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THE UNITED STATES DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
HEARING ON THE POSSIBLE HAZARDS
OF VINYL CHLORIDE MANUFACTURER AND USE

Presentation By:

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UNITED STATES DEPARTMENT OF LABOR

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I INTRODUCTION

On February 15, 1974, the Occupational Safety and Health Administration (OSHA) held a fact finding hearing in Washington, D.C. in recognition of a developing problem involved with the use of vinyl chloride (VC) in the manufacturing process of polyvinyl chloride (PVC). The hearing was called for the purpose of gathering data so that OSHA could determine whether employee exposure to VC needs to be controlled and if so whether an emergency temporary standard needs to be issued.

II FIRESTONE'S CONTINUING CONCERN FOR EMPLOYEE SAFETY

The Firestone Plastics Company, a Division of The Firestone Tire & Rubber Company, has its company headquarters in Pottstown, Pa. The company began its PVC polymerization activities in September of 1947 when it constructed its first plant in Pottstown, Pa. This plant has been continually expanded and modernized since its inception. Since it began, this facility has produced over 2 billion pounds of PVC with no incidence of cancer related health problems. In 1968, due to the increased demands of the entire plastics industry, Firestone started up a new PVC polymerization plant in Perryville, Maryland.

Firestone does not manufacture VCM but purchases it from various manufacturers.

At our headquarters in Pottstown, we carry out Research and

Development activities and technical services. We maintain an extensive engineering staff devoted to new product development, process improvement and efficiency, and plant design, and normal production functions. At all times, at each of our facilities, we have at least one safety engineer whose prime function is to maintain safe working conditions for our employees. Our employees are trained regularly on safe handling of chemicals using the best and most up-to-date information available. Proper labeling of toxic or corrosive chemicals is maintained and standard safe handling procedures are made known to our employees and are rigorously enforced.

Periodic plant inspections by our Akron headquartered Corporate Industrial Hygiene Staff take place to supplement our divisional safety programs. Highly effective safety contests and employee safety incentive programs are regularly conducted.

Our Perryville, Maryland facility is a modern high volume production plant that produces PVC homopolymers and plastomeric PVC pelletized compound. Aqueous suspension polymerization is the only method used in this plant at this time.

The Pottstown plant is a more diverse operation. In this plant, we produce PVC homopolymers by both suspension and quasi emulsion polymerization methods. In addition, various copolymers of VC, using vinyl acetate and maleate esters, are also manufactured.

Vinylidene chloride is not and has not been used in any of our production operations for the last 20 years.

Our reactors are typical of those used in the industry as are

our finishing and drying operations which include both rotary and spray drying systems. All of our purchased raw materials must meet rigorous raw material specifications and most are regularly checked by our Analytical Department to determine if they comply with our purity specifications.

On January 23, 1974, we were advised by the Manufacturing Chemists Association (MCA) that B.F. Goodrich had a probable occupational related health problem in its Louisville, Kentucky plant. Industry representatives were invited to an emergency meeting in the MCA office, Washington, D.C., on January 25, 1974, at which time B.F. Goodrich representatives briefed us on the information available up to that time relating to the incidence of angiosarcoma in Louisville. The problem B.F. Goodrich presented to us is now well-known and the prompt responsible actions taken by B.F. Goodrich in relating the evidence they had to the proper State, Federal, Labor, and Industry representatives is highly commended by our company.

Firestone was represented at this MCA briefing session by key technical and medical management personnel. Upon return to Pottstown that evening, and again on Saturday, January 26, 1974, top management of the Plastics Company was advised of the Goodrich situation. It was decided that it was our management's responsibility to promptly advise our PVC workers of the B.F. Goodrich findings.

On Tuesday and Wednesday, January 29, and 30, 1974, our plant management, in both Firestone PVC plants, met personally with all of our people in small groups of 12 to 15. They presented the information

we had available at that time, which was basically what appeared in the B.F. Goodrich press releases, and promised to keep our people abreast of any new developments. Questions presented by our workers to plant management that could not be answered on the spot were followed up later and the best answers we had at the time were provided.

