File

TO: D.E. Frey

REDACTED

FROM: R.R. Szmerda

March 8, 1984

SUBJECT: Incident of Experience -- Toxic Chemical Release, Tank Farm

SUMMARY

On February 1, 1984, water that had collected and frozen on the idle side of a blank in a tank farm vinyl chloride pipeline deflected the blank against a closed, locked eight-inch wafer valve on the in-service side of the blank. Approximately 100 gallons of vinyl chloride was lost through the valve stem. No injuries resulted, and equipment damage was confined to the valve.

BOARD OF REVIEW

A board of review was held on 2/3/84 with the following in attendance:

| | |
|---|---|
| J.M. Fletcher | - Plant Engineer |
| D.P. O'Keefe | - Manager, Quality Improvement |
| | - Senior Technical Consultant |
| M.J. Slimbarski | - Manager, Mass and Dispersion Manufacturing |
| C.M. Stolfo | - Manager, Suspension Manufacturing |
| R.R. Szmerda | - Manager, Latex Manufacturing and Tank Farm |
| D.R. Erbe | - Latex Engineer |
| G.A. Kaswell | - Sr. Safety Engineer |
| S.P. Warmkessel | - Dispersion Engineer |
| | - Mass Senior Lead Technician |
| | - Suspension Lead Technician (12X8 shift) |
| | - Latex Lead Technician (12X8 shift) |
| | - Mass Lead Technician (12X8 shift) |
| | - Tank Farm Technician (12X8 shift) |

NARRATIVE

Late on the 1600 to 2400 shift on 2/1/84 the tank farm leak detection system indicated a significant fugitive vinyl chloride leak. Two employees attempted to locate the leak but shifting wind patterns made it difficult to locate the source.

The leak source was pinpointed at midnight, when tank farm technician, arrived to start railcar unloading operations at the tank farm. A small flow of liquid vinyl chloride was observed to be coming from the stem of an eight-inch wafer valve. This valve served as a separation to a portion of piping between the new VCM storage sphere which was in service and the old sphere which was out of service and empty. The valve was locked, danger-tagged, and had an adjacent line blank on the old sphere side.

immediately stopped vehicle traffic in the area and contacted the lead technicians of the three adjacent process areas. and the shift mechanic then proceeded to attempt to stop the leak by tightening the valve packing. Adjustment of the packing did not completely stop the leak.

The responding lead technicians stopped vehicle access to the plant, stopped the tank farm charging pumps and shut down the direct-fired dispersion spray drier. At 0130, C. Stolfo and D. Erbe were contacted at home. C. Stolfo instructed the lead technicians to close the manual valve supplying the pipe from the new sphere and charge the liquid from the line to a process building.

Upon arrival at the plant and after assessing the situation, C. Stolfo decided to purge out the residual vinyl chloride liquid by feeding warmed VCM vapor to the pipeline and putting the line on recovery. By 0630, the line was under vacuum and the situation was assessed as under control. Limited vehicle traffic was then allowed into the plant. As an added precaution, vehicle travel was controlled under direct supervision of BFG personnel until 0900. The line was completely recovered by 1500 and the valve replaced by 1700.

FACTS SURROUNDING THE INCIDENT

1. Several months earlier, the out-of-service portion of the pipeline containing the eight-inch wafer valve had been open while maintenance was performed on several other valves.

2. A vapor cloud did not exist at any time during the incident. Lower explosive limit (LEL) leak detection equipment never reached a level sufficient to initiate the automatic shutdown (25% LEL) of the tank farm vinyl chloride charging system.

CONCLUSION

The cause of the incident was an ice plug against the line blank which subsequently bent the wafer valve stem, causing a leak at the stem packing. It is presumed that water had collected in the idle portion of the pipeline during previous maintenance activity.

MANAGEMENT SYSTEM INVESTIGATION

1. has eight month's experience as a tank farm technician and was instrumental in finding the leak and helping to resolve the problem.

2. The out-of-service pipeline was properly locked out and blanked.

3. The area leak detection equipment functioned properly.

4. Appropriate precautions were taken to limit traffic, shut down equipment and notify the nearby process areas by response personnel.

5. The wind conditions were light and the ambient air was approximately 10°F. This low temperature resulted in minimal VCM vaporization.

(6.) Respiratory protection was not used during the tightening of the valve packing. Plant safety procedures require the use of respiratory protection while working in an unknown VCM environment.

CORRECTIVE ACTION

1. The pipeline was completely drained of water and reblanked at the old sphere which still remains out of service. It will be closed to atmospheric conditions and will be placed in service at the completion of the old sphere revisions (June 1984).

2. Disciplinary action was taken in the case of the two individuals who failed to use the appropriate respiratory protection.

3. The facts of this incident will be reviewed at facility safety meetings.

R.R. Szmerda

0002s/nj
3/8/84

cc: [redacted]/H. Waltemate
W.C. Niederst
Area Managers
D.W. Bailey
W.B. Dovey
J.M. Fletcher
J.W. Goetsch
J.A. Kiel
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