

REGION III
NUCLEAR MATERIALS SAFETY SECTION
INDUSTRIAL - ACADEMIC INSPECTION REPORT

Inspection Report No. 85-01

Licensee (Name and Address)

ADCO SERVICES, INCORPORATED.
POST OFFICE Box 35
TINLEY PARK, ILL. 60477

Licensee Contact: J. P. BELL Telephone No. 312-429-1660
License No. 12-11286-01 Docket No. C3007400
Last Amendment No. 25 Date of Amendment: _____
Category: D1 Priority: 2
Program Code: _____

Date of Inspection: JAN 28-29 Feb. 4, 1985

Type of Inspection: ☐ Announced ☐ Initial
☒ Unannounced ☐ Special
☒ Reinspection

Next Inspection 02 87 ☒ Normal ☐ Reduced ☐ Extended

Summary of Findings and Action:

☐ No Noncompliance, Clear 591 issued ☐ Action on Previous N/C
☐ Noncompliance, 591 issued ☐ Regional Action
☒ Noncompliance, Appendix A ☐ HQ Action

Inspector: B. R. Gibson
(Signature)2.15.85
(Date Signed)Approved: Robert E. Burgin
(Signature)2/20/85
(Date Signed)

8506180053 850429
PDR FOIA
SHERMAN85-237 PDR

Revision 8/1/84

JW

4. INTERNAL AUDITS OR INSPECTIONSa. Required by L/C or application: Yes ☒ No ☐ If "Yes":

- 1) By whom Stan Huber
- 2) Frequency monthly Announced: ☐ Unannounced: ☒
- 3) Scope The Consultant observes workers, reviews records perform safe task etc. The licensee is inspected by their insurance company each year.
- 4) Records maintained: Yes ☒ No ☐
- 5) Records reviewed: Yes ☒ No ☐
- 6) Period Reviewed: To JAN 1985 see attachment #1

b. Comments (responsibility of auditor or committee, management control):

5. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERSa. Training program specified in L/C or application: Yes ☒ No ☐b. If training program is required, describe scope of program: ☒

The licensee trains personnel and the Consultant performs additional training each month.

c. Retraining required: Yes ☒ No ☐If "Yes" is retraining: Complete ☒ Incomplete ☐

- 1) Are tests and/or examinations required: Yes ☒ No ☐
- 2) If "Yes" are records available: Yes ☒ No ☐
- 3) Reviewed test results: Yes ☒ No ☐
- 4) Period reviewed: To JAN 85
- 5) Comments (per cent completed, test results, etc.): The licensee has a VCM with a training course with 8 parts. There is a test completed by each person after viewing the tape. The instructor evaluated more training on DOT Reg. The licensee is going to send personnel to the next DOT training in Chicago

d. Training provided, but not covered above: The Consultant

trains personnel during each visit

e. Instructions to workers in accord with 10 CFR 19.12: Yes ☒ No ☐

6. RADIOLOGICAL PROTECTION PROCEDURES

a. Operating and Emergency Procedures

- 1) Required by L/C or application: Yes ☒ No ☐
 2) Provided, but not required by L/C or application: Yes ☐ No ☐
 3) Procedures reviewed: Yes ☒ No ☐
 4) Appeared adequate: Yes ☒ No ☐
 5) Comments (personnel's understanding of procedures): The license

is required by license Condition
to perform tests of the sprinkler system at 6 month
intervals. The Linley Fire Department does this. Was done
at 6 mo intervals except 9-15-83 to 5-15-84 and 6-21-84 to 1-23-85
They also have an emergency plan as outlined in Reg Guide 2.42

b. Changes in procedures since last inspection: Yes ☒ No ☐

- 1) Were changes authorized: Yes ☒ No ☐
 2) Comments: The license has added a better compressor
and has applied to "snip" source and package
for burial. That amendment will allow them to
dismantle Key Key Dodge Co-127 manually.

7. INSTRUMENTATIONa. Type(s) of radiation survey instruments on hand as per L/C, application or equivalent: Yes ☒ No ☐

1) If "No" list changes:

1 Carlson MS-1
3 Influx meters model 22A
6 portable

b. Capability of radiation survey instruments adequate for program: Yes ☒ No ☐c. Calibration of instruments required: Yes ☒ No ☐

d. If "Yes", instruments calibrated in accord with requirements:

Yes ☒ No ☐e. Comments: Their Consultant Calibrates instruments
during monthly visits. Done at 5 month intervals so
that they will be in calibration

8. MATERIALS

- a. Radioactive material secured to prevent unauthorized removal from:
 1) Restricted area: Yes ☒ No ☐
 2) Unrestricted area (20.207): Yes ☒ No ☐

b. Method of control appear adequate: Yes ☒ No ☐

c. Comments: The area is fenced in, locked and secured. The area is restricted to employees or escorted personnel.

9. FACILITIES

a. — Facilities described in letter or application: Yes ☒ No ☐

b. Facilities inspected: Yes ☒ No ☐

c. Comments: The facility is as described in latest amendment and as diagrammed in attachment # 3.

10. POSTING AND LABELING

a. Posting and labeling in accord with 10 CFR 20.203: Yes ☒ No ☐

b. Comments: _____

11. RECEIPT AND TRANSFER OF MATERIAL

a. Procedures for picking up and receiving packages (10 CFR 20.205[b][c]):
 Yes ☒ No ☐

- 1) Incoming shipments monitored: Yes ☒ No ☐
 2) Records of monitoring maintained (10 CFR 20.401[b]): Yes ☒ No ☐
 3) Records reviewed by NRC inspector: Yes ☒ No ☐
 4) Period reviewed: to Jan. 3, 1985

b. Procedures for opening packages (10 CFR 20.205[d]): Yes ☒ No ☐

c. Comments: The licensee surveys packages when they make pickup and again when or if they are delivered to the transfer point facility.

