



ESCAMBIA PLANT
INTEROFFICE MEMORANDUM

To: E. A. Primeau

Date: 12 July 1974

From: W. C. Wilde

Copies: J. T. Barr
T. L. Carey
R. Fleming
~~R. E. Jones~~
J. D. Kramer
A. K. McMillan
G. B. H. Speed
R. R. Spiegelhalter
M. Stermon

Re: Personnel Monitoring for VCM
Levels at Pace Plant

The personnel monitoring for VCM in June showed lower exposure than the monitoring during the period 22 April to 31 May. In June only 3.5% of the samples showed over 50 ppm vinyl exposure, versus 8.3% over 50 ppm for the previous period. Also, 60.8% of all samples in June showed less than 10 ppm vinyl exposure, versus 47.3% for the previous period. The results of the sampling in June are summarized by operating job below:

Job Title	Number of Samples with Exposure of				
	0-10 ppm	10-20 ppm	20-30 ppm	30-50 ppm	>50 ppm
Supervisor	5	1	0	1	0
Senior	6	2	0	0	2
Reactors	10	6	0	2	0
Solutions	10	7	1	4	1
Utility	13	6	4	2	1
Recovery	9	1	1	0	0
Finishing	8	0	1	1	0
Artisan	9	1	0	0	0
TOTAL	70	24	7	10	4

The reactor, solutions, and utility operators continue to have the highest exposures, but the general levels of exposure as well as the number of excursions have come down since last month. At least part of this reduction is due to the change of procedure which has the operators wearing fresh air masks while washing out reactors.

The Sipin pumps still have not been received, and the Sipin representative still is not sure when they will be available. The 20 - 30 minute sampling will be continued using the Bendix pumps and the large carbon tubes.

W. C. Wilde
W. C. Wilde

WCW:aw

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ESCAMBIA CHEMICAL CORPORATION

12

Operator's Job	Operator's Name	Start Stop Duration	Date Shift	VCM level	Comments
Recovery	McLean	12:00 / 12:30 / PM	5/31 / D	<1	
Finishing	Berry	1:15 / PM	5/31 / D	7	
Utility	Dodds	12:30 / PM	5/31 / D	16	
Finishing	Collins	9:00 / 9:20 / PM	5/31 / A	<1	
Recovery	Brooks	5:15 / 5:18 / PM	5/31 / A	<1	
Utility	Kirkland	8:10 / 8:30 / PM	5/31 / A	<1	
Reactor	Cook	5:30 / 6:20 / PM	6/1 / 11-7/8	6	
Solutions	Reinhardt	5:10 / 5:50 / PM	6/1 / 11-7/8	11	
Utility	Martin	4:00 / 5:11 / PM	6/1 / 11-7/8	(46)	
Reactor	Stewart	4:50 / 5:20 / PM	6/1 / 11-7/8	8	
Solutions	Curry	8:30 / 9:00 / PM	6/1 / 3-4 / A	15	
Utility	Paulson	5:45 / 6:15 / PM	6/1 / 3-4 / A	2	
Recovery	Brooks	7:30 / 7:52 / PM	6/3 / 3-4 / A	2	
Finishing	Collins	4:15 / 4:45 / PM	6/3 / 3-4 / A	10	
Utility	Kirkland	9:15 / 9:35 / PM	6/3 / 3-4 / A	14	
Supervisor	Heindl	11:30 / 12:05 / PM	6/4 / 11-7/8	12	
Reactor	Cook	12:00 / 12:30 / PM	6/4 / 11-7/8	<1	
Solutions	Reinhardt	1:51 / 2:10 / PM	6/4 / 11-7/8	19	

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13

Operator's Job	Operator's Name	Start	Stop	Duration	Date	Shift	VCM level	Comments
Utility	Hicks	1:20 PM	1:50 PM	30	6/4	11-7/8	16	
Reactor	Morrell	8:35 PM	9:00 PM	25	6/4	3-11/D	2	
Solutions	Watson	9:20 PM	9:50 PM	30	6/4	3-11/D	5	
Utility	Stanfill	8:05 PM	8:30 PM	25	6/4	3-11/D	260	Operator did not notice any HCl smell. Did not have any high reading. First day not work in PWT.
Artisan	Bott	4:25 PM	5:00 PM	35	6/5	11-7/8	20	
Senior	Nash	12:00 PM	12:45 PM	25	6/5	11-7/8	108	Operator did not know any reason for high reading.
Supervisor	Brown	9:40 PM	10:15 PM	35	6/5	3-11/D	<1	
Senior	West	3:10 PM	3:30 PM	23	6/5	3-11/D	6	
Artisan	Atkins	7:50 PM	8:10 PM	30	6/5	3-11/D	<1	
Reactor	Curry	12:10 PM	12:40 PM	30	6/6	11-7/A	11	
Solution	Collins	12:40 PM	1:00 PM	20	6/6	11-7/A	9	
Utility	Kirkland	11:20 PM	12:05 PM	45	6/6	11-7/A	23	
Solution	Longmire	9:30 PM	9:55 PM	30	6/6	7-3/C	4	
Artisan	Morrell	12:15 PM	12:35 PM	20	6/6	7-3/C	7	
Solution	Atkins	5:10 PM	5:18 PM	28	6/6	3-11/D	38	
Utility	Stanfill	8:15 PM	8:43 PM	28	6/6	3-11/D	7	
Recovery	Brooks	4:55 PM	5:10 PM	25	6/7	11-7/A	2	
Finishing	Bott	1:45 PM	2:10 PM	25	6/7	11-7/A	49	

