

INDUSTRIAL/ACADEMIC INSPECTION FIELD NOTES

Inspection Report No: 88-01

License No: 47-00260-02

Licensee Name and Address:

Docket No: 030-06652

Union Carbide Corp.  
Engineering & Technology Services Division  
Process Measurement Systems  
P.O. Box 8361

So. Charleston, WV 25303  
Licensee Contact: Michael Green

Telephone No: 304-747-5314

Last Amendment No. and Date: #40; 9/27/84

Category E Priority: 2

Date of Inspection: 5/31/88

Type of Inspection: ( ) Announced ( ) Initial ( ) Reinspection  
() Unannounced ( ) Special

Next Inspection Date: 5/90 (  ) Normal ( ) Extended ( ) Reduced

Summary of Findings and Action:

- |  |                            |
|--|----------------------------|
| ( <input checked="" type="checkbox"/> ) No Noncompliance, Clear 591 Issued | ( ) Action on Previous N/C |
| ( ) Noncompliance, 591 Issued  | ( ) Regional Action        |
| ( ) Noncompliance, NOV Issued  | ( ) HQ Action              |

Personnel Contacted:

Jim Baggard

Inspector: Sandra G. Waldron  
(Signature)

6/16/88  
(Date Signed)

Inspector: [Signature]  
(Signature)

6/13/88  
(Date Signed)

\* Those present at exit interview.

Inspection Items	Scheduled for Inspection	Post-inspection Status	Module No.	766 Time Info
Management Meeting - Entrance and Exit Interviews (Required)			30703	1/2 hr
Initial Management Meeting			30800	
Licensed Materials Programs (Required)			87100	2 hrs
Licensee Event Followup			92700	
Followup on Inspector-identified Problems			92701	
Followup on Noncompliance and Deviations			92702	
IE Bulletin/Confirmation of Action Letter Followup			92703	
Followup on Headquarters Requests			92704	
Followup on Regional Requests			92705	
Independent Inspection Effort (Required)			92706	1/4 hrs.
Inspector Dispatched to Site			92700	
Followup on Significant Event Occurring During Inspection			93710	
Closeout Inspection and Survey			83890	
Inspection of Transportation Activities (Required)			86740	1/2 hrs
RadWaste Management/Waste Generators			84850	
Radiation Protection (Required)			83822	1/2 hrs

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
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1. ORGANIZATION Lic. Cond. \_\_\_\_\_ OK

Management Organization:

Radiation Protection Organization:

Radiation Safety Committee:

Authorized Users:

NOTES: J. Boggs - Primary Nucl. Tech., Nuclear Inst. ARSO  
(incl. inst. cal.)  
Mike Beere - Physicist - RSO - writes spec. for instrum.  
J. H. Brubaker - Group Leader - Auto. Analytical Systems  
Dr. Brotherton - Asst. Director of R&D  
(T.N.)

2. LICENSEE INTERNAL AUDITS Lic. Cond. \_\_\_\_\_ OK

Scope and Frequency:

Management Controls:

ALARA Audits:

Radiation Safety Committee Meetings  
Minutes Recorded:

NOTES: Meet 2x / yr.

Ind. Hygiene, Purchasing, RSO, ARSO represented.

records of meetings maintained

3. INSPECTION HISTORY:

a. Violations:

b. Corrected:

N/A

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
<b>4. TRAINING AND INSTRUCTIONS TO EMPLOYEES</b>		<u>OK</u>
Training program, scope and frequency, retraining. Conducted by whom?	Lic. Cond. _____	
Required tests administered; scores satisfactory		
Instructions to workers:	§19.12 R.G. 8.13 R.G. 8.27 R.G. 8.29	
NOTES: Perform training for all RSO's in NJ nationwide. Training req'd for all workers before working incl. users of GC, gauges, machine prod. x-ray. Records maintained		
<b>5. RADIATION PROTECTION PROCEDURES</b>	Lic. Cond. _____	<u>OK</u>
Operating & emergency procedures implemented:	Lic. Cond. _____	<u>OK</u>
Manufacturer's instructions for devices used:		
Protective clothing used:		
Contamination control procedures:		
Access control "High Radiation Area"	§20.203(c)	
Security	§20.207	
NOTES: Have approved O&EP most sources are in permanent storage - Bldg locked, framed & locked gate. Standard for all Union Carbide RAM users.		

One of the Principle Rad. centers for Union Carbide  
 Personnel Go to other plants in U.C. a  
 test for C buildup w/ Am 241 source  
 Install & maintain gauges, meters in all plants.

AREAS INSPECTED AND FINDINGS

Radiography - only machine produced - no work

INSPECTION ITEMS	CRITERIA	FINDING
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6. MATERIALS, FACILITIES, AND INSTRUMENTS OK

Authorized uses and quantities: Lic. Cond. \_\_\_\_\_

Restricted areas, posting requirements: \$20.203

Survey instruments & dosimeters; operable, properly calibrated: - Beckman Gamma 1000 - calib. @ 6 mos. by Beckman - 1/d before use

Fixed monitors (operable and calibrated): last - 3/15/88 calibrated.

