LABOR SAFETY AND HEALTH INSTITUTE

LSHI

"To assure safe and healthful working conditions for working men and women..."

AN OCCUPATIONAL SAFETY AND HEALTH WORKBOOK

NEW! NEW! NEW!

Special Article: "Coke Ovens: Steel's Big Demon Wins Again"

GUIDE #6: Safety and Health on the Job: Who's at Fault?

1977

$4.00

Printed with the assistance of grants from:

The Norman Foundation, New York
and
Center for Medical Consumers &
Health Care Information, Inc.
410 E. 62nd Street
New York, N.Y. 10021
(212) 752-8558

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

Affiliated with:

Consumer Commission on the
Accreditation of Health Services, Inc.

A NON-PROFIT, TAX-EXEMPT ORGANIZATION.

The Labor Safety and Health Institute is one of the most successful activities of the Consumer Commission. For over two years the LSHI has published factual documents for trade union leaders and their members on the dangerous conditions which all workers face on the job, a description of the Occupational Safety and Health Act, and the strength and weaknesses of federal agencies empowered to enforce its provisions.

Jobs are important to all workers. But more important is a safe job, whether in the plants, factories or business offices found throughout this nation.

Reproduced are articles which reflect the goal of both the Commission and the LSHI: health is a basic right which demands the full support of all Americans and the wholehearted endorsement and enforcement of standards by government. The Commission and LSHI are closely linked by our overriding concern to educate workers - consumers.

Donald Rubin
President,
Consumer Commission on the
Accreditation of Health Services

PREFACE

"As the Occupational Safety and Health Director for District Council 37, American Federation of State, County, and Municipal Employees, which represents over 100,000 public employees in the City of New York, we use these *Guides* and other LSHI materials as valuable tools for education amongst our membership, and in some instances with the City Agency Safety Directors themselves. The combination of local trade union educational materials with occupational health care issues are of particular interest to our union, since we directly relate the activities of our union's health and welfare fund to preventive health care measures. Since occupational health is in essence a preventive medicine program, that gives an important added incentive to the implementation of safe and healthy work practices in the many hazardous occupations in New York."

Charles E. Speiser, Director
Occupational Safety & Health,
District Council 37,
American Federation of State,
County, and Municipal
Employees, New York

"As Director of an occupational health program with a strong labor education component, I believe these *Guides* are a valuable and useful contribution to the occupational safety and health field. In addition, this information has the capability of being useful and beneficial to other health professionals in their understanding about this field."

Donald Whorton, MD, MPH,
Director, Labor Occupational
Health Program, Institute of
Industrial Relations,
University of California,
Berkeley, California

INTRODUCTION

Occupational health and safety are important issues facing professionals and workers alike in the health care system. In the near future, all hospitals should be establishing occupational health services as a regular part of their outpatient departments and emergency rooms.

In addition, health planning agencies should begin to use their powers of review and comment in ensuring that health care facilities begin to offer these important services so that job-related illnesses and injuries can be lessened.

The Labor Safety and Health Institute *Guides* on occupational safety and health offer all of those working in the health care system valuable information concerning occupational safety and health issues and how they can be incorporated into regular health-related programs. They should be read thoroughly and used in medical and public health schools in the training of all health students.

John L. S. Holloman, Jr., MD,
President, New York City
Health and Hospitals
Corporation

FOREWORD

The Labor Safety and Health Institute has published this *WORKBOOK* to be used as a practical resource to medical and public health practitioners, trade union education programs, students of occupational safety and health and others with responsibilities for the administration of occupational safety and health duties.

The Institute was established to fill the gap between trade union safety and health activities and medical and public health programs. The purpose of the *Guides* is to serve as a practical tool in explaining the everyday programs which trade unionists accomplish in uncovering, correcting, and preventing job-related hazards. At the same time, the *Guides* are meant to help medical and public health professionals understand the implications of occupational safety and health in their everyday work.

The *Guides* have been duplicated for distribution by the Student American Medical Association; the American Federation of State, County, and Municipal Employees Union; Rutgers Medical School; Cornell University, New York State School of Industrial and Labor Relations; Columbia University School of Public Health and School of Dentistry; New York University's Committee on Health Politics; the National Safety Council, and many others.

Duplication of materials in this *WORKBOOK* is encouraged with credit being given to the Institute. You're invited to make use of the Institute's library and other resources.

Frank Goldsmith, M.P.H.
Director

January, 1977

Table of Contents

Preface

Charles E. Speiser, Director,
Occupational Safety & Health,
District Council 37, AFSCME, New York

Donald Whorton, MD, MPH, Director,
Labor Occupational Health Program,
University of California

Introduction

John L. S. Holloman, M.D., President,
New York City Health & Hospitals Corporation

Foreword

Labor Safety and Health Institute Guides

#1: An Occupational Safety and Health Library for a Local Union

#2: Occupational Health Services in the Hospital Clinic and Emergency Room

#3: Books, Pamphlets, and Articles for Your OSHA Library

#4: Health Systems Agency: Planning for OSHA

#5: Local Union OSHA Administration

#6: Safety and Health on the Job: Who's at Fault?

Consumer Commission on the Accreditation of Health Services, CCAHS Quarterly

OSHA, A Means To Improve the Health of Americans, Parts 1 and 2, Fall and Winter, 1974-1975

Cancer and Jobs, Summer, 1975

Problems in Standard Setting: Vinyl Chloride and Coke Oven Emissions

"Grim Lessons of the Vinyl Chloride Coverup," New Engineer, November, 1975

"Coke Ovens: Steel's Big Demon Wins Again," New Engineer, January, 1977

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

FRANK GOLDSMITH, Director

GUIDE #1

AN OCCUPATIONAL SAFETY AND HEALTH LIBRARY

FOR A LOCAL UNION

It is essential for local unions to have materials on occupational safety and health on a moments notice. Requests are received from staff and local leadership on many issues which require an immediate response. Usually a request to the International Office of the Union would be in order, since they have a greater capacity to gather facts and information on safety and health issues. However, the immediacy, often, does not allow for any delay.

The purpose of a local union library, therefore, is more functional, with the direction application of materials as a basis for collection of library resources.

There are basically two types of information which a local union should gather: 1) General information which all unions are interested in ;
2) Specific information on safety and health issues directly concerning workers in your local union.

1) General Information

a. Guides to proper use of the Occupational Safety and Health Act;
b. Proper and effective use of Federal and State (if any) inspections;
c. Proper and effective use of the National Institute for Occupational Safety and Health (NIOSH), i.e. "Health Hazard Evaluations", "Criteria Documents", and other NIOSH resources;
d. Subscribing to key national newsletters from other unions, scientific and medical groups, and other groups---which are written for, by and with trade union participation;
e. Clipping and filing of news stories from: newspapers, magazines, and other public media sources --- which informs the general public on workers' safety and health problems.

2) Specific Information

a. Correspondence with key information organizations: The Labor Dept., Nat'l Institute for Occupational Safety and Health (NIOSH), Environmental Protection Agency, etc.;
b. Development of correspondence with key scientific/medical experts who specialize in solving and researching safety and health problems of workers. These experts work on both local and national basis and are sometimes available for meetings, as speakers, if the local unions pays expenses of travel;
c. Development of the local union's own individual reports on the safety and health hazards which occur within the workplaces of the local's membership. One copy should be kept for the local's records; one copy sent to the International Office for their records. This is necessary to establish precedents in the pattern of safety and health problems of the local union.

Cost of Library

The cost of the local union library is more in terms of the time and local union commitment---than in actual finances required. A safety and health committee established by the local union is necessary to:

1. Write the letters;
2. Make the follow-up phone calls;
3. Do the filing and clerical work.

Too often materials are collected and thrown together so that they are not useful. An organized method of collection and filing is required.

It will be necessary to spend around $400 to get the library started, but on a yearly basis only around $200 is required.

Key Publications

Federal Government Publications:

1. U.S. Dept. of Labor, Occupational Safety and Health Administration (OSHA) (Office of Information, Washington, D.C. 20210)

   a. Job Safety and Health (Monthly; $9.00 per year), very valuable;
   b. OSHA Standards, as Reprinted in Federal Rgister, essential;
   c. OSHA Press Releases, mailed to their key contact list.

2. National Institute for Occupational Safety and Health (NIOSH)
(Old Post Office Building, Room 536, Cincinnati, Ohio 45202)

a. "Criteria Documents" on Health Hazardous Substances;
b. Protective Equipment Ratings;
c. Safety and Health Manuals for Particular Hazards & Industries.

These materials from NIOSH, free of charge for one copy.

Individual State Government Publications:

A number of States have occupational safety and health departments in their Industrial Commissioner's Office, in their State Department's of Labor or within their public health departments.

To receive information from both the Federal and State Agencies, the President of the local union should send a formal letter on local union stationery requesting to be informed, through press releases and other mthods, of all relevant safety and health matters. The letter should specifically request to be placed on the Agency mailing list.

Trade Union Publications:

These publications carry a minimum charge of $3-5 to cover the costs of handling and printing, but if your local union has its own newspaper, an exchange of publications is usually sufficient to be sent these key publications. The President of the local union in his letter might request to be sent all back issues which deal with the safety and health problems of that local.

1. Facts and Analysis, Occupational Safety and Health (IUD)
Industrial Union Department, AFL-CIO, 815 16th Street NW
Washington, D.C. 20036

2. Health and Safety Bulletin
Int'l Union of Electrical Workers, 1126 16th Street, NW
Washington, D.C. 20036

3. Lifelines
Oil, Chemical and Atomic Workers, Occupational Health Dept.
PO Box 2812, Denver, Colorado 60201

4. Occupational Safety and Health Newsletter
United Auto Workers, 8000 East Jefferson Avenue
Detroit, Michigan 48214

5. Shield
   Int'l Brotherhood of Teamsters
   25 Louisiana Avenue, Washington, D.C. 20001

6. Spotlight on Health and Safety (IUD)
   Industrial Union Department, AFL-CIO
   815 16th Street, NW, Washington, D.C. 20036

7. UAW-Washington Report
   United Auto Workers
   1125 15th Street NW, Washington, D.C. 20005

8. United Mine Workers Journal (semi-monthly)
   900 15th Street, NW, Washington,D.C. 20005

Other Key Publications

These publications would give the local union library a broader perspective on safety and health issues. With the new discoveries taking place, a union never knows when a substance or chemical it had been using for a long time turns up to be dangerous. These publications would help inform the local union concerning these potential hazards to their membership.

1. Environmental News
   Environmental Proection Agency, Washington, D.C. 20460 (no charge)

2. Occupational Health and Safety Letter (semi-monthly)
   1097 National Press Building, Washington, D.C. 20004 ($75 yr, worth it)

3. Occupational Safety and Health Reporter (weekly or more)
   Bureau of National Affairs, 1231 25th Street NW
   Washington, D.C. 20037 ($400 yearly and worth it if union large enough)

4. OSHA Report. Man and Manager, Inc. (Monthly or more)
   799 Broadway, New York, New York (Insight in Management thinking; $30 yr.)

5. Occupational Hazards (Monthly)
   614 Superior Avenue W, Cleveland Ohio 44113 (There is no charge for this monthly publication; it requires a formal request for Local Union President)

6. Survival Kit (Monthly)
   Industrial Health and Safety Group, Urban Planning Aid,
   639 Mass Avenue, Cambridge, Mass 02139 (Also ask for other pamphlets which they have published, the publication is no charge.)

7. MONITER. (Monthly)
   Occupational Health Project, Institute of Industrial Relations
   University of California, 2521 Channing Way, Berkeley, CA 94720

Other Key Organizations:

These organizations are often very helpful to trade unions. They publish materials occasionally. The Local Union President should send a letter requesting samples of their literature and to be placed on their mailing list. A brief mention should be made of the particular hazard the union is facing, and if the organization has any information pertaining to it.

1. American Conference of Governmental Industrial Hygienists (ACGIH)
   1014 Broadway, Cincinnati, Ohio 45202

2. American Occupational Medical Association (AOMA)
   150 North Wacker Drive, Chicago, Illinois 60606

3. American Public Health Association, Occupational Health Section
   1015 18th Street, NW, Washington, D.C. 20036

4. Chicago Area Committee for Occupational Safety and Health
   Room 508, 542 South Dearborn Street, Chicago, Illinois 60605

5. Health Research Group
   2000 P Street, NW, Suite 708, Washington, D.C. 20014

6. Labor Safety and Health Institute
   381 Park Avenue South, New York, New York 10016

7. National Safety Council
   425 North Michigan, Chicago, Illinois 60611

8. Occupational Health Project, Institute of Industrial Relations
   University of California, 2521 Channing Way, Berkeley, CA 94720

9. School for Workers, University of Wisconsin
   432 North Lake Street, Madison, Wisconsin 53706

10. Society for Occupational and Environmental Health
    c/o 3713 "W" Street, NW, Washington, D.C. 20007

11. Southern Institute for Occupational Health; Box 861; Cayce, S.Carolina 29033

Organization of the Library

The organization of the local union OSHA library must be molded to fit the needs and convenience of the membership. Loose leaf binders are the best way to combine newspapers and pieces of paper (clippings,etc.) Stay away from using file drawers. Each binder must be clearly marked so that members need only go directly to the shelves and NOT THROUGH A CARD FILE.

The library should be placed in a highly accessible part of the union office, and be open during convenient hours. In some locations, the local union might use a local public library for the OSHA Local Union Library. This can be done by asking the public library to reserve a special section.

Suggestion of Shelving Space for Library

1. U.S. Department of Labor, Occupational Safety and Health Administration

   A. Federal Registers, Regulations
   B. Enforcement Notices
   C. Press Releases
   D. Other sections which relate to the Local's Problems

2. National Institute for Occupational Safety and Health

   A. "Criteria Documents"
   B. Protective Equipment Ratings, respirators, masks, etc.
   C. Health and Safety Manuals for Particular Industries & Hazards

3. State Industrial Commissioner, Labor Dept or Other Responsible State Agencies

4. Union Publications

5. Materials from other Key Organizations

6. Publications from other Key Organizations

7. Local Union Safety and Health Cases: grievances, arbitrations, medical test results, industrial hygiene results, lists of chemicals, minutes of safety and health committee meetings

8. The International Union's Materials on Safety and Health

9. Misc.

While its very important to make the materials easily accessible to the members, special efforts should be made to keep the binders, booklets, and other materials in the library. Each piece of material should have a card so that accurate accounting can take place in the event some documents disappear. Generally its easier to replace the document, newspaper, etc, than to try and impose restrictions on library use which usually only discourages membership use of the facilities.

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

Guide #2

FRANK GOLDSMITH, Director

Occupational Health Services in the Hospital Clinics and Emergency Room

Hospital clinics and emergency rooms are missing important opportunities to prevent many illnesses and the spread of disease by not screening their patients for health problems created at work.

Clinics and emergency rooms on a daily basis see countless thousands of patients who are there because of job-related illnesses. A recent, federally funded study of over 1,000 workers in 5 different plants conducted by the University of Washington found that 30% of diseases of the workers were caused by workplace conditions. Other estimates of job-related illnesses are higher.

Very few hospital personnel have been trained to find out if the diseases seen by them are caused on the job and very few hospitals build this into their standard registration and admitting forms. This applies to all types of hospital personnel assigned to clinics and emergency rooms, i.e., nurses, technicians, administrators, para-medics, and doctors. In addition, most workers do not know to tell their doctors that the problem may have been caused by working conditions.

Accidents on the job may also lead to and be the result of occupational illness. For example, a worker overcome by carbon monoxide is more at risk to have an accident. Therefore, careful monitering of accidents must take place.

The incorporation of occupational health services into regular hospital and medical practice will also add qualitatively to existing programs aimed at correcting workplace hazards which are initiated by trade unions, governmental agencies and management.

This situation can be signficantly changed with just a few minor reforms in current hospital procedures.

Affiliated with:

Consumer Commission on the Accreditation of Health Services, Inc.

The Medical History: At the Intake Station

There is a difference between the quick identification of the industrial health problem in an emergency room and the less quick and more comprehensive follow-up and identification in the outpatient medical clinic. The pressures in the emergency room hinder the more effective diagnosis and care which can take place in the clinic.

The in-take clerk or nurse presently takes a brief description of the patient entering the clinic or emergency room. That description usually identifies the patient and the methods of payment for treatment. A brief additional question could be:

> Do you think that your illness is related to your place of work? Please describe how.

If applicable the patient would be directed to an occupational health clinic in the hospital (if there is one) or to a nurse or doctor familiar with occupational safety and health problems. At the very least it would alert medical personnel to possible sources of health problems.

The Medical History: By the Doctor or Nurse

When the patient sees a doctor or nurse the standard hospital questionaire could be amended to include the following questions:

> Do you think the illness you have is caused by the conditions at your work?
> If so, what chemicals or other substances do you now have or have had contact with: carbon monoxide, lead, mercury, asbestos, solvents, others?

This question could be asked more specifically if the hospital kept a record of the major industries in the immediate area and the potential hazards associated with that industry.

Also, the doctor or nurse should ask the work history of the patient:

> Describe your present and past jobs you've had.
> Have you work with or near asbestos, fiberglass, plastics or other chemicals products and substances in the past 25 years?

The patient could be asked to furnish the doctor with a job classification desciption used by the employer.

These questions will assist the doctor or nurse determine the general area of the problem. When job-related problems are found, more precise questionaires can be used to better identify the problem.

Several questionaire and medical history forms are needed to cover all possible problems presented by job-related illnesses.

Information on the Problem

Ideally, a distinct occupational safety and health department in the hospital would contain information on job-related problems. This department is essential in areas where there are heavy concentrations of industry.

This department would immediately answer questions concerning workers' problems or be able to seek answers to these problems. An inquiry from the outpatient clinic or emergency room to the occupational safety and health department can greatly improve the diagnosis and treatment of patients. The availability of this resource, by proper epidemiological collection and study of data, anticipates future problems.

For example, exposure to carbon monoxide can cause immediate health problems, but long range effects can also be anticipated. The doctor or nurse can alert the patient to recognize symptoms of illnesses that may arise.

Clinics and emergency rooms at hospitals without occupational safety and health departments should have a list of phone numbers, i.e., poison control, etc. available to get information on these problems.

See page 5 for additional phone numbers and addresses of government agencies, science and medical laboratories and other places that can furnish the hospital with accurate information.

Preventing Further Job-Related Illnesses

Prevention of job-related illnesses, although a concern to health workers, needs to be moved up the priority list. The treatment of these illnesses is not enough, active prevention programs are needed. This is especially true since the passage of the Occupational Safety and Health Act of 1970 which provides for the legal apparatus to prevent accidents and illnesses.

Once patients have had their illnesses diagnosed and a relationship between the health problems and the job established, the proper law enforcement agency would be contacted to follow-up on the source of work related illnesses. See page 5 for the phone numbers and addresses of these government agencies.

Many hospitals have alert systems to identify and handle poisonings. These alert systems can be broadened to include job-related hazards, i.e., carbon monoxide, lead, mercury, asbestos, etc.

