PLAINTIFF'S
EXHIBIT
BRK-216

December 20, 1943

Mr. M. V. Appleman, Safety Director
Carnegie Illinois Steel Corp.
Youngstown, Ohio

Dear Sir:

Copy of a report submitted to me by Mr. [illegible] [illegible] is enclosed for your information and guidance.

Compliance with the recommendations made by Mr. [illegible] will, undoubtedly, assist materially in benefiting the health of your employees. We trust you will carry them 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

DBR/fbe

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DIVISION OF SAFETY & HYGIENE
INDUSTRIAL COMMISSION OF OHIO
Columbus, Ohio

December 17, 1943

In re: Carnegie-Illinois Steel Corp.
Youngstown, Ohio

On December 10 a visit was made to the above named company to check conditions under which a clause it worked and also to check gas conditions.

Contact was made with J. G. Nelson, supervisor of compensation and pensions and M. V. Appleman, safety director.

The Company makes steel products.

Blast furnace gas is used as fuel in internal combustion engines for generating electrical power. There are seven, two cycle internal combustion engines with a capacity of 2500 and 3500 kilowatts respectively; there are also two turbines with a capacity of 15,000 kilowatts respectively. The engines and turbines are located in a building approximately 400 feet by 100 feet by 80 feet to the eaves. There is a monitor in the roof in which windows were opened at the time of this visit. Doors on both ends of the building were open. The company has 16 intake fans through which heated outside air is forced into the building. They also have 4 outlet fans in the basement which take advantage of the air currents generated by the fly wheels in exhausting air. Information as to the capacity of these fans was not immediately available, but Mr. Appleman stated that their capacity was such as to change air in the building 3 times every hour. Readings were taken with a Mine Safety Appliance Carbon Monoxide [illegible] over a period of about 15 minutes between 11:30 and 12:00 noon. The maximum concentration noted was .025 percent near one of the engines. In walking between other engines, a concentration of .02 was obtained. At the aisles on each side of the building a concentration of .015 was noted. The company reports that the highest reading they have been able to obtain was in the neighborhood of .03% and that reading was obtained when they were starting an engine which was cold and leaks developed around the packing until the packing was warm. They report that the room clears out very quickly after an engine has been started.

Steel companies have apparently set a limit of .03 percent for Carbon Monoxide. This company has set a standard of .025 percent except of course for short periods when they are warming up an engine.

In checking the literature it is found that the states of California, Connecticut, Massachusetts, and Wisconsin have set 100 p.p.m. (.01%) as a limit for Carbon Monoxide gas. The following table appears on page 318 in "Analytical Chemistry of Industrial Poisons, Hazards and Solvents" by M. B. Jacobs, Vol. I, 1941.

Carbon Monoxide Poisoning

Effect	CO per cent
Allowable for an exposure of several hours	0.01
Can be inhaled for one hour without appreciable effect	0.04-0.05
Causing a just appreciable effect after one hour's exposure	0.06-0.07
Causing unpleasant but not dangerous symptoms after one hour's exposure	0.1-0.12
Dangerous for exposure of one hour	0.15-0.20
Fatal in exposure of less than one hour	0.4 and above

Health practices pamphlet number 7 of the National Safety Council has set a limit of .01%. The American Standards Associations Z7.1-1941 recommends a limit of .01 for exposure for 8 hours and .04 per cent for not over 1 hour.

From the above [illegible] and literature quoted, it is concluded that the Carbon Monoxide content of the [illegible] above a desirable limit. It is also concluded that if the general content could be kept [illegible] .01 when all engines that are running are sure that the carbon monoxide [illegible] generated in warming up an engine would not be in excess of the recommended limit of the American Standard Association.

The company has employed a very good method for the removal of the CO gas from this engine room. To further reduce the CO content, additional ventilation following the [illegible] when they are warming would be desirable.

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Lorrs: Carnegie Illinois Steel Corp.
Youngstown, Ohio

It is therefore recommended that additional ventilation be provided.

Respectfully Submitted,

DeWitt Huffman
Safety Engineer

DDH/fbe

[redacted]

IN RE: - OD-3056 - L.A. Quimby, check #7550.

CARNEGIE & ILLINOIS STEEL CORPORATION - OHIO WORKS

REPORT SHOWING JOB DESCRIPTIONS IN MASON DEPARTMENT AND REPORTS ON DUST COUNTS ON THE VARIOUS JOBS FROM TESTS MADE IN NOV. & DEC. 1939

Test No.	Place	Count in millions per cubic feet	Maximum percent of free silica
1	Fce. Bulkhead. Hot job	5.225	54.4
2	Tap hole, Hot Job	3.9	33.2
3	Slag pocket #6 fce.	4.8	4.2
4	Slag pocket #6 fce.	2.625	0.0
5	Repairing roof. Hot job	4.35	25.2
6	Relining hot metal spout	1.3	44.0
7	Uptake and ports #6 fce.	8.6	50.0
8	In gas producer while patching	6.5	54.3
9	Relining hot metal ladle	8.25	59.0
10	Bessemer mixer	9.375	54.0
11	Building roof #14 fce.	4.7	45.1
12	Port and breast wall #4 fce.	5.525	57.1
13	Building backwall #14 fce.	3.575	32.5
14	Replacing front wall #13 fce. hot job	3.15	21.0
15	Building front wall #4 fce.	9.075	44.6
16	Building checker chamber bulkhead	4.43	33.3