NOTES:

- RAM (Z 1-83) - sealed sources - 300 Ci each
- Am 241 - 25 Ci each
- RAM (Z 1-83) - mvy - 1 Ci of any nuclide; 2 Ci total except C14 - 2 Ci total
- Am 241 - (monitors) - 3 Ci each

see back of  
 pg 4

7. RECEIPT AND TRANSFER OF MATERIALS OK

Procedures implemented, adequate: Lic. Cond. \_\_\_\_\_

Transfer of byproduct material: \$30.41

Labeling and packaging: \$71.5, (49 CFR 170-189)

Records of receipt, transfer, storage survey, and monitoring \$30.51 Lic. Cond. \_\_\_\_\_

Procurement procedures Lic. Cond. \_\_\_\_\_

Inventory control Lic. Cond. \_\_\_\_\_

NOTES:

\* maintain annual inventory  
 incl. storage - see back of pg 4

all orders for mat'l thru J. Bogger  
 receive mat'l from various plants in area to ultimately  
 send back to manufacturer - ex. rec'd 16 Cs 137 level gauges  
 from S. Chad. - Total 3.8 Ci. - records for ea. gauge  
 transf. kept.

mat'l from plant closings.

maintain very complete records

AREAS INSPECTED AND FINDINGS.

INSPECTION ITEMS	CRITERIA	FINDING
<b>8. PERSONNEL PROTECTION - EXTERNAL</b>		
Personnel monitoring control; minimize exposures, control of accumulated dose	\$20.101, \$20.102, \$20.202, \$20.104,	BD
Dosimetry supplier, frequency of exchange, type dosimeters (W. B. or extremity)	Lic. Cond. _____	
Average exposures (W.B. and extr.)	30 mrem/w	
Maximum exposures (W.B. and extr.)	30 mrem/w	
Number of persons monitored		
Surveys conducted	Storage area surveyed every 6 mos. records kept.	\$20.201, Lic. Cond. _____
Frequency, results, records	max @ fenced area -	\$20.401
Levels in "Unrestricted Areas"	0.5 mR/hr	\$20.105
NOTES AND REMARKS:		
monthly, standard FB exchange		
- only 2 are exp. to RAM		
~ 20 people badged - others - machine produced.		

**9. PERSONNEL PROTECTION - INTERNAL**

Airborne concentrations in "Restricted Areas"	\$20.103
Exposure of minors	\$20.104
Posting of airborne radioactivity areas	\$20.203
Survey, monitoring requirements; records	\$20.201, \$20.401
Ventilation systems	Lic. Cond. _____
Installation and Testing	
Process or engineering controls	\$20.103(b)(1)

NOTES:

N/A

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
<b>10. LEAK TESTS</b>		
Performed by whom?	Lic. Cond. _____	OK
Test frequency, records of results		
NOTES: Perf by J. Bergeron @ 6 mos intervals Records kept. also do wipes for other UC locations		
Beckman 7000 used to counterpoise		
<b>11. EFFLUENT CONTROL, WASTE DISPOSAL</b>		
Release of effluents	\$20.106	OK
Procedures, monitoring of effluents	\$20.401, Lic. Cond. _____	
Waste disposal		
Transfer for final disposal	\$20.311	
Release into sanitary sewage	\$20.303	
Disposal by incineration	\$20.305, Lic. Cond. _____	
Disposal of specific waste	\$20.306	
Waste held for decay	Lic. Cond. _____	
Labels obliterated		
Surveys conducted		
Other Specific disposal method(s)	\$20.302	
Records of disposal	\$30.51, \$20.401(3)	
NOTES:		
hc - allowed to dispose up to 10mCi H <sub>3</sub> in titrated H <sub>2</sub> O by incineration		
hc - Ash disposed off provided surveys made to determine if w in limits of Appendix B, Table II		
disposed of 9.5 mCi H <sub>3</sub> H <sub>2</sub> O 12/85		

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
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12. SHIPPING, SHIPPING INCIDENTS

Procedures for pickup, receipt, monitoring packages §20.205(b) & (c)  
Lic. Cond. \_\_\_\_\_

Transportation (10 CFR 71.5a and 49 CFR 171-178)

- a. Licensee makes shipments of RAM?  
Such shipments are:  
( ) delivered to common carriers?  
\* ( ) transported in licensee's own vehicle as private carrier?  
( ) both?

