

PVC PLANT MANAGERS' MEETING

Cleveland, Ohio

October 10, 1974

SUMMARY OF IMPORTANT POINTS AND DECISIONS

TO:

N. R. Aquino	P. H. Lawrence
E. M. Begnaud	T. R. Linak
W. E. Brodine	R. S. Mather
D. A. Brooks	J. L. Nelson
A. W. Clements	R. N. Rylands
C. B. Cooper	R. D. Scott
L. B. Crider	R. W. Strassburg
A. M. Fairlie	A. Vittone
R. J. Fawcett	H. Waltemate
C. R. Flynn	P. J. Weaver
L. V. Goode	A. R. Webber
E. W. Harrington	D. J. Wells
W. C. Holbrook	J. M. Whitney
J. M. Hyslop	W. J. Wilcox
M. N. Johnson	C. L. Woods
F. E. Krause	B. M. G. Zwicker
R. M. Kreager	

This meeting was held to discuss the impact of the new OSHA Standards for ambient vinyl chloride in our PVC plants.

1. Mr. Vittone mentioned that SPI and Hooker have taken court action to ask the overturn of the standard. Firestone, Air Products, Tenneco, and Union Carbide have also filed asking relief from the standard. Dow is expected to file late this week and B. F. Goodrich will file early next week. All cases will be consolidated and cleared in the Second District Court, New York City. The earliest possible date for a decision on these court cases will be December 10th. They could drag on for as long as 9 months. The SPI is holding an industry meeting October 11th in Washington to discuss the legal aspect of the new standard and to try to find out who will file briefs and who will support filing a brief opposing this standard.

Robin Tech has indicated via the news media that they can meet the new standard using the Shin-Etsu technology. Jones and Day of Cleveland will represent B. F. Goodrich and Diamond Shamrock in actions concerning the standards.

EPA has not set up any standards yet. Also, the FDA has not indicated what course of action they will take. However, it is expected they may insist on items for single service applications containing less than one ppm, such as film for wrapping meats and items for repeated service like pipe would have to meet a specification of 10 ppm. We have not heard from the Department of Transportation concerning their plans.

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2. Bob Webber indicated that he could operate Pedricktown with suitable air masks from plug-in stations if they were arranged so the operator could get from one station to another with the use of a cannister. Therefore, it would be very important to get a cannister plug-in type mask approved by NIOSH. The stairwells and the control rooms could be supplied with fresh, clean air. Pure air cones could be placed over telephones allowing communication without using a mask. The use of a throat mike or a mike installed inside the mask would permit better communication with the computer control center. Bob mentioned that Rohm Haas has an operation in which the operators use air masks all the time. They use plug-in air masks with small egress tanks when required. This plant is located close to the Pedricktown plant and arrangements will be made for a visit to Rohm Haas.
3. Ned Harrington spelled out the basic assumptions for short-term and long-term reduction for vinyl chloride levels.

Short-Term

- a. Push-pull ventilation would be required in all buildings to provide 12 interchanges per hour heated for year-round operation. 20 interchanges per hour unheated will be required for emergencies.
- b. Stacks will be installed to get vinyl chloride up higher in the air for better dispersion.
- c. Local ventilation will be supplied for trouble spots where engineering improvements won't stop leaks.
- d. Purified (activated carbon filtered) air will be supplied for lunch and control rooms.
- e. Cannister masks and air masks will be supplied as necessary.
- f. The waterfill and gas holder system will be evaluated for venting polys prior to opening for cleaning.
- g. The use of a delumper will be tried.

Long-Term

- a. Stripping columns will be installed at all plants and no open slurry tanks will be used until after stripping.
- b. Vent absorbers will be provided for recovery system vent.
- c. Computer control if it can make a substantial decrease in respirator wearing time.
- d. Closed poly operation for pearl resin.

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The use of vent stacks to collect various VCI streams will be used on a temporary basis until such emission sources can be eliminated. W. C. Holbrook said we require permits at Pedricktown and Long Beach for our stacks. Henry will be set up to monitor the dissolving with their new Bendix total hydrocarbon analyzer.

In the future all vents will have to be monitored to measure the emissions from our plant operations for EPA. It is quite possible a gas chromatograph will have to be used in this operation. It was agreed we will go ahead and obtain the materials for these stacks now for installation at all plants. Cleveland Engineering will standardize the design and the plants will handle the installation. Vic Goode will write the overall EA for this job.

Tom Linak will coordinate work with the plants to evaluate the water displacement system of General Tire and Rubber. He will obtain further information concerning their patented delumper used in this system. General Tire vent all miscellaneous vents into their gas holder but the polys are relieved through the standard rupture disc relief valve system.

Tank car unloading lines must be vented into the recovery system or sphere.