This was our immediate response to a very serious situation in order to indicate to our employees that management was active in (1) trying to understand the problem, and (2) preparing to take whatever action was necessary, based on a calm analysis of the situation, to protect the health and safety of our employees.

We now wish to direct attention to five major topics that all, in one way or another, bear on the situation at hand:

1. VCM handling and exposure.
2. FVC handling and exposure.
3. Medical procedures.
4. Support of various industry organizations.
5. Future planned activities.

A. VCM HANDLING AND EXPOSURE

VCM is a gas at ambient temperature that is heavier than air and tends to disperse poorly in the air, therefore technically accurate monitoring has presented some very difficult problems. On a regular basis, for some years, we have been taking spot air samples and determining their VCM contents. If areas of high concentrations were recog-

nized, corrective measures were taken.

We have always recognized reactor cleaning as the most likely place for high worker exposure to VCM. On this basis, we have designed our operations to function with the minimum number of reactor openings and worker entries between polymerization batches. Using the most advanced engineering techniques, we have made great strides over the years, on both a chemical and mechanical basis, to reduce the number of times a man must enter a reactor, thereby reducing the worker exposure hazard. Additionally, reactors are ventilated with fresh air prior to entry of the cleaner and during his time in the reactor. Self-contained air masks are provided throughout the plant in case of accidental high air exposures of VCM.

We sincerely believe we have taken all the necessary precautions to prevent employee exposure to all the chemicals we use consistent with the knowledge we have had of the toxicity of these chemicals.

B. PVC HANDLING AND EXPOSURE

The polymerized PVC in the form of a slurry in water or an emulsion is moved through a closed piping system to a degassing type stripping vessel. Unreacted VCM is removed by vacuum and sent through a closed system to a purifying system and recovered for reuse. The product is now pumped to large blend tanks located outside of the plant.

In the case of the slurry or suspension polymers, the product is moved again through a closed system to a solid bowl centrifuge where the large mass of the water is removed. The wet cake (15% moisture)

is then gravity fed to rotary dryers where the remainder of the water is removed. The product from the discharge of the dryer is conveyed via a closed system either to closed bulk storage bins or put into 50-lb. paper bags.

Quasi emulsion polymer, after being pumped from the blend tanks, is spray dried. This product currently is all packaged in paper bags and not stored in bulk.

The following general facts are known to us:

1. All freshly dried resin contains extremely small amounts of entrained VCM.
2. Emulsion resins, commonly called dispersion resins, are very fine in particle size and dusty and plant design takes this potential dust hazard into account.
3. Suspension resins, often called general purpose resins, are generally coarse in particle size and generally provide little hazard in terms of airborne dust.
4. With the tendency of the various resin types to become airborne, we can state that fortunately the emulsion resin, the dusty types, when freshly made have extremely low levels of entrained VCM - in the order of 10 ppm or less.

The suspension grade products, which pose a small dust problem when freshly made, may contain higher levels of entrained VCM - averaging perhaps to 300-500 ppm.

Therefore, one may conclude those PVC resin grades that potentially can be in the breathing zone of the worker contain extremely low to non-measurable amounts of VCM while those that do present the least likelihood of inhalation do contain measurable but low levels of VCM.

One would conclude from the facts presented that PVC dust presents a very unlikely source of high VCM exposure to the worker. The fact that closed conveying systems are used to move PVC throughout the plant would tend to reinforce this thinking.

C. MEDICAL PROCEDURES

A medical dispensary is located on the premises of our Pottstown plant and is staffed 24 hours per day. A medical doctor is on the premises approximately 3-4 hours per day and is on call at all times. Perryville, being a smaller plant, uses the services of a nearby hospital dispensary, but always has a medical doctor on call.

A pre-employment physical examination is mandatory. Any employee returning to work after being away for more than 7 calendar days is required to report to our company doctor for screening prior to returning to his regular work station.

We have examined the death certificates of employees and retirees from our Pottstown PVC plant for the period 1964 through 1973. This was accomplished through a study by the University of North Carolina School of Public Health and covered the period 1964 through 1972 and from our own records for calendar 1973.

This initial study showed no deaths due to angiosarcoma. In addition, we pursued hospital records and autopsy reports on those deaths that were due to liver disease and again found none due to angiosarcoma. To be certain we have not missed anything, this study is continuing.