If above is yes, complete items below:

- b. Are authorized packages used? [173.415-416]  
Package types used:  
( ) Dot-7A, Type A [173.415(a)]  
performance test records on file?  
( ) DOI-55 [173.416(a)]  
licensee aware of 6/30/85 cutoff on use?  
( ) Excepted, Instruments/articles [173.421-424]  
( ) 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 A/A Program? [71.17(b)]  
NRC A/A approval No: \_\_\_\_\_  
( ) (Well loggers only if AM 41 source in excess of 8ci)

Special Form Material performance test records available for each source design? [173.416(a)] *yes*

- d. Packages labeled as required? [172.403(a)]  
( ) Excepted ( ) WI ( ) YII ( ) YIII *yes*  
Surveys performed to select correct label category and compliance with Rad. Limits? [173.474(i)]

e. Packages marked as required, i.e., proper shipping name, ID No., Spec. No., COC No., etc. [172.300] *yes*

- f. Shipping papers prepared for each shipment? [172.200] *yes*  
Such papers contain required information? [172.203(d)] *yes*

\* Shipping bet. area

Plants  
Ship. papers  
used vehicle  
Placarded

4/28-5/2

5/9-5/13

Shipped

Am-Be source  
to Houston, TX

for C buildup

Mr. J. Boogard

went from

Chad. to Houston,

Picked up source

Shipped back

to WV after

ea. job.

records kept

via Fed Exp

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
<b>12. SHIPPING, SHIPPING INCIDENTS (Continued)</b>		
Transportation (Continued)		
g.	For licensee private carrier shipments: Vehicles placarded as required? [172.500] Cargo blocked, braced, tied down in vehicle? [172.842(d)] Any incidents reported to DOT? [171.15-16]	n/A
h.	Does licensee ship any radwaste? If yes, are shipments: ( ) tendered to common carriers by licensee? If yes, name of broker: Is licensee aware of 10 CFR 61 waste generator requirements? [10 CFR 61] Has licensee classified and characterized waste? [20.311(d)]	
	Incidents, reports, corrective actions QA Program (under General License)	49 CFR 170-199 \$71.11

NOTES:

**13. NOTIFICATIONS AND REPORTS**

To individuals	\$19.13
Overexposures, excessive levels and concentrations incidents	\$20.403, \$20.405
Personnel exposures and monitoring, termination reports	\$20.407, 20.408
Theft or loss of licensed material	\$20.402

NOTES:

no reports required

AREAS INSPECTED AND FINDINGS

INSPECTION ITEMS	CRITERIA	FINDING
14. <u>POSTING OF NOTICES</u>	Part 20, license and documents, procedures, §19.11(a) Notice of Violations	OP
Form NRC-3		
NOTES:	Posted in Mr. Boggs's office	
15. <u>ENVIRONMENTAL MONITORING PROGRAM</u>	Lic. Cond. _____	
Implementation of program, scope and frequency as required		
Records maintained, reviewed by management		
NOTES:		
16. <u>EMERGENCY PREPAREDNESS</u>	Lic. Cond. _____	OP
Procedures available for incidents and accidents		
Training for personnel; coordination with supporting groups and agencies		
NOTES:	Train local Fire, Police, Emergency Personnel	

AREAS INSPECTED AND FINDINGS

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INSPECTION ITEMS	CRITERIA	FINDING
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17. OTHER LICENSE CONDITIONS

Reviewed with licensee representative

NOTES:

*Discussed w/ licensee*

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18. CONFIRMATORY MEASUREMENTS

\$20.105, \$20.201

Licensee's surveys verified on sampling  
basis

NOTES:

*Troxler storage - @ 18" @ 3mD/ks.*

*Perimeter of fence for storage area*

*max 0.6 mR/ks.*

*Vetex*

Meter used:

Calib. Date:

10/87

Serial No: \_\_\_\_\_

Diagrams of areas surveyed:

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19. INDEPENDENT INSPECTION EFFORT

Scope of program:

NOTES:

Union Carbide

Amend. #40 - incinerate H-3 up 10mCi

Broad-Sealed sources - 300 Ci Total

Am 241 - 25 Ci

Various - see item C.

Am 241 - 3 Ci / source

used - RAD, GCa inst. calib.

Am 241 - testing steel vessels & C buildup.

11/85 - Claude Rowe - 591C.

- R5 manual

R50 - semiannual survey

- receipt & transf.

- Training - initial & periodic

- maintain inventory - annual

R5C - meet annually - incl. manag. & Purck. members  
audit programs - used, inventories, records

RAM Committee - annually & unsealed sources in use.

Union Carbide

Storage Area -  $< 2 \text{ mS/yr}$  @ perimeter

Contam. Action Levels

- Lab (restricted area)  $500 \text{ dpm} / 100 \text{ cm}^2$
- unrest. - no det. act.

Survey - cont. & rad levels - monthly  
Air sampling - qtrly.

Pm - TLD's, FB & PD (cumulative reading)

Onsite & T analysis & STD calib.

SM calib - Cs137 - no set interval

X-ray diff. systems:

- freq. surveys recorded.

Training - RPO - 1 wk course  
also used for training users

May performed radiography - 3d course.

Training - cont'd

X-ray diff. - 1 hr TB initial & annual refresher for users.  
ID keeping not allowed in lab.

monthly FB-Gardner