- d. Records of receipt and transfer of material available (30.51[a]; 40.61[a]; 70.51[b][1]): Yes ☒ No ☐
 1) If "Yes", review of records was made by inspector: Yes ☒ No ☐
 2) Period reviewed: To Jan. 29, 1985
 3) Comments: _____

- e. Packages on hand meet labeling requirements (49 CFR 173.399):
 Yes ☒ No ☐
 Comments: _____

- f. Reports to commission required by L/C or regulation submitted:
 Yes ☒ No ☐
 Comments: _____

12. PERSONNEL RADIATION PROTECTION - EXTERNAL

- a. Film or TLD badge supplier Landauer
 b. Badge exchange frequency Monthly
 c. Reports reviewed by Bob Bassett
 d. Records reviewed for period 1981 to 12-31-84 by NRC inspector

- e. NRC forms or equivalent
 1) NRC-4 (20.102[b]): Yes ☐ No ☒ Complete: Yes ☐ No ☐
 2) NRC-5 (20.401[a]): Yes ☒ No ☐ Complete: Yes ☒ No ☐
 Maximum whole body quarterly exposure: 1982 HIGH 1390 - 1983 - 1350
 Maximum extremity quarterly exposure " 570 " 1650
 3) Comments: The licensee has two sets of badges. One set for office employees and one set for driver and warehouse employees.

- f. Pocket dosimeters used: Yes ☒ No ☐
 1) Type used: 541-1
 2) Frequency of recharging: when used
 3) Frequency of reading: during some operations 2 or 3 times
 4) Comments: The licensee rarely has need for them, nor uses them.

- g. Direct radiation surveys of restricted and/or unrestricted areas being made: Yes ☒ No ☐
 1) Records of surveys being maintained: Yes ☒ No ☐
 2) Records of surveys reviewed: Yes ☒ No ☐
 3) Period reviewed: To Jan 25, 1985
 4) Comments: The consultant performs and records the results. See Attachment # 4

13. PERSONNEL RADIATION PROTECTION - INTERNAL

- a. Potential for exposure of individuals to airborne radioactive material exists: Yes ☒ No ☐
- 1) If "Yes" does program for monitoring and control exist:
Yes ☒ No ☐
- 2) Program for monitoring and control appears adequate:
Yes ☒ No ☐

b. Comments: air samples per attachment 4

- c. Respiratory protection program required by L/C or application:
Yes ☐ No ☒

- 1) If "Yes" were respiratory protection procedures reviewed:
Yes ☐ No ☐
- 2) Respiratory protection procedures appear adequate:
Yes ☐ No ☐
- 3) Comments: _____

- d. Bioassay program required: Yes ☒ No ☐

- 1) If "Yes" was bioassay program reviewed: Yes ☒ No ☐
- 2) Bioassay program appears adequate: Yes ☒ No ☐
- 3) Comments: They send urine samples to CEP ~~lab~~ -
a Company in Santa Fe, N.M. given for H-3 and C-14
then under's personnel perform thyroid checks monthly
with a NAE probe. CEP Control for ENVIRONMENTAL
POLLUTION

- e. Smears and air samples:

- 1) Monitoring for airborne radioactivity is conducted (20.103):
Yes ☒ No ☐

a. Records of monitoring reviewed: Yes ☒ No ☐

b. Period reviewed: to 1-25-84

c. Records of monitoring appears adequate: Yes ☒ No ☐

- 2) Smear surveys being conducted (20.201.b): Yes ☒ No ☐

a. Records of smear surveys reviewed: Yes ☒ No ☐

b. Period reviewed: to 1-25-84

c. Records appeared adequate: Yes ☒ No ☐

- 3) Comments: ATTACHMENT H4

14. LEAK TESTS

- a. Leak tests required: Yes ☐ No ☒
- b. If "Yes" leak tests conducted: Yes ☐ No ☐
- c. Records of leak tests maintained: Yes ☐ No ☐
- d. Leak tests records reviewed: Yes ☐ No ☐

- e. Period reviewed: _____
 f. Records of leak tests appear adequate: Yes _____ No _____
 g. Comments: _____

15. RADIOACTIVE EFFLUENT CONTROL AND WASTE DISPOSAL

- a. Byproduct material released to atmosphere and/or sewer (20.106 and 20.303):
 Yes _____ No ☒ *except through air sampler.*
 b. Records of releases or radioactive effluents maintained (20.401):
 Yes ☒ No _____
 1) Period reviewed: *to 1-85*
 2) Records appear adequate: Yes ☒ No _____
 c. Solid waste disposal method: *to Washington Burial and some to landfill, etc*
 1) Records of disposal maintained (30.51): Yes ☒ No _____
 2) Surveys of waste prior to disposal made (20.201): Yes ☒ No _____
 3) Period reviewed: *to Jan 29 1985, during loading of truck*
 4) Records of surveys appear adequate (20.401): Yes ☒ No _____
 d. Comments: *Inspector surveyed a truck loaded for trip to Washington. Maximum 60 mCi/hr Contact and 4 mCi/hr at 10 ft. 13 kg in Cal.*