4. Herm Waltemate discussed the conversion of our current Scott airpaks to pressure demand systems as required by the standard. Each plant is to submit the number of these units to be converted to Herm. We need NIOSH approval of a combination gas mask and air fed respirator combination. The use of a half-face mask would be preferable since eyes have a tendency to dry out using instrument air. Hoods could be considered since they would apparently be easier to wear than masks. We need further definition from NIOSH on types of masks approved for our use.
5. Stripping columns have been successful in reducing the vinyl chloride level of products to negligible amounts for Geon 102EP F-5 resin. We have not tried UPS-1 type 103EP F-76 at Avon Lake through the column. We have used the column to take unrecovered 102EP F-5 and recover the residual vinyl out of the product and this looks very encouraging. A standardized column has been designed and specified by our Engineering Department. Vic Goode will coordinate a total EA for the procurement of all columns and equipment. A meeting of the plants will be set up in Cleveland to discuss and agree on final design and implementation in their plants. This EA should be prepared in time to go to the November Board meeting.

Engineering will have the package for vent gas recovery ready in about two weeks. This system can be discussed at the meeting in Cleveland.

6. Estimated achievable level by plants:

Avon Lake

East Area: 5 ppm average level, 2 ppm TWA
Old Areas: Under 10 ppm average

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Henry

3 ppm TWA with improved ventilation

Long Beach

4 to 5 TWA but excursions might be high until manhead problem is resolved

Louisville

Building 1: 5 ppm TWA

Other Buildings: Can't get less than 10 ppm TWA

Pedricktown

Short Term: 2 to 3 ppm TWA with 10 to 20 excursions

Long Term: 0.5 ppm TWA with 5 to 10 excursions

To achieve long-term results above requires: spot ventilation systems, stairwell and control room fresh air supply, ventilation for changing recovered vinyl chloride filters. In the mass area: HRC for prepoly, better recovery compressor, more reliable block valves. Also required is the removal of vinyl chloride from HRC water. and filling polys with water for reduced loss of vinyl to the atmosphere.

7. Plants estimated the percent of the time operators would have to wear respiratory equipment under the new standard.

Pedricktown

60-70% of the time for short-term basis, 1975 and 1976

20-25% of the time for 1977

Henry

60-70% of the time

Louisville

Building 1 and other old buildings: 80+%

New Poly: 20% of the time

Long Beach

75% of the time in 1976

50% of the time in 1977

Avon Lake

East Area. 50% of the time by 1976

Old Areas: 75%

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This assumes that the operators will be wearing respiratory equipment at all times when they are out of the control room.

Calvert City

The operators would wear respiratory equipment only for excursions, except for maintenance people who would be required to wear them a great percentage of the time. Their people would prefer hoods instead of face masks.

Avon Lake Technical Center

50% of the time.

Research Center

75% of the time in bays when vinyl chloride is used, and 40-50% of the time in general areas.

Most medical problems in the wearing of respiratory equipment are psychological and not physical. It is expected most people will be able to wear respiratory equipment if it were required.

8. Monitoring -- The new standard appears to place more emphasis on personnel monitoring than on fixed monitoring systems. We need clarification regarding the length of time the personnel monitoring samples are to be taken and the procedure to be used in their analysis. L. Crider has requested procedures for analysis of personnel monitoring samples.

The new standard specifies that personnel monitoring data must be released to the employee. We assume this means that it can be posted on the bulletin board.

The headspace method for analyzing carbon tube personnel monitoring samples is currently being developed by John Whitney and will save a lot of analysis time. If we can get NIOSH to approve this procedure, it would be possible to take many more personnel monitoring samples.

According to the standard, all individuals over the action limit (0.5 ppm VC1) will require quarterly personnel monitoring. People exposed to levels of 1 ppm VC1 will require monthly personnel monitoring. This personnel monitoring must be done on an individual basis and not on a job classification basis. It is inconceivable that we will ever be able to correlate personnel monitoring data with fixed monitoring data at these low levels to meet the new standard. Therefore, it was suggested that the Bendix fixed instrument be used for alarm purposes only and personnel monitoring data would then constitute the major data to meet the compliance to our new standard.

A regulated area is when VC1 or PVC is manufactured, reacted, heated, repackaged, stored, or used and the VC1 level is above the permissible exposure limit of 1.0 ppm TWA. Plants should establish at the earliest possible date all areas such as offices where the VC1 content is less than 0.5 ppm (action level) since regular personnel monitoring is not required. This initial survey will be made to deter-

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mine the number of buildings, offices, shops, etc. that can be classified as non-regulated areas.

Contractors working in areas with vinyl chloride concentrations of greater than 0.5 ppm would have to be monitored according to the strict interpretation of the new standard. We will try to establish a variance for contractors since their people are not exposed to vinyl chloride over a lengthy period of time.

It is quite important that we get the instructions OSHA issues to its compliance officers in the field at the earliest possible date. This will help in better defining the standards.