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AP00034882

ESCAMBIA CHEMICAL CORPORATION

Operator's Job	Operator's Name	Start Stop Duration	Date Shift	UCM Level	Comments
Utility	Stanfill	2:55 / 2:45 AM 31	6/7 11-7/A	23	
Recovery	McLean	3:00 / 3:33 PM 33	6/7 3-11/D	3	
Finishing	Berry	9:10 / 10:10 PM 60	6/7 3-11/D	4	
Utility	Stanfill	8:10 / 8:30 PM 20	6/7 3-11/D	14	
Reactor	Curry	3:20 / 3:50 AM 30	6/8 11-7/A	3	
Reactor	Curry	12:50 / 1:30 AM 40	6/8 11-7/A	1	
Solutions	Collins	11:40 / 12:00 PM 20	6/8 11-7/A	2	
Solutions	Henderson	12:30 / 1:00 AM 30	6/8 11-7/A	16	
Utility	Kirkland	6:07 / 6:39 AM 23	6/8 11-7/A	10	
Solutions	Watson	10:10 / 10:30 PM 20	6/8 3-11/D	10	
Reactor	Collins	9:40 / 10:00 PM 20	6/8 3-11/D	12	
Utility	Stanfill	9:20 / 9:49 PM 20	6/8 3-11/D	5	
Utility	Stanfill	9:40 / ? PM	6/10 3-11/D	40	NO FINISH TIME, A. TED 280 GDL FLOW.
Recovery	McLean	9:15 / 9:40 PM 25	6/10 3-11/D	<1	
Finishing	Berry	10:10 / 10:40 PM 30	6/10 3-11/D	27	
Solutions	REINHARDT	1:00 / 1:30 PM 30	6/11 11-7/A	6	
Reactor	Curry	2:10 / 2:30 AM 20	6/11 11-7/A	15	
Utility	Kirkland	12:35 / 12:55 AM 20	6/11 11-7/A	4	

Signed: _____ Date: _____ Read and Understood: _____ Date: _____

ESCAMBIA CHEMICAL CORPORATION

15

OPERATOR JOB	OPERATOR'S NAME	START	STOP	DURATION	DATE	SHIFT	VCM LEVEL	COMMENTS
UTILITY	BOATWRIGHT	4:35/PM	5:05/PM	30	6/11	3-11/C #7/A	3	
REACTOR	MORRELL	4:00/P	4:30/P	30	6/11	3-11/C	9	
SOLUTIONS	LONGHIER	3:40/P	4:05/P	25	6/11	3-11/C	40	
ARTISAN	STEWART	2:45/A	3:10/A	25	6/12	11-7/A	<1	
SUPERVISOR	LAY	11:25/P	12:25/A	60	6/12	11-7/A	<1	
SOLUTION		12:30/A	1:00/A	30	6/13	11-7/D	30	
ARTISAN		5:45/A	6:15/A	30	6/13	11-7/D	1	
UTILITY	STANFILL	4:15/A	4:40/A	25	6/13	11-7/D	22	
FINISHING	DIAMOND	9:25/P	9:50/P	25	6/14	3-11/C	4.8	
UTILITY	THOMPSON	9:20/P	10:10/P	50	6/14	3-11/C	5.4	
RECOVERY	HENDERSON	7:55/P	8:55/P	60	6/14	3-11/C	21A	
SOLUTION	COLLINS	1:15/P	1:35/P	20	6/15	7-3/A	11.9	
UTILITY	KIRKLAND	1:35/P	2:10/P	35	6/15	7-3/A	16.2	
UTILITY	MCGLOTHLIN	11:23/P	12:20/A	57	6/15	11-7/D	5.3	
RECOVERY	CURRY	12:45/P	1:15/P	30	6/15	7/3 A	19.5	
SOLUTIONS	WATSON	2:20/A	2:40/A	20	6/15	11-7/D	11.3	
REACTOR	MCLEAN	3:00/A	3:30/A	30	6/15	11-7/D	19.6	
SOLUTION	STEWART	10:15/A	10:35/A	20	6/16	7-3/A	5.7	

Date: _____ Read and Understood _____ Date: _____
 Date: _____

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16

OPERATOR JOB	OPERATOR'S NAME	START	STOP	DURATION	DATE	SHIFT	VCM LEVEL	COMMENTS
ARTISAN	WALTERS	10:10/A	11:05/A	55	6/16	7-3/A	1.4	
RECOVERY	HENDERSON	9:35/P	10:10/P	35	6/17	3-11/C	3	
FINISHING	DIAMOND	9:40/P	10:00/P	30	6/17	3-11/C	2.6	
UTILITY	STANFILL	11:10/P	11:40/P	30	6/18	11-7/D	7	
REACTOR	McLEAN	12:00/P	12:40/P	40	6/18	11-7/D	4	
SOLUTION	WATSON	1:00/A	1:30/A	30	6/18	11-7/D	5	
REACTOR	COOK	8:25/P	8:55/P	30	6/18	3-11/B	15	
SOLUTIONS	REINHARDT	8:55/P	9:25/P	30	6/18	3-11/B	53	NO KNOWN REASON, TIME SPENT IN 3RD FLOOR KITCHEN
ARTISAN	WALTERS	6:50/A	7:10/A	20	6/19	7-3/A	2	
	LIGGETT				6/18			
SENIOR	WEST	12:25/A	12:53/A	28	6/19	11-7/D	7	
ARTISAN		5:20/A	6:20/A	60	6/19	11-7/D	3	
SOLUTIONS	LONGMIER	12:40/A	1:10/A	30	6/20	11-7/C	17.4	
SUPERVISOR	LAY	7:30/A	7:55/A	25	6/19	7-3/A	33.2	
SENIOR	STEWART	8:00/A	8:20/A	20	6/19	7-3/A	13.8	
UTILITY	THOMPSON	1:40/A	2:20/A	40	6/20	11-7/C	11.9	
Senior	Liggett	3:40/PM	4:05/PM	25	6/19	3-11/B	71	
Solutions	Curry	8:30/AM	9:00/AM	30	6/21	7-3/A	39	