INDUSTRIAL/ACADEMIC

16. TRANSPORTATION (10 CFR 71.5a and 49 CFR 171-178)		Yes	N/A	Vio
a.	Licensee makes shipments of RAM? Such shipments are: () delivered to common carriers? (<input checked="" type="checkbox"/>) transported in licensee's own vehicle as private carrier? () both?	(<input checked="" type="checkbox"/>)	()	()
If above is yes, complete items below:				
b.	Are authorized packages used? [173.415-416]	(<input checked="" type="checkbox"/>)	()	()
n/c	Package types used: (<input checked="" type="checkbox"/>) DOT-7A, Type A [173.415(a)] <i>the Certificate was for test of 365# license ship 565# more.</i> performance test records on file? () DOT-55 [173.416(a)] licensee aware of 6/30/85 cutoff on use? () Excepted, Instruments/articles [173.421-424] (<input checked="" type="checkbox"/>) LSA-strong tight [173.425(b)(1)] () NRC-Certified [173.416(b)] NRC COC's on file? [71.12(c)(1)] Registered with NRC as user? [71.12(c)(3)] Documented NRC-Approved Q/A Program? [71.17(b)] NRC Q/A Approval No.: _____ () Other: _____	()	(<input checked="" type="checkbox"/>)	()
c.	Special Form Material performance test records available for each source design? [173.416(a)]	(<input checked="" type="checkbox"/>)	()	()
d.	Packages Labeled as required? [172.403(a)] <i>SHIPMENT # 4485E 3.5 MA/HR AT IM IS LISTED AS 1 OTHER PAPER FORM</i> () Excepted () WI (<input checked="" type="checkbox"/>) YII (<input checked="" type="checkbox"/>) YIII <i>FOR SPECIAL FORM</i> Surveys performed to select correct label category and compliance with Rad. Limits? [173.475(i)]	()	(<input checked="" type="checkbox"/>)	()
e.	Packages Marked as required, i.e., proper shipping name, ID No., Spec. No., COC No., etc. [172.300] <i>YKS</i>	(<input checked="" type="checkbox"/>)	()	()
f.	Shipping papers prepared for each shipment? [172.200] Such papers contain required information? [172.203(d)]	(<input checked="" type="checkbox"/>)	()	()
g.	For Licensee private carrier shipments: Vehicles placarded as required? [172.500] Cargo blocked, braced, tied down in vehicle? [177.842(d)] Any incidents reported to DOT? [171.15-16]	(<input checked="" type="checkbox"/>)	()	()
h.	Does Licensee ship any radwaste? If yes, are shipments: () tendered to common carriers by licensee? (<input checked="" type="checkbox"/>) tendered through a Radwaste Broker? If yes, name of Broker <i>ADCO</i> Is licensee aware of 10 CFR 61 waste generator requirements? [10 CFR 61] Has licensee classified and characterized waste? [20.311(d)]	(<input checked="" type="checkbox"/>)	()	()

17. NOTIFICATIONS AND REPORTS

- a. Licensee in compliance with 10 CFR 19.13 (reports to individuals):
Yes ☒ No ☐
- b. Licensee in compliance with 10 CFR 20.405 (over exposure):
Yes ☒ No ☐
- c. Licensee in compliance with 10 CFR 20.403 (incidents):
Yes ☒ No ☐
- d. Licensee in compliance with 10 CFR 20.402 (theft or loss):
Yes ☒ No ☐
- e. Comments The licensee reported and overexposure
to an employee the 3rd quarter 1983 in a
timely manner

18. POSTING OF NOTICES

- a. Licensee in compliance with 10 CFR 19.11(a) or (b): Yes ☒ No ☐
- b. Licensee in compliance with 10 CFR 19.11(c): Yes ☒ No ☐
- c. Comments: _____

19. ENVIRONMENTAL MONITORING PROGRAM

- a. Environmental Monitoring Program required: Yes ☒ No ☐
- b. If "Yes" records reviewed: Yes ☒ No ☐
- c. Period reviewed: to 1-25-80
- d. Records appeared adequate: Yes ☒ No ☐
- e. If Environmental Program is not required, briefly describe any existing program: see attachment 5

20. CONFIRMATORY MEASUREMENTS

- a. Independent measurements made by inspector: Yes ☒ No ☐
- b. Comments (describe type, results, comparison with licensee results):

Compared the licensee's survey with both
surveys agreed. High level of agreement on
ATTACHMENT 7 for NRC test results

21. INDEPENDENT INSPECTION EFFORT

- a. Comment on type of independent inspection effort conducted:

22. CONTINUATION FROM PREVIOUS PARAGRAPHS - USE BACK OF PAGE IF NECESSARY

The Licensee shipped or transported

46 shipment in 1982	1000
59 " " 1983	70
83 " " 1984	2500 mci/yr

for attachment 2. Various materials
multiple
#325 C-14 mostly
H-3 and C-14 mostly

The inspector looked into a possible Non/Compliance with 49 CFR as explained in letter dated 9-19-83. An employee had transported some drums that exceeded the limits for exclusive use. 2000 mci/yr at the surface was due to a 4 drums placed together.

The surface at 1 meter, the surface of the truck and the truck at 6 meters were all within limits. The licensee has reinstated personnel in the proper transporting of these drums.

~~ATTACHMENT 6~~ ATTACHMENT 6

The looked at the licensee facility for unloading drums and preparing for disposal. The facility is well shielded, safe practices used and the radiation records indicate very little exposure to this location. Last letter on Colson letter. The licensee has submitted a better explained procedure in the removal.