Remember, the Labor Department is in charge of the enforcement of the law, while, the National Institute for Occupational Safety and Health (NIOSH) is responsible for the identification and research of occupational health problems.

Confidentiality

Confidentiality of patient information must be assured when contacting local enforcement agencies.

Permission of the patient must be obtained prior to informing the employer and union representative. When permission is given, the employer and union should be informed immediately.

An effective program to correct workplace hazards requires the participation and cooperation of union, management, and scientific-medical health and safety professionals.

Patient Follow-Up

When the clinic and emergency room have identified a patient's problem as job-related or suspect it as possibly job-related, the patient's file should be tagged for periodic follow-up. This follow-up includes the check to see if the workplace of the affected worker has been corrected and/or if other workers have been affected by the same problem.

This file would be cross-referenced by occupational hazard or disease so that patterns of the disease and hazards can be identified.

Hospitals' Safety and Health Departments*

The passage of the Occupational Safety and Health Act of 1970 has encouraged some hospitals to establish departments of hospital employee health services. A recent NIOSH study has indicated that these departments are very difficient and need a great deal of upgrading where they exist.

Pressure from doctors, nurses and other hospital workers would force hospitals to establish these departments. At the same time the services and resources of these departments would also include information on patient's job-related problems.

Both employee and patient job-related information would be contained in the same department.

This department would also provide for the monitering of hospital medical records of patients in the in-patient facility.

Occupational Health Services Clinic*

The hospital could offer occupational health services to local trade unions and factory by establishing a occupational health clinic in its outpatient department. This outpatient clinic would coordinate its activities with the hospital's safety and health department described above.

A recent article in the Wall Street Journal highlighted a Salem, Mass. hospital's preventive medicine unit occupational health services to local trade unions and employers. This hospital clinic replaced the company doctor and industrial nurse or added an employee service which didn't take place before.

"The hospital is much better than the shop doctor we used to have," declared a leather workers union official. The article continued that the leather factory contains many safety and health hazards including excessive noise levels and various toxic chemicals. The hospital's occupational health services clinic is thus used as a referral unit for keeping track of health effects on workers associated by these hazards.

Both the hospital clinic and department on occupational health would cooperate in organizing briefings and educational staff meetings, and print materials on safety and health problems. This advanced training program would be an invaluable tool in preparing hospital personnel to recognize and treat job-related problems.

The agencies below have professionals who can help in these programs.

Occupational Safety and Health Agencies (in New York City)

Region II, U.S. Department of Labor
Occupational Safety and Health Administration
1515 Broadway
New York, New York 10036; 212-264-9840

Region II, Dept. of Health, Education and Welfare
National Institute for Occupational Safety and Health
26 Federal Plaza
New York, New York 10013; 212-264-2485

Environmental Science Laboratory, Basic Science Building
Mt. Sinai School of Medicine, City University of New York
10 East 102nd Street
New York, New York 10029; 212-650-6174

Poison Control Center
New York City Health Department
125 Worth Street
New York, New York 10013; 212-340-4490

Resource Materials

"Occupational Safety and Health and the Health Care System," Consumer Commission on the Accreditation of Health Services, Quarterly, Fall, 1974; Winter, 1975 (2 Parts).

"Jobs and Cancer," Consumer Commission on the Accreditation of Health Services, Quarterly, Spring, 1975.

"An Occupational Safety and Health Library for a Local Union," Guide #1, Labor Safety and Health Institute.

* These hospital departments and outpatient clinics could be regionalized into multi-hospital programs.

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

Guide #3

FRANK GOLDSMITH, Director

Books, Pamphlets, and Articles For Your OSHA Library

Labor Safety and Health Institute Guide #1 describes how a local union can start an Occupational Safety and Health Library.

Guide #1 explains how to subscribe to publications from safety and health organizations. It shows how a union can participate in the movement for safe and healthful working conditions.

Guide #3 lists books, articles, and pamphlets which contain useful and pertinent information on occupational safety and health.

The cost of starting such a library is below $100.

The contacts made in establishing such a library will be a source of continuing information on occupational safety and health.

Local unions are urged to contribute their own experiences to some of the journals listed in these Guides so other unions can benefit from the information.

You can order Guide #1 by using the order coupon on the last page of this Guide.

Affiliated with:

Consumer Commission on the Accreditation of Health Services, Inc.

BOOKS

The American Worker: An Endangered Species, Franklin Wallick, Ballantine Books, New York, 1972, (Paperback $1.50).

Bitter Wages, Joseph A. Page and Mary-Win O'Brien, Ralph Nader's Study Group Report on Disease and Injury on the Job, Grossman, New York, 1973 (Paperback $1.15). (Grossman Publishers, 625 Madison Avenue, New York, N.Y.10022)

Encyclopedia of Occupational Health and Safety, International Labor Organization, A must for large unions with extensive job-related hazards, Geneva, Switzerland, McGraw-Hill, New York, N.Y., 2 Volumes,1972 ($50 for both).

Expendable Americans, Paul Brodeur, The destruction wrought by asbestos to workers and community residents, Viking Press, 625 Madison Ave., New York, N.Y.10022, 1974, (Paperback $3.45).

Muscle and Blood, Rachel Scott, The massive, hidden agony of industrial slaughter in America, E.P. Dutton, 201 Park Avenue South, New York, N.Y. 10003, 1974 (Hardback $8.95)

One Sunset a Week, George Vecsey, The story of a coalminer, Saturday Review Press, E.P. Dutton & Co., 1974(Hardback $7.95).

A Study of Hazards in the Chemical Industries, Ray Davidson, Public Affairs Press, Washington,D.C., 1970. (Hardback) (Order through Oil,Chemical & Atomic Workers, 1126 16th Street, Washington,D.C. 20036.)

Working, Studs Terkel, People talk about what they do all day and how they feel about what they do, Pantheon, New York, 1974, (Paperback $2.70).

Work in America, Report of a Special Task Force to the Secretary (Eliot Richardson) of Health, Education and Welfare, MIT Press, Cambridge, Mass. 02142, 1973 (Paperback $3.95)

Work is Dangerous To Your Health, Jeanne Stellman, Ph.D. and Susan Daum, M.D., A handbook of health hazards in the workplace and what you can do about them, Vintage Books, Division of Random House, New York, 1973 (Paperback $1.50).

PAMPHLETS

Alliance forSurvival, Barry Commoner, The fight fordecent working conditions and the fight for a decent environment, United Electrical Workers Union, 11 East 51st Street, New York New York 10022, 1972 (25¢).

Health Hazards Manual for Artists, Michael McCann Ph.D., Foundation for the Community of Artists, 32 Union Square East, New York,N.Y. 10003, 1975 ($2.00)

Health Research Group, Division of Public Citizen, 2000 "P" Street, NW, Suite 708, Washington, D.C. 20036, Send for listing of publications, studies, press statements.

Job Health, Safety and You, A manual that explains how you can guarantee your rights under the 1970 Occupational Health and Safety federal law, International Molders and Allied Workers Union, 1225 East McMillan Street, Cincinnati, Ohio 45206.

Journal of Current Social Issues, Contains various useful articles on occupational safety and health, Spring, 1975, United Church Board of Homeland Ministries, 287 Park Avenue South, New York, New York 10010.

Labor Safety and Health Institute, Practical guides to safety health programs in trade unions and public health, 381 Park Avenue South, New York, N.Y. 10016.

Medical Committee for Human Rights---Occupational Health Project, 558 Capp Street, San Francisco, CA 94110. Send for Catalogue.

National Institute for Occupational Safety and Health, Post Office Building, Room 536, Cincinnati, Ohio 45202, Send for list of criteria documents, studies, etc. One copy no charge, quantities small charge.

National Safety Council, 425 North Michigan, Chicago, Illinois 60611, Send for catalogue of information.

Oil, Chemical and Atomic Workers Union, P.O.Box 2812, Denver, Colorado 80201, Series of pamphlets on health effects of dangerous chemicals. Send for samples, small charge for quantities.

Oil Refinery Health and Safety Hazards---Their Causes and the Struggle to End Them, Richard Engler, Philadelphia Area Project on Occupational Safety and Health, 42 East Logan Street, Philadelphia, Pa. 19144. ($3.00 for local unions; $25.00 for others)

School forWorkers, Universityof Wisconsin, 432 North Lake, Madison, Wisconsin 53706, Assorted practical pamphlets on how to implement the OSHA legislation. Send for samples small charge for quantities.

U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C. 20210. Send for catalogue of pamphlets. Single copies no charge, quantities small charge.

Urban Planning Aid, Occupational Health Project, 639 Mass Avenue Cambridge, Mass 02139, Assorted Pamphlets on key safety and health issues. Send for catalogue, single copies no charge, quantities small charge.

What Everyone Should Know About Mental Health, American Public Health Association, 1015 18th Street, NW, Washington, D.C. 20036 (20¢).

ARTICLES

"A Bookshelf on Occupational Safety and Health," Bertram Carnow, MD, et.al., American Journal of Public Health, APHA, 1015 18th Street, NW, Washington,D.C. 20036.

"Air Pollution Effects On Inner City Residents," Bertram Carnow, University of Illinois School of Public Health, PO Box 6998, Chicago, Illinois 60680.

"Enemies on the Dust, Occupational Respiratory Diseases," Agnes Fahey, National TB and Respiratory Diseases Association Bulletin, June, 1972, N.Y. Lung Association, 50 East 26th Street, New York,New York 10010.

"Can We Afford the Occupational Safety and Health Act?" Symposium Transcription, New York Bar Association, Anthony Mazzocchi, Benjamin Mintz, William White, Health Politics, A Quarterly Bulletin, New York University and the Committee on Health Politics, Spring, 1975, New York University, Washington Square, New York, N.Y.

"The Case for Federal Injury Standards," James O'Brien, AFL-CIO Social Security Department, 815-16th Street, NW, Washington, D.C. 20036.

"Curtailing Municipal Occupational Hazards Through Union-Management Cooperation," Charles Speiser, Public Works, December, 1975,District Council 37, AFSCME,140Park Pl,NYC,NY.

"A Compelling Intuition: Annals of Chemistry," Paul Brodeur, Job-related health hazards of anesthesia gases, New Yorker Magazine, November 24, 1975, 23 West 43rd Street, New York,New York 10036.

"Gauley Bridge: The Emancipation Proclamation Revisited," Eric Frumin, Silicosis dusts diseases described, Textile Workers Union of America, 99 University Place, New York,New York 10003.

"Health Maintenance Organizations andOccupational Medicine," Edward Dolinsky, Bulletin of New York Academy of Medicine,1974.

"A Job Health and Safety Program on a Limited Budget," Daniel Berman, MCHR Occupational Health Project, 558 Capp Street, San Francisco, CA 94110.

"Lessons on the Vinyl Chloride Cover-up," Frank Goldsmith, New Engineer, November, 1975, 730 Third Avenue, New York, New York 10017.

"Materials on Medical Malpractice Against Industrial Physicians," MCHR Occupational Health Project (address above).

"Occupational Cancer," Phyllis Lehmann, Job Safety and Health Magazine, July, 1975, U.S. Department of Labor, OSHA, Washington, D.C. 20210.

"Occupational Diseases and Public Policy: New Challenges to Corporate Control," Daniel Berman & Donald Whorton, MCHR Occupational Health Project (address above).

"Occupational Health: A Discipline in Search of a Mission," Loren Kerr, American Journal of Public Health, APHA, 1015 - 18th Street, NW, Washington, D.C. 20036.

"Occupational Health: A Labor View," Jack Sheehan, United Steelworkers of America, 815-16th Street, NW, Washington, DC 20036.

"Occupational Health and Safety and the Health Care System," Frank Goldsmith, Health Politics, A Quarterly Bulletin, New York University and the Committee on Health Politics, Spring, 1975, NYU, Washington Sqaure, New York, N.Y.

"OSHA: Years of Frustration," AFL-CIO Executive Council Statement, February, 1975, American Federationist, April-May, 1975, AFL-CIO, 815-16th Street, NW, Washington, D.C. 20036.

"A Perspective on Environmental Health in the USSR," Roger I. Glass, M.D., Archives of Environmental Health, 625 Michigan Avenue, Chicago, Illinois, August, 1975.

"Profit in Lint: The Dust in Willy's Lungs," Fran Lynn, The Nation, February 21, 1975, 333 6th Avenue, New York, N.Y.

"The Reproductive Hazards of Work," Andrea M. Hricko, Labor Occupational Health Project, University of California, 2521 Channing Way, Berkeley, CA 94720.

"A Symposium on Occupational Hazards to the Lung," New York Lung Association, 50 East 26th Street, New York, New York 10010, October 29, 1973.

"Third Annual McGraw-Hill Survey of Investment in Employee Safety andHealth," Economics Department, McGraw-Hill, 1221 6th Avenue, New York, N.Y. 10020, yearly $6.00.

"Union Experiences in Occupational Health and Health Care Delivery," Jack Suarez, Int'l Union of Electrical Workers, 1126 - 16th Street NW, Washington, D.C. 20036.

"Women's Occupational Health: The Rise and Fall of a Research Issue," Andrea M. Hricko and Cora Bagley Marrett, Labor Occupational Health Project, University of California, 2521 Channing Way, Berkeley, CA 94720.

"Women Workers and Job Health Hazards," Phyllis Lehmann, Job Safety and Health Magazine, April, 1974, U.S. Department of Labor, OSHA, Washington, D.C. 20210.

Workers' Compensation articles and pamphlets, AFL-CIO Social Security Department, 815-16th Street, NW, Washington, D.C. 20036.

How to Receive Books, Pamphlets and Articles

The BOOKS may be bought or ordered through a local bookstore or ordered through the publisher. For quantities the local union or educational institution may contact the publisher for a discount.

The PAMPHLETS can be ordered directly from the organizations publishing them. Usually one copy is available at no cost, with quantities at a small charge. A letter from the local union president may help this process.

The ARTICLES can be tracked down through your local librarian; by writing directly to the publisher; or by writing the journal which published it. These articles can usually be reproduced by the local union by receiving permission from the author, publisher or organization.

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

Guide #4

FRANK GOLDSMITH, Director

Health Systems Agencies: Planning for OSHA

Federal Law (PL93-641) has mandated that every geographic region in the United States plan for health care in order to improve the health of its residents.

Specifically the law is meant to:

> "...increase accessibility, acceptability, continuity and quality of health services; to restrain increases in the cost of providing health services and to prevent unnecessary duplication of health resources..."

The failure of the current health care system to provide these fundamental health care goals through the Comprehensive Health Planning Agencies and the Regional Medical Programs has resulted in this new attempt: Health Systems Agencies (HSA).

Consumers and to some extent providers of health care services are providing the impetus in making sure that this new attempt at planning health care delivery benefits the patients.

The Bureau of Health Planning and Resource Development of the Dept. of Health Education and Welfare is in charge of HSA and is supposed to moniter these regional HSAs to insure some national system of health standards planning takes place rather than hundreds of different approaches.

Occupational and Environmental Health

Federal guidelines make provisions for the incorporation of environmental health planning as a basic program item to be included in each regional planning system:

> "(8) The promotion of activities for the prevention of disease, including studies of nutritional and environmental factors affecting health and the provision of preventive health care services."

This is #8 on a priority list of ten as listed in the HSA law.

(This Guide #4 is being simultaneously published as the Spring, 1976, Quarterly, of the Consumer Commission.)

Affiliated with:

Consumer Commission on the Accreditation of Health Services, Inc.

This provision was minimally provided for under previous planning attempts (CHPA, RMP, etc.) In more advanced environmental planning programs, the issue of occupational health and safety was incorporated to some extent. These environmentalist planners understood that incorporating for OSHA was a "first line of defense" against environmental pollution. Stop the hazard at the workplace and it won't reach the outside environment.

30% of Workers' Illnesses Are Job-Related

HSA regional planning programs have the prevention of illness and disease as a prime agenda item. Planning which combines the above objectives should result in a population which is healthier and requires less medical and hospital care.

A recent report stated that at least 30% of workers' illnesses are caused by the workplace (See Guide #2). Thus cleaning up the workplace will prevent many of those illnesses and in the long run make the environment safer and healthier for everyone.

Consequently many medical and public health professionals supported the passage of the Occupational Safety and Health Act of 1970 precisely because they envisioned the enforcement of federal safety and health standards set by OSHA as preventing illnesses and the spread of disease. The recent revelations that over 75% of cancers are job-related has highly dramatized that need.

Labor's Stake in Health Planning

Workers and their unions stand to gain the most with HSA involvement in OSHA activities. Labor has extensive experience in providing health benefits to its membership, their families and in lobbying for health legislation which benefits the whole community.

In New York City alone over 4 million people receive their health care paid for by their union's health and welfare fund. Generally union negotiated health benefits exceed the standard commercial (private, for-profit insurance companies) and Blue Cross/Blue Shield, Group Health Inc. coverages. Additional benefits as dental, optical and mental health coverage are enjoyed by union members and their families because of the skill and expertise of union collective bargaining.

Labor's stake in the planning of health care delivery in New York City and elsewhere requires its leadership to make sure that union negotiated benefits are delivered in quality institutions accountable to the public.

The general public will also benefit by labor's involvement in HSAs because labor's demands for greater accountability and a more rational health care planning system will benefit everyone.

The forceful presence of labor in the HSA can ensure that OSHA planning and monitering will be fully implemented. Unless trade union leadership speaks up on OSHA, this important legislation will not be considered a priority; adequate staff and funds will not be set aside for OSHA programs.

HSA Guidelines and OSHA Staffing Committments

While the need for planning for occupational safety and health is clear, labor and medical/scientific professionals must present their case for the incorporation of safety and health into the HSA agenda. If staff is to be provided for environmental and occupational health planning, then the madate must be clear in the HSA's preamble and program development.

Every HSA sets its own By-laws and program initiatives. Therefore, prior to any decentralized planning, regional HSAs must state OSHA planning programs in their guidelines for planning.

Planning Guidelines: 3 Initial Functions

Basic planning takes place on the local, grass roots level. These three basic functions are required for a sound OSHA program:

1) The first function would be the inventory of all health facilities including hospitals, neighborhood health centers, mental health centers, free standing clinics, etc. The main purpose would be to determine the extent to which, if at all, occupational health services are offered, data on job-related illnesses collected and the existence of other OSHA programs. (See Guide #2 for an explanation of each of these OSHA health related functions.)

2) The second function of this local planning board must be an inventory of all factories in the service area. This is in line with HSA legal guidelines as stated in the law:

> "(F) the environmental and occupational exposure factors affecting immediate and long-term health conditions" must be determined.

Thus the HSA must list each factory by type of business conducted; materials produced; safety and health hazards present; number of workers (with demographic characteristics, e.g., race, age, and sex, all essential for epidemiological analysis.)

3) The third function would be to inventory all medical and health-related schools and educational programs to see if occupational safety and health is included in the curriculum available to students.

This series of inventories would then be pulled together on a regional (borough) basis to begin to establish patterns of job-related illnesses, available health facilities which provide occupational health services and OSHA educational opportunities.

