



UNION CARBIDE CORPORATION P. O. BOX 471, TEXAS CITY, TEXAS 77590

HEALTH & ENVIRONMENTAL AFFAIRS

June 13, 1985

Mr. Herb Williams, Regional Director
Texas Air Control Board, Reg. 7
5555 West Loop, Suite 300
Bellaire, TX 77401

Subject: Report of Emergency Air Emission, Vinyl Chloride Release,
June 10, 1985, Solution Vinyl Resins Process, Tank Car
Unloading Rack, Tank Car Valve and Piping Malfunction

Dear Mr. Williams:

The attachments to this cover letter describe the emergency that resulted in the release of approximately 1300 pounds of vinyl chloride monomer on Monday, June 10, 1985 at 0930 hours. A TACB Long Form for Rule 7 Major Upsets is included along with a copy of the Department Head's accident investigation report. This release occurred at our tank car unloading rack in the plant as a consequence of pipe fitters attempting to repair a leaking fitting on the transfer piping on the tank car dome prior to unloading the car.

In addition to the above documents, also included are:

- Standard Operating Procedure for Unloading Vinyl Chloride Tank Cars.
- Schematic Drawing of the Tank Car Dome piping connections.
- VCM ambient air monitoring locations and results by Industrial Hygiene Lab.
- Plant plot plan showing unloading rack location.

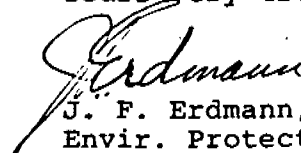
UCC
050648

Mr. Herb Williams
June 13, 1985
Page 2

Remedial action to prevent recurrence is listed on the last page of the Accident Investigation Report, along with a photograph of the dome after the leak was stopped. Personnel exposure to this release was very low as indicated by the Industrial Hygiene monitoring samples in the immediate downwind vicinity of the tank car.

If any further information is desired, please contact me.

Yours very truly,


J. F. Erdmann, P.E.
Envir. Protection
Coordinator
(409) 948-5126

JFE:IR:VinChlor
Attachments

Cc: Emergency Response Branch
EPA, Region 6, Dallas
Dr. Ed Ibert, GCACD, La Marque

Bcc: O. H. Cunningham/R. C. Wise - 500
T. T. Do
C. L. Dudnick - 500
M. E. Eisenhour
L. B. Feldcamp - Baker & Botts
S. J. Footer/F. S. Provenzano (letter only)
J. B. Levertton
K. E. Martin/A. P. Yalcinkaya
R. A. Mendez (Letter only)
S. M. Norwood/D. R. Hall

UCC
050649

TEXAS AIR CONTROL BOARD (TACB)
REPORT FORM FOR NOTIFICATION REQUIREMENTS
FOR MAJOR UPSET (RULE 7), PLANNED MAINTENANCE (RULE 8), START-UP OR SHUTDOWN

MSSL Account No. _____ Region VII (This line for State use only)

Company Name Union Carbide Corporation; Solvents and Coating Materials Division

Plant Location Texas City, Galveston County, TX

Mailing Address P.O. Box 471 or
3301-5th Avenue South City Texas City State TX Zip 77590

Owner, Operator or Responsible Management F.S. "Foley" Provenzano; Plant Manager

Telephone Number 409-945-7411

Nature of Unit or Process Affected (and Other Processes Affected, if any) Vinyl Chloride tank car unloading rack,
4th Ave and D St., Texas City Plant.

Inclusive Dates if for Shutdown and Start-up Monday, June 10, 1985

Time and Expected Duration of Excessive Emissions 0930 to 0950, 20 minutes

Reason or Cause. Maintenance ☐ Major Upset ☒ Test ☐

Explanation In the course of connecting the piping for unloading Vinyl Chloride from tank
car PPGX-9070, pipe fitters were working to repair a leaky fitting when the liquid
discharge valve was inadvertently bumped a partial turn to allow VCM vapors to escape
from the piping they were working on. (Which had not been closed up yet)

Level of Emissions (give basis for estimate): Physical and Chemical Composition, Rate, Concentration, and Duration

Tank car full of Vinyl Chloride (25,000 gal) normal specs, no reaction, fire or
explosion involved. Loss of VCM (by reweighing tank car and comparing to received
weight) was approx. 1300 pounds. (Wind direction S to SSE, 5 to 7 mph, temperature
82°F).

Measures (to be) Taken to Minimize Quantity and Duration of Emissions. Water spray put on tank to prevent
possible vapor cloud ignition. Toxic gas alarm and fire alarm were both activated. Fire
truck and emergency response personnel responded. Perimeter ambient air levels of VCM
checked, nearby building occupants evacuated. Two men put on protective suits and fresh air
masks to go in and shut the partially opened valve, and stop the flow. Total time:
20 min.

Measures (to be) Taken to Prevent Recurrence (If not determined yet, give date when measures will be submitted)

See attached Accident Investigation Report. Procedural changes to prevent valve opening
by accident -- keep tank car dome closed when working on external piping. Seal weld the
piping components where possible to minimize development of piping leaks.

Date, Time, and Means of Notification (letter, telephone, etc.)