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AP000034885

ESCAMBIA CHEMICAL CORPORATION

Operator's Job	Operator's Name	Start Stop Duration	Date	Shift	VCM Level	Comments
Reactor	Collins	7:45 AM 5:15 PM 35	6/21	7-3/A	41	
Reactor	Cook	5:20 PM 6:00 PM 30	6/21	3-11/B	31	
Utility	Kerns	6:00 PM 6:30 PM 30	6/21	3-11/B	30	
Solutions	Nash	4:55 PM 5:25 PM 30	6/21	3-11/B	47	
Senior	Liggett	9:15 PM 9:55 PM 40	6/21	3-11/B	14	
Recovery	Boatwright	6:40 PM 8:15 PM 95	6/24	3-11/B	2	
Finishing	Reinhardt	6:45 PM 7:15 PM 30	6/24	3-11/B	1	
Solutions	Curry	6:00 PM 6:30 PM 30	6/25	3-11/A	4	
Utility	Kirkland	6:05 PM 6:25 PM 20	6/25	3-11/A	3	
Reactor	Collins	4:55 PM 5:10 PM 15	6/25	3-11/A	<1	
Supervisor	McCarthy	3:30 PM 3:58 PM 22	6/26	3-11/A	2	
Artisan	Walters	4:10 PM 4:30 PM 20	6/26	3-11/A	5	
Senior	Stewart	5:10 PM 5:30 PM 20	6/26	3-11/A	3	
Reactor	Curry	8:50 PM 9:20 PM 30	6/27	3-11/A	6	
Utility	Carter	7:30 PM 7:50 PM 20	6/27	3-11/A	6	
Solutions	Brooks	9:30 PM 10:10 PM 30	6/27	3-11/A	4	
Recovery	Nash	5:50 PM 6:15 PM 25	6/28	11-7/B	1,3	
Finishing	Berry	4:20 PM 5:10 PM 60	6/28	11-7/B	3	

Signed:

Date:

Read and Understood

Date

Date

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Al / Randy

We could not get the entire
testimony retyped. Please do so ~~for~~ ^{for}
there and distribute.

Christy

A stylized handwritten signature, possibly reading "J.B.", written in dark ink.

AP00034888

1 they propose to remedy.

2 We therefore request your serious consideration of
3 our comments and suggested changes.

4 MR. FLEMING: Now, Doctor?

5 DOCTOR KOTIN: My name is Paul Kotin. I am a
6 physician, graduated from University of Illinois Medical
7 School, and my specialty is pathology. I have been a practi-
8 cing pathologist and experimental pathologist during all of my
9 career, a career which began with World War II, following
10 which I entered the private practice of medicine in pathology
11 for two years, went to the University of Southern California
12 where I was, for fifteen years, leaving as the Paul Professor
13 of Pathology.

14 I entered Government service in 1961 as the Scien-
15 tific Director for Etiology at the National Cancer Institute,
16 five years later served as the Founding Director of the
17 National Institute of Environmental Health Sciences.

18 I was with Government until 1971, when I left to
19 go to Temple University as Dean of the Medical School and
20 Vice President for Health Sciences, and since June 1st of
21 this year I have been Vice President for Health, Safety and
22 Environment of the Johns-Manville Corporation.

23 My entire research career has been devoted to
24 environmental diseases, especially environmental carcinogenesis,
25

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1 and when not with the Government I worked both sides of the
2 street; I was a consultant for a variety of Federal agencies
3 as well as a consultant to private industry.

4 What I would like to do now is give you a report
5 of the results of the screening of the present employees of
6 Air Products and Chemicals Incorporated, who are engaged in
7 the handling of vinyl chloride, and on the results of an
8 examination of death certificates of those VCM employees who
9 left the company or died while employed.

10 I was employed as a consultant by Mr. Richard
11 Fleming, Group Vice President, Chemical Group of Air Products
12 and Chemicals, in early February 1974, for the specific pur-
13 pose of establishing and conducting a medical evaluation and
14 surveillance program for employees exposed to vinyl chloride.

15 MR. KLINE: Excuse me, Your Honor. If I could
16 interrupt, our copies don't have the good Doctor's presenta-
17 tion.

18 Would you have any extra copies, Doctor?

19 DOCTOR KOTIN: No. Actually, I don't because it
20 was rewritten as of last night, incorporating the most recent
21 data from our studies of employees and data from laboratory
22 tests. It will be submitted for the record.

23 JUDGE MYATT: All right, Doctor; proceed.

24 DOCTOR KOTIN: As a first step, two physicians
25 were identified in the areas where Air Products has vinyl

AP00034890

1 chloride operations -- Doctor William M. Blaylock, of Paducah,
2 Kentucky, and Doctor Bartley Beitelman, of Pensacola, Florida
3 agreed to serve, and in consultation with them, a medical
4 examination protocol was developed and carried out for
5 employees in plants at Calvert City, Kentucky, under the
6 supervision of Doctor Blaylock, and at Pace, Florida under
7 the supervision of Doctor Beitelman.

8 Both physicians are certified by the American Board
9 of Internal Medicine. Doctor Blaylock is a specialist in
10 gastroenterology and hepatology, and Doctor Beitelman is a
11 member of a large medical group who are specialists in gastro-
12 enterology and hepatology.

13 Following several meetings between myself and the
14 two physicians, a screening and review procedure was adopted
15 for Air Products' employees at the two plants. Special empha-
16 sis was directed toward identifying and specifically testing
17 for the two diseases for which there were demonstrated associ-
18 ations between vinyl chloride exposure and disease -- aco-osteop-
19 lysis and angiosarcoma of the liver.

20 These areas of emphasis were just part of the com-
21 plete review of each patient, which included the following:

22 A complete and detailed medical history was taken
23 on each employee. Afterward, a physical examination and a
24 series of laboratory procedures were performed, as follows:

25 Chest X-ray.

AP00034891

1 Hand X-ray.

2 A battery of laboratory tests which I will name,
3 for the purpose of making a point in a few moments.

4 Blood urea nitrogen.

5 Uric acid.

6 Phosphorous.

7 Calcium.

8 Alkaline phosphatase.

9 Total protein.

10 Albumin.

11 Bilirubin.

12 Cholesterol.

13 Globulin.

14 Glucose.

15 Serum glutamic acid transaminase SGOT.

16 Lactic acid.

17 Dehydrogenase.

18 LDOT.

19 Alpha-feta protein.

20 Carcinoembryonic antigen.

21 Complete blood count with platelets.

22 And serum glutamate pyruvic transaminase SGPT.

23 I list this battery of tests, over half of which are
24 specifically directed to the liver, to indicate that it is a
25 battery that is required to evaluate liver function. No one --

AP00034892

1 not even this group, is fully informative at all times.