The City-wide HSA can then utilize these regional inventories to compile a city-wide profile of these three areas of OSHA planning.

Implementation of Planning Results

Through these efforts there can be an early recognition of job-related diseases followed by the creation of a comprehensive plan for prevention.

Providers of health care can be mobilized to head off these job-related health and safety problems well before they become major public health hazards. This is fully in line with HSA legislation:

> "Section 1602. (E) to project for medical facilities which, alone or in conjunction with other facilities, will provide comprehensive health care, including outpatient and preventive care as well as hospitalization;".

This inventory program can also be used by medical, public health, allied health science schools and trade union education programs to develop curriculum which augments the existing community and preventive medicine programs.

The U.S. Labor Department's Occupational Safety and Health Administration's regional offices would find this information invaluable in helping in their enforcement programs. In addition, the National Institute for Occupational Safety and Health (NIOSH) is entrusted under OSHA legislation to research job-related health hazards, can use this information as it continues to develop "criteria documents" which are designed to establish safe and healthful limits on industrial and industrial-type exposures to workers.

Annual Asbestos Screening for Workers Now Mandatory

A key example of OSHA planning is the federal requirement that workers exposure to asbestos must receive annual medical examinations. According to the U.S. Labor Department:

> "The Review Commission (OSHA's highest judicial body) has held that employers must provide annual medical examinations to employees exposed to any concentration of asbestos, no matter how small the amount." (emphasis added)

The enforcement of this federal law will require immediate action by HSAs to insure that medical facilities are available for these worker screening programs. In addition educational institutions should be encouraged to inform health professionals and all health related workers of this responsibility. The local inventory of factory exposures will uncover plants where workers are exposed to asbestos.

This new law now only covers asbestos, but this is just the beginning as workers, their unions and medical/scientific professionals press for the protection of workers against job-related hazards.

HSA Recommendation and Comment Powers

The implementation of inventory findings, OSHA regulations like the one concerning workers annual medical examinations cited above and the matching of job-related hazards stemming from factories in the HSA area with local medical and hospital services can take place within the HSA powers of recommendation and comment.

These review and comment responsibilities cover both new and old facilities.

HSA boards review all requests for expansion, modernization and the construction of new services and equipment.

For existing facilities there is a "appropriateness" review. Within the first 3 years after the establishment of the HSA there is a 3-Year Review of all existing health and hospital facilities. After this initial review there is a further review every five years thereafter. Both of these reports are sent to the State Health Department and made available to the public. The recommendations from these 3 and 5 year reviews become part of the overall State Planning Program. Third-party carriers, i.e., Blue Cross/Blue Shield, Group Health Inc. (GHI), must abide by these health plans.

In both of these reviews, old and new facilities, occupational health services, collection of job-related demographic health data and other occupational health information can be fully incorporated.

Direction for OSHA Planning

Each health planning board (local, regional, national) must have advocates of occupational safety and health interests represented on these boards. These may be medical, public health and scientific and management representatives, but there must be worker and trade union representatives on each board who fully understand the importance of occupationally related illnesses and their prevention.

These HSA board representatives will closely moniter the HSA staff as they inventory and plan for OSHA. In addition, these board members will insure the establishment of planning board OSHA committees which will help HSA staff in conducting the inventory.

HSA staff may have difficulty in obtaining the release of information from the factory manager on job-related health and safety hazards faced by workers. These corporate personnel may need reminding that federal HSA needs their cooperation and requires the furnishing of epidemiological in order to assess the planning needs of the community. Release of individual worker medical information requires worker permission to guard confidentiality.

The support which planning board members can give staff would be invaluable and may be the difference between a closed or open door. The study which found that 30% of workers' illnesses were work related required help from NIOSH and OSHA to open factory doors and corporate data information. OSHA law requires corporate cooperation, however the provisions are sometimes difficult to enforce.

Is There Still Time?

Regional offices of the Department of Health, Education and Welfare are still considering HSA sponsor applicants. These HSAs are not automatically established by the City or State government, although each have considerable influence on which sponsor will become the designee in their area.

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

Guide #5

FRANK GOLDSMITH, Director

Local Union OSHA Organization

Individual shop stewards and committees of trade unions constitute the key form through which safety and health programs are implemented at the workplace level. Regardless of the federal standards, U.S. Labor Department enforcement programs, management programs or even national union programs, workers, themselves, and their local union forms, must be ready to take action to protect their own lives.

In the unorganized shop, that form is usually of an ad-hoc nature in which management is appealed to for help and campaigns are organized among outside publicly interested people to clean up the workplace. These efforts along with other economic conditions often lead to the organization of a trade union.

In an organized shop, two levels are in charge of safety and health activities. The first are individual shop stewards; the second, are committees of trade unions with the same responsibilities.

Shop Stewards

In most organized shops, shop stewards are the grass roots elected union leaders who maintain the closest working relationships with the membership. They are in constant contact with the company's first line of authority, the shop foreman. In some union the business agent is assigned the role of shop steward.

Shop stewards carry a heavy load of responsibilities. This sometimes necessitates the appointing or electing of an assistant shop steward to assist on particular problems. An assistant shop steward for safety and health is usually a necessity in shops with active safety and health programs.

NOTE See Page 5 for additions to Guide #3's list of Books and Pamphlets.

Affiliated with:

Consumer Commission on the Accreditation of Health Services, Inc.

A NON-PROFIT, TAX-EXEMPT ORGANIZATION.

The processing of members' grievances and the setting of work rules often demands special attention on complicated issues involving safety and health. Thus an over work loaded shop steward is of little help.

The shop steward usually works closely with committees of the union and reports regularly at union membership meetings and through the local union newsletter.

Shop Committees

Every local union has a grievance committee whose responsibility is to process all grievances and to insure that proper administration of contractual affairs takes place. A sub-committee of the grievance committee, a sub-committee on job safety and health, could handle all such worker OSHA complaints.

Some unions have negotiated contract language to establish safety and health committees which have their own grievance procedures. This is necessary due to the growing legal complications with OSHA legislation and subsequent Labor Dept. rulings as well as the increasing number of arbitration awards which establish new quasi-legal procedures. However, the union should retain the right to process safety and health grievances through regular union grievance procedures.

To be effective these shop committees and the shop stewards must have the active involvement of the total union membership. This is made possible by reporting to union membership meetings and through union newsletters.

Hazard Detection

A very practical program for any local union is the monitoring of hazards in the workplace. With a small investment of money the following equipment is invaluable: Noise Meter ($125), to keep track of noise levels above 80 dBA; Light Meter ($100), to monitor for over or under light exposure and glare areas; Camera ($75), pictures of hazards are valuable in documentation; Industrial Bulb Thermometer ($100), to document excessive heat or cold work areas. These pieces of equipment can be easily read and used in the workplace as part of a union safety and health prevention program. They can be used to serve as a check on company findings. Air quality monitoring is more difficult, but newly developed equipment has made this possible. This will require some outside technical help, at least in the initial steps.

The union committee should also review the health records of its health fund. Records of illnesses and deaths of members, by job title, can often give an indication of the presence of workplace dangers. The union health plan administrator can help in this review. Added questions on union health plan forms can document more job-related health data.

The committee can conduct its own survey of the membership on the incidence of illnesses and accidents in the shop and then correlate findings with the findings taken in the monitoring survey of the shop.

All worker health records must be held in strict confidentiality.

Hazard Verification

Sometimes the presenting of hazard evidence to the company will bring immediate corrective action. But, the union should be prepared to offer verification of its findings. This can often be done by comparing union results with company results. Companies may be willing to co-operate prior to the union consulting with federal agencies.

If these routes are not possible, then the union should consult with the National Institute for Occupational Safety and Health (NIOSH) to substantiate its findings concerning workplace hazards and worker illnesses and deaths. A "Health Hazard Evaluation" can be requested of NIOSH by the union without employer agreement. This does not constitute an inspection and will not result in any citations.

Once verified, the union must then decide on the next course of action. At this point, if not previously done, the entire union membership must be brought up to date on the hazards being uncovered and the risk being faced by the whole membership. This should be done at the union membership meeting or through newsletter bulletins.

Administration of Hazard Correction

Two roads can be travelled at the same time.

The first, would be filing a grievance with the company on the hazard in line with the working conditions clause of the contract contained in just about every labor contract, or the union might initiate action under specially negotiated contract safety and health language.

The second, would be filing a complaint with the Occupational Safety and Health Administration (OSHAdm.). The OSHAdm. compliance officer should then appear unannounced at the plant gate within a couple of weeks (shorter periods are possible under the "imminent danger" provision of the OSHAct). The shop steward, shop committee or union president should accompany the OSHA inspector on the "walk around" and subsequent documentation of workplace hazards. The individual worker who files the complaint can also accompany the OSHA inspector. Any citations must be properly monitored along with subsequent assessment of penalties and posting of violations. The union must make sure that a proper OSHA inspection are followed. International union offices have information on the proper procedures and also helpful hints on the "walk around" and other documentation requirements.

Correcting the Hazard

The goal of all safety and health programs is the correction of hazards.

Often the company will issue personal protective equipment such as hard hats, cotton "surgical" face masks or sometimes a respirator or safety shoes. But, this is not enough. NIOSH criteria documents and OSHAdm. standards state specifically that this personal protective equipment can only be used on a temporary basis. The conditions of work, i.e., machinery, etc., must be corrected so that workers need not wear any protective equipment to be safe. All through these processes, the union must keep an accurate ledger of all hazards, the actions taken by the union and the programs initiated by the company. This ledger is an invaluable tool in defending the rights of workers.

Labor Education

Labor Safety and Health Institute (LSHI) Guides #1 and #3 state inexpensive, simple methods and materials which can be used to inform the union membership on safety and health problems. This kind of educational program for the membership is sometimes a pre-requisite to confronting the company on hazards. Internal union education classes are essential. These should augment a local union's meetings or special sessions can be called by the safety and health committee. Shop steward training is a rather common program, however, such training often doesn't contain safety and health information. A minor adjustment in the curriculum for shop stewards can help make stewards equipped to handle job-related health hazard grievances.

Medical & Health Resources

LSHI Guides #2 and #4 indicate that hospitals and health planning agencies are beginning to undertake their responsibilities to eliminate job-related illnesses and disease. These resources are invaluable to the local union wishing to document health hazards to the company. In addition, of course, the rehabilitation of the injured and ill workers must take place within institutions which understand job-related problems. Formal relationships can be developed between the union health fund and hospitals which are used frequently by workers in the union.

Authority of Shop Steward and Union Committees

The mere establishment of a union mechanism with responsibilities in safety and health, while an important step, does not guarantee a safe workplace. These committees must have authority which comes from negotiated contract language and the willingness of individual workers and the entire membership to stand behind its safety and health programs. While it's ultimately in the interest of management to share authority on safety and health matters with workers and their union, very few companies are willing to participate in joint labor-management committees which really share authority. Union constitutional by-laws are also valuable in attempting to assert workers' rights at the workplace.

Cost of Corrective Actions

The OSHAct was passed, "To assure safe and healthful working conditions for working men and women..." No mention was made of the cost of such corrective action. The OSHAct didn't say,"only if the companies can afford it." Workers and their unions are well aware that making the workplace safe will cost some money and that there is an unwillingness by companies to invest money in such corrective programs. However, corporate unwillingness to invest can be changed by workers and their unions presenting evidence of the danger of workplace hazards combined with the above union administrative strategies. The advocacy role of the OSHAdm. in protecting the rights of workers and the legal provisions of the OSHAct is essential. However, the use of traditional union actions may still be necessary to bring about a corporate change of heart and get the workplace to be safe and healthful.

Additional Books and Pamphlets for the Local Union Library (Guide #3)

Crisis in the Workplace, Occupational Disease and Injuries, Nicholas A. Ashford, MIT Press, Cambridge, Mass 02139, 1976, (Hardback $16.95).

Help for the Working Wounded, Thomas Mancuso, MD, International Association of Machinists, 909 Machinist Building, Washington, D.C. 20036, 1976 (Paperback $1.00).

Working for Your Life: A Woman's Guide to Job Health Hazards, Andrea Hricko with Melanie Brunt, Labor Occupational Health Program, Univ. of California, and Public Citizen's Health Research Group, 2521 Channing Way, Berkeley, CA 94720, 1976, (Paperback $5.00).

"California Negotiated Clauses for Occupational Health & Safety," Labor Occupational Health Project, University of California, 2521 Channing Way, Berkeley, CA 94720, 1976 (Pamphlet $2.00).

If LSHI Guide readers know of any other books, pamphlets or articles which would be interest to trade union and community health activists, please forward them to our Office for inclusion in the next Guide.

LABOR SAFETY AND HEALTH INSTITUTE

381 Park Avenue South (27th Street)
New York, New York 10016
212-689-8959

"To assure safe and healthful working conditions for working men and women..."

Guide #6

FRANK GOLDSMITH, Director

Safety and Health on the Job: Who's At Fault?

Myths and Reality

Management used to tell workers: If you join a union the factory will have to close. If you join a union the less qualified workers will stop you from advancing. If you join a union....

Today, in the area of job safety and health, the old anti-labor management line has a few new words, but the same old tune. Management has revitalized the old anti-union myths to fit modern times. The new lines are: If you demand a safer and healthier workplace we'll be forced to close the plant; the "accident prone worker" and the worker who seems to get ill more than others will have to go! If you demand a safe and healthy workplace....

Myth #1: The "Accident Prone" Worker

Management likes to place the responsibility of workplace accidents on the "accident prone" worker. While workers occasionally misjudge a situation or because of inadequate working conditions err and cause accidents, the fact is that most serious job-related accidents are caused by conditions controlled by management. Over the years safety engineers hired by industry and some corporate leaders, notably those of the steel industry, have maintained that only five to fifteen percent of accidents at the workplace are caused by working conditions. They maintain that the remaining 85 percent of the accidents which involve serious injury or death are the fault of employees, first line supervisors, and sub-contractors who work in the factory. The "unsafe acts" of these workers has led to the so-called "accident prone" employee myth. This takes the focus of the cause of workplace accidents from the dangerous working conditions and machines and places it on the backs of the workers who have more than one accident.

Employers have argued that the federal Occupational Safety and Health Act (OSHA) while preventing a few accidents really isn't worth the time and money since OSHA only addresses a small percent of the causes of accidents and illnesses at the workplace.

Accident Prone Worker Myth Falls Down

The accident prone worker myth has been laid to rest by the first objective study to determine the exact causes of job-related accidents. A 1975 University of Wisconsin study found that only 26 to 35 percent of job-related accidents were caused by workers' unsafe acts; while the conditions of work controlled entirely by management were responsible for 54 to 58 percent of job-related accidents or twice the amount caused by workers.

Thus electrical hazards, storage of chemicals, the protective guards on machines and other safety problems require immediate correction by management. The education of workers on the prevention of accidents and illness at the workplace is only meaningful after management has made the workplace safe.

Job-Related Illness: A Greater Problem Than Accidents

The occupational accident has received more publicity than the job-related illness. The coal mine disasters are real and filled with an immediate emotional response. Yet the coal miner who contracts black lung disease is more easily forgotten.

Myth #2: "Life Styles" or Eat Too Much - Drink Too Much....

Since the passage of the OSHAct, occupational illness has received increasing attention. As the relationships between poor health and job conditions became better known, employers sought to discount these relationships by placing the blame on the workers' "life styles."

Management has charged with an almost religious fervor that workers smoke too much, drink too much and slept too little. The one life-style element not considered was the job...the place where workers spend almost 50 percent of their waking hours. Many employers now reluctantly acknowledge that aarbon monoxide, lead, aniline dyes, asbestos, vinyl chloride and other toxic substances found in the workplace can be factors causing worker illness and death. But, the "life styles" myth is perpetuated so employers can avoid their responsibilities while placingthe primary cause of illness on workers.

Coal, Asbestos, Carbon Monoxide vs. Food, Drink and Sleep

Coal mine operators countered every effort to make the mining process as safe as possible. When workers became ill due to workplace hazards, the operators dodged any responsibility to provide benefits. The operators rationale: coal miners smoked too many cigarettes, drank too much alcohol and slept too little.

Coal miners and their union refused to accept that logic. The miners knew what the cost of working in a coal mine meant to too many of them: black lung disease. The miners and their union led a struggle to make the mines safer and when the inevitable struck: to have reasonable benefits provided. The struggle culminated in the Coal Mine Health and Safety Act of 1969. This Act is forcing changes in coal mining operations that makes the mines safer for workers and

provides benefits to miners struck by dreaded black lung disease. The "life style" myth was conquered by miners who spend most of their lives in the bowels of the earth.

However, of the 90,000 black lung applications received by the Labor Department each year, only 3,000 are approved. And, the coal companies, not satisfied with that ratio, have contested the payment of 97 percent of the approved payments.

A similar struggle was waged by workers in contact with asbestos. Researchers, led by Dr. Irving Selikoff (Mt. Sinai School of Medicine), identified asbestos as a cause of many respiratory diseases, cancer and other illnesses not formerly identified as being work-related.

The New York City bridge and tunnel officers are constantly exposed to abnormally high levels of carbon monoxide expelled by vehicular traffic. These workers used St. Vincent Hospital services to document the cause and effect of excess carbon monoxide on their health, and that the exposure to high levels of carbon monoxide and other air pollutants was the primary cause of their respiratory problems and heart attacks. The claim of management that these workers' illnesses were caused by excessive cigarette smoking was proven wrong.

Workers handling vinyl chloride and other toxic substances which attack the liver and bladder have had their illnesses blamed on their life styles, that is, on their alleged excessive drinking of alcohol. These workers have repudiated these malicious charges of management by securing scientific medical data which showed that toxic substances at the workplace are the primary cause of their liver and bladder illnesses.

When management assertions are left unchallenged, then the health problems of workers are thought to be caused by factors not related to the workplace. When challenged, conditions at the workplace often become the primary cause of a significant number of diseases, illnesses, and deaths. Workers and their unions have to document the facts so that they can wage a successful fight for decent working conditions. The alternative is not a job for a living, but a job that may bring an untimely death.

Cancer: Killer at Work

Until a few years ago, the causes of cancer were unknown. Americans were led to believe it was genetics, a virus, a communicable disease. Cancer patients are discriminated against as are their offspring; and both experience guilt and shame because of the disease.

Yet, studies of the causes of illness and deaths of workers show that many cancer deaths can be traced back to work conditions. Reports indicate that 25 percent of all cancers are caused by conditions at work.

It is now generally agreed by U.S. National Cancer Institute, the Internatinal Agency for Research on Cancer, and other prestigious cancer institutes and professionals that about 85 percent of all cancers are related to environmental and occupational hazards.

Dr. Umberto Saffioti, a U.S. cancer expert has stated,

> "Cancer---in the last quarter of the twentieth century ---can be considered a 'social disease,' a disease whose causes and control are rooted in the technology and economy of our society. The prevention of cancer is largely an ATTAINABLE goal...." (emphasis in original)

Study Shows Most Illnesses are Job-Related

Thus the myth that the life style of workers is the main cause of many illnesses is being rapidly replaced by factual data which shows that the workplace is dangerous. The only scientific attempt to identify the extent to which workers' illnesses stem from their jobs was done by the University of Washington. That study of 600 employees working at six different plants found that 30 percent of the workers' illnesses were job-related and another 30 percent showed a strong correlation between the illness and the workplace as its cause.

