestricted area was identified. (Section 3)

## DETAILS

1. Persons Contacted

R. Adams, landlord, Kennedy Industrial Park, Hammond, IN
Richard Mason, President, Midstate Testing Laboratory, Inc. (MTL)
R. Drake, Senior Inspector, MTL
S. Hampton, Health Physicist, State of Indiana Board of Health, Indianapolis, IN
C. Bingham, Director, New Brunswick Laboratory, Department of Energy (DOE) Argonne, IL
J. Paller, Health Physicist, New Brunswick Laboratory, DOE, Argonne, IL
Robert Mason, Health Physicist, New Brunswick Laboratory, DOE, Argonne, IL
J. Sickles, Custodian, New Brunswick Laboratory, DOE, Argonne, IL
P. Neeson, Health Physicist, Chicago Operations Office, DOE, Argonne, IL
J. Munro, Radiation Safety Officer, Technical Operations, Inc. (Tech/Ops) Burlington, MA

2. General Background Information

Midstate Testing Laboratory, Inc., is a firm which conducts radiographic tests utilizing Ir-192 and Co-60 sources in radiographic exposure devices as authorized under NRC License No. 13-11822-01.

On June 2, 1982, a Senior Inspector of the licensee contacted the NRC Region III Office and stated the company was going bankrupt and was being locked out of their facility located at 7943 New Jersey Avenue in Hammond, Indiana.

On the same date, the NRC Region III Office contacted the landlord, Kennedy Industrial Parks, and verified the company had been locked out of its facility for nonpayment of rent.

The NRC Region III Office made numerous attempts without success to contact the president of Midstate Testing Laboratory, Inc. by telephone during the period June 4 through June 17, 1982.

On June 18, 1982, the NRC Region III Office obtained the landlord's permission to enter and inspect the Midstate Testing Laboratory, Inc. The licensee's inventory on-site consisted of five radiographic exposure devices containing four sealed radiography sources (Table 1) and one soil moisture probe containing radioactive material.

On June 22, 1982, the NRC Region III Office sent a letter (Attachment 1) to the president of Midstate Testing Laboratory, Inc., at his Hammond, Indiana address. The letter stated that if the licensee did not contact NRC by 4:00 p.m. on June 28, 1982, and make arrangements to transfer the radioactive material, the NRC would take measures to ensure that the radioactive material would be placed in a safe storage location pending final disposal. The licensee did not respond to this letter or otherwise contact the NRC.

On July 22, 1982, the NRC issued an Order (Attachment 2) that suspended the license and the licensee's use of the material, required the licensee to transfer or permit transfer of the material to an authorized receiver, and required the licensee to show cause why the license should not be revoked. The NRC's letter transmitting the Order stated that the NRC would take measures to ensure transfer of the material if the Order was not complied with. There was no response to the July 22, 1982 Order.

On July 30, 1982, the Region III Office, acting on the presumption that the material had been abandoned, entered the facility with the permission of the landlord and removed four radiographic sources with their containing cameras and one empty camera. These were transported for temporary storage to the New Brunswick Laboratory on the Argonne National Laboratory site. At the same time, representatives of the State of Indiana removed a soil moisture probe containing a radium-beryllium neutron source. Region III representatives also performed radiation and contamination surveys of the radiographic devices and of the licensee's premises.

On August 10, 1982, three of the sources (1.7 Ci cobalt-60, 3.4 Ci iridium-192, and 0.54 Ci iridium-192) and their containing cameras were shipped by truck to Tech/Ops Incorporated at Burlington, Mass. The sources are scheduled for disposal and the cameras are to be stored for up to 6 months pending further instructions from Region III. The remaining 6 µCi iridium-192 source and camera and the empty camera were stored at the Region III Office in Glen Ellyn, Illinois.