2 Minor differences in the laboratory tests performed
3 in Florida and Kentucky reflected the availability of labora-
4 tory resources.

5 Testing showing abnormal laboratory findings in any
6 employee were repeated to assure their authenticity. In addi-
7 tion to the repetition of the preceding tests, when indicated,
8 the following additional tests were performed on employees
9 not previously having these tests: the two important ones
10 were liver-scans and liver biopsies.

11 The persistence of abnormal laboratory findings, or
12 the presence of signs and symptoms suggesting liver toxicity
13 was followed by a further re-examination of the employee for
14 the specific purpose of determining the desirability of a
15 liver-scan and possible liver biopsy.

16 At Pace, Florida, 201 employees were tested, and 13
17 employees were found to have test results which varied from
18 established norms. All these 13 employees were retested;
19 four employees had normal results on retest, three employees
20 had persistent minor variations which, in our opinion, did not
21 require further testing at this time. These employees are
22 scheduled for retesting in 90 days to determine their persist-
23 ence.

24 Liver-scans were performed on six of the 13, all of
25 which were normal. One case of acroosteolysis was found

1 during the examination, and this employee has been removed
2 from vinyl chloride operations.

3 At Calvert City, Kentucky, 291 employees were
4 tested. On the initial tests, we found 97 employees who had
5 findings which varied from recognized norms. Equipment mal-
6 function was suspected, and verified, and upon retest, 29
7 employees showed persistent abnormalities.

8 These 29 were scheduled for immediate retest. 16
9 employees showed persistent equivocal variations; as in the
10 case of Pace, Florida, they are scheduled for retest within
11 90 days.

12 Of the 13 employees with persistent abnormalities
13 -when retested, six showed findings which directed to more
14 complex and increasingly sensitive and diagnostic tests for
15 liver physiology and anatomic state.

16 The six employees were examined by liver biopsy,
17 intravenous pyelogram, upper and lower gastrointestinal series,
18 a gallbladder X-ray, a repeat of the chest X-ray, and a com-
19 plete physical re-examination.

20 Of the six biopsies, two were diagnosed as cases of
21 Gilbert's disease, a congenital abnormality of enzyme metabol-
22 ism, one case was identified as having chronic gallbladder
23 disease with an anatomically abnormal gallbladder -- an intra-
24 hepatic gallbladder, a gallbladder buried within the liver,
25 and this is what gave us the cold spot on the liver-scan.

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1 One case was diagnosed as having chronic gallbladder
2 disease with coexisting persistent hepatitis.

3 One case showed chronic persistent hepatitis subse-
4 quent to an infectious hepatitis, and one case showed no
5 abnormality.

6 I also examined the death certificates of former
7 employees who had been engaged in the manufacture of vinyl
8 chloride and who died either while working for or subsequent
9 to leaving the company. I was unable to identify any relation-
10 ship between the causes of death and the exposure to polyvinyl
11 chloride in their work environment.

12 Throughout the entire testing and examination pro-
13 grams at both Air Products plants there were constant discuss-
14 ions between the physicians on site and myself; often on a
15 daily basis. In addition, I have been to both the plants in
16 Florida and Kentucky and personally reviewed records with the
17 local physician.

18 I would conclude at this time that except for the
19 case of acroosteolysis discovered in an employee in the
20 Florida plant, the results of the screening comprising medical
21 and environmental history, X-ray, physical examination, labora-
22 tory tests -- and where indicated, liver-scan and biopsies --
23 findings or diagnosis which point to VCM as a positive agent
24 or mechanism were not identified.

25 More specifically, we can state at this time that

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1 no cases of angiosarcoma have been identified.

2 JUDGE MYATT: Before you start, Mr. Fleming, you
3 have submitted your statement and Mr. Barr's, and an appendix
4 with it which is attached to it?

5 MR. FLEMING: Yes, sir.

6 JUDGE MYATT: All right, Mister Reporter, for the
7 record, the statement of Air Products will be Exhibit 23-A
8 and the Appendix will be 23-B, and I will ask you to designate
9 in the record, although you do not have a copy, the report of
10 Doctor Kotin as 23-C, and he is to supply us with a copy of
11 that as quickly as possible.

12 (The documents referred to were
13 marked for identification as
14 Exhibits 23-A, 23-B and 23-C,
15 inclusive.)

16 JUDGE MYATT: Mr. Kline, proceed.

17 MR. KLINE: Before beginning with the actual question-
18 ing, I would ask that, if you would, you provide in the post-
19 hearing comment, the various job classifications in your
20 various plants, the approximate exposure of persons in those
21 job classifications -- that is, what sources do they come
22 near, and whether -- indicate if you could whether it is an
23 intermittent type exposure or a continuing exposure.

24 MR. FLEMING: We will of course provide whatever
25

EAP
JGT 8-9-79

R. E. JONES

JUL 11 1974

RECEIVED

VCM Residues Said To Decline With Patented GAF Solvent

The solvent, N-methyl 2-pyrrolidone and trademarked "M-Pyrrol", has been applied by GAF to the development of, first, a high-efficiency automated cleaning process for PVC reactors which eliminates the need for human entry into the vessels and permits unique high recoverability and re-use of the original solvent, and, second, a process for the recovery and purification of vinyl chloride gas venting from PVC reactors.

According to Reanne Berni, product manager for acetylene chemicals-solvents at GAF, and developer of the solvent and its thermoplastics applications at the company, the process engineers expressed little interest originally in the method.

Discipline kept?

GAF, in 1968-70, again made the rounds of PVC manufacturers with the new "system" but while somewhat more interest was shown, according to Mr. Berni, only two companies agreed to try the new proce-

However, beginning in the 1970s, Mr. Bernie reports that interest in Pyrocl's system picked up among PVC makers. That was the time early information on the and potential carcinogenicity began to circulate. Today, he says that interest in "m-Pyrocl" is "high" as it becomes apparent entry into PVC value is no longer

[illegible]

AP00034897

Chemical Marketing Reporter

Vol. 204 No. 1

100 Church St., New York, N.Y. 10007

July 1, 1974

VCM's Labor and Management In Confrontation at Hearings On 'Viable' Industry Standard

By RALPH L. CHERRY
Washington Editor

With jobs of possibly as many as 2.2 million workers at stake as well as the future of an entire plastics industry, officials of the Department of Labor this week begin sifting through a mass of research data, medical reports, statistical information and recommendations for a viable permanent standard for worker exposure to vinyl chloride contamination.