National Response Center

~~TACB~~ June 10, '85, 1114 hrs, phone to Petty Off. M. Bryan by J. F. Erdmann

TACB Regional Office June 10, '85, 1106 hrs, phone to Mr. Cliff Farnum, by J. F. Erdmann

CB Local Program June 10, '85, 1122 hrs, phone to Ms. Phyllis Gilliland, by J. F. Erdmann

Date June 13, 1985

Signed

Form sent to: TACB-Austin
TACB-Region 7 ☒

J. F. Erdmann
Galveston County Air Control ☒ J. F. Erdmann, P.E.
U.S. E.P.A. -Dallas ☒ Envir. Prot. Coord.
National Response Center

UCC
050650



UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS DIVISION
TEXAS CITY PLANT 515

ACCIDENT INVESTIGATION REPORT

FE COPY - OK G.

Please route and review as shown. Signify your H/A by initialing or attach comments.

Dept. Hd (s)	Mgrs. Dept	S & FP or H & EP Depts
1. S. M. Norwood	3. R. A. Mendez	5. F. C. Phinney
2. _____	4. _____	6. _____

Accident Report #: 20249

Loss Description: Pollution/Air

Accountable Department: UCAR Solution Vinyl Resin Building#: Tk. Car Rack Date of Accident: 6/10/85

Potential Accident Classification: ☐ 1 ☐ 2 ☐ 3 ☒ 4 Actual Accident Classification: ☐ 1 ☐ 2 ☐ 3 ☒ 4

Probability Recurrence: ☒ Remote ☐ 2 Low ☐ 3 Moderate ☐ 4 High

Loss Analysis	A. \$ 300	Material Loss (\$ Loss/Unit x # Units) (in lbs; gals; etc.)
+ B.	\$ _____	Product Mixup (Rerun, Devaluation, etc.)
+ C.	\$ _____	Equipment Damage (\$ to Replace/Repair)
+ D.	\$ _____	Business Interruption (\$ V-M Loss)
+ E.	\$ _____	Med./Comp. Constant
+ F.	\$ 4,000	Productivity Loss (Est. Manhours x \$/Manhour) and/or Cleanup Costs
=	\$ 4,300	Total Loss

DETAILED REPORT

Accident Summary

A vinyl chloride leak occurred on Tank Car PPGX-9070 while it was on the southeast spot of the VCM Tank Car Rack.

Investigation

Tank car PPGX-9070 was connected to the unloading hoses on 6/9/85. The nitrogen pressure test on 6/10/85 (Midn. Shift) showed a minor leak. The Day Shift Operator on 6/10/85 re-tested the unloading hoses to identify a leak in the pipe threads above the hammer coupling. The Chief Operator was notified of the leak & Pipefitters were requested to repair the leak. The Pipefitter removed the hammer coupling, taped the pipe threads, & re-assembled the coupling. The pipe threads still leaked due to the apparent wear of the pipe nipple. The nitrogen hose to the pipe nipple was removed & the nitrogen hose end was broken off in this process. The Pipefitters left for coffee break. The Pipefitters & the Operator returned after coffee break to replace the pipe nipple & the nitrogen hose. The Pipefitters were attempting to remove the pipe nipple from the end of the hose when a VCl leak started. VCl leaked through the hand valve on the tank car & out through the hammer union which had been loosened to remove the pipe nipple. The toxic gas alarm #623 was turned in at 9:35 a.m. and the fire spray system was actuated. The Fire Squad arrived & provided additional water spray protection. The Fire Squad personnel entered the area with protective clothing & closed the hand valve on the tank car which was open less than 1/4 turn.

(continued on attached page)

UCC
050651

Investigation (continued)

Additional Facts:

1. There was no VCl leak during the coffee break nor anytime prior to the reported leak. The hammer union had been loose for several minutes including the coffee break without any VCl leakage.
2. There was a 24-inch pipe wrench inside the wheel of the leaking hand valve. The end of the pipe wrench was placed down between the valve wheel spokes.
3. VCl area monitors read a maximum of 5.1 ppm during the incident. Peremeter monitors set by the Industrial Hygiene Department showed up to 7 ppm VCM approx. 100 yards downwind of the leak during the incident.
4. The loss of VCl was 1300 lbs per the tank car weigh tickets before & after the incident.

ACCIDENT #20249 INVESTIGATION TEAM

Chairperson:	S. M. Norwood	Dept. Head
Members:	R. A. Mendez	Ass't. Plt. Mgr.
	J. E. Tipton	Pipefitter Leadman
	M. Williams	Pipefitter
	J. Foreman	Pipefitter
	D. L. Berringer	Maint. Superv.
	M. E. Durdin	Maint. Area Superv.
	H. Terrell	Shift Prod. Superv.
	W. E. Alford, Jr.	Chief Operator
	Y. Cantu	Operator
	D. R. Hall	Group Leader
	D. B. Rygaard	Day Prod. Supervs.
	R. J. Bocek	Prod. Engr.
	J. R. Rex	Day Prod. Supervs.
	M. E. Eisenhower	Sr. Staff Engr.
	J. D. Summers	Safety Engr.
	A. P. Yalcinkaya	Industrial Hygiene
	K. E. Martin	Industrial Hygiene
	J. F. Erdmann	Environmental Protection