VINYL CHLORIDE EMISSIONS CONTROL PROGRAM

PLANT "B" SHIPPING DEPARTMENT

1988

SL 091305

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I. INTRODUCTION

Vinyl chloride monomer (VCM) is a cancer suspect agent. Federal laws apply to the manufacture, handling, and storage of VCM. Specifically, these laws deal with employee exposure to VCM and to the amount of VCM that can be released to the environment.

Employee exposure limits are set by the Occupational Safety and Health Act (OSHA). The current OSHA permissible exposure limit for VCM is as follows: (1) No employee may be exposed to VCM at concentrations greater than 1 ppm averaged over any 8 hour period; (2) no employee may be exposed to VCM at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes; (3) no employee may be exposed to VCM by direct contact with liquid VCM.

Releases of VCM to the environment are governed by the Environmental Protection Agency (EPA). Following EPA guidelines, PPG has established a leak detection program in all areas of VCM manufacture, storage, or handling. The Plant "B" Shipping Department has such a leak detection program. The program covers the VCM tank car loading rack and is outlined in the remainder of this section of the standard operating manual.

II. LEAK DETECTION - VCM LOADING RACK

A. Fixed Point Monitoring

An Arcas -

The Shipping Department is responsible for maintaining the instrument gas supplies. Gas cylinders must be checked daily to insure an adequate supply is on hand. The pressure of each cylinder connected to the analyzer also must be noted and recorded on the cylinder log sheet.

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The Arcas system provides for alarm and leak detection. A detection of 5 ppm (parts per million) or greater is classified as an alarm. An audible alarm sounds on the tank car loading rack at an alarm panel, while indicating lights show the sample point which is alarming. An alarm will also sound in both the EC/HCL and VCII control rooms. Personnel at these two units are responsible for investigating all leaks detected at the tank car loading rack when Shipping personnel are not working at the rack.

The alarm at the tank car rack alarm panel will sound until it is acknowledged by Shipping (or other) personnel. Two successive detections of 5 ppm or greater is classified as a leak. All analytical determinations are recorded on a hard copy printout in EC/HCL control room, showing the sample point and level of VC detected. Operators at EC/HCL will notify Shipping personnel as to the sample point and level of VC for each alarm. Shipping personnel are responsible for correcting the leak problem. Once the leak has been eliminated, notify EC/HCL personnel to report the corrective action taken to resolve the leak. The operator will record this information on the hard copy printout, which will be maintained in the unit's files.

The sample points, as they are identified on the printout and the alarm panel are shown below:

Sample Point Location for VCM Monitor

Stream 1	Track 4	Station 1
Stream 2	Track 4	Station 2
Stream 3	Track 4	Station 3
Stream 4	Track 4	Station 4
Stream 5	Track 5	Station 1
Stream 6	Track 5	Station 2
Stream 7	Track 5	Station 3
Stream 8	Track 5	Station 4
Stream 9	Spare	
Stream 10	Calibration	

B. Portable Monitoring

An HNU Model PL 101 is employed for portable leak detection. The instrument is calibrated weekly and is used for both leak patrol and pinpointing leaks detected by the fixed point monitoring system.

C. Leak Patrol

The VCM loading rack is surveyed once per week using the HNU portable analyzer. Included in this survey is a check of flanges, valves, pump seals, pressure gauges, etc. Results of this monitoring are recorded on a form and the records retained in the Shipping Department files.

III. REACTION TO LEAKS DETECTED BY ARCAS

A leak detected by the Arcas analyzer is defined as two successive detections of 5 ppm VCM or greater. When a leak occurs it must be located and eliminated by the prompt action of loading personnel or their supervisors.

The procedure below outlines the steps to be taken when a leak occurs.

Procedure for Locating a VCM Leak

1. Determine the location of the leak as indicated by the alarm panel.

2. Wearing a full face breathing air mask, inspect the area near the alarming station in an effort to determine the leak source visually. If a leak is found, attempt to correct it by appropriate action.

3. If visual inspection is unsuccessful, employ the HNU Model P 101 portable analyzer and continue to seek out the leak source. Correct any leak found by taking appropriate action.

   NOTE: Notify your supervisor to assist you with the HNU if necessary.

4. Complete the VCM leak report. Record the date, time, cause, and location of leak on the "Leak Report" and in the VCM rack logbook. Include a brief statement of your corrective action to eliminate the leak. Also, report your corrective action to the EC/HCL operator.

VCM EMISSION CONTROL LEAK REPORT

VCM LOADING RACK

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DATE	TIME	HNU READING	LOCATION OF LEAK	CAUSE OF LEAK	CORRECTIVE ACTION TAKEN	HNU READING	INIT

Date_____ Completed By_____

VCM EMISSIONS CONTROL WEEKLY CHECKLIST

TANK CAR LOADING FACILITIES

Loading Line	Leakage	Comments
Station 4-1		
4-2		
4-3		
4-4		
5-1		
5-2		
5-3		
5-4		
Vapor Header		
Station 4-1		
4-2		
4-3		
4-4		
5-1		
5-2		
5-3		
5-4		
Pump Area		
North Pump Seal		
South Pump Seal		
North Pump Suction and Discharge Valves		
South Pump Suction and Discharge Valves		

Meter #_____ Meter Calibration Date_____

Notes:
1. METER MUST NOT BE USED IF THE CALIBRATION IS OVER 7 DAYS OLD
2. A LEAK IS DEFINED AS 10 PPM OR MORE AT A DISTANCE OF 6" DOWNWIND OF THE SOURCE

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