

SIGNIFICANT INCIDENT REPORT

This form is to be used for first notice reporting of all incidents involving process upsets, near miss accidents (no injury) and chemical releases of a nature deemed to be significant. It is to be completed by the supervisor(s) of the area. Significant fire damage incidents should be called into Loss Prevention. Vehicular damage incidents should be called into the Guards.

GEOGRAPHIC LOCATION: Plant A B/C Complex

INCIDENT DATE: 8/2/84 TIME: 4:30 PM

SPECIFIC LOCATION: UCM I - STRIPPER AREA

WEATHER (Clear) Cloudy - Rain - Wind - Etc.) SOUTH WIND

TYPE OF INCIDENT: (Could be more than one) Near Miss Accident checked
Operational Upset _____ Chemical Release checked

DESCRIPTION OF INCIDENT: Detail what occurred; immediate action taken, i.e., clean up, evacuation, etc. How injury was avoided if a near miss accident occurred.

THE STRIPPER WAS HOOKED UP TO THE QUENCH LIQUOR TANK BY WAY OF AN ORGANIC HOSE FOR LIQUID DRAWING PURPOSES. THE ORGANIC HOSE RUPTURED AND LATER BROKE IN TWO. A VAPOR DETECTOR ALARM WAS RECEIVED AS FIRST INDICATION OF THE PROBLEM. THE QUENCH LIQUOR TANK SIDE OF THE HOSE WAS IMMEDIATELY ISOLATED. IT TOOK APPROXIMATELY 5 MINUTES TO ISOLATE THE STRIPPER SIDE OF THE HOSE DUE TO THE WHIPPING ACTION.

ESTIMATED DEGREE OF SEVERITY: (Your best estimate of equipment down time, quantity of material released, injury potential.) QUANTITY OF CHEMICALS RELEASED:

10.6^{##} VINYL CHLORIDE, 4/3.4^{##} ETHYLENE DICHLORIDE, 45.7^{##} HYDROGEN CHLORIDE

FOLLOW-UP ACTION TAKEN OR RECOMMENDED: THE HOSE WILL BE INSPECTED BY INDUSTRIAL ENGINEERING PERSONNEL TO DETERMINE THE CAUSE OF FAILURE.

INVESTIGATED BY: Carry K. Bryant 8/2/84

Distribution: Originator maintains a copy. Send a copy to the appropriate plant E.R. Supervisor (Manager of Safety & Health for the Complex Group).

Further notification or distribution will be made by the E.R. Supervisor after review with the Department Superintendent. Loss Prevention will be informed of chemical process and property insurance incidents by the E.R. Supervisor. The Manager of Safety and Health will be sent a copy of all completed reports.

APPROVED: J. Hub
Rev. 3/84

18/3/84
Date

E. J. Miller 8/7/84
Date

Not reported. Included in leak detection plan.

SL 049540

2% VC
 33% AL
 50% EDC
 15% HCL

$$90^\circ \rightarrow 90^\circ$$

$$90^\circ \rightarrow 0^\circ$$

$\frac{1}{4}$ " hose

$$\gamma = \frac{\pi \cdot 5.5^2 \cdot 77.5}{4} = 1698.7 \text{ ft}^3$$

$$PV = nRT$$

$$\eta = \frac{PV}{RT} = \frac{105(1698.7)}{10.73(546)} = 30.8 \text{ lb-moles in trigger}$$

Vol % = 2% Vinyl $90^\circ \rightarrow$ approx. for 5 min

$$W = CA_z \gamma (2gc \rho \Delta P)^{1/2} \quad C = 0.8$$

$$Z = 1 - \frac{1}{2}k(0.4)$$

$$A_f = \frac{\pi(0.75)^2}{4} \times \frac{1}{144} = 0.00307 \text{ ft}^2$$

$$g_c = 32.2$$

$$\rho = \frac{.5(30.8)(99)}{1698.7} + \frac{.33(30.8)(30)}{1698.7} + \frac{.15(30.8)(36.5)}{1698.7} + \frac{.02(30.8)(62.5)}{1698.7} = 1.2 \text{ #/ft}^3$$

$$\Delta P = \frac{90 \text{ #}}{\text{in}^2} \times \frac{144 \text{ in}^2}{\text{ft}^2} = 12,960 \text{ #/ft}^2$$

$$\cancel{\text{something}} \quad r = \frac{14.7}{104.7} = 0.14 \quad k \approx 1.4$$

$$Z = 1 - \frac{.86}{1.4}(0.4) = 0.748$$

$$W(\text{#/sec}) = 0.8(0.00307)(0.748) \left[2(32.2)(1.2)(12960) \right]^{1/2} = 1.84 \text{ #/sec}$$

$$\text{wt \% VC} = \frac{(0.02)(30.8)(62.5)}{[.5(30.8)(99) + .33(30.8)(30) + .15(30.8)(36.5)]} = \frac{38.5}{1998.15} = 0.0193 = 1.9\% \text{ VC}$$

$$W(\text{#/sec}) = 1.84 \times 0.019 = 0.035 \text{ #/sec} \times 60 \text{ sec/min} = 2.13 \text{ #/min}$$

Duration of Release ≈ 5 min

$$\text{Amount of VC Released} = 2.13 \times 5 = 10.6 \text{ # VC}$$

$$\text{EDC released} = 0.749 \times \frac{1.84}{100} \times 5 \times 60 = 413.4 \text{ # EDC}$$

$$\text{HCL released} = 0.083 \times 1.84 \times 5 \times 60 = 45.7 \text{ # HCL}$$