Therefore, to the best of our knowledge, based upon the best medical counsel available to us at this time, no deaths in our PVC worker population have been due to angiosarcoma.

D. SUPPORT OF VARIOUS INDUSTRY ORGANIZATIONS

Firestone has been an active member of MCA (Manufacturing Chemists Association) for many years, as well as a charter member of the Vinyl Chloride Safety Association - an independent organization composed of most PVC and VCM producers. In addition, we are active members of SPI (Society of Plastics Industry) and SPE (Society of Plastics Engineers) and several other organizations which are concerned not only with dissemination of technical information but with safety and health activities in our industry.

While we regularly participate in many of the activities of each of these organizations, the emphasis here is the MCA activities that have already been made part of the record. We have contributed financially and professionally to all of the VCM/PVC related MCA studies which include:

Animal exposure studies by Industrial Bio-Test Laboratories, Epidemiological studies by Tabershow-Cooper Associates, and The Acroosteolysis study now completed.

We plan to continue our active financial and professional support of additionally planned MCA studies as well as those that we deem appropriate by our other organizations that bear upon the problem at hand.

E. FUTURE PLANNED ACTIVITIES

As well as supporting studies by the various organizations just mentioned, we also are implementing the following programs:

1. Increased medical surveillance of all our PVC workers as recommended by medical teams already seeking out appropriate medical protocols.
2. Implementation of a multipoint, continuous, sequential system to monitor VCM levels in the plant and a personal VCM monitoring system for those employees who work with VCM. Where such monitoring indicates areas of high exposure, a system for tracing the source of exposure will be utilized and the necessary corrective actions will be taken.
3. Any and all work practices that are deemed necessary to reduce worker exposure to VCM are already being implemented by plant management.
4. While we consider our plant ventilation systems quite effective, we are already taking steps to improve them and are taking other engineering steps designed to reduce worker exposure to VCM.

On all of these matters, we will work closely with other members of our industry, with our labor unions, and with the appropriate State and Federal agencies so all of the necessary corrective steps indicated may be taken just as promptly as possible.

III STATEMENT OF POSITION RELATIVE TO IMPLEMENTATION OF A TEMPORARY EMERGENCY STANDARD

Of ultimate concern to Firestone and to all parties concerned is the health and safety of employees engaged in the VC-PVC manufacturing process. In this regard, Firestone believes that available data indicate

that a standard controlling employee exposure to VC and the level of VC in the atmosphere is necessary. However, Firestone also believes that the manner in which this standard is developed and promulgated should be by the regular rule making procedures contained in Section 6(b)(2) of the Occupational Safety and Health Act (OSHA) rather than by the issuance of a temporary emergency standard.

Controlling VC manufacture and use without further investigation could produce far reaching damage. Overreaction by OSHA in issuing needless stringent standards could reduce industry production thereby placing thousands of employees out of work who are involved in VC-PVC production or use and could cost the industry millions of dollars. Moreover, as the facts will show, since the period of exposure to VC or the latent period involved between exposure and detection of angiosarcoma is anywhere between 10 to 20 years, prolonging the promulgation of a standard for a short period until more substantial facts are made available would not have any harmful effects.

IV THE SITUATION GIVING RISE TO THE VINYL CHLORIDE-ANGIOSARCOMA PROBLEM

Attention to the possible connection between vinyl chloride exposure and angiosarcoma in humans was directed when B.F. Goodrich recently reported that four of its employees who had worked in the PVC manufacturing process in its Louisville, Kentucky plant had died from angiosarcoma (Tr. 84). By way of background, Goodrich reported that the first indication of any health hazard involved with exposure

to VC was discovered in mid-1964 by Dr. Creech at the Louisville plant. Dr. Creech found that an unusual hand problem had developed with some of the employees who had entered the polymerization reactors to manually remove the build-up of solid PVC from the reactor walls. Goodrich immediately advised the affected employees of the problem and instituted a continuing monitoring system of hand x-rays. In its effort to reduce employee exposure Goodrich developed a new reactor cleaning process and as a result there have been no new cases of any hand problem within the past several years (Tr. 87-88).

