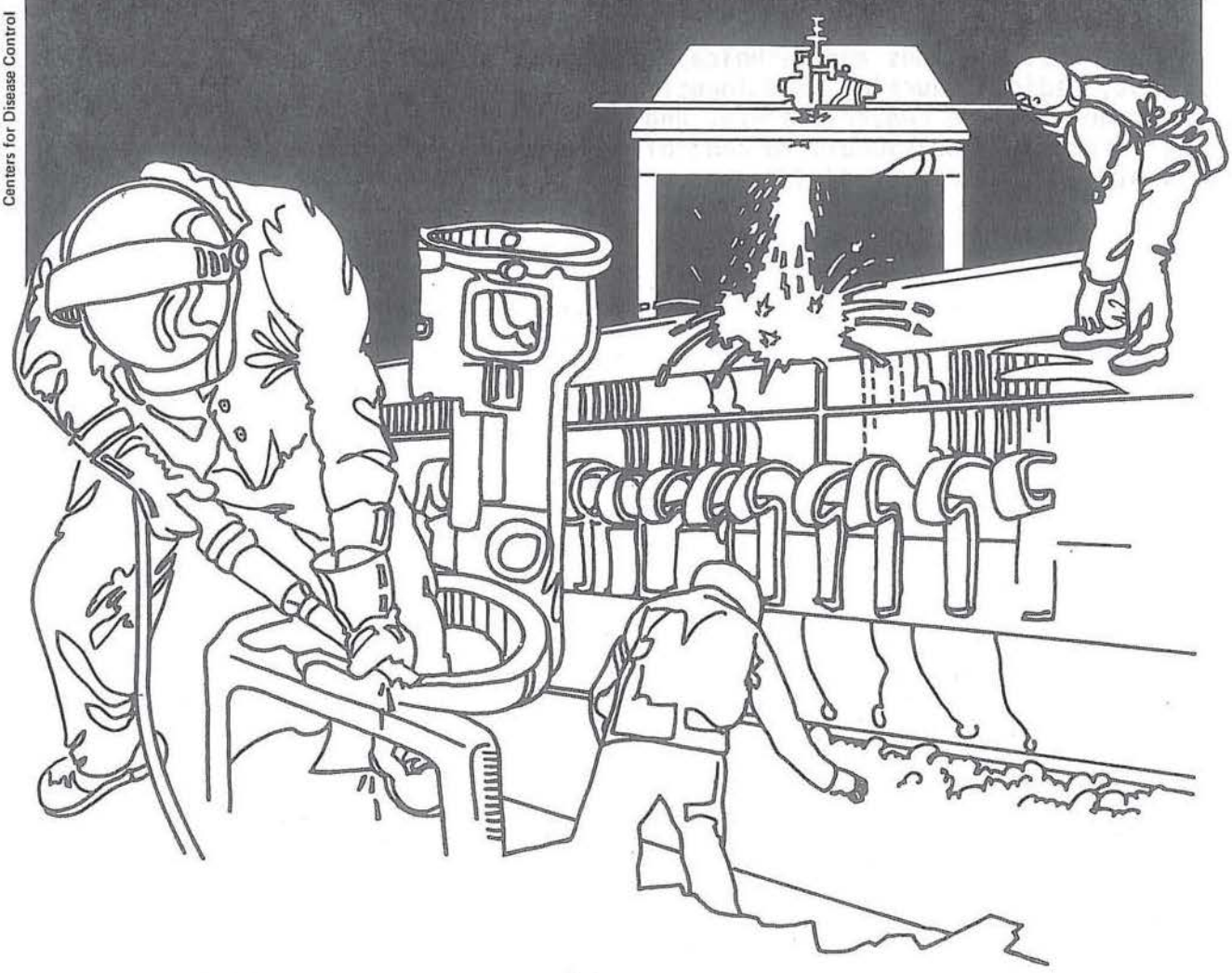
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES ■ Public Health Service
Centers for Disease Control ■ National Institute for Occupational Safety and Health

NIOSH



Health Hazard Evaluation Report

HETA 81-379-1018
LOCKLAND POST OFFICE
LOCKLAND, OHIO

PREFACE

The Hazard Evaluations and Technical Assistance Branch of NIOSH conducts field investigations of possible health hazards in the workplace. These investigations are conducted under the authority of Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6) which authorizes the Secretary of Health and Human Services, following a written request from 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 Hazard Evaluations and Technical Assistance Branch also provides, upon request, medical, nursing, and industrial hygiene technical and consultative assistance (TA) to Federal, state, and local agencies; labor; industry and other groups or individuals to control occupational health hazards and to prevent related trauma and disease.

HETA 81-379-1018
December 1981
Lockland Post Office
Lockland, Ohio

NIOSH INVESTIGATORS:
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I. SUMMARY

On June 22, 1981, the National Institute for Occupational Safety and Health (NIOSH) received a request from Branch 43, of the American Postal Workers Union (APWU) located in Cincinnati, Ohio, to evaluate employee exposures to dusts and fibers in the mail sorting area of the Lockland Post Office. The request did not report any health complaints; however, there was concern that material floating in the coffee water may be fibrous glass or asbestos, presumably from the deterioration of the suspended ceiling.

To determine if the mail sorting area contained exposure potentials of a toxic nature, NIOSH conducted a site visit at the Post Office on July 24, 1981. Area airborne and bulk dust and water samples were obtained for fiber and particulate analysis. Work practice procedures were observed for additional patterns that could generate airborne emissions.

The sample analysis indicated that cellulose wood and paper fibers along with aluminum silicates, calcium and iron dust particles were common in most all samples. All of these substances are common derivatives of soil and atmospheric dust sources. Analysis of the ceiling-tile sample confirmed that it was a mineral wool-fibrous glass mixture. No asbestos or fibrous glass was found in any of the air, settled dust or water samples.