But, the medical records maintained by the employer and logs of workers' compensation cases showed only three percent of these illnesses as being work-related.

Workers' Compensation: Must Expand to Include Illnesses

Workers' compensation programs have already accepted the principle that workers hurt on the job deserve workers' compensation awards. But, the concept of job-related illness and disease has not been fixed in compensation programs. Proposed federal workers' compensation legislation does not establish that principle and therefore is deficient because it fails to correct a major problem facing workers: just, equitable and speedy compensation for loss of function and income when disabled because of a work-related condition.

John F. Burton, staff director of the National Commission on Workers' Compensation has recently said,

> "...the challenge of providing workable coverage of work-related diseases has not been successfully met in any of the federal standards bills (for workers' compensation) introduced to date."

The failure of legislators to require workers' compensation boards to establish regulations and procedures to determine when the primary cause of disability, illness, and loss of pay are related to unsafe conditions at the workplace is major drawback to a preventive safety and health program. But, the continuing revelations of the dangers of asbestos, vinyl chloride, kepone, and other toxic agents; excessive noise levels; exposure to harmful vapors, etc. will force changes as the public and the workforce become more familier with the true causes of their illness, disability and premature death.

Dr. Lorin Kerr, Director, Dept. of Occupational Health, United Mine Workers of America, recently pointed out that,

"Management has consistently lobbied against improvements of workers' compensation and company-oriented physicians have been reluctant to recognize or diagnose occupational disease for fear of increasing corporate costs."

Job Death Body Count Grows

Job-related accidental death estimates range from 14,000 to 25,000 yearly. These deaths are caused by conditions at the workplace that are under the sole control of management. Job-related illnesses cause over 100,000 deaths each year according to the Dept. of Health, Education, and Welfare. These deaths are also caused by conditions under the sole control of management. And, based on the recent University of Washington study these figures are probably underestimated.

Myth #3: "Bottom Line": Clean Up Means Close Up

Once workers stop believing in the myths of the unsafe "accident prone" worker and the "life style" illnesses , another myth must be hurdled. This myth is the "bottom line" assertion of employers. This myth directly confronts what workers' believe to be their immediate self interest. The bottom line myth states that if workers demand safer and healthier working conditions, the employer will be forced to close the plant. The opposite is the real truth.

The Environmental Protection Agency in the only exhaustive study on this job loss issue found that while environmental laws may have caused the closing of a few plants employing about 13,900 workers, these same laws generated almost 125,000. And, there was no proof that these plants weren't slated for closing for other financial reasons, i.e., taxes, company policy, consolidation, etc.

Russell Train, former EPA Director, added that for each billion dollars spent in the federal $18 billion waste water treatment construction program, 70,000 jobs were created. The demand for clean water creates jobs and stops layoffs.

The widespread layoffs of workers in cities throughout the country, and in New York City in particular, have placed technical personnel responsible for the monitoring of air quality and related environmental conditions on the unemployment lines. For example, the New York City Dept. of Air Resources' staff has been reduced from 425 to 287 in a period in which air monitoring and enforcement staff should've been doubled. Similarly, at the workplace maintenance workers in city agencies and private establishments are the first to be fired when the employer is looking to cut down on expenses. These maintenance workers are often entrusted with housekeeping and related jobs that make a workplace a little safer and healthier. Here the fight against layoffs and for stronger enforcement of environmental and occupational regulations leads to additional jobs.

The Labor Department's Inflationary Impact Statement outlining proposed federal standards on worker exposure to coke oven emissions in the steel industry stated that it would require the hiring of 5,000 manual

and technical workers in addition to an existing coke plant workforce of 15,000 workers. The final federal standards for emission monitoring, although weak, will create more jobs at the coke plant.

Each federal standard, promulgated or proposed, on toxic substances or safety hazards will by necessity require the hiring of technical and maintenance employees to monitor and correct workplace hazards.

This combination of environmental and occupational laws are often inseparable and both will create meaningful jobs if they are strictly enforced. Federal job training programs should be utilized to keep employees armed with up to date work skills.

Order Coupon

The Labor Safety and Health Institute Guides and Consumer Commission CCAHS Quarterlies are available upon request at $1.00 per copy.

Subscribers to the Labor Safety and Health Institute are entitled to future Guides at no extra charge. Membership is $10 per year. Contributions are tax deductible.

Name .....

Organization/Union .....

Address (Mailing).....

.....

Phone Numbers (.....).....

Materials Available ($1.00 each)

1. Guide #1: OSHA Local Union Library .....
2. Guide #2: Occupational Health Services .....
3. Guide #3: OSHA Bibliography .....
4. Guide #4: Health Planning and OSHA .....
5. Guide #5: Union OSHA Administration .....
6. Guide #6: Job Hazards: Who's At Fault? .....
7. CCAHS Quarterly: OSHA & Health Care .....
8. CCAHS Quarterly: Cancer & Jobs .....

LSHI Workbook ($4.00) .....

Labor Safety and Health Institute
381 Park Avenue South
New York, New York 10016
212-689-8959

CONSUMER COMMISSION ON THE ACCREDITATION OF HEALTH SERVICES

CCAHS QUARTERLY

FALL

OSHA - A MEANS TO IMPROVE THE HEALTH OF AMERICANS

1974

PART I

This is Part I of a two-part series describing occupational safety and health. Part I describes the history behind the Federal Occupational Safety and Health Act of 1970 (OSHA), how it works, and applies to New York City. Part I also points out the role that the health delivery system can play to increase the safety and working conditions which have an impact on health. Part II will highlight the practical programs which health care facilities can utilize in making occupational safety and health part of their preventive and community medicine activities.

Those interested in gaining more information should contact their local unions, community boards or health departments, the National Institute on Occupational Safety and Health or Region II - Department of Labor.

The passage of the Occupational Safety and Health Act of 1970 (OSHA) has brought new hope to working men and women throughout the United States. Now there is legal basis for protecting their health and safety while on the job. The major goals of OSHA, as stated in its preamble are:

Preamble to OSHA:

> "To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging States in their efforts to assure safe and healthful working conditions; by providing research, information, education, and training in the field of occupational safety and health; and for other purposes." (Public Law 91-596; December 29, 1970)

OSHA probably comes the closest to providing working people in this country with a chance to reach the lofty definition of health of the World Health Organization.

World Health Organization Definition of Health:

> Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Those are high sounding words and promises, not uncommon to other preambles to social legislation. What has been the reality?

A Little Background

OSHA is the first piece of Federal protective legislation for workers in the history of the United States which covers conditions at the workplace. The 1969 Coal Mine and Safety Act, which was passed a few months prior to OSHA, as well as Maritime Acts and acts covering the Atomic Energy Commission were previous examples of governmental involvement in the area of management prerogatives. Prior legal protection available to workers had been the "working conditions" clauses in their collective bargaining contracts (for unorganized workers there was and remains no such protection). The majority of those contract clauses came into being only after the major organizing campaigns of the 1930s, many of them bitter and protracted.

During the Second World War, the Walsh-Healy Act was passed which did establish some minimum standards for working conditions for those private companies doing business with the U.S.government. (Public employees or other private sector workers were not covered by the Act). These standards and those passed by the American Conference on Government Industrial Hygienists (and other professional organizations which sometimes state "acceptable" safe standards) remain the only Federally endorsed health and safety standards which now exist, except for the recently passed asbestos, polyvinyl chloride and noise standards, and the package of 14 cancer causing chemicals. There is still no Federal standard of exposure to such dangerous common substances as lead, carbon monoxide and silica. In fact, there are 500 widely used chemicals within a total of 25,000 toxic chemicals which are used by industry and for which safe standards do not exist.

The period prior to 1970 was marked by industrial disasters and public outrage by workers. In 1877, the State of Massachusetts passed the first safety law which required guard rails on certain machines and by 1893, the first national railroad safety acts were passed. However, this did not stop industrial accidents from killing 4,534 railroad workers in just one year, 1907. Soon after, the State of New York passed the first workers' compensation law in 1910. In the same year, Alice Hamilton, the founder of the occupational health field of medicine, began her work.

The "Era of the Muckrackers" from 1900 to 1910 brought some of the dangers of industrial life to the attention of people in the United States. Upton Sinclair's book, The Jungle pointed out the hazards faced by meatcutters. Other writers of the time described the problems of everyday life which plagued city dwellers who daily faced urban areas filled with industrial dangers.

The infamous 1911 Triangle Shirtwaste fire in New York City killed 146 workers. Soon after, the first fire safety laws came into existence (the law required open fire exits). These laws brought the hundreds of sweat shop workers in the garment district greater safety from the threat of fires.

The first government recognition of an occupational disease concerned the use of white phosphorus in matches in 1912; and the early 1920s brought a ban on the use of radium in watch dials. In 1948, the Federal government banned the use of berrylium in the making of flourescent lights. All these substances were acted on only after great damage to workers and subsequent public outrage.

However, these governmental actions did little to prevent a tragic occupational catastrophy from taking place in the early 1930s. During tunnel construction for Union Carbide, in Gauley Bridge, West Virginia, 476 tunnel workers died from silica exposure or were killed by accidents, and over 1,500 workers were disabled. At least half of the deaths were caused by exposure to particles of rock called silica, and the disease called silicosis. Those killed by the silica inhaled as little as three months of the silica dust while digging in the tunnel.

Even with the passing of the Wagner Act (which gave workers the right to organize), the Social Security Act and other pieces of protective legislation, there still was not a comprehensive piece of legislation to protect workers. And, there was no law providing a legal basis on which workers could, in a court of law, raise issues of occupational safety and health. This situation abruptly changed, however, after the social upsurge and changes of the 1960s, and the mine disaster of 1969 in Farmington, West Virginia. In this mine disaster, 78 miners were killed in a mine blast. A strongly organized labor lobby soon forced the passage of the Coal Mine and Safety Act of 1969; and on its heels, the Occupational Safety and Health Act of 1970.

How Does the Law Work?

There are at least 4.1 million workplaces covered by the Act, even with the Act's total exclusion of protection for public employees. The enforcement of the Act is entrusted to the U.S. Department of Labor and its subdivision, the Occupational Safety and Health Administration (OSHA). This agency hires compliance inspectors who inspect the workplaces in the United States. The labor movement pushed to get at least 5,000 inspectors hired to do this monumental job. The U.S. Department of Labor received congressional authorization to hire 500 and promised to increase the number to 1,000 by 1972 or 1973. (The number has not been increased). It is impossible for 500 (actually only about 375 were ever employed at any one time) enforcement officers to inspect 4.1 million workplaces on a regular timely basis.

Under the Act, a separate agency, the National Institute for Occupational Safety and Health (NIOSH), was set up to establish the criteria for all existing toxic chemicals and other safety health hazards. The NIOSH, located administratively in the Department of HEW, and physically in Cincinnati, Ohio, recommends criteria to the Department of Labor for the promulgation and enforcement standards. Unfortunately, NIOSH has been subject to massive budget cuts and administrative hamstringing by constant reorganization and other limitations.

As a result, NIOSH has had to sub-contract almost all of its work in the development of safety standard criteria and this has severely restricted its establishment of uniformity. In spite of these problems, NIOSH has developed, distributed and delivered to the Department of Labor, over 25 criteria documents, which, if promulgated and implemented, would greatly improve the health and safety of workers.

How Do workers Find Out If They Are In Danger?

If a worker wants to report that a particular chemical is dangerous or that any other workplace situation is unsafe, a call can be made to the Regional Office of the U.S. Department of Labor, OSHA Division. A compliance officer should be requested to inspect the workplace or condition. A letter is usually required. However, if the situation is an emergency, the worker can invoke the "imminent danger" section of the Act and an inspector MUST be sent to the workplace within 24 hours.

When the inspector arrives at the plant, the worker is allowed to "walk-around" with the inspector and the union representative, (at a possible loss of pay according to recent court decisions) and show the inspector what is wrong. The worker may also choose to remain anonymous and not accompany the inspector and foreman. This anonymity is protected under the Act with severe penalties to the employer when an act of discrimination is taken against the worker for seeking an inspection. These cases are piling up. It is quite clear that this inspection procedure almost requires a union representative to be present to protect the rights of workers. Unorganized workers do not have an organization like a union to defend their rights and protect their health. When an inspector arrives and finds a violation, a citation is issued. The penalty procedure is a fine, similar to a traffic ticket. A worker can also request (from NIOSH) an inspection to see if a particular substance, material or procedure is dangerous.

How Much Are the Fines?

According to the Department of Labor figures in U.S. Senate hearings, the average fine given to employers in the first two and one-half years under the Act is well under $50. This low

figure is indicative of the ineffectiveness of OSHA enforcement. In addition, 98.6% of the violations, were classified as being of the "nonserious" nature as opposed to "serious" violations. This classification almost ensures a low fine, and with it, virtual guarantees that the workplace will remain unsafe.

There are administrative procedures under OSHA which lead to a Review Commission to which appeal complaints on particular citations by both worker and employer may finally be appealed. To date, this Review Commission has had a record of reducing fines and thus, by administrative actions, eliminating existing violations. Its track record has not been favorable to workers and their unions. Review Commission decisions are subject to appeal in the Federal courts. This is an expensive and time-consuming process.

What Has Been Industry's Response?

Industry's response is self-protection. In almost every case, industry has complained about the strict enforcement of OSHA. A recent study by a well known economist indicated that industry plans to spend less money as a percent of capital expenditures on improving safety and health conditions in 1975 than it did in 1974.

How Is NYC Affected?

The City of New York presents certain unique problems, which affect the safety and health of many workers. First of all, NYC is not basically an industrial town with steel mills, auto factories, or coal mines. There exist no massive factories producing textiles, steel, automobiles, etc. But New York is a city in which thousands of smaller workplaces predominate -- small to medium sized shops doing garment and needle trade work, small iron and other metal works, as well as hundreds of carpentry and similar industrial shops. The massive construction industry also plays a major role in the city's industrial profile. Unfortunately, the lack of large industrial complexes in New York City has probably led to the general lack of awareness that occupational safety and health is a major issue here.

In addition, New York has over 300,000 public employees who are specifically excluded from Federal OSHA coverage, and who have only former Mayor Lindsay's Executive Order #109 for protection (#109 allows little hope for improvements, since it lacks any enforcement penalty and can call only for voluntary compliance). Of these 300,000 workers well over 50,000 do industrial type work in sanitation collection, the city incinerators, in the bellies of municipal hospitals where there are high noise levels and crushing heat, in water treatment plants, etc., where they are exposed daily to chemicals and other health hazards of all kinds. To a

great extent, the large number of public employees in the public sector plays a role in the determination of major labor oriented political issues in New York City. The lack of legal coverage for such a major segment of the City's work force may be holding the City administration from implementing safety and health laws for all of the workers in New York City.

New York does have a well organized labor movement and a very highly developed medical and public health structure. The Department of Health, the Health and Hospital Corporation, the Comprehensive Health Planning Agency, the Environmental Protection Agency and other City agencies which have some responsibility for occupational safety and health could constitue a substantial body of concern if motivated to implement OSHA. The City health agencies could be augmented in this effort by the large number of health science schools, other schools and community organizations interested in health care. To date, no decision has been made to get involved.

And so, with the exception of a few committed unions and some health advocates, OSHA isn't far off the ground in New York City.

What Has OSHA Done?

Through its legal obligation to make a full report directly to the President and indirectly to the Congress, OSHA has provided some officially sanctioned figures on the gravity of the situation. The figures (which are quite staggering) state that over 14,000 workers die yearly due to industrial accidents, and over 100,000 die yearly due to occupational disease according to Work In America by Eliot Richardson, former Secretary, HEW. Reliable sources indicate, however, that the figures are more like 25,000 dead from accidents and well over 200,000 dead from occupational diseases (especially with the recent revelations on asbestos and vinyl chloride exposure).

The Department of Labor (DOL) is responsible to collect data on mortality and morbidity caused by occupational conditions. The importance of this type of data collection by DOL cannot be overstated. The tabulated results and statistics form the basis for valuable decision-making in the area of occupational safety and health. Unfortunately, a recent Senate investigation of OSHA cited the DOL for its failure to collect and analyze this vitally needed data. The President issues a formal report to Congress every 18 months which is available under the Freedom of Information Act. OSHA has tried to respond to issues like vinyl chloride with hearings, but there is still no schedule for the promulgation of other standards. In response to criticism, OSHA is presently developing a new system for promulgating standards. This came after the establishment of standards on asbestos, in which OSHA responded to industry's pressure by setting standards above the

medically recognized safety level of zero exposure.

Cooperation Is the Key to a More Effective Use of OSHA

OSHA has given hope to many workers. More sophisticated unions in the safety field have used OSHA to get their workplaces cleaned up by threatening to bring OSHA inspectors into the workplace. OSHA has also given hope to some health professionals who see it as an aid to preventive medicine-- an important area of health care.

Dr. Irving Selikoff of Mt. Sinai Environmental Science Laboratories, has inaugerated many screening programs with unions to detect silicosis, lead poisoning, asbestos, and vinyl chloride exposure. One such program in New York City, is a cooperative effort between Local 259 of the United Auto Workers (UAW), the employer, and the Mt. Sinai Department of Environmental Medicine, headed by Dr. Selikoff.

The thrust of this study is to determine the effects of breathing shop air on workers in auto repair agencies. It is Dr. Selikoff's contention that the auto repair workers are exposed to high levels of asbestos dust. The lining of brakes consists of asbestos fibres, which become dust with use and collect in the drums and the plating of the brakes. This dust becomes airborne in the shop while brake repair jobs are done. For many years, this brake dust was merely blown throughout the shop by compressed air hoses, exposing all workers to high concentrations of asbestos dust.

The Mt. Sinai-Local 259 program, which has been under way now for a year, began when staff members of Dr. Selikoff's group inspected the death records of Local 259 members (with the consent of the union). The next step was to take air samples in several of the auto repair shops. Most recently, forty older members (who have twenty or more years in the industry) have been examined by the Mt. Sinai group at Local 259 headquarters. An important consequence of this study by the Mt. Sinai group is the provision of medically sound information to the union to make improvements in the working conditions of the shop.

In a related fashion, Dr. Steven Ayers, St. Vincent's Hospital, has been helping Bridge and Tunnel Officers to set lower carbon monoxide levels, which will prevent the high incidence of heart attacks in workers.

These projects are good examples of what cooperative relationships between health professionals and trade unions can accomplish. Once the health hazard has been identified by the health professional, it then becomes the responsibility of the union to educate the membership and work with management to eradicate this hazard.

Interest and concern in the problem of industrial health and safety hazards are growing within the health care system.

Screening programs such as those of Dr. Selikoff and Dr. Ayers are becoming more available. Projects such as those described above, are an an important first step toward the development of a comprehensive health care program of diagnosis, treatment and, ultimately, prevention, for millions of workers in this country.