Four full days of public hearings on the issue by the Occupational Safety & Health Administration (OSHA) last week brought management and labor into direct confrontation over the stringency of the standard that should be imposed. Industry said that

OSHA's proposal that worker exposure (without protective equipment) be limited to undetectable levels of vinyl chloride is not feasible. Labor said OSHA's proposal was not strict enough.

To give emphasis to labor's views, Peter Bonamarito, President of United Rubber Workers, speaking on behalf of the AFL-CIO said:

"This country survived for nearly two hundred years without polyvinyl chloride and we can survive in the future without it. If PVC cannot be made and used safely, then the proposed standard must be replaced by an orderly procedure to phase out vinyl chloride production and find substitutes for its products, or to phase out the products themselves."

Although the link between vinyl chloride contamination and angiosarcoma is still de-

bated by some scientists, evidence of its cancer-causing potential was strengthened further upon receipt of a telegram shortly before the hearings began from Dr. Cesare Maltoni of Italy reporting further on the experiments he is conducting of the effects of vinyl chloride contamination on rats.

He advised Assistant Secretary of Labor John Stender who supervises OSHA that "the up-to-date results indicate that VCM administered by inhalation produces in rats symbl gland carcinomas, nephroblastomas, angiosarcomas of liver and other sites, skin carcinomas and probably hepatomas and neuroblastomas.

"In mice, VCM produces angiosarcomas and angiomas of the liver and of other sites, pulmonary tumors, mammary carcinomas and skin tumors."

Dr. Daniel P. Boyd, director of the Office of Standards Development for OSHA, who announced receipt of the telegram to the packed hearing, said, "Based upon the Maltoni and Industrial Bio-Test Laboratory experiments, and the 19 cases of angiosarcoma found in persons exposed to VCM, our present judgement is that VCM is a carcinogenic agent.

OPERATING WITH UNKNOWNNS

"In protecting employees from carcinogenic material, we are operating in an area of many unknowns. For example, we do not know the mechanism by which a chemical carcinogen operates or whether a safe level of exposure can be set. However, the problem of employee exposure to carcinogens is with us today, and it is our responsibility to deal with it as rapidly as possible, based upon the best available information."

A number of the chemical manufacturers were in attendance at the hearings, either as participants giving reports on their knowledge of the chemical's hazardous properties or as observers. The industry's principle arguments that the government act with reason and not destroy an industry whose products have a value of \$65 billion

annually were offered by the Society of the Plastics Industry.

The \$65 billion annual worth of the plastics industry and the 2.2 million job figure was contained in an economic study of the industry prepared for SPI by Arthur D. Little, Inc., management consultants.

In connection with establishment of a permanent standard, OSHA is preparing an economic impact statement which it hopes to complete in about a month. An environmental impact statement was completed earlier last month and is being reviewed in industry comments.

Anton Vittone, president of B.F. Goodrich Chemical Company, and chairman of the SPI's Committee of Vinyl Chloride Monomer & Polyvinyl Chloride Producers, warned OSHA that the plastics industry could not live with the proposed permanent standard that would reduce permissible worker exposure to vinyl chloride contaminated air from 50 parts per million to less than 1 ppm, plus or minus 50 percent. He offered a new standard for employee safety calling for a stepped reduction of permissible levels of VCM in the workplace as follows:

For PVC resin plants - Effective October 5, 1974, a ceiling of 40 ppm of VCM and a maximum daily time weighted average of 25 ppm. Levels above 40 ppm would require the use of practical and effective respiratory protection. One year later the ceiling would drop to 25 ppm with no time weighted average and on October 5, 1976, it would stay at 25 ppm with a maximum time weighted average of 10 ppm.

For VCM plants - Effective October 5, 1974, a ceiling of 25 ppm and a maximum time weighted average of 10 ppm. Levels above 25 ppm would require the utilization of practical and effective respiratory protection. One year later the ceiling would drop to 10 ppm and a maximum time weighted average of 5 ppm and levels

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VCM Hearings

Continued from Page 38

above 10 ppm would require use of practical and effective respiratory protection.

Mr. Vitti said that the industry's commitment to the proposed standard could not be accomplished overnight since, in certain areas, the technology for accomplishing it is, as yet, not developed and, when developed, facilities must be installed requiring time for engineering, procurement and installation.

He emphasized that the industry committee is unanimous in its position that OSHA's proposed permanent standard of "no detectable level" is not technologically feasible and, if adopted, would shut down the industry.

Jerome H. Heckman, EPA's general counsel, emphasized that any final standard adopted by the government must take into balanced account the full spectrum of public and employee health considerations, social and economic impact, as well as other public interest factors.

He stressed that Congress specifically provided in the Occupational Safety and Health Act, and that the courts have recognized, that the Secretary of Labor must, in establishing protective standards, consider the "feasibility" of meeting them. He said the term "feasibility" encompasses technological and economic considerations as well as health.

Liver Cancer Victims Lived Near PVC Plants

Two "downwind cases" of angiosarcoma of the liver have been tentatively identified in Connecticut after review of the possible connection of vinyl chloride gas to record cancer deaths in the state. A story in the Connecticut Herald last Friday (June 28) quoted sources at National Institute of Occupational Safety & Health as saying that environment near two PVC fabrication plants in Connecticut was "highly suspected" as a factor in the two cases of liver cancer. This brings to four the total number of angiosarcoma deaths in the state that have been connected to PVC facilities.

The latest cases, according to the Connecticut newspaper, involved a woman who lived within a half a mile of a Ross & Roberts Company plant in Bridgeport.

Earlier in June, two PVC workers in the state, one from each of the same two plants, were identified as accounting for another two of the registered angiosarcoma deaths. There are a total of six such deaths recorded in the state cancer registry. The two remaining cases have not yet been connected to causative factors.

