PLAINTIFF'S
EXHIBIT
BRK-46

March 14, 1947

Mr. G. G. Goe,
Purchasing Agent,
National Tube Company,
Pittsburgh 30, Pa.

Dear Mr. Goe:

Copy of a report submitted by Mr. DeWitt Huffman is enclosed for your information and guidance.

Compliance with the recommendation made by Mr. Huffman will, undoubtedly assist materially in benefitting the health of your employees. We trust you will carry it out at your earliest opportunity.

If there is anything further this Division can do to assist you, kindly let us know.

Very truly yours,

Superintendent

DH:ha
cc: Al Benson

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March 11, 1947

Mr. J. H. Flukey,
Superintendent,
Division of Safety & Hygiene,
Building.

Re: National Tube Company,
Lorain, Ohio

On March 5 a visit was made to the above named Company to check fume conditions with respect to trichloro thylene degreaser. Request for this survey was made by C. C. Dee, Purchasing Agent of their Pittsburgh Office.

Contact was made with Claude Raley, Superintendent of Protection and Director of Safety; H. L. Smith, Assistant Director of Safety; Al Benson, Industrial Hygiene Engineer and C. H. Hill, Superintendent, #2 Machine Shop.

The Company removes grease from steel rolls and roll bearings in the degreaser.

The degreaser is located near the south end of a building approximately 400' x 100' x 25' to the eaves of the side bays. Air is recirculated in the building through large ducts located near the ceiling. The heating coils through which the air passes are located in both the south-west and south-east corners of the building. The general motion of the air is toward the heating coils where the air is recirculated.

The degreaser in question is model D-P-Blakeslee Degreaser, serial #6180, manufactured by the G. S. Blakeslee and Company, Chicago, Ill. The degreaser is approximately 12' long by 5' wide by 10' deep. It is heated by steam coils. There are cooling coils approximately 3' from the top of the degreaser for the condensation of the solvent used for degreasing. Blakeslee solvent which according to the tag on the barrel contains over 99% trichloroethylene, is used in the degreaser. Vapors from this solvent were quite strong in the breathing zone of the operator who leaned over the edge of the degreaser in order to observe its operation. The Company has made tests and found the fumes to be considerably above the maximum allowable concentrations for this solvent in the breathing zone of the operator.

An attempt was made to reduce the concentrations of the fumes from the solvent without resorting to exhaust ventilation. The first thing was to increase the rate of evaporation of the solvent so as to form a heavier blanket of condensing solvent at the cooling coils. It was thought that a heavier blanket might more effectively separate the solvent vapors below the blanket from the air above. However, this operational change did not materially reduce the concentration of escaping vapors. It was observed that the employee held the material being cleaned above the vapor blanket when spraying it with solvent. He was instructed to keep the materials being degreased below the vapor blanket when spraying. This resulted in a noticeable reduction in the concentrations of escaping vapors.

At other installations it has been found effective to place a shield around and extend it several feet above the top of the degreaser to reduce the air motion in that area. This was tried at this plant, but no reduction in air velocity across the top of the degreaser resulted. However, after the shield had been placed around the tank it was observed that doors at the end of the building were opened and caused more general air disturbance.

[illegible] south-west corner of the building toward which vapors [illegible] drift, complain of headaches. They report that [illegible] between the solvent vapors and the electric arc. [illegible] presence of heat, trichloroethylene vapors are converted [illegible], usually war gas. Whether this reaction occurs when the [illegible] in the quantities as would be found near the welders is questionable.

[illegible] to ozone was detected near the welding arc. The following [illegible] in the May, 1944 edition of "Heating and Ventilating", [illegible] the title "Health Hazards Associated With Welding" states that ten to thirty parts per million of ozone occur 1" from the arc; nine parts per million, 4" from the arc; and 2 to 1 part per million, 5 feet from the arc.

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Ozone has not been considered an occupational health hazard in connection with welding. If the welders continue to be bothered by fumes from the solvent it is suggested that they be moved to another section of the building where they would be subject to a lesser concentration of fumes.

It would appear that the solution to this problem is to install exhaust ventilation. The company that manufactures the degreaser has a unit which may be the answer. It is recommended that lateral type exhaust ventilation of not less than 50 cubic feet of air per square foot of bank area be provided.

The Company has ordered a Wilson apparatus for the determination of chlorinated hydrocarbons. It is respectfully suggested that this Division be notified when this equipment has been received and improvements made to remove the fumes from the degreaser so that another visit may be made to this plant.

Respectfully submitted,

[redacted] Huffman,
Safety Adviser

DH:ha