U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
CINCINNATI, OHIO 45202

HEALTH HAZARD EVALUATION DETERMINATION REPORT 73-175-118
WHEELING-PITTSBURGH STEEL CORPORATION
STEUBENVILLE, OHIO

MARCH 1974

I. TOXICITY DETERMINATION

Based on the results of an observational and environmental evaluation conducted by the National Institute for Occupational Safety and Health (NIOSH) on January 8, 1974, it has been determined that total dust, iron oxide, carbon monoxide, and ozone exposures were not at concentrations hazardous to employees at the hand scarfing area of the Wheeling-Pittsburgh Steel Corporation's South Plant, Mingo Junction, Ohio.

II. DISTRIBUTION AND AVAILABILITY OF DETERMINATION REPORT

Copies of this hazard evaluation determination are available upon request from the Hazard Evaluation Services Branch, NIOSH, U.S. Post Office Building, Room 508, 5th and Walnut Streets, Cincinnati, Ohio 45202. Copies have been sent to:

(a) Wheeling-Pittsburgh Steel Corporation
(b) Authorized Representative of Employees
(c) U.S. Department of Labor - Region V
(d) NIOSH - Region VIII

For the purpose of informing approximately 20 exposed employees, this report shall be posted in a prominent place readily accessible to workers for a period of at least 30 days.

III. INTRODUCTION

Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6), authorizes the Secretary of Health, Education, and Welfare, following a written request by any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The National Institute for Occupational Safety and Health received such a request from the union representative, Local #1190, U.S.W.A., Steubenville, Ohio, to evaluate the potential hazards associated with the alleged exposures to fumes and smoke in the hand scarfing area of the Wheeling-Pittsburgh Steel Corporation's South Plant.

IV. HEALTH HAZARD EVALUATION

A. Plant Process

The hand scarfing area of a steel mill is the area where large slabs of steel vary from 80 inches in width and 30 feet in length to smaller pieces

36 inches in width and 15 feet in length. Workers in this area use oxygen and natural gas torches to burn slag from these steel slabs. Actual work time is dependent on how fast a worker can complete his quota of steel slabs. This varied in this plant from a minimum of one and one-half hours to a maximum of three hours. PVC filter samples were taken on four hand scarfers and one crane operator. Samples were taken for the entire duration of the work period but were removed when the worker finished his job. All samples were analyzed for total dust and for Fe_2O_3. Carbon monoxide and ozone samples were taken with a Draeger pump and detector tubes.

B. Evaluation Design

The hand scarfing area was evaluated by taking personal samples on all hand scarfers and all crane operators. These samples were analyzed for total dust and Fe_2O_3. Carbon monoxide and ozone samples were taken by direct reading instruments during the same sampling period.

C. Evaluation Methods

Total dust and Fe_2O_3 samples were taken on PVC filters, using an MSA vacuum pump operated at 2 liters per minute. Carbon monoxide and ozone measurements were taken with a Draeger pump and detector tubes.

D. Evaluation Criteria

The occupational health standards relevant to the substances of this evaluation as promulgated by the U.S. Department of Labor (Federal Register, October 18, 1972) are as follows:

Substance	mg/M^3
Carbon monoxide	55
Ozone	0.2
Fe_2O_3	15
Nuisance dust	15

mg/M^3 - milligrams of contaminant per cubic meter of air

Occupational health standards are established at levels designed to protect individuals occupationally exposed to individual substances on an 8-hour per day, 40-hour per week basis over a normal working lifetime.

E. Evaluation Results and Discussion

This evaluation was initiated and completed on January 8, 1974. All contaminants were well within established Federal standards. A summary of results may be found in the Appendix.

V. AUTHORSHIP AND ACKNOWLEDGEMENTS

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APPENDIX

CARBON MONOXIDE AND OZONE* CONCENTRATIONS TAKEN WITH DRAEGER PUMP AND DETECTOR TUBES IN IMMEDIATE HAND SCARFING AREA - January 8, 1974

Time	ppm
9:15 p.m.	10
10:40 p.m.	15

*Ozone measurements were made but none detected throughout work shift

ppm - parts of vapor or gas per million parts of contaminated air by volume

LABORATORY RESULTS FOR TOTAL DUST AND Fe_2O_3 - January 8, 1974

Worker	Area	Sample Number	Volume liters	Total Dust mg/M^3	Fe_2O_3 mg/M^3
W.B.	Scarfing	PVC 5	194	4.1	2.3
S.F.	Scarfing (Craneman)	PVC 8	174	5.4	2.6
F.K.	Scarfing	PVC 7	344	1.8	0.7
R.G.	Scarfing	PVC 9	208	1.7	2.3
R.D.	Scarfing	PVC 10	314	4.3	3.1
H.F.	Scarfing	PVC 6	112	14.5	7.8