In the spring of 1973 Dr. Creech observed that some of the employees in the VC department had an increasing incidence of symptoms normally associated with possible liver ailments. This situation prompted the implementation of liver function tests for those employees who were engaged in the PVC manufacturing process. Of the 271 employees tested at the Louisville plant, 55 had some evidence of slight liver abnormalities. However, because of the limitations of liver tests, these results were not in themselves any major factor for concern. Nevertheless, on December 18, 1973, a meeting was held between Dr. Creech and Dr. Johnson, the Company's Director of Environmental Health, to discuss the results of these tests. At this meeting Dr. Creech reported that he had recently learned that an employee who had died in 1973 was the victim of angiosarcoma of the liver. As a result of this information Dr. Creech promptly reviewed the medical record concerning another employee who had died of liver cancer in

1971 and found that he also had angiosarcoma of the liver. Available medical records were further examined and it was determined that an employee who had died of an unknown liver cancer in 1968 also had angiosarcoma. Finally, an employee who had a liver problem died on December 19, 1973 from angiosarcoma. It was concluded that because these deaths resulted from a rare type of liver cancer, there might be a work-related cause. Therefore, the Occupational Safety and Health Administration was informed of the situation.

The deceased employees had an average exposure to VC of approximately 19 years. During this time they also had exposure to such volatile organic chemicals as vinylidene chloride, vinylacetate, methyl acrylate, ethyl acrylate, and chlorinated solvents. To the best knowledge of the B.F. Goodrich Co., these are the only four isolated cases of deaths caused by angiosarcoma. All four of these employees at one time or another had worked in the same department of the VC processing plant in Louisville, Kentucky.*

Even though these are the only four deaths reported by B.F. Goodrich and by all other companies, in the record of these proceedings, involved in the VC-PVC manufacturing process, it was determined that there was a possible connection between employee exposure to VC and angiosarcoma. This possibility prompted OSHA to conduct this fact finding hearing to determine whether or not standards regulating the use and exposure of VC are necessary.

More recent, off the record, information tends to indicate that there are a few more deaths which appear to be related to VC in other industries. This additional information lends support to the continuing need to closely scrutinize the VC-PVC manufacturing process.

V DISCUSSION

A. PREFACE

Although this proceeding is a fact finding hearing and the record is left open for the purpose of submitting further information in this regard, Firestone feels compelled to expose and discuss the unfounded and unsupported statements presented in favor of adopting an emergency temporary standard.

Testimony was offered by various union representatives indicating that the occurrence of four deaths from angiosarcoma since 1968 is of such a magnitude that the only avenue available to OSHA is the issuance of an emergency temporary standard. Section 6(c)(1) of the Act provides that the Secretary shall be empowered to issue an emergency temporary standard to take immediate effect upon publication in the Federal Register if the Secretary determines:

" . . . that employees are exposed to grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards, and . . . that such emergency standard is necessary to protect employees from such danger."

It is submitted that the accusations presented by those favoring an emergency standard are mere appeals to one's emotions and sympathies based on mere conjecture and therefore do not support the first requirement in Section 6(c)(1) that a "grave danger" exists.

To conclude that there is a grave danger to employees from the four deaths which have resulted at B.F. Goodrich is inaccurate and cannot be accepted by the reasonable mind. Indeed, the following discussion will clearly show that while studies in progress may develop that there is a potential hazard, there is definitely not a grave danger. Moreover, utilization of the regular rule making

process does not necessarily mean that the final promulgation of a standard must proceed at a snail's pace. Rather, it is submitted that this rule making process does not impede the proceedings from moving forward with all due dispatch.

B. TESTIMONY IN SUPPORT OF AN EMERGENCY
TEMPORARY STANDARD

Dr. Irving J. Selikoff from the Mount Sinai's School of Medicine began his testimony by stating that while there has been a potentially serious disease among workers engaged in VC-PVC manufacture for over the past 25 years, the problem has been inadequately approached by medical science and by industry (Tr. 26). Dr. Selikoff indicates that the handwriting as to these dangers was on the wall many years ago as witnessed by the fact that in 1949 liver damage was found in 15 of 48 workers in Russia and that similar reports involving liver, skin and other cancer-related problems were reported in France and Rumania.