HOSPITAL CONSULTANTS • NUCLEAR MEDICINE SPECIALISTS

STAN A. HUBER CONSULTANTS, INC. □ 235 ESSEX LANE □ NEW LENOX, ILLINOIS 60451 □ (815) 722-8009

February 28, 1984

James P. Bell
President
ADCO Services, Inc.
17658 Duval Drive
Tinley Park, IL 60477

Dear Mr. Bell:

This is the summary report of our February 6 and February 28, 1984 visits to your facilities.

LICENSING

Preparation of the NRC and IL license amendment applications to reduce the time radioactive source/wastes are required to decay in storage, and the NRC amendment to remove sources from Kay Ray shielding, is pending your authorization. As you indicated, these items would need to be reviewed along with other possible license amendments that may be needed. Such combined amendment applications would mean less paperwork and lower costs in amendment fees. We will follow up in preparing these applications whenever you advise us of your decisions on the possible additional amendments.

INSPECTIONS

You received a letter, dated February 2, 1984, from the Illinois Department of Nuclear Safety, citing two items of non-compliance and making 2 suggestions. We prepared a letter to IDNS, notifying them of the actions taken in response to their letter. The letter was left with you for you to sign and forward to the IDNS. We will obtain a copy during our next visit and confirm the non-compliance items have been corrected.

RADIATION SAFETY AND RECORD SYSTEMS

1. We reviewed the fourth quarter 1983 and first month of first quarter 1984 film and TLD badge results for all personnel and noted all individuals to be below 18% of MPD (Maximum Permissible Dose) as suggested by the ALARA program.

Bob Bassett sent a letter to R. S. Landauer, Jr. & Co. to update the cumulative exposure histories for employees with damaged or missing ring badges.

2. The monthly radiation surveys, wipe tests, and air sample checks were performed during our February 6, 1984 visit. Results of our findings were placed in the radiation safety record files for review during future inspections.

3. The charcoal impregnated filter in the compactor area was assayed for I-125 concentration using the Ludlum Model 2127 meter. Measured concentration of activity proved to be below the 25% of MPC.
4. Sharon E. confirmed she will send the urine collection for H-3 bioassay of all required employees to CEP within the next week. The required urine analyses are to be performed on a quarterly frequency.
5. Bob Bassett indicated he will perform the I-125 thyroid bioassay checks on personnel during the next few weeks. I performed a bioassay on myself and found the probe and scaler to be operating properly in comparison to past results.

CONTINUING EDUCATION

1. The annual radiation safety review for employees needing Level II training will be conducted during our March 26 visit. A form, indicating when employees need various levels of training is in your training file. We prepared this operational chart to help schedule when people need the different levels at various times.

Bob E. indicated that Paul Bohn, John McCormick, John Bielecki and Tim Tucker can be instructed for Level II.

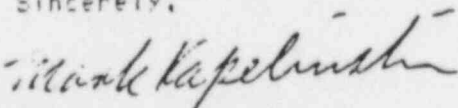
2. Gerard Mrzesinski asked that we give Level I to him, his son Terry, and his new employee Ed Neal during one of our next few visits. If possible, try to arrange this on one of our consulting visits at the end of the month.

INSTRUMENTATION

The quarterly operational checks on all survey meters will need to be performed during our next visit. We will bring a form to document these checks.

Thank you for the opportunity of serving you. Our next visit is scheduled for Monday, March 5, 1984.

Sincerely,



Mark Kapelinski
Nuclear Medicine Consultant

HL:ghh



HOSPITAL CONSULTANTS • NUCLEAR MEDICINE SPECIALISTS

STAN A. HUBER CONSULTANTS, INC. □ 235 ESSEX LANE □ NEW LENOX, ILLINOIS 60451 □ (815) 722-8009

January 30, 1984

James P. Bell
President
ADCO Services, Incorporated
17658 Duvar Drive
Tinley Park, Illinois 60477

Dear Mr. Bell:

This is the summary report of my visits to your facilities on January 9, and 23, 1984.

LICENSING

No NRC amendments are needed at this time.

INSPECTIONS

The yearly Illinois Department of Nuclear Safety Inspection was conducted by Ken Barat on January 9, 1984. Ken B. informed us that it would be at least three or four weeks before results of the inspection are received by ADCO. He also stated that in the future some inspections may be conducted once every two years rather than on a yearly basis.

Some of the items that are being documented in the official report to Springfield by Ken B. are as follows:

1. There was no documentation of any radiation safety review for either John McCormick or Sue Swaw in the radiation safety review files. The consultants performed this review during the January 23 visit to update the files.
2. Ken B. also mentioned there were three months on the monthly radiation surveys that showed no decontamination was done at areas that exceeded the action level. If an item of non-compliance is cited for this on the official report, a reply letter will explain that this is a controlled contamination area and that Regulatory Guide 8.23 gives recommendations as to various action levels in such areas.
3. Additional comments were made stating that signs should be posted on the refrigerator, microwave, and pop machine to reflect that eating and drinking areas are confined to the designated coffee room.
4. ADCO should check to see if R.M. Webster and Associates are authorized to calibrate survey meters.

RADIATION SAFETY AND RECORD SYSTEMS

1. We reviewed the available film and TLD badge results for all employees and noted all to be below the 10% of MFD as suggested by the ALARA program.

During our next visit in February we will check to see if Bob Bassett has located any of the missing badges mentioned by Stan Buhr in the December '83 report. Estimated averages will need to be performed to update the cumulative exposure histories for those employees' badges that cannot be located.