Based on the evaluation results, NIOSH has concluded that there was not a health hazard in the sorting area of the Lockland Post Office. Recommendations to further reduce dust levels by improving certain work practices are contained in Section VII of this report.

KEYWORDS: SIC Code 4311 asbestos, fibrous glass, Post Office, sorting and bagging mail.

II. INTRODUCTION

In June 1981, NIOSH received a request for a health hazard evaluation at the Lockland Post Office, Cincinnati, Ohio. The request was initiated by an authorized representative of employees from Branch 43 of the APWU. The requestor asked NIOSH to evaluate the mail sorting area for potential airborne exposure(s) which included asbestos and fibrous glass. The requestor was also concerned about the possible contamination of (uncovered) coffee water . NIOSH responded to the request by sending two industrial hygienists to the site (July 24) to evaluate the work environment.

III. BACKGROUND

The Lockland Post Office employs three supervisors, three clerks, 36 letter carriers, and one custodian in a 7897 square foot area. Duties of the clerks and carriers involve sorting, separating, and packing mail for distribution. All duties are performed during an 8 hour shift which starts at 4:00 A.M. for clerks and 6:30 A.M. for mail carriers. Work activities are usually completed by 5:30 P.M. The work area is ventilated by bringing air in through six circular air diffusers (located in the ceiling), and exhausting it through rectangular wall openings. Filters are located in the system which can be removed for cleaning. Both heating and air cooling is provided by the system..

IV. METHODS AND MATERIALS

The strategy used during the investigation consisted of evaluating existing conditions by personal observation, area air sampling, evaluating potential sources of exposure such as water supplies and ceiling tile, and by collection of bulk dust samples (from areas not cleaned for several months). The area air samples were collected on AA filters (0.8 u pore size) by using MSA battery operated vacuum pumps calibrated at 2.0 and 2.5 liters per minute for 150 minutes (NIOSH Method 309-1) and analyzed by Transmission Electron Microscopy (TEM). The two bulk water samples collected were filtered onto 47 mm Millipore AA cellulose ester filters, dried and portions were suspended in ethanol and deposited onto carbon coated TEM grids for observation. The ceiling tile and settled dust samples were prepared by suspending portions of the samples in ethanol and then depositing aliquots of the suspensions onto carbon coated TEM grids.

V. RESULTS AND DISCUSSION

The results from the July 22, 1981 investigation revealed that no asbestos or fibrous glass materials were present in the air during mail sorting procedures (Table I).

Samples collected and their results included: both hot and cold water which contained potassium and phosphorous (cold water) and aluminum, silica, potassium and iron when heated; a piece of ceiling tile which contained a mixture of mineral wool and fibrous glass as well as aluminum, silica, calcium and iron; and dusts from light fixtures which contained trace amounts of magnesium, aluminum, silica, calcium, iron, paper dust and clays. Cellulose wood and paper fibers were also common in all bulk samples. These consistituents along with the various aluminum silicates, calcium and iron dust particles can be found readily in soil and typical atmospheric dusts.

VI. CONCLUSIONS

Asbestos was not found in any of the samples collected. Although the ceiling tile did contain fibrous glass there was no evidence of significant deterioration. Some of the substances found in the air, water and settled dusts samples are common air contaminants while others such as the paper dust and cellulose fibers result from handling mail. Such materials would not normally be expected to cause adverse health effects. However, a small percent of the population (those with certain allergies) may be affected during the periods of increased mail processing activities.

VII. RECOMMENDATIONS

1. Insure that the air handling unit is serviced on a regular basis with special attention to changing the filters.

2. Floor fans (e.g., the two 24"-36" floor units) should be limited in use. Such units tend to "stir-up" and re-distribute dust particales rather than remove them.

3. Use vacuum to clean overhead light fixtures and floor areas instead of broom and dust mops.

4. Although the floating materials would not be expected to cause a health problem, frequent cleaning of the coffee pots and keeping them covered would minimize the accumulation of foreign materials on the water surface.

VIII. AUTHORSHIP/ACKNOWLEDGEMENTS

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IX. DISTRIBUTION AND AVAILABILITY OF REPORT

Copies of this Determination Report are currently available upon request from NIOSH, Division of Standards Development and Technology Transfer, Information Resources and Dissemination Section, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22151. Information regarding its availability through NTIS can be contained from the NIOSH Publications Office at the Cincinnati address.

Copies of this report have been sent to:

1. Branch 43 APWU
2. Station Manager, Lockland Post Office
3. Safety Manager, Lockland Post Office
4. NIOSH Region V
5. OSHA Region V

For the purpose of informing the 40 affected employees, the employer shall promptly post this report in a prominent place(s) near the work area of the affected employees for a period of thirty (30) calendar days.

TABLE I

Lockland Post Office
Lockland, Ohio
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Sample	Fibrous glass Present	Asbestos Present	Elements Detected	Other Materials
A-1 Dust from light fixture	No	No	Mg,Al,Si, Ca, Fe	Cellulose fibers-paper dust, clays
Ceiling Tile	Yes	No	Al,Si,Ca,Fe	Mineral wool
A-1 filter (air sample)	No	No	Ca,Fe,Si,Mg Al,P,K,Ti,Cl	No fibers observed
A-2 Filter (air sample)	No	No	Ca,Fe,Cr,K, Al,Mg,S,P, Zr,Cl	No fibers observed
Blank Filter	No	No	None	None
Cold Water	No	No	K,P	Cellulose wood and paper fibers
Hot Water	No	No	Al,Si,K,Fe	Cellulose wood and paper fibers, gnat and trichomes from plant leaves