The final goal of such programs, of course, is prevention - that is, elimination of the occupational health hazards which cause disease. The importance of OSHA is that it provides the legal mechanism to achieve this aim, through the cooperation between workers and their representatives, and workers in the health care system.

* * * * * * * * * * *

Part II of this newsletter will highlight practical programs which health care facilities can utilize in making occupational safety and health part of their preventive and community medicine activities.

CONSUMER COMMISSION ON THE ACCREDITATION OF HEALTH SERVICES

QUARTERLY

OSHA AND THE HEALTH SYSTEM PART 2 WINTER 1975

Introduction

Part I of the Fall, 1974 CCAHS Quarterly described the history, functions and programs under the Occupational Safety and Health Act (OSHA) of 1970. A brief history of occupational safety and health dangers, as well as legislative attempts to ameliorate such dangers and the particular problems affecting the greater New York City work force were also summarized.

Under OSHA, the U. S. Department of Labor (DOL) is charged with enforcement of basic safety and health standards at the workplace. These standards are based on the recommendations from the National Institute of Occupational Safety and Health (NIOSH) which is under the jurisdiction of the U.S. Department of Health, Education, and Welfare (HEW). Both agencies attempt to collect up-to-date statistics on deaths and injuries traceable to unsafe working conditions. Although primary responsibility for data collection resides with the DOL, to date, it has relied wholly on industry records and limited review of workmen's compensation records. These sources of data, used to make objective assessment of the effects of unsafe working conditions, are of questionable value. The 1974 Senate Oversight Hearings indicated gross governmental negligence in the collection of data on industrial work-related injuries and deaths. Several figures which are normally used and accepted as a definitive of the extent of the problem include: 15,000 to 25,000 deaths each year caused by industrial accidents and over 100,000 deaths each year from industrial disease exposure. The latter figure is attributed to former Secretary of Health, Education and Welfare, Elliot Richardson.

The most startling occupational hazard figures involve cancer, the nation's prime killer. The World Health Organization and others have asserted that most cancers are related to environmental and occupational exposures. Thus, these cancers can be prevented or greatly reduced by correcting our environment. Data like this show that occupational safety and health is not an isolated area of labor legislation, but is of concern to all Americans.

Workers, until the 1970 OSHA, had no national legislative act to create and enforce work-site safety or to correct hazardous working conditions. Despite this, health care professionals, institutions and workers are only beginning to see the relationship between unsafe work conditions and their health problems.

A recent American Public Health Association Journal editorial by Dr. Henry Howe, representative of the American Medical Association, stated that, "Medical surveillance of the health of working people, even under NIOSH and OSHA regulations, will increasingly involve the whole medical care delivery system, including the services of laboratory personnel, public health nurses, radiologists, epidemiologists, mental health professionals, dentists, community health planners, environmentalists, health educators, veterinarians, social workers and new professionals." Dr. Howe has come to realize the

interrelationship between workers' safety and health, and the responsibilities of the health care system in helping workers achieve safe working places.

Effective involvement of health professionals to minimize work related health problems requires the development of:

(1) a data collection network which would provide DOL with complete and accurate statistics on occupational safety and health problems faced by workers;

(2) a screening program to detect occupationally related diseases; and,

(3) a program of medical surveillance, treatment and prevention of occupationally related disease and injury.

Such proposed programs could then help translate OSHA into a more effective piece of legislation, and also reinforce the available health care delivery system with a strong emphasis on preventive medicine.

Today there is no specific legislative mandate, health code or other public health law requiring hospitals, medical professionals and other health care workers to monitor occupationally related diseases and disability.

The U. S. Senate Oversight Hearings on OSHA concluded in 1974 that there is a need for improved reporting mechanisms and aggressive adminstrative action to insure complete data collection. Workers and their unions who will benefit from more accurate records, are now lobbying for stronger legislation requiring better reporting. Once accurate data is collected, follow-up procedures and preventive measures can be established.

Incorporating occupational safety and health surveillance responsibilities into the job description of hospital workers will facilitate OSHA data collection at those institutions.

Of course, strong legislation which ties existing State and City Public Health Laws to OSHA is urgently needed. This will fill the vacuum between the federal, state and city levels. Although improved legislation is one immediate goal, interim programs should be immediately initiated to fill the gap.

Threat of Medical Malpractice Provides Incentives for Change

Recently, the U.S. Supreme Court ruled that a $79,000 award given to the widow of an insulation worker who died of asbestos inhalation be left standing. An effective medical surveillance program by that company's medical department might have saved the worker's life, thereby eliminating a sizeable court award and related legal expenses.

In another ruling, a retired steelworker has recently been awarded $30,000 in damages from the U.S. Steel Corporation in a landmark civil lawsuit in which the man claimed his hearing was impaired by excessive noise in the steel mill.

In yet another case, a Californian asbestos worker was awarded a $350,000 settlement in a malpractice suit against a company-employed doctor. Although the worker had been diagnosed three times by that doctor as having asbestosis, on no occasion was the worker informed about his illness. The doctor's defense stated that the company was his client and not the worker, and that nothing could be done about the disease anyway. The court ruled that the doctor did have an obligation to inform the worker. The court also recognized that the early detection of asbestosis could have been a basis to advise the worker to stop smoking and adjust other aspects of his life style. These actions could have lengthened the worker's life.

The defenses taken by most companies are usually adequate to protect them against adverse judgments. The rulings in those cases are exceptional in that the rights of workers were upheld. These cases may become landmark decisions which will force employers to improve working conditions or face large malpractice awards or other financial penalties.

A Hypothetical Case

It has been known since the late 1890's that aniline dye is carcinogenic. An aniline dye plant worker complained of excessive exposure to dangerous chemicals. A concerned nurse and physician, after talking with the patient, came to the conclusion that a serious health problem existed for the workers. The physician contacted the worker's union and in a few weeks spoke before workers from aniline manufacturing plants. During the discussion the workers realized that many physical illness complaints that they had could be related to their working conditions. A program was developed to have the workers put through a medical program to detect work related illnesses. The union instituted action to make the workplaces safer. This hypothetical case was posited to help answer these questions:

1. Did the MD have a moral or legal obligation to take any action?

2. If the hospital administrator had been informed, what steps would the administrator have to take? Was there a moral or legal obligation to do anything?

3. Can the patient's doctor (or the hospital) be sued for negligence for not protecting and informing other workers at the plant?

4. Should the doctor/hospital seek to force the company to institute safer working conditions (to minimize exposure to aniline dye)?

5. Should OSHA and public health laws be improved to ensure that health institutions and professionals take steps to correct occupationally-derived disease and injury?

Under present law and social practice, medical professionals, health institutions, and other health care workers have no legal obligation to identify and correct occupational health hazards. Despite the lack of legislative mandate, there is still an ethical and moral dimension to correct work related health problems faced by employees.

Needed: Consumerist Approach

OSHA enables workers, unions and public interest groups to correct occupational hazards. The worker is on the front line when occupational hazards exist. Workers often have the best information on workplace deficiencies. Consequently, their involvement in reporting these deficiencies is vital to the OSHA program. Many workers are deeply concerned about the effects an employer sponsored and controlled program can have on uninterrupted employment and promotions. But unless there is a strong union and worker participation, occupational safety and health programs may be suspect among employees.

Guarantees of privacy and confidentiality of the participants is essential. Without these guarantees, the best OSHA programs may falter due to worker fear, disinterest and non-participation.

The four year experience under OSHA, thus far, has shown that without the concerted action of workers, unions and local community representatives, OSHA would have had little impact on workplace health hazards. The combination of workers, as potential medical patients and community board activists, as users of available community services, can provide a sufficient political base to pass more effective occupation and safety health programs. This political base itself will greatly strengthen the enforcement of any legislation to improve workplace conditions. Specially tailored educational programs for community boards will create a better understanding of OSHA and exert pressure on local health facilities to develop occupational programs.

A First Step: Comprehensive Screening

Monitoring programs can identify safety and health problems faced by workers. Large-scale screening programs can determine whether workers are being exposed to excessive amounts of toxic substances which pose a serious threat to their health. Landmark programs have been inaugurated with the United Auto Workers, Local 259, which screened its members for asbestos exposure to brake linings. Tunnel workers were screened for exposure to silicosis; Textile Workers Union members were screened for exposure to poly-vinyl chloride. Other such programs, such as the screening of Bridge and Tunnel Officers for exposure to carbon monoxide, has been performed recently at St. Vincent's Hospital by Dr. Steven Ayers.

Programs like these are excellent examples of how cooperation between workers, employers, and health professionals can result in increased screening and early diagnosis of occupationally related diseases. But this is just the first step.

The next step is the linking of screening programs with comprehensive programs to diagnose, treat and prevent occupational disease and disability. In the Fall 1974 CCAHS Quarterly, these programs and those initiated by Dr. Irving Selikoff, of Mt. Sinai Environmental Sciences Laboratory, were briefly described. The remainder of this Quarterly briefly outlines where occupational safety and health programs can be linked to existing health care services.

The Out-Patient - Ambulatory Care System

Every day workers enter emergency rooms overcome by chemical fumes or excessive exposure to dangerous substances, or with work-related injuries or illnesses. Hospital-based outpatient and ambulatory care services, however, have few programs to detect or report unsafe or unhealthy working conditions. Since large numbers of people use these hospital based ambulatory services for primary, as well as for emergency treatment, the incorporation of occupational health and safety services would be extremely beneficial, reduce health costs and improve the lives of workers. Hospitals can become one data collection center to identify the sources of work related health problems. The unsafe work locations, once identified, can be inspected and a timetable for correction of unsafe conditions can be established.

For more chronic conditions, specialty clinics could routinely monitor workers for occupationally related diseases. Careful follow-up and "preventics" could help reduce the risk to uninfected co-workers. Better communications and coordination of OSHA programs between hospitals and local factories should be developed for continuous comprehensive medical detection programs to protect workers, prevent disease and minimize occupational hazards. These programs, developed within the OSHA guidelines, must maintain active involvement of workers, unions and community boards in policy making decisions.

Ambulatory care services can play a major role in occupational safety and health programs. For instance:

Obstetrics Gynecology (OB-GYN)

Pregnant workers should never be exposed to toxic substances. It has been established that carbon monoxide, lead and mercury, to name a few, can impair the fetus. Obstetrics-Gynecology departments should apprise patients of these dangers. Proper follow-up on pregnant workers can help lower birth defect and death rates and increase the chances for a normal delivery.

Pediatrics Clinic

Pediatrics clinics should be closely linked to OB-GYN. Some pediatric clinics now monitor for lead poisoning and drug addiction. Pediatric programs should be expanded to include infants exposed to ambient toxic chemicals. A careful medical history designed to identify any past occupational conditions which the mother may have been exposed to and which might have affected the fetus or the child is vital.

Pulmonary Function Clinic

Many industrial substances can adversely affect the lungs and respiratory systems of workers. OSHA-oriented pulmonary function clinics can catch the pulmonary problems of workers at an early stage. Once detected, workers can obtain professional advice to prevent further deterioration and be advised of the aggravation of their occupationally-derived pulmonary problems by such ordinary life-style habits as smoking.

Dermatology Clinic

The skin can manifest many signs of unsafe working conditions. Rashes, itching and other apparently minor dermatologic irritations, can be an early warning to dermatology clinic staff that workers are in contact with dangerous substances. Preventive programs can be developed to detect and correct health related dermatological problems.

Mental Health Facilities

Mercury, noise and carbon tetrachloride are just a few of the environmental substances found in factories as being identified as possible sources of mental distress. Pressures of various kinds at work can also cause severe mental stress. Exposure to chemicals inimical to the human nervous system can cause severe mental and nervous system disorders. Community mental health programs should be integrated into OSHA programs. These programs should be expanded to include detection and treatment services for occupationally caused mental disorders.

Occupational Safety and Health Clinic

Occupational safety and health clinics do not exist in any hospital or related health facility now. When developed, an OSHA clinic would collect and analyze data and follow-up on the occupational causes of disease or injury. In addition, it would serve as a screening and diagnostic center for other specialty clinics. Labor and management groups could receive training about occupational problems. Health professionals would also be trained to detect occupationally-related diseases and injuries. These clinics would serve as a central contact to the local health departments.

The Emergency Room

The Emergency Room (ER) can become a vital link to OSHA for workers, unions, management, and the Department of Labor inspectors. ER personnel could perform "Imminent Danger" inspections for the DOL or report imminent danger situations to the DOL. The Act requires an inspection of a workplace within 24 hours by the DOL when an imminent danger exists. Emergency rooms designated by the DOL as centers could report potentially dangerous conditions, request imminent danger inspections, and provide valuable medical and technical expertise to DOL inspectors.

In addition to the ambulatory services, in-patient services can be utilized to detect and correct occupational safety and health hazards.

Hospital In-Patient Programs

Occupational health programs to be implemented on an in-patient basis would closely follow those outlined for specialty clinics. In-patients are more available for in-depth interviews about working conditions.

Health care workers (nurses and social workers) in closer contact with in-patients would be invaluable information gatherers.

Hospital Pathology

Hospital pathology departments have personnel trained to find the origins of disease. Developing a relationship to detect and report occupational related diseases with the DOL, health department and this department is needed.

Medical Record and Related Certificates

New modernized methods of taking a medical history and recording treatment and the patient's progress have been introduced recently. The present medical record (chart) format needs further revision to include data on the patients' (or family) occupational history, potential work hazards faced, etc.

Another important medical document used to determine the causes of death is the death certificate. Present death certificate format makes it practically impossible to record causes of death related to work. The death certificate needs to be revamped to allow for the recording of occupational causes of death.

The birth certificate could also be adjusted to include health problems of the newborn which can be traced to the mother and other family members. Modification of the birth certificate would probably be more difficult to accomplish but appropriate revision would be invaluable to epidemiologists.

Health Science Schools and Training

OSHA's effectiveness requires concerned and knowledgeable health professionals and workers. Several areas outlined below can be points where the educational process can begin.

Medical Schools

According to recent figures, there are only 2,624 full-time doctors in the U.S. in occupational medicine and only two medical schools providing full programs in occupational medicine. Medical school curricula has to be expanded to train more physicians for occupational medicine.

Schools of Nursing

Nursing school curricula should be expanded to train more nurses for occupational health services.

Schools of Public Health

Occupational medicine courses exist in most schools of public health. Expansion of courses, plus upgrading of course content and staff would

attract a wider range of health professionals.

Schools of Social Work and Allied Fields

Adding occupational health and safety course content to school curricula will prepare their students to detect occupational diseases. In addition, students in physician-assistant, nurse-practitioner, para-medical and similar programs would benefit from training in occupational safety and health, since many innovative health programs have increased the medical responsibilities of these workers. The suggested expansion and additions of program do not require radical modifications in course curricula.

Training Present Health Care Personnel

The training and education of present health care workers is needed. Professional health associations might offer courses on occupational safety and health for members. Health worker unions also might run classes for members on occupational safety and health issues.

Local Government Health Agencies

Local government health agencies have a responsibility to make the workplace safer for workers and the health system more responsive to the health needs of workers. For instance, in New York City, the City Health Department currently inspects restaurants to ensure that minimal standards are met. A similar program to inspect work conditions would protect employees. The City Health Department would inspect work sites to see that OSHA standards are being met; the results made available to the unions, the public, and workmen's compensation insurance companies.

Another program started by New York City and copied throughout the country is the Poison Control Center. Anyone seeking information about poisons can call. The Center expanded, to include an up-to-date roster on substances found in factories, etc. would be helpful to workers and unions.

Also administered by the City Health Department is the "Ambulatory Care Program," (see Health Perspectives, "Ambulatory Care Program - Role For the Consumer," Jan-Feb, 1975) which governs the spending of public monies in the ambulatory care programs located at participating non-profit voluntary hospitals. The addition of occupational safety and health programs to the Ambulatory Care Program contract would greatly expand life-saving and cost-producing services at those institutions. Community Boards, as on-the-spot monitors of this added program, would ensure responsiveness to community and worker needs.

Summary

The OSHA legislation had raised hopes that the workplace would be a place to support life, not to shorten or cripple it.

This hope can only be fulfilled if present legislation is expanded to

include guarantees that data will be collected on occupationally-derived illness and injury, and that, this data will quickly lead to preventive and corrective measures.

OSHA's dream can be fulfilled only if workers and unions are full participants in programs designed to protect them against peril. That method will be more successful if health care providers, as well as City and State health agencies provide professional, technical back-up for all occupational safety and health programs. This in turn requires a more compassionate, concerned and educated provider.

Once these elements are merged, successful OSHA programs, more readily accessible to workers, will reduce health and safety hazards at the workplace.

CONSUMER COMMISSION ON THE ACCREDITATION OF HEALTH SERVICES

CCAHS QUARTERLY

SUMMER 1975

CANCER AND JOBS

Each year, more than 350,000 Americans die of cancer!

The medical profession and research scientists are putting every effort into seeking solutions to the high cancer and heart disease rates. Industrially developed countries list these twin killers as their main causes of deaths, having already eliminated other diseases associated with underdevelopment, i.e., tuberculosis, dysentery, etc. To some extent, through research, the causes and cures of heart disease are being uncovered. But the causes and prevention of cancer are still unknown. As a result, cancer continues to terrorize. The close relatives of those stricken by this frightening disease are especially vulnerable to the fear generated by cancer.

Fear -- a Problem

The fear generated by cancer causes very important public health problems, since the methods to seek prevention techniques and improved treatment are tied to the willingness of people to cooperate with the researchers. The prime reason for this fear is the inability to learn the cause of cancer and, more importantly, the belief that heredity is a major factor in cancer.

Another reason that creates a fear of cancer is the practice of job discrimination against people who have had cancer. Employers, to avoid higher premiums for health and life insurance often discriminate against employees with a history of cancer, and in many cases do not hire people who have had cancer.

Government War against Cancer

The Nixon and Ford Administrations have made statements equating the conquest of cancer as the "health care victory of the 1970's": like putting "a man on the moon in the 60's" within the context of health care. Large sums of money were pumped into the fuel lines of research to make this "victory" possible. For instance, more than $1.7 billion has been spent under the National Cancer Act of 1971. That does not include research monies which were re-directed toward the so-called "war" on cancer. Despite the influx of massive financial support, no descriptive plan was made to wage a winning war against cancer, nor was there a plan to set priorities on how the money would be spent! Most importantly,

A NON-PROFIT TAX EXEMPT ORGANIZATION • 101 WEST 31ST STREET, NEW YORK, N.Y. 10001 • TEL.: 524-4166

workers and their representatives were not included in this fight.

A May 27, 1975 New York Times front page story exposed the failures of the national cancer programs being funded by the federal government. The article compared the misleading comparison of these programs with the distortions that accompanied government releases on the Vietnam War. Dr. Charles C. Edwards, a respected health expert, resigned from his position as Under-Secretary of Health, HEW, partly because of his disgust with the use of the national cancer program as a political issue. The amount of dollars, appropriated after the Presidential level rhetoric settled down, was inadequate and poorly used.