What Dr. Selikoff does not report, however, is what exposure levels, i.e., parts per million (PPM), were involved in these cases and the surrounding circumstances which gave rise to these disorders. Since Dr. Selikoff revealed the figures on how many workers were exposed and what type of disorders were reported, his obvious failure to present the exposure levels involved speaks for itself.

In his testimony, Dr. Selikoff also referred to recent German studies conducted by Marsteller which indicated that out of 20 workers in a PVC producing plant having a range of exposure from 1 1/2 to 21 years, 19 had some evidence of a liver disease. Again, however, even with this most recent study of 10 weeks ago, Dr. Selikoff failed to divulge the PPM level of exposure. It is therefore our

contention that Dr. Selikoff's conclusions from these reports and his recommendations that employee exposure be reduced to a zero exposure is without merit, and as will be subsequently shown, is contrary to current scientific studies.

Dr. Selikoff's suggestion, however, of continued research and of medical surveillance of employees currently exposed or involved in the process of VC-PVC manufacture is commendable and fully supported by Firestone.

In his opening remarks, Mr. Mazzocchi, Legislative Director of the Oil, Chemical and Atomic Workers Union, stated that it is certain beyond doubt that there exists a grave danger to employees involved in the PVC manufacturing process. Mr. Mazzocchi then boldly asserts that industry has failed to protect its employees from this danger. However, Mr. Mazzocchi did not introduce nor refer to any documentation supporting these conclusions. Further neglect to provide such information may be found for example in his accusation of industry disregard for employee safety by stating that a recently issued set of NIOSH recommendations on the control procedures for VC exposure is not being adhered to by industry (Tr. 39). No facts or figures were given in support of these assertions. Mr. Mazzocchi alleged that direct exposure to VC occurs in manufacturing processes today, but again no supporting evidence is offered. Mr. Mazzocchi's further statement that because angiosarcoma is a rare liver disease, many doctors may have misdiagnosed angiosarcoma deaths and that consequently death

certificates may not accurately reflect all employees who may have died from angiosarcoma, is also without foundation or merit. While angiosarcoma may be a rare cancer, there was no testimony offered to show that its detection might be difficult. Indeed, even though rare, the detection of angiosarcoma may be easily observed.

Finally, Mr. Mazzocchi states that Dr. Selikoff recently examined a number of workers involved in a VC polymerization plant and uncovered gross findings of liver disease. Interestingly enough, however, such testing and results were not offered into evidence by Dr. Selikoff. This omission by Dr. Selikoff to utilize his own research to support his proposal that an emergency temporary standard be issued, indicates the testing and results were not scientifically sufficient to draw any definite conclusions.

Dr. Mancuso, clinical consultant to the Industrial Union Department, opened his testimony with the pretentious statement that a new occupational cancer has been identified, that an emergency standard is necessary, and that other cancers may very well be caused from employee exposure to VC. Dr. Mancuso proceeds to allege that not only is VC exposure a problem but initiating the step to rectify the situation is also a problem since whenever a new occupational cancer is discovered, it is played down for fear of alarming the worker and the general public. However, the activities surrounding the announcement by B.F. Goodrich of the four employee deaths and the proceedings of this hearing certainly discredits such statements and is in fact clear evidence of not only industry's but also government's concern for the protection of employee safety and

health.

Dr. Mancuso then clouds the issue at hand by claiming that there are thousands of chemicals in industry today which have the possibility of being carcinogenic. The relevancy of this assertion to the conditions involved with the use and manufacture of VC is non-existent. To be sure, there may very well be other chemicals which may be carcinogenic in nature. However, investigation of these chemicals must proceed on an orderly basis. Because it has been suggested that VC may be a potential carcinogenic agent, it is being investigated with vigor to determine if employee exposure to VC is hazardous. To proceed on the assumption that all chemicals are carcinogenic until proven otherwise would only breed public hysteria and fear that all chemicals are carcinogenic. The unreasonableness of such an approach needs no explanation. It is not being suggested that Dr. Mancuso is not raising a potentially serious problem. It is only being suggested that the manner in which to proceed be done on a scientific, priority basis.