The Herald quoted NIOSH sources as saying "there is no other possible explanation for these cases of angiosarcoma except for residue in the neighborhood of these two plants." The source was said to base his comment on a report on the latest identified victims submitted by the National Cancer Institute.

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VCM LEAK DETECTION PROGRAM

OBJECTIVE - To eliminate VCM leaks throughout the PVC unit.

PRESENT PROGRAM - Supplementing the fixed monitors installations is an area type inspection conducted by two lab men using both the Bacharach and the Century detectors. This inspection is done two or three times per week with results of the inspection being tabulated and reported.

PROPOSED PROGRAM - Continuous search and inspection program conducted by maintenance shift mechanics. Detected leaks to be repaired immediately by the mechanic or reported for service determined by equipment availability.

TIMING AND IMPLEMENTATION - An experienced mechanic familiar with the PVC plant operation and equipment will be selected and made familiar with proper use of the Bacharach portable detection equipment. Inspection of VCM handling equipment and piping can be started immediately on the day shift. An inspection guide sheet covering the system from the unloading area to storage and all outside operating area distribution can be prepared. Inspection inside operating buildings will be conducted on an area basis with tracing to source when concentrations are detected. A written record will be made of all leaks detected and type of repair made to develop a history to aid in determining re-curring type leakage.

The day shift inspection will be expanded to round-the-clock seven day per week coverage as additional mechanics become

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available. Complete shift coverage can be expected within two weeks. Inspection and monitoring of all operating areas would then be conducted on a minimum once per shift basis. A log book or record of each shift's activities would be maintained. Particular attention would be given to areas such as the reactor floor where flanges are broken or manways opened as a part of the operating requirements.

Continual review of shift records will be required to determine areas of higher leak frequencies so that inspections can be oriented toward early detection. This record should also provide information on type of leaks experienced and lead to improvement of materials and equipment. As experience is developed with the inspection program, it may be possible to reduce the inspection frequency and the personnel involved.

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VCM Near Plants No Hazard, EPA Says

After atmospheric tests at vinyl chloride plant sites Environmental Protection Agency has decided vinyl chloride emissions are not a serious hazard, but that plant operating procedures should be tightened anyway.

Meeting with senior executives of the twenty-nine companies which manufacture vinyl chloride and vinyl chloride resin last Tuesday (June 11), EPA Administrator Russell E. Train said:

"There is no scientific evidence to indicate that these emissions pose an imminent

hazard to people living near these plants. However, prudence dictates that reasonable steps should be promptly taken to reduce vinyl chloride emissions to the lowest practical level."

Mr. Train requested that each company begin or continue monitoring emissions from its plants in order to provide more extensive information on the quantities of vinyl chloride entering the environment. EPA will support additional monitoring in cooperation with state and local governments.

He also recommended that manufactur-

ers consider long-term modifications to VCM processes promptly, in addition to other steps to improve operating procedures that should be taken immediately.

Mr. Train said a number of vinyl chloride manufacturers have already reported substantial efforts to reduce emissions as well as monitoring activities, and he said the companies in general have assured EPA of their desire to co-operate fully with the agency.

Preliminary monitoring results, Mr. Train noted, show levels in the ambient air near the plants fluctuate sharply. Apparently, this is due to the periodic openings of polyvinyl chloride reactor kettles, accidental plant discharges, variations in the production process and meteorological conditions.

While almost all of the samples collected contained detectable levels of vinyl chloride, more than 95 percent of the samples showed amounts less than one part per million, Mr. Train said.

At several of the chemical complexes tested, however, a number of individual air samples showed more than one ppm vinyl chloride. A one-time high of 33 ppm was obtained at Louisville, Ky., although repeated

sampling at this site indicated that this level was unusual, according to EPA.

Mr. Train stressed the preliminary nature of EPA's findings while expressing confidence that they will be verified by later tests.

"Only a limited number of samples were taken at each facility under varying meteorological and temperature conditions," Mr. Train said. "While we are reasonably confident that our monitoring efforts were sound, it is difficult to generalize about ambient conditions from our samples."

Also there were many opportunities for error in the individual measurements made in this pioneering effort. It is clear that considerable additional work is required before we have an accurate picture of the vinyl chloride levels in the ambient air."

EPA also monitored water effluents and found typical levels there at two to three ppm, in one instance at 20 ppm. Vinyl chloride entrapped in sludge and other solid wastes from the reactor kettles ranged from 100 to (in one case) 3,000 ppm. No evidence indicated that vinyl chloride is present in detectable levels in drinking water, EPA says.

"At the present time," Mr. Train notes, "there is no basis for considering that the levels of vinyl chloride detected in water discharges or in sludge, if handled properly, are hazardous to human health or to aquatic life."

Participants in the vinyl chloride controversy reacted to EPA's findings in predictable manner last week.

Dr. Sidney Wolfe, head of Ralph Nader's Health Research Group in Washington called them "enraging to see." The Nader group, with labor allies, has been pushing for zero-detectable levels of VCM in the workplace environment contending that there is no known level of safe exposure to the suspected carcinogen.

Dr. Wolfe said the objections to atmospheric VCM inside manufacturing plants extend to environmental VCM outside them. On a twenty-four hour basis the exposure of the community to a given level of VCM would be treble that of an eight hour worker, he said.

EPA is trying to "take the edge off the urge" to do something about environmental VCM, Dr. Wolfe charged. The agency is "admitting there are significant levels of VCM in the environment. This is ridiculous; certainly there is an imminent danger," Dr. Wolfe said.

A Manufacturing Chemists Association spokesman on the other hand, said the EPA report is good news. The data with respect to communities surrounding vinyl chloride plant sites are encouraging, he said, and last week's meeting "was very beneficial for all parties concerned."

"I think EPA put the right emphasis on the matter," he said. Like EPA, he cautioned that the environmental tests are only preliminary.

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Debating Health Vs. Jobs

Plastics Industry Mobilizes to Thwart Tough Rules on Handling Vinyl Chloride

By WALTER DOWNS
Staff Reporter of The Wall Street Journal

WASHINGTON — As the federal government moves closer to adopting stringent controls over handling of the ubiquitous industrial chemical vinyl chloride, manufacturers who use it are mobilizing to try to show that the controls would prove economically disastrous.