A Program is Called For to Win the War

A cancer program must include ways to prevent cancer, treat cancer, and improve cancer research. The causes of cancer cannot be separated from the treatments of that disease. One problem with present cancer research expenditure is that the appropriated money has been spent mostly on treatment. Treatment programs are often very fancy, esoteric and expensive. These programs may be helpful, but the high cost of treatment makes them unavailable for those who need them most. Research centers concerned with the study of viruses and biological hereditary factors in cancer research, have been almost the sole recipients of federal funding. Their efforts focussed on the attempt to find a "pill" that would "cure" cancer.

Only 10% of Cancer Research Monies Spent on Environmental Risk

Sidney Wolfe, M. D. of Ralph Nader's Health Research Group feels more cancer research money should be spent in the area of occupational and environmental risk. He says:

> "Curiously, the very countries which have progressed the most in preventing ... epidemics of infection, are by virtue of parallel industrial 'progress' amongst the leaders in cancer rates. Current estimates by National Cancer Institute officials indicate that more than three-fourths of all cancer is environmentally induced by exposure as industrial air and water pollution, and, in a more concentrated form, workplace pollution, cigarettes, chemicals in foods, and drugs." (Emphasis added.)

The National Cancer Advisory Board (March, 1975) has stated:

> "There was an obvious sense of general astonishment ... that the National Cancer Program does not appear to have accorded an adequate priority nor sense of urgency to the field of

> environmental carcinogenisis, particularly where this concerns chemical carcinogens. In spite of the fact that there is wide-spread recognition of the importance of environmental chemical carcinogens in the press, by the lay public and in Congress, it would seem that the problem has been accorded a low priority in the National Cancer program and as far as could be judged, to absorb about 10% of the budget."

Three-fourths of the problem gets only one-tenth of the budget.

Barry Commoner, noted environmentalist, described the interrelation of environmental and occupational hazards:

> "The worker and the environmental scientist have a great deal in common, and need to share their experience because, in my opinion, the environmental crisis in this country, and in the world, will not be solved unless you win your fight for decent working conditions, for health and safety measures, in the shop.

Jobs and Cancer

At a recent New York Academy of Science meeting (March, 1975) the subject of Occupational Carcinogensis (occupationally related cancer), was discussed. At that meeting, the first of its kind in the United States, scientific results were reviewed by the experts in the field from the National Cancer Institute, university laboratories, and other scientific organizations.

Landmark research on the cancer risk of workers exposed to asbestos and vinyl chloride were reviewed. These studies proved that not only were workers who manufacture asbestos and vinyl chloride proven to be a cancer risk, but their families and the general public were also at risk.

Toxic Substances Associated with Cancer Expanded

But the Conference didn't stop there. Other toxic substances were revealed as having cancer-causing properties.

Such widely used substances as arsenic, chloroprene (used in garden hoses and other rubber products), and bis-chloromethyl ether (combination of formaldehyde and chlorides commonly used in laboratories) were shown to be associated with cancer. Tri-chloroethylene (TCE -- a solvent in metal industries, a dry-cleaning agent in the clothing industry, an anesthesic in operating rooms and a chemical to decaffeinate coffee) was fingered as a carcinogen a couple of weeks after the Conference. The National Institute for Occupational Safety and Health (NIOSH) issued a "cancer alert" on TCE on June 6, 1975 labelling it a "highly potent liver carcinogen."

These findings put tens of thousands of workers at cancer risk. Many scientists and trade unionists expressed the conclusion that: research by the National Cancer Institute (NCI) and other research laboratories which receive large government grants should begin to relate their cancer research to the environment and workplace, and researchers should also begin to assess the relationship between viral and genetic approaches to the cause of cancer and the effects of environmental and occupational carcinogens.

Recommendation for Action

It is urgent that new approaches be used to study cancer, its causes and prevention: the Labor Safety and Health Institute of the Consumer Commission recommends that:

1. All chemicals and substances be tested for their cancer-causing properties before they are used for industrial purposes. Current federal legislation (Occupational Safety and Health Act, Federal Water Pollution Control Amendments of 1972 and other protective pieces of legislation) does not contain language which requires chemical pre-testing. Federal legislation to insure that such pre-testing take place, i.e., Substance Control Act (S.776), is needed.

2. Programs to educate workers, their representatives, scientists and medical professionals on problems of exposure to carcinogenic substances be instituted.

3. There be increases in federal funding of programs of the National Institute for Occupational Safety and Health (NIOSH) to study jobs and cancer and increases in funds for programs to NIOSH to coordinate its activities with the National Cancer Institute and similar research institutions.

4. Federally funded programs to train industrial hygienists and toxicologists to conduct the research and analysis necessary to determine the association between potentially carcinogenic substances and the disease and death of workers be started.

5. The immediate retrospective screening of hospital medical records by trained cancer epidemiologists be started to determine the extent that occupational exposure to chemical substances is a cause of cancer. Studies to determine the correlation between occupations of patients and cancer should be instituted. This information would then be used to either (a) start a cancer registry in each hospital or (b) upgrade current cancer registry in each hospital. Occupational histories of patients to some extent are already listed in medical records but more comprehensive documen-

tation is necessary. A study at the Roswell Park Memorial Institute in Buffalo, N.Y., showed that some types of cancers affected certain groups of workers in selected occupations (i.e., apparel industries). Discerning cancer trends by occupation can help determine causes of cancer and initiate preventive programs.

6. Because of the number of patients seen, the Departments of Preventive and Community Medicine and Ambulatory Care are key to the detection, treatment, and prevention of cancer. The activities of these departments can be dovetailed to those of cancer researchers. Community boards for ambulatory care can be potent forces to establish cancer programs leading to sound occupational health clinics in hospitals.

7. Cancer as an international problem needs to be researched worldwide. The World Health Organization, in conjunction with the International Labor Organization and the International Agency for Research on Cancer, should convene special meetings on cancer so that scientific data and research are exchanged.

The participation of workers in the detection, prevention and treatment of cancer is a necessary element to implement the above recommendations successfully.

******* ******** *******

Prepared by: Labor Safety and Health Institute, an affiliate of the Consumer Commission, 381 Park Avenue South, New York, N. Y. 10016, Frank Goldsmith, Director. The Institute has also prepared a two-part series on Occupational Safety and Health and the Health Care System (see CCAHS QUARTERLIES: "OSHA -- a Means to Improve the Health Care of Americans", Fall, 1974; "OSHA and the Health Care System", Winter, 1975). These Quarterlies are available from the Consumer Commission.

August, 1975

Grim Lessons of the Vinyl Chloride Coverup

by Frank Goldsmith

Over the past few years, "startling" discoveries of dangers in materials once thought to be harmless have been quite common. Thus, when the dangers of vinyl chloride were first widely publicized in 1974, there was little ripple within the engineering community—even though 5 billion pounds of the polymer, polyvinyl chloride, are produced in the United States each year, accounting for nearly 20 percent of all the plastic the nation uses.

But were the dangers of PVC—especially its ability to induce hemangiosarcoma, a previously rare cancer of the blood vessels of the liver—really unknown before 1974? Or were they simply ignored or even suppressed by companies within the plastics industry? Now that the dangers of PVC, asbestos, and numerous other substances have become known, what is being done to avoid similar experiences in the future? And what will be the outcome for engineers who design facilities in which potentially toxic or cancerous materials are used?

Sadly, the safeguards against potential occupational dangers are inadequate even now. The Occupational Safety and Health Administration is underfunded—scarcely able to check on the safety of existing industrial materials, let alone the 500 new ones that appear on the market each year. And

the agency insists on carrying out "economic impact" studies of its proposed major regulations, even though good data does not exist for calculating such costs (and as if, in any case, it is possible to quantify the value of a human life).

Nor is any remedy likely to be found outside the federal government. Engineers find it difficult to argue for strict protective measures in the face of weak federal standards. And the relatively few companies committed to keeping good medical records of their workers are often unaware of the types of subtle medical problems to look for.

The PVC affair highlights the weaknesses of worker and consumer protection against such substances. PVC was introduced commercially in this country in 1927 as a wall covering. It is one of the most versatile of all plastics—cheap, reasonably fire resistant, and easily molded at low temperatures. It has long been known that the monomer, vinyl chloride, can affect the central nervous system. In fact, it was once used as an anesthetic, but was discarded because it causes heart irritation.

The first technical article outlining occupational health problems with the chemical appeared in 1938 (see chronology). By the 1960s, the professional occupational health journals had carried numerous articles on bone and skin diseases among workers who had been exposed to high concentrations of VC. In 1961, researchers at Dow Chemical, a major producer of the monomer, reported that test animals exposed to 100 ppm during the equivalent of normal working hours for 4.5 to 6 months suffered slight liver damage. As a result of these findings, the company lowered the allowable level of worker exposure to VC in its own plants to 50 ppm.

At the time the most widely accepted standard was 500 ppm, which had been the level decided upon by the American Conference of Governmental Industrial Hygienists. In 1962, on the basis of research done at Yale by D. Lester, L.A. Greenberg, and W.K. Adams, which found no evidence of danger from VC exposure, the ACGIH decided not to follow Dow's lead and to modify its 500 ppm limit only slightly. It was not until 1971 that the ACGIH standard was significantly tightened—to 200 ppm.

The United States was clearly lagging behind Europe in strengthening

Frank Goldsmith, who holds a master's degree in public health from Columbia University, is director of the Labor Safety and Health Institute in New York City.

its VC exposure standards. "Great Britain had lowered to a maximum level of 200 ppm, following cases of acroosteolysis [bone disease] in the sixties," says Dr. Irving Selikoff, cancer researcher at New York's Mt. Sinai School of Medicine. "West Germany had set a level of 100 ppm in 1970, based on Dow's 1961 results with animals." The Soviet Union's occupational exposure limit at this time was only 10 ppm.

In this country, however, industry seemed to be trying to ignore the problem. In 1964, B.F. Goodrich fought claims for compensation from a worker for injuries he claimed were due to exposure to VC. The worker late died from hemangiosarcoma; his was the second death to be firmly tied to VC exposure.

Harold Williams, who worked for nearly 30 years at a Monsanto facility in Springfield, Massachusetts, which pressed vinyl chloride resins into, among other things, phonograph records, is currently suffering from nerve problems that may have been caused by VC exposure. He recalls that Monsanto did inform its employees in the mid-1960s that there were "some problems" with the material, but it said that the workers should not worry.

In the early 1970s, according to Williams, Monsanto ran additional tests on its workers in Springfield, but the tests' purpose went largely unexplained and individual test results were kept secret. (Whether Monsanto was performing these tests in response to new research that had surfaced in 1970 linking VC exposure to cancer in animals is uncertain, but the suspicion is strong.) Sweeping statements were issued by the company to the effect that the workers faced no danger and that they were in good shape. PVC operations at the plant are now closed, and Williams is fighting the company to prove that his health problems are work-related.

The circumstantial evidence suggests that many firms deliberately suppressed evidence of PVC dangers in order to avoid costly plant modifications. However, in the companies' defense, it should be pointed out that there was no great appreciation of industrial cancer problems in the early sixties (although aniline dyes have been causing recognized cancer problems since the 1880s) and no strong central agency, governmental or private, to coordinate and disseminate research findings. Thus, Dow Chemical could announce a possible danger and cut worker exposures in its own facilities. But there was no way of forcing the remainder of the industry to follow suit.

These shortcomings were supposed to have been corrected with the creation of the Occupational Safety and Health Administration (in the Labor Department) and the National Institute of Occupational Safety and Health (in HEW) in 1970. But OSHA and NIOSH have proved to be singularly slow-moving and incompetent with regard to many occupational safety problems. PVC was one of these. Even after the ACGIH lowered its exposure limit for VC to 200 ppm in 1971, OSHA, which had gotten its 500 ppm standard from the ACGIH in the first place, did not follow suit.

In January 1974, the general public

In Search of a Standard

1927: Polyvinyl chloride first commercialized in United States.

1938: Acute animal toxicity to high doses of vinyl chloride first reported.

1949: Liver damage found in 15 of 48 workers exposed to VC in the Soviet Union.

1961: After numerous reports from around the world suggesting potential dangers in VC, Dow Chemical conducts sensitive experiments on the question; discloses animal data showing deleterious effects of VC concentrations as low as 100 ppm; decides to cut worker exposures in its own plants to 50 ppm.

1963: American Council of Governmental Industrial Hygienists modifies its 500 ppm time-weighted average VC exposure limit to 500 ppm maximum concentration.

1964: John L. Creech, B.F. Goodrich plant physician in Louisville, reports that an unusual hand problem has developed among a few employees who enter polymerization reactors to manually remove buildups of solid PVC from reactor walls.

1965: *Soviet Medicine* reports disorders of the liver and bile ducts in workers engaged in the production of some plastics.

1970: Preliminary results of animal experiments presented by P.L. Viola at Tenth International Cancer Congress in Houston, showing that high VC doses cause cancer.

1971: OSHA publishes list of "threshold limit values" for pollutants in the workplace; VC limit is set at 500 ppm.

1972: ACGIH revises VC limit downward to 200 ppm; OSHA standard remains at 500 ppm.

Cesare Maltoni finds first angiosarcomas in rats he is studying (August).

1973: In January, a team of three American chemical industry representatives visits Maltoni in Bologna to learn of his results and see his slides.

In spring, Creech at Goodrich recommends that liver function tests be initiated; they eventually involve 271 employees, of whom 55 show evidence of "slight liver abnormalities."

July 17, representatives of the Manufacturing Chemists Association and NIOSH meet in secret to discuss the VC matter.

December 18, Maurice Johnson, environmental health director of B.F. Goodrich, visits Louisville plant; Creech informs him that he has learned of an employee's death the previous March due to angiosarcoma of the liver. This prompted Creech to review medical records of another employee, who had died of liver cancer in 1971, and the review confirmed that the death was due to angiosarcoma.

By year's end, Maltoni's study shows that levels of VC as low as 250 ppm induce a variety of cancers in rats.

1974: January 22, B.F. Goodrich announces that the two deaths, plus a third one were due to angiosarcoma.

January 24, Goodrich's announcement carried by *Louisville Courier-Journal* and *Wall Street Journal*.

February 15, informal fact-finding

hearing is convened by the Labor Department "to give interested persons or organizations an opportunity to present oral or written data, views, and/or positions regarding the possible hazards associated with the manufacture and/or use of vinyl chloride."

March 11, NIOSH director Marcus Key notifies OSHA that "in view of . . . our inability to describe a safe exposure level as required in Section 20 (a) (3) of the Occupational Safety and Health Act, we rejected the concept of a threshold limit for vinyl chloride gas in the atmosphere."

April 5, OSHA sets Emergency Temporary Standard for exposure to VC at 50 ppm.

May 3, OSHA releases proposed draft Environmental Impact Statement on its proposed VC standard for comments. That same date, Tabershaw/Cooper Associates, Inc., submits its report, *Epidemiological Study of Vinyl Chloride Workers*, to the Manufacturing Chemists Association; it concludes that "cancers of the liver (primarily angiosarcoma), respiratory system, brain, and cancers of unknown primary site, as well as lymphosarcoma, occurred more often than expected in those members of the study population with the greatest exposure. Even though the excesses were not statistically significant, the findings warrant further study."

May 9, OSHA proposes that the permanent VC job health standard be set at "no detectable level."

May 10 and 11, New York Academy of Sciences holds first public international meeting on the toxicity of VC.

In June, Maltoni reports angiosarcomas in test animals exposed to only 50 ppm VC during simulated work periods.

June 12, final draft Environmental Impact Statement on proposed VC standard is released by OSHA.

June 25, OSHA holds public hearing on proposed standard for occupational exposure to VC.

August 26, economic study on proposed standard, done by Foster D. Snell, Inc., calls "no detectable level" standard on VC "not feasible." Study is criticized by Health Research Group on September 6 as emphasizing "the failure of the industry to produce detailed and relevant economic data to support any of its claims."

October 1, OSHA releases final VC regulations, to become effective October 4; maximum permissible level is to remain at 50 ppm through December 31, then drop to 1 ppm averaged over an eight-hour period, and 5 ppm for 15-minute periods. The industry goes to court, seeking a stay in the standards due to take effect January 1; U.S. Court of Appeals grants the stay.

1975: January 31, OSHA regulations on VC upheld by U.S. Court of Appeals for Second Circuit; industry files appeal.

U.S. Supreme Court agrees to hear case, but refuses to order a stay of the regulations in the meantime; regulations go into effect April 28.

May 8, General Tire and Rubber Company's Ashtabula, Ohio, plant says it was in full compliance by April 1, and had been in a position to be in compliance as of the original January 1 date.

May 23, Georgia-Pacific announces that its plant VC levels meet new OSHA curbs.

May 28, U.S. Supreme Court upholds the 1 ppm limit on VC.

finally learned about the dangers of VC exposure. Three workers at a B.F. Goodrich plant in Louisville, Kentucky, were judged to have died from hemangiosarcoma caused by exposure to vinyl chloride. Numerous other workers at the plant displayed nerve disorders that appeared to be VC-related.

Hearings were quickly called by OSHA to gather information on the scope of the danger and to set new occupational standards. At the February 1974 hearings, several industry executives refused to acknowledge any previous awareness of the VC problem. Tony Mazzocchi, legislative director of the Oil, Chemical, and Atomic Workers Union, asked Goodrich president Anton Vittone, for example, why his firm's operations in Holland had more information on the VC problem than the parent company. Vittone dodged the question: "We've been trying throughout these many years to keep abreast of any developments in Europe with respect to this area and we will continue to do so."

At the same time, other industry spokesmen admitted that they had been privy to research indicating the danger at least since 1970. That was the year Italian researcher Publio L. Viola announced at the Tenth International Cancer Congress in Houston that VC had caused cancer in animals in preliminary tests at extremely high exposure levels (30,000 ppm). The Manufacturing Chemists Association, in public statements, admitted that it had been following Viola's work with experimental animals and had "carefully" studied his findings. Yet the trade group testified at the February hearings that it had had no direct contact with NIOSH specifically concerning the VC problem until July 17, 1973, when an industry delegation, including a European representative, met with Dr. Marcus Key, then NIOSH director, and his staff.

Commenting on MCA's slowness in contacting federal officials, Dr. Selikoff said, "If their statements mean what they seem to mean, then we're nearly four years behind where we should be. You don't automatically assume that animal studies are conclusive, but the industry should have at least notified its own doctors."

Dr. Sidney Wolfe of the Nader Health Research Group offered the same opinion. "It's inexcusable that they didn't tell the government [before mid-1973]," he said. A NIOSH scientist also criticized MCA: "it would have been appropriate for them to tell us about the European studies as soon as they knew," he said.

NIOSH, however, is not absolved from blame. Why did the institute have to wait for industry to tell it about the danger in the first place? Why didn't it have its own information? And why, even after receiving the evidence from the MCA, did NIOSH delay taking any action until after public disclosure of VC-related deaths in 1974?

