PLAINTIFF'S
EXHIBIT
BRK-5

The Industrial Commission
Of Ohio
Division Of Safety & Hygiene
246 N. High St., Col., O. 43215

November 3, 1981

Legal Section
Industrial Commission of Ohio
246 North High Street
Columbus, Ohio 43215

OD 17971-22
Richard Klinger
Inland Division - GM
Dayton, Ohio

Attn: Judy Spencer

Dear Ms. Spencer:

On July 20, 1981, I visited the Inland Division Plant - GM, Dayton, Ohio, to investigate Mr. Richard Klinger's claim. His work history record reflects 28 years of employment with Inland Division starting December 4, 1952, in an occupation described as "Scratch brush." I will not attempt to describe every position description the claimant had in the 28 years of employment, nor will I attempt to list all the areas of the plant worked in since this information is readily available on his work record. However, I would like to emphasize, and as reported by Inland officials who assisted in my investigation, that the claimant had worked continually in the same department since August 7, 1961. Also, that personnel records reflected the claimant being an injection machine operator since 1974.

Mr. Klinger alleges exposure to various fumes, smoke, and vapors contributing directly to his health effects. Hence, it has taken considerable time to build a picture of his exposures, and allegations made.

The vapor tank he stated running over is a vapor finish tank for plastic wheels. As a press operator, he was not involved in this process. The tank is approximately 75 feet away from the nearest press. The company did not know of any spills, even though the tank has been here many years. Further, as these same company officials related, there was nothing in the claimant's medical records to reflect exposures to solvent spill from the tank. This would be the only record

if he had formally complained of exposure. The chemical solvent used in the vapor tank is proprietary information, but I was given the chemical name to aid in my investigation. Health hazard information revealed short-term overexposure causing headache, drowsiness, vomiting, dizziness, unconsciousness, irregular heartbeat, and possible death. Long term exposure is listed as may causing liver and kidney damage.[1]

The claimant alleges exposure to benzene fumes from vinyl. The company reported benzene had never been used in Department 170 where injection molding of steering wheels is performed. The claimant performed this function as a final press operator. Vinyl chloride monomer is polymerized into polyvinyl chloride, a plastic resin used to make steering wheels. Since 1976 a bulk monitoring program of this process has been in effect. If there is over a 50 part per million residual of vinyl chloride residual remaining after polymerization, the entire batch is returned to the manufacturer as part of a quality control program. The vinyl chloride is received in another department of a separate building in the Inland complex where compounding takes place, being fed directly into Banbury mixers. The entire process is entirely automatic. The finished product is in pelletized form. It is then ready for use in molding of plastic steering wheels in the presses through an injection mold process. No personnel monitoring for vinyl chloride was reported by Inland Division. However, the Inland Industrial Hygienist reported direct readings for carbon monoxide and hydrogen chloride (thermal decomposition products of polyvinyl chloride) were taken during a burn-out of this material in a press. Low levels of carbon monoxide were detected and were felt to be insignificant. It should be reported that such thermal decomposition is an infrequent event in this process. Procurement of Occupational Safety and Health Administration records revealed 15 air samples for vinyl chloride in Department 170 taken during the period of 1975-1976. Vinyl chloride levels ranged from less than 0.2 parts per million to as high as 4.4 parts per million (ppm). The OSHA permissible exposure limit is 1 ppm averaged over an 8-hour period, with no employee allowed to be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes. Attachment 1 is the OSHA air sampling results for vinyl chloride as stated.

My visit to Department 170 revealed several rows of enclosed machine presses in operation. I noticed no vapors, fumes, or smoke in the ambient air. Reportedly these presses have been in use since the late 1960's. Three years ago window fans were installed for general comfort ventilation. All the presses are completely enclosed with safety cages.

Vinyl chloride monomer is a widely used chemical, the parent compound of polyvinyl chloride (PVC), a plastic resin used in innumerable consumer and industrial products--containers, wrapping film, electrical insulation, credit cards, and in this case, automobile steering wheels. At the same time, however, it can be said that overwhelming scientific evidence shows vinyl chloride to be a human carcinogen. Moreover, medical evidence suggests a strong association between exposure to vinyl chloride and the occurrence of a number of toxic, nonmalignant illnesses involving skin, bones, liver, lungs, and blood. Polyvinyl chloride and other vinyl chloride polymers are not, at the time of this writing, considered to represent a carcinogenic risk to man.[2])

Vinyl chloride was once considered for use as a general anesthetic, but its use for this purpose was abandoned in the early 1930's after experiments in animals demonstrated that its anesthetic effects were often accompanied by cardiac irregularities.[2])

In 1967 the occupational disease acroosteolysis was reported from exposure to vinyl chloride. This disease appeared among workers engaged in the process by which vinyl chloride was reacted (polymerized) to polyvinyl chloride. The disease symptoms included tenderness of the fingertips, sometimes accompanied by a gradual destruction of the bony integrity of the fingers. Workers suffering from this condition exhibited a form of vascular disease known as Raynand's phenomenon.[2])

In 1974, the Department of Labor promulgated an emergency temporary exposure standard for vinyl chloride based on reports of workers contracting a rare liver cancer (angiosarcoma) from exposure. Based on such data, the American Conference of Governmental Industrial Hygienists has classified vinyl chloride as a confirmed carcinogen with a threshold limit value time-weighted of 5 parts per million recommended. It was felt if this value is not exceeded, there should be no increase in the incidence of cancer, especially angiosarcoma of the liver.[3])

The only symptom described by the claimant which parallels exposure to the proprietary chemical noted, and vinyl chloride, is mention of the heart muscle and "causing it to pound." The question then is whether the polymerization of vinyl chloride to polyvinyl chloride caused this temporary physical condition. As reported by the company, compounding has been accomplished in another building since 1976 with a continual quality control program. The claimant reported this symptom occurred 1972, 1973, and 1974 with a question mark on the claim form. As noted previously, the Occupational Safety and Health Administration detected airborne concentrations of vinyl chloride ranging from

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0.2 - 4.4 parts per million by air sampling during the time period 1975-1976. Hence, this would seem to imply that such levels of vinyl chloride could have existed in the workplace in the time period mentioned by the claimant, particularly when it is realized that the quality control program was not in effect until 1976. Whether such low levels would cause irregular heart beat would be pure conjecture on my part. The literature I have reviewed indicates not. Humans exposed to vinyl chloride in air at a concentration of 6,000 parts per million for one-half hour experienced dizziness and drowsiness.[4] It is listed as a potent carcinogenic agent in man over long exposure periods.

Therefore, I find it difficult to support the claimant in his allegations. I can attribute no lung or heart disease in his occupation as a press operator for 28 years.

Respectfully submitted,

Glenn L. Davis
Industrial Hygienist

GLD/nm

Attachment

References:

1) Occupational Health Guidelines for Chemical Hazards, DHHS (NIOSH) Publication No. 81-123, January, 1981.

2) Vinyl Chloride, An Information Resource, DHEW Publication Number (NIH) 79-1599.

3) Documentation of the Threshold Limit Values, 4th Edition, 1980, American Conference of Governmental Industrial Hygienists Inc.

4) Toxicology, the Basic Science of Poisons, Casarett and Doull's, 1980, MacMillan Publishing Company.

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