3. Inspection on June 18, 1982

On June 18, 1982, a Region III representative inspected the facility after being admitted by the landlord. The inspector surveyed the facility and the radiographic exposure devices (cameras). The devices (Table 1) were found in a locked storage cabinet (Figure 1) posted as a Radioactive Materials Area. Radiation levels were 3 mR/hr at 18 inches from the cabinet door and 0.6 mR/hr at the rope. Maximum gamma readings at contact with the camera ranged from 1 to 150 mR/hr (Table 1). The cameras were individually locked to prevent source removal. Labels on the cameras indicated they had been leak tested on December 4, 1981.

The inspector entered the source storage cabinet with a key furnished by the landlord. This key and those for unlocking the cameras were kept hanging on the wall in another room where they would have been available to anyone entering the premises. Although the sources were found safely stored in their cameras, the larger sources (1.7 Ci cobalt-60 and 3.4 Ci iridium-192) could be unsafe if removed. Unshielded, these sources could have an exposure rate of about 20 R/hr at one foot; at contact, the exposure rate would be about 100,000 R/hr. The failure of the licensee to continue exercising access control of the facility and the availability of keys for gaining access to the

sources appears to be noncompliance with 10 CFR 20.207(a). This regulation requires material stored in an unrestricted area be secured from unauthorized removal.

At the conclusion of this visit, the exposure devices were again locked in the storage cabinet and the landlord agreed to deny unauthorized persons entry to the facility.

4. Inspection on July 30, 1982

Region III inspectors were admitted to the facility by the landlord on July 30, 1982. The inspectors found and took possession of five exposure devices (cameras) and four sources (Table 1) as described in Section 2. In addition, representatives of the State of Indiana took possession of a soil moisture probe containing a radium-beryllium neutron source. Analyses of inspector smears (Table 3) on the exposure devices and of the moisture probe indicated no source leakage was occurring. The inspector also made direct radiation and contamination surveys of the facility. The results (Table 3 and Figures 1 and 2) indicated that the facility met the NRC guidelines for release for unrestricted use (Attachment 3).

With the sources removed, direct radiation levels were below 10 μR/hr; the only smearable contamination distinguishable from background at the 95% confidence level was approximately 3 ± 2 dpm/100 $cm^2$.

5. Discussion

The landlord, Mr. Adams, was informed that the premises were suitable for unrestricted use at the close of the inspection on July 30, 1982.

On August 6, 1982, Mr. John Munro of Tech/Ops Inc. agreed to accept three sources for disposal and agreed to hold the cameras in which they were shipped for up to six months pending further instructions from Region III.

On August 9, 1982, Mr. Richard Mason, President of Midstate Testing telephoned Region III in response to a telephone message left for him on August 6. Mr. Mason was informed of the actions taken by the NRC including shipment of the sources to Tech/Ops. Mr. Mason acknowledged the information and stated that he had no intention of abandoning the material. In addition, Mr. Mason stated that he intended to respond to the show-cause Order. Mr. Mason acknowledged that the sources had decayed to the point where the activity was too low to be useful in radiography work but he indicated interest in recovering the cameras at some future time.

TABLE 1

Sources and Exposure D vices on Hand 06/18/82

| Licensee's I. D. | Device Identification | Source Identification | Original Source Activity | Activity on 07/30/82 | Contact Exposure Rate 6/18/82(mR/hr) |
|---|---|---|---|---|---|
| Unit 1 (a) | Tech/Ops 533, S/N 219 | Iridium-192, Tech/Ops 424-1 S/N 0612 | 27Ci, 12/22/81 | 3.4 Ci | 5 |
| Unit 2 (b) | Tech/Ops 533 | No Source in Camera | - | - | 1 |
| Unit 3 (a) | Tech/Ops 533, S/N 550 | Iridium-192 Gamma Industries TIA S/N 66031 | 57 Ci, 3/17/81 | 0.55 Ci | 2 |
| Unit 4 (b) | Gamma Industries, Century S/N 528 | Iridium-192 Gamma Industries A2A S/N P-50.97 | 103 Ci, 9/13/77 | 6 uCi | 1 |
| - (a) | Tech/Ops 525, S/N 26 | Cobalt-60 Tech/Ops 424-5 S/N 1480 | 5 Ci, 4/19/74 | 1.7 Ci | 150 |
| - (c) | Kaiser Aircraft Electronics Soil Moisture Probe VMP-487 S/N 0012 | Radium-beryllium Neutron Source | 3 mCi | 3 mCi | 25 |