In its own defense, the MCA claims that it did notify industry medical personnel—and that this notification is what led to identification of the first hemangiosarcoma death (at the Goodrich plant in Louisville in December 1973). When asked why a general public notification was not made, an

industry spokesman noted that the research was still in a preliminary stage. Companies, he said, fear that the release of inconclusive data will provoke public hysteria, governmental regulation, or private lawsuits before enough information is available to make rational decisions.

But the MCA appears to have been reluctant to pursue the information that *was* available. According to Cesare Maltoni, director of the Bologna Center for Prevention and Detection of Tumors and Oncological Research, it was not Viola's 1970 findings that prodded the MCA into action, but rather Maltoni's notification of the MCA directly, in late 1972. Maltoni added, in an article in *Ambio*, a Swedish journal, that even before 1972 "our data [had been] periodically transmitted to the European companies which have supported our research, and are available to all interested parties." Finally, a few months after Maltoni's formal notice to the MCA, and, according to *Chemical & Engineering News*, after "some months of negotiation" with the European companies involved (Montedison, Imperial Chemical Industries, Solvay, and Rhone-Progil), "a team of three U.S. chemical industry scientists visited Prof. Maltoni . . . to learn of his results and to see his slides."

More than 7,000 people in the United States alone work in plants where the potential for exposure to VC gas is particularly high—either in the production of the monomer from feedstocks or the plastic from the monomer. Tens of thousands more—one widely quoted estimate is 170,000—are involved in the fabrication of products containing PVC, and more than 1 million Americans work with such products after fabrication. Millions more may be in potential danger because they live near facilities handling PVC. One June 1, 1974, the *New York Times* reported that "a woman who for nearly 30 years lived four blocks downwind from a polyvinyl chloride manufacturing plant died of hemangiosarcoma." Despite the wording of the *Times* article, the women's death is still not confirmed as having been hemangiosarcoma, although the likelihood is strong.

NIOSH, with the help of major medical laboratories, has begun a "body count," using death certificate data, in an attempt to discover just how widespread the problem has become. However, it is difficult to obtain an accurate estimate. Death certificates do not contain much of the information necessary to determine the cause of a death; especially for occupational cancers, which generally take at least 15 to 20 years to develop, the person's occupational history is necessary. And numerous cases of hemangiosarcoma have no doubt been misdiagnosed, because, until recently, the disease was so rare.

Well over 100 deaths have been at-

A Landmark Conference

Toxicity of Vinyl Chloride-Polyvinyl Chloride edited by Irving J. Selikoff and E. Cuyler Hammond (New York Academy of Sciences, 2 East 63 St., New York, N.Y. 10021, 337 pp., $35 paperbound).

In May 1974, less than four months after the first public disclosure of human deaths associated with vinyl chloride, the New York Academy of Sciences held a conference on the subject. The program was extraordinary, partly because of the speed with which it was organized (a speed that no governmental agency could ever hope to match, although several such agencies helped support the academy's effort), and partly because of the quality of the program's participants. Virtually every researcher doing significant work in the field—industrial hygienists, regulators, and physicians—attended, attacking the problem from all points of view.

This extraordinary meeting could have produced an extraordinarily dull book of proceedings—useful at best to a few workers doing esoteric work in the field, and perhaps not even very well understood by most of them. Instead, the proceedings—papers presented, discussions held, and a remarkable collection of 389 references on VC and health, going back as far as 1930—together form a definitive, landmark work. Of the numerous studies on the health affects of various technologies that have crossed our desks over the past few years, we have reviewed only the ones that could explain a health problem in terms a non-doctor can understand—those that a plant engineer, for instance, could use to justify increased worker protection to his or her management, or that a product designer could use to check on the safety of the materials he is planning to shove into the paths of commerce. This is one of those rare books. While one will need a medical dictionary or occupational health encyclopedia to get through the roughest papers, the pattern should be clear to any technically educated person of good will.

In part, this is due to the quality of the conference participants. But the book owes a debt to its two editors as well—they resisted the temptation to save space (and money) by eliminating each researcher's reasons for doing what he or she did. Thus, the editors have preserved methodologies that guide all health researchers. They have also preserved some of the groping the various authors went through, inching toward discovery of a terrible health problem by degrees, often in ignorance of data that could have been used to better define their experiments.

For this reviewer, reasonably skilled in the arcane art of measuring small amounts of pollutants in air, the sheer complexity of some of the animal experiments is especially startling. Is it necessary? The answer is provided by Cesare Maltoni and Giuseppe Lefemine, in their introduction to a paper presenting some of their findings: "What is now happening with vinyl chloride and the story of vinyl chloride carcinogenicity should bring about greater consideration of experimental bioassays and finally induce a new turn in the field of occupational and environmental carcinogenesis. In other words, experimental prediction on the pathogenetic potential of occupational and environmental agents before they are produced and released on a large scale into the human environment should preclude the need for later epidemiological evidence."

Remember the 389 references, which were compiled only after deaths were recognized and hundreds of future deaths were made unavoidable. Was it a failure of technology, or a failure of all professionals to be responsible for that technology—and their fellow human beings?

—S.S.R.

tributed to this disease (including several at PVC fabricating facilities, where much lower levels of exposure occur than in VC manufacture and polymerization). But, due to the paucity of data and incomplete employer medical files, the link between the disease and VC has not been confirmed in some of these cases.

Even so, it is clear that the problem is a national one—in fact, an international one. If a highly visible national disaster, such as a flood or earthquake, had caused as many deaths, it would have been accompanied by a massive federal aid program. Nothing like that has happened with VC.

OSHA has only recently begun to take effective action to deal with the problem. In April 1974 it set an interim worker exposure limit of 50 ppm, and proposed a limit of "no detectable VC" in plant atmospheres. The final standard, as promulgated by OSHA in October 1974, set a limit of 1 ppm per eight-hour day, with a 5 ppm limit for exposure times of no more than 15 minutes. The new limits did not go into effect until the following April, however, due to industry court action. At least four companies had announced compliance with the OSHA standard at press time, and another claims to be producing PVC with especially low residual VC for use in packaging.

Use of VC as a propellant in aerosol cans was banned by the Consumer Product Safety Commission in 1974, but the commission refused to order a recall of such aerosol cans already in the hands of consumers. The federal Environmental Protection Administration has set machinery in motion to establish a "hazardous air pollutant" standard for VC plants under the Clean Air Act; the standard was pending at press time. And the Food and Drug Administration has proposed to ban the use of rigid PVC in food packaging because of the potential (though comparatively slight) danger of VC leaching into the food.

In short, it took at least five years from publication of evidence linking VC to cancer—and more than a quarter of a century after VC was linked to other occupational diseases—for reasonable protection standards to be instituted. Even now, there is a question as to how strongly those standards are being enforced. OSHA, for example, has yet to inspect those plants that claim to have cleaned up.

The vinyl chloride case, as well as recent experience with asbestos and mercury, highlights the need for independent research on occupational and environmental hazards. That is why NIOSH was created in the first place, and why it received the support of organized labor and large sections of the scientific community. But, as far as labor is concerned, OSHA and NIOSH were not diligent enough about getting the facts of the PVC case to the public. Jacob Clayman, secretary-treasurer of the Industrial Union Department of the AFL-CIO addressed the issue at a 1974 symposium on PVC at the New York Academy of Sciences. "Multicorporate studies of cancer from vinyl chloride were initiated secretly in this country and in Europe," he said. "They were discussed with the [U.S.] government in secret, and their results would probably still be secret without the presence of mass media [interest] . . . Even after the Louisville cases were announced, the government attempted to conduct key meetings without the presence of [labor] representatives. In at least one case . . . the government sought to substitute a medical survey of employees by an independent researcher . . . with a study of their own to be conducted—by a secret prearrangement—in collaboration with the company.

"Seemingly to slow down the development of new information, NIOSH is being ordered to request no increases in staff and funds to cope with the additional burden of the vinyl chloride investigation. Because of resources already stretched to the breaking point, in effect NIOSH is being asked to diminish its total effort. Research means information and information means regulation. Regulation means corporate expenditures. The equation is rather simple."

Hard evidence to support Clayman's charges is difficult to come by, but there is no doubt that such monetary and political equations have governed OSHA thinking in the past. A memo from former OSHA director George Gunther surfaced during the Watergate affair, in which Gunther suggested that selective OSHA enforcement (and nonenforcement) of the Occupational Safety and Health Act could yield large amounts of money for President Nixon's reelection campaign.

Although management of OSHA and NIOSH has taken a turn for the better recently, the only way to insure relative independence for occupational safety enforcers is to split OSHA off from the Labor Department. Such independence would also increase the possibility that "no strings" research money would be available for health investigations by scientists and engineers.

Labor must also put its own house in order. With few exceptions, American unions are cut off from international research and advances in occupational safety and health—in part because AFL-CIO head George Meany refuses to sit at the same table with trade unionists and scientists from socialist countries such as the Soviet Union, or even officials from social democratic countries such as Sweden. Thus, U.S. unions, a key force in safety and health policy-setting in the United States, are often unaware of important data presented at meetings of the International Labor Organization and the World Health Organization. Fortunately, some unions, even within the AFL-CIO, are not heeding Meany on this issue, and have begun to participate.

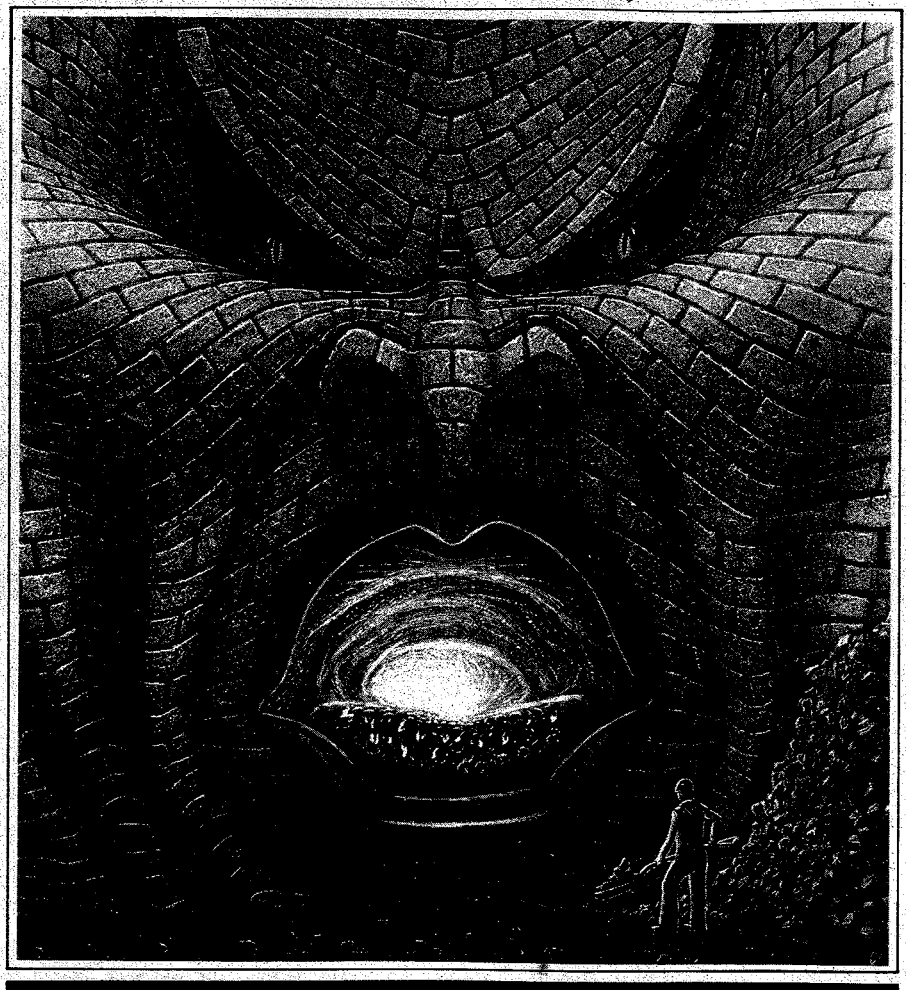
Despite dire industry predictions that the PVC industry could disappear under tough new standards, no plant has closed because of them, at least four new ones have opened, and prices are below 1974 highs. On October 1, Uniroyal threatened to close a 29-year-old PVC plant unless the standards were loosened. But even if there are dislocations in the industry, should that be the main consideration? In the past, labor has tended to be protective of jobs, and to bargain on occupational safety. But Peter Bommartio, president of the United Rubber Workers Union, the union with the most to lose if the PVC industry closes, told the Labor Department, "This country survived for nearly 200 years without polyvinyl chloride, and we can survive in the future without it. If PVC cannot be made and used safely, then the proposed standard must be replaced by an orderly procedure to phase out vinyl chloride production and find substitutes for its products, or to phase out the products themselves."

That attitude may be disturbing to some engineers. But it is a warning that continuation of past mistakes should not be tolerated, and that the chance for new mistakes should be minimized, even if the development of new products is slowed in the process. To do otherwise is to reduce the value of human life to that of the rats used in the experiments of Viola and Maltoni. □

NEW ENGINEER

COKE OVENS

STEEL'S BIG DEMON WINS AGAIN



by Frank Goldsmith

In 1775 Percivall Pott showed that English chimney sweeps were being given cancer of the scrotum by their jobs. The specific carcinogen was later identified as benzo(a)pyrene (BaP). Chimney sweeps no longer get scrotal cancer, because they employ the simple expedient of washing regularly. However, the same carcinogen is today giving cancer to people who work in American coke ovens, and to people who live near coke ovens. Soap won't cure the problem this time.

COKE OVENS

Neither the steel companies nor the unions pushed for stronger coke oven standards, so who can blame OSHA's Morton Corn for ducking the responsibility?

The federal government has become interested in harmful emissions from coke ovens because of its responsibilities for occupational health and environmental protection. Steel companies, however, have been opposing clean-up moves on the grounds, variously, that ways to clean up the ovens do not exist, that they are too expensive to be practical, and that their emissions aren't really all that dangerous.

No one outside the steel industry (the biggest coke-producing group) seriously disputes that coke oven emissions are harmful, however. Aside from BaP, the generally recognized carcinogenic substances in coke emissions include benzo(b)-fluoranthene, benzo(j)fluoranthene, benzo-(b)anthracene, and chrysene. Several other substances in coke oven emissions are known to increase the potency of chemical carcinogens. All this was suspected by 1892, and confirmed in the medical literature by 1936.

Last October, after five years of legal and administrative wrangling, the federal Occupational Safety and Health Administration of the Department of Labor finally got around to issuing a new standard limiting emissions from coke ovens. The steel industry's trade association, the American Iron and Steel Institute, immediately sued in the federal Court of Appeals for the Third Circuit, in Philadelphia, asking that the Labor Department review the standard once again. The AISI was joined by six steel companies: U.S. Steel, National, Jones & Laughlin, Wheeling-Pittsburgh, Sharon, and Shenango.

But it turns out that the new standard, which is scheduled to be phased in during a three year period beginning this month, is not much different from the one it replaced —200 micrograms per cubic meter of "coal pitch tar volatiles," versus the new standard of 150 micrograms per cubic meter of benzene-soluble particulate emissions (roughly the same thing), both averaged over eight hours. And unfortunately, in developing the standard, the Occupational Safety and Health Administration ignored several significant technological advances that are available in this country, some of which are already in widespread use in other countries. The standard is thus, from an engineering point of view, both inadequate and outdated even before it takes effect.

The model for the new standard was the U.S. Steel plant in Fairfield, Alabama. The Department of Labor says that this plant uses the best technology achieved by the steel industry to date in this country. Yet, there is other technology available that would protect both the workers and the general population from coke oven emissions to a far greater degree. There is no question that such methods need more development work, but such work seems well within the financial capabilities of the industry—especially since the federal government is now willing to give the industry until 1980 merely to catch up with the better plants now operating in this country.

Why did the federal government ignore the most modern technology? The Occupational Safety and Health Administration decided to accept only the testimony of the steel industry and of the United Steelworkers union. Neither group brought the subject up.

Contrast the steelworkers' inaction to the activism of the United Rubber Workers Union in forcing a tough worker protection standard for vinyl chloride in 1975. Under the leadership of Peter Bommerito, the rubberworkers used testimony from such experts as Dr. Cesare Maltoni of Bologna, Italy, to show that workers exposed to VC risk cancer of the blood vessels in the liver (see "Grim Lessons of the Vinyl Chloride Coverup," November 1975).

The Occupational Safety and Health Administration even backed away from the recommendation of the Labor Department's Special Advisory Committee on Coke Oven Emissions in setting the new standards. The committee had recommended that workers be given the right to transfer out of the ovens before feeling the medical effects of exposure to coke fumes, at no loss in pay.

Dr. Morton Corn, chief of OSHA, refused to consider this as part of the standard, on the grounds that issues of worker transfer should be handled in collective bargaining. The Occupational Safety and Health Act was supposedly designed to remove worker safety and health questions from the bargaining table. Why should a worker have to sign away his health to keep a job?

Instead, the steelworkers and the industry agreed to discuss transfers only for personnel already judged to be in medical trouble. By then, of course, it is too late. And, under the standard, medical examinations are to be voluntary on the part of the workers, rather than mandatory. How many will refuse to be tested for fear of losing their jobs?

I have been following these developments with more than ordinary interest since February 1976, when I was rudely awakened to my personal stake in the issue of coke oven emissions. At that time I received newspaper clippings from my parents, who live in Johnstown, Pennsylvania. The Pennsylvania Department of Environmental Resources had found that the air in Johnstown contained 20 to 30 times the amount of BaP that is considered normal for an urban area. The Department of Environmental Resources attributed this concentration primarily to the emissions from the Bethlehem Steel Corporation, the nation's second largest steel producer.

I then figured out my own personal cancer equation. I was born in Johnstown in 1941 and spent the first 18 years of my life

in that coal mining and steel producing town, which until now has been known more for its disastrous floods than for its bad air. (A flood in 1889 left more than 2,200 dead. Another flood occurred in 1936.) Eighteen years of exposure to high levels of BaP puts a person in the high-risk group. The long-term effects of such exposure usually take 25 to 40 years to manifest themselves, so I am also in the right age group to start showing symptoms. Did the air I was breathing contain BaP levels high enough to harm me? The evidence is conflicting, but ominous.

Let's take a look at our culprit, the coke oven. George Clack, writing in the U.S. Labor Department publication *Job Safety and Health* magazine, provided the following description:

"Coke itself is the solid residue, mainly carbon, left after coal has been heated and the volatile materials distilled away. It is primarily used as a fuel for making steel in blast furnaces. Modern coke ovens also allow recovery of such calculable by-products from the coking process as benzene, creosote, toluene, road and roofing tars, and ammonia for fertilizer.