2. We performed the monthly radiation surveys, wipe tests, and air sample checks during our January 9 visit. Documentation of these results were put in the radiation safety records files.
3. The charcoal impregnated filter was removed from the air sampling device near the compactor and assayed for I-125 concentration using the Ludlum Model 2127. Measured concentration of activity for nine days of compaction was $4.05E-12$ uCi/ml which is well below the 25% of MPC.
4. We have talked to Dave Bohn regarding the log of day-of-use checks on the AMS-3 monitor at the compactor area and confirmed they now log the checks on the strip chart recorder paper and date it. They also check the alarm system in the morning of the day the compactor is used.
5. We have checked and confirmed with Dave B. that they have replaced the HEPA and initial filters in the compactor. We surveyed both filters and found them to be at background level readings.
6. We talked with Sharon regarding the quarterly requirements of urine collection for H-3 bioassays. Sharon will submit these analyses to CEP during January 1984.

INSTRUMENTATION

We prepared a Year-at-a-Glance chart for survey meters for calibrations and operational checks. Because the operational check form for survey meters could not be located, we will check with Bob Bassett for these records during our next visit.

CONTINUING EDUCATION

We performed the Level 1 orientation instructions to John McCormick and Sue Swaw on January 23, 1984. A checklist of the items covered along with signatures of these two employees were placed in the ADCO training files for future reference by regulatory agencies.

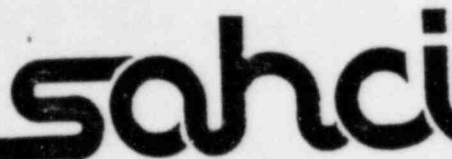
Thank you for the opportunity of serving you. Our next visit is scheduled for Monday, February 6, and 20, 1984.

Sincerely,

Mark Kapelinski
Mark Kapelinski

Nuclear Medicine Consultant

MK/JP/JH/jmk/KD



STAN A. HUBER CONSULTANTS, INC. □ 235 ESSEX LANE □ NEW LENOX, ILLINOIS 60451 □ (815) 722-8009

December 28, 1983

James P. Bell
President
ADC0 Services, Incorporated
17650 Duvar Drive
Tinley Park, IL 60477

Dear Mr. Bell:

This is the summary report of our December 12 and December 19, 1983 visits to your facilities.

LICENSING

1. You confirmed that the Illinois amendment for release of old facilities has now arrived.
2. The NRC has also sent an acknowledgement card indicating the renewal application was received. We expect it will be another four or five months before the new license is issued, but the old license will remain in effect until that time. If any questions for additional information are received please contact our office.

REGULATIONS

A current copy of regulations 10 CFR 20 could not be found in the offices. This was needed to prepare paperwork for the new 10 CFR 20.311 regulations concerning transport of radioactive waste. These changes were to become effective December 27, 1983. I provided ordering information to obtain the most recent paperback bound copy version of Title 10 Code of Federal Regulations. This book is issued annually and is a convenient method for ensuring that a recent copy of all the pertinent NRC regulations are available.

RADIATION SAFETY AND RECORD SYSTEMS

1. We reviewed the 1983 film and badge results and noted some missing data during the past few months. These included the following:
 - a) All September 1983 badges.
 - b) Ron Fields whole body and ring badges from August 1, 1983 to August 30, 1983.
 - c) Ron Christensen's ring badges from October and November 1983.
 - d) Tim Tucker's ring badge from October 1983.
 - e) John McCormick's ring badge from November 1983.

- f) Sharon Ertl and Rich Seidlicki had turned their November 1983 badges in late and these should show up on the next report.

I left Bob Bassett a note on these badge reports for follow-up during our next visit. If results for the missing reports can not be located, it may be necessary to perform estimates and include this in the employees' cumulative exposure histories.

2. The available badge results for all personnel indicated readings at low levels well within acceptable limits.
3. We performed the monthly radiation surveys, wipe tests, air sample checks, and compactor filter checks and documented these in the radiation record files. New wipe test swabs were obtained, but these may not be as convenient as the previous Nu-Con smears which are available on a paper roll. I provided Sharon E. with the address of Atomic Products which may have these smears available.
4. The log of day-of-use checks on the AMS-3 monitor at the compactor area should be reinitiated. This was discussed with Dave Bohn.
5. A new sketch and survey form was prepared to reflect the changes in the new facility. Extra copies were placed in our file for use during future monthly surveys.
6. Thyroid bioassay checks on ADCO personnel were performed during our December 12, 1983 visit. All results were at low levels within action levels and were recorded in the bioassay records.
7. Urine collections for H-3 bioassay will need to be submitted to CEP next month to maintain the required quarterly frequency.
8. Bob Bassett indicated he is aware that the absolute (HEPA) and initial filters in the compactor need replacement. He indicated these would be ordered in the near future.

INSTRUMENTATION

We calibrated the Eberline E-520 #1174 and the Gamma Industries 155b survey meters on December 12, 1983. Certificates were placed in the calibration log. Additionally, we performed calibrations on the Victoreen pocket dosimeters.

Several of the other ADCO meters had been repaired and calibrated recently and we updated the calibration schedule sheet in the log book.

CONTINUING EDUCATION

I performed the initial orientation instructions to John Bielecki on December 19, 1983. A checklist of the items covered and a copy of his radiation safety exam were placed in the ADCO training file for future reference.

Thank you for the opportunity of serving you. Our next visit is scheduled for Monday, January 9, 1984.