Finally, it was interjected by Dr. Mancuso that exposure to VC may produce degeneration of other organs of the body. However, there have been no reported cases of such occurrences and therefore there is no foundation for this implication. If Dr. Mancuso is merely suggesting that such degeneration is possible, there is no objection. But to imply that an emergency standard need be issued on this possibility without substantiating evidence, is pure fantasy.

Lewis S. Beliczky, Director of Industrial Hygiene for the United Rubber Workers International Union, opens his testimony with the presumption that the four deaths at the B.F. Goodrich Company due to angiosarcoma must be occupationally related. Certainly to so hastily conclude that these deaths resulted solely from the employees' occupation is mere conjecture and not fact upon which a conclusion may be drawn that a grave danger is currently engulfing the work force of the United States engaged in the production of PVC. Mr. Beliczky also stated that because there is no indication that manufacturers are implementing the recommendations made by NIOSH, an emergency standard is needed however, these recommendations issued by NIOSH are not the letter of the law and failure of a company to comply is no indication of that company's lack of concern. Moreover, many of NIOSH's recommendations are currently being revised, modified and altered in order to arrive at a realistic and well thought out list of guidelines. Therefore, to suggest that an emergency temporary standard be implemented merely because it has not been shown that all manufacturers of VC-PVC are following the recommendations of NIOSH is ludicrous.

The total disregard for the facts and the reality of the situation clearly marks the irresponsibility with which these witnesses approached the subject matter.

C. CONCLUSION

These and other accusations which were presented by those favoring an emergency temporary standard have all presumed that there

is no dichotomy between recent and old exposure and between and amongst varying levels of exposure namely without concern for dose relationship and that the cause of angiosarcoma has been due to any exposure to VC. This assumption is without proof. Secondly, the arguments presented hypothesize that it is the exposure to existing levels of VC that is dangerous. It is suggested, however, that because the deaths at B.F. Goodrich to VC was on the average of nineteen years exposure, that these employees may have been exposed to a high level dose of VC at some time in the past, the effects of which are becoming evident today. Consequently, there is no proof or any basis for the assumption that exposure levels of today, i.e., in the area of 50 PPM's, is dangerous to the human being. This is not to say that a danger may not exist. It is only to suggest that no grave danger has been established. Of all the companies involved and employees engaged in the production of PVC from VC, there have only been four angiosarcoma cases recorded since 1968. This fact, when coupled with the latent period between exposure and detection of angiosarcoma and the fact that nearly all the deaths occurred at one plant indicate that there is a strong possibility that there were peculiar circumstances involved which precipitated the angiosarcoma in these four individuals.

VI SUMMARY OF SUPPORTING DATA IN OPPOSITION
TO AN EMERGENCY TEMPORARY STANDARD

1. Dr. Viola's report to the Tenth International Cancer

Congress that tumors in the skin, lungs and bones of rats were found after being exposed to 30,000 PPM of VC, was concluded with the statement:

"No implication to human pathology can be extrapolated from the experimental model reported in this paper." (Tr. 68)

Further, at a meeting between the MCA and Dr. Viola in May of 1971, Dr. Viola further reported that in his opinion a 500 PPM level provided an adequate margin of safety for employees exposed to vinyl chloride (Tr. 69).

2. Professor Maltoni, of the Institute di Oncologia, Bologna, Italy, stated that rats exposed to VC four hours daily, five days a week for twelve months showed that the incidents of angiosarcoma decreased with the amount of exposure from 11 cases at a 6,000 PPM exposure to two cases at 250 PPM exposure. Moreover, out of those rats exposed to 50 PPM, there was no appearance of angiosarcoma (Tr. 50)

3. Studies by Torkelson, Oyen and Rowe show that after six months' exposure, seven hours per day of 100 PPM, there was only slight liver and weight increases in rats with no effects on dogs, guinea pigs or rabbits. There was no effect on any of the animals after six months' exposure to 50 PPM.

4. The American Conference of Governmental Industrial Hygienists (ACGIH) has recommended, on the basis of its research, that a time weighted average (TWA) exposure of 200 PPM provides an adequate margin of employee safety.