The rules would be utterly unworkable, the companies say, and industry would lose an essential manufacturing material. In consequence, they add, makers of plastic pipe, auto parts, phonograph records and many other products would be driven to the wall. And, they contend, thousands of jobs would vanish.

This gloomy picture is likely to dominate Labor Department hearings, beginning today, on planned standards for eliminating the exposure of plastics-industry workers to the chemical, which is suspected of causing cancer.

Exposure to vinyl chloride, a gas, has been linked by researchers in 13 cases of a rare liver cancer, angiosarcoma, among workers handling it in the U.S. and other countries; in 14 of these cases, death resulted. In addition, angiosarcoma has recently been blamed for the death of two employees in U.S. plants handling polychlorinated biphenyls, the powdered derivative of vinyl chloride gas that is fabricated into a wide range of plastic products. (Two other deaths from angiosarcoma have been discovered among people living in the vicinity of plants using polychlorinated biphenyls.)

In April, the Labor Department's occupational safety and health administration imposed a temporary emergency standard limiting workers' exposure to vinyl chloride to 50 parts per million in the air they breathe, a sharp reduction from the previous limit of 100 parts. Now, the agency is proposing—and witnesses at this week's hearings will debate—a standard cutting exposure permanently to "no detectable" level at all.

Although the plastics industry opposed the emergency ruling, its voice has so far been weaker than that of organized labor and various scientific groups, which back the tough rules.

Down for the Industry?

At this week's hearings, however, the industry is expected to argue strenuously that the "no detectable" exposure limit would spell doom for the several dozen plants that make vinyl chloride or use it to make polychlorinated biphenyls and other products. The standard would require that most operations in the production of vinyl chloride and polychlorinated biphenyls be closed off, or workers be equipped with respirators, or ventilation devices or other methods. In addition, some operations at plants turning polychlorinated biphenyls into products, which are sold to companies as far as 10,000 miles away, would be subject to similar strictures.

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In a week's survey of the industry in

industry, a trade group, asserted that sufficient technology doesn't exist to meet the proposed standard and warned that much of the vinyl and polychlorinated biphenyl industry might have to close if the standard goes into effect. The society predicted that 10 million jobs and "at least \$5 billion" in sales and production could be lost.

Ralph Harding Jr., president of the society, said that the proposed standard "is technologically infeasible to achieve, even with the highly sophisticated methods of the industry over the years. If the proposed 'no-detectable-level' standard is adopted, the vinyl chloride and polychlorinated biphenyl producing industries will be forced to close down immediately."

The Labor and Health View

A number of labor-union and occupational health experts are expected to dispute the society's claims at the hearings. They contend that it is possible to meet the standard without closing the industry.

But harsh predictions are contained in many of the more than 125 letters from plastics firms already on file with the Labor Department. The letters, representing the writers' formal "comments" on the planned rules, give an indication of the probable tone of this week's hearings. Although most letters concede that some controls are in place on vinyl chloride, most contend that the proposed measures would mean nothing less than the collapse of their industry.

Almost all the letters come from users of polychlorinated biphenyls, or PCBs, and not companies directly handling vinyl chloride itself or those turning it into PVC. In most cases, they explain that their suppliers of PVC have told them the standard will make it impossible for them to continue producing the raw plastic. Urged to write to the government, the PVC users have done so, foreboding their financial ruin.

"Unless a reasonable approach is taken," wrote Frank Ottomarchi Jr., president of a plastic-pipe-extruding firm in Illinois, "it could mean the destruction of many small businesses such as ours where we have invested our life savings."

J. J. Horton, chairman of Fenner Dunlop Inc., a California maker of PVC window blinds and sliding doors, wrote last year that, at the depth of the depression, he started a business which had grown today where we do approximately 70 million worth of business and employ over 200 people. If the new rules are imposed, he said, "we'd be back to a one-man business overnight."

One firm, Custom Tole Products Inc., which makes plastic trim for several big auto makers, warned that the new rules could cut off its supply of PVC resins, ending its production and causing it to rack losses by default for failure to fulfill supply contracts. The firm, an officer noted, "would undoubtedly be forced into bankruptcy."

Hubbard Asmarco, a bookbinding company in Oshkosh, Mich., wrote to demand that it continue to remain in business if PVC supplies were restricted because its inventory of PVC bottles and plastic bottles are a result of a backlog of orders.

In fact, many of the letters contended that PVC is already in short supply, right now, and absolutely necessary for a variety of important uses.

Supporters for the recent industry-related rule that the plastic is used in its production, the American Plastics Council, contended that the standard would force PVC producers to close their industry would be forced out of business.

The National Association of Home Builders

Cincinnati Bell Finds Users Pick Self-Help Over Added Expense

ATTN Unit Says 20-Cent Fee For Directory Assistance Has Cut Inquiries 74%

A TOLL on Cincinnati Bell's new charge for directory assistance has cut inquiries 74%, the company says.

In June 1973, the charge was instituted, and the company says it has received a number of inquiries from users who are not sure if they are getting a rate over 17¢ per call. The company says it will not charge for each inquiry and will not charge for each inquiry.

Since the charge was instituted, the company says it has received a number of inquiries from users who are not sure if they are getting a rate over 17¢ per call. The company says it will not charge for each inquiry and will not charge for each inquiry.

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Newton Co.'s plastics and synthetics division, which makes tubing for medical use, warned that if the new rules curbed supplies of PVC, desperately needed equipment used in kidney dialysis and heart surgery might become unavailable. And Graniteville Co., of Graniteville, S.C., a maker of non-relaxant tents and tent material, called PVC "the most important component" in its products.

Most of the letter writers acknowledged the need to protect workers from the possibility of liver cancer. But they urged delay in imposing such harsh restrictions, both to give scientists time for further research and to allow the businesses to phase in the new controls.

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Provident Fund Says American General Unit Is Its New Manager

By a WALL STREET JOURNAL Staff Reporter
PHILADELPHIA — Provident Fund for Income Inc. announced completion of the take-over by Channing Management Corp., a subsidiary of American General Insurance Co., as its new investment adviser following denial by a federal district court judge of a preliminary injunction sought by two fund shareholders who opposed the take-over.

