



Corrected
FILE

Interoffice Communication

To C. E. Gremillion
From Jim Hall
Date April 16, 1975
Subject Proposed VCM Monitoring Program Analysis

The objective of this project will be to develop a system for monitoring personnel exposure to vinyl chloride vapors in the Conoco VCM Plant. Such a system would ideally meet the following criteria:

1. Accuracy - the system should meet the accuracy and confidence level requirements as defined in the OSHA Standard for Exposure to Vinyl Chloride (CFR 1910.93q (d) (4)) for ensuring that VCM Plant personnel are not excessively exposed to vinyl chloride vapors.
2. Impose a minimum workload on laboratory and administrative personnel.
3. Possess alarm capabilities which could alert operating personnel if VCM concentrations exceed 25 parts per million (ppm).
4. Be capable assisting in the control of access to regulated areas and maintaining records of authorized personnel who have entered the areas.
5. Be economically feasible.

The alternative monitoring methods fall generally into two categories. First, personnel dosimeter monitors consisting basically of a portable pump (attached to the belt of the individual to be monitored) which draws a known volume of air from the worker's breathing zone, through a tube filled with activated charcoal. Concentrations of organic vapors in the work place air are adsorbed onto the charcoal, subsequently desorbed with carbon disulfide in the laboratory and measured by gas chromatography. The primary advantage of such a monitoring system is the accuracy afforded by obtaining a continuous integrated sample of air genuinely representative of the air which was inhaled by the monitored individual. The disadvantages of such a system includes (1) the man-hours required in laboratory analysis and subsequent calculations, (2) the inconvenience to the individuals who must wear the pumps for relatively long periods of time (four to eight hours) and the cost associated with scheduling, done by laboratory personnel, of dosimeter monitoring and, (3) the inability of this sampling system to detect short term exposures to relatively high concentrations of VCM.

The second category of monitoring methods consists of three basic components:

1. A number of fixed-point area monitors to measure VCM concentrations at specified points throughout the plant over the entire workday.

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2. A method to determine the presence or absence of operations or maintenance personnel during the workday. These data might be obtained by means of a time and motion study, work sampling study, portable radiotransmitters, or by means of badge readers at gates controlling access to regulated areas.
3. A technique to correlate the data obtained from the two above components and reduce it to useable form, i.e., TWA personnel exposures. These calculations might be done most economically by electronic data processing equipment.

The advantages to such a system would include (1) the reduction or elimination of dosimeter monitoring requirements, (2) immediate alert in the event of excessive exposure, (3) potential improvement in the control of access to regulated areas (4) the capability for expansion of monitoring for other hazards, (EDC, noise, etc.) and (5) the capability if the system is computer operated, to meet associated OSHA requirements such as printing form letters to inform employees of over exposure, calculation of TWA's for all employees and maintaining records. The disadvantages to this type of system would be its high initial investment and a probable reduction in accuracy because the data are not obtained from actual breathing zone samples.

The above techniques and any feasible combinations will be investigated, evaluated and compared with respect to economic feasibility, attainment of accuracy requirements and suitability for implementation. Periodic progress reports will follow. Ultimately, a fully documented recommendation will be submitted for management approval.


Jim Hall

bw
CC:
G. D. Johnson
R. J. Vernon

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ATTACHMENT A
VCM HEALTH STANDARD
TRAINING SCHEDULE

	<u>Date</u>	<u>Time</u>	<u>Location</u>	<u>Personnel</u>	
Monday	March 17	6:30 a.m.	Main Office Conf. Room	C. Landon R. Fox J. Morris D. Lonkowski J. Cochran	R. Shirley R. Lee L. Riley P. Potier
	March 17	1:00 p.m.	Main Office Conf. Room	J. Brunson I. Sappington T. J. Gross B. Winey C. B. Haney A. Thibodeaux B. Stark	J. Robinson P. Fetzer C. Lunn J. Hall L. N. West T. Randolph
	March 17	2:30 p.m.	Maintenance Conf. Room	C. Buller A. C. Hughes R. Trahan I. Alexander J. Como B. Brown	J. Vickers B. Landers J. Puerta R. Badolato W. Cooper L. Aydelotte
T day	March 18	9:00 a.m.	Maintenance Conf. Room	L. Cole B. Richard J. D. David R. Oquinn L. Simon H. Istre E. Moerbe J. Doucet A. Feemster F. Guillory J. Adams	J. Burk C. Fontenot N. Trent J. Vincent J. Darbonne W. Gallien W. Berzas J. Carradine S. Jack W. Ceasar L. Guillory
	March 18	10:00 a.m.	Maintenance Conf. Room	T. Hooper H. Moseley G. Linscombe L. Ogea G. Parker L. Thompson J. Cook D. Derouen J. Gautreaux G. Spencer P. Leger	T. Barton J. White H. Monticello A. Dartez M. Holland S. Noblit D. Going M. Mudd C. Heddins H. Adkison

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	<u>Date</u>	<u>Time</u>	<u>Location</u>	<u>Personnel</u>	
T day	March 18	11:00 a.m.	Maintenance Conf. Room	G. Draper E. Cooper H. Hackett B. Cole E. Gremillion	J. McCulley J. Coplin B. J. Stine J. Hall J. A. DeBernardi
	March 18	1:30 p.m.	Maintenance Conf. Room	K. Cash B. Brown J. Whitmire B. Baker R. Buller T. Cholley D. Ross M. Issac	A. Hoffpauir G. Ben G. Gray D. W. Fontenot C. Romero J. Baglio W. Richard
Thursday	March 20	1:30 p.m.	Maintenance Conf. Room	C. Kroske L. Woodhatch M. Fogleman L. Thierry	E. Gould K. Ryder R. Guillory

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CIRCULATE TO:

~~JHM~~

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RETURN TO PLANT
MANAGER'S OFFICE

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