file EPA/VCM Std

Jim Sandstedt
FYI - I picked this up at the SOCMA meeting interesting as it reflects EPA thinking
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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Mr. William M. Reiter
Director, Pollution Control
Allied Chemical Company
P. O. Box 1057 R
Morristown, New Jersey 07960

Dear Bill:

As we discussed this morning by phone, I have enclosed twelve copies of a draft generic standard for hazardous pollutants that we are considering. This would eventually become part of the EPA carcinogen policy, which may be proposed before the end of 1978. The thinking is to propose the generic standard when a chemical is designated hazardous in order to put a cap on indiscriminate emissions. It would not include capital intensive requirements, deferring these to the proposal of the normal regulation package for the hazardous pollutant.

We would appreciate your MCA group reviewing this and discussing it with us at our October 25 meeting. I imagine our initial interest is more with the technical aspects of what to control, to what degree, and how often to inspect.

I'm looking forward to seeing you on the 25th. If you have any questions on this, do not hesitate to call.

Sincerely yours,

Dave

David R. Patrick, Chief
Chemical Manufacturing Section
Chemical and Petroleum Branch

Enclosures

Comments are specifically requested on the following generic standards:

I. Applicability.

Except as noted below, these requirements apply to any equipment which comes into contact with any liquid mixture containing 10 percent or more by weight, or any gaseous mixture containing 10 percent or more by volume, of any hazardous organic chemical or hazardous organic chemicals.

II. Fugitive Emissions.

(A) All compressor seals and pipeline and pressure relief valves in gaseous service will be monitored during operation on a quarterly basis as outlined in IX (A). Whenever a concentration of 1000 ppmv (parts per million by volume) is detected, a leak exists. Whenever a leak exists, it will be repaired within 15 days with exceptions as outlined in II (F) and (G).

(B) All pump seals, pipeline valves in liquid service, and process drains will be monitored during operation on an annual basis as outlined in IX (A). Whenever a concentration of 1000 ppmv is detected, a leak exists. Whenever a leak exists, it will be repaired within 15 days with exceptions as outlined in II (F) and (G).

(C) Pressure relief valves will be observed quarterly ensuring that they have resealed properly after opening. Pressure relief valves will not chatter because of improper operating set pressure. Improperly operating pressure relief valves will be repaired within 15 days.

(D) Rupture disks installed ahead of pressure relief valves will be inspected weekly. Whenever a rupture disk installed ahead

(H) Housekeeping practices.

(1) All liquid spills will be cleaned up within 8 hours. Acceptable cleanup methods include siphoning into a storage container (e.g., a portable spill tank), chemical absorption and other appropriate methods.

(2) Wherever a valve is located at the end of a pipe or line, the pipe or line will be sealed with a second valve, blind flange, plug or cap. This requirement does not apply to pressure relief valves.

(3) Whenever liquid or gaseous samples are taken from lines or equipment, a closeable container will be used and sample valves will be closed between samples. Liquid and gas that is bled from sample lines will also be collected. All sample and bled material will be returned to the process or disposed as outlined in V.

III. Chemical Storage.

For storage equipment of greater than 75 cubic meters capacity:

(A) All storage vessels exposed to sunlight must be painted white. No more than 20 percent of the surface of the storage vessel, or 20 square meters, whichever is less, may be covered with writing, figures, etc. This requirement does not apply to insulated, pressurized, or controlled temperature storage vessels.

(B) Tank connection flanges and manway seals will be inspected as outlined in IV (B) quarterly. If a liquid leak exists, then monitor the source as outlined in IX (A). Whenever a concentration of 1000 ppmv is detected, a leak exists. Whenever a leak exists, it will be repaired within 15 days with exceptions as outlined in II (F) and (G).

VI. Process Vents.

Where a process vent may emit a hazardous organic chemical or any mixture containing 1 percent or more by volume of hazardous chemicals procedures describing process operation, including start-up, shutdown, normal and emergency procedures, will be written and distributed to all operators. Operators will receive an annual minimum of two hours of training in these procedures.

VII. Air Pollution Control Devices.

Where a control device is used to reduce air pollutant emissions of a hazardous organic chemical, procedures will be conspicuously posted outlining normal and emergency operating procedures for the control device. As a minimum, these procedures will include all operating and maintenance procedures recommended by the control device manufacturer. Operators will receive an annual minimum of two hours of training in these procedures. The procedures will be followed continuously.

VIII. Recordkeeping and Reports.

(A) When a leak is detected, the presence of the leak will be noted on the survey log shown in Figure 1. Other information as shown will be included on this survey log. A weatherproof and readily visible tag bearing an identification number and the date that the leak was detected will be affixed to the leaking component. After the leak has been repaired, the remaining portion of the survey log will be completed and the tag discarded. The survey log will be retained for at least two years after the repair is completed.

(B) Each quarterly report as shown in Figure 2 will be submitted to the appropriate EPA Regional Office listing all leaks that were located since the last report and not repaired within 15 days. In

and provide estimation of mass emissions from the sources in categories II, III, IV, V, VI, and VII.

