

Tenneco Chemicals

A Tenneco Company



P.O. Box 849
Pasadena, Texas 77501
(713) 479-3411

August 7, 1980
(JWK-86-80)

Mr. Bill Stewart
Executive Director
Texas Air Control Board
6330 Hwy. 290 East
Austin, Texas 78723

Dear Mr. Stewart:

In accordance with Section 6.65a of the National Emission Standards for Hazardous Air Pollutants - Vinyl Chloride, the following information is presented concerning the release of vinyl chloride monomer to the atmosphere at Tenneco Chemicals' Pasadena, Texas complex.

The emissions occurred at:

1. 9:15 p.m. on July 22
2. 7:00 p.m. on August 2
3. 1:15 a.m. on August 4

The source of the VCM was the discharge of safety relief valves on the separators on the discharges of several vacuum compressors in the PVC plant. This resulted because of the apparent failure of the gas holder emergency isolation system to function properly.

The circumstances surrounding the first relief valve discharge on July 22 are as follows:

1. During the current expansion of the PVC plant, numerous alterations and changes to the instrument panels in the operations control room are being made. During recent tie-ins and changes on the reactor control instrumentation, two valves' identification were inadvertently mislabeled.
2. At the time of this release, the process control computer in the PVC plant was out of service and the reactor operation was on manual control. This required the sequencing of valves, etc. to be done by the operator technician, rather than by the computer.

Tnneco Chemicals

Mr. Bill Stewart
Texas Air Control Board
August 7, 1980
Page Two

3. Because of the mislabeled valves, a situation occurred which caused the gas holder to be filled rapidly. When the movable top reached a high level, the vapor inlet valve to the gas holder automatically closed. This immediately isolated the gas holder from all sources of vapor input, including the reactor evacuation compressors and the water wash vacuum compressors.
4. An overpressuring of these systems occurred, causing the safety relief valves on the following compressors to open momentarily, discharging VCM vapors to the atmosphere:
 - a. H301B reactor evacuation vacuum compressor
 - b. H303 water wash vacuum compressor
 - c. H304 water wash vacuum compressor

The volume of vinyl chloride monomer loss during this discharge is estimated at 500 pounds. This figure was derived from the design characteristics of the relief valves.

The mislabeling of the valves on the control panel was corrected promptly, and an investigation was started on the overpressuring of the vacuum compressors in spite of the gas holder emergency isolation system.

The circumstances surrounding the relief valve discharge on August 2 are as follows:

1. The pump which empties the inlet and outlet knockout pots on the gas holder of collected liquid failed. This allowed a high level of liquid to accumulate in the outlet knockout pot.
2. The resulting low pressure downstream of the knockout pot caused the K301 a, b & c recovery compressors to shut down automatically on low suction pressure.
3. A high level in the gas holder resulted, causing the vapor inlet valve to close automatically.
4. Once again, an overpressuring of the water wash vacuum compressor system occurred and the safety relief valves on the separators on H302 and H303 compressors opened momentarily, discharging VCM vapors to the atmosphere.

The volume of vinyl chloride monomer loss during this discharge is estimated at 300 pounds.

The investigation initiated as a result of the first incident on July 22 continued.

Tenneco Chemicals

Mr. Bill Stewart
Texas Air Control Board
August 7, 1980
Page Three

The circumstances surrounding the relief valve discharge on August 4 are as follows:

1. The emergency recovery of a PVC reactor was required (a periodic non-hazardous occurrence).
2. A high level in the gas holder resulted, causing the vapor inlet valve to close automatically.
3. Once again, an overpressuring of the water wash vacuum compressor system occurred. The safety relief valve on the H302 vacuum compressor opened momentarily, discharging vinyl chloride monomer to the atmosphere.

The volume of vinyl chloride monomer loss during this discharge is estimated at 200 pounds.

The investigation on these incidents continued. A subsequent plant test on the gas holder emergency isolation system, which was installed in 1979 to prevent such occurrences of overpressuring when the gas holder was isolated, has indicated some problem with the closed valves leaking through. This investigation will continue and appropriate corrective action, including mechanical modifications, will be taken as required.

Please let me know if you have any questions or if additional information is needed.

Sincerely,


James W. Kachtick, P. E.
Manager, Environmental Sciences

Approved: 

L.L. Bird
Mfg. Mgr. - Polymers

JWK:skk

cc: Allison Peirce -- HCPC

L.L. Bird
S.E. Richter
T.T. Moore
C.A. Hendricks
L.L. Roberts
R.T. Gottesman
J.P. Sandstedt

TEN 1566