Sincerely,

Stan W. Buhr SWB
Stan W. Buhr
Vice President

SWB:hh

2

1982

35
8
3

256
222
755

1983

31
11
17
2

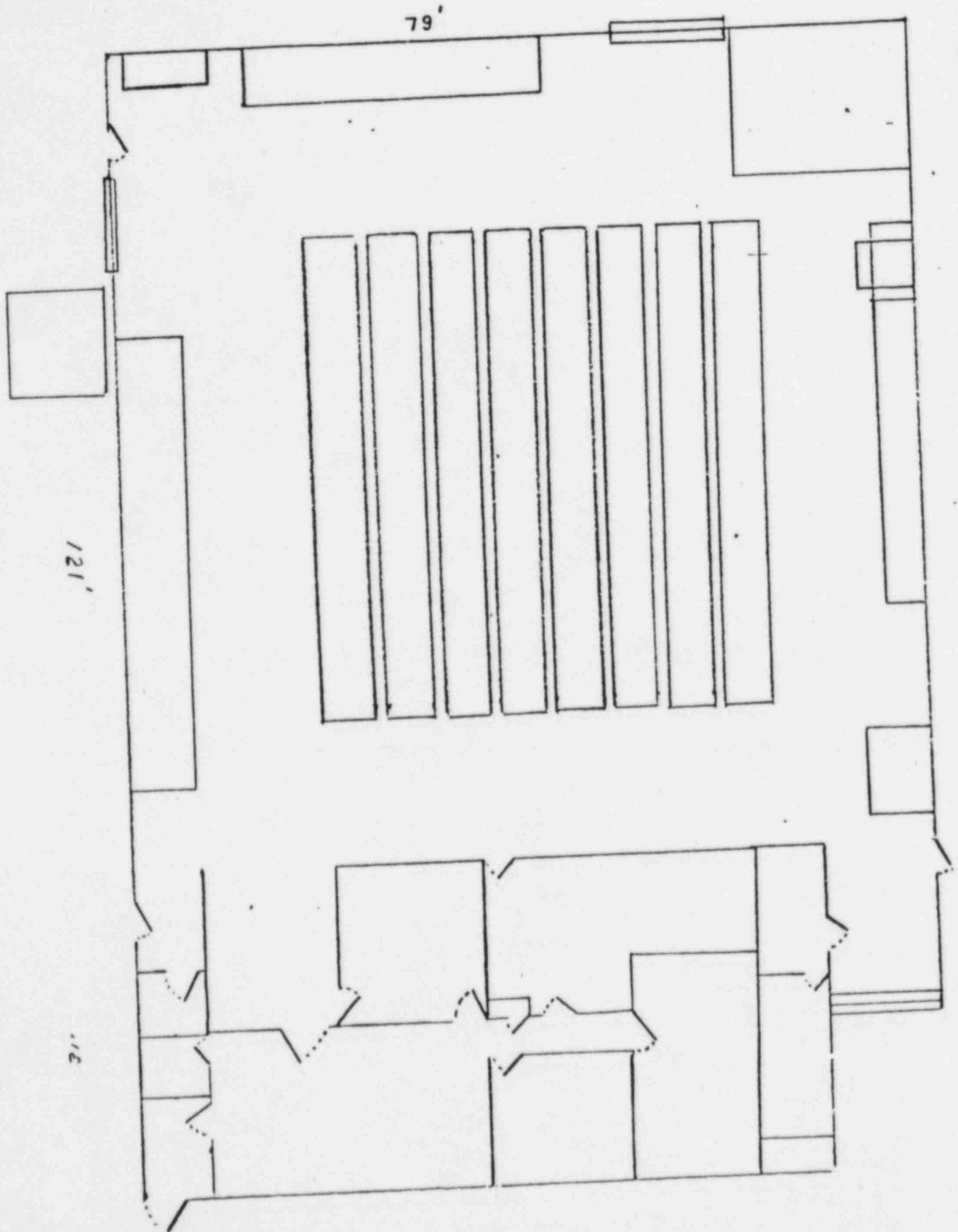
256
222
755
Chim. Rec.

