56th All-Ohio Safety and Health Congress & Exhibit May 14-16, 1986 Cincinnati Convention Center, Cincinnati, Ohio

Behind the Scenes IN SAFETY AND HEALTH

PLAINTIFF'S
EXHIBIT
BRK-167

January 2, 1986

Ms. Judy Spencer
Legal Section
Industrial Commission of Ohio
246 North High Street
Columbus, Ohio 43215

Re: OD #22085-22
Clarence Mick
Chevrolet-Parma Plant
General Motors Corporation
Parma, Ohio

Dear Ms. Spencer:

On October 3, 1985, an industrial hygiene investigation was conducted in the Prop Shaft building of Chevrolet Parma Plant. This was to investigate Mr. Clarence Mick's claim of an occupationally induced lung disease. This investigator initially conducted an investigation of this claim in October of 1984. Subsequently the Division of Safety and Hygiene's legal section told this writer to stop investigating the claim until further notice. The claim was reopened for investigation in August of 1985. Throughout the investigation this writer worked with Ms. Catherine Primuth of Baughman and Associates (L.P.A.). She was helpful in obtaining all of the information that this investigator requested. Also Ms. Mary Lou Hezra obtained and explained the claimant's work history and Mr. Paul Wulff conducted the plant tour and described the working conditions to this investigator. After the plant survey on October 3, 1985, this investigator requested further information concerning industrial hygiene surveys conducted in the areas that the claimant worked. This information was received on November 18, 1985.

Chevrolet-Parma consists of the Pressed Metal, Transmission, and Prop Shaft Plants. The Prop Shaft Plant is over 500,000 square feet of machinery and equipment and employs over 1,000 persons. It produced propeller drive shafts and in recent years has added the processes necessary in producing front wheel drive assemblies. The process of producing a Prop Shaft includes producing steel tubing that is subsequently cut to a proper length. Further on the tubing is connected with yokes, trunnions, and bearings. Machinery has to be

The Industrial Commission of Ohio • Division of Safety and Hygiene • 246 N. High St. • Columbus, Ohio 43215
Richard F. Celeste, Governor • Leonard T. Lancaster, Industrial Commission Chairman • Emory Huguelet, Vice Chairman • George C. Smith III, Member
Raymond A. Connor, Member • Robert L. McAllister, Member • John A. Pompei, Safety and Hygiene Superintendent • Lou Gergely, Assistant Superintendent

done on the yokes and trunnions and the machines that do this are the ones the claimant worked on or around.

A copy of Mr. Mick's work history is supplied with this report and it reveals that he worked approximately thirty years for Chevrolet-Parma. The Prop Shaft Plant that this investigator toured was built around 1969 and Mr. Mick worked in this plant since that time. Mr. Mick's job titles were job setter, die setter, and machine operator. The main areas that he worked are Departments 26 and 28. To a lesser extent he worked in Departments 30 and 42. On the work history insert, the department is designated by the second two digits of the first column of numbers.

This investigator will explain some of the changes that have taken place over the past fifteen years. A recent change in coolant was a major factor that influenced the decision not to conduct personal air monitoring. This along with coolant system changes and the relocation of machinery indicated that air monitoring would not be representative of the claimant's exposure. Nevertheless, copies of monitoring conducted by General Motors Corporation's Industrial Hygiene Department is being supplied with this report.

The claimant worked most recently and for a significant period of time in Department 26 of the Prop Shaft Plant. He was a job setter on the Barnes Transfer Machines. A job setter sets up tooling on these machines before they are operating but a job setter spends the majority of a work shift in the vicinity of these machines. Around 1978 the Bairds machines were added to Department 26. The Bairds do machining on trunnions. Also a centralized cooling system, system 10, was added to supply coolant to the Barnes Transfer and Bairds machines. In the past each machine had its own self-contained coolant system. In January of 1984 a coolant change took place and the use of coolant CX1002 was initiated.