At Provident's annual meeting last week, shareholders approved turning over management of the mutual fund to Channing and elected seven new directors, all with Channing, and reelected five directors.

A suit filed May 30 by Richard M. Somers Jr. and William Penn Management Corp., both shareholders of Provident Fund, charged that proxy material mailed in connection with the annual meeting was misleading in that it failed to set out certain facts that might influence holders deciding how to vote on the change in investment advisers. Provident said Judge Joseph L. McGlynn Jr. ruled Monday that the proxy material fairly described the proposed transaction.

The suit had originally sought to enjoin the annual meeting, but the plaintiffs agreed not to oppose the meeting after Provident agreed it wouldn't take any action on that matter until after the court hearing.

Provident also said that as a result of the judge's decision, it sold the business and assets of Provident Management Corp., its previous investment adviser, to Channing Management and the business and assets of Pennsylvania Funds Corp., the principal retailer of the fund, to Channing Co., principal underwriter of the Channing funds and also a subsidiary of American General Insurance.

Funding Is Set to Telecast A Series of U.S. History

By a WALL STREET JOURNAL Staff Reporter
WASHINGTON — The National Endowment for the Humanities and New York City's public television station WNET announced more than \$5 million in funding for production of a 13-week dramatization called "The Adams Chronicles 1750-1900."

The series will trace historical incidents in the life of one family, that of Presidents John Adams and John Quincy Adams, over a span of 130 years. It will be produced by WNET and telecast nationally over the Public Broadcasting Service during the 1975-76 season as part of the nation's bicentennial celebration.

The organizations said the \$4 million in grants made by NEH to WNET include \$1 million outright and \$3 million in gifts-and-matching grants. The Andrew W. Mellon Foundation already has provided \$750,000 toward the matching grants and is expected to provide another \$750,000 next year, they said.

In addition, WNET announced a separate grant of \$1.2 million directly to the station from Atlantic Richfield Co. for the project.

Cyclops Unit Raises Some Prices 5% to 17%

By a WALL STREET JOURNAL Staff Reporter
PITTSBURGH — Cyclops Corp. said its Universal-Cyclops specialty-steel division raised prices 5% to 17% on high-temperature alloys in bar and forging billet forms, and it added that it plans to increase prices on sheet and strip forms of high-temperature alloys "at an early date."

The company said the increases follow patterns set by competitors.

EPA Air Samplings Don't Show Hazards From Vinyl Chloride

By a WALL STREET JOURNAL Staff Reporter
WASHINGTON — The Environmental Protection Agency said air sampling in areas surrounding vinyl chloride and polyvinyl chloride manufacturing plants didn't turn up hazardous levels of the two compounds in the atmosphere.

However, a reading taken 0.2 mile from the B. F. Goodrich Co. plant in Louisville, Ky., showed 33 parts per million of polyvinyl chloride compared with the 50 parts considered dangerous to health. And EPA Administrator Russell Train requested that all 29 companies that make vinyl chloride resins take "reasonable steps" to reduce emissions of the compound to the "lowest practical level."

Vinyl chlorides have been found to cause a rare and frequently fatal form of liver cancer among workers in factories producing the resin compounds. The EPA is considering establishing an atmospheric ceiling for vinyl chloride emissions. In addition to its own sampling program, the EPA is asking the manufacturers to continue or start their own monitoring programs and also to provide technical and economic information for use in its standard-setting deliberations.

The EPA sampling, conducted at varying distances from a dozen vinyl chloride and polyvinyl chloride plants around the country, turned up atmospheric levels of less than one part per million in 95% of the readings.

The cause of the exceptionally high readings, which also occurred to lesser extents outside plants in Louisiana and California, isn't known. EPA air pollution officials believe such readings could result from the opening of a process kettle, inadvertent polyvinyl chloride venting, meteorological conditions or a combination of these factors.

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Labor Dept. Moves To Speed Issuance Of VCM Regulation

The Department of Labor has decided to dispense with normal procedures of first obtaining objections to proposed regulations and requests for hearings, and move directly to the hearing stage on the proposed permanent vinyl chloride occupational safety regulations to speed the settlement of the issues involved and issuance of the regulations in final form.

In an amendment to its May 10 announcement of a proposed rulemaking with regard to a permanent standard for occupational exposure to vinyl chloride, the department announced that hearings will be held on the standard June 25 in the Departmental Auditorium, Washington, D.C. starting at 9:30 a.m.

Persons wishing to participate in the hearing are required to notify Ms. Joanne Goodell, Attn: Docket OSH-36, Occupational Safety and Health Administration, 1725 M. Street, NW, Room 200, US Department of Labor, Washington, D.C. 20210, no later than June 17.

In addition to the practical, the notice should contain a general statement of the position to be taken with respect to any provision of the proposed standard, and of the evidence to be adduced in support of the position.

Last week, Manufacturing Chemists Association issued a detailed chronological report on its activities concerning occupational health aspects of vinyl chloride.

In preliminary disclosures of MCA's activities given exclusively to this publication the week before (CMR, 5/27/74, pg. 18), the

Labor Dep't. Moves.

Continued from Page 7

association assailed implications that it had withheld pertinent information on the carcinogenicity of VCM for more than a year.

Among the more recent actions taken by MCA, according to the chronology, was the issuance of a press release announcing preliminary indications that VCM exposure produced liver cancer in mice at several exposure levels, down to fifty parts per million.

The findings were the result of studies conducted by Industrial Bio-Test Laboratories, which was commissioned by the association in February 1973 to conduct animal exposure tests with VCM. The experiments entailed animal inhalation tests that would expose rats, mice and hamsters to vinyl chloride concentrations of 2,500, 200 and fifty ppm for one year, with animals to be kept on observation for an additional year.

In addition to this test, MCA says that four supplementary research projects on VCM proposed by the group are now in near prospect. These projects include:

- Rat metabolism study
- Rat fetus study
- Animal chronic exposure study at levels below fifty ppm
- Animal acute exposure study to test potential effects from possible single massive release causing extremely high VCM atmospheric concentrations.