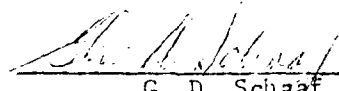
9. It appears that our warehouses will have to be monitored where PVC products are stored. This will be handled under the end products committee in cooperation with Ed Begnaud and his people. All finished products will have to be labeled after the first of January, 1975 according to the new standards. Ed is working with our marketing people to provide the proper markings on the bags.
10. It was agreed to proceed with all the current projects in progress on lunch rooms and shower rooms. The new standard may allow us to eat in control rooms, and this will be reconsidered at plants where this can be advantageous.
11. A daily change of clothing is not specified in the standard. Our present policy can reduce the frequency of clothing changes if it can be done so without personnel problems.
12. Mandatory showers will be eliminated, but employees will be urged to take showers on their own time. This mandatory program will be cut off as soon as it can be without undue personnel problems.
13. Coveralls will be used for poly cleaning by entry. Polys should not be entered until after HRC has been used. Solid charges and other hazardous operations will require the use of a impervious suit and this can be equipped with cooling if required to prevent heat prostration problems.
14. Doctor Johnson outlined the medical surveillance required by the new standard. A copy of this information is attached.
15. Plants estimated productivity loss under the new standard. Long Beach and Pedricktown estimated 20-30% loss in productivity if wearing of air line masks and respirators is required. Henry and Avon Lake could not estimate at this time. Louisville estimates up to 30% productivity loss.

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16. Discussion on how to present this information to the employees suggested the use of a TV tape so that the same information could be heard at all plants. Mr. Harrington will investigate this with our training department.
17. Mr. Nelson summarized some of the main points at this meeting. The plants are to reduce ambient vinyl chloride levels to the lowest possible levels. Employees are still going to have to wear respiratory protection. The company plans to spend the necessary dollars to solve this serious problem. However, we may lose capacity and productivity in the meantime. Our large polymerization units will present fewer problems; however, it is expected we will obtain lower levels in all of our work areas as we continue to improve operations. We cannot expect the published permanent standard to be changed much, so we should be prepared to meet it. We should stress the challenges and the opportunities that these goals represent to our employees and their continued employment with B. F. Goodrich.


G. D. Schaaf

GDS/clb
10-22-74

Atts.

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COMMENTS ON THE MEDICAL SURVEILLANCE PROGRAM UNDER THE
NEW VINYL CHLORIDE STANDARD

A. Who must be examined and how often?

1. The standards require that all employees exposed above the action level, that is to say, 0.5 parts per million, be examined. Those who have worked for ten years or more must be examined every six months. Those who have worked less than ten years must be examined annually. I think this means that in practice, all employees in our PVC operations must be examined because, even though someone might spend a relatively short time in the area, he nonetheless could easily have a small excursion. It doesn't take much of an excursion to bring his exposure above the allowable 0.5 ppm TWA for an 8-hour day.
2. One very confusing thing in the regulation is that the action level which determines the need for physical examinations is 0.5, whereas the limit which determines a regulated area is 1.0. Therefore, it is conceivable that we could have a number of people who work outside the regulated PVC areas and nonetheless would be required to have examinations on the above schedule if the standard is adhered to rigorously.

B. What does the examination consist of?

1. A general physical examination by a physician.
2. A series of biochemical examinations which is not quite so extensive as the SMA 12 plus GGTP that we are now doing. Since there would be no economy in doing the lesser number of examinations, I would recommend that we continue with our current blood testing program.

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3. The body of the standard indicates that we must test for dysfunction of the kidney and for abnormality in the pulmonary system. It then refers the reader to Appendix A which is headed "Supplementary Medical Information". This appendix refers to additional tests which may be useful and then describes what can be done in the way of testing for kidney and lung problems. I find this very confusing in that it would seem to make examination of the kidney and lungs mandatory and then indicate that any studies of kidney or lung functions are only suggestions rather than requirements of the standard. In practice, I think that we should do our kidney testing by doing a simple urinalysis, checking for albumin and red blood cells and omit the exfoliative cytology which they suggest but which I think would be of very little value and which is quite expensive. As far as pulmonary testing is concerned, I think we might as well plan to do the basic pulmonary function which they recommend, which is a forced one second and total vital capacity with a chest X-ray.

C. What will be required in order to come into compliance?

1. Sufficient physician time to do the required examinations.
2. Access to a laboratory which can do the required blood testing. (I think we already have this pretty well in hand).
3. A pulmonary function testing machine where we do not already have one and someone who is trained to operate it. Any nurse can be readily trained to do this, so this should pose little problem.

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4. Either on-site X-ray facilities or access to X-ray facilities. I think the choice here should be dictated solely by economics. When one considers that the cost of an X-ray on the outside is approximately \$15.00, plus the time the employee loses going to and from the facility, it wouldn't take a very large number of employees to justify installing our own equipment.

D. Suggested plan of action for bringing our examination program into compliance with the new standard.

	<u>Suggested Responsibility</u>
1. Determine the number of physical examinations which would be required at each location annually.	Plant
2. Arrange for sufficient physician time to perform these examinations.	Plant and Environmental Health Department
3. Design the required forms for recording the examination and reporting the results to the employee.	Environmental Health Department
4. Acquire adequate pulmonary function testing facilities at each location if we do not already have it.	Environmental Health Department to provide plants with recommendations on specific equipment
5. Investigate the economics of installing in-house X-ray facilities vs. sending employees outside.	Plant and local physicians
6. Examine the overall dispensary facilities at each location to see whether any physical expansion will be required in order to accommodate the new program.	Plant and local physicians plus Environmental Health Department

M. N. Johnson, M.D.

10/7/74

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