Also Department 28 has changed significantly since the claimant worked in it. It now contains the highly automated Turbine Shaft and Sun Gear Shaft operations. When the claimant worked in Department 28 it contained the Bairds (now in Dept. 26) and the Chain Broaches. The claimant used to do set-up work on the Bairds and periodically would have changed heads on the Chain Broaches. Inserts of the 1975 and 1985 Prop Shaft Plant floor plans are supplied with this report and further indicate the changed that have occurred. It is important to mention that the claimant was a committee man for two terms. A term started on June 19, 1978, and another on February 11, 1981. Each term lasted at least two years. As a committee man Mr. Mick was responsible for prop shaft production but did not do labor work. As a committee man Mr. Mick could have been anywhere in the Prop Shaft Plant including the Satellite area. This investigator understands the Satellite Area to be an air conditioned office area within the Prop Shaft Plant.

A few ventilation changes have occurred in the Prop Shaft Plant such as the addition of an overhead exhaust system in Department 26 and localized capture vents on the Chain Broaches. Otherwise in the

areas of concern the Prop Shaft Plant is equipped with a general dilution ventilation system. It is believed that respiratory protection was not used regularly by the claimant when performing his usual job duties. Chevrolet-Parma did not require respiratory protection for workers doing jobs such as the claimant's normal duties. A copy of the claimant's 1955 application is supplied with this report. It indicates that Mr. Mick worked for a coal company from 1944 to 1952 and had pneumonia in 1952. The facsimile file indicates that the claimant has smoked cigarettes.

As stated earlier the coolants used in system 10, the coolant system in Dept. 26 for the Bairds and Barnes Transfer machines, have changed in recent years. A coolant called Dasco 1050 was used prior to 1982. Between 1982 and 1984 Cimcol 400 was used and coolant CX1002 is now being used. These coolants are made differently. Dasco 1050 is a heavy duty emulsified oil, Cimcool 400 is a synthetic coolant, and CX1002 is a semi-synthetic coolant. Data sheets pertaining to these coolants are supplied with this report. Also supplied is a summary of developments with system 10 that this investigator believes was prepared by Mr. Wulff. This summary and the corporate industrial hygiene survey reports address employee complaints concerning dermatitis and respiratory problems while working around system 10.

Hamilton and Hardy's - Industrial Toxicology states:

"Exposures to mist sprays of insoluble oils used as coolants, cutting fluids, and lubricants in machine operations are usually not harmful to the respiratory tract, although worker discomfort occurs at oil mist levels bove 5 milligrams per cubic meter. Mineral oil droplets less than 5 micrometers in diameter may be inhaled and results in fibrotic nodules, paraffinomas, or in lipoid pneumonitis. Decoufle could find no evidence that machinists exposed to cutting oil mists had any unusual mortality from respiratory tract cancer."

The Encyclopaedia of Occupational Health and Safety states:

"With the increased use of oil mist lubricating techniques; interest has developed in the health hazards these may present. Cases of lypoid pneumonia have been reported since 1925 and the possible effects of oil on the lungs have been summarized as.

(a) diffuse acute-interstitial proliferative inflammation with or without associate pnneumonia,

(b) diffuse chromic - a proliferative fibrosis;

(c) chronic localized - a paraffinoma consisting of large globules of oil in hyaline fibrosis tissue.

Most researches conclude that there is no increase in respiratory symptoms or diminution of respiratory performance in persons exposed to oil mist. Whether or not there is an increased incidence of lung cancer in persons so exposed has yet to be fully evaluated."

The Industrial Hygiene Department of the General Motors Corporation conducted air monitoring in Department 26 on March 5, 1981, as the result of employee complaints. At the time Department 26 was using a coolant called Quaker Microcut 19-N-203 which contains 50-60 percent mineral oil and 15 percent diethanolamine. Monitoring results did show detectable levels of particulates, oil mist and diethanolamine although the levels on this day are below established limits. These limits include the Occupational Safety and Health Administration's time-weighted average (TWA) Permissible Exposure Limits and the American Conference of Governmental Industrial Hygienists' TWA Threshold Limit Values. Diethanolamine now has a Threshold Limit Value of 15 milligrams per cubic meter. Another survey done in Department 26 for airborne total particulates on March 8, 1984, found airborne levels within cceptable limits.