1984

58
1
4
20

256
222
755
Quarry

3



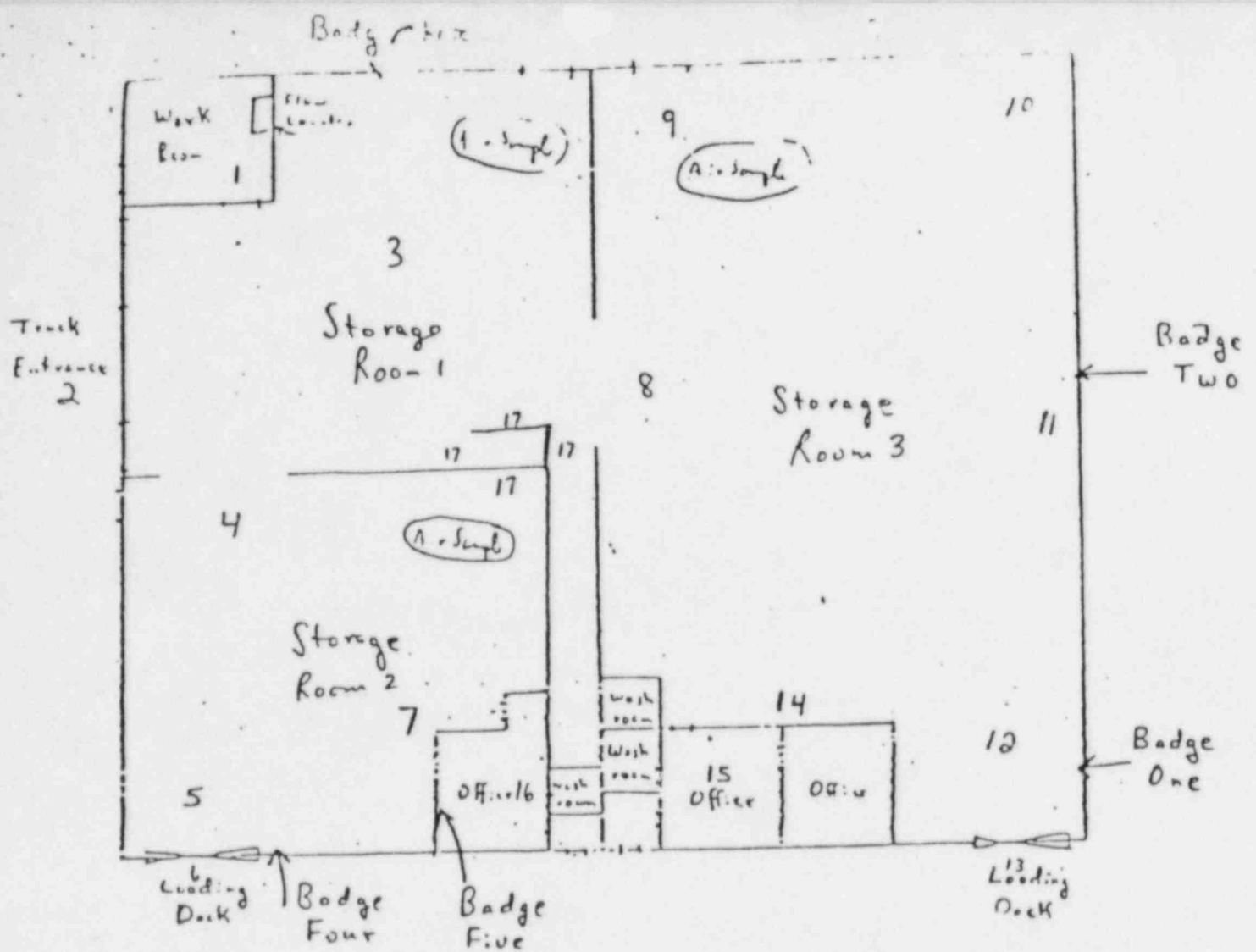
DUVAN DRIVE

Surveys are performed with a low level GM survey meter with shield open. Wipe tests are performed on floor surfaces with rad-wipe smears, or similar absorbent material and assayed in a windowless g.m. counter. Each wipe test area is 400cm². Net cpm results/400cm² are converted to net dpm by dividing by 4 and dividing by the decimal value of the efficiency rating (bottom of page). Background mr/hr and cpm are recorded at bottom of form (#20).

LOCATION (See numbered sketch)	MR/HR	DISTANCE	WIPE TEST SAMPLE (400cm ²)		
			Gross cpm	Net cpm	Net dpm/100cm ²
Driver Room	0.08	Waist Level	42	7	9
side of Truck Entrance	✓ 0.15	3ft from wall	28	0	0
Storage Room 1	1.5	Waist Level	34	0	0
Storage Room 2	0.15	Waist Level	41	6	8
" inner loading area	0.05	Waist Level	38	3	4
side loading area	✓ <0.05	3ft from wall	40	5	6
Storage Room 2 (frig. storage)	0.5	Waist Level	31	0	0
entry to Storage Room 3	0.9	Waist Level	29	0	0
entry to Storage Room 3	0.2	Waist Level	40	5	6
thwest corner of Storage Room 3	0.7	Waist Level	31	0	0
East wall of Storage Room 3	0.15	Sweep of entire wall	33	0	0
East Loading Area Storage Room 3	0.4	Waist Level	29	0	0
East Loading Area Storage Room 3	✓ 0.1	Waist Level	37	2	3
Walkway near Offices	0.2	Waist Level	28	0	0
Receptionist Office	0.07	Waist Level	35	0	0
President's Office	0.08	Waist Level	35	0	0
High Activity Storage bin	15	(all 4 sides at block surf)	31	0	0
19 White tractor	<0.05	1"	34	0	0
10 Menom tractor # 1451	<0.05	1"	39	4	5
BACKGROUND	<0.05	(outside)	35	-	-

Instrument: Ludlum Model B 14C
 meter serial # 12486
 Background check (surface of 10uCi Na22): 0.8 mr/hr

Instrument:
 Baird Atomic windowless flow counter
 1 minute net count of 0.174uCi C14 source = 75513 cpm
 Efficiency (divide by 2.2×10^6 dpm/uCi) = 19.8
 Scaler Test: 3615 cpm



Date	Badge One	Badge Two	Badge Three	Badge Four	Badge Five
(All readings in millirems)					
1/81	M	M	M	40	M
2/81	M	10	M	50	M
3/81	M	M	50	240	70
4/81	M	M	40	100	M
5/81					
6/81	20	280	40	30	10
7/81	20	50	1370	70	40
8/81	M	140	(light track)	40	20
9/81	M	20	30	50	120
10/81	M	10	30	100	80
11/81					
12/81					

28, 1981

Location at which air sample was taken is noted on the attached facility sketch.

