-6

SPECIAL LIMITED INSPECTION

1. Name and address of licensee
Union Carbide Corp.
Chemicals & Plastics Operations Div.
Tech Center
P.O. Box 8361
South Charleston, W.Va. 25303

2. Date of inspection
7/29/68

3. Type of inspection
R-3

4. License number(s), docket number(s), number and date of last amendment for each license. Category and Priority of each license
47-260-6
Thru Amend. No. 22 dtd Apr. 28, 1967
E, III

5. Date of previous inspection
6/3-4/65

6. Is "Company Confidential", or proprietory, or classified information contained in report?
Yes_____ No ✓

(Specify paragraphs)

7. Scope of inspection
Special limited inspection conducted on the basis of memo from L.D. Low dtd April 3, 1968.

8. H.W. Young
Inspector

7/29/68
Date of Report

J.T. Sutherland
Reviewer

8/14/68
Date of Review

A-193

1 of 6

Bldg 770, 2nd floor, east wing, Dr. Bricker,
storage in hood of room 235
operations in 237
both posted CRM symbol
both restricted areas - 24 hr. control by staff.
AEC-3 posted by entrance to room 237
surveys by Fred Williams &/or R.O. Mid Kiff
release within limits

on inventory 5.0 mc. C14
48.0 mc C-14
53.0 total

labeling CRM, isotope quantity & date
Records of receipt maintained by Dr. Bricker from U Carbide
" of trans. to U. Carbide
waste to Radiological Service Co. NJ
Latest & only waste
C-14 — 61 mc
Ra 226 — 1.7 mc
Sr 90 — 20 mc
H-3 — 12 C
Cs 137 — 1 mc

Dr. Bricker authorized by Isotope committee (4/quarter)

2 of 6 N.C. Eastman, Project scientist
Bldg 770, 4th floor, room 455, tracer studies
85 mc C14 received from Union Carbide
85 mc C14 transferred to " " & Mellon Institute, Pittsburg Pa.
liquid form
Inventory - none
Surveys by Fred Williams &/or R.O. Mid Kiff
All work in hood (air flow 1200 cfm)
used rubber gloves, no pipetting
Sign CRM posted when required
Labeling CRM symbol ok, Also isotope quantity & date
No restricted area

Licensee Union Carbide Corp.

Summary

The use of Lic Mat. has not resulted in excessive external exposures or exposures to concentrations of radioactive materials. There has been no release of effluents to unrestricted areas. The radiation level in the unrestricted area has been less than 0.6 mr/hr.

Noncompliance and Safety Items

None (clear)

Unusual Occurrences

No loss
No overexposures
No malfunctions
No ingestion
No inhalation
No spills

(None)

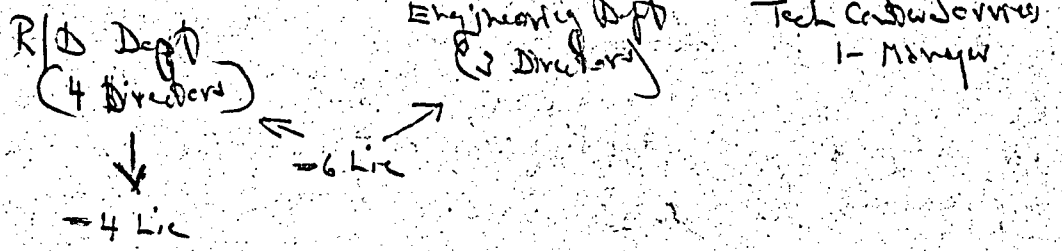
Status of Previously Reported Noncompliance or Safety Items

N/A (clear)

Management Interview

The inspection findings were discussed with Mr. R. M. Berg Asst. Director of R & D. Dept.

Tech center for Group 1 of Union Carbide
Group 1 consists of chemical & Plastics production facilities of Union Carbide



Isotopes Committee
Mr. N.H. Ketcham – chairman, South Charleston Plant
Mr. C.G. Corvic, South Charleston Plant
Mr. V.O. Foglesong, Institute Plant
Mr. D.L. Heywood, R&D Dept, Tech Center
Mr. B.L. Murray, South Charleston Plant
Mr. R.E. Peele, Institute Plant
Mr. C.E. Pownall, Purchasing
Mr. R.V. Seeley, Engineering Dept
Mr. Fred. Williams, RSO, Tech Center

Meets on infrequent basis. Last met formally 1 Oct 20, 1965. Minutes kept should there be a Health or Safety problem. it would be brought to the attention of committee.

