

INTER-OFFICE MEMO **TENNECO CHEMICALS, INC.**

TO G. Rozand AT Piscataway DATE November 23, 1971

FROM A. Siegel AT Burlington COPY TO J. Kilcullen  
J. Fath  
P. Scarito

SUBJECT Report on the meeting with the Occupational Health Committee of MCA, Washington D.C. on November 16, 1971.

On November 16, 1971 a meeting was held in Washington, D.C. between company representatives of the Vinyl Industry and the MCA Occupational Health Committee to discuss a proposed research program to study the possible carcinogenic effects of Vinyl Chloride Monomer.

The meeting opened with a brief announcement that the University of Michigan had almost exhausted the funds allotted for the Acroosteolysis (AOL) Study. The MCA has additional monies available but requires authorization for commitment of these funds from the participating companies. This will be done shortly through a letter ballot. In answer to questions from the floor Dr. W.E. McCormick (B.F. Goodrich) indicated that there were approximately 50 active cases of AOL still followed. The value of continuing the study would be to determine whether any measures taken by the companies are having any effect of the incidences of AOL.

Dr. McCormick then gave the background leading to the current meeting.

In May of 1970 Dr. P.L. Viola, Regina Elena Institute for cancer research, Rome, Italy, presented a paper to the 10th International Cancer Congress alleging for the formation of cancer in rats as a result of very high and prolonged exposure to Vinyl Chloride Monomer vapors. This work grew out of the original study of the investigation of AOL. In his program Dr. Viola exposed rats to 30,000 parts per million of VCM vapors for 4 hours per day, 5 days per week, and for a total of 12 months. Almost all the animals developed tumors of the skin and lungs. At the lower level of exposure for example, 10,000 parts per million, 5,000 parts per million and below 5,000, the tumor rates were reduced to 25%, 15% and some indication, respectively.

In May of 1971 after meeting with Dr. Viola, the MCA's Occupational Health Committee recommended that this matter be brought to the attention of those companies in the Vinyl Industry to determine whether they would support further research in this area. Dr. McCormick indicated that although Dr. Viola's findings have been challenged by a number of Vinyl Industry doctors, his findings are now public record and present the Vinyl Industry with some very serious problems. Over reaction by the Federal Government, State Agencies and by the public could;

1. Force companies to cease operations.
2. Require companies to redesign their plants to prohibit exposure to VCM vapor.
3. Pay for every case of cancer reported regardless of how remotely connected with VCM exposure.

In view of the extremely serious nature of this problem the MCA proposed that a study be undertaken immediately to either refute Dr. Viola's conclusions or better to define the cancer causing agent.

Dr. Torkelson (Dow) then outlined the proposed research study:

1. There are two manufacturing processes used in the United States for the production of VC monomer. The ethylene monomer derived 90% of the productive capacity with the acetylene accounting for the remaining 10%. (Dr. Viola used acetylene derived monomer.) Both monomers will undergo study.
2. Both rats and mice will be used in this study as opposed to only one animal used in Dr. Viola's experiments.
3. The VCM concentrations will be at a lower level starting with the highest concentration at 5,000 parts per million, and reducing to 500 parts per million. The inclusion of the higher level was to provide for an overlap with the original study.
4. Exposures would be from 18 months to 24 months, 5 hours per day and 5 days per week.

Prior to the meeting, an inquiry was made to research on what independent laboratories would be interested in conducting the tumor inducing properties of VCM and to determine the estimated cost of such studies. The lowest acceptable bid was \$183,000.

Dr. M.J. LeFevre, Solvay et Cie - was asked to address the group and explain what European companies had found during research studies. Dr. LeFevre launched into a lengthy discourse on the AOL studies, laboratory findings and plant investigations.

With regard to the carcinogenic effects of VCM:

- a. Dr. LeFevre expressed doubts that Dr. Viola was correct when he stated that one could assume that the VCM he used had insignificant amounts of non-carcinogenic contaminants to be concerned about and would not influence the outcome.
- b. No cases of tumors have been detected in any of the Solvay workers in any of their plants throughout Europe.
- c. European companies have been unable to determine what specific agent causes AOL or the possibility of cancer.
- d. Since their Solvay findings showed only AOL was apparent in workers cleaning reactors. Solvay sampled the gases found in the reactors after the reactions and just prior to reactor cleaning. They found a very high level of impurities and suspect that these impurities may have been generated during the reaction cycle. If the possible causal agents are in these impurities then it would be necessary to concentrate on these areas for prevention of exposure.

Considerable discussion followed the two presentations. Some of the typical questions raised were as follows:

1. Is any governmental agency taking an active interest in Dr. Violas's report?

Answer: Dr. Torkelson though there was, but could not recall which one. He did however, know it was on the agenda for discussion by the American Conference of Industrial Hygienics.

2. What do we hope to gain if we confirm Dr. Viola's results in rats or mice?

Answer: The industry can gain approximately two to three years of time to determine what course of action is required to prevent exposure to VCM. In addition we have a moral obligation to our workers and the public to determine if the hazard really exists.

3. Shouldn't the congenital effects (embryo) and the genetic effects be included in the study?

Answer: This would be a good idea, however, it will cost considerably more than the original proposal.

4. Should acetylene derived VCM be left out of the study in order to reduce costs since it only represents 10% of U.S. production?

Answer: No, since the vinyl industry should know which one if any monomer causes cancer.

5. Since there have been no reports of cancer in human beings that had been attributed to vinyl chloride, what would be the difference if the studies do confirm Dr. Viola's results?

Answer: I believe (Dr. McCormick) that, "The Vinyl Industry would be in a very bad time."

6. What other industry should have cause for concern besides the vinyl industry?

Answer: It would appear that all ethylene based derivatives, styrene and butadiene just for starters.

7. Should we start with the detailed lab analysis of VCM or at least have this analysis in conjunction with the animal studies?

Answer: Possibly, it does however, add to the cost of the original research proposal.

It was the unanimous opinion of all of those at the meeting that a research program should be under taken. However, a lengthy discussion followed as to what items should be included or deleted from the studies and the method of funding. (Example: Pro Rata on published capacity data or equal cost.)

Since no definite program or funding arrangements could be agreed to, an Ad Hoc committee was selected to determine what course of action to take. The MCA will then send out along with the recommendations, a letter ballot requesting that companies indicate their choice of program and funding. This should be completed within a month from the date of the meeting.

The MCA meeting notes should be sent to you within the next few weeks. Attached is a report of Dr. Viola's presentation, a copy of an article in the Chemical Marketing Newspaper, the original MCA request for bids on the research program and a list of participants at the meeting.

Should you require any additional information please let me know.

*A. C. Siegel*