"Coke ovens vary in size between 10 and 20 feet in height, 40 and 48 feet in length, and 17 and 19 inches in width, and the ovens are arranged in batteries of 10 to 100.... In a typical coke plant, during the 'charging' process, a 'larry car' loaded with coal moves along a track on top of a battery of coke ovens, pausing to pour coal down three or four chutes into each oven. The coal is then heated at temperatures between 22,000°F and 28,000°F. After 16 to 20 hours of coking, a 'pushing' machine shoves the whole mass of materials from the oven into a 'quench car' alongside. Finally the hot material is carried to the quenching plant and doused with water to cool it. This 'quenching process' produces enormous clouds of billowing steam—the sure sign of an American coke plant. Though the steam may obstruct vision, most experts view it as a relatively innocuous emission if the quenching water is unpolluted—a big if.

"The three major sources of harmful emissions are charging, pushing, and leakage from coke oven doors during coking.

"To draw off the hot gases produced when coal pours into the red-hot oven during the three to five minute charging process, each oven has one [or] two ducts hooked up to a [steam powered] vacuum system. The problem in traditional coke plants is that these ducts and the charging holes themselves tend to become jammed with settled coal or clogged with carbon buildup, or the steam pressure may simply not be enough to draw off all vapors. When any of these things occur, flames,

Bad Faith, Bad Air

On February 20, 1976, the Pennsylvania Department of Environmental Resources filed suit—against Bethlehem Steel; Lewis W. Foy, its chairman; Thomas N. Crowley, its general manager; and Stewart S. Cort and F.A. Daggett, former chairman and general manager respectively—alleging violations of the state Air Pollution Control Act, and asking for civil penalties.

The complaint held that Bethlehem and the department had agreed, on February 25, 1972, on a program for controlling air contaminants emitted from the coke batteries at Bethlehem's Johnstown plant, including 228 ovens in three batteries (numbers 17, 18, and 19) at the Franklin works and two batteries (numbers 15 and 16) containing 88 ovens at the Rosedale works. The result of the agreement was a consent order covering the charging, coking, and pushing operations of the batteries. The order called for establishment of an abatement plan, which, according to the department, Bethlehem submitted to it on June 29, 1973. The department approved the plan on July 23, 1973.

According to the complaint, Bethlehem was supposed to submit to the department detailed plans for controlling pushing emissions at Battery 16 by October 1, 1973, complete construction by July 1, 1975, and be in compliance with the final emission standard by October 1, 1975. The department alleged that, at the time of the complaint in February 1976, Bethlehem had yet to take any of the planned steps toward rectification of Battery 16's pushing emissions.

Also according to the June 1973 plan, Bethlehem was supposed to take Battery 17 out of operation by May 31, 1975. The complaint alleged that Bethlehem was still operating the battery in February 1976.

The February 1972 order also established emission standards for pushing with which Batteries 18 and 19 were supposed to comply. The department alleges that these standards have been violated at both batteries.

There were several other counts in the complaint, concerning such things as stack emissions and pollution from steel furnaces. In conclusion, the department made the following statement:

"By its failure to comply with the various applicable rules, regulations and orders and its continued unlawful operation of the sources identified in [the complaint], Bethlehem has caused carcinogenic, oncogenic and other harmful air contaminants to be emitted into the outdoor atmosphere in the Johnstown Air Basin in such manner and concentration as to be inimical to the public health, safety, and welfare, or which are injurious to human, plant and animal life, and to property, and which unreasonably interfere with the comfortable enjoyment of life or property, thereby causing air pollution as defined in the Air Pollution Control Act."

As of this writing, the case is still pending.

Among Bethlehem's responses to the suit was a public statement, which read in part:

"State officials focused attention on levels of a substance called benzo(a)-pyrene (BaP) and singled it out as a health hazard.

"While it is true that coke ovens emit benzo(a)pyrene, they are neither the largest nor the only source of that substance in the U.S.A. Benzo(a)pyrene is a product of combustion, and occurs wherever there is burning. BaP is found in cigarette smoke, the smoke from fireplace logs, in smoke from incinerators, from motor-vehicle exhausts, in fumes from hot roofing tar and in such grilled foods as toast, bacon and charcoaled steaks.

"Bethlehem's Johnstown plant, where the DER has taken its samples, is only one of the many sources of BaP in the community. Data from a National Academy of Science study shows that the major single source of BaP emissions in the United States is coal-burning furnaces in homes. The next major source is refuse burning.

"With respect to coke-oven emissions, BaP constitutes a very tiny portion of the total—no more than a few tenths of one percent. BaP levels in a large, crowded, air-conditioned sports arena where smoking was not permitted were found to reach 220 nanograms per cubic meter of air, as compared with the highest reading claimed by the DER in Johnstown of 60 nanograms per cubic meter....

"There is no evidence from toxicologic studies that inhalation of BaP by itself causes cancer. Studies also show that a Johnstown resident would take in more BaP by eating two charcoal-broiled steaks than he would from breathing air for a year at the BaP concentration claimed by DER to exist at some location in Johnstown."

Of course, the issue is not whether BaP is a problem nationally, but only whether or not it reaches harmful levels in Johns-

black smoke, and gases may shoot 10 feet into the air of the charging holes at the top of the oven. These charging emissions account for as much as 70 percent of total emissions."

Hardware exists that can prevent these charging emissions. A 1974 article in the *Journal of the Air Pollution Control Association* discussed a total of eight possibilities. The article was written by Larry Kertcher, of the Maryland Bureau of Air Quality Control, and Benjamin Linsky, a civil engineering professor at West Virginia University.

One of the systems they discussed, the pipeline charging system, was in successful operation at the Allied Chemical Corporation's Semet-Solvay Division in Ironton, Ohio. This system, instead of using larry cars, uses a pipeline to carry preheated coal into the ovens. The pipeline-oven connection is a closed one, unlike the larry car

town—where coke ovens are indeed the biggest source of the substance. And BaP ingested is metabolized in a different way than BaP inhaled. Generally, a substance that gets into the body through the lungs is more harmful than when it must traverse the digestive system first.

In an interview with the Associated Press, Maurice K. Goddard, head of the Pennsylvania Department of Environmental Resources, said, "One of the discouraging facts about trying to get these big steel companies to do something is that the ownership and key officers are remote from the plants.

"Lukens steel in Coatesville is in compliance. Both air and water. Most of the smaller firms in this state are in compliance or at least they're trying. I think that's because they live in the community, they know the workers."

"U.S. Steel keeps saying it can't afford to do anything. I'll bet Bethlehem Steel says the same thing. Last year was supposed to be a bad year for U.S. Steel. But they had a net income of $559 million and if you had one share you would have made a dividend of 10 dollars on a share worth almost 80 dollars. That's 12 percent return on your investment. You don't get that on your savings account at the bank. I think U.S. Steel could siphon off 50 cents of that and take care of the people's health.

"I think the key people at the big steel companies sat down and figured out the dollars and decided it would be cheaper to fight in court than comply.

"When Bethlehem Steel signed a consent decree with the state of Pennsylvania in 1972, I believed they meant it. When nothing happened, I gave them the benefit of the doubt. In 1974, I began to wonder. Nothing happened in 1975 and we decided to sue."

Chronology

1775: Percivall Pott documents job-related cancer of the scrotum in English chimney sweeps.

1873: German scientist R. Volkman confirms Pott's empirical findings.

1892: It is suggested that coal-tar exposure can cause cancer of internal organs.

1907: Exposure to "pitch, tar, tarry compounds" listed as compensable in workers' compensation schedule in England.

1920: Listed as "notifiable" in U.S. Factories Act.

1936: Lung cancer firmly linked to coal-tar exposure.

1948: Thousands disabled, 21 die in Donora, Pennsylvania, because of a pollution-trapping atmospheric inversion.

1967: American Conference of Governmental Industrial Hygienists (a non-official group) adopts as a standard an eight-hour time-weighted average of 200 micrograms per cubic meter coal tar pitch volatiles, defined as the benzene soluble fraction of total particulates.

1969: Secretary of Labor adopts ACGIH standard.

January, 1971: Allied Chemical and Salem Corp. form Coaltex Associates, to license technology for pipeline charging of coke ovens with pre-heated coal.

February, 1971: A study in the *Journal of Occupational Medicine* concludes that coke plant workers have two to three times the cancer risk of the general population, with those who work on top of the ovens having seven to ten times the risk of the general population.

June 8, 1971: American Iron and Steel Institute formally challenges the coke oven standard. In response, the United Steelworkers of America request development of stringent new standards. The Department of Labor reaffirms the existing standard, pending further research by the National Institute for Occupational Safety and Health.

1973: NIOSH issues a report entitled "Criteria for a Recommended Standard . . . Occupational Exposure to Coke Oven Emissions."

November 6, 1974: Standards Advisory Committee on Coke Oven Emissions begins hearings.

November 29, 1974: President Ford issues executive order 11821, which requires inflationary impact statements on proposed safety and health standards.

May 24, 1975: Standards Advisory Committee submits its report.

July 31, 1975: OSHA issues proposed coke oven emissions standard.

October 17, 1975: OSHA issues draft environmental impact statement on proposed coke oven emissions standard.

November 4, 1975: OSHA begins public hearings on proposed standard.

March 12, 1976: OSHA releases inflationary impact statement.

May 14, 1976: OSHA concludes public hearings.

August 20, 1976: Final environmental impact statement becomes available.

October 20, 1976: OSHA announces new coke oven emissions standard.

October 22, 1976: Standard appears in *Federal Register*. Industry goes to court, petitioning for delay.

January 20, 1977: Coke oven emissions standard scheduled to begin being phased in; final controls due by early 1980.

system, and therefore there is no opportunity for gases to escape into the air, when the system works right.

Kertcher and Linsky found indications "that use of the pipeline system will increase the coke production of a battery by approximately one-third," and that "pipeline charging also allows the use of lower cost, poorer quality coking coals." They also found that, for installation on existing systems, the pipeline system was quite expensive, compared to the other systems under review, and they suggested that, for retrofit purposes, a jumper pipe installation with a new larry car design would prove the most economical.

In the jumper system, the gases from the oven being charged are moved by suction through a jumper pipe to another oven, rather than into the atmosphere.

Another system, in operation at the Jones and Laughlin steel plant in Pittsburgh, was sponsored jointly by the American Iron and Steel Institute and the U.S. Environmental Protection Agency. It essentially is an improved design of the vacuum duct system that is now used to draw off gases during charging. Greater steam pressure is used, and gas escape routes are blocked. Most important among these escape routes are the larry car hoppers themselves. When empty, each of the hoppers currently becomes an easy route to the outdoors. Provision of butterfly doors to seal the hoppers remedies this situation.

There are two other sources of emissions, leakage from coke oven doors and emissions during pushing. Leakage from doors is related to the age of the ovens and the quality of maintenance. As for pushing emissions, one method of controlling them is to place a hood, or shed, over the side of the oven from which the coke is pushed, and over the quencher car and track. The hood extends the entire length of the battery and is equipped with fans and gas cleaning equipment to deal with the exhausted gases.

Improvements are also available in the quenching process. Writing again in the *Journal of the Air Pollution Control Association*, Benjamin Linsky advocated a changeover from wet quenching to the dry quenching method. He reported that a dry quenching process was developed shortly after World War I by Sulzer brothers, and that dry quenching is now used in the Soviet Union, Czechoslovakia, Japan, Switzerland, Finland, France, Great Britain, South Africa, and East and West Germany, but not in the United States. (The Soviets commissioned their first commercial dry quenching plant in 1960.)

The dry quenching process uses inert gas instead of water to draw the heat from the coke. After pushing, the incandescent coke is placed in a quench tower, and the gas (basically nitrogen and carbon dioxide) is passed through it to absorb the heat. The gas then transfers the heat to a waste-heat boiler to make steam, which can then be used for such tasks as electricity production and preheating of coal. (The energy recovery involved can cut plant fuel bills drastically.)

Although quenching with unpolluted water does not cause air pollution, Linsky notes that "specialists familiar with air and water pollution control of coke ovens and steel mills recognize that wet quenching towers have been used to dispose of polluted mill and by-product coke plant waters.... By removing wet quench towers, the temptation for an operator to function at less cost, by not treating some of this polluted water, is removed."

"Because adjustments can be made on the coke transporting vehicles," Linsky goes on to note, "dry quenching could reduce air pollution during the push and transportation phases of the coke process" as well.

Dry quenching of incandescent coke after it has been pushed from the coking ovens is a proved, reliable process that is presently being used in several industrialized countries," writes Linsky. "Foremost among dry quenching's advantages are: (1) virtual elimination of air pollutants emitted during quenching; (2) elimination of potential water pollution associated with wet quenching; (3) improvements in the working environment; (4) saving substantial amounts of energy in usable forms; (5) producing more usable coke that is superior to wet-quenched coke."

Kertcher and Linsky have clearly shown that the technology needed for a clean-up is available. The steel industry, however, has not shown itself to be very interested in cleaning up its coke ovens, and even under government prodding it has performed prodigies of foot-dragging (see box). The problem has not been made any easier by the federal government's virtual surrender to the industry in the matter of the new coke oven standard.

The history of the new standard goes

The Health Problems: Societal Implications

Industry generally does not contest the studies showing that coke oven workers are far more likely to die of cancer—especially lung cancer—than the general population. But the steel companies do contest the assertion that benzo(a)pyrene is the culprit. They want monitoring done for all respirable agents (fumes, dust, and gases) in coke oven emissions, and not merely BaP.

The United Steelworkers and the Occupational Safety and Health Administration say that while this would be nice in an ideal situation, it is difficult enough to monitor for BaP, and that emission controls for BaP will tend to reduce exposure to the other cancer-causing agents as well, without more cost and delay.

Another problem is that while studies have adequately documented the excess death rates among coke oven workers, the rate of disabling sicknesses is not known. The University of Pittsburgh's School of Public Health, under contract from NIOSH, has been conducting a retrospective mortality study on more than 50,000 people who worked in steel mills from 1953 to 1960. The fifth report of the nine generated by this study so far covers coke oven workers. No systematic health studies on the subject have been issued by the steel industry, except for a few reports covering small numbers of employees. If the industry really cared about worker health, it would have done such studies years ago.

One interesting finding of the University of Pittsburgh's studies is that black steelworkers tend to have a higher incidence of cancer than whites. One reason: coke oven work is the least desirable in a steel mill; new employees, including a disproportionate number of blacks, start on the ovens. And the Advisory Committee report noted that "more and more women, many of childbearing age, are being employed at the coke ovens. On some batteries, as much as 20 percent of the workforce already is women operating in such capacities as larry persons and lid persons... benzo(a)pyrene is a demonstrated transplacental carcinogen that could infest the unborn fetus of these women coke workers."

A common reply by management and company foremen in the steel industry, to workers complaining about their assignments, is to say "don't gripe about your job assignment, at least you aren't working in the coke ovens." But these studies have shown that workers elsewhere in the plant are affected—to a lesser degree—by coke oven emissions.

The Cancer Atlas, a county-by-county determination of cancer rates nationwide (published by the National Cancer Institute in 1975) shows that residents living around coke plants also show increased incidence of cancer. But it is difficult to show a firm relationship between the plants and the cancer, because other substances in the environment—as well as genetic variations in the population and such other variables as diet—also enter into the equations. Nonetheless, the statistical inferences are ominous.

back nearly ten years. In 1967, the American Conference of Governmental Industrial Hygienists (a non-official group) adopted as a standard an eight-hour time-weighted average of 200 micrograms per cubic meter coal tar pitch volatiles, defined as the benzene-soluble fraction of total particulates. The Secretary of Labor adopted this limit in 1969, and OSHA took it over as an established federal standard after it began operations in 1971. But that same year, the American Iron and Steel Institute, an industry group, challenged the applicability of the standard in a petition filed with the Department of Labor. The steel industry's reaction was a common one that year, as many previously voluntary standards became mandatory under OSHA. In the petition, AISI requested the revocation of the standard. In response, the United Steelworkers requested stringent new standards.

The Department of Labor reaffirmed the existing standard, pending further research by the National Institute for Occupational Safety and Health. In 1973, NIOSH published a report entitled "Criteria for a Recommended Standard...Occupational Exposure to Coke Oven Emissions." The next step in the bureaucratic process was the holding of hearings by a Standards Advisory Committee on Coke Oven Emissions, appointed by the assistant secretary of labor for OSHA. The hearing process began in November 1974, and the report was submitted in May 1975.

On July 31, 1975, OSHA published its proposed standards for exposure to coke oven emissions in the *Federal Register*, and in October it released its draft environmental impact statement. In February 1976, OSHA released its inflationary impact statement on the proposed standard.

Needless to say, the industry was opposed to the standard. In testimony about the cost of complying with the proposed standard, Bethlehem Steel argued that it could not afford to clean up. OSHA's inflationary impact statement had held that cleaning up would have a negligible effect on the price of steel, but the Council on Wage and Price Stability supported the industry position, suggesting that the money might be better spent on cancer research.

Will the new standards, as weak as they are, cause substantial harm to the industry, with a loss in jobs? It seems hardly likely. During the next eight years, industry spokesmen testified, the steel industry expects to invest nearly $40 billion in new facilities. Estimates of the total annual cost of the new standard range from $130 million (the study done for OSHA) to $1.28 billion (the one done for industry). The American Iron and Steel Institute said much of the higher cost would be in lost coke production during installation of new controls, and so forth. But the study done for OSHA noted that scheduling of conversions during slack times over the next three years offered enough flexibility to keep such losses to a minimum. No one really expects the industry to run at peak capacity continuously for several years.

In the end, the Council on Wage and Price Stability said its "best guess" of costs would be $200 million per year—a figure that would cause steel prices to rise by considerably less than 1 percent.

OSHA declined to place a dollar value on the benefits to be derived from this expense, noting that the controls will help protect both workers and people living near coke ovens. It seems clear, however, that the expense is reasonable—if the new standard is strict enough actually to protect worker health. We won't know that for another 20 years, at the earliest. Let's hope we don't have to say then that we made a mistake, and try once again to install controls that were technically feasible as early as 1977, to protect against a hazard that was clearly defined in the 1930s. □

Frank Goldsmith, who teaches at Cornell University, holds a master's degree in public health from Columbia University, and is director of the Labor Safety and Health Institute in New York City.

ORDER COUPON

The Labor Safety and Health Institute Guides and Consumer Commission on the Accreditation of Health Services CCAHS Quarterlies are available upon request.

Subscribing to the Labor Safety and Health Institute entitles you to future Guides at no extra charge. Membership is $10 per year. These contributions are tax deductible. Please make checks out to the Consumer Commission on the Accreditation of Health Services.

Name .....

Organization/Union .....

Address (Mailing) .....

.....

Phone Numbers .(...).....

Materials Available ($1.00 each)

1. Guide #1: OSHA Local Union Library .....
2. Guide #2: Occupational Health Services .....
3. Guide #3: OSHA Bibliography .....
4. Guide #4: Health Planning & OSHA .....
5. Guide #5: Union OSHA Administration .....
6. Guide #6: Job Hazards: Who's at Fault? .....
7. CCAHS Quarterly: OSHA & Health Care .....
8. CCAHS Quarterly: Cancer & Jobs .....

LSHI WORKBOOK $4.00. .....

Labor Safety and Health Institute
381 Park Avenue South
New York, New York 10016
212-689-8959