(H) Whenever an owner or operator is unable to comply with requirements as outlined in this attachment, he will notify verbally the appropriate EPA Regional Office immediately except as provided in II (G). In all cases, notification will be confirmed within two days by a written statement.

IX. Test Methods.

(A) Monitoring hazardous organic chemicals emissions.

This test method describes the procedures used to detect volatile organic chemical (VOC) leaks from sources of hazardous air pollutants. A portable test device is used to survey individual equipment leak sources. The specifications and performance criteria for the test instrument are included.

(1) Apparatus

(a) Monitoring Instrument

The VOC detection instrument used in this procedure may be of any type that is designed to respond to total hydrocarbons. The instrument must incorporate an appropriate range option so that source levels (10,000 ppmv) can be measured. The instrument will be equipped with a pump so that a continuous sample is provided to the detector. The instrument meter readout will be such that the scale can be read to ±5 percent at 1,000 ppmv at mid-scale in the range option. The instrument must be capable of achieving the performance criteria given in Table 1. The definitions and evaluation procedures for each parameter are given in subcategory (3).

calibration procedure, introduce the 1,000 ppmv hexane or hexane equivalent calibration gas into the instrument sample probe. Adjust the instrument meter readout to correspond to the calibration gas value.

(b) Individual Source Surveys

Place the instrument sample probe inlet at the surface of the component interface where leakage could occur. During sample collection, the probe should be moved along the interface surface with special emphasis placed on positioning the probe inlet at the local upwind and downwind side of the component interface. This general technique is applied to specific types of equipment leak sources as follows:

(i) Valves - The most common source of leaks from block (glove, plug, gate, ball, etc.) and control valves is at the seal between the stem and housing. The probe should be placed at the interface where the stem exits the seal and sampling should be conducted on all sides of the stem. For valves where the housing is a multipart assembly, or where leaks can occur from points other than the stem seal, these sources should also be surveyed with the probe inlet moved along the surface of the interface.

(ii) Flanges and other connections - For welded flanges, the probe should be placed at the outer edge of the flange-gasket interface and samples collected around the circumference of the flange. For other types of non-permanent joints such as threaded connections, a similar traverse is conducted at the component interface.

(iii) Pumps and compressors - A circumferential traverse is conducted at the outer surface of the pump or compressor shaft and housing seal interface. In cases where the instrument probe cannot

concentration at the time of measurement is the same known upscale value.

Calibration Error - The difference between the VOC concentration indicated by the meter readout and the known concentration of a test gas mixture.

Response Time - The time interval from a step change in VOC concentration at the input of the sampling system to the time at which 95 percent of the corresponding final value is reached as displayed on the instrument readout meter.

(b) Evaluation Procedures

At the beginning of the instrument performance evaluation test, assemble and start up the instrument according to the manufacturer's instructions for recommended warmup period and preliminary adjustments.

(i) Zero and calibration drift test - Calibrate the instrument per the manufacturer's instructions using zero gas and a calibration gas representing about 1,000 ppmv. Record the time, zero, and calibration gas readings (example data sheet shown in Figure 3). After 2 hours of continuous operation, introduce zero and calibration gases to the instrument. Record the zero and calibration gas meter readings. Repeat for three additional 2-hour periods.

(ii) Calibration error test - Make a total of nine measurements by alternately using zero gas and a calibration gas mixture corresponding to about 1,000 ppmv. Record the meter readings (example data sheet shown in Figure 4).

(iii) Response time test procedure - Introduce zero gas into the instrument sample probe. When the meter reading has stabilized, switch

(2) Procedure

Observing from vantage points to sufficiently inspect the source, that is, observing points of frequent liquid leaks, determine if any chemicals are leaking. A liquid leak exists if any chemical liquid is observed running or dripping from the surface of the source. When a chemical liquid is dripping to a surface which is in the vicinity of a possible hazardous pollutant emission source, locate the source of the liquid.

TAG NUMBER	UNIT	COMPONENT	HAZARDOUS ORGANIC CHEMICAL CONCENTRATION IN STREAM	DATE LEAK LOCATED	DATE MAINTEN-ANCE PERFORMED	DATES MAINTEN-ANCE ATTEMPTED	REASONS REPAIRS POST-PONED OR FAILED

FIGURE 2. Example Leak Report.

Instrument ID _____

Calibration Gas Mixture Data

_____ppmv

Run No.	Calibration Gas Concentration, ppmv	Instrument Meter Reading, ppmv	Difference,[1] ppmv
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

Mean Difference[2] _____

Calibration Error = $\frac{\text{Mean Difference}^{(2)}}{\text{Calibration Gas Concentration}}$ = _____

[1](Calibration Gas Concentration - Instrument Reading)
[2]Absolute Value

Figure 4. Response Time Determination

Instrument ID _____

Calibration Gas Concentration _____ppmv

95% Response Time:

1. _____Seconds
2. _____Seconds
3. _____Seconds

Mean Response Time _____Seconds

Figure 5. Response Time Determination