5. The Manufacturing Chemists Association (MCA) has initiated

its own investigation of VC exposure and in February, 1973, signed a contract with the industrial BIO-TEST Laboratories, Inc. to conduct experiments. In these experiments, rats, mice and hamsters will be exposed to 50 to 2,500 PPM's of VC seven hours per day, five days per week for a twelve month period. These tests began in September of 1973 and therefore results will not be available for at least another twelve months. Up to this point, however, it was reported that there has been no appearance of tumors. Moreover, because there is some doubt as to whether VC was the sole cause of angiosarcoma, MCA has contracted with Tabershaw-Cooper Associates of California to conduct a study into the causes of death in all VC-PVC production workers. The purposes of these tests is to compare the mortality of individuals who have worked in VC plants with that of the general population; to compare the mortality pattern of VC workers based upon estimated occupational exposure, and to compare mortality among VC workers with those of other occupational groups. A final report of this investigation will be published in April. Although these mortality statistics are not yet complete, a preliminary review showed that except for the occurrence at the B.F. Goodrich chemical plant at Louisville, Kentucky, there has been no departure from the pattern and incidents of deaths that would be expected among a population of the kind that has been subject to the survey.

6. Monitoring of employee exposure to VC conducted by Dow Chemical indicates that levels of exposure below 50 PPM are

attainable, but that in the older plants the achievement of such goals may be very difficult and in all probability require modifications which will take much time to accomplish. Consequently, the adoption of any emergency standard that the level of exposure be immediately brought under the 50 PPM level would be virtually impossible to attain. As a consequence, due to the fact that most industries are moving towards this lower level of exposure, it is suggested that continuing investigation of vinyl chloride in its carcinogenicity continue as these industries reduce exposure to 50 PPM. Further, it is suggested that OSHA recognize the voluntary action which industry is taking to lower the level of exposure to VC and the active role that industry is taking in contributing to the continuing investigation by such organizations as MCA. Dr. Rowe of Dow suggests that an eight hour exposure of 50 PPM is a satisfactory environmental standard for VC based upon all the medical and toxicological data which is available at this time. However, it is submitted that intensive scientific investigation should still be vigorously pursued, and when such level of safe exposure has been established on the basis of genuine scientific data then industry should move swiftly to lower exposure to less than the safe limitations.

7. As a practical matter it is contended that a temporary emergency standard would result in further polarization rather than constructive definition of those areas which should be regulated. In order to provide adequate information it is suggested that each producer and user of VC undertake an industrial hygiene survey of his

operations, and a medical survey of the VC workers and report these results as soon as available to NIOSH and OSHA.

8. Finally, it is suggested that the rule making process for a current standard in VC exposure should not be based on conditions that existed in the past but should rather be based on the conditions as they exist now. Activity by NIOSH and other investigations being conducted by industry indicates that a temporary emergency standard is not required.

In conclusion, Firestone takes the position that:

1. The high incidence of angiosarcoma found in the B.F. Goodrich plant in Louisville has not yet been satisfactorily explained and justifies immediate investigatory action by both industry and government.

2. A reasonable set of work practice standards that deal directly with the problem can be developed jointly by industry, labor, and government.

3. Our expertise and cooperation is available to other members of our industry, to labor unions, and to appropriate government agencies which are working toward a responsible solution to this problem.

4. Unilateral Firestone actions in terms of increased medical surveillance, VCM monitoring, improved work practices and any other appropriate measures designed to reduce VCM exposure to the workman will be carried out.

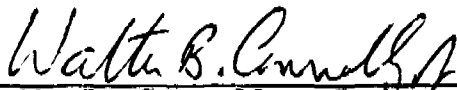
We, therefore, sincerely request that all parties involved in this investigation refrain from acting with undue haste in the issuance of a Temporary Emergency Standard which may create upheaval which could adversely and immediately affect labor, industry and ultimately government.

Firestone addresses itself to this problem primarily on the basis of its ethical and moral responsibilities to its employees. We seek and urge responsible, rational action and guidance from all concerned towards the important and continuing objective of improved employee safety.

The Firestone Tire & Rubber Company


By: J. H. Rosenson, Vice President


By: L. H. Ballou, Medical Director


By: W. B. Connolly, Jr., Assistant Counsel