It must be pointed out that these values represent conditions on the date of this survey, and the degree of their applicability to any long-term situation can only be determined by a professional well versed in the practice of industrial hygiene and/or occupational medicine. Use of these data in an effort to establish or eliminate cause-and-effect relationships with regard to disease or illness must be done with extreme caution, and then only by an individual who fully understands the many inherent variables.

Threshold Limit Values refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variations in individual susceptibility, however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness. The TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.

When concerned about exposures to cutting fluids it is important to mention concern over potential exposures to nitrosamines. Nitrosamines are considered to be human carcinogens. Recent literature indicates that nitrosamines major route of entry into the body is through skin absorption.[1] An insert is supplied concerning nitrisamines and the types of cutting fluids that may contain nitrosamines. Also a biocide called Dowcide A was used in system 10 while the claimant worked in Department 26. An article is supplied that address biocides including Dowcide A. Additional information concerning oil mist exposure is also being supplied.

In summary Mr. Mick worked approximately 30 years for the Chevrolet-Parma Plant. The working conditions that this investigator saw are not necessarily typical of the claimant's working environment because of the changes that have occurred in the Prop Shaft Plant over the years. Nevertheless this investigator was able to get an idea of the claimant's working environment through information supplied to this writer during the investigation. Valid or not, a number of

[1]David Rounbehler and John Fajen, N-Nitroso Compounds In the Factory Environment (Cincinnati, Ohio, National Institute of Occupational Safety and Health, 1983) p. 41, 64.

employee complaints of mists and fumes in Department 26 and near system 10 are indicated in the supplied literature. Nevertheless, the same literature describes the active response of Chevrolet-Parma to these complaints and internal corporate air monitoring did not indicate unacceptable airborne contaminant levels. It is possible that the claimant did have occasional airborne oil mist and other coolant components exposures throughout his 30 year tenure at Chevrolet-Parma. However slight, literature does indicate an association between oil mist exposure and adverse effects on the lungs.

Sincerely,

Timothy J. Fiorilli

Timothy J. Fiorilli
Industrial Hygienist

TJF/rr

Inserts:

Copy of Mr. Mick's work history
GMC Industrial Hygiene Surveys
Prop Shaft Plant floor plans (1975, 1985)
Mr. Mick's Employment Application
MSDS's for Dasco 1050, Cimcool 400, CX-1002 and Dowcide A
Summary of System 10 (Prop Shaft Coolant System)
JOMarticle "Antimicrobial Agents for Water-Based Metalworking - Fluids" April, 1981
Zenz, Occupational Medicine (Nitrosamines)
Doc. of TLV - Diethanolamine
JOMarticle "A Study of Mortality, Symptoms, and Respiratory Function in Humans Occupationally Exposed to Oil Mist" July, 1970
JOMarticle "Respiratory Symptoms and Lung Function in Oil Mist - Exposed Workers" June 1982.
JOMarticle "Cancer Morbidity Among Men Exposed to Oil Mist in the Metal Industry" May 1981
British Journal of Industrial Medicine "Occupational asthma due to an emulsified oil mist" 1985
AIHA article "Respiratory response of guinea pigs to oil mists "August, 1979
Patty's - Dowcide A p. 2617

6

RECORDS
CERTIFICATION

I, the undersigned, an employee of the Bureau of Workers' Compensation, do hereby certify that the microfilm images on this reel of microfilm or microfiche are complete and accurate reproductions of the original records of the S+H as accumulated during the regular course of business, and that it is the established procedure of this department to microfilm its records for permanent file and to dispose of the original records after microfilm reproductions have been made.

William D. Kaye
SUPERVISOR, Microfilming Unit

John Fry
Name (Camera Operator)

10/27/86
Date

10-27-86
Date

1.