Licensee Union Carbide Corp

Mr. N. Landfried, Inst. Engineer

Mr. H.L. Green, Inst. Engineer
Mr. R.V. Sealey, Group Leader
Dr. D.L. Kaylwood, Group Leader
Mr. T. Kennell, Project chemist
Mr. Ray Louther, chemist

DETAILS

A. Participants

Mr. N.H. Ketcher, Chairman - Isotopes Committee, RSO for - 6 license
Dr. J.H. Bricker, Project scientist
Mr. R.G. Tyndall, Asst RSO for -4 and part of -6 Lic
Mr. N.C. Eastman, Project scientist
Mr. J.K. Rose, Group Leader

B. Scope of License Program

Tracer studies associated with chemical industry (study of chemical reactions)

C. Organization

Mr. Ketcher - RSO for -6 license & Experience at K-25 plant ORNL. 4 years exp. at ORNL plus 17 years exp at Union Carbide
Mr. Fred Williams - RSO for -4 licenses & Experience at Y-12 Plant ORNL. 12 years exp. at ORNL plus 5 years exp. at Union Carbide

organization (see back of page 2)
Isotopes Committee " " " "
Ketcher approves all non encapsulated sources
Williams " " " encapsulated sources

D. Administrative Control

Authorized quantities of isotopes received
Authorized users selected by Isotopes Committee

E. Use of Material

Tracer studies associated with R&D in the chemical field

Inventory

C-14 - 53 mc + 68 mc + 50.11 mc = 103.178 mc
Cl-36 - 20 μc
S-35 - 19.37 mc
H-3 - 100.0 mc

(3 of 6) Bldg 770 4th floor, room 424
J.K. Rose Group Leader (chemist)
Roy Lowther, chemist
Inventory

C-14 - 68 μc
storage in locked cabinet -
williams & Midleff survey
rubberglove, paper, [illegible]
receipts from Union Carbide
trans. to Phillip Morris, Richmond
to Union Carbide

Labeling ok
Posting on cabinet CRM
No restricted area
work in hood

(4 of 6) Bldg 770, 1st floor, room 158
Mr. T Kennell, Project chemist
None on inventory

From: Tracerlab 90 mc
" : United shoe 45 mc
To: 112 mc disposed to Radiological Services Inc
To: 15 mc to United shoe
To 8 mc " " "
Survey by Fred Williams & Ro. Midfell (air & wipe samples)
No pipetting, use rubberglove, absorbent paper
All in closed system
No lost ingestion, inhalation, etc
Labeling ok
Area posted CRM symbol ok
work in hood

Licensee: Union Carbide Corp.

F. Facilities

Same as reported by Ellis in report of inspection on June 3-4, 1965

G. Equipment

Same as reported by Ellis in report of inspection on June 3-4 1965

H. Radiological Safety Procedures

Manual for use of Radioactive Materials (see folder) followed as required.

I. Personnel Monitoring and Exposure to External Radiation

No PD or FD. Their use evaluated & determined that PD & FB would serve no useful purpose.

J. Exposure of Employees to Concentrations of Radioactive Materials

None

5 of 6 Lab 5304, Bldg 740
Dr. D.L. Haywood Group Leader
Transstudies in Agriculture Study
C-14, Cl-36, S-35, H-3 (Solids)
MMC ~~synthesis~~
From: - NEN, Volk, Mallinckrodt, Union Carbide
To: Mellon Inst., Union Carbide, Texas A&M
U of Calif (Riverside & Berkeley); US Dept of Agr.
(<2 mc.)
Beltsville, Md.
& Fargo, N.D.

Enclosed systems
Surveys - Fred Williams, 8 yrs Y-12 (HP & Ind. Hyg), 9 yrs. here
Hood test, wipe test

Inventory
C-14 - 50.11 mc S-35 - 19.37 mc
Cl-36 - 20 μc H-3 - 100 mc

Storage
Lab 4309
refrigerator - sample

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6 of 6 R.V. Sealey, Group Leader Mr. M. Landfried, Inst. Eng.
M.L. Green, Inst. Eng. Bldg 740 Lab 2324
Inst. group (Sealed sources)
Tracer work
C_8 137
C_8 131
Ra 86
Z_2 133
} ORNL
Union Carbide

No inventory
Disposal by Radiological Services
Surveys by F. Williams
C-14 — 1.9 mc

Bldg 745
Inst Lab - storage of C-14 Inst. Carbo.
ORNL sign
AEC-3

Licensee Union Carbide Corp.

K. Effluents to Unrestricted Areas

calculations of effluents show all fume hood releases to be less than Pt 20 limits

L. Disposals

All disposals to Radiological Services Inc., NJ.
Records maintained
one since last inspection, 2/7/67, C-14, 61 mc; Ra 226, 1.7 mc
Sr 90, 20 mc; Cs 137, 1 mc; & H-3, 12 C.

M. Miscellaneous Surveys, Evaluations, and Records

Mr. Fred Williams surveys all areas during periods of work
Records maintained. No evidence of contamination & no radiation levels greater than 0.6 mr/hr

N. Special License Conditions

No incineration
No sealed sources therefore no leak testing

O. Posting and Labeling

All work & storage areas posted CRM with symbol
All containers labeled " " " Also isotope guarded & date.

All restricted areas posted Form AEC-3, as required

Licensee Union Carbide Corp.

P. Independent Measurements

Eberline E 500-B.
Survey of Lab. - No evidence of contamination on floor work benches & sinks
No radiation levels greater than 0.6 mr/hr.

Q. Operations Observed

None

R. Incidents, Overexposures, Theft or Loss, Equipment Malfunction

None

S. Other Information or Continuation from Previous Paragraphs

None