(a) Shipped to Tech/Ops Burlington, Mass
(b) Stored at USNRC Region III Office
(c) Removed by Indiana State Division of Health, Indianapolis, Indiana

TABLE 2

Instruments Used For Survey and Smear Counting

June 18, 1982

1. Eberline E520 Geiger Mueller Counter Serial No. 2188; calibrated June 14, 1982.

2. Gamma Industries Inc. Geiger Mueller Counter, Serial No. 2039; calibrated April 6, 1982.

July 30, 1982

1. Health Physics Instruments Inc. Tissue Equivalent Survey Meter Model 1010, Serial No. 310; calibrated May 6, 1982.

2. Ludlum Measurements Inc., Model 19 Micro-R Meter, Serial No. 0962; calibrated May 6, 1982.

3. Eberline Model PRS-1 with HP-210 Probe, Serial No. 414; calibrated May 20, 1982.

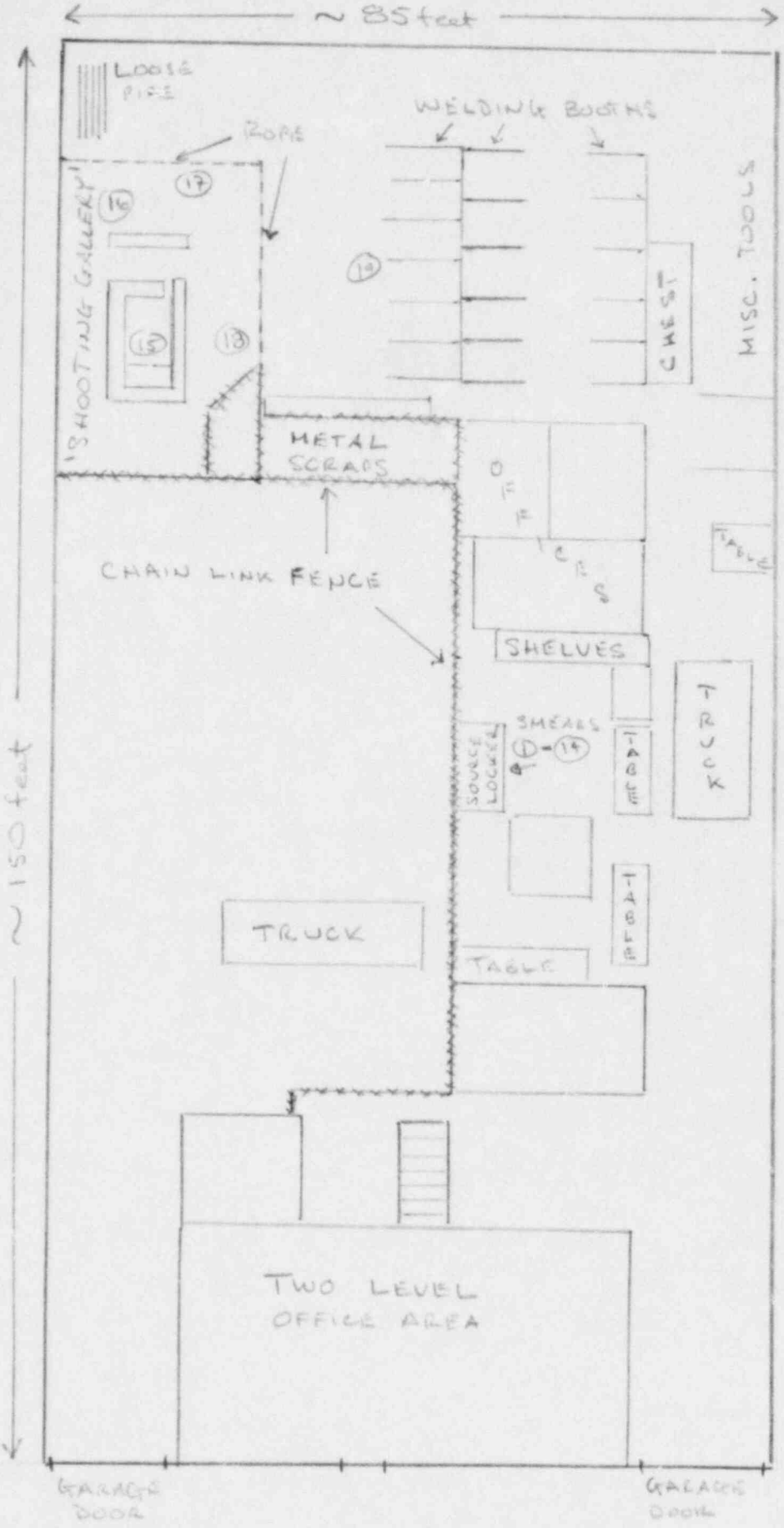
4. Canberra Model 2201, Low Level Alpha/Beta System.