Detector efficiency: 79%

Isotope: Th-230 Activity: 00832 uCi or 18304 dpm

(14,542 cpm) - (35 cpm background)

(100%) = 79% efficiency

18304 dpm

Sample counts:

Volume of air sampled: 1140 ft³

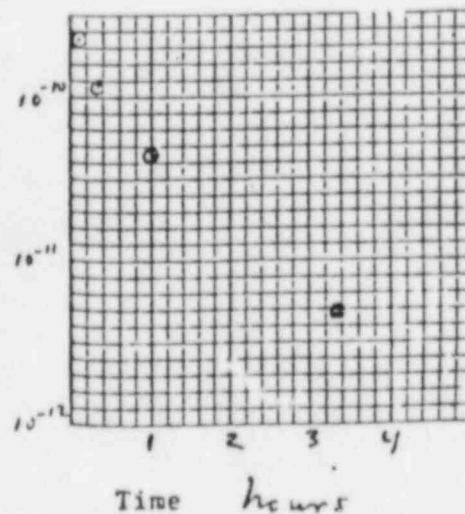
Sample Time collection:	Gross cpm	Net cpm	Correction for sample size ($\div .13$)	Net dpm (\div eff)	dpm/ 1000ft ³	uCi/ ml
<u>7 min</u>	<u>1021</u>	<u>986</u>	<u>7585</u>	<u>9601</u>	<u>8422</u>	<u>1.35×10^{-10}</u>
<u>20 min</u>	<u>824</u>	<u>789</u>	<u>6069</u>	<u>7682</u>	<u>6739</u>	<u>1.08×10^{-10}</u>
<u>30 min</u>	<u>510</u>	<u>475</u>	<u>3654</u>	<u>4625</u>	<u>4057</u>	<u>6.5×10^{-11}</u>
<u>hrs, 20 min</u>	<u>85</u>	<u>50</u>	<u>385</u>	<u>487</u>	<u>427</u>	<u>6.9×10^{-12}</u>

(/1000 ft³) (1.605×10^{-14}) = uCi/ml

concentrations of radionuclides do/do not
comply with specified action levels. (See
site side of this form for action levels
procedures).

Air
Concentration

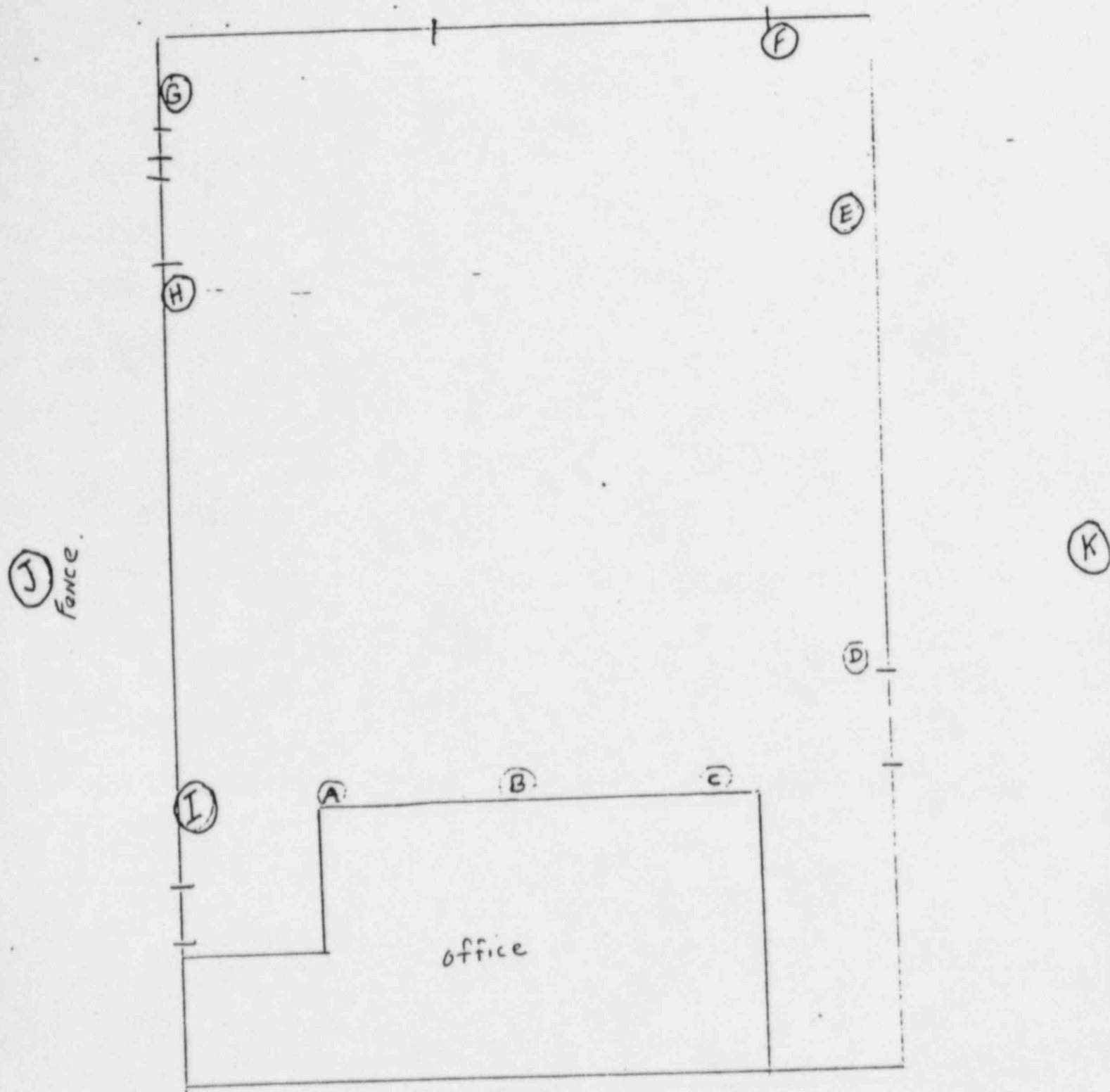
uCi/ml



Signature Stef W. Buh

film Badge Location

ATTACHMENT # 3



Don't lose