TABLE 3

Smear Results

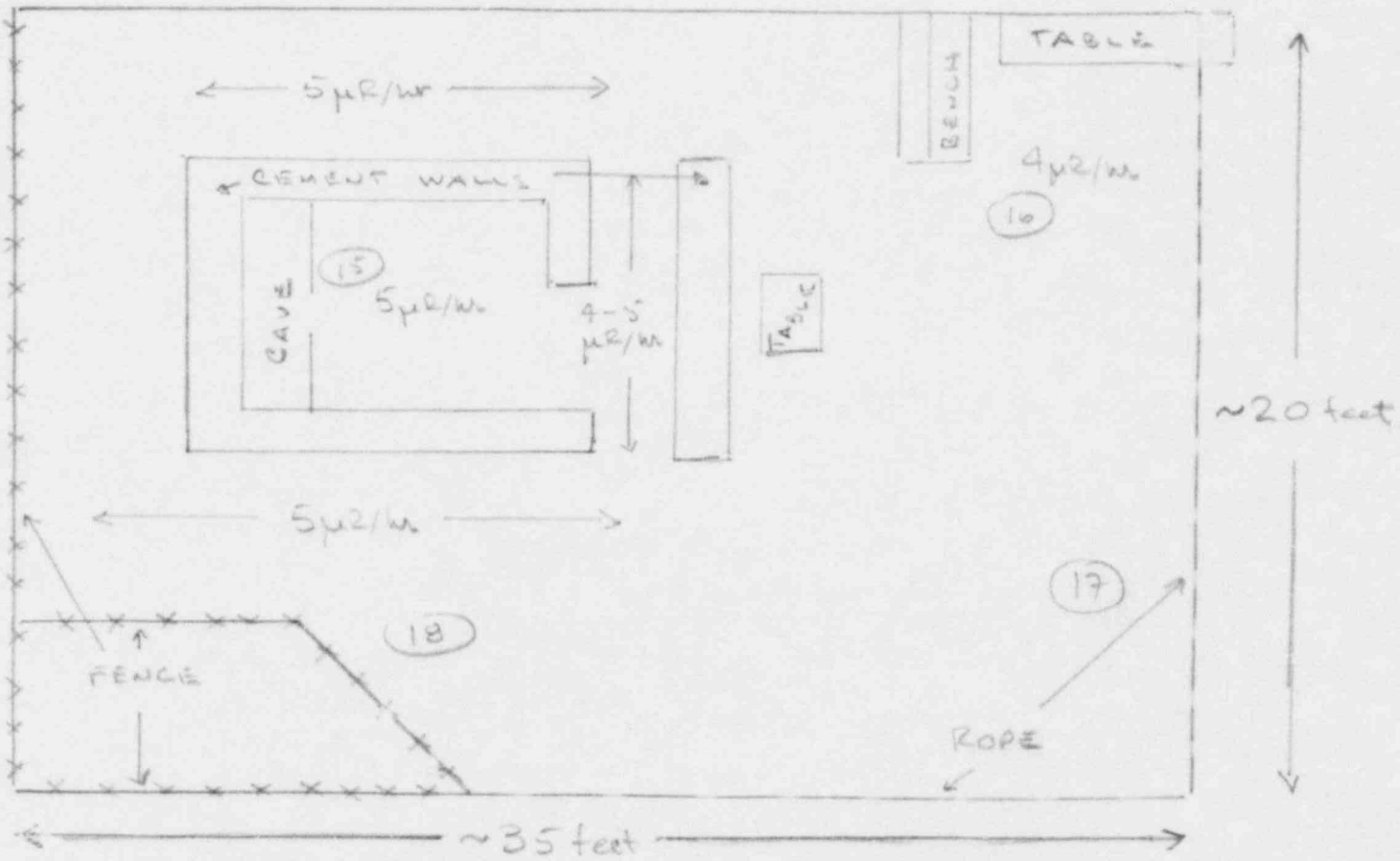
| (a) ID# | (b) Lab# | Location | (c) Alpha dpm/100cm$^2$ | (c) Beta dpm/100cm$^2$ |
|---|---|---|---|---|
| 1 | 82-454 | Outside Storage Locker Door | <1.15 | <3.42 |
| 2 | 82-455 | Ra-Be Source | <1.17 | <3.63 |
| 3 | 82-456 | Composite smear all sources | <1.15 | <3.96 |
| 4 | 82-457 | Tech Ops Camera Unit #3 | <0.78 | <3.42 |
| 5 | 82-458 | Tech Ops Camera Unit #1 | <0.78 | <3.42 |
| 6 | 82-459 | Overpack-large barrel | <0.78 | <3.42 |
| 7 | 82-460 | Overpack-small barrel | <1.68 | <3.42 |
| 8 | 82-461 | Tech Ops Camera Unit #2 | <1.68 | <3.42 |
| 9 | 82-462 | Ra-Be Source | <0.78 | <3.42 |
| 10 | 82-463 | Indus. Century Camera Unit #4 | <1.15 | <3.42 |
| 11 | 82-464 | Tech Ops 525 Co-60 Camera | <1.15 | <3.42 |
| 12 | 82-465 | Tech Ops 525-Crankout Device | <1.17 | <3.63 |
| 13 | 82-466 | Inside Storage Locker | <1.15 | <3.42 |
| 14 | 82-467 | Outside Storage Locker | <0.78 | <3.42 |
| 15 | 82-468 | Cave in "Shooting Gallery" | <0.78 | <3.42 |
| 16 | 82-469 | In front of cave area | 2.72± 2.14 | <3.42 |
| 17 | 82-470 | "Shooting Gallery" | <0.78 | <3.42 |
| 18 | 82-471 | "Shooting Gallery" | <0.78 | <3.42 |
| 19 | 82-472 | Near Welding Booth | <1.68 | <3.42 |

(a) Sample identification # on Figures 1 and 2.
(b) Region III Laboratory Sample I.D. Number.
(c) Errors and limits are at the 95% confidence level.




SKETCH OF SITE - MIDSTATE TESTING LAB., INC.
CIRCLED NUMBERS ARE LOCATIONS OF SMEARS TAKEN 7/30/82
DIRECT RADIATION READINGS WERE <10μR/Hr AT ALL LOCATIONS

Figure 1




MIDSTATE TESTING LAB, INC. — 'SHOOTING GALLERY'
CIRCLED NUMBERS ARE LOCATIONS OF SMEARS TAKEN 7/30/82

Figure 2